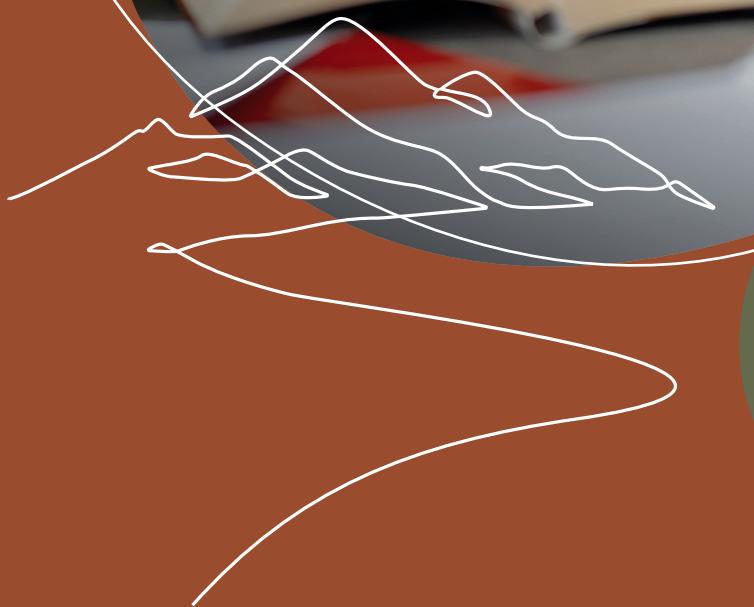


# Adult Literacy and Numeracy

Tutor manual



From  
Research  
to Practice



Part One

Edited by Iona Johnson

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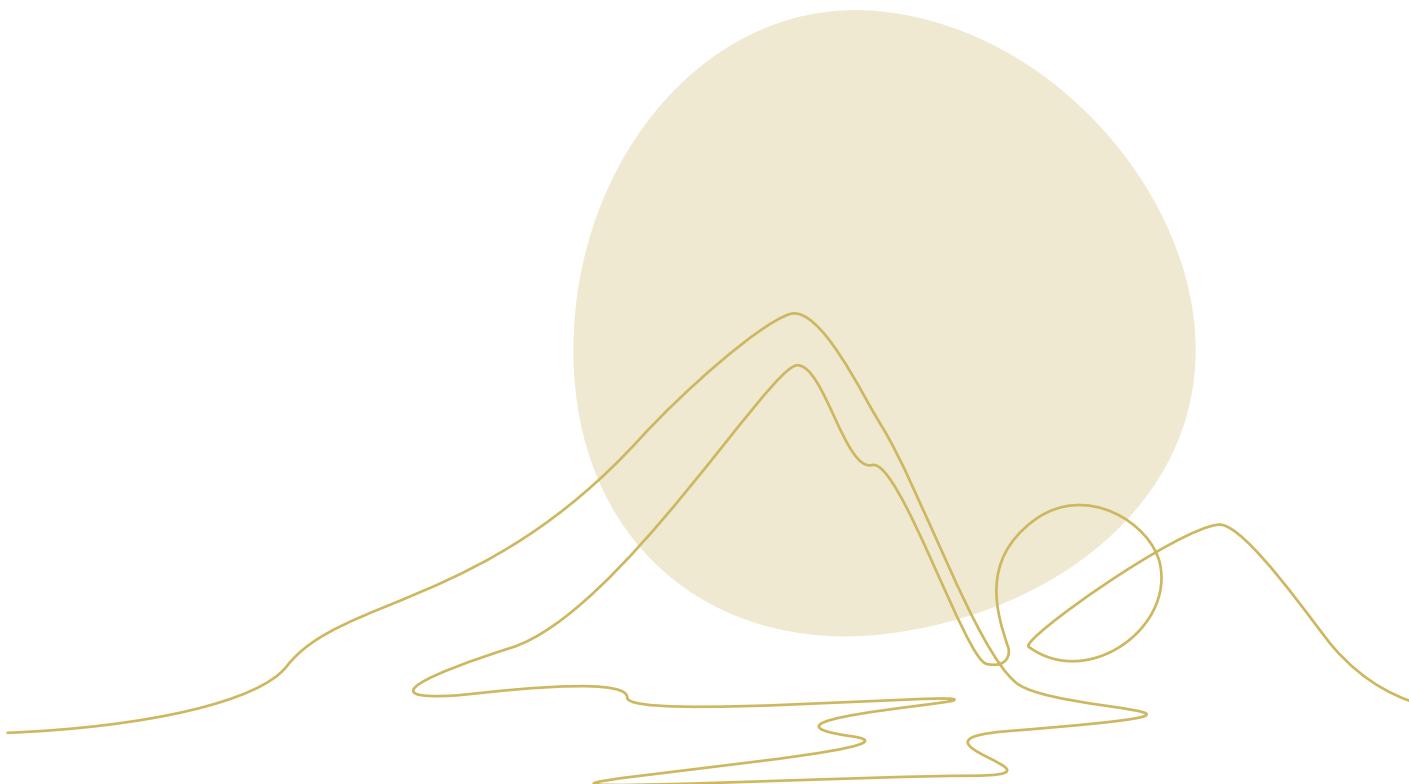
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## Acknowledgement of Country

In recognition of the profound history and enduring culture of lutruwita (Tasmania), we humbly acknowledge the traditional custodians of the land on which we live and work. We honour and pay our deepest respects to all Tasmanian Aboriginal peoples, the original knowledge holders, storytellers, teachers and caretakers of this beautiful island. We further extend our respect to all Aboriginal and Torres Strait Islander peoples of this land we call Australia, and especially to their Elders, both past and present, whose language, wisdom and connection to country continue to guide and inspire us. May their enduring relationship with country teach us to respect and nurture this place we are privileged to call home.



## Preface

This manual is the result of a two-year collaboration between Libraries Tasmania and TasTAFE. The project was initiated to address a critical gap in the adult literacy sector: the need for a comprehensive, contemporary resource that not only outlines effective strategies for improving adult language, literacy and numeracy skills, but also explains the research and science behind these strategies. Our goal was to develop a manual that serves as both an educational tool and a practical guide, empowering tutors with the knowledge and techniques necessary to make a meaningful impact on adult learners.

By offering a comprehensive and practical guide, we aim to enhance the effectiveness of those who volunteer, work or aspire to work in the field of adult literacy. We sincerely hope that this manual will improve the quality of tutoring delivered and contribute to the broader goal of increasing literacy and numeracy skills within our communities. We believe that with the right tools and knowledge, every tutor can make a significant difference in the lives of adult learners.

We aspired to develop a manual that will have a profound impact on the practice of adult tutoring in Tasmania, Australia and potentially more broadly. We hope you enjoy using it for years to come.

# Contributors

## Acknowledgement of contributions

We extend our deepest gratitude to the dedicated team of subject matter experts, teachers, practitioners, advisors, reviewers and writers who worked with us to meticulously craft the content of this manual. Through this collective knowledge, we have endeavoured to produce a contemporary, research-informed and practical guide to adult tutoring. Your contributions have significantly enriched the quality of this manual.

We are immensely grateful to our specialist content writers, whose expertise and experience provided the depth of knowledge required to articulate the theory behind our practical guidance for tutors. We also acknowledge the peer reviewers whose critical evaluations and constructive feedback helped refine and enhance the final product. Your efforts have been instrumental in making this manual a comprehensive resource.

We would like to express our sincere appreciation to the Tasmanian government for funding and support of this project. Their commitment to improving adult literacy and numeracy in the Tasmanian community has made this manual possible. We are grateful for their dedication to fostering educational opportunities for all.

Finally, we would like to acknowledge and thank the adult literacy sector in Tasmania. You have all contributed to the content through your dedication and application of the strategies that are evidence-based and that work.

## Writers

### ***Dr Iona Johnson***

Qualifications: Master of Adult and Vocational Education, Graduate Diploma Education, Bachelor of Education (Professional Honours), PhD Fine Art, Graduate Certificate Health and Human Services, Certificate IV Training and Assessment, Diploma of Social Services – Community Work

Position: Senior Literacy Advisor, Libraries Tasmania

Contact: [iona.johnson@libraries.tas.gov.au](mailto:iona.johnson@libraries.tas.gov.au)

### ***Susan Buggy***

Qualifications: Bachelor of Arts, Bachelor of Education

Position: Former Literacy Coordinator, Libraries Tasmania

### ***Kate Louise Boatwright***

Qualifications: Bachelor of Teaching, Bachelor of Arts

Position: Literacy Coordinator, Libraries Tasmania

## Specialist content writers

### ***Annette van Lamoen***

Chapter: Dyslexia

Qualifications: Bachelor of Arts, Bachelor of Education, PostGraduate Diploma (Language and Literacy Education), Master of Education (Hons)

Position: Professional Learning and Development Consultant, Ako Aotearoa, New Zealand

### ***Dr Polly McGee***

Chapter: Trauma-informed practice

Qualifications: Bachelor of Arts (Hons), PhD Philosophy, Master of Creative Writing, Master of Psychology and Counselling

Position: Co-CEO DISCO (Disruptive Consulting)

### ***Dr Damon Whitten***

Chapter: Numeracy

Qualifications: PhD, Master of Education

Position: Professional Development and Learning, Ako Aotearoa, New Zealand

### ***Courtney Dunbabin***

Chapter: Developmental language disorder

Qualifications: Bachelor of Speech Pathology

Position: Speech and Language Pathologist

### ***Dr Samuel D Calder***

Chapter: Developmental language disorder

Qualifications: PhD

Position: Lecturer, Speech Pathology, Health Sciences, College of Health and Medicine, University of Tasmania

## **Specialist peer reviewers**

### ***Lyn Stone***

Qualifications: Bachelor of Arts (Hons) Linguistics

Position: Founder, Lifelong Literacy

### ***Dr Janet McHardy***

Qualifications: PhD Education

Position: Independent Adult Literacy Practitioner and Advisor

### ***Dr Damon Whitten***

Qualifications: PhD, Master of Education

Position: Professional Development and Learning, Ako Aotearoa, New Zealand

## ***Ian Hewitt***

Qualifications: Master of Applied Linguistics (TESOL), Diploma of Education (English as an Additional Language, Japanese)

Position: English as an Additional Language Teacher/Academic Manager ELICOS, TasTAFE

## ***Content advisors***

### ***Nic Duffy***

Qualifications: Bachelor of Adult and Applied Learning

Position: Advanced Skills Teacher, TasTAFE

### ***Jane Shepherd***

Qualifications: Certificate IV in Training and Assessment, Graduate Certificate in Education, CHCSS00101 Language, Literacy and Numeracy Tutor skill set

Position: Advanced Skills Teacher, TasTAFE

### ***Andrea McMahon***

Qualifications: Graduate Diploma in Librarianship, Graduate Certificate in Education

Position: Former Senior Literacy Coordinator, Libraries Tasmania

## ***Project Manager***

### ***Kirrily Loveday***

Qualifications: Bachelor of Education

Position: Education Leader – Foundations, TasTAFE

Contact: [kirrily.loveday@tafe.tas.edu.au](mailto:kirrily.loveday@tafe.tas.edu.au)

# Introduction to the manual

Tutoring an adult to build their literacy and numeracy skills is deeply meaningful work, enabling an adult learner to achieve things they may have never believed possible.

This manual provides information on how to approach tutoring and outlines the research that explains why particular strategies work.

The content for this manual has been developed by the Adult Literacy Service, run through Libraries Tasmania, which has been funded by the Tasmanian State Government to deliver adult literacy and numeracy tutoring since 2009. This consistent funding has enabled the service to learn and develop a better understanding of adult literacy and numeracy tutoring, to the point that it is now possible to clearly articulate an approach, drawing on research-informed practices. The research and learning theories behind practice approaches have been carefully considered to identify recommended instructional approaches.

**Part One: Tutoring Adults in the Australian Context** recommends approaches for tutoring based on research and suggests activities for working with an adult learner. It presents information on reading, writing and numeracy instruction. The more extended reading chapter presents information with a focus on more recent cognitive research and therefore includes a comprehensive list of relevant literature. A chapter on working with adults who are learning English describes how this work can be approached for these learners. The final chapter in this part discusses session planning based on learning plans, ensuring that learners are supported to achieve their goals.

**Part Two: Diversity and Inclusion** discusses the needs of learners who may have specific learning disabilities that can make learning literacy and numeracy challenging. It is useful to identify the indicators of dyslexia and developmental language disorder when assessing your learner and to understand how to approach work with them. Part Two also addresses how to work with learners who may have experienced trauma, particularly trauma relating to specific learning disabilities or during other educational experiences. Tutoring involves setting up safe working relationships and learning environments, particularly for learners with additional challenges.

**Part Three: Templates and Resources** includes a set of templates and resources for working with adult learners in each of the instructional areas. This addresses the current difficulty of finding suitable resources for adults. Many of the freely available resources online are only suitable for children or do not approach instruction in ways that align with the recommended approaches in this manual.

The manual can play a role in both preparing a tutor to undertake literacy and/or numeracy tutoring and serving as an ongoing reference for practice enquiry. If you are not already connected with a service that supports tutors, it would be helpful to find other practitioners to talk with, to develop your understanding and practice of tutoring. Ideally, find someone who can mentor and support you to develop a reflective practice as you begin tutoring a learner.

There are four areas that an adult will seek tutoring help in – reading, writing, numeracy or speaking in English. Generally, an adult learner will ask for tutoring in a particular area for a particular goal. This focuses tutoring work on one of these specific skill areas. The manual addresses each of these skill areas separately, although work with a learner can often involve more than one area, particularly reading and writing. The manual can be read from front to back and may also be used as a reference book, drawing on the chapters that are most relevant for your work with a learner.



## Readers' guide to this manual

We note that information can feature in multiple chapters, and we recognised that not all readers will work through the manual from front to back. The manual has several features to help you navigate your way.

- Icons signpost aspects of each chapter.
- Links to videos and other resources within the text have been provided as QR codes.
- Extra reading and resources have been collated and positioned at the end of each chapter.
- Footnotes provide links to resources pertinent to specific sections.
- A list of acronyms and a glossary are at the back of Parts One and Two.
- You are welcome to photocopy the templates in Part Three for your use as many times as you like.

## Legend

-  Titles for templates are highlighted throughout Parts One and Two.
-  Highlight boxes provide detail of evidence-based teaching approaches.
-  Darker highlight boxes provide specific advice to tutors and examples to use.

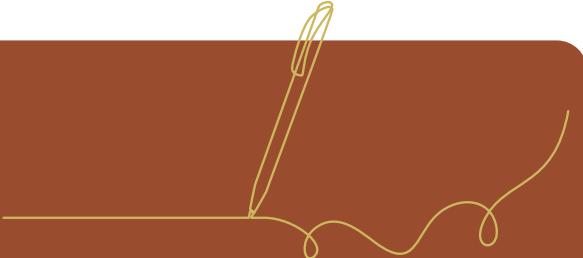


# Chapter 1

## Adult literacy and numeracy in the Australian context

1





## Main points

- A significant number of Australian adults do not have the literacy or numeracy skills needed to participate fully in everyday life, work and study opportunities or to reach their own potential.
- While these adults may have developed strengths in other areas, they are more likely to experience greater difficulties with financial, health, wellbeing and inclusion challenges.
- Our society is structured in ways that perpetuate disadvantage. This includes unequal opportunities for education. Low literacy is not the fault of an individual – it is the result of a system that does not provide equitable access to sound educational practices.
- Individual tutoring can be the first real opportunity for an adult who has had negative educational experiences, to engage in learning outside a classroom context.
- A tutor can individualise tutoring based on a learner's goals and their assessed learning needs.
- It takes courage for an adult to ask for literacy/numeracy help and find the motivation to develop an identity as a learner and be persistent to build their skills.
- As a tutor, you have a responsibility to ensure you are well prepared and have the knowledge and skills needed to provide effective instruction. Learners need to have successful learning experiences.

# Introduction

1

**This first chapter** looks at the big picture of adult literacy in Australia. We discuss adult literacy as an issue in Australia, outlining the challenges this presents for individuals. Learning to learn can be a big step for an adult who has disengaged from learning over a period of time. Individual tutoring can be their first step and learners are often nervous, having a history of difficult educational experiences. This chapter outlines what you might expect to do as a tutor and provides an orientation to some background knowledge that will help you be effective as a tutor.

Links to some learner stories show the difference that building literacy skills can make in someone's life. Links to tutor stories show how rewarding tutoring work can be.

Finally, the *Australian Core Skills Framework* is introduced, as this is a key reference point for assessing learners and understanding their existing skills and skill gaps.

## Definition

What exactly are we talking about? What do we mean by low literacy and numeracy?

“Literacy and numeracy are more than being able to read, write and do maths. Having good literacy and numeracy means being able to apply these skills, often in a digital context, along with oral communication and creative thinking, to the demands of the modern world.

Technological advances and increasing demands on workplaces and organisations mean the skills we need are more complex today than they were 50 years ago. We all need to be able to do our own banking, fill in forms, go online, calculate prices and estimate time. From the building site to the office, all workers need sound reading, writing, maths and digital skills to work safely, communicate clearly, use workplace technology and comply with standards.

Good literacy and numeracy skills improve a person's quality of life. They make it more likely for someone to have a job, earn a good income, be in good health and be involved with family and community. The children of parents who have the skills and confidence to read to them and help them learn will do better in school. Communities with higher literacy levels are more resilient and have higher per capita income. Businesses with more literate workforces are more productive.”

*(26TEN Tasmania: Tasmania's strategy for adult literacy and numeracy 2016-2025)*

The Programme for the International Assessment of Adult Competencies (PIAAC) identifies three major purposes for literacy:

- 1) participate in society
- 2) achieve one's goals
- 3) develop one's knowledge and potential.

Literacy skills can enable participation in the workforce, and many programs are funded to facilitate this. For example, vocational courses in foundation skills are designed to meet this need. However, literacy skills also enable everyday participation in society – reading signs, managing money, reading school newsletters etc. Engagement in education and training, participation in community, and developing your own potential and fulfilment are also significant benefits of higher literacy. Everyday literacy demands include managing financial questions, navigating health issues, participating in your children's school communications, and filling out forms. Tutoring individuals who are not yet confident to join classes helps people build the literacy skills they need to work towards their personal life goals.



## Literacy levels in Australia

The Organisation for Economic Cooperation and Development (OECD) Survey of Adult Skills brings together PIAAC results from different countries, including Australia. The first PIAAC cycle was conducted in 2011-12. The second cycle of PIAAC will be conducted from 2024-29.

In this study, a sample of adults was assessed across six levels of performance. Level 3 is considered functional literacy, indicating the level of skills required to navigate everyday personal and workplace activities (Australian Bureau of Statistics, 2013). Results consistently show between 40% and 50% of adults had less than functional literacy, performing below Level 3 (below functional literacy).

The national average for literacy skills with less than functional literacy (Level 2 and below) was 44.2%. For numeracy, the national average for adults with less than functional numeracy was 54.2%. These results varied between states.

The literacy levels recorded in the Australian PIAAC 2012 were (ABS, 2013):

- 3.7% (620,000) are below Level 1 – the lowest level of literacy
- 10% (1.7 million) are at Level 1
- 30% (5.0 million) are at Level 2
- 38% (6.3 million) are at Level 3 – functional literacy
- 14% (2.4 million) are at Level 4
- 1.2% (200,000) are at Level 5 – the highest level of literacy.

The PIAAC 2011-12 results also showed that Tasmania's skills had room for improvement. While the national average for literacy skills with less than functional literacy was 44.2%, in Tasmania this figure was 48.8%. For numeracy, the national average for adults with less than functional numeracy was 54.2%, and the Tasmania figure was 58.8% (ABS, 2013).



### Stop and think

How might low literacy levels be showing up in your community?

# Impacts of low literacy

Adults who have not become good readers are likely to experience significant difficulties in life (Mulcahy et al., 2016). They are:

- more likely to be unemployed
- if employed, likely to earn less and receive fewer training and promotion opportunities
- likely to make less use of preventative health services and engage in more risky health behaviour
- likely to experience more health issues and illness but are less likely to understand and manage their treatment
- more likely to engage in antisocial behaviours and more likely to offend
- likely to experience lower life satisfaction and lower self-esteem and wellbeing.

Although these outcomes are significant, they may be mediated by a range of variables such as socio-economic status and access to support resources.

Adults with low literacy also develop coping strategies and strengths enabling them to survive. These can include developing:

- a good memory
- good observational skills
- strong verbal communication skills
- the ability to use assistive technology
- ways of enlisting help to complete everyday literacy and numeracy tasks, often drawing on key safe relationships.

## Resources

### Learner stories



In Tasmania, literacy and numeracy tutoring has helped many adult learners achieve their goals. Some of the stories of these learners can be found on the 26TEN website: <https://26ten.tas.gov.au/about-us/stories/>



**A decade of making a difference:** This 26TEN video also talks about the learner outcomes that have been achieved: Video: [https://www.youtube.com/watch?v=SXjnH\\_VkDBY](https://www.youtube.com/watch?v=SXjnH_VkDBY)



## Tutoring options

There are several ways to be a literacy tutor. If you are volunteering for an existing service, there will probably be guidelines, resources and support for you to offer tutoring. Individual tutoring is tailored for each learner, depending on their goals and learning needs. Initial discussion and assessment help establish a learner's goals and the skills they will need to develop in order to achieve these goals. There is no set curriculum but there should be a clear approach, based on evidence-informed practice with associated recommended resources. Tutoring involves building the underlying literacy and/or numeracy skills and applying these skills in the context of a learner's goals, interests and everyday life. This might include applying literacy skills in a digital context when relevant to a learner's goals.

Tutoring includes providing literacy and numeracy support to meet individual adult learner needs. Tutoring typically includes:

- an initial interview to get to know the learner, their goals, strengths and interests
- assessing learner skills to inform development of a learning plan
- session planning based on the learning plan
- preparing learning activities to support literacy skill development
- regular learning sessions with learners
- regular review of progress, adjusting instruction and updating learning goals
- encouraging independent learning.

## One-to-one face-to-face tutoring

Individual face-to-face adult literacy and numeracy tutoring is a mode of learning that involves direct interaction between a tutor and a learner. It is often the primary way that literacy tutoring is offered. Individual face-to-face adult literacy and numeracy tutoring can be helpful for people who have had difficult experiences at school and have disengaged from formal education. It can provide a non-threatening way to build their skills and confidence.

### ***Benefits of face-to-face tutoring***

- Building trust and rapport between the tutor and the learner, which can enhance motivation and confidence
- Enabling the tutor to tailor the learning activities to the learner's needs, interests, goals and learning styles
- Providing immediate feedback and guidance to the learner, which can help them overcome difficulties and improve their skills
- Creating a safe and supportive learning environment for the learner, especially if they face barriers or challenges in accessing other learning models
- Fostering social and emotional skills, such as communication, collaboration, empathy and self-regulation

## Remote tutoring

Remote adult literacy tutoring is another way of providing tutoring support. It encompasses a range of delivery methods including online connection using meeting and whiteboard platforms or using a combination of phone, video calls, email and physical resources sent by mail. Remote tutoring arrangements can be established with learners, depending on the preferences and practical options of the learner and tutor. These options can enable tutoring at more flexible times and so extend the reach of tutoring to people who want to learn outside work hours or who have difficulty or reluctance coming into a physical location.

### *Benefits of remote tutoring*

- Convenience and flexibility for both the tutor and the learner, as they can choose the time and place that suits them best
- Being more accessible and affordable for learners who live in remote areas
- Reducing barriers such as travel, work schedules and family obligations that might prevent learners from attending in-person sessions
- Enabling sessions to run outside of library hours
- Making it easier to run more frequent tutoring sessions, building the intensity of instruction and therefore improving learning outcomes
- Using a variety of digital tools and platforms to enhance the learning experience, such as video calls, chat messages, online whiteboards, online games, quizzes and resources

## Hybrid tutoring

A hybrid model of literacy tutoring combines face-to-face tutoring with remote tutoring, alternating face-to-face sessions with online sessions. Again, communication channels could be any combination of the following: online platforms, phone, video calls, email, snail mail and face-to-face instruction.

# What is important to know about working with adults?

Adults who want to improve their literacy may have missed school, not had appropriate instruction or received insufficient support for their learning needs. Adults often come with goals they would like to achieve; they may have realised they need to read or write better so they can help their children with schoolwork or undertake tasks at work or gain a qualification. However, they may not yet have the confidence or skills to enter formal education or group settings, so working one-to-one with a tutor can create an opportunity for individualised support in a setting that feels safe and can address their specific learning needs.

Adults also come with a wealth of life experience and some prior knowledge. They will have strengths and interests that can be drawn on during tutoring (Thomas et al., 2020). A skilled and knowledgeable tutor will be responsive to the learner by tailoring teaching to learner goals and addressing skill gaps. It is important to undertake an assessment to identify learning needs related to their goals. This informs learning plans and lesson planning.

## Structural disadvantage

In Australia, the idea that the schooling system provides equal opportunity for everyone is a myth. Structural inequality means that people from lower socio-economic backgrounds do not have the same opportunities to succeed in the education system. Teachers respond to middle class children more favourably as their language, attitudes, behaviours and dress align with teacher expectations – they therefore receive better feedback and encouragement in school and are more likely to succeed (Hayes, 2020). Children from working class backgrounds present differently and may also not see the value of learning for the manual work they expect to do (Holmes et al., 2015).

It is important to acknowledge structural disadvantage, as it lifts the blame for low literacy from learners. The system has not provided equal opportunity for learners from disadvantaged backgrounds. Class, race, gender and other marginalised identities in combination compound disadvantage, resulting in experiences of marginalisation and oppression (Hanson & Fletcher, 2021). For example, being both working class and living with disability, like dyslexia, is likely to mean not experiencing supportive educational environments and not having access to disability supports.

## Aboriginal learners

Aboriginal and Torres Strait Islander peoples in Australia face profound structural disadvantage (Steering Committee for the Review of Government Service Provision, 2020). The *Overcoming Indigenous Disadvantage Report: Key Indicators 2020* showed that although numbers of Aboriginal and Torres Strait Islander young people completing year 12 are increasing, the number transitioning into education or training when they leave school has declined since 2002. The flow-on effects include poorer employment outcomes, lower income, poorer health outcomes and fewer life opportunities.

Australia's history of settler colonisation significantly displaced Aboriginal people, and this has not been acknowledged in accounts of Australian history presented in schools until recently (Zhang, 2024). The education system has also ignored Aboriginal ways of learning. Aboriginal people have experienced cultural marginalisation in the schooling system and have developed a distrust of mainstream education (Zhang, 2024).

Contemporary discourse emphasises the strength and resilience of Aboriginal people given this history. Approaches that support self-determination and empowerment shift the focus when working with Aboriginal people, to ensure that Aboriginal people determine what they need, including in education (Australian Government, 2020).

Education needs to incorporate inclusive curricula, to validate culturally diverse forms of knowledge, and to create equitable learning environments to meet the specific needs of Aboriginal learners (Varsik & Gorochovskij, 2023). If you undertake tutoring with an Aboriginal learner, you will need to consider this. It will be important to identify culturally appropriate resources for working with your learner and to be aware of the cultural sensitivities your learner may have.



## The need for learner persistence

It can take time and persistence for an adult to build their skills. Andragogy, the art and science of adult education, identifies several adult learning principles (Adult Learning Australia, n.d.; Knowles et al., 2020). It is motivating for an adult to see how learning is relevant to their goals. Motivation and engagement are related to learners' self-efficacy – which is slightly different to confidence.

Self-efficacy in a learning context is a learner's belief in being capable of achieving their learning outcomes or goals (Zivlak & Stojanac, 2019). Learners with low self-efficacy have less belief in their abilities and are less likely to make an extended effort with challenging tasks. Their lower aspirations and reluctance to make an effort are likely to result in poorer outcomes and less persistence (Kirk, n.d.).

A learner with strong self-efficacy will see problems as challenges to overcome, rather than something to avoid. They are more likely to try more difficult tasks and keep working until they master them. They tend to develop a deeper interest in learning and will persevere. Self-efficacy can be built by having successful learning experiences. As a tutor, it is helpful to know how to build adult learners' self-efficacy, as this will support their motivation and engagement in learning. A tutor plays an important role in providing achievable and relevant tasks, encouraging learners to persist and work towards becoming independent learners. Self-efficacy is also supported by providing frequent and precise feedback to acknowledge effort and to enable a learner to learn from mistakes.

Persistence is important in adult literacy work as it will take time and effort for a learner to make progress (Reder, Gault & Lechner, 2020). Learners with higher self-efficacy are more likely to persist when faced with learning challenges. Practice Engagement Theory is based on Reder's (2020) longitudinal study of adult literacy learners, which found that significant literacy gains are seen three to five years after an adult engages in learning if they practise the skills they have learnt in everyday life. Motivation, engagement and persistence have strong impacts on learners' outcomes (Thomas et al., 2020).

# What do tutors need to do?

1

A **skilled tutor** will teach skills related to an individual's learning goals, provide practice opportunities and support the learner to practise these skills in their life context. Tutoring involves managing the cognitive load for the learner, introducing new ideas gradually, and reviewing and repeating information in different ways to consolidate learning before introducing more information. Responsibility for learning begins with the tutor and shifts to the learner – the tutor begins by demonstrating and teaching directly (I do), then supports the learner to do this with them (we do) and finally provides opportunities for the learner to undertake the task themselves (you do).

While adult learners need to build confidence (Ferguson & Merga, 2021), this comes from developing skills rather than simply being encouraged. It is important to build learner confidence by teaching skills as well as strategies for learning, so they can become independent learners. Adults are often good at engaging with metacognitive thinking – talking and thinking about learning – and this helps build independent learning skills. Using terminology that applies to the knowledge they are learning also supports metacognitive thinking.

Adults may come with poor habits and compensatory ways of tackling reading and writing, and this will need to be discussed with the learner and old habits unlearnt as more effective strategies are taught. The research-informed approaches recommended in this manual offer the best chance for adult learners to build the neural architecture involved in becoming literate. Adults with learning difficulties may need more support and practice to review, repeat, reinforce and consolidate learning.

Some adults who have not learned to be successful readers and writers were not taught by teachers using research-informed practices, so it is important they are given the best opportunity possible to experience success this time. They need to be taught strategies that good readers and writers use.

## How do tutors do it?

Recommended tutoring approaches are based on a research-informed understanding of how learning happens and on instructional practices to build reading, writing and numeracy skills. Recommended practices generally include building strategies, including metacognition, using explicit instruction. Assessment with each learner will help identify their strengths and learning needs in relation to their goals. A detailed learning plan provides clear guidance for tutors to design session plans to focus on the areas of learning that will enable them to meet their learning goals.

Chapter 3 highlights the skills found to underpin skilled reading as illustrated with Scarborough's Reading Rope (2001). This has two main strands – building word-level skills and building language comprehension skills. The component skills for these strands include phonological awareness, phonics and fluency at the word level and vocabulary and comprehension skills at the comprehension level. Chapter 3 outlines these component skills and provides demonstrations of teaching strategies and activities to support skill development. These are the underpinning technical skills that enable readers to comprehend text efficiently. While English may appear to have many irregularities, there is almost always a logical reason for how words have been built. Tutoring involves teaching the patterns and underlying systems of logic in English and knowing when to apply them. These chapters will provide an orientation to approaches for undertaking this work, and resources and links are listed for you to find more information to build your own knowledge and skills for tutoring.

Chapter 4 discusses the skills required to teach writing effectively. These are outlined in Sedita's Writing Rope, with five areas of focus. The strands in this rope include critical thinking, syntax, text structure, writing craft and transcription. Parallel to ideas outlined by the reading rope, the technical skills involved in writing enable writers to express themselves effectively in written formats.



**Remember...**

Tutoring based on the best available research about effective instructional approaches is most likely to support learners in achieving their literacy and numeracy goals.

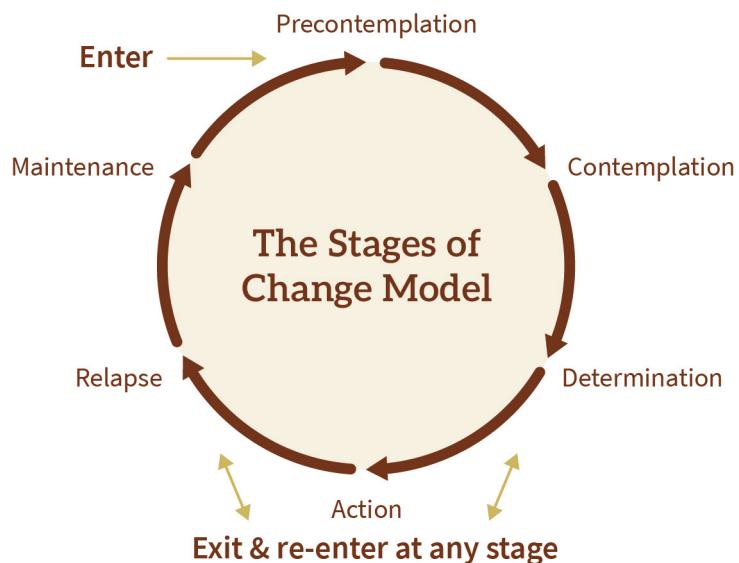
# Learner journeys

## The beginning of a learner's journey

It can take a lot of courage for an adult to ask for help with their reading, writing or numeracy. Tutors need to be responsive to new learners, build rapport quickly and establish a focus and beginning point for tutoring. The early meetings are critical – the learner will be working out whether they feel safe and whether the help offered will meet their needs. Over several initial meetings, the tutor needs to build rapport and find out about their existing skills and interests. They should informally assess a learner's skills using non-confronting everyday literacy activities. The assessment provides information about the learner's skills and the gaps they need to fill to achieve their learning goals.

## Learning involves change

Learners are often very nervous at the outset and may not be quite ready to commit to regular learning sessions. The stages of change model helps us understand how people begin engaging in tutoring and becoming a learner. It can involve a shift in identity which requires change. They may not have thought of themselves as a learner before and may not have valued the activity involved in learning.



*The transtheoretical model of behavior change (Prochaska & DiClemente, 1982)*

Change is hard work – think about trying to establish an exercise routine, for example! For adult learners in the early stages, making changes to focus on learning often involves repeated early attempts and tentative exploration before they become more confident, committed and skilled as learners. Adults begin in the precontemplation and contemplation stages of engagement in education. They are likely to dip in and out of informal learning, participate in short courses, look for easy wins, and seek recognition and reward by gaining short certificates. In the process, they can build relationships with tutors/teachers, feel more comfortable in the learning environment, feel respected and supported, identify new interests, achieve some life goals, and develop some literacy and learning skills. This can precipitate an upward spiral of engagement and learning.

Community-based organisations offer opportunities for adults to begin engaging in informal, non-threatening learning environments. Libraries, community houses and adult learning group activities are available to support family literacy, digital skill building, social network development and learning in any area. This can lead to more sustained engagement in learning and may be the beginning of an adult's lifelong learning journey. Engaging in tutoring may be a step between this and moving into more formal study and qualifications. Alternatively, tutoring may enable an adult to step back into the workforce or to deal with everyday tasks independently.

The document *Ready for Change* links the stages of change model (Prochaska & DiClemente, 1982) to the kinds of beliefs and behaviours that might be expected as someone contemplates learning, then becomes more committed to learning, and moves towards developing the motivation and skills to become a self-identified and self-directed learner. Some learners beginning tutoring are at the point where they are determined and committed to learning, while others may engage only for short periods and may come back again. As a tutor, it is important to know this is not a reflection on you as a tutor. It does highlight how precious the window of opportunity is for working with someone when they do decide to engage in tutoring.

## Resources



Ready for Change | Karen Manwaring  
[https://pmnc.org.au/wp-content/uploads/2017/11/Ready\\_for\\_Change\\_PMNC.pdf](https://pmnc.org.au/wp-content/uploads/2017/11/Ready_for_Change_PMNC.pdf)



## How tutors can support a learner's journey

We have talked about some of the difficulties that learners face. In the first interactions, they are often assessing us and whether we are going to be safe and helpful for them. Our attitudes and responses need to be reassuring, and setting up clear structures, boundaries and expectations also helps create safety.

It will be important to establish clear expectations about how the tutor and learner plan to work together. How often will they meet and in what way – face-to-face or online?

It will also be important to discuss communication expectations, such as:

- How often do you and the learner expect to communicate?
- What do you expect to communicate about and when?
- What is acceptable to the learner and does not feel intrusive, such as text reminders and follow-up texts?
- How much are you prepared to be available between sessions, such as answering unscheduled texts and within what response time?

# Australian Core Skills Framework

To understand the skill levels that a tutor might encounter in adults, the *Australian Core Skills Framework* (ACSF) can be a useful reference point. The ACSF is a national approach to identifying and developing core skills in personal, community, work, and education and training contexts. It provides a common way to identify, describe and talk about core skills. This tool provides a systematic approach to benchmarking, monitoring and noting progress in each of the core literacy and numeracy skills. The five core skills are learning, reading, writing, numeracy and oral communication. A learner is unlikely to be working on all of these at once.

A tutor might find the ACSF useful both as a guide to skill levels and as a way to track learner progress.

It can be used to:

- assess an individual's core skill levels
- identify learner knowledge and skill gaps to inform the development of a learning plan and targeted activities
- plan individual approaches for tutoring and learning
- track learner progress over time.

The focus for a tutor is likely to be in core skills where a learner is below Level 3, remembering that Level 3 is considered functional literacy, which means having enough skills to navigate the demands of everyday life.

The ACSF can give you some understanding of the literacy and numeracy levels that you will encounter in learners with skills below Level 3. It is surprising to realise how challenged some learners are. There are examples of the kinds of activities you would expect a learner to be able to do at each of the different levels in the five core literacy skills – learning, reading, writing, numeracy and oral skills. These provide some insight into the skills expected at each level. You can find these sample activities in a section at the end of each level descriptor in the ACSF.

In 2017, a new **Pre-level 1** was developed as a supplement to the ACSF. Many adult learners begin their learning journey below ACSF Level 1, in one or more core skills, so this supplement was introduced to address this.

## Resources



Australian Core Skills Framework:

<https://www.dewr.gov.au/foundation-skills/resources/australian-core-skills-framework>



Find the **Pre-level 1** supplement to the ACSF here:

<https://www.dewr.gov.au/skills-information-training-providers/resources/acsf-prelevel-1-2017>



## Learn about the skill levels of adult foundation skill learners

In the ACSF, look up the sample activities for ACSF Level 3 (functional literacy) Reading (p. 55), then compare these to the sample activities for ACSF Level 1 Reading (p. 47).

Then look up the sample activities for ACSF Pre Level 1 Reading (p. 16).

You may be surprised at how challenged some adults are!

Have a look through the ACSF at the sample activities for learning, writing, numeracy and oral communication at the different levels.



### Stop and think

How will you gather assessment information to help plan your tutoring sessions?

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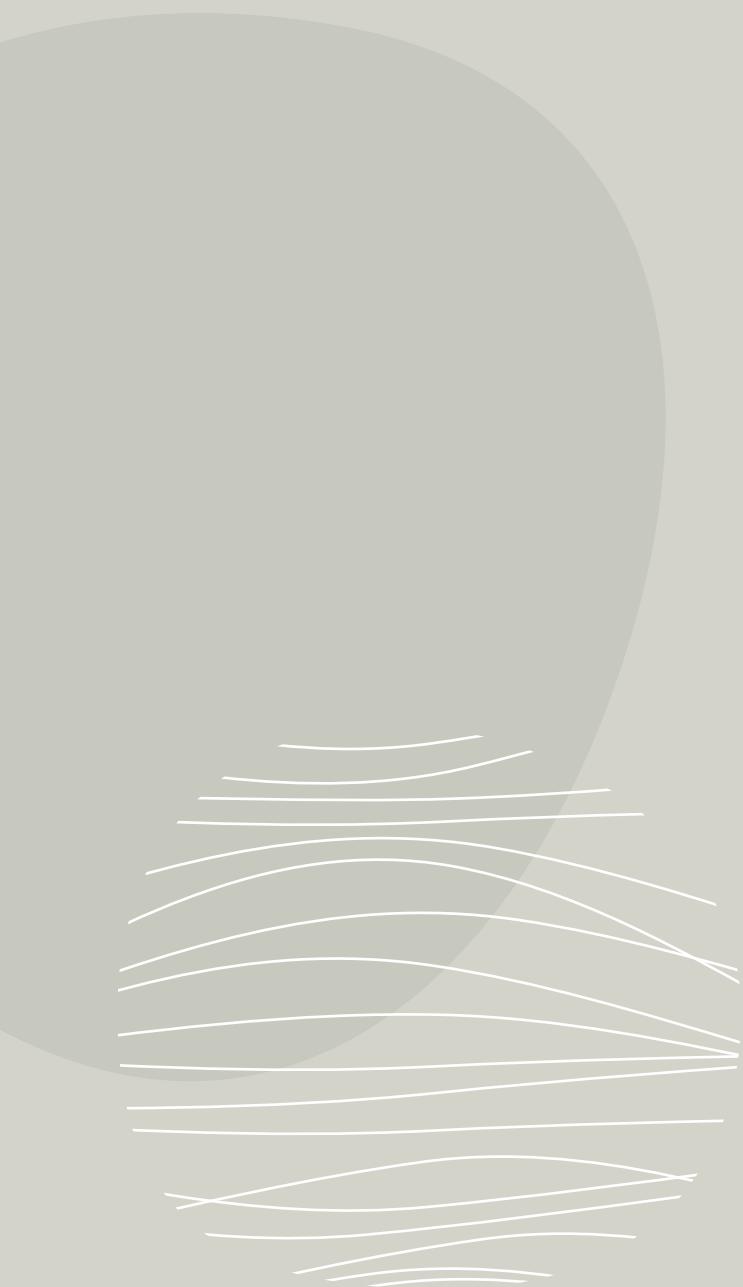
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## Chapter 2

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# Pedagogy and practice approaches

2



## Main points

- A cognitive approach to literacy and numeracy instruction is recommended, drawing on the research into how the brain learns to read and build numeracy skills.
- Tutoring can support adults to build strategies for learning and undertaking tasks, enabling adults to become active and independent learners.
- The gradual release of responsibility model provides a way to ensure learners are supported to learn and are active in the learning process.
- Learners' goals should inform tutoring, and learners should be encouraged to apply the skills they learn in everyday life contexts.
- Explicit instruction for adults who are building foundation literacy and numeracy skills will be more effective than inquiry-based learning.
- Research into learning informs this approach, providing guidance on structuring learning sessions and managing cognitive load.
- Working memory can only manage, on average, four pieces of information at a time – some learners will have a lower working memory, and this should be identified in order to effectively support their learning.

## Introduction

This chapter presents some carefully considered research into learning theories that inform the practice approaches we recommend for tutoring. Subsequent chapters go into more detail about effective instruction in the specific areas of reading, writing, numeracy and tutoring English language learners.

It is important to understand the theory behind practice for several reasons. Theories provide explanations to complex questions, based on extensive research and evidence. Effective tutoring involves a knowledge about how adults learn and how adults learn to read, write and become numerate. These are complex skills and require specific knowledge to teach effectively. Adult learners often feel vulnerable, and tutors need to bring not only empathy to the relationship but also skills that ensure learners will be successful in learning the literacy and/or numeracy skills they have not been able to master yet.

Chapman and McHardy (2019) found that adult literacy teachers tend to be over-reliant on their personal feelings and beliefs to guide their work with adult learners. Their study showed that tutors rely on personal experiences, such as what worked for them when learning to read as a child, or how they like to learn; tutors may also be emotionally motivated to support learners based on ideas about learner negative life experiences. However, this approach does not provide a good guide for working with adults who are learning to read. Instead, they suggest that effective instruction is based on careful assessment of learner skills and knowledge of effective strategies to address individual learning needs (Chapman & McHardy, 2019).

Assessment of adults wanting to improve reading often shows that their skills falter at the level of word reading. Skilled reading requires fluent 'decoding' and word recognition to enable text comprehension (National Research Council, 2012). Decoding relies on automaticity in recognising sound–letter patterns, and adults who are still building reading skills often have difficulty hearing the sounds in words and therefore matching sound–letter patterns (MacArthur et al., 2012). Without these skills, adults then use ineffective strategies for reading words, like guessing based on the first letter or the context of the word. They may approach learning to read as a process of memorising whole words, which is a slow and laboured process compared to developing sound–letter knowledge and applying this as a transferable skill to new words.

Teaching an adult to read often involves building these skills for word reading, and so tutors need to understand how to provide instruction in this area (McHardy et al., 2018). There is a framework for understanding the component skills required to build reading comprehension, ‘The Big Six’, and a pedagogy based on the science of reading (Konza, 2010) that provides guidance on how to best provide literacy instruction. There is a parallel with numeracy instruction. The ‘Big Ideas in Number’ outlines the component skills for building numeracy, and this also has a developmental order of instruction. Recommended pedagogy for this foundation instruction is that explicit, systematic approaches are most effective, not only for children, but also for adults who do not yet have the building blocks for literacy or numeracy (Wheldall et al., 2023).

By applying pedagogical theories, tutors can create more engaging and effective tutoring approaches. This can lead to better learner outcomes, promoting learning, motivation and growth. For tutors, understanding recommended practice approaches can be empowering. Prepared with the right tools and knowledge, tutors can make informed decisions about their tutoring, fostering a sense of confidence and competence in their professional roles. When tutors also adopt a reflective practice approach, they can continue to learn and develop their tutoring skills over time.

This manual presents an extensive amount of information about adult literacy and numeracy instruction because adult learners present with a wide range of needs and abilities. We must know how to address learning needs for learners who do not yet have functional literacy or numeracy – working at ACSF Pre Level 1 – to learners at Level 3. Each learner needs an individualised plan and with different learning goals. You are not expected to absorb all this information at once; rather, this manual content can be a source of information for you to refer to once you are working with your learner to address their specific needs.

As an active adult learner, you can navigate the information based on your own learning needs. Initially, it is important to understand several critical concepts and the reasons why we recommend certain approaches. Beyond this, the details and resources for instructional work will make more sense once you are working with a learner and need this detailed information. After your initial engagement with the manual’s content, we expect that you will revisit information in relevant chapters and develop your knowledge for working with your learners.

# Theory

2

Theory is also important for understanding broader social contexts, the development of individual adults within these contexts and the difficulties presented by these contexts (Gouthro, 2019). The theoretical foundations of adult education draw on the fields of psychology, sociology and philosophy. Adult educational theory, developed in North America in the 1920s, drew on early philosophers such as John Dewey and Eduard Lindeman, who explored not only education but also the nature of knowledge and its role in political life (Carr & Kemmis, 2004).

## Adult learning theory

In the 1980s Malcom Knowles popularised ideas from earlier thinkers about ‘andragogy’, a theory for helping adults to learn. Andragogy is based on a humanistic conception of self-directed and autonomous learners where teachers are defined as facilitators of learning. Andragogy describes the specific needs of adult learners, such as respecting their existing skills and previous experiences, focusing on problem-solving, and understanding adults’ motivation and choice to learn for a specific and current life purpose.<sup>1</sup> This is different from ‘pedagogy’ which generally describes children’s learning, where children are dependent on others and learning is developmental and staged to reach agreed benchmarks. Knowles (1970) identified what he believed to be the characteristics of motivated, self-directed adult learners:

- The need to know: Adults are motivated by a need-to-know information that is relevant to them and their goals.
- Learner’s self-concept: Adults are considered self-motivated and self-directed, independent and able to make their own decisions.
- Role of the learner’s experience: Adults bring a wealth of life experiences to their learning, including knowledge about language, text and communication. They have problem-solving, reflective and reasoning skills. Adults’ prior experiences have shaped how they think of themselves as learners, and some of these experiences may not have been positive.
- Readiness to learn: Adults have an interest and readiness to learn. They are motivated because they have identified something they want to learn. They are therefore goal-focused and looking for meaningful and related learning.

<sup>1</sup> *Adult learning principles* | Adult Learning Australia: <https://ala.asn.au/adult-learning/the-principles-of-adult-learning/>

- Orientation to learning: Adults are keen to engage in life-centred experiences, wanting help to deal with immediate, practical life tasks, for example, to read to their children, gain a qualification, gain a better job.
- Motivation: Adults are motivated by internal factors, including increasing self-esteem, personal growth, improving quality of life, and increasing job satisfaction. This contrasts with external reasons, like gaining a better job or gaining a certificate.

While these principles point to general characteristics to consider when working with motivated and self-directed adult learners, *they are not true for all adults*. In adult tutoring, we work with adults who are not yet independent, self-directed or motivated learners and who are more dependent on a tutor to direct their learning. We encounter many adults who are motivated by external reasons, like wanting to gain a certificate, but who go on to develop internal motivations for learning as they begin to experience learning success.

Several theories can be drawn on to inform our understanding of how adults learn. Within adult literacy, there are three main groups of relevant theories – cognitive, constructivist and sociocultural. These broad conceptions of literacy lead to different approaches for working with adults, and each has relevance for organisational approaches in different contexts. In the manual we take a cognitivist approach.

### **Sociocultural theories**

**Sociocultural theories** emphasise the socially situated aspects of engagement with literacy and literate practices. A literacy culture – within a family, organisation or community – describes the ways that people use print and engage in literacy practices (Street, 2003). Social practice theory includes multiple forms of engagement with literacy that are culturally specific and contextually relevant, varying according to different cultures and groups (Street, 2003). Multiliteracy theory engages with the new and changing communication technologies, like digital text, video and imagery, and the social practices and purposes involved in using these across personal, educational, work and community life (Cazden et al., 1996). Approaches for teaching literacy from a sociocultural perspective include oral, visual, place-based and digital literacies (Quick, 2023).

## **Constructivist theories**

**Constructivist theories** understand literacy acquisition as a process of active meaning making. The context for learning is important, with resources and activities drawing on learner interests and authentic text (Smagorinsky, 2013). Constructivist theories came out of whole language and psycholinguistic theories (Goodman, 1977; Smith, 2012). Learning to read and write was considered a natural process occurring through immersion in print-rich environments. Students are positioned as active learners who are supported to construct their knowledge in relation to texts. Constructivist theories have focused on oral and print literacy but generally not on social and cultural differences in literacy practices. Constructivist pedagogies focus on reading and writing whole texts with skills taught within a meaning-centred context (Quick, 2023). They do not address the development of reading and writing skills to the extent that cognitivist theories do.

## **Cognitive theories**

**Cognitive theories** focus on the skills and processes that enable reading and writing print, generally text-based print. They explain the development of print-specific, cognitive component skills like working memory, phonological awareness (hearing the sounds within words), decoding (sounding out) words and reading comprehension skills (Castles et al., 2018). Cognitive models of reading include Ehri's phases (2020), which describe the development of word reading, and Gough and Tunmer's Simple View of Reading (1986). Cognitive approaches for teaching literacy build component skills to support learning to read for comprehension. Print-reading difficulties are understood to be a result of poor instruction at school (Buckingham et al., 2013) or cognitive differences (Snow et al., 1998). This could be contrasted with a sociocultural understanding which might note the differences between ways of doing literacy at home and ways of doing literacy at school.

Sociocultural and constructivist theories are often considered oppositional to cognitive theories and pedagogical approaches. The ‘reading wars’ waged in the 1970s and 1980s, with whole language (cognitivist) proponents arguing that reading was caught not taught (Goodman, 1977; Smith, 2012). Subsequently, cognitivist proponents have drawn on research that demonstrates this is not the case (Ehri, 2020; Moats, 1994). Reading and writing need to be explicitly taught, and the Science of Reading movement advocates for a structured approach to building component reading skills (Ehri, 2020; Shanahan, 2020a). More recently, some researchers have worked to connect or unify aspects of these different theories, suggesting that each is too narrow to fully conceptualise literacy development (Purcell-Gates et al., 2006; Quick, 2023).

This manual takes the **science of reading** approach to instruction, drawing on cognitive research to support recommendations for instructional practices.<sup>2</sup> While tutoring work with adult learners primarily focuses on developing the component skills for reading and writing, these are located within a cultural context (Thomas et al., 2020). Learners always have their own goals relating to their lives and the broader social context that they inhabit. These socially constructed goals are enabled through the development of cognitive skills and practices, creating more possibilities and advantages for their lives and supporting their engagement in society and the ever-changing digital environment.

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<sup>2</sup> *What is the science of reading?* | The Reading League <https://www.thereadingleague.org/what-is-the-science-of-reading/>

# Instructional strategies

## Explicit instruction

Explicit instruction is an evidence-based approach to instruction that takes a structured and systematic approach to teaching. This approach is based on research on instruction design and applied behaviour analysis, which has found explicit instruction achieved greater learner gains than less guided instruction (Sweller, 2021).

Learners are guided through the learning process in small steps and have plenty of opportunity to practise, building skills to the point of mastery (Wheldall et al., 2023). It means teaching content, skills and strategies directly, using clear and unambiguous language (Five from Five, 2025). There is a high level of interaction between tutors and learners. Tutors can plan to carefully sequenced concepts and build skills and knowledge, beginning with simpler information and progressing towards the complex.

Each adult learner will have a different starting point and quite likely has some knowledge, but significant gaps. When you read the chapter on session planning you will see that this is all applied in the context of an adult's self-identified learning goals and interests. It does not mean that sessions are rigidly delivered or that adults are taught like children. It does mean that tutors should work to a plan which ensures that the steps required to build skills are carefully sequenced and delivered.

### *Features of explicit instruction*

- Tutor directed
- Planned and sequenced lessons
- Clear, detailed explanations and instructions
- Information introduced in small steps
- Modelled and guided instruction (I do, we do, you do)
- Practice after each step, teaching to mastery
- Frequent feedback
- High tutor–learner interaction
- Reviews and spaced practice

Adapted from Five from Five (n.d.)

## Gradual release of responsibility model

This model is embedded in the explicit instruction approach. Responsibility for undertaking an activity or using a learning strategy gradually transfers from the tutor to the learner through stages (Duke & Pearson, 2002). This is easy to remember as **I do, we do, you do**. This approach should be used every session with learners to ensure they are actively learning and to support adults to become independent learners.

### I do

- Explicit instruction: Explain the activity/strategy and when and how it should be used. Provide examples to assist this explanation and, where possible, make connections to the learner's existing knowledge.
- Modelling: Show the learner how to do the activity/use the strategy. Think out loud to verbalise your thinking process with the learner. This allows the learner to see how a proficient reader/writer thinks about and processes text.

### We do

- Guided practice: Work together to apply the strategy and gradually release responsibility to the learner i.e. provide less support as the learner becomes more proficient with the strategy.

### You do

- Independent practice: Monitor as the learner applies the strategy on their own. Support them to integrate this strategy into their repertoire of comprehension strategies and review the strategy as necessary.

## Explicit instruction vs inquiry-based learning

Adult learning principles suggest that adults are self-directed, independent and able to make their own decisions, which appears to align with an inquiry-based approach to learning. However, this does not describe all adults, or it may describe some aspects of an adult's life but not all. An adult who is not confident about their learning, literacy and numeracy skills is not likely to be self-directed or self-motivated. The aim of tutoring work is to help them get to this confident, independent learning space.

### *The learning hierarchy model*

The learning hierarchy model identifies four phases in learning – acquisition, fluency, generalisation and adaption.

1. Acquisition: Initially, when a learner is beginning to learn a new skill, they are not able to perform the task easily or with accuracy.
2. Fluency: As they gain knowledge, they will start to undertake the task slowly and with more accuracy and start to combine the new skill with other skills.
3. Generalisation: They are fluent and accurate but may still confuse the skills they need to use with similar skills.
4. Adaption: They are fluent and accurate and able to apply the skill in new contexts without support. (Haring et al., 1978)

Clearly, a learner will need a high level of support initially, and as they build skill, less support is needed. The gradual release of responsibility approach to instruction aims to actively engage the learner in building their skills (Duke & Pearson, 2002). In the acquisition phase, I DO – explain and demonstrate the concept using worked examples. Check for understanding by asking questions and reteach if needed. To build fluency, WE DO – work through examples together and provide feedback. In the generalisation and adaption stages, YOU DO – learner undertakes the activity independently.

Different instructional strategies will be effective at each stage of learning. Sometimes people assume that because we are working with adults, learner agency is paramount and therefore inquiry-based learning should be used. When a learner is a beginner, this approach will put a learner in the very difficult position of needing to find out for themselves about the knowledge and skills required. This is inefficient, taking time to work through trial and error. Risks include cognitive overload, with too much information for learners to process, and learners not building robust, complete and accurate knowledge (Merlo, 2024). It is potentially overwhelming and demotivating for a learner who has already been unable to learn the skills on their own. Inquiry-based learning should be avoided for teaching new skills (Kirschner et al., 2006).

Explicit instruction with learners who are beginning to learn a new skill is the most effective approach and will lead to independent and competent learners in the long run. Adults will generally have some literacy and numeracy knowledge and may also rediscover and quickly master content they have previously encountered at school. A perceptive tutor should be able to recognise and draw on this knowledge in their learner, moving into applied examples more quickly.

Nevertheless, it is important to note that for learners who are not beginners, explicit instruction in areas where they already have knowledge can be counterproductive, creating cognitive overload as they attempt to process information they no longer need and match it with existing knowledge. The instructional strategies used with learners depend on what stage they are at in the learning acquisition process. For those with well-developed knowledge in an area, inquiry-based learning in that area will be more appropriate.

Instructional approaches found to be consistently effective are those that follow the gradual release of responsibility model (Merlo, 2024). Explicit instruction to develop literacy and numeracy competency is used during the acquisition phase, followed by extensive practice to develop fluency; then instructional approaches with less guidance are applied with real-world applications in the generalisation and adaptation phases (Merlo, 2024). Carefully scaffolded exploration during the generalisation and adaption phases can support building learner agency and applying literacy and numeracy skills to new situations.

# What is cognitive load?

Understanding **cognitive load theory** and how **working memory** and long-term memory intersect underpins pedagogical approaches informed by the science of learning.

Cognitive load theory provides an understanding of how people learn and instructional practices that will support learning. Learning happens when new information moves from working memory to long-term memory. Learning is a change in long-term memory. Working memory can only hold information for about 20 seconds, but can hold it for longer if the information is rehearsed. To hold the information permanently, it needs to be transferred to long-term memory. If new information is not transferred to long-term memory, nothing has been learned (Sweller, 2021).

Managing cognitive load connects with the idea of carefully sequencing information for learners as well as managing the difficulty of information presented to the learner.

## Key concepts

- Attention: Clearly establish what the session asks the learner to focus on and amplify attention on key information.
- Working memory: Present information in manageable chunks for a learner, avoiding overloading working memory which in an average person can process only four pieces of new information at a time.
- Long-term memory: Know what your learner already knows, so you can adjust your materials to allow for working memory limits and enable building of long-term knowledge.
- Cognitive load theory: Understand how to reduce the cognitive demands of a task to avoid overload. Match the task complexity with the learner's level of expertise.



## Working memory

There is a limit to how much new information the brain can process at any one time. The average person can **hold** about seven chunks of new information at one time in working memory but can only **process** about four chunks at a time. If working memory is overloaded with too much information, learning becomes difficult and is interrupted. Clearly, this has implications for instruction which will be discussed later.

## Long-term memory

Long-term memory stores large amounts of complex information, including concepts and procedures, as **schema**. **Schemas** are mental models. Closely related information is organised in schema according to how it will be used. A schema can be developed in long-term memory from a simple model into a more complex and sophisticated one over time. Skilled performance is developed through building schemas that are increasingly complex by combining elements of lower-level schemas into higher-level schemas. There is no limit to how complex a schema might become. An important process in schema construction is building automaticity. This enables information to be processed automatically without conscious effort. Automaticity is built with extensive practice (Centre for Education Statistics and Evaluation, 2017b). This clearly has implications for instruction. The information presented in the next chapter on reading, for example, describes the instructional approach well. Instruction begins with the building blocks of identifying and linking letters and sounds to the point of automaticity and progresses to learning to decode and learn words. When enough words are learnt, reading starts to become more fluent, and cognitive space becomes available for focusing on the content of reading rather than reading itself.

Schemas are important, providing a system for organising and storing knowledge in long-term memory. They also reduce working memory load. A schema counts as one item in working memory, so high-level schemas enable us to process complex information within the limits of working memory. Schemas enable us to process much larger amounts of information. The limitations of working memory can be overcome with automation and the construction of schema, freeing up working memory to learn new information.

### An example:

Learning to read requires the coordination of multiple interacting elements. Applying an understanding of how we learn to the process of learning to read, firstly a learner will need to build their knowledge of letters and then learn that the sounds are represented by letters. They will do this over time, building knowledge of simple letter-sound relationships and then learning more complex associations – where two letters might represent a sound, for example, *<oa>* represents the /O/ sound. They will need to practise this to the point of automaticity, so that they quickly know what any letter or letter combination sounds like. A beginning reader will then develop higher order schemas as they learn combinations that form words. The word ‘fish’ contains the sounds /f/ /I/ /sh/ and is spelled with the corresponding letters. The letter combinations for words become instantly recognised and retrievable once they are stored in long-term memory. ‘Fish’ can be read quickly without sounding out the letters anymore. Schemas for words are then combined into higher-order schemas for phrases and sentences. These ever-increasingly complex schemas eventually enable a reader to quickly read text without conscious effort to derive meaning from print (Sweller et al., 1998).

### Types of cognitive load

There are three types of cognitive load – intrinsic, extraneous and germane load.

**Intrinsic load** is about how complex or difficult the task is for a particular learner. This relates to the number of new elements in a task and the interactivity of these elements. The more elements already known by a learner and held in long-term memory, the easier the task will be. Intrinsic load is about the difficulty of a task for a learner, which relates to their level of expertise and working memory capacity.

**Extraneous load** is any additional load added to the task by poorly explained instructions or poorly presented instructional materials. Anything that is not directly contributing to the task creates unnecessary demand on working memory as learners deal with this extra information.

**Germane load** is the information that supports integrating new information with the new knowledge. New knowledge is linked to prior knowledge. This can be encouraged by reminding learners about previous learning and linking to existing knowledge to facilitate constructing schema. It is most helpful for a learner to be taught explicitly how to solve a problem and be shown lots of worked examples of how to do it (Centre for Education Statistics and Evaluation, 2017a).

### **Managing cognitive load**

We can manage these different types of cognitive load by reducing the difficulty of the task for the learner, ensuring there is no unnecessary information and encouraging links to prior knowledge. Complex tasks need to be broken down into steps that the learner can manage.

## **Implications for learners**

Some learners have a smaller working memory than average, so managing cognitive overload will be even more important. Working memory issues are more likely in learners with learning difficulties, ADHD, acquired brain injury and other mental health issues. It is not possible to change or increase someone's working memory, so instruction needs to be tailored for these learners. Assessment and then close observation to check for understanding and retention when teaching are important.

An assessment of a learner's verbal working memory through a digit span test will provide an indication of their working memory.<sup>3</sup> For learners with a lower-than-average working memory, reducing cognitive demand will make learning achievable. Learners with an average working memory should not be asked to process more than four items at a time, and one or more of these items must be relevant to building schema. If learners are asked to complete tasks that exceed the capacity of their working memory, we are likely to encounter a situation where a learner appears to be able to do a task but does not learn it (Ashman, 2022). If a learner uses all their working memory to perform the task, there is no further memory capacity to remember it. We see this when we observe a learner decode a word while reading but when they encounter it in the next sentence, they do not remember it and need to decode it all over again. Or we might teach a learner something new but find they don't remember it in the next session. The learner used their working memory to resolve the task but had insufficient working memory to take the next step of transferring it permanently to long-term memory (Russell & Sweller, 2019).

<sup>3</sup> An example is the Digit Memory Test: <https://www.staffordshire.gov.uk/Education/Access-to-learning/Graduated-response-toolkit/School-toolkit/Cognition-and-learning/SEN-support-in-school/Auditory-Memory-Digit-Test.pdf>

## What does this mean for instruction?

Cognitive load theory validates explicit models of instruction, accompanied by practice and feedback, particularly for novices in any area. Explicit instruction involves tutors showing learners clearly what to do and how to do it, rather than asking them to discover it for themselves. Some research indicates that managing cognitive load through explicit instruction may also contribute to higher levels of motivation and engagement in learners (Centre for Education Statistics and Evaluation, 2017b).

A useful way to monitor learning is to see if learners can transfer their new knowledge to a similar task. We can then see if they have built a schema, a deeper understanding of knowledge beyond simply recalling facts. For example, can a learner decode a word they have not read before by applying their knowledge of sound–letter associations to work out the new word? Similarly, if a learner is building an understanding of one of the rules for adding suffixes, can they do this with a new word?

As a learner moves along the novice–expert continuum, less structured approaches can be effective, as long as guiding principles, prior information and signposts are provided, along with scaffolding and assistance when needed (Australian Education Research Organisation, 2023; Centre for Education Statistics and Evaluation, 2017b). Opportunities for more independent work should be provided to enable a learner to practise their newly acquired knowledge and skills, as per the gradual release of responsibility discussed above and remembered as: ‘I do, we do, you do’.



**Remember...**

- We learn best when information is provided in small chunks and presented in a logical sequence from start to finish.
- Manage the difficulty of the task presented based on the learner’s prior knowledge and an understanding of their working memory capacity.
- Only four (or less for some learners) pieces of new information can be processed at one time. This needs to include information about how to do the task, so that the process enters long-term memory and helps build the learner’s schema.
- If a learner is not remembering what they did a minute ago, they have used all their working memory to complete a task with nothing left available for them to link it to long-term memory. Reduce the amount of new information they are working with and include information about the process.

# Self-efficacy

## ***Supporting adults to become independent learners***

When adults develop literacy and learning skills, they start to become more active, independent and self-directed learners. Working with an adult to build literacy skills often starts to shift a learner's ideas about possibilities for their lives. As learners build skills, their sense of agency or capacity to do things to change their situation begins to increase. "Agency is a socially situated process, shaped by the experiences of the past, the chances present in the current moment and the perceptions of possible futures" (Evans, 2002). A learner's sense of agency is linked to their sense of self-efficacy which is something we can influence in tutoring. Self-efficacy is about having a strong, positive belief that you have the capacity and the skills to achieve your goals.

Self-efficacy in a learning context is a learner's belief in being able to achieve their learning outcomes or goals (Zivlak & Stojanac, 2019). Learners with high self-efficacy have a stronger sense of their ability to achieve and are likely to make more effort, recover from setbacks and ultimately achieve their goals. Learners with low self-efficacy have less belief in their abilities and are less likely to make an extended effort with challenging tasks. Their lower aspirations and reluctance to try are likely to result in poorer outcomes and less persistence (Kirk, n.d.). Persistence is important in adult literacy work, as it will take time and effort for a learner to make progress (Reder et al., 2020). Learners with higher self-efficacy are more likely to persist when faced with learning challenges.

Self-efficacy is malleable and can be built. As a tutor, it is helpful to know how to build adult learners' self-efficacy, as this will support their motivation and engagement in learning.

There are four ways that tutors can help learners build self-efficacy:

1. Having successful experiences
2. Watching others succeed at tasks
3. Verbal persuasion – tutor guidance, feedback and communication to support effort
4. Creating a safe and supportive learning environment – positive mood supports self-efficacy while anxiety can undermine it (Sharma & Nasa, 1994).

In conclusion, building self-efficacy and learning success can help adults increase motivation and confidence to become more self-directed and autonomous lifelong learners. Tutors should work to strike a balance between explicit instruction to help a learner build the skills to meet their goals and designing learning that builds self-efficacy, enabling adults to become independent learners.

## **Strategies for tutors to build learner self-efficacy**

- **Use moderately difficult tasks**

Tasks need to be achievable – tasks that are too difficult will reinforce low self-efficacy. The target for difficulty is slightly above the learner’s current ability level.

- **Capitalise on learner interests**

Relate the learning material to learner interests.

- **Allow learners to make their own choices**

This does not mean completely open choice about everything. Set up choices that allow learners to make their own decisions, such as a choice between two reading topics, or how they want to practise their skills – on their own, twice a week for half an hour or every day for ten minutes.

- **Encourage learners to try**

Give them consistent, credible and specific encouragement, such as, “You can do this. We’ve set up an outline for how to learn this... and a schedule for practising each week – if you follow the plan, you will be successful.”

- **Give frequent, focused feedback**

Giving praise and encouragement is very important, but it must be specific and credible. Use praise for effort made and avoid hyperbole. When giving feedback on learner performance, compare it to past performance to show progress.

- **Teach specific learning strategies**

Give learners strategies for the work you ask them to do.

- **Encourage accurate attributions**

Help learners understand the reasons for not succeeding – not because they’re not smart enough, but because they didn’t spend enough time on the task, or they didn’t follow the learning strategy.

- **Establish specific, short-term, challenging but attainable goals**

[Schunk & Pajares, 2002].

- **Plan a specific learning strategy**

Plan the strategy with your learner and have them verbalise their plan.

As they proceed through the task, ask them to note their progress and verbalise the next steps [Schunk & Pajares, 2002].

From Margolis and McCabe (2006)

## Growth mindset

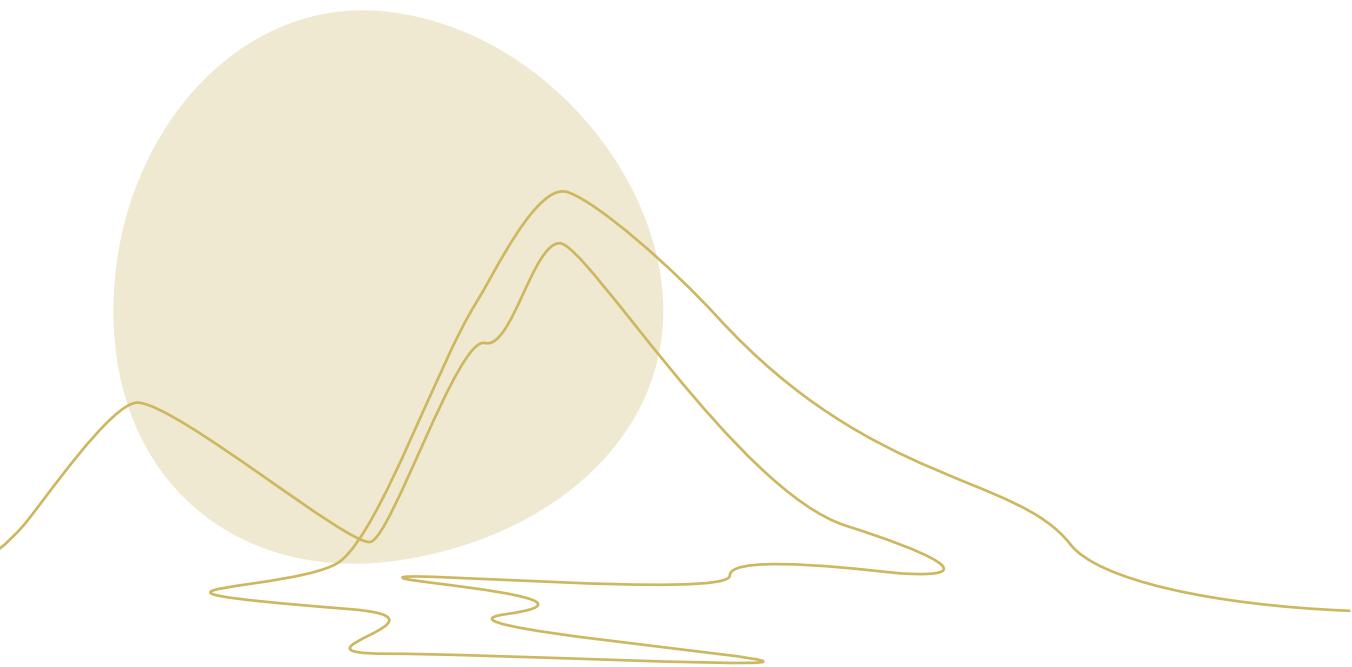
The concept of a growth mindset can be useful to talk about with some learners.

Carol Dweck (2012) developed this thinking, bringing together ideas about what helps facilitate learning and what gets in the way of this. A growth mindset focuses on the belief that learning is a challenge that presents opportunities for growth. Mistakes and setbacks can be learnt from. These kinds of attitudes can help a learner persist even when learning is difficult.

### Resources



Video: Challenge and growth mindset  
<https://youtu.be/2bwtL1Yd58k>



## Multisensory teaching

2

When working on developing reading skills, not only is an explicit, systematic approach to instruction recommended, but multisensory instruction is also recommended.

Multisensory instruction when teaching reading involves asking a learner to use two or more modes of sensory input in relation to the specific skill they are learning. This is commonly misunderstood, however. This may come from the popularity of the concept of learning styles in education. It does not mean simply adding a kinaesthetic element to instruction, like singing or undertaking an activity that applies other sensory input – though this may be useful for other reasons. Even practices like making letters in sand trays have not been found to be helpful.

So, multisensory instruction needs to be carefully defined. Specifically, multisensory instruction simply means asking learners to simultaneously say the sounds or letters of words as they write them. This activates auditory, visual and kinaesthetic channels. Another example may be asking learners to pay attention to the shape of their mouth and the movement that happens when articulating sounds and segmenting words.

Multisensory instruction has been found to increase engagement and retention of information (Hasbrouck, 2021). While multisensory teaching has been shown to support student learning, researchers are not yet sure exactly why. Some researchers attribute the value of multimodal instruction to enhancing a learner's **memory**: engaging multiple senses may help the brain store information in long-term memory. Others believe multimodal instruction has more to do with **attention**. For example, using both auditory and tactile modalities during phonics instruction prolongs the time students spend thinking about and linking letters and sounds. Both of these explanations have to do with what we know about neural processing and pathways created in the brain (Shanahan, 2020b).

While all learners benefit from multisensory instruction, those who have dyslexia will find multisensory instruction particularly helpful. Students with dyslexia face obstacles with word recognition and decoding. According to the International Dyslexia Association, "multimodal (multisensory) structured language teaching" can help students with dyslexia overcome those obstacles by strengthening the pathways in the brain that involve phonological (speech) and orthographic (print) processing – building speed and accuracy in reading ability (International Dyslexia Association, 2020).

## The myth of learning styles

The concept of learning styles has been popular, promoting the idea that people have a natural style of learning that enables them to learn best. The most commonly described learning styles come from the VARK model – visual, auditory, reading/writing and kinaesthetic. The idea was that a learner might learn best if an instructor presented information in a way that aligned with a learner's learning style. However, research has shown that the theory of learning styles is a myth (Pashler et al., 2008). In reality, people use whatever sensory inputs are relevant and necessary to learn new things. For example, learning music will require a focus on auditory input, but when reading music, a visual channel is also necessary. Learning to use a computer will require probably all four sensory channels.

When planning instruction for learners, it is best to focus on what is required to learn the specific content rather than what sensory channels a learner might prefer to use. It is likely that when a learner says they like doing things with their hands, it means they have developed manual skills they feel confident about, but they may not have built skills in reading/writing, so they would prefer not to read/write as they don't feel confident in this area.

Learning to read can be difficult. As Mark Seidenberg said, "Reading is an extraordinarily complex act. [It is a] behaviour that is the product of our capacities to see, hear, write, speak, learn, remember, and think" (Seidenberg, 2017, p. 187). A multisensory approach to instruction maximises sensory input when learning to ensure full learner attention and support building memory.

Drawing on the concept of learning styles is NOT recommended!



### Stop and think

How does this confirm, clarify or challenge what you already know?

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# Chapter 3

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## Reading



3

## Main points

- Drawing on research and theory to inform practice can support tutors to develop the knowledge and skills for effective instruction.
- Research has shown that, like children, adults develop the same parts of their brain when learning to read. Instruction that is effective with children can be adapted to working with adults, who generally bring some knowledge of reading, an ability to engage in metacognitive thinking and a wealth of life experience.
- The Simple View of Reading asserts that decoding words as well as language comprehension skills lead to good reading.
- Learners with dyslexia can find decoding difficult and learners with developmental language disorder can find language comprehension difficult – knowing how to work with these challenges is helpful.
- The components of effective instruction include developing phonological awareness, building phonic knowledge and vocabulary, improving fluency and learning comprehension strategies.
- Component skills should be taught systematically and applied to a learner's context.
- The focus for learning with each adult will depend on their goals and the areas they most need support in, noting that phonological awareness, phonics, vocabulary and fluency all underpin reading comprehension – the starting point is often instruction at the word level.
- The gradual release of responsibility model – I do, we do, you do – can help tutors structure learning activities.

# Introduction

This chapter draws on research-based approaches for reading instruction for tutoring adults. While research on adults is not as extensive as research on children, research has established that the same brain structures are activated and developed in adults learning to read as children who are learning to read (Dehaene et al., 2015; Kurto, 2023). It is therefore logical to think that the evidence for instruction with children will have application for working with adults, although the approach will need to be modified. Studies exploring these approaches with adults have found promising results. Adult learners usually have some understanding and skill in reading, but if they are not confident readers, they may not have read enough to develop their vocabulary or become familiar with the structures of written text. They also may not have learnt how to decode words to read them. Developing all the component skills that enable reading can help adults improve their reading skills (Moats, 2015; Tighe, 2020; Thomas et al., 2020). Early assessment identifies what learners know and what skills they may need to build to improve their reading, so that instruction can be focused on their learning needs. Often, this assessment will show that less-skilled readers need instruction at the word level (McHardy et al., 2021).

This chapter introduces the frameworks and practice approaches to guide instructional approaches to teaching reading. By the end of this information-rich chapter, you will have an understanding of key strategies for teaching the component skills of reading.

# The science of reading

Over the last 50 years there has been extensive research into how the brain learns to read, which has resulted in a consensus of evidence that has come to be known as the science of reading (The Reading League, 2022). The science of reading draws on research from multiple fields – cognitive psychology, communication sciences, education, implementation science, linguistics and neuroscience (The Reading League, 2022).

## *The Reading League definition*

“The **science of reading** is a vast, interdisciplinary body of scientifically based research about reading and issues related to reading and writing.

This research has been conducted over the last five decades across the world, and it is derived from thousands of studies conducted in multiple languages. The science of reading has culminated in a preponderance of evidence to inform how proficient reading and writing develop; why some have difficulty; and how we can most effectively assess and teach and, therefore, improve student outcomes through prevention of and intervention for reading difficulties.” (The Reading League, 2022, p. 6)

The science of reading has assembled a consensus of evidence that supports what is now a well-established framework for understanding what’s involved in developing reading skills.

## Working with adults

Approaches for teaching reading have changed over the last few decades and approaches based on the science of reading have not always been used. It is logical to think that many of the adults we work with are instructional casualties – they may not have received effective instruction in the critical components of reading when they were at school (Snow et al., 2015). While some children will learn to read no matter what instructional approach is taken, at least half will need explicit, systematic phonics instruction (Young & Hasbrouck, 2023). Tutoring can benefit adults who needed this instruction but did not get it.

The research base on instructional approaches for adults is not as extensive as it is for children (McHardy & Chapman, 2019; McHardy et al., 2021). It is a more difficult cohort to conduct research with, as adult learners are a heterogeneous group and often engage in programs for short periods of time with different goals and motivations. However, even with adults, instruction which takes an explicit, systematic approach to teaching reading is particularly important for those who find it harder to learn to read, including those with learning difficulties (Thomas et al., 2020). It is likely that a significant number of adult learners will have reading difficulties, like dyslexia or developmental language disorder, as described in Chapters 8 and 9 in Part Two. Practices based on the science of reading support all learners, including learners with learning difficulties, by aligning with how the brain processes, stores and recalls information (Thomas et al., 2020).

The question for adult literacy tutors is no longer whether to use approaches based on the science of learning, but how to apply these when working with adults. Adults who have not developed strong reading and writing skills generally need explicit and intensive instruction to build their skills in both reading and writing (Kruidenier et al., 2010; Thomas et al., 2020). Adults generally have some ability to read and may have built up a set of words that they have learnt through memorisation, although they may not have any learning strategies other than rote learning every word. Learning how words work by building strategies for analysing words can open new doors for developing literacy skills.

Making literacy gains takes time and sustained effort, and it is hard to see progress over short periods of time, but basing instruction on assessed learning needs linked to adults' goals and using evidence-aligned instructional approaches will give adult learners the best possible chance for making progress.

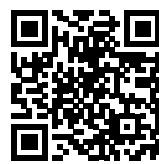
# The Big Six

The US Report of the National Reading Panel (NICHD, 2000) identified five key elements that were critical to the development of reading. Subsequently, Deslea Konza (2010) argued for a sixth element – oral language.

## Resources



Video: An introduction to the teaching of reading  
<https://www.youtube.com/watch?v=Qzyr5VPKTPE>



Research has shown that there are six critical components that enable the development of successful reading (Konza, 2010). This has informed the development of the Big Six framework that can inform the delivery of literacy learning. The Big Six framework outlines the critical component skills required in instruction for learning to read and write:

- oral communication (speaking and listening)
- phonological awareness (hearing the individual sounds within words, distinguishing syllables)
- phonics (sound/letter knowledge)
- vocabulary (word meanings)
- fluency (reading with accuracy, prosody and speed)
- comprehension (understanding the text).

Each of these component skills must be taught to enable proficient reading. Although word level skills – phonological awareness and phonics – may be a starting point for some learners, the other component skills also need to be taught. We examine each of these areas for instruction in this chapter. While this chapter focuses on reading, reading is best taught alongside teaching writing, as reading will improve writing and writing will improve reading. See Chapter 4 for information on writing instruction.

## The simple view of reading

Adapted from *Integrating the Big Six of Reading: The Simple View of Reading* (Leading Learning Improvement, Best Advice Series). Department for Education South Australia, 2020.

The simple view of reading is a model of reading that can help tutors understand learners' abilities in the two key aspects of reading comprehension: reading words and language comprehension. This understanding helps us to more clearly identify individual learner needs and to design targeted instructional support to enable them to become successful readers.

Reading is a complex cognitive process. It involves reading accurately and with understanding. The simple view of reading takes both of these aspects into consideration. Gough and Tunmer (1986), who developed the model, called it the simple view of reading, not because reading is a simple process, but rather because their model is a conceptually simple representation of what a beginning reader needs to master. While this was developed as a model to explain reading skills in children, studies with adults have also found that reading words (decoding) and language comprehension are important components of reading skills (Tighe & Schatschneider, 2016).

Gough and Tunmer (1986) expressed their model as an equation:

$$D \times LC = RC$$

Where D is decoding, LC is language comprehension and RC is reading comprehension.

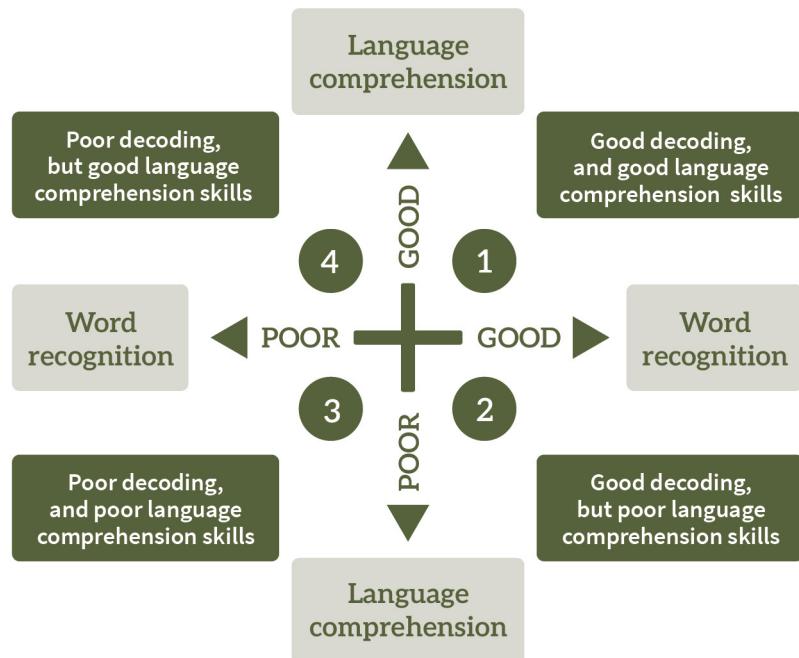
**Decoding** enables accurate word recognition. This involves knowing letter-sound correspondences to decode the words and draws on phonological awareness and phonics knowledge (see the Big Six above). Some versions of the model refer to 'word recognition' rather than 'decoding', acknowledging that familiar words are identified 'by sight' after they have been decoded multiple times. Sight words are any words that have been learnt and can easily be recalled from long-term memory.

**Language comprehension** means the ability to understand, or comprehend, spoken language and refers to oral language and vocabulary. As skills in decoding and language comprehension develop, students also develop reading fluency and reading comprehension (see the Big Six above).

Reading comprehension is the **product** of both decoding and language comprehension. If one aspect is absent or weak, then reading comprehension is poor. The simple view of reading emphasises that both decoding and language comprehension are equally important when considering someone's ability to comprehend written text. If only one aspect is well-developed – for example, a student who can decode words accurately, but their understanding of language is low – then reading comprehension will be poor. This relates to the two learning difficulties discussed in Chapters 8 and 9 in Part Two. Dyslexia typically involves difficulties with decoding while developmental language disorder involves difficulties with language comprehension.

## The simple view of reading quadrants

The simple view of reading can be plotted on a quadrant chart, with accurate word recognition (decoding) on one axis and language comprehension on the other (Rose, 2006). This chart shows how student reading difficulties can be categorised to guide the focus for individualised learning support.



*Simple view of reading quadrant chart (Rose, 2006)*

Good readers, who have built strong decoding skills, can recognise words quickly and accurately and have a good comprehension of language, would be in quadrant 1. Students in all other quadrants have reading comprehension difficulties to some extent. Students in quadrant 3, who have both poor word recognition skills and poor comprehension skills, are the most disadvantaged.

**Quadrant 1:** If a learner performs well on a phonics screening check (e.g. can decode pseudowords accurately, delete phonemes) and can understand the text they read, they are generally a typically developing reader and would sit in quadrant 1.

**Quadrant 2:** If a learner can read text aloud accurately, but gives little indication of understanding, they would be placed in quadrant 2. They will need to develop language comprehension skills. Language comprehension includes background concepts, vocabulary, language structures, verbal reasoning and literacy knowledge. A tutor would then design instruction to develop their language comprehension by engaging them in vocabulary building experiences and a range of rich literature to improve their reading comprehension. This would include oral language activities that involve dialogue. Sessions would include reading high-quality literature and information texts to learners, and discussion involving shared, sustained interactions.

**Quadrant 3:** If the learner has both poor understanding of spoken language as well as difficulty with reading words accurately, the learner is positioned in quadrant 3. The instructional focus would be on both decoding and language development. A tutor would explore language comprehension skills like reading and discussing rich literature and informational text and building vocabulary. They would include strategies to improve word recognition skills – phonemic awareness, mastering the alphabetic code and building phonic knowledge. Phonic knowledge is built based on understanding the relationship between sounds and their written representation (discussed in more detail below).

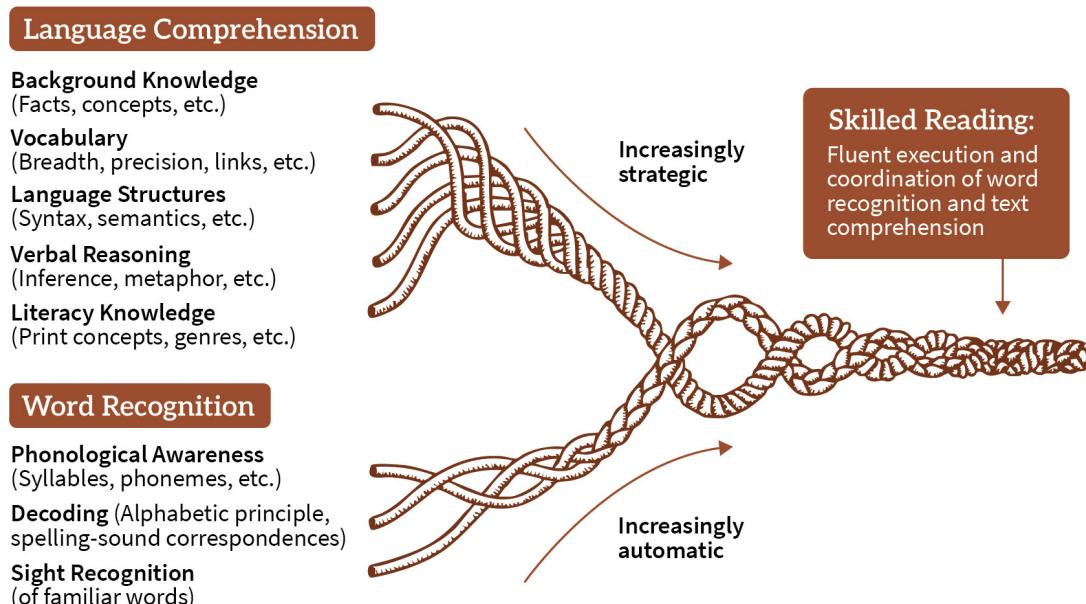
**Quadrant 4:** Quadrant 4 includes learners who have good oral language skills and understand the text that is read to them but are struggling to read the text. Learning would concentrate on increasing word recognition – phonemic awareness, mastering the alphabetic code and building phonic knowledge.

Learners with dyslexia are likely to experience word recognition difficulties (quadrant 4). Learners with developmental language disorder experience language comprehension difficulties (quadrant 2). Some learners may have both (quadrant 3). Not all learners with these profiles will have one of these disorders. It is not a tutor's role to diagnose learning disorders. We often do not know whether learners have one of these diagnosable conditions, so we focus on undertaking a careful assessment of their skills and then tailoring instruction to address skill gaps. It is useful to consider whether assessment information shows a need for decoding skills or language comprehension skills or both. This enables us to develop tailored learning plans.

## Linking the simple view of reading to the Big Six

The simple view of reading relates to the Big Six component skills for instruction within language comprehension and word recognition (Reading League, 2022). Scarborough (2001) developed a visual representation of the component skills needed to be a good reader. Scarborough's Reading Rope visually ties together the essential components for teaching reading with the larger concepts of word recognition and language comprehension. The rope metaphor makes it clear that if any one strand is weak, this affects the whole rope.

## The many strands that are woven into skilled reading



*Scarborough's Reading Rope (Scarborough, 2001)*

## Oral language

For children, learning to speak and listen occurs in early development. The brains of young children are primed to pay attention to and absorb language. In contrast, reading and writing are not natural skills and need to be taught explicitly. Oral language is the foundation for the development of literacy skills and in children is a strong indicator of later reading, writing and academic achievement (Bayetto, 2015). Adults who have grown up in homes where parents have higher education are more likely to be exposed to a wider range of oral vocabulary and use of language, giving them an advantage when they begin to learn to read and write (Wheldall et al., 2023). Adults who have not had this advantage may need more support to develop their vocabulary and ability to express themselves in a wider range of contexts.

Oral language supports the development of literacy skills. Adults will have a range of oral language skills, depending on what they have been exposed to firstly at home, then at school, and later in workplaces and in the community. Some adults will have had the opportunity to develop speaking and listening skills for engaging in both informal and formal settings, while others may not have had opportunities to learn how to engage comfortably in more formal settings or in educational settings. Some adults will have had difficult experiences in school and not feel at all confident in a classroom. One-to-one tutoring can provide a safer situation for learners to develop interactive language skills. Tutors can firstly create a safe learning environment through careful use of language. Tutors can also model language use and help build speaking, listening and interactive skills with learners (Fallon et al., 2015). Learning depends on verbal interactions. Language is the vehicle for thinking and learning about language and for building reading and writing skills. Through talking, learning tasks can be explained and discussion can help build understanding and skill. Adults often have awareness of their learning, so explanations of language regularities and strategies for learning can support more rapid learning (Thomas et al., 2020).

Some adult learners may have more difficulty with oral language for a range of reasons. Some have additional cognitive challenges that manifest in difficulties communicating or engaging in learning, for example developmental language disorder. For more information about this, see Chapter 9 in Part Two.

## English as an additional language (EAL) learners

Tutors might work with EAL learners. Some EAL learners may have developed literacy skills in their own language while others have not had the opportunity. Some want to focus on building their conversation skills while others have developed their oral communication and are more focused on building their reading and writing skills. Hearing words used in spoken language helps build vocabulary and therefore comprehension. Some EAL learners may be working on developing literacy skills but also have a learning difficulty, like dyslexia, or an additional cognitive challenge.

Chapter 6 on working with adults who are learning English provides more detailed information, although the reading and writing chapters will also be useful for work with these learners.



# Phonological and phonemic awareness

**Phonological awareness** is a broad term that refers to the ability to separate spoken sentences into words and spoken words into syllables. It includes:

- oral rhymes (mad, bad)
- syllables (clap kitten – kitt.en or kit.ten)
- onsets and rimes (sip – onset = s, rime = ip)
- individual phonemes (or sounds) (sun = /s/ /u/ /n/).

**Phonemic awareness** is a subset of phonological awareness and is the ability to hear, identify and manipulate **phonemes**, the smallest units of sound that can differentiate meaning. For example, the sounds in the word ‘sun’ are /s/ /u/ /n/.

## Why is it important?

Broadly, **phonological awareness** supports the development of vocabulary and builds word consciousness (Moats & Tolman, 2009). It enables learners to:

- pay attention to the sounds in unfamiliar words and compare them to known words
- repeat and pronounce words correctly
- encode words accurately so they can be remembered, retrieved and used
- differentiate words that sound similar, allowing meanings to be compared.

More specifically, **phonemic awareness** enables a learner to understand the **alphabetic principle**. English uses an alphabetic writing system with letters, individually and in combinations, representing single speech sounds. People who can break words into sounds, recognise the associated letter(s) and put them together again understand the alphabetic principle (Wheldall et al., 2023). It is difficult to do this if you are not able to clearly distinguish the sounds in words.

Building phonemic awareness underpins literacy development and is important for learning to read and spell. This skill accounts for a significant amount of the difference between good adult readers and poor adult readers (Tighe & Schatschneider, 2016). A reader needs to be able to decode words – to break them into their individual sounds/phonemes and then blend the sounds to read the word. Writing involves segmenting the sounds in words and then encoding sounds with letter patterns. Without phonemic awareness, a reader does not have the tools they need to build the higher-level literacy skills needed to understand text. The ability to manipulate and substitute sounds in words supports the development of orthographic mapping, which will be discussed in more detail under the topic of fluency.

Research has found that many adults who are struggling to read have not fully developed their phonemic awareness (Tighe & Schatschneider, 2016). Those with poor phonemic awareness are also likely to be poor spellers (Talwar et al., 2014). For older struggling readers who struggle to hear the individual sounds in words, developing phonemic awareness will help them improve their reading skills (Kruidenier et al., 2010; Yoncheva et al., 2015). Undeveloped phonemic awareness can indicate a phonological processing difficulty that is often a feature of dyslexia. Once these learners develop phonemic awareness, they will begin to make real progress.

Improved phonemic awareness may also be necessary for adults who are learning English as an additional language. While research has shown that phonemic awareness in one language transfers across to other languages learnt (Farrall, 2012), some EAL learners may need to learn new sounds as some sounds in English may not exist in their own language (Cárdenas-Hagan, 2018).

There are approximately 44 sounds in most dialects of English, and building phonemic awareness involves ensuring learners can hear and manipulate all these sounds. Developing phonemic awareness to the point of automaticity is the aim of this work. Phonemic awareness involves more than just the skills of segmenting and blending the individual sounds in words. Being able to add, remove or swap sounds within words helps both reading and writing development. Once phonemic awareness has been developed in learners, there is no need to continue instruction in this area. Proficient phonemic awareness is a route to reading and spelling, not an end in itself.

## Assessment

New learners need to be assessed to check whether they can hear the sounds in words, because if this is difficult, they will not be able to build phonic knowledge and then decoding skills. Not all adult learners will have this difficulty and for some, they might be able to hear the beginning and ending sounds of words but not middle sounds, as the middle sounds are the hardest to hear (Brady, 2020). Assessment can focus on what a learner's specific difficulty might be, so that if they need to do some phonemic awareness work, it can be targeted to their area of difficulty. The most important phonemic awareness skills are the ability to segment and blend sounds in words – these directly relate to the skills required for reading and writing (Brady, 2020).

### Phonemic awareness screener

## Instructional approaches

Adults may not expect to be working on hearing sounds, so working with adults includes explaining why these skills are being taught. Phonemic awareness is a closed skill set and can be taught to the point of mastery in a relatively short period of time (Paris, 2005). It is best taught explicitly and systematically (Stahl, 2011). Phonemic awareness activities should form only one component of a lesson, which also needs to include activities involving meaningful language and print. Work in initial sessions helps learners practise breaking words into sounds.

Research has shown that while phonemic awareness is an aural skill, it is best taught in connection with letters (Brady, 2020; Ehri, 2020). This reduces the cognitive load for a learner. Sounds and letters are used together to build proficiency in blending, segmenting and manipulating the sounds in words. Being able to identify sounds without using letters shows that a learner has phonemic awareness proficiency.

Research has shown that phonemic awareness development should begin by focusing on individual sounds (Brady, 2020). There is no need to teach the broader phonological skills – rhyming and syllables – before beginning to focus on phonemes (IDA, 2022). Learners can develop skills in hearing these larger units of sound – rhymes, syllables, onset-rime – as they build phonemic awareness. Once basic phonemic awareness has been established in early sessions with learners, further phonemic awareness instruction should occur in tandem with systematic phonics instruction (Brady, 2020).

Basic phonemic awareness includes the ability to blend sounds to make words, which is easier than segmenting the individual sounds in words. Words are spoken quickly, and the sounds are co-articulated – they run together. Some learners will struggle to hear particular sounds or to hear the middle sounds in words; they will only need to focus on these skills. Learning to distinguish the sounds in words involves saying them more slowly to identify the sounds. Adults who already know how to spell some words may need to be reminded that these activities are simply about practising hearing sounds.

#### Say the word, identify the sounds, write the spelling

Note that when breaking words into phonemes, it is important not to add an extra /uh/ sound to each phoneme. *<cat>* is segmented into /c/ /a/ /t/ not /cuh/ /a/ /tuh/.

For learners who need to build phonemic awareness from the start, work should begin by focusing on the initial sound in consonant-vowel-consonant (CVC) words, then the last sound and finally the middle sound (Brady, 2020). Once this has been mastered, learners then need to be able to distinguish individual sounds in CCVC words, then CVCC words, moving on to CCVCC words. Some adults may already be able to hear all the sounds in simple CVC words and will not need to start here, but may find it difficult to hear the internal consonants in blends (CCVC, CVCC, CCVCC words). Their starting point should be focused on this skill.

Advanced phonemic awareness involves developing the ability to delete, substitute and manipulate sounds within words (IDA, 2022). This ability will help learners to analyse words and apply spelling rules later.

Building phonemic awareness can begin with an activity like the following:

## Blending sounds

Identifying beginning, ending and middle sounds in words.

Use the grapheme letter tiles that include digraphs on individual tiles.

### I do

1. Define: Phoneme blending is the ability to combine a sequence of individual sounds to produce a recognisable word.
2. Introduce: “Today, we will listen to a word one sound at a time, then put those sounds together to make the whole word.”
3. Model blending phonemes:
  - Point to and say the sounds in ship (for example) by pointing to the letter tiles representing each sound, emphasising the sounds: /shhhhiip/.
  - Then, run your finger under the letters quickly, connecting the sounds as you say ship.
  - Use the word in a sentence: The ship sailed on the river. Repeat the modelling process with the words sick and feet.

### We do

4. Guided practice: Tell the learner it is now their turn to try some words with you. Give them a new two-phoneme or three-phoneme word, and point to and say the sounds together and then blend them into the whole word. Provide prompts and feedback as needed to blend the phonemes.

### You do

5. Individual practice: Tell the learner, “Now it’s your turn.” Give them new words to try independently.

Note: Only use words with spelling patterns that the learner already knows and target their difficulties.

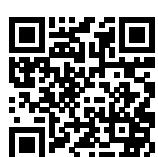
## Resources



Video: Watch how this might look in practice here:

01 Phonemic Awareness Development

<https://www.youtube.com/watch?v=EYAPxWcCKa4>



# Phonics

Phonics involves connecting the sounds of English to the spelling patterns that represent them. It is also described as sound-letter knowledge or the alphabetic principle. Building phonic knowledge enables a beginning reader to read words by decoding them – using knowledge of letters linked to the sounds they represent. It is an important skill to build, although not the only skill needed, when learning to read. There are some adults who have not ever learnt that sounds are represented by letters. Other adults who are still learning to read and write may already know some sound-letter patterns but have gaps in their phonics knowledge. Because of this incomplete knowledge, adult beginning readers have difficulty decoding, which is applying sound-letter knowledge to work out new or unfamiliar words while reading. The starting point and focus for working with adults depend on what phonic knowledge a learner already has. Assessment will identify gaps in phonic knowledge and inform lesson planning.

## Phonics with adults

Teaching phonics is commonly associated with teaching children; however, for adults who are struggling to read, it is a critical strategy to build reading skills (National Research Council, 2012). It can be a way to help learners move past their ‘stuck’ point, as adults often don’t use decoding as a strategy for reading (Kruidenier et al., 2010). Helping adults build an understanding of sound-letter correspondences can facilitate the development of independent reading relatively quickly (Moss et al., 2019). The ability to decode words, to work out a word based on knowledge of the sounds linked to letters and letter combinations, is a strong predictor of reading success in adults (Talwar et al., 2021). Adults may need to unlearn old and ineffective reading habits, like memorising whole, unanalysed words or guessing new words based only on the first letter.

Phonics is only one instructional component for teaching reading and is best taught while building phonemic awareness (Kilpatrick et al., 2019). Depending on a learner’s areas of difficulty, instructional time will also need to be allocated to build the other knowledge for reading – morphology, etymology, orthography.



We can also draw on an adult's ability to think about thinking – metacognition – so discussion of the strategies for reading and writing helps an adult understand the purpose of learning activities and to build their strategies for learning. Learning the relevant terminology enables discussion of the activities and reminds adults of the strategy they are using. Relating learning to the context of adults' lives also makes it clear how learning is relevant and can be applied.

Some adults will not yet understand the alphabetic principle, and this knowledge can open the door to learning in a remarkable way, facilitating a burst of learning and reading development. These adults will need to learn to analyse words phonically to link sounds to spellings, with the sequence of sounds in a word as an anchor for understanding spelling. Other adults may be aware of this but not be using it as a strategy for reading; they will need to undo old habits, like rote memorisation of words, and instead build their decoding skills.

## Escape velocity

The process of storing words in long-term memory to enable automatic word recognition without needing to decode it again is called **orthographic mapping** (Ehri, 2014). The connection between a word's spelling and the associated letter-sounds is critical (Ehri, 2014). The sequence of letters or spelling patterns need to be linked or mapped to the spoken sounds by reading and writing the word a few times to secure it in memory (Ehri, 2014). When learners apply their phonic knowledge to each new word, after repeated exposure to the word, it will move into a long-term memory word bank to become automatically recognised (Kilpatrick, 2015). The word will no longer need decoding every time. This then leads to fluent and effortless reading, as words can be easily read and the reader can then focus their attention on understanding the text.

Once adults understand the alphabetic mapping principle – that sounds are represented by letters – and have built knowledge of the most common patterns, they will start to approach 'escape velocity', which is the ability to learn from reading with less need for feedback and support (Seidenberg, 2024). They will begin to build their word bank independently and will have an increasingly large number of words they can read quickly and easily. **Other reading strategies become just as important to develop.** For example, morphology, learning about the meaningful parts of words, builds a deeper understanding of how words work – spelling represents meaning as well as sound. There is no need to maintain a focus on learning every single phonic pattern, particularly those that are not common.



## Assessment

Assessment of each learner's phonic knowledge is critical to establish a starting point because adults come with prior knowledge and are likely to know a fair number of words already – although they may have learnt them as 'whole words', rather than by analysing for sound-letter relationships.

Some online assessment tools that assess phonic knowledge which will give you a starting point for work with your learner:

### Resources



Sylvia Greene's Informal Word Analysis Inventory  
<https://firstliteracy.org/wp-content/uploads/2015/07/Greene-phonics-inventory-assessment.pdf>



The Nonsense word test  
<https://www.decodingdyslexiaor.org/wp-content/uploads/2014/10/nonsense-word-test.pdf>



Intensive Literacy Program Placement Test  
<https://spelsa.org.au/pages/intensive-literacy-program>



## Synthetic phonics

Although the starting point for learning may be based on the literacy demands in learners' lives, sound-letter knowledge should be taught mainly with a synthetic approach, systematically addressing a learner's knowledge gaps to build a more complete knowledge base. We talk about taking an explicit and systematic approach to teaching phonics, but this does not mean doing the same thing with every learner, given their different starting points, prior knowledge and capabilities. The term 'synthetic' means linking graphemes to phonemes and blending (synthesising) these sounds together to read words. It also explicitly explains that a single sound can be represented by more than one grapheme, for example, the 'long' sound /A/ as in 'pain' can be represented by the digraph <ai> or in words like 'day',

as <ay>. In words like ‘cake’ the split digraph <a-e> represents the same sound. In words like ‘eight’, it is spelled <eigh> (Wheldall et al., 2023). A **synthetic phonics** approach starts with the basic code – simple and more common patterns – and then moves on to advanced code – more complex and less common patterns. The synthetic approach systematically introduces single letter sounds and then moves on to two and three letter sounds (for example, <sh> which is a digraph – two letters represent one sound). Synthetic phonics teaches blending sounds and letters in words as these are introduced.

## Resources

Video: What is systematic synthetic phonics? | MultiLit; Five from Five



[https://fivefromfive.com.au/wp-content/uploads/2022/07/mysimpleshow\\_What\\_is\\_systematic\\_synthetic\\_phonics\\_.mp4](https://fivefromfive.com.au/wp-content/uploads/2022/07/mysimpleshow_What_is_systematic_synthetic_phonics_.mp4).



With adults, some teaching will also be incidental, also called embedded phonics, drawing on example words based on the learner’s reading and mistakes noted in their writing. However, if **only** an incidental approach is used, the logic of spelling may not become as apparent and there is no way of knowing whether gaps in phonic knowledge have been addressed.

## The logic of phonics

In English, there are over 75 spelling patterns to represent approximately 44 component sounds of the language.<sup>4</sup> Although the English alphabetic system is not entirely transparent (having a one-to-one match of sound to symbol), much of it is regular (Stone, 2021). Approximately 50% of all English words can be spelled accurately by direct sound–symbol correspondence patterns alone, for example, *fantastic*, *laptop*, and another 36% can be spelled accurately except for one speech sound, usually a vowel sound (Moats & Tolman, 2009). For example, the word *said* contains the direct sound–symbol correspondences for /s/ and /d/, while it is the vowel sound that contains the irregular/rare spelling pattern of <ai> for the /e/ sound. Surprisingly, approximately only 4% of all English words in print defy explanations and are truly irregular. Often these are relics from Old English (Moats & Tolman, 2009).

<sup>4</sup> See Alison Clarke’s Spelfabet – sorted by spelling page: <https://www.spelfabet.com.au/spelling-lists/sorted-by-spelling/>

Most commonly, speech sounds in English words are spelled with one of several possible spellings, which are determined by their place in a word and various conventions, like <ck> used after a short vowel sound, or <dge> to represent a /j/ sound at the end of a word (Moats & Tolman, 2009). The Roman alphabet was invented to represent Latin sounds, a language that had only 5 vowels, as opposed to the approximately 20 vowel sounds we have in English. The history of the development of English helps explain the range of phonic patterns that we encounter. When England was invaded by the French, the Vikings, the Greeks and Romans, spelling from their languages was adopted and this explains the multiple spellings for the same sound. English has also evolved over time. For example, the silent <e> in split digraphs (e.g. rate or same) was not silent in Middle English, it was a spoken sound.

Adults are able to talk about learning and need to know why something is important to learn. **Etymology**, knowledge about word origins, can support learners to build an understanding of how words work. Phonic patterns are linked to the origins of words and learners may be interested in connections to the history of English, particularly the invasions of England bringing new words and spelling patterns.

As well as the alphabetic principle, which draws on sound–letter correspondences to explain spelling, English draws on **morphology**, which also plays a part in determining the structure of words. Morphology is “the study of word formation, including the ways new words are coined in the languages of the world, and the way forms of words are varied depending on how they’re used in sentences” (Lieber, 2009). Morphemes are the units of meaning in a word and can influence the associations between letters and sounds. For example, in the words ‘wait’ and ‘weight’, the spelling is determined by the meaning of the word. The word ‘weight’ is associated with the base word ‘weigh’ and the spelling of the morpheme is consistent in both. All morphemes are made up of phonemes (sounds), so learning sound–letter relationships remains vital (Wheldall et al., 2023). Morphology is discussed in more detail when discussing vocabulary building later in this chapter and in Chapter 4: Writing.

#### Sound–letter chart

## Scope and sequence for teaching phonic patterns

Every good, structured program has a scope and sequence for introducing phonic patterns. It is usually difficult to combine resources from different programs because each program sets up slightly different structures.

This scope and sequence can be used to provide the backbone structure for developing learning sessions. Adults will also bring up questions/words that they want to know about that do not fit with the sequence, or if studying, their course might require learning specific vocabulary. Ideally, the balance of instructional focus is 80% structured and 20% based on learner enquiry/needs. If the balance tips too far into learner-driven questions, it will become difficult to manage the cognitive load for the learner as too much new information will be required. It is also useful to bear in mind that not all learners' mistakes require correction, and tutors will need to make decisions in sessions on how to maintain the instructional focus, based on the session plan, underpinned by the background program scope and sequence.



### Stop and think

How could you explain to your learner why phonic skills are important to help them achieve their goals?

## Phonics instruction

Teaching phonics should be explicit, supporting learners to systematically build knowledge of sound-letter patterns so they become automatic. Initially, the teaching focus should be on the 100 most common phonic patterns.

## **Key phonic concepts to teach**

In English, there are over 75 spelling patterns and approximately 44 sounds, although there are only 26 letters in the alphabet.

### **Words are made up of sounds that can be segmented and blended**

The individual sounds in each word can be identified: cat contains the sounds /c/ /a/ /t/. This is segmenting sounds.

The sounds can be linked together to make a word: /d/ /o/ /g/ becomes dog. This is blending sounds.

### **Sounds are represented by graphemes**

For example, the sound /n/ is represented by the grapheme <n> and the sound /ch/ is represented by the digraph <ch>

### **A grapheme consists of one, two, three and sometimes four letters**

Some sounds are represented by one letter (graph), and others are represented by two letters (digraphs, e.g. <th> or <oa>). A few are represented by three letters (trigraphs, e.g. <igh>) while a couple are represented by four letters (quadgraphs, e.g. <ough> or <eigh>).

### **One grapheme can represent several phonemes**

<c> can sound like /k/ or /s/, <ea> can sound like /e/, /E/ or /A/

### **One phoneme can be represented by different graphemes**

/m/ can be spelt <m>, <mm>, <me> or <mb>

/O/ may be spelled <oa> or <o\_e> or <ow>)

Adapted from Moss et al. (2019).

The synthetic phonics approach involves applying sound-letter knowledge to words as letters are learnt. This means that a learner who only knows the first six sound-letter connections (commonly s a t p i n ) will learn the three letter words that can be made from these letters. A beginning decodable reader will put these words into sentences. For example, *Pat Spat Ants* (SPELD SA Intensive Literacy Program, n.d.).<sup>5</sup>

<sup>5</sup> SPELD SA Intensive Literacy Program <https://speldsa.org.au>

For beginning learners, the starting point will be short, easy words and then progress to longer words with more complex spelling patterns. When teaching a new spelling pattern, an example word should be chosen that will be memorable to the student and does not present any other orthographic challenges. A short list of words with the same pattern should be taught to reinforce the idea that this is a pattern. The Phinder website can be used to find word lists using sound-letter spellings.<sup>6</sup> The frequency of each spelling pattern is also provided, which will help identify the most common ones to focus on. As learners build their bank of known words, they will be able to add less common but personally relevant words to the categories they know.

You may also come across the term ‘blends’, which are common consonant beginnings and endings of words. For example, st-, tr-, spl- or -mp, -st, -rd. These are not phonemes or spelling patterns describing one sound, as they comprise two or even three sounds and two or three spelling patterns. Some programs explicitly teach blends; however, it may confuse a learner who is learning to distinguish single sounds and associated letter patterns. Blends are certainly not a starting point or shortcut for early instruction.

Activities should support learners to encounter new spelling patterns and words in several different contexts. Movable tiles can be used to support a learner to make and break the words they are learning. Decodable readers can present new patterns and words to enable repeated encounters to build familiarity and support transferring learning to long-term memory. Similarly, encouraging adults to look for words in their everyday lives supports practice and the application of new knowledge. Learners will vary in how much they need to practise and review new patterns. Learners with working memory challenges might need to repeat, review and reinforce new learning in shorter and more frequent sessions.

## Resources



Video: Watch how this might look in practice here:

02 Phonics Instruction

<https://www.youtube.com/watch?v=Uukdvpm4KtU>



<sup>6</sup> Phinder: A resource for phonics lessons <https://www.devinkearns.com/phinder/>



## **Set for variability**

Set for variability is a strategy that readers can use to work out the pronunciation of words they are reading. It follows from the understanding that some spelling patterns are used for more than one sound (Buckingham, 2023a). When decoding a word that does not sound right, a learner can try using an alternative sound that the spelling pattern could also represent. For example, a learner may know the grapheme /ea/ as representative of the long /E/ sound as in bead, or as the long /A/ sound, as in break. On seeing the word ‘breakfast’, they may initially decode it as ‘breekfast’. When realising that does not sound like a word, they can try other sound options for the /ea/ grapheme, including the short /e/ sound to work out the known word, ‘breakfast’.

Some words that are spelled the same have an alternative pronunciation (e.g. read, wind, live, use). Some words that are spelled the same will be pronounced differently because the stress falls in a different place in the word. For example, content/content, insert/insert, object/object).

Other words have an unusual pronunciation. With an unfamiliar or an irregular spelling pattern, learners might use a strategy that draws on morphology to work out the unknown part of the word. This relies on a learner’s knowledge of prefixes, suffixes and root words. If the root word is not known to them, we are not asking learners to guess. If the word is not known, it must be taught. Morphology is discussed in more detail in Chapter 4: Writing.

## **Sight words**

The term ‘sight word’ has at least four meanings in education, but reading scientists reserve the term for any “familiar word that is recognised instantly, automatically, and effortlessly, without sounding it out or guessing. It does not matter if the word is phonically regular or irregular. The point is that it is immediately recognised” (Kilpatrick, 2016, p. 27). In fact, good readers can recognise printed words faster than objects and colours (Cattell, 1886). This discovery led to the understanding that the development of a sight word vocabulary depends on phonemic awareness, not visual memory. While visual memory is essential for letter learning, it is not a major contributor to word recognition. Furthermore, visual memory scientists have shown we cannot store 30,000 to 90,000 words for immediate retrieval. Reading involves visual input but not visual storage (Department for Education SA, 2020).

It has been established that words are best learnt through **orthographic mapping** which involves word analysis (Ehri, 2020). Word analysis includes examining sound–letter patterns, meaningful word parts, related words and how the word can be used. This helps build a rich neural network of understanding of a word, which helps a learner move the word into long-term memory.

When learning to read, there are a number of commonly encountered words that are not phonically regular (e.g. said, does, some, was, because). The spelling of one or more parts of the word is not orthographically transparent or the spelling pattern has not yet been learnt. These words need to be learnt to enable a reader to access text. Even these words can be analysed to identify the known sound–letter correlations and the tricky part identified for learners to pay attention to when learning. Once words enter long-term memory and are effortlessly retrieved, they become ‘sight words’.

The 100 most common words in English

## Reading longer words

Beginning learners will progress beyond reading single syllable words to reading multisyllabic words. Some adults will already have good phonemic awareness and phonic knowledge but will not have learnt to break longer words down into syllables to decode them. Showing them how to decode multisyllabic words in their first sessions can create excitement, as they realise they will be able to rapidly develop their reading skills.

### Syllables

Long words can be broken into syllables and each syllable sounded out. Breaking a word into syllables helps make decoding manageable. Each syllable can then be broken into sounds to identify phonic patterns as well as morphemes (meaningful parts – prefix, suffix, root word). This is a powerful strategy for adults to learn as they realise that they can work out longer words that have previously been too difficult. Some multisyllabic words have transparent orthography, e.g. fan.tas.tic can easily be broken into three syllables and sounded out.

However, in many multisyllabic words, some syllables are stressed while others are unstressed. Unstressed syllables often result in the vowel becoming indistinct and making the sound /uh/, a sound which is called a schwa. For example, in the word ‘television’, the first *e* and the *i* can clearly be heard, but the second *e* makes the sound /uh/. Teach that ‘tele’ is a recurring prefix that is always spelled *tele* and means over a long distance. Other examples of this prefix include telephone and teleconference. Other forms of the word can be found which can also help clarify the vowel sound. In ‘televisual’ the second *e* can be clearly heard. We also commonly refer to the ‘telly’, a more colloquial, short version.

When it is not possible to find an alternative form of a word to help make the vowel sound distinct, a learner will need to learn the word using a ‘spelling voice’, over-pronouncing the schwa sound when learning the word. For example, to learn the word ‘tortoise’, the /oi/ sound can be articulated to help a learner remember the spelling of it (Clarke, 2019).

There are a number of other research-based strategies to support learners who are learning to read longer words (Kearns & Whaley, 2018). Learning will of course be most effective when the underpinning phonic knowledge and morphological knowledge are built and **strategies are practised** to become more automatic and therefore help a learner become a more fluent reader.

Resources to support teaching phonics are provided in Part Three.

### Strategies for reading longer words

1. Identify syllables and breaking these into sound-letter patterns.
2. Apply the set for variability principle within syllables – there are different pronunciations of vowel sounds. Try the short sound first as this is more common. Know that schwa (/uh/) can be a vowel sound.
3. Understand morphological families.
4. Identify prefixes, suffixes and base words when reading.
5. Practise pronouncing prefixes and suffixes to the point of automaticity.
6. Practise correcting mispronunciations.

Adapted from Kearns & Whaley (2018).

### ***The decoding threshold***

Studies have found there is a ‘decoding threshold’ (Wang et al., 2018). Below a certain level of decoding ability, it is difficult to develop reading comprehension. The link between decoding ability and comprehension relates to the capacity of the brain’s ability to take in new information. When cognitive effort is focused on decoding words, there is not enough capacity left for comprehending the text. In cognitive science terms, the learner is experiencing too much ‘cognitive load’. Decoding needs to become automatic for learners to be able to focus on meaning (Wang et al., 2018).

Decodable texts reduce the memory load for beginning readers at a time when the aim is for learners to become familiar with the alphabetic principle (Hempenstall, 2016). Decodable texts for beginning readers mainly focus on single syllable words, enabling a learner to practise reading words to consolidate learning of new sound–letter patterns. Decodable readers support beginning readers to practise blending and segmenting words, build phonic knowledge, develop automaticity and experience early reading success. The *Drop In* decodable series is designed for beginning adult readers and presents adult story lines (see reading material listed at the end of this chapter).

Adults need to move beyond building decoding skills to develop the other component skills for reading, for example, learning about morphology in the context of meaningful text with multisyllabic words. Developing reading comprehension is supported by building background knowledge of topic areas. It is helpful to present reading material pitched at a learner level **and** focused on a topic area/learner interest. There are a number of resources designed to be easy to read about a wide range of topics, including sites that edit current news into an easier to read format. A number of these materials are listed at the end of this chapter. They help build vocabulary and concept knowledge, which support comprehension.

Sometimes learners need help to read more complex texts that are beyond their reading level – perhaps for a course they are doing (e.g. the lifesaving manual or a workbook from a vocational area). This is dealt with in Chapter 4: Writing (Building literacy skills for study). It will be necessary to work on comprehension strategies alongside building the component skills of reading, including phonics and morphology.

## Vocabulary

A person can't read and understand a word if it is not in their vocabulary. When someone has a limited vocabulary, it affects their ability to comprehend text (Dymock & Nicholson, 2012). When a word can be decoded, but it is not in a learner's vocabulary, comprehension remains difficult (Kruidenier et al., 2010). Spoken language is generally simpler and less formal than written text. A learner's range of spoken vocabulary is generally smaller than the much wider range of words found in written texts. New words are acquired as we hear words used around us and through encountering a wider range of words when reading written text. Adults who have not been reading will not have had the opportunity to build a strong reading vocabulary, although they may have developed their language skills by listening to audiobooks, news, documentaries, television, as well as engaging in conversations with other adults (Dymock & Nicholson, 2012). Good readers read more and, as a result, become better readers. Conversely, poor readers read less, are therefore exposed to fewer words and have fewer opportunities to learn new vocabulary.

When it comes to reading, a person's reading vocabulary refers to the words they recognise and understand while reading. Their oral vocabulary includes the words they use when speaking or understand when listening (Bell & McCallum, 2015). Vocabulary knowledge is strongly related to reading proficiency and achievement in general (Beck et al., 2013). Building vocabulary is critical to support reading comprehension. Vocabulary growth is a gradual and ongoing process that is distinct from mastering the letters and sounds of the alphabet. It requires continuous development and has no endpoint.

Vocabulary knowledge can be categorised into different degrees of knowledge:

- unfamiliar words a person has never encountered
- words a person has heard but is uncertain about their meanings
- words a person recognises and has some understanding of
- words a person knows well and can confidently explain to others.

If someone can recognise and understand a word in a text but cannot provide its definition, that word can be considered part of their **receptive vocabulary**. This type of vocabulary relates to their ability to understand words when reading or listening. If a person can use a word when speaking or writing, it is considered part of their **expressive vocabulary** (Kane, 2018). Receptive vocabulary is usually larger than expressive vocabulary.

## Word consciousness

Building vocabulary is one of the critical components of reading instruction and it needs to be explicitly taught. Effective instructional strategies are needed to address the vocabulary gap for poor readers (Bell & McCallum, 2015). One component of instruction is fostering **word consciousness**. Word consciousness refers to a person's awareness and sensitivity towards words and goes beyond simply knowing the definitions of words. It involves having a deeper appreciation for language and a desire to learn and use new words (Kane, 2018). Tutors can encourage a curiosity about words by exploring words in texts.

Anne Bayetto, lecturer in special education at Flinders University, suggests that tutors read aloud to students for around five minutes every session – a mix of fiction and non-fiction. Reading provides an opportunity to demonstrate curiosity about words and word meanings and exposes learners to new vocabulary. The most effective way to build vocabulary is by reading extensively and regularly (Beck et al., 2013; Dymock & Nicholson, 2012; Kane, 2018). As well as building vocabulary, reading non-fiction also helps broaden general knowledge.

### *Strategies for fostering word consciousness*

- Model interest in exploring new vocabulary.
- Engage learners in interactive and enjoyable word activities.
- Show that word choice and usage can convey subtle differences.
- Teach morphology.
- Explore the origin and history of words through etymology.
- Support the learner's development of oral language through rich discussion of texts and ideas.
- Practise correcting mispronunciations.

Adapted from Kearns & Whaley (2018).

## Explicit vocabulary teaching

In addition to word consciousness, it is important to explicitly teach vocabulary. This means providing direct and clear instruction on specific words or terms, their meanings, and how to use them in context. An explicit approach to vocabulary instruction includes:

- definitions and the use of multiple contexts
- active and deep processing activities
- repeated exposure to a word and regular review.

With explicit instruction, learners can deepen their understanding of word meanings, explore word relationships, and better comprehend complex texts (Beck et al., 2013). Words can be defined and explored within sentences, paragraphs or texts, helping learners develop a deeper understanding of their usage (Ebbers & Denton, 2008). Providing examples and non-examples, asking questions, and showcasing word usage across different contexts helps the learner remember the word (Cockrum & Shanker, 2021). It is important to use active processing tasks of varying levels of difficulty, tailored to individual learners' capabilities (Wheldall et al., 2023).

Explicit vocabulary instruction is most effectively carried out in short bursts over several lessons (Beck et al., 2013). Regularly reviewing and practising words already learned is crucial in this process. By engaging in consistent review sessions, learners reinforce their understanding of and familiarity with the vocabulary they have encountered (Wheldall et al., 2023). Regular review is essential for learning and long-term memory consolidation (Marzano, 2000, as cited in Kane, 2018).

## Strategies for instruction

Vocabulary words should not be taught as a list. We recommend these four key strategies for instruction:

1. For EAL learners, teach concrete words that name a thing, like road, with pictures. Adults with English as a first language will generally know most of these words, although they may not know how to spell them.
2. Teach more abstract words with a semantic word matrix, clustering words with related meaning. **Semantic mapping**

3. Work on words connected by common roots, using the **morpheme matrix**.  
For example, there are many words with the base word 'form'... forms, formed, formal, formally, inform, informs, informed, information, reform, deformed, unformed. The *4,000 simple word families* list identifies these.<sup>7</sup>
4. Read a lot, focusing reading on texts dealing with similar topics. The Text Project has collated texts related to topics and using core vocabulary that can be downloaded for free.<sup>8</sup>

### Which vocabulary words are most important?

Vocabulary can be categorised into three groups according to how frequently words are used and how easily they may be understood (Beck et al., 2013).

- Tier 1 vocabulary includes commonly used and understood words that are used in everyday situations and conversations.
- Tier 2 words are generally the focus for building vocabulary with adult learners. Tier 2 words are found in written texts, may have multiple meanings, apply in different contexts/topics, may not easily be spelled phonetically and require explicit teaching. Morphology and etymology are useful approaches for analysing these words to understand the meaning and the origins of the less common spelling patterns found in these words. Building tier 2 vocabulary can enable a learner to use more descriptive words. Building tier 2 vocabulary will also improve comprehension skills, increasing a learner's confidence in reading a wider range of texts. Examples include words like valuable, benefit, clarify, liberate and reversible.<sup>9,10</sup>
- Tier 3 words are highly specialised words found in specific content areas. Adults who are studying in specific fields could focus on words drawn from their course. Building vocabulary in the subject area they are learning will support them in understanding course content more easily.

<sup>7</sup> *4,000 simple word families*: [https://textproject.org/wp-content/uploads/resources/WordZones\\_4000-simple-word-families.pdf](https://textproject.org/wp-content/uploads/resources/WordZones_4000-simple-word-families.pdf)

<sup>8</sup> Download free student texts and teacher resources from the Text Project: <https://textproject.org>

<sup>9</sup> Tier 2 words, sorted into categories: <https://msbinstructionalcoach.wordpress.com/wp-content/uploads/2012/08/tier-2-vocab-lists.pdf>

<sup>10</sup> Tier 2 words, sorted by number of syllables: <https://www.spelfabet.com.au/wp-content/uploads/2023/05/Tier-2-words-sorted-by-number-of-syllables-1.pdf>

With adult learners, generally tier 2 words that relate to their interests, learning goals, or area of study or work will be words to focus on. Words for each learner will therefore be different. Careful selection of words ensures that instruction is focused on those that are important, conceptually meaningful, and relate to learner interests and goals (Beck et al., 2013).

While it makes sense to identify tier 2 words that are relevant to the learner, this can be further refined to be more effective (Hiebert, 2020). The 5,586 most commonly occurring words appearing in school texts from K-12 have been identified and then these have been sorted into 2,500 morphological families (Hiebert, 2020). Words with semantically connected root words form a family. There is a distinction between root words and base words – base words can stand on their own but root words need a prefix or suffix added to make sense. For example, the base word, ‘form’, meaning shape, is the basis for many other words – deform, reform, conform, inform, information, informant, informed, informs, informing etc. The root word ‘min’, meaning small, needs additional suffixes like minimal, minimalist, minimise. Building learner knowledge of more common base and root words supports the strategy of considering word parts to work out word meanings.

Hiebert (2020) talks about the importance of ensuring that the most commonly occurring words (core vocabulary) are taught because these will make more complex texts more accessible for readers.

## Resources



Video: Vocabulary matters

[https://www.youtube.com/watch?v=PIC\\_f1G7Vyw&t=149s](https://www.youtube.com/watch?v=PIC_f1G7Vyw&t=149s)



## Teach vocabulary before reading a new text

To improve reading comprehension when introducing a new text, it is useful to pre-teach unfamiliar words to the learner (Bromley, 2007). By analysing the text beforehand, a tutor can identify tier 2 and 3 words that the learner may not be familiar with and provide explanations. The tutor can use various strategies, such as providing simple examples, offering synonyms or antonyms, using visual aids or engaging in brief discussions, to help the learner understand the meaning of these words. It's important to note that the teaching process doesn't need to be extensive at this stage. The goal is to provide enough information for the learner to recognise and comprehend the word when they encounter it in the text (Kane, 2018).

The tutor may choose to revisit the word later for a more detailed focus, after reading. Teaching the meaning of these words before reading helps ensure that the vocabulary becomes a part of the learner's spoken language before they encounter it in written form (Beck et al., 2013; National Research Council, 2012).

### ***Definitions and the use of multiple contexts***

Introduce a new word by explaining it in everyday, connected language rather than using a dictionary definition (Wheldall et al., 2023; Beck et al., 2013). Dictionary definitions can be overwhelming for struggling readers, as they often present multiple meanings that go beyond common usage. Show the word in written form, pronounce it several times, and encourage the learner to repeat it. It is important to deepen the learner's understanding by offering multiple examples that demonstrate how the word is used in different contexts and to highlight multiple meanings. To ensure learning is retained and words move into long-term memory, ensure multiple exposures to new words and provide ample instructional opportunities.

### ***Teach independent word learning strategies***

Adult learners will come across new words outside their tutoring sessions, so it's crucial to teach them how to determine the meaning of unfamiliar words when reading independently (Ebbers & Denton, 2008). A learner may be able to infer the meaning of unknown words by using **etymology** and **morphology** in conjunction with context clues (Ebbers & Denton, 2008). Context clues are words or phrases surrounding the unknown word that give hints about what it might mean. Sometimes, the context directly explains the new word's meaning. Other times, the context provides some information but not enough to be certain. In some cases, the context can of course lead to misunderstandings (Beck et al., 2013). Therefore, to better understand unknown words using context, teach learners to also consider the word's etymology and analyse its morphemes (Ebbers & Denton, 2008).

To support this, a tutor should teach:

- morphology, etymology, and how to use context clues
- how and when to use reference materials such as dictionaries (print or online), glossaries and thesauruses.

Resources for teaching vocabulary are provided in Part Three.

## Morphology

Being able to identify the meaningful parts of a word provides a learner with a strategy for understanding how a word is constructed. **Morphemes** are the smallest meaningful units in words and consist of base words or roots, and affixes like prefixes and suffixes (Bangs & Binder, 2016). They are frequently occurring word parts with consistent meanings. Viewed as a unit, they require less decoding, making reading easier. When a learner can consciously identify, understand and manipulate morphemes, they are demonstrating morphological awareness (Kirby et al., 2011). Morphological awareness is essential for decoding words, expanding vocabulary, and improving reading fluency and comprehension (Bangs & Binder, 2016; Bhattacharya, 2020).

### Morphemes

Prefixes attach to the front of a root or base word (e.g. un- in unhappy, re- in redo).

Suffixes attach to the end of a root or base word, or to other suffixes (e.g. -ing in flying, -able in watchable, -ment and s in judgements).

Base words are complete English words and can stand alone (e.g. place).

Roots are the core, meaningful part of a word, original word or word part from the language of origin (usually Latin or Greek). Root words require the addition of prefixes or suffixes to convey meaning (e.g. vis has a Latin origin meaning to see; it appears in words like visual, vision, vista, visor).

Teaching the most common prefixes and suffixes and what they usually mean provides a reader with a strategy for understanding the meaning of the word. The 20 most common prefixes make up 97% of all prefixed words, and the 14 most frequently used word roots provide clues to the meaning of over 100,000 words (Hiebert, 2020). Morphology helps build vocabulary and therefore comprehension. Morphology also helps build spelling skills – see Chapter 4: Writing for more about this.

Explicit instruction in morphology equips learners with a valuable strategy for determining the meaning of unfamiliar words but also leads to improvements in decoding and spelling (Tighe & Binder, 2015; Tighe & Schatschneider, 2016). It has been shown that instruction in morphology for adults, combined with phonemic awareness and spelling, leads to significant gains in word recognition and spelling (Alamprese et al., 2011; Gray, 2019).

Morphology instruction includes two approaches – creating morphological awareness and teaching word families. **Morphological awareness** – the understanding that word parts convey meaning – is taught explicitly by explaining how morphemes work, exploring common morphemes and using graphic organisers to analyse word structures.

A **morphological family** is a set of words that share a common root or base. For example, happy, happiness, unhappiness, unhappy, happier, happiest. The suffixes that are added change the part of speech – they can be changed from adjectives to nouns or verbs. Exploring morphologically related words extends knowledge beyond one base word to include all other related words, increasing vocabulary by several words (To et al., 2016). Exploring morphological families can be connected to discussions about etymology (see next section).

Visual aids and graphic organisers can be used to teach morphological families effectively, as they make it easier for learners to see how morphemes combine and relate to each other (Deacon & Bryant, 2006).

Common prefixes

Common suffixes

Greek and Latin root words

Word matrix

Prefixes and suffixes generally have a consistent meaning, and their spelling remains consistent when they are added to base or root words. However, when suffixes are added to the base or root, the spelling of the end of the base or root often needs to be changed – see spelling section in Chapter 4: Writing.

## Resources



This is what morphology instruction can look like.

Video: 05 Morphology to support word analysis

<https://www.youtube.com/watch?v=Agpumso2r90>



## Stop and think

How do you think you would introduce morphology to your learners?

## Etymology

Etymology, the study of word origins, can provide insight into families of words with the same origin. When meanings for common base words, prefixes and suffixes are taught, it becomes possible to understand a much wider range of words. For example, the meaning of the Latin root word ‘struct’ is build, so the meanings of deconstruct, reconstruct and instruction can be worked out drawing on knowledge of prefixes and suffixes.

English has lots of words that have come from other languages. This relates to the history of England which was invaded by the Scandinavians, the Anglo-Saxons and the French, and words from their languages were incorporated into English (Moats, 2020). In the 1500s scholars in England also borrowed words from Greek and Latin, particularly scientific and medical terminology. Etymological knowledge also helps us understand spelling. There are a number of distinct spelling patterns that are not orthographically opaque that come from Greek, Latin and French. For example, the spelling pattern <ch> sounding like the /sh/ sound appears in French words, like in the word ‘chef’.

Some learners will be interested in the history of invasions of England which provides an explanation for the multiple spellings of the same sound and insight into word origins. It can be described as archaeological work, diving into the historical reasons that words and spellings have come to exist. A timeline illustrating this history can be used to prompt discussion.

### Word origins

When learning new words and spelling patterns, building a multilayered understanding of both the orthographic pattern and the word origin helps create a rich neural network that supports moving knowledge into long-term memory. Spelling patterns link with semantic word families, and this provides a meaningful reason for a spelling pattern. The most common base words, prefixes and suffixes can be taught to provide foundation knowledge in this area. Once adults know how to find etymological information, they can be more self-directed to seek out word origins for words of interest to them.

Learning should build on prior knowledge and relate to the learner's experiences. Commonly, adults encounter complicated long words in relation to health issues. The Greek and Latin origins of these words can provide insight into how medical words can be understood and spelled. The word parts often provide some description of the medical issue, and this knowledge can help deepen understanding not only of the word but of the medical condition itself.

### Resources



This is what instruction in etymology can look like.

Video: 04 Etymology to Build Word Knowledge

<https://www.youtube.com/watch?v=c4HDwbC6KzU>



## **Active and deep processing activities**

Active and deep processing can be encouraged through strategic questioning and using graphic organisers.

**Strategic questioning** encourages deeper thinking about words and meanings.

Asking questions can be a valuable tool for engaging learners in deep processing of new vocabulary words (Ebbers & Denton, 2008). *What* and *why* questions can prompt further thinking about content and meaning. For example, when learning about the word ‘gnaw’, the following questions could be asked:

- “What kinds of food might you gnaw – a bowl of soup, corn on the cob, an ice cream, an apple? Why or why not?”
- “What are some other things that might be gnawed? Who or what might be doing the gnawing?”
- “A dog might gnaw at its bone, but would it gnaw at a piece of chicken? Why or why not?”

## **Graphic organisers**

Graphic organisers to support vocabulary building activities can be found in Part Three.

New word analysis

Semantic mapping

## Fluency

Fluency is defined as “Reasonably accurate reading, at an appropriate rate, with suitable expression, that leads to accurate and deep comprehension and motivation to read” (Hasbrouck, 2020). Comprehension is demonstrated with fluency through tone, pauses, accuracy and pace (Wheldall et al., 2023). Fluency depends on the development of the underpinning skills, phonemic awareness and phonic knowledge, which build decoding ability and enable words to be retained in long-term memory. Having a large bank of words in long-term memory means that a reader can focus on reading fluently and for comprehension, rather than focusing on word-level decoding. Fluency can also be developed through reading practice.

Reading fluency is a multifaceted and complex skill. The components of fluency can be demonstrated at two levels: word reading fluency and text reading fluency. Word reading fluency, also called automaticity, is the ability to read individual words from memory correctly and without hesitation. Fluent word reading is a precursor to fluent text reading. Text (or passage) reading fluency comprises three components: accuracy, automaticity (rate), and prosody (expression). A learner will have poor text reading fluency if they read too many words incorrectly, read too slowly, or if they read with effort or without expression.

Fluency doesn't necessarily develop automatically once learners are able to decode words. In the early stages of learning to read, readers may be accurate but slow and inefficient at recognising words. Less fluent readers may need to focus their attention on figuring out the words, leaving them little attention for understanding the meaning of the text. Continued reading practice helps word recognition become more automatic, rapid and effortless. As phonemic awareness and phonic skills are acquired to the point that a learner can quickly recognise sounds and spelling patterns in words, decoding becomes less demanding. The next step is to move towards reading without decoding every word because a learner has built a large memory bank of words.



Fluency develops as a learner's word bank grows – the more words they have learnt so that they are automatically recognised and no longer need decoding, the easier it is to read. Fast, accurate and effortless word recognition, built through practice, is called automaticity. Fluent readers no longer concentrate on decoding words, and they can focus their attention on what the text means. They can make connections between the ideas in the text and their background knowledge. Fluent word readers recognise words and comprehend them at the same time. It is difficult to understand text when reading is not fluent. Lack of fluency is a sign that a learner is using their cognitive energy for decoding and understanding text at the word and sentence level.

Fluency is also about reading with expression. To read with expression, readers must be able to divide the text into meaningful chunks. Readers must know to pause appropriately within a sentence and at the end of a sentence. They need to know when to change emphasis and tone. This is the difference between reading a list of words and reading connected, meaningful text.

## Orthographic mapping

Reading fluency depends on having a large and instantly accessible sight word vocabulary in long-term memory. The reading brain does not store words as images. Despite a common misperception that words are remembered through visual recognition as whole units, research has now established that orthographic mapping more accurately explains the process of learning words (Ehri, 2022). This has been validated in studies using MRI scans, showing what parts of the brain are activated when learning words (Seidenberg, 2017). Words are not memorised as unanalysed wholes; they must be analysed to enable mapping. Word analysis depends on phonemic awareness and sound-letter-knowledge. Learning words happens through orthographic mapping (Ehri, 2022).

**Orthographic mapping** is the process readers use to store written words for immediate, effortless retrieval. It is the process of turning unfamiliar written words into familiar, instantaneously accessible sight words in long-term memory (Kilpatrick, 2015). Orthographic mapping draws on our memory of how a word is spoken and links the sequence of sounds to the sequence of letter patterns that represent those sounds. At the core of orthographic mapping are grapheme–phoneme connections that provide a powerful mnemonic system for remembering words. Words that have been learnt in this way become sight words – words that are instantly recognised and no longer need to be decoded.

Orthographic mapping occurs when, in the course of reading specific words, readers form connections between written units, either single graphemes or larger spelling patterns, and spoken units, either phonemes or morphemes. These connections are retained in memory along with meanings and enable readers to recognise the words by sight. (Ehri, 2014, p. 5)

Learners need to know how to apply phonological awareness and phonics knowledge to new words and be able to independently bond word sequences into long-term memory. It cannot take place without attention to phonology applied to word analysis.

Any instructional method that takes attention away from the sequences of letters in words will interfere with efficient orthographic mapping. Building orthographic mapping skills enables a learner to read more independently, as they are able to draw on their sound-letter knowledge and decoding skills to work out words for themselves.

A **sight word** is a word that is instantly and effortlessly recognisable from memory regardless of whether it is phonically regular or irregular. It is not just an irregular word, such as 'one', 'said', or 'yacht', but any word that a learner no longer needs to sound out. This includes long, short, irregular, regular, high frequency and low frequency words (Peltier, 2022). Once a word becomes a sight word, the visual-word form area, or the brain's letterbox, almost instantly connects written symbols on a page to the word's pronunciation and meaning (Dehaene, 2010). After multiple exposures to a written word, the word becomes instantly familiar to typically developing readers (Kilpatrick, 2015). Learners with learning disabilities, such as dyslexia, may need more exposure.

When learning words with an irregular or unusual spelling, the same process of word analysis applies. Usually, only one part of the word has an unusual pattern. Other words with the same unusual orthographic pattern should be taught as a set of words with the same pattern. Sometimes unusual patterns are remnants of older English spellings, so investigating the origin of words can reveal why the spelling exists.

The Look, Say, Write, Cover, Check approach to teaching words – as unanalysed wholes – is not supported by evidence. Any strategy that does not pay attention to the letter-sound correspondences within a word, and instead takes a learner's attention away from the sounds, does not support the orthographic mapping process and should not be used with learners.

Other **strategies not supported by evidence** include:

- word searches
- matching the words with the picture
- remembering the word shape
- cloze (matching exercise)
- three-cueing model of reading – picture, first letter, context
- four-cueing model – letters, grammar, meaning, context.

We do not recommend these strategies. Learners who have developed any of these approaches should undo these habits and be taught to use more effective strategies for reading. Adult learners who have developed inefficient reading strategies or compensating strategies using their visual memories will need to undo bad habits, such as guessing at unknown words by using context and first letter, and learn how to read by attending to grapheme–phoneme correspondences.

### **Fluency instruction**

Adults can improve their reading fluency. For adults with poor decoding or word analysis skills, direct instruction in word analysis supports improvements in reading fluency (Kruidenier et al., 2010). Word analysis of both sound–letter patterns and meaningful word parts (morphology) has been found to improve comprehension in adults (To et al., 2014). Similarly, building a large vocabulary supports fluency. Knowing how to say and spell a word, what its meaningful parts are, and what it means in different contexts enables a reader to recognise and read words more fluently (Burt & Coon, n.d.).

A guided repeated reading program for adults learning to read found significant gains in reading fluency through repeated reading, choral reading and teacher-guided reading, paired with instruction in phonics, vocabulary building and comprehension strategy support (Shore et al., 2015). The program also reported an increase in the variety of texts readers chose to read as well as improvements in adults' feelings about how well they read. Gray et al. (2018) demonstrated in a randomised controlled trial of adult struggling readers that those learners "who were instructed in morpho-phonemic analysis, taught word origins, morpheme and syllable structures showed greater gains in reading unfamiliar words on standardized tests of word reading, including word attack and word recognition, than those learners instructed in traditional whole word study..."

Fluency does not manifest at a particular stage of reading development. Fluency changes, depending on what readers are reading, their familiarity with the words, and the amount they practise with reading text. Even very skilled readers may read in a slow, laboured way when reading texts with many unfamiliar words or topics. For example, readers who are usually fluent may not be able to read technical material fluently, such as a textbook about nuclear physics or an article in a medical journal.

It is important to note that fluency instruction should be with a text that a learner can read at their independent level. It is at this level that learners are able to practise on speed and expression rather than decoding.

### ***Determining reading levels***

**Independent level:** text in which no more than approximately 1 in 20 words is difficult for the reader.

Accuracy level: 95-100%

Independent-level texts are appropriate if students are reading independently with little or no instructional support. Independent-level texts are often used to build fluency.

**Instructional level:** text in which no more than approximately 1 in 10 words is difficult for the reader. Students need instructional support from the tutor.

Accuracy level: 90-94%

Instructional-level texts are appropriate for small-group instruction when teachers provide assistance as students read.

**Frustration level:** text in which more than 1 in 10 words are too difficult for the reader.

Accuracy level: less than 90%

Frustration-level texts can be used when extensive support and instruction are provided by the teacher during one-on-one instruction.

### ***Calculating the per cent accuracy level***

Divide the number of words read correctly by the total number of words read to calculate the per cent accuracy level.

Number of words read correctly/Total words read

For example, if a learner reads 120 words correctly from a text that contains 125 words, the accuracy level is 96%.

$120 \div 125 = (.96)$  or 96%

96% accuracy means that the text is at the student's independent reading level.

Sources: Partnership for Reading (n.d.); Gunning (2002).

### ***Strategies for building reading fluency***

**1. Repeated oral reading** with support improves reading fluency and overall reading achievement. Learners who read and re-read passages orally as they receive guidance and/or feedback become more fluent readers (Shore et al., 2015). Repeated oral reading substantially improves word recognition, speed and accuracy as well as fluency. To a lesser but still considerable extent, repeated oral reading also improves reading comprehension. Repeated oral reading improves the reading ability of all learners. Generally, about four readings of a text will be enough (Ortlieb & Young, 2016).

The text chosen for fluency exercises should be at the independent level for the learner and should be up to 250 words in length, although for beginning readers this will simply be one sentence. With fluency activities, the first reading may involve some decoding or analysis of unknown words. If the learner does not know a word after three seconds, then provide this. Subsequent readings shift a learner's focus to reading for fluency. Provide specific positive and corrective feedback after each reading, mentioning accuracy, expression or reading rate.

This can be a timed activity. The purpose of timing is to see gains and give feedback on progress, supporting learner development in their reading accuracy and expression, not just reading speed.

Repeated reading for fluency can be one of the smaller components of a lesson. A learner might be asked to practise reading a text aloud between lessons and then this can be read again at the beginning of a session. Depending on the learning needs identified in assessment, the majority of the time in a session is generally better used for building phonic knowledge and orthographic mapping skills and building words stored in long-term memory.

**2. Echo reading** involves the tutor reading a line or sentence and the learner then reading it again, matching reading expression, reading rate and accuracy. This creates many opportunities for positive feedback. The tutor should model fluent and expressive reading to support a learner in building this skill.

**3. Cloze reading** involves the tutor reading a text aloud with the learner reading silently alongside. Periodically the tutor should stop and let the learner read the next word or the rest of the sentence. This supports a learner to understand a text and build reading confidence. Again, the tutor should model reading with accuracy, expression and a manageable reading rate.

## Resources



This is what fluency instruction can look like.

Video: 03 Reading Fluency

<https://www.youtube.com/watch?v=QqXWjVTeL7E>



# Comprehension

Comprehension is the aim of reading. Reading comprehension is the ability to understand, analyse and interpret text. Recalling the simple view of reading, reading comprehension is the product of decoding and language comprehension (Tighe & Binder, 2015). It is a complex process that depends on a reader having enough reading skills to follow the ideas presented in the text. “Successful comprehension occurs when a reader has good word reading skills, strong vocabulary knowledge, an understanding of grammatical rules, inference-making skills and background knowledge that enable them to create a mental model of what they read” (Wheldall et al., 2023).

Reading skills are developed as previously described – by building phonemic awareness, phonics knowledge, fluency and vocabulary. Decoding and analysing words support learning and help a reader store a large number of words in long-term memory (no longer needing decoding). When a reader has a large bank of words in long-term memory, they are better equipped to read fluently and will have the cognitive capacity to think about the meaning of the text they are reading. However, competency in these foundational reading skills alone will not result in good reading comprehension.

**Good readers** approach reading with intent and actively seek information. They begin with a purpose in mind – to learn, to find specific information, to problem-solve or for entertainment. They monitor their understanding as they read, relating text to their existing knowledge and experience, asking questions and identifying the key ideas. Good readers actively adapt their comprehension approach based on their purpose. For example, good readers might:

- skim the first few pages of a book to see if it’s something they’re interested in reading
- check the contents page or index to find what they are looking for
- read relevant text sections more closely to assess how well it covers the topic area they are addressing
- read closely and sequentially when following instructions like a recipe
- make inferences when reading news articles, maybe considering the broader context of news events and motivations of people involved
- rapidly scan for relevant search results on search engine pages
- consider what they know about a particular historical period before beginning a historical novel.

When a good reader begins to lose the meaning of a text, they may slow down their reading, re-read text, make inferences based on surrounding text, or use their knowledge of morphology to see if they can work out word meanings. Good readers may also take notes as they read to help retain information, build a concept map to help create a mental representation of the content, and look up unknown words or concepts.

In contrast, **struggling readers** often lack a clear purpose for reading, struggle to skim or scan for key information, and have difficulty following complex instructions or making inferences. They may also have trouble monitoring their understanding, linking their background knowledge to a new text, and distinguishing key details. Instruction aims to teach learners to engage actively with text, to make connections between their prior knowledge and the text, and to approach reading in a more purposeful and self-regulated way (Gajria & McAlenney, 2020). Studies indicate that adults who are struggling with reading are more likely to be able to recall ideas from a text or locate a single piece of information in a simple text, but they are often not able to synthesise information from longer or more complex texts (Kruidenier et al., 2010). The strategies that can help build this skill are, firstly, using comprehension monitoring to ensure that text is understood while reading and, secondly, summarising text to make connections.

Several cognitive challenges can explain why some struggling readers find it hard to make inferences – poor working memory, attention issues or language difficulties (Mellard et al., 2015; Nayton, 2013). For someone with a low working memory, comprehension is likely to be challenging. Understanding a sentence involves remembering the words and the meaning of a string of words within the sentence, recalling information from preceding text, connecting and understanding syntactic information, linking to prior knowledge, monitoring text coherence, and making inferences (Nayton, 2013). These all place a high demand on working memory, so for some learners, reducing cognitive load by reducing the complexity of the task will be helpful.

## Building comprehension

Several factors, beyond foundation reading skills, promote skilled comprehension – background knowledge, rich vocabulary knowledge and use of metacognitive strategies (Birsh & Carreker, 2018; Sedita, 2021; Talwar et al., 2021).

### *Strategies for building reading comprehension*

Research in reading comprehension suggests the following are useful:

1. Build skills and knowledge in the areas that contribute to reading comprehension – phonemic awareness, phonics, fluency, vocabulary, morphology, sentence structure and text structures.
2. Build background knowledge and vocabulary in the relevant interest/topic area.
3. Explicitly teach comprehension strategies, both cognitive and metacognitive.

(National Research Council, 2012)

**Background knowledge** is the topic information that a reader brings to a text. It includes both general knowledge and topic-specific knowledge and can be informed by personal experience, prior learning, or both. Background knowledge is essential for reading comprehension, as the more background knowledge a reader has about the text being read, the better they will be able to understand it (Greenberg, 2021). This is illustrated by considering the idea that even a good reader is likely to struggle to read a text about a specialised topic they know very little about, such as astrophysics.

Adults who are still learning to read are more likely to be able to understand texts relating to everyday activities than academic writing, as they have not had the opportunity to build background knowledge through reading (Greenberg, 2021). This impacts adults who start to engage in post-secondary education or in workplaces where texts are provided with an assumption of prior knowledge. They are then in the position of not being able to understand or learn from these texts. Working with these adults requires facilitating access to content prior to reading a text, and this might be through conversation or video, for example.

Background knowledge plays an important part in how well a reader understands a text. It has been argued that background knowledge has a greater impact on reading comprehension than teaching comprehension strategies (Willingham, 2023). Learning how to activate and use background knowledge is a comprehension strategy. Background knowledge allows readers to make connections between the text and their own experiences and knowledge, improving their understanding of the text. Wexler (2020) noted that students with low reading skills but high background knowledge understood 80% of a text, while readers with high reading skills but low background knowledge understood 53% of the text.

## Instructional approaches

Adults should be encouraged to develop **metacognitive strategies** so they understand the range of **cognitive strategies** they can draw on to help them understand texts.

**Model** metacognitive strategies by showing active engagement with text. When you model thinking aloud, you can demonstrate how you navigate the text, show your own curiosity and thinking, and show a learner useful ways to respond to text – good questions to ask, things to be curious about and working out meaning. While the tutor may model this initially, and templates provide question prompts, the aim is for the learner to direct thinking and questioning themselves as they become more confident.

## Before, during and after reading strategies

Strategy instruction can be organised into before, during and after reading activities that encourage active reading for comprehension (Texas Education Agency, n.d.).

**Before reading**, explicit strategies for supporting comprehension include activating prior knowledge, identifying new vocabulary and having a purpose for reading – with adult learners, this might relate to an area of study or to expand knowledge of an area of interest to the learner. Reading the title, scanning the text and looking at diagrams/pictures can help initiate curiosity and a conversation about the topic. Activating prior knowledge by asking what a learner already knows about a topic makes the brain ‘sticky’, open to new information. New and related information will be easier to learn as it builds on existing knowledge. This is called ‘priming’.<sup>11</sup>

<sup>11</sup> *Priming in psychology* | Very Well Mind: <https://www.verywellmind.com/priming-and-the-psychology-of-memory-4173092>

For learners who are still building foundation reading skills, the cognitive load imposed by reading can limit their ability to absorb new information from text. For learners who are building new subject content knowledge, cognitive load can be managed by providing new information first via other media or discussion. The text will then be more easily understood and can reinforce this learning.

**During reading**, strategies aim to engage a reader actively with the text. This may include asking a learner to make notes, mark the text with sticky notes or jot down questions. Metacognitive skills involve self-monitoring for understanding while reading. When meaning breaks down – at a word, sentence or paragraph level – a reader needs to apply a fix-up strategy. Strategies might be re-reading, stopping and thinking, decoding, learning vocabulary, slowing down reading, or detailed outlining. Stopping to link ideas with a reader's knowledge, experience or thoughts that are generated by the text can help a reader relate to and understand the text. Discussion can provide opportunities for a tutor to think aloud, to demonstrate how a good reader makes sense of text content and for a learner to connect ideas with their own ideas.

**After reading**, a reader's ability to accurately retell content from text demonstrates how well they understand the text. A learner may need to practise finding the main ideas in texts. A graphic organiser can help identify key ideas and focus a reader on the important points to include in a summary. Commonly the questions who? what? when? where? why? and how? are used as prompts for a learner to review the text and find specific pieces of information. Writing about reading supports the comprehension and learning process.

## Resources



This is what comprehension instruction might look like.

Video: 07 Comprehension Instruction

<https://www.youtube.com/watch?v=9TJ-af04B48>



## Metacognitive strategies

An adult learner needs to build both cognitive and metacognitive strategies for making sense of text. Metacognitive thinking – thinking about learning and use of strategies – helps facilitate the process of becoming an independent learner (Hock & Mellard, 2005). Metacognitive strategies help readers monitor and assess their own understanding of the text. Strategies include monitoring comprehension, activating background knowledge and self-questioning (am I using the right strategy?) (Swain, 2023).

Metacognitive thinking includes reviewing the use of cognitive strategies by asking questions like “Is this strategy working? Do I need to try another approach? I don’t understand – shall I try re-reading this?”

If meaning is lost while reading, teach learners to choose a fix-up strategy – re-read, stop and think, slow down, decode, look up vocabulary.

Several graphic organisers can support learners to use these strategies. The figure below provides some examples.

Metacognitive strategy	What it is	When to use it	Graphic organiser
Activating background knowledge	Accessing and thinking about relevant background knowledge in relation to a new text	Before and during reading	What I know, what I want to know, what I learned (KWL) chart
Predicting	Making educated guesses about content based on the title, headings, introductory sentences and other clues	Before and during reading	KWL chart
Questioning	Asking questions	Before, during and after reading	KWL chart
Monitoring comprehension	Tracking one’s own understanding of text to identify areas of misunderstanding and fix misunderstanding	During reading	Stop and think Slow down Re-read Decode Look up vocab



## Cognitive strategies

Cognitive comprehension skills include being able to identify the main idea, create mental concept models, summarise, make inferences and draw conclusions, as well as comparing and contrasting elements of the text with other texts and evaluating critically. It is important to note that comprehension strategies only need to be taught when needed, until mastered. More strategy instruction does not necessarily lead to better outcomes (Petscher et al., 2020).

Mastering these cognitive skills involves several steps. For example, making inferences depends on understanding syntax and drawing on background knowledge and memory. The skill of making inferences can be developed by helping learners know when to use background knowledge, vocabulary and to make connections. Engaging with text for meaning will also be more effective when both reading and writing strategies for comprehension are used.

Comprehension is best developed in the context of the learning focus. Comprehension skills and strategies are not generic. They are used differently depending on the text, task and reader (Buckingham, 2023b). Teaching comprehension skills in the abstract or focusing on individual skill components has limited effect (Wheldall et al., 2023).

**Writing strategies** to support comprehension include learning about constructing compound and complex sentences and cohesive ties (and, because, before, but, so), so that learners become familiar with the structures and language encountered in written texts (Wheldall et al., 2023). When asked to write about learning material, learners are required to engage more deeply with content, making connections, clarifying ideas and organising their thoughts. For more information about writing strategies please review Chapter 4: Writing.

Note: Text chosen for comprehension work should be related to the learner's interests or focus for learning and should be at a level that does not overload a learner with decoding and vocabulary challenges (text should be at the instructional level – no more than 1 in 10 words is unfamiliar). It should also be a text where the learner has enough relevant background knowledge to be able to make sense of it.

There are several more graphic organisers to support learners building these strategies.

Cognitive strategy	What it is	When to use it	Graphic organiser
<b>Inferencing</b>	Using information from the text and from one's own knowledge to read 'between the lines'	Before, during, and after reading	Concept or mind map, Venn diagram
<b>Understanding text structures</b>	Understanding the structure or organisation of a text to facilitate comprehension; includes understanding syntax and sentence level structures	Before and during reading	Graphic organisers for different text structures – description, Compare and contrast, Problem and solution, Sequence of events, Causes and effect
<b>Visualising</b>	Creating a mental representation of the ideas	During reading	Concept map
<b>Summarising</b>	Deleting irrelevant details, combining similar ideas, extracting main ideas, and connecting major themes	After reading	Concept or mind map Summarising text What's the main idea?
<b>Reading with purpose</b>	Skimming, scanning or close reading		



## Scanning and skimming

Some learners assume they need to read their textbook from cover to cover, and it is helpful for them to know how to get an overview of a topic and how to find specific information when needed.

Showing a learner how to navigate relevant text types – tables, reports, manuals etc. – can make reading tasks more manageable. Skimming and scanning can help learners navigate textbooks and manual texts to get an overview of information and to find specific information when doing assignments.

Skimming, scanning and close reading are different techniques for reading text. They have different purposes.

**Skimming** is rapid reading to get an overview of a text. It can be helpful to get an idea of text content, main points and concepts.

**Scanning** is useful for finding specific information. It involves quick reading, using text navigation aids, to find specific facts. Readers look for specific key words or phrases relevant to the search.

Using headings, contents page and indexes helps a reader find and navigate text-based information. Knowing that subheadings, highlight boxes, summaries and conclusions provide the key ideas helps facilitate a succinct understanding of the text. The rapid reading involved in scanning and skimming is difficult for learners who are still decoding words and are not yet confident readers. Engaging in study will be challenging for learners still building these skills.

**Close reading** is a slower and more careful reading of a text, paying attention to details. Close reading can support understanding more complex texts. A text might be read several times to develop a deeper understanding of the content. The first reading can tackle decoding or syntax questions and identify the main ideas. The second reading would consider the author's purpose and the structure of the text, and the third reading would enquire more deeply into the ideas within the text, linking it with reader knowledge and drawing inferences and conclusions (Starke, 2021). Making notes or creating graphic depictions can support this process. Close reading is useful for both emerging readers and those who are more confident.

## Gradual release of responsibility model

An appropriate model for explicitly teaching reading comprehension strategies is the gradual release of responsibility model (Pearson & Gallagher, 1983). This is remembered as **I do, we do, you do**. In this model, responsibility for the use of a strategy gradually transfers from the tutor to the learner through stages (Duke & Pearson, 2002):

### *Stages in transferring responsibility*

1. **Explicit description:** Explain the strategy and when and how it should be used. Provide examples to assist this explanation and, where possible, make connections to the learner's background knowledge.
2. **Modelling:** Read the text out loud and use a 'think aloud' to share thoughts with the learner. Use a graphic organiser if appropriate. A think aloud involves the tutor verbalising their thoughts as they demonstrate the comprehension strategy. Think alouds are helpful because they allow the learner to see how a proficient reader thinks about and processes text. They can be used with any type of text and with students of all ages and abilities.
3. **Guided practice:** Work together to apply the strategy and gradually release responsibility to the learner i.e. provide less support as the learner becomes more proficient with the strategy.
4. **Independent practice:** Monitor as the learner applies the strategy on their own. Support them to integrate this strategy into their repertoire of comprehension strategies and review the strategy as necessary.

(Adapted from Duke & Pearson, 2002, pp. 208–210)



### Remember...

1. Background knowledge is essential for reading comprehension. Even skilled readers may struggle with reading about unfamiliar topics, such as astrophysics.
2. To support learners, provide relevant background knowledge through discussion or no-text media, or use materials that connect with their existing knowledge and experiences.
3. Explicitly teach cognitive and metacognitive comprehension strategies using the gradual release of responsibility model.
4. Teach each strategy individually until mastered, eventually building up a repertoire of strategies and then support metacognitive thinking.
5. Once comprehension strategies are learnt, they do not require reteaching and instead should become a topic for occasional review.



### Stop and think

How could you apply the I do, we do, you do approach to instruction?

## Resources

- Practising switching sounds in words helps build phonemic awareness. Word chains are an activity that supports this. Word chain exercises listed in order of difficulty can be found on this page: <https://www.dyslexiclogic.com/blending>
- There are several apps that can help build phonemic awareness and phonic skills. Alphabetic code chart with synthetic phonics principles: [https://alphabeticcodecharts.com/wp-content/uploads/2021/01/AAA\\_Training\\_The-English-Alphabetic-Code.pdf](https://alphabeticcodecharts.com/wp-content/uploads/2021/01/AAA_Training_The-English-Alphabetic-Code.pdf)
- Teaching points for simple to complex alphabetic code: [https://alphabeticcodecharts.com/wp-content/uploads/2021/01/B2\\_DH-Alph-Code-overview-with-teaching-points-plain-1.pdf](https://alphabeticcodecharts.com/wp-content/uploads/2021/01/B2_DH-Alph-Code-overview-with-teaching-points-plain-1.pdf)
- SPELD SA Intensive Literacy Program <https://speldsa.org.au/pages/intensive-literacy-program>
- Online blending board: <https://research.dwi.ufl.edu/op.n/file/bca9ju45kvvrvoan/?embed>  
and blending board video tutorial: <https://www.youtube.com/watch?v=o9hDsQru0bk>
- Phinder word lists with letter-sound patterns: <https://www.devinkearns.com/phinder/>
- Phonics activity pack, Dyslexia/SPELD: <https://dsf.net.au/booster-pack/more-family-resources/phonics-activity-pack>
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- [Issue 14, December 2022 \(nomanis.com.au\)](https://nomanis.com.au)

## Reading material

- Read Works are short texts for different levels, with collections relating to a range of topic areas, designed to support the development of background knowledge, vocabulary and reading comprehension: <https://www.readworks.org>
- News in Levels website provides non-fiction articles written in simpler text to enable reading practice: <https://www.newsinlevels.com>
- Breaking News English is another website with news written in simpler language (note that the spelling exercises provided do not align with the approach we are taking to teaching spelling): <https://breakingnewsenglish.com>

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# Chapter 4

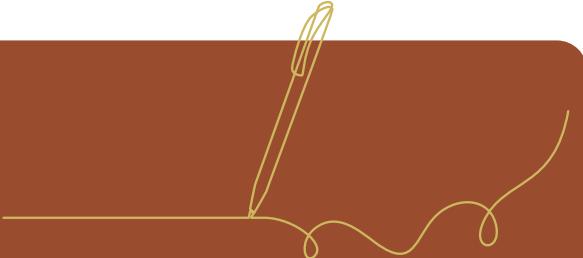
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## Writing



4

## Main points



- Writing is harder than reading, and component skills for writing need to be taught explicitly.
- The Simple View of Writing asserts that transcription skills (handwriting and spelling) as well as text generation (generating ideas) enable skilled writing.
- Learning to read supports building good writing skills. Conversely, learning to write builds reading skills.
- Building writing skills includes handwriting, spelling, constructing sentences, paragraphs and more extended writing.
- Writing can be for a wide range of purposes – analysing examples of text types as writing models is helpful (emails, work documents etc.)
- Writing supports and deepens content learning in subject areas – writing should be taught in the learning context, related to the learner's goals.
- Like reading, writing skills improve both work and life outcomes for adults.

## Introduction

This chapter looks at the underpinning theory that supports our recommended approaches for teaching writing and provides guidance on effective instructional approaches for undertaking this with a learner. It begins with teaching handwriting, moves into spelling and then progresses into teaching sentences, paragraphs and more extended text. Each learner will have a different starting point and focus for their learning. Some learners will be focused on learning to write simple everyday texts, while others may be needing support to master the writing requirements in their study. Some may be interested in creative writing, and there is a section on teaching creative writing. You can draw on the teaching aspects that are relevant for your learner.

4

## The connection between reading and writing

Writing is a communication skill that enables adults to engage with the world and, like reading, written skills influence both personal and vocational outcomes. Significantly, this includes social outcomes and active participation in society (Vera-Toscano et al., 2017). On a daily basis, we usually need to read and write, both physically and online – lists, notes, text messages, online forms, emails, work documents and so on. Adults who have not developed strong reading and writing skills generally need explicit and intensive instruction to build their skills in both reading and writing. Reading and writing instruction should be integrated (McLean, 2022). For adults who are studying, most courses include writing to some extent, and the writing demands of many jobs are increasing (Graham & Perin, 2007). Preparing adults for study or work often involves building writing skills. Increasing writing skills helps create opportunities for greater engagement in everyday life, study and work.

While there is substantial research on writing instruction with children and adolescents, there is less on adults. The work on writing instruction with children, and more particularly with adolescents, provides insight and direction into effective instruction with adults. The Reading to Learn intervention with adolescents recommends that explicit teaching in reading and writing supports students to learn (Acevedo & Rose, 2007). Self-regulated strategy instruction with adults has found positive results for writing and self-efficacy (MacArthur et al., 2022). Ideas within this approach include think-aloud modelling, collaborative practice and gradual release of responsibility.

Writing is harder than reading, so writing skills are generally lower than reading skills. Regular reading improves writing skills and grammar (Cunningham & Stanovich, 1997; Krashen, 2004) as well as spelling and verbal vocabulary (Sullivan & Brown, 2014). However, the literature also suggests that the relationship between reading and writing is bidirectional: word recognition can impact spelling and the ability to write fluently, but learning to spell can also influence word recognition (Berninger et al., 2002). This means that writing helps improve reading and reading improves writing (Graham et al., 2018). In fact, writing instruction has a high impact on reading comprehension (Hochman & Wexler, 2017; Truckenmiller & Chandler, 2023).

Writing can also significantly promote and deepen learning and reading comprehension and build analytic skills (Wexler, 2024). When learners are asked to write about what they have been learning, they engage more deeply with the content as they review the material, integrating this with their own thinking, which increases retention of the information (Graham & Hebert, 2011). Learning to write more complex sentences enables a learner to become familiar with the structures and language they encounter in written texts, leading to improved reading comprehension. Reviewing material, making connections, clarifying, and organising their thoughts help build analytic thinking (Sedita, 2023).

We already know that reading comprehension is supported by building background and general knowledge (Wheldall et al., 2023). However, learning comprehension skills and building vocabulary in the abstract are not very effective. Perhaps the best vocabulary list is a book, suggesting that a learner's reading/textbook provides the context for vocabulary learnt. Similarly, writing skills should be taught in the context of the content that is being learnt (Sedita, 2023). Writing should be tied to the knowledge that the learner is building – in their area of interest, study or work. This includes teaching grammar and writing conventions in the context of the learner's own writing needs.

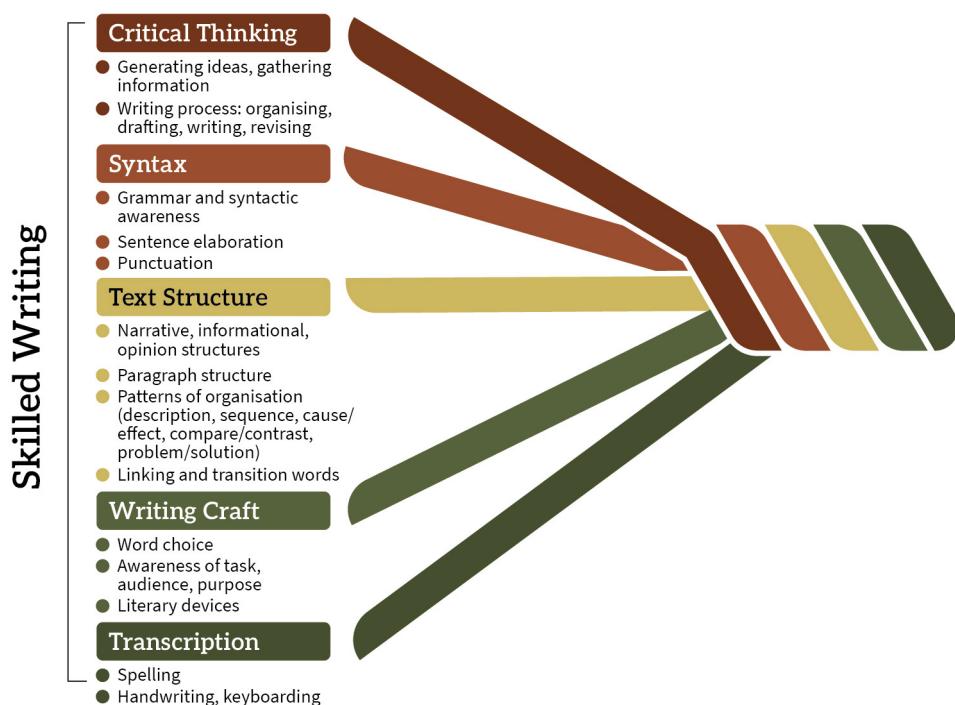
# Theoretical perspectives on writing

## Frameworks for thinking about writing instruction

Research on writing instruction continues, and we will incorporate what is found to be effective as more is discovered about writing processes, sequences of learning and effective instruction. The evidence-based approach to teaching writing is to use explicit instruction and to teach the building blocks for writing, scaffolding new learning by relating this to what a learner already knows. This involves supporting a learning progression beginning with learning to write words, then sentences, punctuation, paragraphs and finally more extended writing. These skills need to be applied to the learner's context. Adults will have a range of learning goals for writing, and for some, this may more simply mean learning to write professional work emails, while others may have more ambitious goals, like writing their life story.

## The writing rope

Scarborough's Reading Rope (2001) provides a graphic that depicts multiple components of language comprehension (i.e. background knowledge, vocabulary, language structures, verbal reasoning, literacy knowledge) and word recognition (i.e. phonological awareness, decoding, sight recognition) as strands in a rope. Joan Sedita (2023) has proposed a similar visual model for understanding the component skills needed for skilled writing.

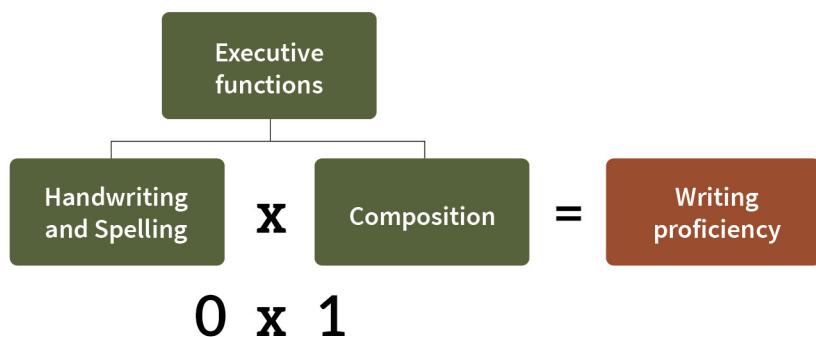


*The writing rope (Sedita, 2023)*

The rope metaphor describes the strands that contribute to fluent, skilled writing. Many of the skills involved in writing also support reading comprehension. Writing also supports learning. Taking time to structure thoughts about a topic area consolidates learning and helps transfer new information into long-term memory.

## The simple view of writing

Just as there is a simple view of reading, Berninger & Wolf (2016) have proposed the simple view of writing, which connects to this conception of the Writing Rope.



*The simple view of writing (Berninger & Wolf, 2016)*

Handwriting and spelling facilitate composition. Adults coming into literacy tutoring often want to work on their transcription skills – they want to be able to handwrite more clearly, spell words more confidently and know how to use punctuation. These building blocks will enable adults to move on to developing skills in composition.

Beyond the technical skills involved in writing, adults have different motivations and social contexts for writing. Writing is complex, requiring skills and the coordination of knowledge to compose text (Hayes, 2012). When a learner needs to focus attention on these skills, the task of composition will result in cognitive overload. Adults who are reluctant to write have often experienced this.

# Writing pedagogies

Like learning to read, learning to write is not a natural process. It needs to be taught. There has been a strong focus on understanding approaches to teaching reading, but more recently, writing instruction has increasingly attracted attention. We focus on identifying research-based approaches for writing instruction. In Australia, there have been three distinct pedagogies for writing instruction – writing as product, writing as process and genre writing (AERO, 2022). Each approach is useful for different contexts and teaching purposes.

## Product approach

This approach is highly structured and scaffolded, focused on building linguistic knowledge and appropriate use of cohesive devices, syntax and vocabulary (AERO, 2022). The emphasis is on the quality of the written product. The components of writing are taught separately at first. Based on examples, students are asked to practise writing tasks, with a high level of support, then apply this to a meaningful task, moving towards more independent writing as they build skills. It was the dominant approach in Australia prior to the 1970s and has been criticised for isolating concepts and working on them out of context. However, it is an approach that is well suited to supporting beginner writers as it breaks writing down into component skills, providing more structure and support for learning.

## Process approach

The process approach emerged in the 1970s in Australia, at the time that whole-language approaches became prominent in reading instruction (Weaver, 1990). The idea was that writing should not be broken into micro skills but should be taught as a whole and authentic task. Teaching engages students in moving from idea generation to publication. Stages include prewriting, composing, revising, editing and publishing (AERO, 2022). There is very little focus on linguistic knowledge, grammar and text structures. It is less scaffolded than product writing and more learner-centric (writer's workshop models are examples). It is more suitable for learners who have developed some skills and knowledge about writing.

## Genre approach

The genre approach became the primary pedagogy for teaching writing in the 1980s and remains dominant (AERO, 2022). Genre teaching considers the purpose of writing and focuses on text structures and linguistic features. It involves teaching about context, purpose, structure and grammatical features for each genre or writing form, usually using model texts (Badger & White, 2000). It is underpinned by the release of responsibility for learning model, beginning by examining an example, modelling using an exemplar, then creating text with support, and moving on to creating text independently. Instruction is explicit and systematic but is taught within the learning context. Research shows this improves student writing slightly more than the process approach (AERO, 2022). For adults with specific goals, looking at worked examples of the type of writing they are learning can be a useful process for analysing how to do it (e.g. emails, résumés, recipes).

## A cognitive approach

A fourth pedagogy, cognitive strategy instruction, could be considered a more teacher-led, scaffolded and structured version of writing as process instruction. It has also been found to be effective (McLean, 2022). Cognitive strategy instruction typically involves modelling strategy use, genre instruction and scaffolded gradual release to independent practice (McKeown and FitzPatrick, 2019).

## Conclusion

Research shows that all pedagogies do improve student writing (AERO, 2022). Significantly, the process and genre approaches are not effective with writers who are struggling – and the adults that we are tutoring are often in this category. The product approach is more suitable for beginners, while process and genre approaches are more suitable as skills and knowledge increase. The genre approach is somewhat more effective than the process approach. Most writing programs include aspects of all pedagogies.

## **Summary**

- Use writing to support reading and learning.
- Use effective instructional techniques consistently and frequently.
- Ensure foundational instruction in handwriting and spelling.
- Build sentence-level writing instruction.
- Embed grammar and punctuation instruction in meaningful writing tasks.
- Provide strategy instruction for planning, drafting, evaluating and revising writing.
- Explicitly teach genre macrostructure and microstructure through modelling, guided practice and exemplars, providing subject-specific instruction as required.
- Understand the differences between informational writing and narrative writing.
- Ensure learners write frequently to build skills and for specific audiences and purposes.
- Where possible, build knowledge for writing such as rich content knowledge, knowledge of text structures, linguistic features and vocabulary.
- Create a motivating and supporting writing environment where writing is valued, routine and collaborative.
- Provide more scaffolding and instruction for students with learning difficulties.

Adapted from AERO (2022).

# Handwriting instruction

## Adults with writing difficulties

Writing is a complex process that involves multiple skills including motor skills, orthographic knowledge to spell words and sentence structure knowledge. Beyond these more technical skills, a writer needs to organise ideas to develop content, drawing on expressive, planning and revision skills. Research indicates that handwriting skills also support the development of reading and writing skills (Afonso & Alvarez, 2019). If handwriting has not become automated, the cognitive demand of writing will be high. A writer will be focusing simultaneously on idea development, spelling, sentence construction and the mechanics of writing itself. Writing will be slow and laboured, and this means that the writer cannot keep up with their thoughts, losing ideas and the flow of text (Harris et al., 2010). Handwriting instruction can help improve legibility and fluency, and this has been shown to increase the quality of writing (Santangelo & Graham, 2016).

Adults who have not developed strong handwriting skills have often become reluctant to write because it is too difficult. Adults are also aware that poor handwriting can create a bad impression, as readers are likely to make negative judgements about less legible writing (Santangelo & Graham, 2016). They may therefore be embarrassed about their writing. Struggling with the mechanics of writing might also have led some adults to think they are not smart, as they find it hard to express themselves well in writing. For adults seeking help with their handwriting, good handwriting instruction and encouragement to practise can help build legible and fluent writing. Some adult learners have learnt to write basic script but would like to learn cursive writing, which enables faster writing. When a learner wants to improve handwriting or learn cursive, these can be added to their learning goals and are included within a learning plan and addressed in learning sessions.

## Cursive handwriting

Cursive writing enables faster writing. Cursive writing further benefits brain development in the areas of thinking, language and working memory (James & Engelhardt, 2012). It stimulates brain synapses and synchronicity between the left and right brain hemispheres, resulting in increased comprehension and engagement. For children, fluent handwriting leads to better reading (Young et al., 2015), and it is probably fair to assume that improving handwriting with adults will also support reading improvements. Cursive helps learners master written expression and critical thinking skills. In the US, the College Board found that students who wrote in cursive scored higher on their SAT than those who printed because the speed and efficiency of their writing enabled them to focus on the content of their writing (Asherson, 2013).

## Keyboarding

In everyday life, most people use both handwriting and keyboarding skills. While keyboarding has become much more common with the use of mobile phones and electronic devices, it does not replace handwriting. Keyboarding can be a starting point to helping engage learners with poor handwriting in the early stages of their learning. Some learners may have been advised to write on computers to bypass their handwriting difficulties. However, studies have shown that writing by hand activates the reading and writing circuits of the brain (James & Engelhardt, 2012). Tracing or typing letters does not activate these areas of the brain.

Generally, handwriting instruction is more helpful in building reading and writing skills in beginning readers and writers. Once letters are linked to sounds and early reading skills have been developed, keyboarding may be a subsequent area for development (Freeman et al., 2005). Touch typing can be faster than handwriting, so learning to type efficiently can enable a shift of focus to thinking about and developing writing. However, without keyboarding instructions to develop typing automaticity, students' writing may be of lower quality than handwritten texts (Connelly et al., 2007). Software programs may be effective in providing enough practice to develop efficient keyboarding skills (Mackenzie, 2018).

# Writing challenges

Some adult learners will have more specific difficulties with writing, and depending on the nature of the difficulty, this may or may not be possible to remediate.

## Reverse positioning sensation

The physical approach to writing can play a part in difficulties – the pencil hold, paper and arm positioning, and body posture all contribute (Young et al., 2015). Learners using incorrect hand, wrist or arm positions may have developed attention difficulties or written language difficulties when they were at school. Those with reverse positioning sensation often hold the pencil with their fingers on the underside (Young et al., 2015). This means that what they see is different to what they feel with their fingers – haptic input is mixed. When learning the shape of letters and connecting these to the letter names and sounds, the mixed haptic input can lead to confusion. Research shows that letter perception is facilitated by handwriting, helping letter processing in the brain (Young et al., 2015). Writers with a correct pencil grip do not have their fingers under the pencil, so what they see matches what they feel when writing. Ensuring learners are holding the pencil correctly is therefore important. This increases ease and stamina for writing.

## Dysgraphia

Dyslexia is a learning difference that makes it harder for people to learn to read, while dysgraphia is a difficulty with writing. Dysgraphia can cause difficulties with either the physical act of writing or expressing thoughts in written form. Dysgraphia makes fine motor coordination difficult. It affects 5-20% of people, and some of the adults seeking help may have this condition (Cleveland Clinic, 2022). Dysgraphia is a neurological condition and can be either developmental, becoming apparent when children are learning to write, or it can be acquired, commonly after a head trauma (Hendrickx, 2009). Dysgraphia, like dyslexia, is considered a learning difference. It is distinct from dyslexia although they share some symptoms and may co-occur.

A diagnosis of dysgraphia can result in strategies for accommodation, modification or remediation, depending on the level of difficulty. For some adults, remediation will be difficult, and interventions will not be able to correct the difficulties (Hendrickx, 2009). Modification then involves adapting goals and objectives to reduce the effect of dysgraphia on learning. Accommodations enable access to education or the workplace with supports or assistive resources. When working with adults, it may become apparent that attempts to remediate handwriting are not effective and so the focus for intervention might need to shift to developing keyboarding skills and using assistive technology.

# Handwriting instruction

Handwriting is a learned skill requiring direct and systematic instruction. Explicit handwriting instruction involves teaching how letters can be written legibly and efficiently, with recommended starting points for each letter and an order of strokes to follow (Seraphin-Thibon et al., 2019). It takes time and practice to learn to write letters without conscious effort. Once learned, however, writing fluency and speed will then increase. Building writing skills to the point of automaticity frees up attention to focus on the other aspects of writing (McCarroll & Fletcher, 2017).

Adults who want to improve their writing may benefit from instruction and writing practice to ensure correct letter formation and to increase writing speed. For these learners, a component of their lessons will include spending time developing this skill. Regular practice enables progress, so encourage learners to practise at home. For some learners, this might involve setting specific practice tasks.

## Skills check

Establish that your learner has:

- correct pencil grip
- correct writing pressure
- secure paper placement, keeping the paper still
- good posture.

## Building letter formation skills

Handwriting charts show how to write letters efficiently, indicating the order of strokes for each letter.

It is helpful to focus on letters grouped according to their formation as shown in the table.

Type of letter formation	Example
The ‘stick’ letters	l i t j
The anticlockwise letters	c o a d g q e s f
The ‘wave’ or down-up letters	u y
The clockwise letters	r n m h p b k
The diagonal letters	v w x z

Ask the learner to say the letter name as they write it, and watch to make sure the letter formation is correct. Make sure they practise correct letter formation rather than reinforcing incorrect formation.

The Australian School Fonts website provides handwriting charts for each state.<sup>12</sup>

## Letter reversal

Letter reversal in very young children is normal, even up to the age of eight. With time and support, they learn to correct this. Sometimes adults are still confused by <b>s and <d>s. Strategies for correcting these include:

- demonstration
- copying from a model, indicating stroke starting points and stroke order
- emphasising correct letter formation – b starts with a stick, whereas d starts with an anticlockwise movement
- emphasising that almost all letters start at the top, except for d and e
- developing a mnemonic – bat then ball or doorknob before door.

For other letter reversals, additional strategies might include:

- emphasising completion of each lower-case letter – ends with an exit to the right
- relate lower-case to upper-case letters.



### Stop and think

What skills do you need to practise to confidently tutor handwriting skills with your learner?

<sup>12</sup> Australian School Fonts. Choose the chart that is relevant for your state:  
<https://www.australiansomchoolfonts.com.au/resources/>

## Spelling strategy instruction

Spelling in English is deeply layered, and there are several systems of logic that contribute to building skills and strategies for spelling. Spelling has evolved to represent sounds (phonemes), meaning (morphemes), and history (etymology). Orthography is the set of conventions that apply to spelling, including punctuation and spelling patterns.

There is usually a logical explanation drawn from one or more of these frameworks for understanding how words have been built. Approximately 50% of words are spelled according to sound-letter patterns, and another 36% of words have only one unexpected spelling within the word. Nine per cent of words are spelled based on meaning, morphology or word origin. Only 4% are actual oddities (Moats, 2020). Phonics on its own is not enough to become proficient at reading and writing, although it is an important component of reading and writing skills.

Research has found that “Students who have learned the connections between speech sounds and written symbols, who perceive the recurring letter patterns in English syllables, and who know about meaningful word parts are better at remembering … words” (Evans, 2024). Using terminology with learners to describe key concepts in phonology, morphology and etymology (phonemes, graphemes, digraphs, syllables etc.) creates a shared and meaningful language about learning with adults and helps build an understanding of the spelling strategies being taught.

There are several strategies to teach learners in supporting them to build spelling skills and knowledge. **Metacognitive thinking** enables discussion of strategies and identification of patterns (like groups of words with common spellings – who, what, why, when, where).

## **Spelling strategies**

**Phonological awareness** – being able to hear the syllables and sounds within words

**Phonics** – knowing sound-letter patterns and linking sounds to spelling patterns

**Orthography** – knowing about the conventions for spelling (e.g. we use *<ch>* but never *<hc>*, words never start with *<ck>*, *<gh>* sounds like /f/ only after *<ou>* or *<au>* as in tough and laugh)

**Morphology** – knowing about meaningful word parts or morphemes (common root words, prefixes and suffixes)

**Etymology** – knowing about word origins helps explain some spelling patterns (e.g. *<ch>* sounds like /sh/ in words with French origins, words like chauffeur, chandelier)

**Memory skills** help learning, like focusing on the tricky bit rather than trying to memorise a whole word; occasionally mnemonics help with unusual words

Learning how words work shifts the focus for spelling from rote memorisation to understanding how phonics, morphology and etymology explain the way words are spelled. Learning to spell words is built by teaching phonic patterns for spelling and morphological patterns (prefixes, suffixes and root words) that convey meaning. Words with the same etymological origin often use the same spelling patterns. These strategies create a rich neural knowledge of how words have been constructed, supporting the process of securing words in long-term memory.

Words become part of long-term memory through the process of **orthographic mapping**. Orthographic mapping draws on our knowledge of how a word is spoken and links the sequence of sounds to the sequence of letter patterns that represent those sounds. With enough phonological awareness and phonics knowledge, learners can analyse new words, identifying the sequence of sound-letter patterns. This will enable them to independently bond the letter sequences into long-term memory.

## Phonological awareness

Phonemic awareness should be developed while building phonic knowledge. This has been discussed in Chapter 3: Reading.

## Phonics

Phonics involves connecting the sounds of English to the spelling patterns that represent them. It is also described as sound-letter knowledge or the alphabetic principle. Building phonic knowledge enables a beginning reader to read words by decoding them – using knowledge of letters linked to the sounds they represent. Phonics for reading has been discussed in detail in Chapter 3, but reading and writing are not separate activities.

Learning to encode (spell) words at the same time as decoding them strengthens learning.

Learner assessment of phonics for spelling will show you a learner’s gaps in phonic knowledge (Stone, 2021). You will probably discover more gaps as you see the writing produced by your learner.

### Resources

A spelling assessment tool can be found here:



Low frequency word spelling test  
<https://www.spelfabet.com.au/2018/01/low-frequency-word-spelling-test/>



Teaching phonics should systematically target gaps in knowledge of the 100 most common patterns first, although an adult will probably have questions about words drawn from their life as well.

Words must be analysed to enable mapping the sequence of spoken sounds to letters and to identify morphemes. Practice in mapping letters to sounds in words is a key strategy for early spelling practice. Any instructional method that takes attention away from the sequences of letters in words will interfere with efficient orthographic mapping. (Poor habits include guessing based on the word shape, the picture, the first letter or the words around it.)

### Same sound – different spelling; same spelling – different sound

While there are approximately 44 sounds in most dialects of English, there are about 75 spelling patterns (Venezky, 1999). Other letter sequences are products of orthography, morphology and etymology. Many sounds have several ways they can be represented. For example, the long E sound can be spelled *<ee>*, *<ea>*, *<y>* and even *<e>*.

Some spellings can represent different sounds. For example, /ea/ sounds like a long /E/ in ‘team’ but short /e/ in ‘bread’.

When teaching new spelling patterns to low-level learners, stick with one sound and words with the same spelling for the sound. Introduce another sound with associated spelling at different times to avoid confusing your learner. Once they have learnt a set of words for each, you can introduce a word sort, asking them to sort words into the same sounds or same spellings.

Higher level learners who have understood these concepts and are able to assimilate new information more readily, as they have a stronger knowledge base, may be able to deal with these concepts more quickly, even within the same lesson. You will need to judge what your learner is capable of.

### Introducing new spelling patterns

Teaching spelling happens alongside teaching reading.

A spelling pattern can be introduced, linked to the letters for spelling that sound. A key word is chosen as the primary example of a word spelled in this way – this should be a common word and a noun. For example, the long E sound can be spelled with the digraph *<ea>*, in the example word ‘team’.

The word can be analysed with the spelling grid – ‘team’ has three sounds and four letters; the letters representing each sound are written down, and the tricky part, the *<ea>* spelling, is noted. Several other words with the same spelling and sound can be introduced, for example, tea, meat, lead, seat, dream, clean.

Using a spelling voice also helps move spelling into long-term memory. This means spelling out the word using letter names and saying the letter–sound correspondences. Words can also be split into constituent morphemes. For example, animal, as a word sum, is anim+al.

The learner should have **multiple opportunities to read and write these words to help them remember** this learning. This would include writing these words several times – with the tutor dictating words. Words can be used in written sentences – either dictated by the tutor or drafted by the learner. Reading in the session could include reading aloud a short text containing these words.

Another part of the session might include reading a text related to a learner's interests. The learner could be asked to highlight words using the same spelling pattern. These might be added to the word list generated for this pattern.

There may be an appropriate decodable reader the learner can take home to read in between sessions to revisit and consolidate learning. You could ask them to write down any words they notice with the spelling pattern during the week and bring them to the next session.

Learning should be reviewed in the next session to ensure the learner has moved this information into long-term memory.

### ***Routine for learning new spelling (based on focus phonic pattern)***

- Analyse the example word – number of syllables
- Review the word meaning
- Link sounds to letter patterns that represent the sounds
- Identify which phonic patterns are new/tricky
- Identify morphemes
- Identify words related morphologically
- Practise writing the word in a sentence
- Practise writing the word, using knowledge built from this process 6x for homework on 3 different days

Depending on the learner's knowledge of spelling strategies, not all of these will apply. If they are still only focusing on building phonic knowledge, then morphology will not yet be relevant.

## Using syllables for longer words

Even when a learner is still working on building knowledge of the most common spelling patterns, they can start to decode and encode (spell) longer words. Analysing longer words can begin with breaking the word into syllables and then breaking these syllables down into individual sounds and linking to spelling patterns, so sound clues are used for spelling. Many prefixes, bases and suffixes are also monosyllabic and once someone has a working set of these, spelling becomes easier and not everything needs to be broken down into phonemes every time.

Each syllable contains one vowel sound. When vowels are spoken, the jaw opens wider than when consonants are spoken. To work out how many syllables in a word, ask your learner to hum the word. Words like ‘chasm’, ‘bottle’ and ‘listen’ with two syllables require two puffs. Sometimes a syllable might be spelled with only one vowel, but they can have up to five sounds. More commonly they have two or three sounds, so when a learner is familiar with sounding out short CVC (consonant-vowel-consonant) words, breaking down syllables is an achievable task. A learner who is just mastering CVC words can be introduced to syllables to break down longer words like *fan.tas.tic*. This can help build confidence in their ability quickly, as an adult wants to be able to master longer words.

### Resources



This is what spelling instruction can look like.

Video: 06 Spelling Strategies

<https://www.youtube.com/watch?v=pUfyPVaJjYc>



## Homophones

Some words sound the same but are spelled differently to indicate the meaning of the word. These spellings reflect different morphological and etymological origins. For example, to, too and two reflect different word origins. <tw> comes from Old English *twa* ‘two’ and describes a twining together of things. ‘Too’ is about more than enough and was given more stress when said, so the spelling reflected this emphasis. The simplest version ‘to’ is a function word and can describe going towards. Talking about these origins for spelling homophones maintains a focus on the word and analysing how it has been built. Discussing the origins of the specific spelling patterns helps build this rich neural network of understanding about the words which helps move the words into long-term memory.

### Common homophones

## Morphology

Just as there are too many words to learn to read and spell one by one, there are also too many words to learn the meaning of one by one. English spelling is not as unpredictable as people think. English is a morphophonemic system, meaning that English words are spelled based on sound but also based on meaning. Morphology is the study of the smallest units of meaning in words. Morphology is another key organising principle of English spelling, marking connections in meaning. This is evident with homophones – words that are said the same but are then spelled differently so that meaning can be distinguished. For example, where and wear or two, to and too.

Studies have found that adults benefit from learning morphology to build literacy skills (Galuschka et al., 2020). Instruction about meaningful word parts is associated with improvements in word reading and spelling and forms a strategy for determining the meaning of unfamiliar words.

Longer words are often built from morphemes that change the word’s meaning. For example, ‘jump’ is a morpheme. It cannot be broken down into anything smaller that conveys meaning and is called a base word. Adding suffixes can change the meaning and part of speech of a base word. ‘Jumps’ contains two morphemes. The <ss> adds a different unit of meaning, making jump either a verb or a noun.

Prefixes and suffixes added to the beginnings and ends of words change their meaning in predictable ways. Research indicates that teaching prefixes helps build word analysis skills. The 20 most common prefixes account for over 90% of prefixed words, and they have consistent meaning and spelling, forming a reliable strategic approach to spelling.

Building a knowledge of meaningful word parts can support meaning making when reading and spelling when writing. Analysing words' prefixes and suffixes is an effective strategy for expanding vocabulary. There are too many words to learn individually, so learning about how words are constructed helps build new vocabulary and spelling knowledge.

Constructing a word matrix to analyse the morphemes and identify word families can make this clear.

Suffixes convey meaning and can change the part of speech of a word. For example, they can change a base word from a noun to an adjective or verb, e.g. leaf + y = leafy. Often when suffixes are added to words, the end of the word needs to be changed slightly. There are predictable patterns for doing this too.<sup>13</sup>

### **Four main ways to add suffixes**

1. For most words, just add the suffix.
2. When a word ends in e, drop the <e> when adding a vowel suffix, e.g. wake-waking.
3. When the second last letter is a short vowel sound, double the final consonant when adding a vowel suffix, e.g. run-runner.
4. When a word ends in <y>, swap the y and i to add any suffix, except <ing>, e.g. fry-fried.

Adapted from Sedita (2023).

<sup>13</sup> Lyn Stone's book *Spelling for life* provides good summaries of rules for adding suffixes.



When learning a new rule for adding suffixes, a learner will need to practise this in several ways and see it in various contexts. As well as engaging in activities that provide practice, a learner should be prompted to use new spelling rules in their writing. Learners can also be encouraged to include new vocabulary in their writing. Templates in Part Three provide activities for practising and building this knowledge.

Practice in analysing words can be provided when reading texts. Knowledge of what prefixes and suffixes denote can be drawn on to work out the meaning of new words. Some (derivational) suffixes change the part of speech, while inflectional suffixes play a role in grammar without changing the word's meaning. Inflectional suffixes include: -s (or -es); 's (or s'); -ed; -en; -er; -est; and -ing.

### ***Frequently encountered words***

Hiebert (2005) identified the 20,000 most used words in school texts and sorted them into about 5,500 families of words with the same root. For example, improve, improved and improvement are in the same word family with the common base word 'prove'. For adults, many of these words will already be known vocabulary, leaving a much smaller group of word families that will help build a learner's word knowledge. When working with adults who are building their morphological knowledge as a spelling strategy, drawing on more common word families related to an adult's interest and learning focus will be helpful.<sup>14</sup>

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<sup>14</sup> *4,000 simple word families* is a full list, and you can choose the word families that are more relevant to your learner: [https://textproject.org/wp-content/uploads/resources/WordZones\\_4000-simple-word-families.pdf](https://textproject.org/wp-content/uploads/resources/WordZones_4000-simple-word-families.pdf)

## Schwa

One of the things that gets tricky when sounding out longer words is the sound of an unstressed vowel which makes the sound ‘uh’. This sound is called ‘schwa’. About 20% of vowels are not clearly pronounced in the unstressed syllables of longer words (Moats, 2020). In multisyllable words, one syllable has the primary stress, and the vowel sound can be clearly identified, but another syllable may be either unstressed or given secondary stress. Unstressed vowels will be pronounced as a schwa. When this happens, there is no sound clue for what vowel needs to be represented by the spelling. For example, ‘circus’ ends in the /uh/ sound. Other examples of schwa include elastic, general, teacher, dollar. When this happens at the end of words there are several common ways this can be spelled (e.g. <er> or <ar>), and word analysis strategies with a focus on morphology can be applied to learn these patterns. At the end of words, <er> often denotes ‘one who does’.

When the unstressed vowel sound /uh/ appears in the middle of the word, it is usually spelled with a single vowel. The order of frequency that these are used is a and e, followed by i, o and then u. Another strategy for working out which vowel to use draws on morphological understandings. Different forms of the word which emphasise different syllables in the word can reveal the vowel sound that needs to be used. For example, we can clearly hear the vowel sounds in ‘compete’, whereas in ‘competition’ the <e> sounds like /uh/, and we can use our knowledge of the spelling of ‘compete’ to identify the unstressed vowel that it represents.

# Writing instruction

Working with adults with low-level writing skills often begins with building transcription skills – handwriting and spelling. Building writing skills starts with learning to encode words – to use the sounds in a word as a guide to spelling. We have seen that strategies for spelling go beyond sound-letter correspondences to include morphology to spell for meaning. These building blocks will enable adults to move on to developing skills in syntax, punctuation and writing sentences.

## Writing sentences

Beyond word-level writing, learners will need to learn to write simple sentences with correct punctuation. Learning punctuation can be a significant confidence booster for adults. Learning when to use capitals, full stops and commas and why this helps a reader can be significant for a learner who has struggled with this previously.

Learners will then be ready to learn to combine simple sentences using simple conjunctions. Conjunctions are words that connect parts of sentences, like phrases and clauses (Stone, 2016). Writing longer sentences can be explored using conjunctions.

### Conjunctions

There is a sequence of difficulty in using conjunctions, from easier to more difficult (Moats, 2020). The different functions of conjunctions are:

- sequence: and, then, when, both
- causation: because, so
- disjunction and alternation: but, or, either/or, neither/nor, though
- conditionality: unless, although, if, if/then, if only.

Part Three contains templates for writing sentences:

Writing compound sentences

Writing complex sentences

Punctuation

Grammar – parts of speech

Writing descriptive sentences

### ***Developing ideas and writing them down***

When asking adults to do some writing, some may spell or write sentences that vary from ‘correct’ spelling or ‘standard’ syntax (Exley & Kitson, 2020). However, their writing provides important clues about what they know. Their spoken English may vary from standard English and they may be communicating well but have not learnt more formal ways to write (Exley & Kitson, 2020). Focus on the content first and getting ideas down, then work on transcription skills. Other adults might feel stuck and limit themselves to writing words they know how to spell. When learners are encouraged to talk about the content freely and then turn their attention to writing this, they will be able to draft writing with an adult voice, and you will have meaningful content to work with and some important clues in their mistakes about where some of their knowledge gaps are (Moats, 2020).

The steps are:

- Idea generation – I want to write about (sailing). My thought is ‘I love sailing when it is really windy.’
- Transcribing – say each word, one at a time, break each word down into sounds and spelling patterns as they are written.

One of the challenges associated with asking learners to write the way they speak is that spoken expression may not be structured in whole sentences or in grammatically correct ways. Writing is a skill that needs to be taught respectfully, as there are language structures that apply in written formats that are different when speaking. Reading with learners exposes them to the language structures of written text. Learners may need to learn to write in a more formal voice and to use complete sentences in work or study contexts.

## Writing for fluency

Writing fluency includes more than simply being able to transcribe at a reasonable rate. It includes being able to produce ideas rapidly, appropriately, creatively and coherently (Latif, 2013). While handwriting and spelling play a role in writing fluency, so do generating and expressing ideas.

### *How to support the development of writing fluency*

1. Teach handwriting and spelling explicitly to the point of automaticity.
2. When drafting text, let go of a focus on spelling and handwriting and allow the learner to focus on ideas.
3. Talking about ideas first and planning writing to help get a flow of ideas going.
4. Handwriting and spelling are important, but practising writing often is also critical.
5. Try non-stop writing – ask your learner to write non-stop for one minute. Give them a short break and then ask them to write for another 90 seconds. Have another short break and then ask them to write for two more minutes non-stop. This promotes thinking while writing.

Adapted from Shanahan (2025).

## Writing paragraphs

Once learners have built skills in sentence writing, they can move on to constructing short paragraphs, introducing the idea that a paragraph is a cluster of thoughts about a similar idea.

### ***Three-sentence paragraph***

- Topic title
- Beginning sentence
- Two important ideas that **expand, explain** or provide an **example**

#### **Example**

Title: Volcano

Volcanos are cone-shaped mountains. They are stunning in the landscape.

Volcanos can erupt with ash and lava.

(Auman, 2016).

### **Paragraph writing**

## Editing work

Finally, learners need to develop the habit of checking and editing their writing to make sure they have written well. Teach learners to manage and self-direct their own stage of writing – plan, develop and review.

### ***Revision questions for a learner to use***

- Organisation – are my ideas well organised?
- Content – is the message clear?
- Language – have I added details?
- Print conventions – is the punctuation and spelling correct?

(Paulson, 2023)

# Writing at surface level and deeper levels

## Surface level features

Writing skills involve mastery of visible features including spelling, punctuation and sentence construction. These features are easily observed and can be explicitly taught. Surface level features are necessary for every type of writing.

Some learners may be ready to consider ways to develop their writing by thinking carefully about word choices – to find words that convey emotion or convey more nuance. They may be interested to learn about using imagery or metaphors in their writing. These topics are discussed in more detail later in the creative writing section of this chapter.

## Deeper thinking processes

Deeper thinking processes include comprehension, vocabulary and reflection. They vary depending on the genre and type of writing. These skills are harder to observe and teach.

Asking a learner to write a summary of a short text is a good starting point for comprehension work. This helps a learner capture the surface level ideas of a text but does not necessarily include deeper thinking. Asking about what might be inferred from a text, a subtext, connections with broader ideas and connections with your own ideas can help engage a learner in deeper thinking and writing about a text.

Learners can be supported to develop deeper thinking and analysis skills with the following simple question structure:

## What, why, how questions

Sentence stems can help prompt beginnings for answers to *what? why? how?* questions that promote thinking at a surface level, a metaphorical level and a structural level about a text.

### The first level:

*What is your immediate impression? What is the first thing you notice/think when you read this?*

Example sentence starters:

“On the surface, it appears...”

“At first glance, a reader might notice...”

“Literally, the words mean...”

### The second level:

*Look at the text again. What might be happening on a deeper level? Why did the writer use those specific words and not other words?*

Example sentence starters:

“On a deeper level, however,...”

“On closer inspection, a reader might notice the word...”

“On the other hand, this word may mean...”

It is useful to model different ways to search for meaning:

1. *Look up the word. Are there any other definitions or interpretations?*
2. *How does it sound? Say it and listen to the sounds. Are they harsh? Soft? Is this positive or negative?*
3. *What other words could have been used? Why did the writer not use these words?*
4. *What is not being said?*

### The third level:

*Look at the text again. This time, pay attention to its structure.*

1. *What order are the words in? Why might they be in this order?*
2. *Look at the punctuation. Does it speed up / slow down / fragment the tone?*

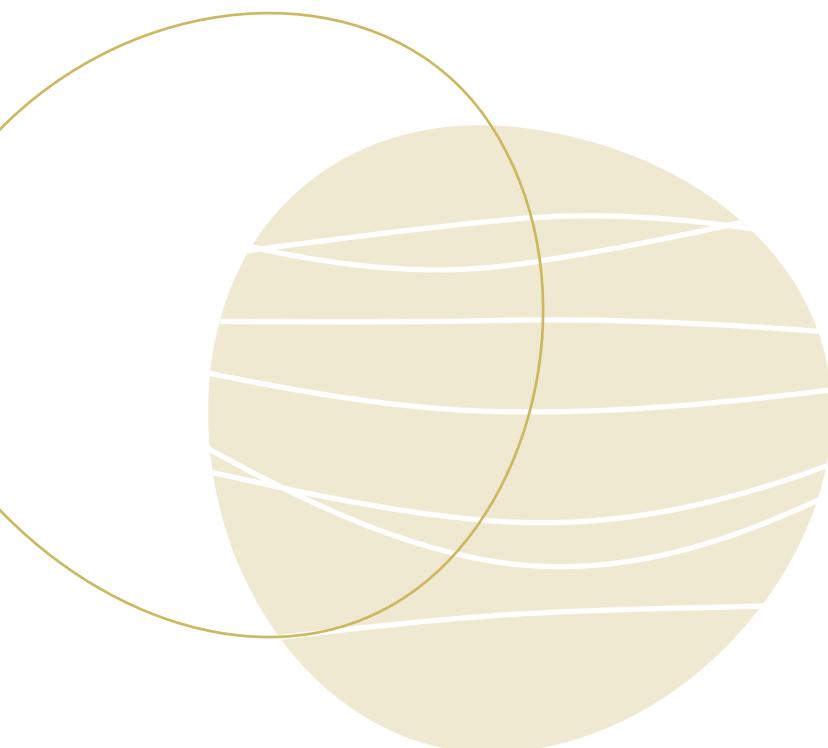
Adapted from Jafar (2022).

It is helpful to analyse example texts to show a learner how the texts are constructed and how to think more deeply about the ideas presented. Teaching learners to apply deeper thinking to their own writing can be built into planning for writing. There are three main types of writing:

1. **Information writing** discusses information on a topic and ideas are expressed logically and clearly.
2. **Opinion/argument writing** presents thoughts or a point of view on a topic and includes providing supporting information.
3. **Narrative writing** engages a reader in real or imagined events or experiences – details, structure and sequence need to be considered (Sedita, 2023).

Planning for each type of writing will vary. Topic webs for each of these can provide a way to focus thinking and plan a structure for writing.

#### Semantic mapping



## Building literacy skills for study

Some adults enrol in courses or undertake apprenticeships and find they have difficulty completing course work because of their literacy or numeracy challenges.

While strategies like using a reader pen or text-to-speech software can support reading, and speech-to-text software can support writing, the use of this technology bypasses literacy skill development. Tutoring can be valuable for people who want to get help with course content and requirements and also to improve their literacy skills.

Targeted support is often needed in the following areas:

- word reading and spelling
- background knowledge of the subject area
- tier 2 and 3 vocabulary
- reading and comprehension skill development
- writing tasks.

The underpinning skills involved include:

- building phonological awareness
- building phonic knowledge
- building morphological knowledge
- developing orthographic knowledge
- building automatised and fluent reading and writing skills.

As a tutor you can support these learners to build these skills with a focus on their course content. You can review their course material and analyse content to identify:

- vocabulary relevant to the course – links to etymological and morphological strategies for spelling
- the text types required for the course, e.g. reports, record keeping documents, emails – so you can show good examples of the relevant text structures and teach learners to navigate these and write them if required.

## ***Teaching strategies for comprehension***

(See also Chapter 3: Reading)

- Explicitly teach vocabulary – build a glossary of terms.
- Teach background knowledge in the topic.
- Activate prior knowledge and discuss key concepts before reading.
- Model and teach writing conventions – familiarity with formal text helps reduce the difficulty of interpreting texts.
- Use morphological strategies to understand the structure and meaning of words.
- Work out meaning by inferring, questioning and summarising.
- Link meaning across sentences and paragraphs – review, consolidate and respond to text (e.g. summarise).
- Skim, scan and do close reading.

Adapted from Department of Education, Victoria (2022).

## **Summarising**

Summarising is one of the most important strategies for improving writing and comprehension skills (Graham & Hebert, 2011). Being able to summarise is complex. It involves identifying the key ideas in a text, the implicit knowledge and the author's intention. It is a condensed version of the text, written in the learner's own words. It deals only with the text and does not include the learner's opinion.

Questions that can help summary writing include:

- What's the main idea? What is the essential information?
- What are the supporting ideas?

### **Summarising text**

Other resources for writing to learn are included in Part Three.

## Creative writing

Creative processes can invite a learner to think more freely to develop creative and imaginative work. Creative writing can include poetry, flash fiction, short story writing and biographical writing. Interestingly, creativity is often generated within constraints. For example, haiku poetry has a set form. Western storytelling also has a typical structure – beginning, middle and end – although writers may deliberately subvert this. The work generated by different cultures has distinct features and forms. For developing writers, some of these forms create parameters that can help focus a learner on features of writing. In the case of haikus, the focus is on syllables. Other poetry may focus on rhyme. Presenting a creative challenge can be a playful way to support learning.

Creative processes can create opportunities for:

- **Fun and a change of pace.** Some of the necessary and important explicit literacy tasks can involve a high level of focus and repetition. Including creative activities can provide a brain break and fun while still learning.
- **Putting things into practice.** Learners may use their recently acquired knowledge such as grammar, vocabulary or phonological awareness to complete a piece of creative writing. It can be satisfying for learners to see their knowledge put into practice, and it can help consolidate their learning.
- **Self-expression.** Creative processes can give learners the opportunity to tell their stories, share ideas and express themselves. For some, this may be the first opportunity they've had to do this.
- **New thinking.** Creative processes can encourage learners to be analytical, think conceptually or consider ideas from a different angle.
- **Inspiration.** For some learners, creativity can foster a love of story, which can motivate a desire to improve reading and writing skills.
- **A growth in confidence.** Creativity requires learners to take risks and try something they haven't done before. For some, the process of risk-taking coupled with self-expression can build confidence and resilience.

## Using visual imagery to prompt writing

Discussion of visual imagery can support thinking and help generate creative ideas for writing. A writing activity can draw on a visual image to prompt a response that can be developed through writing. Lateral thinking and imaginative responses can be encouraged. Images can set up a portal into storytelling. For example, asking “What happens next?” invites imaginative engagement with an image and can unlock a flow of ideas.

For many literacy learners their only experience of reading may have been with very literal, simple text that doesn’t suggest layers or shades of meaning. Images can be a springboard for introducing word play and to explore rhyming, alliteration, descriptive language and other devices. With images, you can ask questions like, “Does a picture of a tree have to be about a tree, or can it symbolise something else?” You can introduce the idea of metaphors and other devices authors use to create rich text. For example, a house might represent literally a house, or it might stand as a symbol of safety and security. Alternatively, it could be a metaphor for ‘self’.

Images can also be used to engage analytical thinking. For example, the weekly images produced by *The New York Times* are drawn from the media and are often ambiguous, requiring deductive thinking and interpretation.<sup>15</sup>

Working with images can also be a tool to illustrate or create story structure. As you ‘read through’ a wordless book, the learner can observe how a story is laid out, with a beginning, middle and end, and how the story may contain a message, pose a question or a problem to solve, and contain characters. These are all elements we may build into a story told through text.

Using images in your sessions can provide opportunities to build vocabulary and develop language to explore what a learner sees, thinks or feels.

Creative writing resources can be found in Part Three.



### Stop and think

How could you explain to your learner how creative writing skills can help them achieve their goals?

<sup>15</sup> *What's going on in this picture?* | The New York Times: <https://www.nytimes.com/column/learning-whats-going-on-in-this-picture>

# Resources and recommended reading

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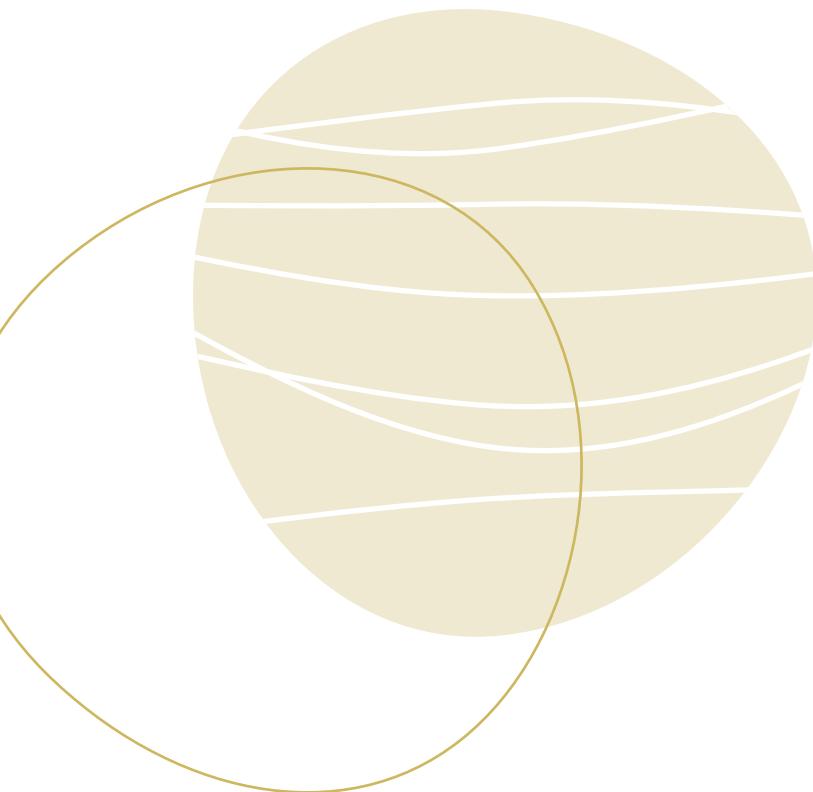
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## Additional resources

- Spelfabet resource: an assessment that provides information about a learner's knowledge of phonics and their ability to apply this when writing: <https://www.spelfabet.com.au/2018/01/low-frequency-word-spelling-test/>
- Australian Education Research Organisation (AERO) Practice Guides for teaching simple, compound and complex sentences, punctuation: <https://www.edresearch.edu.au/guides-resources/practice-guides>
- SPELD SA Intensive Literacy Program is for older learners wanting to develop or consolidate basic reading, spelling and writing skills: <https://speldsa.org.au/pages/intensive-literacy-program>
- Phonics International has free synthetic phonic resources available for download, including alphabetic code charts. Free login for access.  
<https://phonicsinternational.com> and how to:  
<https://phonicsinternational.com/how2.pdf>

- Dyslexia SPELD Foundation  
DSF spelling wheel:  
<https://dsf.net.au/professionals/teachers-and-tutors/effective-teaching-strategies-for-all-students/the-dsf-spelling-wheel>  
Written expression remediation for older students and adults PDF: <https://dsf.net.au/CMSPages/GetFile.aspx?guid=d0fa9fb4-efda-4602-8423-d533e8315162>
- Literacy Impact Educational Services –  
Teaching morphology: Resource kit: <https://www.literacyimpact.com.au/wp-content/uploads/2023/02/Morphology-Resource-kit-updated-20.02.23-MS.pdf>
- Australian School Fonts – download for your state: <https://www.australiansomchoolfonts.com.au/resources/>
- Tasmanian Handwriting Guidelines: <https://publicdocumentcentre.education.tas.gov.au/library/Shared%20Documents/Handwriting.pdf>



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# Chapter 5

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## Numeracy



5

## Main points

- Adults who are not confident with numeracy often have anxiety about numbers. Instruction needs to build new self-belief and confidence by ensuring success.
- Assessment will show what underlying numeracy skills need to be taught.
- The Big Ideas in Number describe the progression and development of numeracy skills to guide tutor instruction.
- Effective instruction builds conceptual understanding, not rote learning.
- Instruction builds conceptual understanding by starting with concrete materials.
- Instruction progresses from concrete materials to visual representations to working with mathematical symbols (+/-x= etc.)
- Teach the concept and practise calculations before applying to real-life problems.
- Apply skills to the learner's specific real-life numeracy context/needs.
- Numeracy instruction involves a lot of dialogue – discuss and show how numerical thinking can involve multiple ways to solve problems.
- Begin with the simple and progress towards more complex operations.
- Automaticity and fluency are important in numeracy to free up cognitive load.

# Introduction

Numeracy is woven into almost every aspect of adult life, meaning difficulties with numeracy can make adults vulnerable to a range of negative social, economic and health outcomes (Peters, 2020). Supporting adults to develop their numeracy skills can improve their confidence, their beliefs about themselves as learners, their decision-making around finance and health, their ability to help their children, and their coping abilities at work and in daily life.

This chapter will help build your knowledge of key underpinning concepts that support building foundation numeracy skills. It also includes guidance in effective numeracy instruction. Just as in literacy, learners will have different starting points and different knowledge gaps. By the end of this chapter, you will have an understanding of how to address numeracy gaps in ways that align with the cognitive development of numeracy skills.



## Stop and think

How do you feel about tutoring numeracy? Why do you think you feel that way?

5



# What is numeracy?

The term ‘maths’ often conjures up memories of maths at school and all the abstract sums and formulae we learnt. However, over the last three decades there has been an increasing awareness of the role of numeracy skills in adult life (Tout, 2020). Being ‘numerate’ goes beyond learning these kinds of mathematical calculation skills (Goos et al., 2019).

The Australian Association of Mathematics Teachers (DEETYA, 1997, p. 15) states that:

**To be numerate is to use mathematics effectively to meet the general demands of life at home, in paid work, and for participation in community and civic life.**

Being numerate involves the capacity to make sense of real-life contexts using a mathematical lens to solve real-world problems (Geiger et al., 2015). Essentially it is the “ability to use, apply, interpret, and communicate mathematical information and ideas” (OECD, 2012). Within the *Australian Core Skills Framework* (ACSF), numeracy is “about using mathematics to make sense of the world and applying it in a context for social purpose” (McLean et al., 2012). Numeracy is about using numbers to solve both everyday and highly technical problems – the mathematical concepts that we need to use vary depending on the tasks we have to do. In tutoring, we work with learners who are missing some of the underpinning foundational knowledge needed to do everyday maths tasks, like working out costs and change when shopping, or reading and understanding an electricity bill.

This conception of adult numeracy is reiterated internationally. “Numeracy is the ability to access, use, interpret, and communicate mathematical information and ideas, in order to engage in and manage the mathematical demands of a range of situations in adult life” (OECD, n.d.).

The Programme for the International Assessment of Adult Competencies (PIAAC) makes a clear distinction between the terms maths and numeracy:

- **Mathematics** is the formal study of numbers, shapes, patterns, and relationships. It includes both basic and advanced topics – abstract reasoning and theoretical knowledge.
- **Numeracy** refers to the ability to understand and work with numbers in everyday contexts. It involves practical applications of basic mathematical concepts – everyday life skills (PIAAC, 2009).

In tutoring, you will be working on building a learner’s numeracy skills.

## Foundation numeracy skills

So, numeracy goes beyond being able to do calculations. It is firstly about identifying and understanding maths embedded in everyday contexts, secondly about knowing how to choose appropriate calculations based on the task, and thirdly, being able to communicate what you find. Being able to interpret, understand and communicate numerically also requires the other core literacy skills – reading, writing, listening and speaking. The ACSF also outlines these three aspects of **numeracy**:

- The literacy of numeracy – numeracy is embedded in language: What information is given? What is being asked for?
- Selecting the appropriate process and doing the calculation: What do I need to do to work this out?
- Communicating the answer – doing something with the result: How can I write this down? What words help me talk about this?

## Everyday numeracy

The Everyday Maths Project in Australia 2011-14 explored the maths used by 160 adults in their everyday, non-working lives (Northcote and Marshall, 2016). Participants completed a logbook of their maths calculations over 24 hours and the study concluded the following:

- The most common tasks were around time (a measurement concept), money or finance. Key topics were counting, addition, subtraction, mass and height, length and distance, volume and capacity, multiplication, and fractions and ratios.
- The average number of calculations was five per day.
- On average younger participants (18-30 years old) completed the least calculations of the group (just over four calculations) and the 61-70 year old group completed the most (about 6.5 calculations).
- Mental maths was the most common calculation method used by the group and ‘pen and paper’ was next. Other methods included calculators, computers, phones, asking other people, counting aloud and creating drawings.
- 66% of the calculations were categorised by participants as low level (lower or middle primary) and 1% as difficult.
- Participants’ responses indicated that 62% of the calculations required exact answers. For most of the other answers, an estimate was adequate for the task.

In an earlier study, Northcote and McIntosh (1999) found that addition and subtraction were the most common calculations used and that 84.6% involved mental maths – not involving calculators or pen and paper; 60% of calculations only required an estimate and not an exact answer (Northcote & McIntosh, 1999).

These studies demonstrate the broad range of maths skills being used in everyday life and the resources being used to solve problems. It also reminds us that many maths skills are needed within everyday life, study or work contexts. It is important to note, though, that some financial decisions might be made infrequently but when made, they have large consequences on someone's life. For example, investment decisions or taking out a mortgage require numeracy skills in order to compare options. Some options may not result in good financial outcomes. Similarly, some health decisions can have a big impact on someone's life. Ignoring dental work which is expensive may end up resulting in hospitalisation for much more serious dental work, which costs a lot more in the long run.

### *Examples of everyday numeracy*

- Budgeting
- Bus timetables
- Calendars
- Clocks
- Cooking
- Driving
- Form filling
- Gardening
- Measuring
- Parking
- Paying bills
- Taking medication
- Shopping
- Sport scores
- TV schedules

### **Examples of numeracy in the workplace**

- Calculation – with and without calculators or computers
- Mental calculations/estimations
- Calculation and interpretation of percentage
- Measurement, such as length, volume, weight, temperature, speed
- Use of ratio and proportion
- Creation and use of formulas (possibly using spreadsheets)
- Display and interpretation of data
- Use and interpretation of graphs, charts and tables
- Use and interpretation of scale drawings, plans and diagrams
- Recognition of patterns and anomalies with measurement and data
- Communication of mathematically related ideas
- Use of computers/technology in relation to mathematical tasks
- Use of mathematical ideas and concepts to model or analyse workplace situations
- Use of mathematical ideas and concepts to evaluate and critique workplace practices and monitoring system

(Marr & Hagston, 2007)

All these numeracy tasks depend on having a solid foundation knowledge of numeracy.

### **Assistive technology**

It could be argued that literacy and numeracy skills are no longer as necessary as there is assistive technology to support reading (text-to-speech and autocorrect for spelling and grammar) and writing (speech-to-text) and more recently, generative AI. However, these supports are only useful up to a point. In numeracy, using a calculator is helpful but there is still a need for a user to drive this and to understand what to ask a calculator to do. If you don't understand the calculation required, a calculator is not useful.

## Learner motivation

Although the 2012 PIAAC study showed that low numeracy rates are more prevalent than low literacy rates, adults are more reluctant to ask for help with it. Adult learners typically seek support at a point of acute need, such as for study or work or everyday tasks like managing money or understanding instructions for medications. With some learners, numeracy issues emerge during discussion or appear incidentally during work on literacy issues. Missing critical mathematical information at school can have a high impact, as shaky foundation knowledge undermines confidence and the development of more complex numeracy skills. There are many learners who talk about the difficulties they have with maths, and this correlates with significant knowledge gaps.

Learners seeking numeracy support can be motivated by the need for maths for:

- employment – referred by their employer, an employment agency or self-referred
- study to meet course requirements
- preparation for a course or to pass an entrance test
- everyday numeracy skills – needing to budget, manage medication, organise a schedule or calendar etc.

When adults identify a need or a goal relating to learning numeracy skills, they will be more motivated to engage and persist in learning numeracy skills. An important part of early conversations with learners is establishing their learning goals, which can then be included in the learning plan.

The following might make it difficult for learners to decide to work on their numeracy skills:

- previous negative education experiences – disrupted, inappropriate teaching methods, different learning style
- maths anxiety, leading to avoidance, lack of motivation and a sense of shame
- socio-economic circumstances – poverty, generational view of formal education
- EAL / Aboriginal – English language barrier
- access – remote/rural, transport, lack of offerings
- learning difficulty e.g. dyscalculia (also known as ‘maths dyslexia’)
- working memory challenges that make learning difficult
- literacy issues – reading and comprehension
- difficulty grasping abstract concepts
- perceived irrelevance – ‘When am I going to need algebra?!’

## Good practice recommendations

Research on effective instructional practices for adult numeracy is limited, partly due to the heterogeneous nature of the adult numeracy field and the challenges of conducting intervention studies with this group (Wedege, 2010). However, there are three important findings that inform how tutors should approach numeracy instruction.

First, multiple studies find that many adult learners have problematic histories with mathematics, leading to complex affective relationships with numeracy (Hannula et al., 2016; Hart & Ganley, 2019). These include negative beliefs about themselves as learners of mathematics, and negative attitudes and dispositions towards numeracy. In addition, adult learners often experience negative emotions such as fear, panic or anxiety when undertaking numeracy instruction, which can interfere with the learning process (Whitten, 2018). Recommendations are to address these factors directly with learners and support them to develop positive beliefs and experiences with numeracy (Hannula et al., 2016; Luttenberger et al., 2018; Wilder & West, 2023).

The second finding relates to the importance of identifying the context in which the learner uses numeracy. Adult learners typically undertake numeracy instruction to more effectively fulfill their roles in the community as workers, family members and community members (Safford-Ramus et al., 2016). Therefore, adult numeracy research recommends that tutors prioritise making links between the numeracy being taught and the contextual needs of the learner (Brooks, 2015; Dalby & Noyes, 2015; FitzSimons, 2019). This ensures the numeracy instruction meets, and integrates with, adults' real-world needs, and aligns with learning theory that numeracy is best learned when applied in a meaningful context (Nathan & Sawyer, 2014).

The third finding relates to effective teaching practice. Observations of adult numeracy sessions have found that tutors use different teaching methods to meet a variety of needs, **spend time explaining numeracy concepts**, attempt to break down concepts into smaller understandable parts, are very encouraging, and give encouraging feedback (Coben et al., 2007; Whitten, 2018). However, some research suggests tutors talk too much, often preferring a transmission approach in which the learners' role is to reproduce procedures, rather than empowering learners as discoverers and constructors of their own understanding (Benseman et al., 2005; Mesa, 2010; Whitten, 2018). Recommendations are that educators adopt more active approaches to learning in which learners actively connect to, build on and transform their existing knowledge, rather than focusing on the memorisation and reproduction of methods (Carpentieri et al., 2010).

A large body of research from the domain of mathematics education is available to inform numeracy practice at the instructional level. This body of research is drawn from children of all ages, and from preservice and practising teachers.

### ***The focus for numeracy teachers***

In general, it is agreed that tutors ought to focus on:

- developing learners' conceptual understanding and use this to grow procedural fluency
- emphasising connecting new learning to prior learning and in the process address misconceptions
- engaging learners in challenging tasks that promote active meaning making
- supporting learners to transfer knowledge to new situations
- developing their learners' awareness of themselves as doers of mathematics.

(Le Donné et al., 2016; National Council of Teachers of Mathematics, 2024).

In addition to these principles, the following practices have been recommended over the last several decades (National Council of Teachers of Mathematics, 2014, 2024).

- Establish clear learning goals to focus the learning.
- Build procedural fluency from conceptual understanding.
- Implement tasks that promote reasoning and problem-solving.
- Use and connect mathematical representations.
- Engage learners in rich mathematical discourse.
- Elicit and use evidence of student thinking.

## Maths anxiety

Maths anxiety is a widespread concern for people across the world. Paechter, Macher, Martskvishvili, Wimmer and Papousek define maths anxiety as “feelings of apprehension and increased physiological reactivity when individuals deal with math, such as when they have to manipulate numbers, solve mathematical problems, or when they are exposed to an evaluative situation connected to math” (Paechter et al., 2017). Maths anxiety can manifest physiologically as a fight, flight or freeze response, and this results in a reduced ability to think and learn.

There is a variety of reasons that someone may have developed maths anxiety and not been able to benefit from maths tuition at school.<sup>16</sup>

- A person’s genetic disposition (mental and physical)
- A person’s economic background (hunger, cramped conditions)
- Family’s social background (alcohol, drugs, domestic violence)
- Lack of parental positive encouragement in maths
- The school environment – large class sizes, distractions, bullying
- Unusual exterior reasons for missing school (illness, frequent family moves)
- The maths teacher’s own maths anxiety
- The maths pedagogy – possible inflexibility of some methods used to teach teachers to teach
- Inappropriate use of online maths courses (screen teaching)
- The maths course textbooks, which are alienating

Often learners will say they don’t like maths; others will completely avoid engaging with it. Understanding the signs of maths anxiety will support you when working with a learner who has maths anxiety.

<sup>16</sup> Adapted from Teacher | The Maths Anxiety Trust: <https://mathsanxietytrust.com/teacher.html>

Tutors have different levels of confidence about their own numeracy skills and their ability to undertake numeracy tutoring. This chapter will provide enough information for tutors to understand how to build foundation numeracy skills with learners with low numeracy skills. If you are not yet confident about providing numeracy tutoring, this chapter should help you gain enough understanding, skills and activity ideas for you to begin. It will help you feel more comfortable addressing basic maths questions as they arise in the course of literacy tutoring.

Tutors with strong numeracy skills or previous numeracy teaching experience might feel confident to undertake higher level maths tutoring or doing only maths tutoring. Sometimes there are learners who need to learn maths in a vocational context, and this might sit within a tutor's skillset.

## Strategies to use to help adults overcome maths anxiety

It is helpful to build a relationship of trust and respect and to ensure that you establish a safe learning environment where your learner can talk honestly about their fears. Helping a learner cultivate a growth mindset can be helpful. Look at what they can already do and involve learners in numeracy based on their goals and interests (sport, cars, cooking, gardening and craft are great sources of numeracy learning). Planning sessions to ensure learner success to build confidence is also important.

- Talk about it. Help your learner to identify their own strategies for overcoming maths anxiety.
- Create a supportive atmosphere in which your learner can relax.
- Use activities which provide an early experience of success.
- Focus on what your learner is able to do, acknowledging their skills and experience.
- Encourage discussion and exploration of multiple ways to solve problems, rather than focusing on one right answer.
- Monitor your learner and be prepared to modify or stop an activity if they become anxious.
- Incorporate breaks or easier activities to relieve stress.
- Encourage your learner to take their time and be persistent (time pressure can trigger anxiety).

- Value a range of approaches and methods of solving problems.
- Teach in context, using situations and examples which are relevant to your learner's needs, goals and interests.
- Teach learners how to use calculators and encourage their use.

Adapted from Marr et al. (1991).

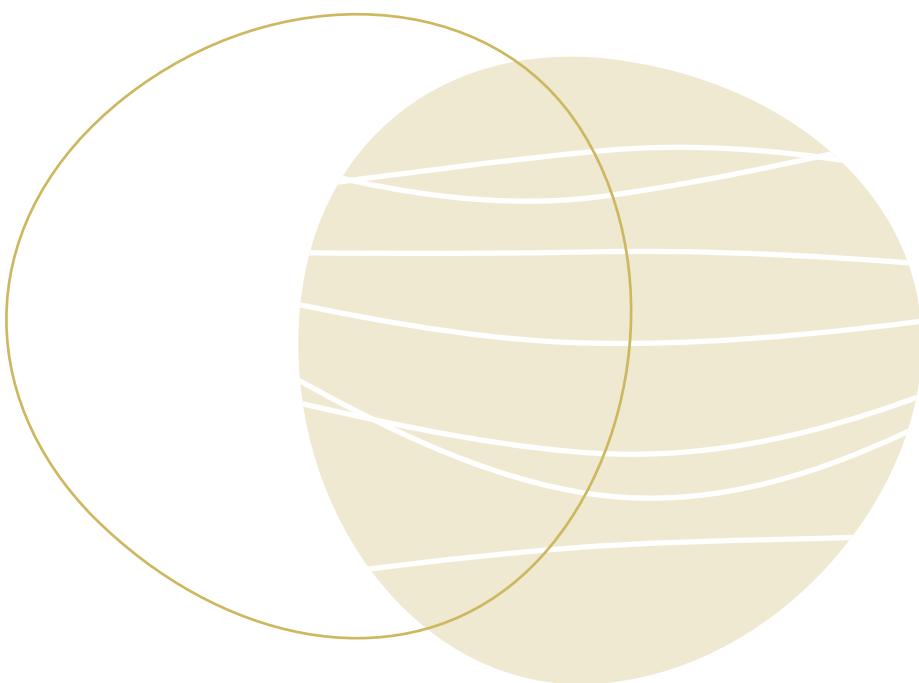
## Resources



Video: In this video, Thomas Hunt explores maths anxiety and how to help learners become more comfortable with maths.  
<https://youtu.be/7WAmFQFH2sc>



5



## Numeracy assessment

Assessment of a learner's skills provides a picture of what they can do and what skills they will need to develop in order to reach their goals. Careful assessment of learners' numeracy skills and knowledge at the beginning, and throughout tuition, is highly recommended (Cumming & Gal, 2000; Moss et al., 2022). Given the nature of maths anxiety, assessment is an informal process and may take place over several early sessions, gathering information partly through informal interview questions and partly by running some assessment tasks. A tutor's first meeting with a learner might focus on the learner's previous learning experiences, such as school experiences, their feelings, attitudes, joys and frustrations with numeracy, their current contextualised numeracy challenges in adult life, and their learning goals. The following questions can elicit this kind of information (Whitten, 2018; 2024):

- Tell me why you are interested in improving your numeracy?
- Tell me about your experiences learning mathematics in school?
- Do you think school set you up well to use numeracy in your adult life?
- How do you feel about numeracy and how might this be improved?
- Are there any areas in your life now where numeracy is a challenge?
- What key areas would you like to work on?

Assessment includes discussion of a learner's goals – what is their need for maths and what everyday tasks do they want to be able to do?

There are a wide range of paper or computer-based numeracy assessments that learners can complete independently. However, a drawback of these assessments is that they do not fully reveal the learner's thinking, how they solved or attempted to solve a problem, or where and why they went wrong or right. The tutor will need to ask follow-up questions to understand why they may be answering correctly or incorrectly. Understanding *how* learners are thinking, and *why*, and then responding appropriately is one of the most effective practices a numeracy tutor can implement (Hodgen et al., 2010; Moss et al., 2022). Therefore, it is recommended that you integrate assessment questioning alongside the assessment tools you might use.

Begin with a low-level assessment task and as learners demonstrate their skills, provide progressively more difficult tasks, stopping when a learner is not able to complete the task. Assessment interviews are typically comprised of sets of tasks that assess a learner's numeracy across different domains of mathematical reasoning, often linked to the 'big ideas of mathematics', which will be discussed shortly (Askew, 2013). These typically include additive thinking, multiplicative thinking, proportional reasoning, knowledge of the number system such as place value, and number facts. When you have finished with one domain, you can move to the next.

Some example assessment tasks designed for adults can be found at the link in the following Figure, beginning on page 10.



A stall has 6 trays of eggs for sale.  
There are 24 eggs in each tray.  
How many eggs are there in total?

Check if the learner uses a partitioning strategy:

$$\begin{aligned}6 \times 24 \\(6 \times 20) + (6 \times 4) \\(6 \times 2) \times 12 \\(25 \times 6) - 6\end{aligned}$$

*Diagnostic tasks (TEC, 2008)*

A final point, adults will almost always want to know the answer to a task they struggle with. While there is often a sharp division between assessment and tuition in school, in adult numeracy tutoring, there is no need for this. When the learner asks how the task can be solved, it is a good opportunity to seamlessly bridge into instruction (Moyer & Milewicz, 2002).

Information drawn from these discussions and assessments is used to develop a learning plan that shows what learning is needed to enable a learner to achieve their goals. The strategies for teaching numeracy and the activities that are recommended for individual learners will be based on the information you will find in this chapter.

# Neurodiversity

Some people have a learning difficulty related to learning maths concepts. **Dyscalculia** is a maths learning difficulty manifesting as trouble mastering number sense, numeracy facts and calculations. Like dyslexia, dyscalculia is neurological in origin and occurs across all ages and abilities. It has a genetic component, and so children of those with dyscalculia are more likely to also have the condition. It is estimated that 3-7% of adults and children have dyscalculia. An estimated 25% of people have trouble with maths relating to other neurodiverse conditions such as dyslexia or relating to traumatic learning experiences. Approximately 60% of learners with dyslexia will have difficulties with maths, but the number of those with the more persistent difficulties that dyscalculia presents is less. Some learners will present with indicators of dyscalculia. If you know what to look for, you might start to notice indicators of dyscalculia while you are assessing a learner.

## *Indicators of dyscalculia*

- Persistent difficulties with maths that have been present since the learner was young
- Difficulties in maths but not in areas that do not involve numbers
- Lack of an intuitive understanding of numbers and simple number concepts, for example the relationship between multiplication and repetitive addition
- Lack of a fundamental understanding of how numbers relate to each other, for example 6 can be made from  $5 + 1$ , double 3,  $4 + 2$  (flexibility of number) as well as a visual concept of the magnitude of numbers
- Unable to make sensible references to numbers, for example, if asked if a pizza should cost \$4,000
- Difficulties with subitising, recognising how many items there are in a set, and instead, needing to count them one by one
- Relying on following procedures they may not understand, rote learning and simple ways of working out answers like counting on fingers
- Extreme difficulties spotting patterns in numbers and making generalisations
- High levels of maths anxiety

Adapted from British Dyslexia Association (n.d.).

When working with an adult with indicators of dyscalculia, it will be helpful to focus on the underpinning Big Ideas in Number to build conceptual understanding rather than rote learning. Concepts can be explained in several ways using visual supports – number lines, place value charts, pictures, arrays, diagrams and concrete materials (Chin, 2017). These learners might begin by counting out everything and need to build counting on, then additive and multiplicative skills. This may include a strong focus on building number sense, place value, partitioning, mental maths and learning common number facts.

## Number sense

Number sense underpins the development of mathematical skills. Learners with dyscalculia will show more difficulties with number sense, subitising (being able to quickly recognise small groups of numbers), comparing magnitude and ordering numbers. People with dyscalculia can still learn but it will be more challenging, progress will be slower and learners will require explicit instruction using manipulatives and visual supports and they will need more revision (SPELD NSW, 2020).

Dehaene (2011) summarises number sense as a fundamental way in which we make sense of the numerical world. Number sense enables us to quickly perceive the quantity of small groups of things. We understand that the number 9 is larger than 5 and that  $12 + 15$  cannot equal 96. These fundamental intuitions and abilities are called ‘number sense’ (Dehaene, 2011). This sense is evident in all cultures across the world and Dehaene (2011) points out the specialised brain circuits that apprehend quantities, enabling number sense.

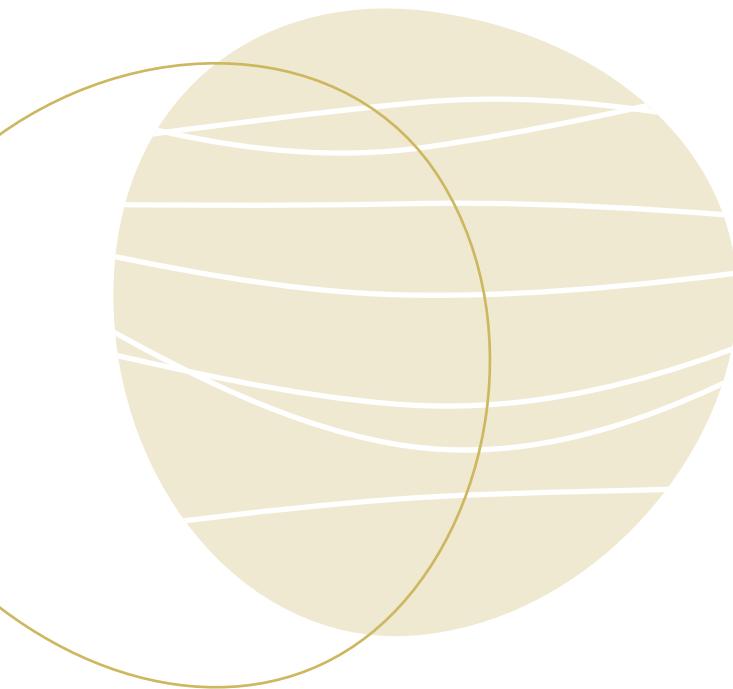
These biologically determined brain circuits develop in interaction with language acquisition and education to build higher-level mathematical skills. Mathematical skills are developed from this base of fundamental number sense and move from simpler to increasingly more complex concepts and procedures. These key concepts and strategies for teaching in each of these areas will be outlined in this chapter.

## Revisiting explicit instruction vs inquiry-based learning

In Chapter 2 we defined the instructional approaches supported by research that we recommend. We explored when it is helpful to provide explicit instruction and when to set up inquiry-based strategies. A learner will need a high level of support initially, and as they build skills, less support is needed (Kirschner et al., 2006). Instructional approaches found to be consistently effective are those that follow the gradual release of responsibility model (Merlo, 2024a). Explicit instruction to develop mathematical competency is used during the acquisition phase, followed by extensive practice to develop fluency, and then instructional approaches with less guidance are applied with real-world mathematical applications in the generalisation and adaptation phases (Merlo, 2024b). Carefully scaffolded exploration during the generalisation and adaption phases can support building learner agency and applying numeracy skills to new situations.

The gradual release of responsibility approach to instruction aims to actively engage the learner in building their skills (Duke & Pearson, 2002).

- In the acquisition phase, I DO – explain and demonstrate the concept using worked examples. Check for understanding by asking questions and reteaching if needed.
- To build fluency, WE DO – work through examples together and provide feedback.
- In the generalisation and adaption stages, YOU DO – learner undertakes the activity independently.



## The importance of discussion

The language and words in numeracy are crucial. Talk with your learner to explore, clarify and build confidence in the language of numeracy from simple to complex. There may be some unlearning to do too, for example, attempting to learn everything by rote rather than building an understanding of concepts and being able to think about numbers and problems flexibly (Tout, 2017).

One of the bridges that helps a learner develop confidence and skills in numeracy is to engage in ‘rich numeracy talk’ (Whitten, 2024). Talking with your learner about numbers, showing them ways of working with numbers and encouraging exploratory thinking helps break down the idea that there is one right answer and one right way to do maths. Talking helps a tutor know what a learner does understand and what they are still learning. The idea is to talk about your workings out! This enables responsive and useful tutoring, meeting the learner at the point of need.

It is important to note that research suggests that tutors tend to talk too much, preferring to transmit information with learners reproducing procedures and placed in a more passive role (Mesa, 2010; Whitten, 2018). Whitten (2024) found that in fact tutors talked about 80% of the time, and learners only occasionally explained their thinking or just answered questions. Learners can be encouraged to be more active learners by asking them to clarify and talk through their thinking. Learners should be prompted to construct their own understanding, with tutors asking questions to prompt thinking and build on their previous knowledge.

## Multisensory teaching

You have already learnt that a multisensory approach to teaching literacy supports learners to make stronger connections and build secure foundation knowledge, and this applies to numeracy as well (Paschler et al., 2008). Just as with literacy, multisensory does not mean applying an assorted swag of random sensory activities; it does mean using sight, sound and touch *related to the actual concrete task and process*, to support learning.<sup>17</sup> Research has shown that seeing and visualising are particularly helpful when learning maths (Boaler et al., 2016). A multisensory approach includes using physical objects, visualisation tools and drawing. In fact, visualisation tools, like number lines, are particularly important for learning numeracy. Visual maths problems help learning by building important neural networks (Boaler et al., 2016).

Not only do visual pathways and connections in the brain support mathematical learning, but talking also engages the senses and is central to learning. In fact, talking includes gesturing, pointing and using our bodies to emphasise and focus thinking. Drawing is a form of gesturing – particularly when drawing in the air. Explaining ideas includes gesturing without words at times, and some embodied cognition researchers now suggest that instruction should include not only verbal explanations but also using gestures to support thinking (Alibali & Nathan, 2012). Drawing on all these strategies for explaining ideas and learning to use mathematical language helps learners build understanding and confidence in manipulating numbers. These strategies help learners connect the symbolic representations of numbers and operations with a sound understanding of their meaning.

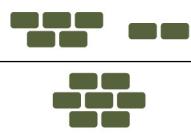
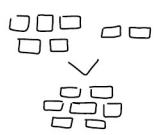
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<sup>17</sup> This Maths Australia webpage has useful content about multisensory teaching: <https://mathsaustralia.com.au/teaching-multisensory-maths/>

## Working from the physical to the visual to the symbolic

For learners who are still building number sense and learning to trust the count, it is helpful to make concepts more tangible. When a learner does not yet have the numerical understanding or skills for tackling their real-life numerical question, instruction should begin with concrete activities using physical objects (Chin, 2017). Maths involves visual-spatial thinking and once a learner has understood concepts using concrete resources, visual representations of number concepts can be used. Activities which use concrete resources and visualising tools can help adults understand the base-10 system and what adding, subtracting and multiplying actually mean. Representing objects can be linked to symbolic representations – numbers and operations ( $5 + 2 = 7$ ).

### Building schemes: the concrete pictorial-abstract approach

	Concrete	Representational	Abstract
			$5 + 2 = 7$
			

*Using the concrete-pictorial-abstract approach to build schemas: multiple ways of representing  $5 + 2 = 7$ . Source: Merlo (2024b)*

Numeracy concepts can be represented in many ways. For example, place value concepts can be represented on a place value chart, on an abacus, or using ones, tens, and hundreds blocks, using drawings or diagrams, with money (\$1, \$10, \$100), or numbers on a page. Using a range of these representations and supporting the learner to make connections between them deepens their understanding of concepts and procedures (NCTM, 2024).

Once conceptual understanding has been built and component steps mastered, these new skills can be applied to examples based on the learner's interests and real-life numeracy questions.

## Context and application to real-life examples

Numeracy work with adults involves breaking down a task or numeracy learning goal into component skills and then teaching each step, building from the learner's existing knowledge to ensure that relevant concepts and skills are built which are then applied to the learner's real-life task. Competency depends on consolidation of skills before doing real-world tasks. New Zealand has developed a guide, *Teaching Adults to Make Sense of Number to Solve Problems*, which outlines (pp. 3–15) how the progression of skills underpins each of these numerical concepts.<sup>18</sup> They also point out that sometimes there are literacy skills required for a task.

Developing maths skills will need explicit learning and practice with real-life examples, and the learner's goals provide a focus for the work. Workplace tasks or the focus of study provide good examples of numeracy tasks relevant to the learner (Marr & Hagston, 2007; Tout, 2017). The NZ guide *Learning Progressions for Adult Numeracy* provides a guide for mapping skills required for numeracy tasks.<sup>19</sup>

For learners who are building everyday maths skills, use relevant activities with resources such as catalogues, packets, websites, paper-based and online activities, games and puzzles. Remember to talk, discuss and ensure underpinning concepts are understood. As learners build confidence, encourage them to explore!

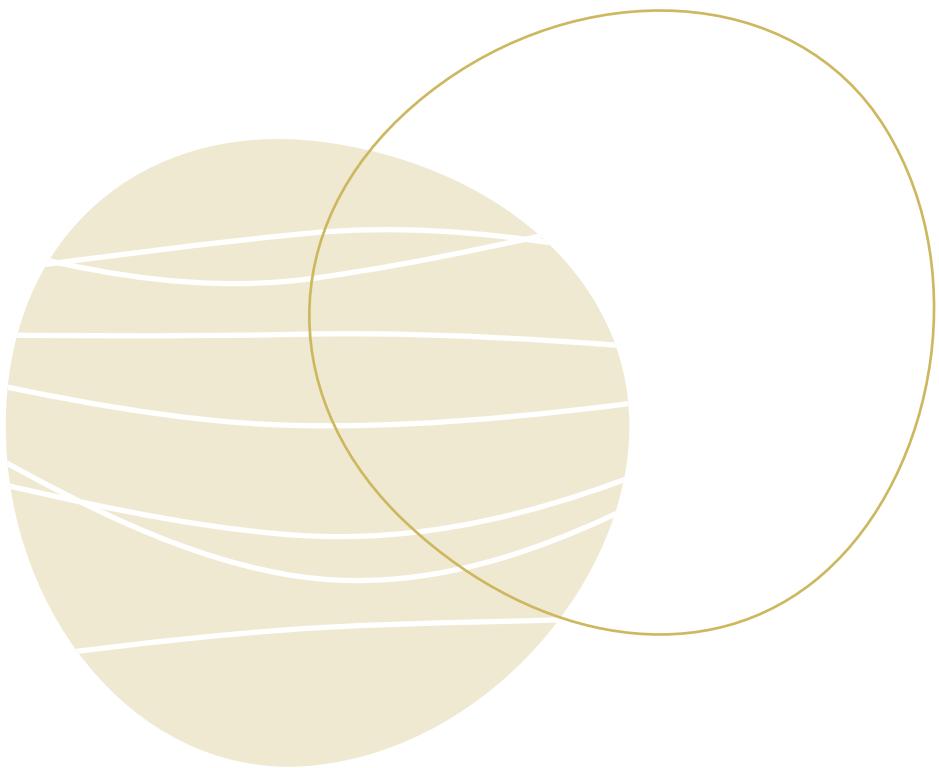
For example, a young man who wants to study to be a chef will need to do a range of tasks involving numeracy skills such as understanding and adjusting recipes, reading instructions and information, costing, budgeting and prioritising. This job requires both literacy and numeracy skills. When analysing what numeracy skills these tasks require, several underpinning areas of numeracy become apparent. This learner would need to already have a good sense of numbers and confidence in working with numbers. They would also need to understand place value, and it would be good to know if they are confident converting fractions, decimals and percentages. It would be important to assess their additive and multiplicative skills. Budgeting will require additive skills and an ability to think flexibly about numbers to make adjustments. Using recipes and adjusting the quantities to make

<sup>18</sup> *Teaching adults to make sense of number to solve problems* | TEC: <https://ako.ac.nz/assets/Knowledge-centre/ALNACC-Resources/Learning-progressions/Learning-progressions-make-sense-of-number.pdf>

<sup>19</sup> *Learning progressions for adult numeracy* | TEC: <https://ako.ac.nz/assets/Knowledge-centre/ALNACC-Resources/Learning-progressions/Learning-progressions-numeracy.pdf>

double amounts would also require skills in measurement and addition, as well as an ability to calculate fractions and/or decimals. It is likely some work would need to be done to ensure they have a solid understanding of these skills. Partitioning skills will also support him in thinking about how many servings of food might be expected from each recipe and how much each serving might cost. When shopping for best value items, he will probably need to use proportional reasoning (rates) to compare the prices of products (e.g. \$ per 100g). Estimating skills will enable him to judge whether his actual calculations are realistic and likely to be accurate.

While this learner probably does not need to use counters to consolidate their sense of numbers and build early additive skills, using visualisation tools like grids and number lines will help him see and understand the questions he is dealing with. Each section in this chapter provides examples of visualisation tools that will help learners build their understanding of key concepts and procedures.



## The Big Ideas in Number

The Big Ideas in Number is a parallel to the Big Six in literacy. The brain builds numeracy skills in specific ways, and understanding key concepts will help us teach numeracy in ways that support the brain to learn. Stanislav Dehaene (2011) identified the parts of the brain involved in developing number sense and the critical underpinning skills that enable the development of more complex mathematical skills. This chapter goes into each of these six ideas in some detail to ensure tutors understand how to guide numeracy development with learners.

Some adult learners will need to begin with developing number sense while others will have patchy knowledge and commonly need to build skills in partitioning, multiplicative thinking and proportional reasoning.

**The Big Ideas in Number** are six key concepts that learners need to develop over time to build numeracy competency (Siemon, 2007). The research suggests that each concept needs to be well understood in order to make the leap to the next because the concepts become progressively more complex and are built on previous understandings (Department for Education, 2020). While the concepts are connected, learners move through these understandings in a developmental progression. This starts with trusting the count and moves through additive thinking and on to multiplicative thinking, which then enables proportional reasoning. Adults struggling with numeracy are more likely to have additive thinking skills but need to develop their multiplicative and/or proportional reasoning skills. It can be surprising to encounter some significant gaps in the foundational numeracy skills of the adults coming into tutoring. Even if you think your numeracy skills are only just adequate, they are quite likely much more developed than many of the learners you work with.

Real-world numeracy tasks often require these different types of numeracy thinking. Money skills are often about additive skills, whereas working out the right amount of paint to buy for the size of a room involves multiplicative skills. Mixing two-stroke for a lawnmower requires proportional thinking.<sup>20</sup> Adults who need to develop multiplicative or proportional reasoning skills need clear instructional support to build the underpinning skills and support to show them how to apply these to the task they are tackling.

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<sup>20</sup> A new type of numeracy approach (that is actually old). September 28, 2021. Damon's maths and numeracy blog: <https://damonmath.blogspot.com>

### ***Sequence of learning the Big Ideas in Number***

1. **Trusting the count** – a sense of number and a belief in one’s own mathematical ability
2. **Place value** – ‘ten of these is one of those’ is a key pattern underpinning initial place value understanding
3. **Additive thinking** – counting, adding and subtracting, moving into multiplicative thinking – multiple groups of units, multiplication and division
4. **Partitioning** – the process of dividing an object/s into equal groups or equal parts. The idea that a collection or quantity can be expressed in terms of its parts is fundamental in developing a strong sense of number
5. **Proportional reasoning** – the relationships between quantities like fractions, decimals, ratios, percentages and proportions
6. **Generalising** – the capacity to see patterns, structures, rules, formulae

The six Big Ideas are built on three essential underpinning numeracy skills (Booker et al., 1997):

- Place value – an understanding of numbers and the ability to think of them in more than one way
- Meanings for mathematical operations – understanding what operations do (addition, subtraction, multiplication, division), recognising operation symbols and the ability to write and interpret symbolic statements
- Mental strategies – a working knowledge of number facts (addition and subtraction to 20; multiplication and division to 100) based on efficient non-counting mental strategies.

**Number facts** are building blocks that are foundational knowledge for developing higher level mathematical skills. Knowledge of how numbers work and the patterns that support calculations in basic operations – addition, subtraction, multiplication and division – needs to be automated to free up thinking space for more complex calculations and how these are applied in context.<sup>21</sup>

<sup>21</sup> Learning progressions for adult numeracy, p. 13 | TEC: <https://ako.ac.nz/assets/Knowledge-centre/ALNACC-Resources/Learning-progressions/Learning-progressions-numeracy.pdf>

## Trusting the count and number sense

Number sense is more than simply being able to count. It involves understanding how numbers relate to each other and includes an ability to think about numbers in more than one way. Beyond counting by ones, developing numeracy skills is about building strategies for more efficient ways of thinking about and solving numerical problems.

Generally, people can intuitively recognise small groups of numbers and have built an early sense of number. However, it may be surprising to learn that some adult learners still find this difficult and may need to begin building facility in this before going to attempt more complicated numeracy tasks. When learners are confident representing numbers in multiple ways and in a range of contexts, can recognise groups of numbers without counting one by one, and can use comparative language when talking about collections and quantities, they can **trust the count** (Department for Education, 2020).

Number sense has been defined as:

a person's general understanding of number and operations along with the ability and inclination to use this understanding in flexible ways to make mathematical judgements and to develop useful and efficient strategies for managing numerical situations... It results in a view of numbers as meaningful entities and the expectation mathematical manipulations and outcomes should make sense... Those who use mathematics in this way continually utilise a variety of internal 'checks and balances' to judge reasonableness of numeric outcomes. (McIntosh, Reys, Reys, Bana & Farrell, 1997, in Siemon et al., 2015).

Several concepts are critical to establish the foundations of number sense (Department for Education, 2020).

- Understanding magnitude, whether a number is small or big and being able to order numbers in terms of increasing magnitude, is essential.
- The ability to subitise – to immediately recognise the number of objects in a small group of up to 4 or 5 – indicates whether someone has developed mental models to enable further manipulating numbers.
- Learners need to understand that a group of 3 and a group of 4 make a group of 7. They will understand that an 8 is one more than 7 and that 6 is 4 more than 2.
- Knowing the number pairs that can be added to make 10 establishes the base-10 patterns, making bigger calculations easier (9+1, 8+2, 7+3, 6+4, 5+5 etc.).

Because our mathematical system is a base-10 system, the patterns for numbers up to 10 are replicated with both higher and lower (decimal) numbers. It is interesting and helpful that we have a handful of 5 fingers and 2 hands of 10 fingers!

### ***Trusting the count***

**Subitising:** recognising the quantity in a small group of objects without counting

**Counting:** knowing the progression of numbers 0-100

**Numbers before and after:** can name the previous or next number to the one given

**Comparing and ordering:** comparing different quantities of objects, e.g. putting in order from smallest to largest

**Parts/whole knowledge:** recognising different ways two parts can make a whole

5

# Activities to build number sense

## Developing mathematical language

Knowing that numbers of objects correspond to numerical symbols, and also to written words for numbers, lays the foundation for numeracy development.

Understanding that three objects can be represented by the symbol 3 is essential foundation knowledge. Knowing how three is written as a word is important too, as it will help people read numbers embedded in everyday texts and contexts. It is rare that numeracy is encountered without text in everyday life. Literacy skills support the use of numeracy skills.

When a learner is still building number sense and learning basic number facts, you will need to spend time talking together about numbers and concepts, such as bigger than and less than. You will need to help a learner learn about odd and even numbers, as this will help them prepare to undertake calculations later.

Even numbers are divisible by two, while odd numbers aren't. This knowledge helps begin establishing patterns in maths, for example when looking at a 10x10 frame, the even numbers all line up down the grid.

## Concrete activities

### Using fingers

Research has found that there is a part of our brain that is used to perceive and represent our fingers and that we can 'see' a representation of our fingers in our brains even when we don't use our fingers in a calculation (Berteletti & Booth, 2015). This area of the brain lights up even when we are not physically using our fingers for calculations (Boaler et al., 2016).

There is evidence to suggest that when people are trained in ways to perceive and represent their own fingers, they get better at this and this improves their mathematical ability (Gracia-Bafalluy & Noël, 2008). Unfortunately, some people have been told as children not to use their fingers. Adults who are working on numeracy may also assume they cannot use their fingers. However, fingers are probably one of the most important aids for developing early mathematical thinking, even in adults (Boaler & Chen, 2016).

The base-10 number system that we use derives from the fact that we have 10 fingers.

## Counting objects

Objects can be counted and grouped as ones and tens. Piles of 10 objects show how many tens make up 20, 30 etc.

The size of these groups can be compared to help establish number sense.

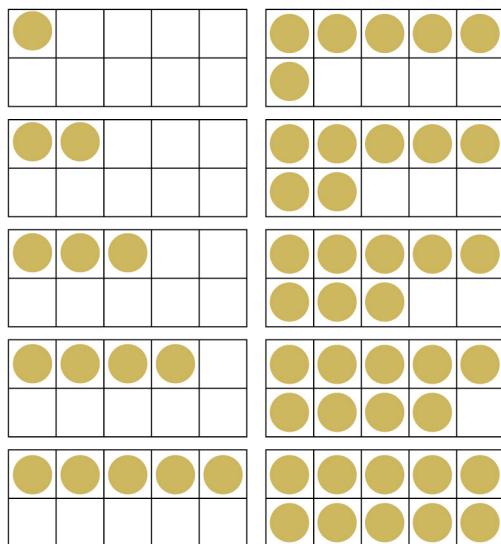
Regrouping is the process of making groups of tens or hundreds. The concept that one of these is worth ten of those can be shown with base-10 or Cuisenaire blocks.

## Dice

The groups of dots on dice and dominoes present regular patterned groupings of numbers that can help learners build a mental model of these numbers. Rolling two dice to practise adding these small numbers can help consolidate this knowledge and build the understanding that two smaller numbers can make up a larger number.

## Visual activities

### Ten frames



Ten frames also show that two smaller numbers can make 10. There are different ways to make 10 from two smaller parts – 1 and 9, 2 and 8, 3 and 7, 4 and 6, 5 and 5. Knowing how to quickly make 10 from any of the numbers 0-9 is useful when making more complicated calculations later.

There are also different ways to make nine or eight etc.

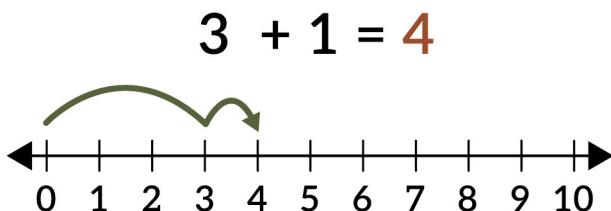
Blank 10 frames can be printed to draw on, or counters could be used

Number frames to build number sense

## Symbolic activities

### Number lines

Encouraging adult learners to use number lines to support, explain and describe their thinking is highly recommended (Gravemeijer, 2014; Woods et al., 2018). The benefits are that they represent clearly what is happening when numbers are added or subtracted because they are linear, mirroring the intuitive number strategies used by learners. For example, a number line better represents mental arithmetic strategies than using place value blocks.



Number lines

### Matching words with symbols

Cards with words for numbers, a visual representation of number (e.g. dots) and the symbol for the number can support learners in learning numerical symbols.

Moving on from counters, a learner will begin to use mathematical symbols, understanding how to represent numbers with symbols...

$$8 + 2 = 10, 3 + 7 = 10, 5 + 4 = 9$$

## Real-world application

Use real-life examples.

If you have three apples, how many more do you need to make five?

## Place value

The key pattern underlying early place value understanding is that ‘ten of these is one of those’ (Siemon, 2007). Understanding place value enables fluency in mathematical calculations and supports learning with both larger numbers and decimals (Department for Education, 2020). The decimal system that we use hinges around tens, and it is not helpful that our naming system obscures this fact with the names eleven and twelve and the ‘teen’ names for numbers between 13 and 19. Some other languages, like Japanese, make the system much clearer by using names for these numbers to reflect the fact that we are talking about ten and three, ten and four etc.

It is easy but mistaken to assume that being able to count to 100 means that someone understands place value. We do encounter adults who have not yet built a sound understanding of place value, and for some learners building this understanding before working on calculations with two or more digits will be necessary.

Digits are to numeracy what letters are to literacy. They are symbols, or graphic representations. Just as letters are used to represent different sounds depending on how they are used in words, so digits are used to represent different quantities depending on where they are used in numbers.

**Digits** – the symbols/numerals, 0 to 9, used to represent quantities when forming part of a number

**Numbers** – a quantity expressed as a single or series of digits.

The values represented by a digit change according to their position in a number. For example, in the number 234, the digit 2 represents 200 and in the number 542, the digit 2 represents 2.

## **Place value**

**Counting:** counting forwards and backwards by 10s and 100s

**Additive partitioning (parts/whole):** breaking down number into thousands, hundreds, tens, ones

**Representing:** making and naming larger numbers through spoken words, writing and symbols, including decimal places, including measurement

**Operations:** engaging in basic operations, including understanding zero in place value

**Comparing, ordering, sequencing:** e.g. arranging multi-digit numbers into the correct order, rounding

**Flexibly renaming number:** renaming a number in multiple ways to show understanding of place value, including measurement conversions

The base-10 number system is essentially multiplicative, involving different sized groups that are powers of ten (Department for Education, 2020). Understanding place value pattern supports efficient ways of working with numbers with more than one digit. Being able to count large groupings efficiently, as well as comparing, ordering, counting forwards and backwards, and understanding the relative size of numbers confidently in place value units is a key indicator of whether a learner has developed sound knowledge in place value (Department for Education, 2020).

# Activities to build understanding of place value

## Language to support learning

Talk about everyday things and learn to compare, order, count and rename objects and amounts, and use everyday objects to support these conversations.

Converse using language that enables comparison of differences in number, for example, before, after, more than, less than, larger, smaller.

Draw on examples from the learner's life. The desk that you are working at might be 60 cm wide and 90 cm long. It is clearly visually longer than wider.

## Concrete activities

Use concrete materials to name and record two-digit then three-digit numbers. Counters, pictures, any other object, words or symbols can be used to represent quantity. Colours might help differentiate objects that represent tens or hundreds.

Although it is tempting to begin work with learners by using money, as this is a concrete manipulable, some learners will need to build number sense and place value concepts before applying this knowledge with money. Once the foundation knowledge has been established, money presents an opportunity to work with everyday maths to consolidate an understanding of place value with dollars and cents.

## Visual activities

### Number lines

Number lines help visualise larger and smaller numbers and are useful for learning about place value.

On a number line, 1.2 is smaller than 1.6 but bigger than 1.06.

8,312 is closer to 10,634 than 2,985.

Support learners to build multiple ways of understanding numbers. One hundred can be understood as 100 units/ones or as 10 tens or as one hundred. Sixty-four can be understood as the whole number of 64 or as 64 units/ones or as 6 tens and 4 units/ones. A critical concept to understand when working in decimals is that the magnitude of the numbers decreases as more decimal places are added. This is the opposite of working with whole numbers where the magnitude increases with more numbers.

Number lines are useful for introducing and explaining this concept.

As learners are beginning, you might initially only talk about numbers up to 100, then later move into hundreds and later again build thousands knowledge, before even beginning to work on decimal places.

**Decimal Place Value Chart**

Ten Thousands	Thousands	Hundreds	Tens	Ones	Decimal Point	Tenths	Hundredths	Thousands	Ten Thousands
10000	1000	100	10	1	.	0.1	0.01	0.001	0.0001
10000	1000	100	10	1	.	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$	$\frac{1}{10000}$

Place value charts

## Symbolic activities

These kinds of questions enable practice in representing numbers, sequencing and ensuring a sound understanding of place value.

### *Example questions*

Write three thousand, two hundred and seventy-nine in figures: **3,279**

Name this number: **4,756**

What does the 3 represent in 6,358? **300**

Arrange the following numbers in order from lowest to highest:

27 142 3 250 117 39 6 89 12

Now, group the numbers in hundreds, tens and ones:

100s 10s 1s

## *Rounding up and down*

The ability to round up and down is a component skill involved in understanding place value.

Numbers ending in 1-4 are rounded down, and numbers ending in 5-9 are rounded up.

For example, 32 would be rounded down to 30 and 85 would be rounded up to 90.

### *Example questions*

Round 236 to the nearest ten: **240**

Round 5,342 to the nearest hundred: **5,300**

Round 46,728 to the nearest thousand: **47,000**

## Rounding activities

## Real-world application

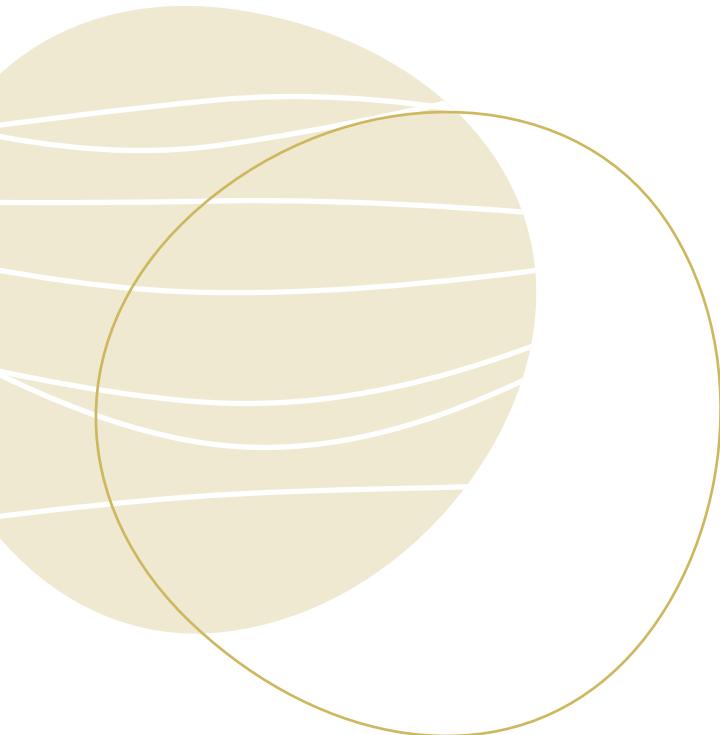
### **Measurement**

Measurement also enables the application of place value skills. All the measurement prefixes reinforce the place value concepts milli, centi, deci, kilo. Again, this can be demonstrated with concrete objects, like a ruler, and then move into visual then symbolic representation.

- Start with length as this uses all of the measurement prefixes.
- Teach the units associated with each unit of measurement.
- Demonstrate conversion between units.
- Practise using hands-on and printed resources.
- This work can lead on to practising additive skills and basic operations calculations.

Learning about measuring and converting weight may be a relevant application of place value understanding.

For example, 1,000g is 1kg. 7,220g is ? kg.



# Additive thinking

Additive thinking deals with addition and subtraction, understanding what these concepts mean, and being able to draw on strategies to solve both single and multiple digit quantities. Drawing on previous skills built for representing quantities, a learner can then learn a range of strategies for adding and subtracting. There will be more than one way to find an answer. For example,  $24 + 51$  could be worked out by adding 50 to 24, then adding 1 to this. Or  $20 + 50$  is 70, then add  $4 + 1$ , making 75. Or, 24 could be rounded to 25 and 51 rounded to 50 (the two rounded amounts cancelling each other out), then  $25 + 50$  is 75.

Some adult learners are not yet confident with addition or subtraction. For example, a learner might not have understood that they can count on from one number to add another. In the sum  $3 + 4$ , rather than counting every counter from the pile of three and four, they can start with four and count on three more. These kinds of skills seem so obvious to us that we have generally long forgotten how we learnt them, and it can be surprising to find the gaps like this that some adults have in very basic numeracy.

## Additive thinking

- **Strategies for single digits:** representing and solving single digit addition and subtraction questions
- **Strategies for multiple digits:** representing and solving multi-digit addition and subtraction questions
- **Estimating:** doing an in-the-head approximation before or after calculation
- **Representing:** appropriate setting out and communication of process

# Activities to build additive skills

## Language for additive thinking

Numeracy questions are often presented in the context of everyday or work-related problems. It is important to ensure that learners understand the language that points to the calculations required. Language for addition and subtraction includes add, and, plus, take away, less, minus.

## Numeracy facts that support additive thinking

Build learners' knowledge of additive and subtractive number facts, so that this knowledge becomes automatic and frees up cognitive space to undertake more complex calculations.<sup>22</sup>

## Concrete activities

### Using objects

Groups of counters or objects can be used to demonstrate the idea of adding and subtracting. Again, using a nominated colour to represent ones, tens or hundreds can be helpful.

Base-10 blocks or Cuisenaire rods may help demonstrate some of the teaching concepts, like carrying over: “Ten of these is worth one of those”.

## Visual activities

### Number lines

Number lines are a useful way to visualise addition and subtraction, showing clearly what is happening. They can provide a focal point for thinking out loud and talking about strategies for working out problems.

Begin with number lines that deal with positive numbers, and once knowledge is secure, you can then introduce representation of negative numbers on a number line.

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<sup>22</sup> *Teaching adults to make sense of number to solve problems*, pp. 80–81, provides activities to support learners to build additive and subtractive fact knowledge: <https://ako.ac.nz/assets/Knowledge-centre/ALNACC-Resources/Learning-progressions/Learning-progressions-make-sense-of-number.pdf>

## Symbolic activities

### *Building skills in abstract representation*

Once a learner has understood additive concepts, they can learn to calculate addition and subtraction with mathematical symbols.

- Once they're comfortable with single-digit number sums, introduce adding two-digit numbers. Begin with two-digit sums that do not require 'carrying over' (regrouping).
- Introduce carrying over: Teach how to 'carry over' when sums exceed 9 ("ten of these is one of those" – e.g. base-10 blocks, Cuisenaire rods).
- Support as required. Provide a grid to help learners keep the digits in the correct columns.
- Provide plenty of practice questions to build confidence and skill.
- Gradually increase the difficulty as your learner improves: 3-digit + 2-digit sums, 3-digit + 3-digit sums, addition of 3 numbers, etc.
- Introduce adding decimals once the learner is confident adding whole numbers.
- Use boxes or graph paper if needed to help keep columns straight.

**Subtractive skills** are taught after additive skills. Like teaching addition, use manipulatives when necessary and number lines to demonstrate the concepts. Begin with simple one-digit then two-digit numbers and gradually increase the difficulty as the learner masters these skills. Rather than 'carrying over', which is used in addition, in subtraction, numbers are 'borrowed' from the higher numbers.

### *Estimation skills*

Estimation is not guessing. It involves using a strategy to find a figure that is close to the actual figure. Calculating a figure that is close to the answer will help someone check the reasonableness of their actual answer. Estimation is useful in real-life contexts, for example, working out approximately how much timber is needed for a building job or how much fabric is needed for a sewing project will help prevent wastage.

There are three types of estimations:

1. Estimating measurements
2. Estimating quantities
3. Estimating computations

When estimating computations, strategies include rounding up and rounding down and drawing on basic multiplicative facts, particularly knowledge of multiples of 10.<sup>23</sup>

## Real-world application

Use real-life examples including text.

Money presents an opportunity to work with everyday maths to build an understanding of place value with dollars and cents. If you have \$100 and spend \$64 at the shop, how much change will you get? If a loaf of bread costs \$7, how much would three loaves of bread cost?

Other applications of additive skills will be suggested by your learner's needs and interests. When assembling a door panel for a car, the mechanic uses 12 nuts, 14 washers and 8 bolts. How many nuts, washers and bolts would be used on two door panels? On four door panels?

Using a number line to talk through steps to find an answer for this can support learner thinking and understanding of this kind of problem.

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<sup>23</sup> *Teaching adults to make sense of number to solve problems*, p. 85–86, provides sequential activities to support a learner to develop estimation skills: <https://ako.ac.nz/assets/Knowledge-centre/ALNACC-Resources/Learning-progressions/Learning-progressions-make-sense-of-number.pdf>

# Multiplicative skills

Multiplicative thinking is an important and perhaps more difficult mathematical concept (Siemon et al., 2001). It is the ability to manipulate numbers as groups and quantities. Understanding the inverse relationship between multiplication and division is central. Again, it involves building different ways to think about multiplication. Learners should master additive thinking before progressing to multiplicative thinking. Both are necessary before working on proportional reasoning (fractions, ratios, decimals, percentages).

## **Multiplicative thinking**

Multiplicative partitioning (equal groups): ‘part-part-whole’ breaking numbers down into parts based on place value

Skip counting: multiplying by using a pattern, e.g. twos, fives, tens

Strategies for single digits: representing and solving single digit multiplication and division questions

Strategies for multiple digits: representing and solving multi-digit multiplication and division questions

Estimating: doing an in-the-head approximation before or after calculation

Representing: appropriate setting out and communication of process

One way of supporting learners is to embed an activity that helps adults recognise how multiplication differs from additive thinking. The key is to highlight that multiplicative thinking is about how many *groups* we add or take away, not single numbers. It involves working with a number of ‘groups of ...’. Language for this includes ‘for each group of’ and ‘times as many’. Teaching multiplication also starts by working from the concrete and moves to the abstract. This can be demonstrated with equal groups of objects or a visualisation tool. Instruction includes building skills in working with a constant number in a group. It is essentially about more efficient ways of adding the same number repeatedly. For example, 3 fours can be worked out as 2 fours, then add another four. Or 8 twos could be calculated with skip counting 2,4,6,8,10,12,14,16. Multiplication and division are inverse operations. Division is used when the total amount is known and finding out how many groups of  $x$  are needed.

Learning the times tables helps build fluency with maths, but for some learners this may not be important. Knowing how to think about calculations and being able to calculate multiplications using a calculator may meet their numeracy needs.

However, automaticity with multiplication does make maths easier. An example of the impact of this is evident with a learner who told a story about being away from school while the eight times table was taught, and she remembers then struggling with calculations involving multiplications of eight. This story provides some insight into how missing foundational numeracy information has an impact. Imagine how missing critical numeracy concepts has a much higher impact again! Adults more commonly already have additive skills but are not confident with multiplicative thinking, so this is an area that will often need attention. Building mental strategies for multiplication and division facts up to one hundred can be helpful (Siemon, 2007).<sup>24</sup>

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<sup>24</sup> *Teaching adults to make sense of number to solve problems*, p. 17, has eight specific activities sequenced in order to develop learners' multiplicative thinking: <https://ako.ac.nz/assets/Knowledge-centre/ALNACC-Resources/Learning-progressions/Learning-progressions-make-sense-of-number.pdf>

# Activities to build multiplicative skills

## Language and representation

Groups of, lots of, how many groups of, times, divided by

Representation – concrete, pictorial, spoken and written and symbolic

## Number facts that support multiplicative thinking

Learning the number facts associated with multiplicative thinking should draw on the patterns that exist for each number. Di Siemon describes these in the following document, relating the facts to the  $10 \times 10$  grid.<sup>25</sup>

Building fluency with multiplication can help a learner develop their facility with calculations. Di Siemon outlines a number of these strategies in this document that will download directly.<sup>26</sup>

## Concrete activities

Objects and counters in ‘groups of’ show a learner what is meant when multiplying or dividing.

## Visual activities

### Array or area models

While number lines are very good for developing learners’ additive and subtraction strategies, array models have been found very useful in revealing the underlying structure of multiplication (Young-Loveridge, 2005). The strength of an array is that it displays the two-dimensional nature of multiplication and various number properties.

5

<sup>25</sup> *Teaching adults to make sense of number to solve problems*, p. 82–84. Work through these number facts with activities to support learners to develop them: <https://ako.ac.nz/assets/Knowledge-centre/ALNACC-Resources/Learning-progressions/Learning-progressions-make-sense-of-number.pdf>

<sup>26</sup> *Building mental strategies for multiplication facts: multiplication table* | Mathematical Association of Tasmania: <https://mat.aamt.edu.au/content/download/33531/473727/file/Multiplication%20Table.doc>

An array or area model is an arrangement of objects (e.g. counters) arranged in rows and columns to create a rectangle. The rows and columns represent groups and numbers of groups. Moving from the concrete to visual representations can be supported by drawing grids or using graph paper. Array diagrams illustrate the groups that you are working with. So, 3 groups of five can be shown on a grid. This also shows that 5 groups of three are equivalent.

This can be explored further – it could be re-arranged to show that it is made up of 2 groups of six and 1 group of three.

When developing thinking about division, it shows that 15 has 5 groups of three or 3 groups of five.

Using word problems as the basis for using arrays shows how real-life questions can be answered with numerical thinking. For example, if you plant 3 rows of tomatoes with 5 tomatoes in each row, how many tomato plants do you have?

An area model also illustrates how area is calculated. If you have a wall that is five metres long and three metres high, what is the size of the area that you will need to paint?



Number charts and arrays

## Region models

Beyond rectangles, the area of different shapes can be calculated with multiplicative skills. Shapes can be illustrated on an array model and the formulae for calculating squares, triangles and rectangles can then be taught.

### Resources



Video: Finding the areas of different shapes

<https://www.youtube.com/watch?v=LpyzdO2fXtA&t=222s>



## Skip counting

Practise skip counting by twos, threes, fours, fives, tens etc. Practise this going forwards and backwards.

### Multiplication chart with numbers

This chart can be printed to use with learners. It can be used to show the patterns that emerge for each times table.

Multiplication										
X	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

### Multiplication chart

## Division

Division is the reverse of multiplication and should be taught after the concept of multiplication has been understood. Division is used when you know the total amount of something. Again, this can be taught beginning with manipulatives, then using visualisations before using abstract numerical symbols.

A concrete example can be discussed using counters. If you have 24 apples and you share these with 3 friends, how many will each friend get?

Number lines can be used to skip count back by threes to see that there are eight jumps making up 24. Introduce the language and numerical representation involved: 24 divided by 3 is 8.

An array diagram can also help work out division questions.

### Resources



Video: Division using arrays

<https://www.youtube.com/watch?v=mSBXfqFguNM&t=59s>



Start by teaching the concept, then gradually increase the complexity of division problems as your learner builds skills and understanding.

Begin with simple one- and two-digit numbers, then progress to longer numbers. Teach short division before long division, and dividing whole numbers before dividing decimals.

## Symbolic activities

### *Learning abstract representation*

Once a learner understands the language and concepts involved in multiplicative thinking, they will more easily manage to calculate problems using mathematical symbols ( $\times, /, =$ ).

You will be able to teach how to lay out multiplication and division sums starting with easier ones, requiring no carrying over or leftovers. It can be helpful to use graph paper to keep the columns straight.

You might need to revise how to do the workings out for manual calculating.

Remember how to do long division??

1. Break down the numbers from the dividend into their **place values**.
2. Sequentially divide the divisor into each place.
3. Bring up any remainders to the next highest place value digit.

### *Learning some of the rules that enable more advanced calculations*

Once a learner has understood these concepts, more complicated work drawing on rules that guide calculations is possible.

Learning the order of operations will become relevant (BODMAS).

## Real-world applications

### **Money**

Money questions enable practice of multiplicative skills. If a sandwich costs \$11, how much would 4 packets of sandwiches cost?  $\$11 \times 4 = \$44$ .

If you bought lunch for your family of five at the fair, how much would you spend if everyone got a pie and drink? Pies cost \$6, drinks cost \$4.  $\$6 \times 5$  and  $\$4 \times 5 = \$50$  (so expensive!!)

## Estimation

Working out approximate amounts using estimation helps decision-making with everyday questions.

If your car holds 50 litres of fuel and petrol costs \$2.32/l, approximately how much will it cost to fill the tank?  $2 \times 50$  plus about  $0.3 \times 50$  = approximately \$115.

Approximately how much paint is needed for a wall that is  $3 \times 4\text{m}$  if one litre of paint covers  $3.2$  square metres? There are  $12$  square metres. If one litre covers approximately  $3$  square metres, this means  $4$  litres will be about enough.

## Time

We use a time numbering system which is based on  $60$ , rather than the base- $10$  system we otherwise use. There are  $60$  seconds in a minute and  $60$  minutes in an hour.

Thinking about time provides an opportunity to consolidate multiplication skills –  $60$  can be divided into  $12$  even parts of five and we often count by fives when telling the time. Calculations like adding  $15$  minutes to  $4:35$  can be done by counting on by  $3$  fives.

Thinking can also be linked to the base- $10$  system – counting by tens to sixty. If someone left home ten minutes ago, what time did they leave?

Blank clock

# Partitioning

Partitioning is about dividing something into **groups or parts**. It is the skill of breaking numbers into smaller parts. For example, 22 might be partitioned into 20 and 2, or 10 and 12 (Whitten, 2024). Asking learners to think about different ways that a number can be calculated breaks down the idea that there is only one way and only one answer. Maths can be exploratory and interesting. Partitioning follows on from multiplicative thinking but extends into working with fractions. Research has shown that about 90% of commonly encountered texts in everyday life require knowledge of fractions, decimals, percentages, ratio and proportion (Department for Education, 2020). For example, if a store has a 20% off sale, and the full price of an item is \$40, how much is the item during the sale?

## **Partitioning**

**Multiplicative partitioning (equal groups):** dividing a whole into various numbers of equal parts (fractions), including time

**Representing:** describing and recording fractions: proper, improper, mixed numbers

**Comparing/ordering:** ordering different simple fractions, decimals and percentages

**Flexibly renaming fractions:** equivalent, simplifying, converting e.g. common denominator

**Counting by fractions:** counting forwards and backwards using different denominators e.g. counting by quarters, eighths

# Strategies for teaching partitioning

## Language and representation

When talking and thinking about partitioning, knowing more than one way to make a number helps create flexibility and facility in playing with numbers.

Some of the language to use includes out of, per cent, numerator, denominator, quarters, thirds, halves, (and later on) improper fractions.

$3 \frac{3}{4}$  can also be written as  $9/4$  which is an improper fraction – the numerator is bigger than the denominator.

## Concrete activities

Use this terminology with concrete examples. For example, if I cut an orange into four quarters and eat three, I have one quarter ( $1/4$ ) left out of four.

Folding a paper strip into halves, quarters, thirds etc. demonstrates the principle of equal parts in a whole.

Objects that represent tens and ones can be used to work out how many ways you can partition numbers. For example, asking a learner how many ways they can make the number 42 can be worked out using Cuisenaire rods. It could be made with four 10s and two 1s, or eight 5s and two 1s, or seven 6s or six 7s etc. Later, the learner will be able to work this out on paper, drawing marks to support thinking. They will learn to do this in more complex ways that demonstrate their understanding of previously learnt skills. For example, 42 can be thought of as 7 lots of  $2 \times 3$ . Finally, they will learn to do this in their head and will be able to think about this without needing concrete or visual supports.

## Visual activities

### Number lines

Once a learner has built some understanding of the quantities that fractions represent, a number line can support thinking and discussion about ordering fractions with different denominators. For example,  $1/4$  comes before  $1/3$ , which comes before  $1/2$ . Fractions can also be expressed as decimals. Decimals are commonly used in the real world to talk about accurate measurement, and a decimal line has a close visual parallel with rulers and tape measures.

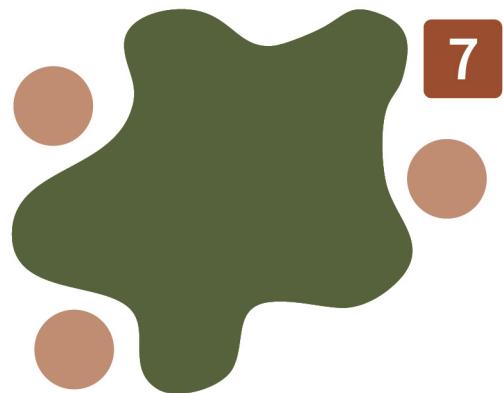
### Equivalent fractions

Splat! is a useful website.

Splat! presents visual problems for practice in partitioning. They build from simple to more complex questions.

In the example shown here, if the total number of dots is 7 and 3 dots are visible, how many dots are under the Splat?

**How many dots are under the Splat?**



5

### Resources

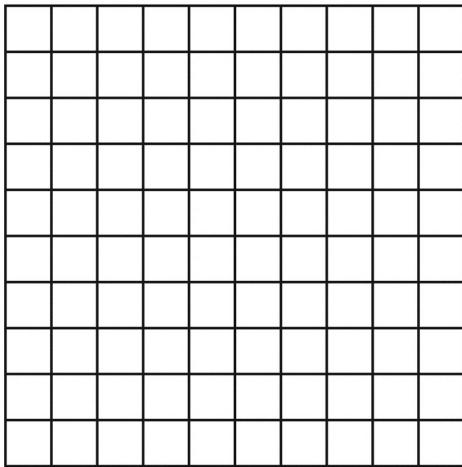


An explanation of Splat! by Steve Wyborney:  
<https://stevewyborney.com/2017/02/splat/>



For those who do not have PowerPoint, Steve has also produced:  
Splat! for Google Slides—40 Lessons—Steve Wyborney’s Blog:  
<https://stevewyborney.com/2018/09/splat-for-google-slides-40-lessons/>





10 x 10 array

A 10 x 10 array can help visualise and build conceptual understanding of percentages and fractions to explore different ideas.

- One per cent is one of these one hundred boxes.
- Fifty per cent is 50 boxes, half of these boxes. How many groups of fifty in one hundred? This can be represented as  $1/2$  and as a decimal as 0.5.
- Twenty per cent is 20 boxes. How many groups of twenty in one hundred? This can be represented as a fraction  $1/5$  and as a decimal as 0.2.
- All the boxes have the same value. If the total value of 100 boxes is 100 and we are thinking about 20% of one hundred, this could be thought of as 20 boxes. If we think of each box having the same value, this means that every box is 20% full. Each box has the value 0.2.
- If the total value of the hundred boxes is different, for example, 40... and you then look for 20% of \$40. If each box has the same value, each box will be  $40/100 = 0.4$ . Twenty boxes is then  $0.4 \times 2 = 8$ . 20% of \$40 is \$8. Or 20% of \$40 is  $40/5 = \$8$ .
- The 10 x 10 array can also be used to show that 2 lots of 25% make 50% or  $1/4$  and  $1/4$  are the equivalent of  $1/2$ .

## Symbolic activities

Arrays, number lines, and diagrams, and building the language and representational conventions, support a learner to develop skills in partitioning with numerical symbols. This includes fractions, decimals and percentages. The equivalence of fractions, percentages and decimals can be demonstrated with visual arrays, supporting a transition to symbolic representation and calculations using symbolic representation.

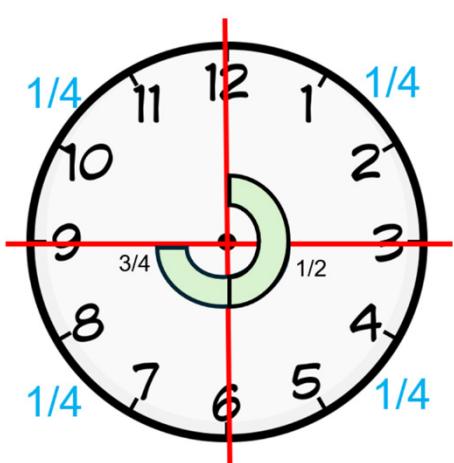
## Real-world applications

Provide real-life examples relevant to learner needs.

### Time

Telling the time using an analog clock is a skill that some learners still need to learn. Time can be represented and spoken about in several ways involving breaking up (partitioning) an hour in multiple ways, using minutes, five-minute increments, quarters, halves etc.

- vocabulary – relate to fractions e.g. ‘quarter’, ‘half’
- vocabulary – e.g. ‘to’, ‘past’, ‘o’clock’
- reading digital time – read the hour first, then minutes
- reading analog time – read minutes first, then hour
- use ‘from’ the last hour until half-past, then use ‘to’ the next hour
- teach ‘am’ and ‘pm’



While we use number systems based on the number 10, the first number system developed in Mesopotamia (now Iraq) approximately 4,800 years ago based on 60. Our system of measuring time comes directly from that number system (Tertiary Education Commission, 2008).

Number lines match the way we visualise larger and smaller numbers mentally. When numbers are presented in a circle, this does not match the way we think. Learners should have built a good sense of number and place value before tackling analog time telling.

If we want to work with a learner to build their skills in calculating differences in time, then we would need to build the learner's skills in addition and subtraction first. For example, if we asked what time the 9.50 bus will arrive if it is 20 minutes late, the learner would need to know both the number fact – one hour is 60 minutes – and be able to add 20 minutes with this in mind.

### **Dates**

A learner's understanding of time and the base-60 system used could be extended into thinking about months and years which correlate loosely with the base-60 system – 30ish days in a month and 365 days in a year. This could be an opportunity to develop partitioning skills, extending into numbers beyond 100. For example, 365 could be made up of  $6 \times 60$  plus 5 or  $12 \times 30$  plus 5 (12 months plus 5 days to make the months with 31 days).

Dates also provide an opportunity to practise multiplicative skills to consolidate number facts about 7s, 14s, 12s.

The seven times table is relevant when talking about days in the week.

Practising skip counting in 7s, starting with different dates, helps a learner calculate what date it will be in a week's time. Thinking about weeks in the year, if there are 7 days in the week, how many weeks are there in a year?  $365/7 = 52$  (and a bit).

A fortnight is  $2 \times 7 = 14$ . How many fortnights in a year?  $365/14 = 26$  (and a bit). These bits add up to an extra day over 4 years, which is why we have leap years.

How many weeks are there in a month?  $30/7 = 4$  with 2 left over. This is why the days of the week are different every month and why the days for the same dates are different every year.

# Proportional reasoning

Proportional reasoning enables calculations of percentages, ratios, fractions, decimals and percentages that involve unequal quantities. It involves consideration of the relationship between two quantities. It draws on multiplicative thinking, partitioning knowledge and more complex calculations. Rather than simply describing a quantity as bigger or smaller, terms like double, half or three-times greater are used (Department for Education, 2020). Problems using these skills are commonly encountered in everyday life. These are relevant to tasks involving measurement, calculating best buys, currency conversion, adjusting recipes and working with plans. For example, working out which tin of soup is the best value for money will involve working out the cost per weight (probably \$/100g) for each soup tin size to enable comparison of the costs for soups which come in different quantities.

## *Proportional reasoning*

- **Fractions:** recognising & interpreting, comparing, basic operations with
- **Decimals:** recognising & interpreting, comparing, basic operations with
- **Percentages:** recognising & interpreting, comparing, basic operations with
- **Flexibly renaming proportions:** simplifying, converting between fractions-decimals-percentages
- **Ratios:** comparison between things, relates closely to fractions
- **Rates:** two quantities changing by the same factor, calculations based on change over time

# Strategies for building proportional reasoning skills

## Language for proportional reasoning

Ratios, proportions, percentages, rates, fractions

## Concrete activities

When a learner has in place the underpinning concepts and is ready to develop proportional reasoning skills, they are more likely to understand the concepts based on visual representations and may not need concrete objects to understand the principles. However, some concrete examples may get them started.

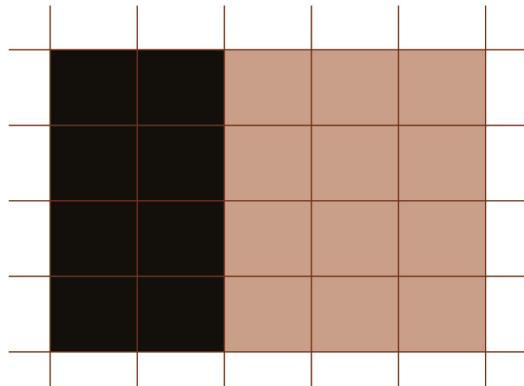
If you have 3 bowls with 4 apples in each, the ratio of bowls to apples is 3:12 which is simplified by dividing both sides by 3 to be 1:4.

If you have 2 red counters for every 3 green counters (2:3), when you have 6 red counters you would then have 9 green counters.

## Visual activities

### Ratios

This array illustrates a ratio of 8:12, which simplifies to 2:3.



The array shows there are two groups made up of 20 equal parts – one group of eight (2x four) and one group of twelve (3x four).

When comparing ratios, 2:3 is smaller than 3:4.

Tables, graphs and pie charts enable comparison of data in terms of percentages, ratios and rates.

## Symbolic activities

### Percentages

If a pair of jeans cost \$70 and they are reduced by 15%, how much do you save?

Check if the learner uses a partitioning strategy:

15% of 70

10% is \$7, 5% is \$3.50

So, there is a saving of  $\$7 + \$3.50 = \$10.50$ .

### Rates

You want to buy a new TV. It retails for \$1,000.

Three different shops have it on sale.

<p>TV - regular price \$1000 <b>20% off</b> Hurry, while stocks last!</p>	<p>TV - normal price \$1000 <b>\$150 off</b> Sorry, no rainchecks</p>	<p>TV - usually \$1000 <b>1/4 off</b> Bargain!</p>
Shop A	Shop B	Shop C

Shop A has it reduced by 20%, Shop B has \$150 off, and Shop C has reduced the price by 1/4.

Finding the answer involves calculating three different prices and comparing them to find the cheapest.

### Ratios

If you need to make a fuel mix in a 5-litre container with a ratio of 50:1 petrol/oil, how would you work this out?

The learner needs to understand what a ratio is and how to express this mathematically.

If you need to mix fuel with a ratio of 50 parts petrol to 1 part oil, then this could be depicted on an array.

1 part oil and 50 parts petrol is the same as 1/51 or 0.02 (rounded up) or 2% oil and therefore 98% petrol (49/50 or 0.98).

2% of 5L is 20 ml and 98% of 5L is 480 ml petrol.

5L requires 5x these amounts, so 2% of 5L is 100 ml and 98% of 5L is 4,900 ml petrol.

## Learning formulae

As a learner builds their skills in symbolic representation, rules might be relevant when dealing with quantities that are expressed as different fractions.

Fraction Rules	
Adding fractions with common denominators	$\frac{A}{B} + \frac{C}{B} = \frac{A+C}{B}$
Subtracting fractions with common denominators	$\frac{A}{B} - \frac{C}{B} = \frac{A-C}{B}$
Adding fractions with different denominators	$\frac{A}{B} + \frac{C}{D} = \frac{AD}{BD} + \frac{BC}{BD} = \frac{AD+BC}{BD}$
Subtracting fractions with different denominators	$\frac{A}{B} - \frac{C}{D} = \frac{AD}{BD} - \frac{BC}{BD} = \frac{AD-BC}{BD}$
Multiplying fractions	$\frac{A}{B} \times \frac{C}{D} = \frac{A \times C}{B \times D}$
Dividing fractions	$\frac{A}{B} \div \frac{C}{D} = \frac{A}{B} \times \frac{D}{C} = \frac{A \times D}{B \times C}$

## Real-world application

### Financial literacy

Learning about budgeting, calculating tax liabilities or compound interest, and comparing loan rates or bank products require proportional reasoning skills. These applications of numeracy are important to know how to do, as the choices that someone makes around saving, spending and loans can have a large impact on their life. The ability to do these kinds of calculations depends on having the foundation skills in place. It might be a useful goal for a learner and will require building knowledge in additive and multiplicative skills first.

### Examples from learner lives

The numeracy needs of a learner and real-life examples can provide the focus for work in this area. A learner may need skills to work out the best discount on an airfare or to calculate distances from a map.

You will need to identify and map out which subskills are required and ensure they are taught first, before applying them to real-life questions. For example:

- Drawing on a learner's interest in football might lead to discussions about the AFL ladder.
- Understanding how to read a table and interpret what it means may be the first part of a discussion before beginning on numeracy questions.

## Higher-level maths skills

Learners requiring tutoring assistance beyond foundation skill numeracy might need to find a specialist tutor. This higher-level work might be linked to areas of vocational study, like apprenticeships in carpentry or plumbing for example. Content might include:

- formulae: uses variables to represent numbers, transposition
- scientific notation: used for very small or very large numbers in calculations
- trigonometry: Pythagoras' theorem, angles, sin, cos, tan
- algebra: applied in more complex vocational contexts.

Resources to support numeracy instruction are provided in Part Three.



### Stop and think

What activities could you do to contextualise specific numeracy skills and knowledge to a learner's everyday life and interests?

## Resources and reading

Beattie, S. & Ross, L. 2010. *The Numeracy Workbook*

Chin, Steve, 2009. *What to do when you can't Add and Subtract*

Chin, Steve, 2009. *What to do when you can't Multiply and Divide*

Chin, Steve, 2009. *What to do when you can't Tell the Time*

Chin, Steve, 2009. *What to do when you can't do Fractions, Decimals and Percentages*

Chin, Steve, 2009. *What to do when you can't Learn the Times Tables*

Marr, Beth, 2013. *Building Strength with Numeracy*

McIntosh, Alistair, 2005. *Mental Computation: A Strategies Approach*

Vize, Anne, 2005. *Maths Skills for Living*

Vize, Anne, 2005. *Maths Skills for Working*

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## Games

Games can help consolidate numeracy skills while adding an element of play to learning.

- UNO
- Number Boggle
- Card games using a standard pack of cards e.g. Pontoon
- Crib
- Yahtzee
- Rummikub
- Dominoes
- Monopoly

## Online resources

The following websites have a range of resources for you as a tutor assisting a learner, or for your learner to engage with.

Building strength with numeracy. VALBEC.

<https://valbec.org.au/Building-Strength-with-Numeracy/>

All sections of this Australian resource are free except for Measurement and Decimals which can be purchased.

Building mental strategies for multiplication facts. NSW IER.

<https://education.nsw.gov.au/teaching-and-learning/curriculum/literacy-and-numeracy/teaching-and-learning-resources/numeracy/multiplicative-strategies>

Building fluency with multiplication can help a learner develop their facility with calculations.

Mental computation: A strategies approach.

<https://hive.ceob.edu.au/mental-computation-modules>

Alistair McIntosh and Shelley Dole resources to help develop mental computation skills to build basic facts, addition and subtraction, multiplication and division, fractions and decimals, ratios and percentages.

Numeracy and maths. Multifangled.

<https://multifangled.com.au/free-resources/>

A number of publications that apply numeracy in context designed for working with adults.

See maths differently: Unlock your maths eyes.

<https://haveyougotmathseyes.com>

This Maths Eyes resource pack from Ireland has been developed to encourage learners to see the ‘maths’ in the world around them.

Maths for adults. BBC.

<https://www.bbc.co.uk/teach/skillswise/articles/zfdymfr>

This is a British site, so money and measurement are imperial.

Yarrka Barring: Resources for First Nations people. Consumer Affairs Victoria.

<https://www.consumer.vic.gov.au/resources-and-tools/yarrka-barring-resources-for-first-nations-people>

Math units. Khan Academy.

<https://www.khanacademy.org/math>

Math is fun.

<https://www.mathsisfun.com>

This US site is for children but provides well-presented information and activities. A good one to refresh your own knowledge of mathematical concepts!

Math. GCF Global.

<https://edu.gcfglobal.org/en/topics/math>

GCF Global has free interactive maths resources, based on US concepts.

Basic math videos and worksheets. Math Antics.

<https://www.mathantics.com/>

Videos that explain key mathematical concepts, e.g. place value, number lines.

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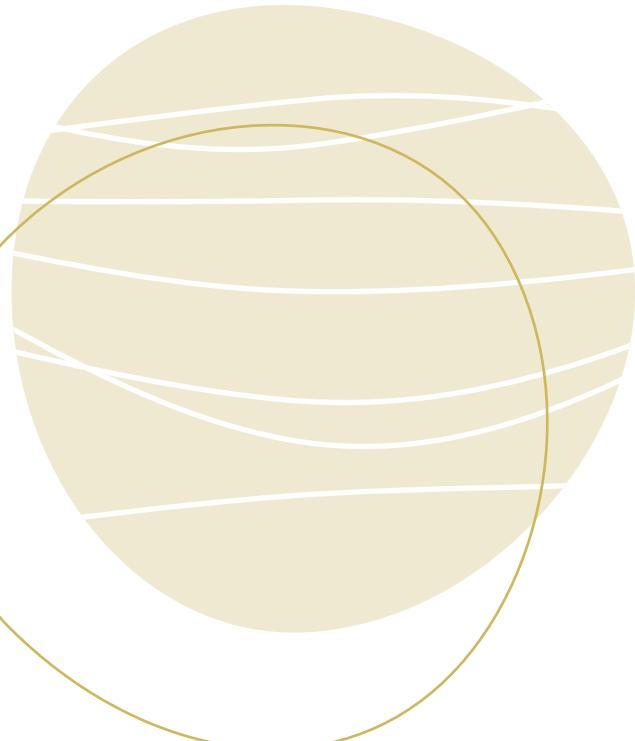
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## Chapter 6

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# Working with English as an additional language learners



## Main points

- It is important to be well-informed about the cultures of the learners you work with, to ensure you understand how to provide a safe learning environment, where differences are respected.
- While generalisations can be made about cultures, not everyone will be the same – not all Australians like Vegemite and football!
- Some exchange of cultural knowledge may be involved in learning, as learning a language also involves learning about the culture.
- Use culturally appropriate resources where learners see themselves represented.
- The focus for tutoring should be on communication rather than perfect English.
- Both communicative and grammar-based instruction will be useful. The balance of these will depend on the focus for the learner.
- EAL learners are likely to need help with pronunciation and grammar as well as common phrases and idioms.
- Approaches for teaching reading and writing will also be relevant.

# Introduction

This chapter begins by looking at cultural competence – what do we need to know and do to be safe and supportive with learners from different cultural backgrounds who are learning English as an additional language (EAL). Language acquisition theories that underpin this work are explored. The chapter then outlines strategies for teaching speaking and listening skills and goes on to look at strategies for teaching reading and writing skills. While some learners are focused on speaking and listening, others are keen to build their reading and writing skills. Some learners speak very little English and may not be literate in their own language, while others might be well educated in their first language and wanting to build reading and writing skills in English. The approaches used will depend on the learner’s goals. Teaching approaches for EAL learners draw on the reading and writing strategies for instruction, outlined in the reading and writing chapters for English-speaking adults. Additional EAL learning needs and goals will determine adaptions, additional considerations and a different emphasis in instruction.

Supporting individuals from diverse language backgrounds to improve their English is often bound up with learning about Australian cultures, customs and systems. Learning a new language involves learning a new sound system, thousands of words, rules for putting the words together, idioms, and learning about a new culture. It is best supported by tutors who are respectful and aware of other cultures and cultural traditions. English conversation groups can provide opportunities for social connection, practice with conversational skills and sharing of information. Individual tutoring provides more focused learning for people wanting to improve their spoken and written English. Some services may offer support to EAL learners to prepare for tests like citizenship tests or IELTS.

Individual tutoring includes working with Aboriginal and Torres Strait Islander learners. Some Aboriginal and Torres Strait Islander people speak multiple languages. Given the problematic history of European colonisation in Australia and the ongoing impact on Aboriginal and Torres Strait Islander people, it is important to be aware of these issues and to be sensitive to the impacts on learners. Tutors need to ensure they are aware of this when working with Aboriginal and Torres Strait Islander learners.

# What is cultural competence?

Cultural competence is the ability to understand, communicate with and effectively interact with people from all kinds of cultural backgrounds (Ricee, 2023).

## What is culture?

Betancourt (2004) defines culture as a pattern of learned beliefs, values and behaviour that are shared within a group; it includes language, styles of communication, practices, customs, and views on roles and relationships.

## Terminology

The most current terminology used to describe people learning English is **English as an additional language (EAL)** learners. This acknowledges that someone already speaks one or more primary languages and that they are adding to their language skills by learning English. This term is respectful of the language strengths someone already has and avoids positioning EAL learners as deficient. The term **culturally and linguistically diverse (CALD)** also recognises cultural and language diversity in a positive way, again avoiding positioning people as 'other'.

### Resources



Video: Cultural competence

<https://www.youtube.com/watch?v=2ugzWjl2tv0>



Beyond respect and awareness, **cultural competence** includes the ability to identify and challenge one's own cultural assumptions, values and beliefs and to commit to communicating across cultural differences (Livingstone, 2014). **Intercultural competence** is another term used to describe the ability to interact effectively and appropriately across different cultures. This includes the idea that as a community we are valuing all cultures equally rather than accepting one dominant culture which determines the 'norm' (Bennett, 2013).

There are four aspects to cultural competence (Livingstone, 2014):

1. Awareness of one's own views of cultures
2. Developing positive attitudes towards cultural differences
3. Gaining cultural knowledge about differences in cultural beliefs, views and practices
4. Developing skills for communication and interaction across cultures.

Each of these four aspects of cultural competence are explored further below.

### ***1. Awareness of one's own views of cultures***

Identifying our own biases is the first step to being able to re-evaluate our stereotyped beliefs and attitudes about other cultures.<sup>27</sup> Cultural bias is the interpretation of situations, actions or data based on the standards of one's own culture (MasterClass, 2021). Cultural biases are grounded in assumptions someone might hold due to the cultural context in which they were raised. Some examples of cultural influences that may lead to bias include:

- linguistic interpretation
- ethical concepts of right and wrong
- understanding of facts or evidence-based proof
- intentional or unintentional ethnic or racial bias
- religious beliefs or understanding
- sexual attraction and partnering.

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<sup>27</sup> This checklist highlights key areas for self-reflection, suggesting ways to build awareness of your cultural competence: [https://bushready.nt.gov.au/\\_data/assets/pdf\\_file/0009/281934/cultural-Awareness\\_self-assessment.pdf](https://bushready.nt.gov.au/_data/assets/pdf_file/0009/281934/cultural-Awareness_self-assessment.pdf)

## **2. Developing positive attitudes towards cultural differences**

Respecting and valuing different cultures enables us to understand and learn from each other. This happens when we are curious and open to other viewpoints, thoughts and the experiences of others. Many EAL learners have had experiences that are very different to our own, and some of these may have been very difficult experiences.

Understanding a learner's background makes it easier to view their situation and behaviour in a positive light. Their cultural context and experiences may have also significantly shaped who they are and how they engage in our culture. For example, someone who is working in what may be perceived as a low status job, like a taxi driver, may in fact be highly qualified but had to leave their country and career behind. It would be misguided to make assumptions about them based on their English language competence, as they may in fact be highly educated and skilled.

### **Cultural diversity in Australia**

According to the 2021 Australian Bureau of Statistics (ABS) census, 27.6% of the population were born outside Australia. Over 5.8 million people in Australia reported using a language other than English at home, which was 22.8% of the population. Approximately 3.4% indicated that they do not speak English well or not at all. Of those who do not speak English well, the top five languages they speak were Khmer, Vietnamese, Hazaragi, Chaldean Neo-Aramaic and Korean. This will vary depending on settlement patterns in different states.

People with diverse cultural backgrounds are more likely to face significant challenges, including lack of access to educational and employment opportunities, increased health and mental health issues, housing difficulties, lower socio-economic status and loss of identity. This can be due to systemic barriers, such as lack of access to information translated into their own language as well as social isolation, discrimination and racism.

### **EAL learner backgrounds**

People learning English have widely varying backgrounds, including:

- migrants – people who have moved to Tasmania by choice
- skilled migrants – have professional skills and qualifications in their own country which may not be recognised in Australia, preventing them from working in skilled positions
- working visa holders – short-term specific work visas
- humanitarian refugees – people who have been granted visas to provide refuge from unsafe, often political, situations in their own country
- asylum seekers – people escaping unsafe, political situations in their country who are seeking a visa
- spousal visa holders – spouses of Australian citizens or permanent residents
- family visa holders – family members of Australian citizens or permanent residents
- international students – who are highly literate in their own language and building English skills for study.

They may be newly arrived, on short-term visas or longer-term residents. EAL learners on humanitarian visas may have spent years in refugee camps and have the additional trauma of being unwillingly displaced from their country. About 8% of Australian migration comes from humanitarian entry, although again this percentage will vary between states (ABS, 2022). Some come from Western countries with a similar culture and languages that often share a common linguistic heritage with English (e.g. Germany or France). Others come from cultures with languages of different origins and a different script. For example, Chinese characters are pictographic, based on visual imagery, rather than phonographic like English, which is based on sound-letter associations. The widely different backgrounds of EAL learners must inform and influence how we interact and work with each individual.

EAL learners who are literate in their own language, and well-educated with established careers and knowledge of additional languages, are more likely to be confident and self-directed learners. Others who are not literate in their first language will need to begin by learning fundamental concepts, like the alphabetic principle, and they may need to learn the English script. All will probably need some help with pronunciation, grammar and vocabulary and to learn more about how our culture and systems work.

Factors which can affect second language learning can be external, internal or specific to an individual (Matrisciano, 2018).

External factors include the social and learning environment:

- demands in daily life – work or caring responsibilities
- cultural background – expectations and norms
- the teaching approach and materials used when **tutoring**
- teaching interactions – **tutoring**, conversation groups.

Internal factors include:

- previous education – may or may not be educated in their own language
- the learner's existing knowledge
- previous learning experiences of education – positive or negative.

Individual factors include:

- motivation – immediate goals for learning
- ability, personality
- impact of trauma
- prior life experiences – cultural displacement.

Clearly, when tutoring we can really only influence the factors involved in learning and the learning environment.

### 3. Gaining cultural knowledge about differences in cultural beliefs, views and practices

Culture is complex and includes:

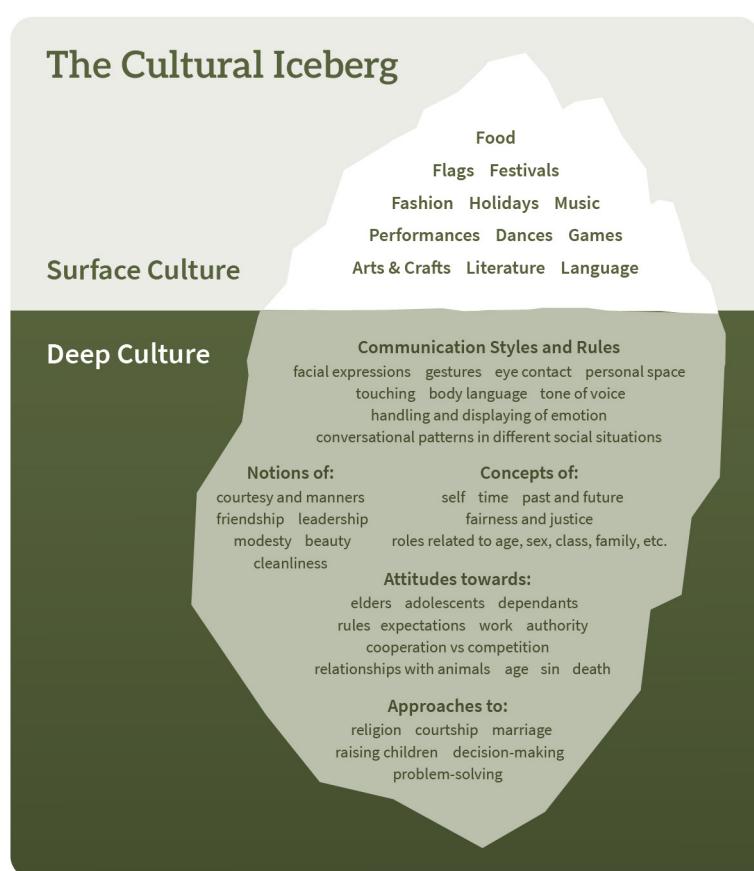
- political, economic, religious and social systems
- aspects of life – song, food, dance, dress and jewellery
- housing, decoration, art and architecture
- a different appreciation of time
- different educational systems and expectations
- gender role expectations
- cultures within regional areas or refugee camps.

We need to respond to the various dimensions of cultural differences respectfully and diplomatically.

#### Visible and less visible culture

Hall's (1976) Iceberg Model for understanding culture makes it clear that some aspects of a culture are visible – things that we can observe about a culture. There are also aspects of culture that cannot be easily observed – see the diagram.

*The cultural iceberg (Hall, 1976)*



This means that when we are learning about another culture, some things will be more visible while others are less easy to see. Understanding a culture requires moving beyond the visible features of culture to look more deeply at the beliefs, values and patterns of behaviour and interaction. This will give us more insight into someone's world view and a better idea of how to interact respectfully with them.

### Low-context and high-context culture

The concept of low- and high-context cultures describes a range of cultural communication expectations (Wurtz, 2005). There is a continuum of how much verbal and non-verbal interactions are valued, how explicit the messages are and how important the context is in communication (Hall, 1976). In **high-context cultures**, communication relies heavily on context, non-verbal cues and implicit messages. People in these cultures are more attuned to body language, gestures, tone and facial expressions. **Low-context cultures**, on the other hand, depend on explicit verbal communication, with messages being direct and clear.

High-context cultures often emphasise close-knit relationships and community, while low-context cultures value individualism and flexible relationships. Misunderstandings can occur when people from these different cultures interact, as their communication styles may clash (Ramos, 2014). Low-context communicators might seem distant or unfriendly to those from high-context societies, while high-context communicators might appear pushy or impolite.

All aspects of an EAL learner's culture need to be respected, even when their values are different. When there is a difference in communication approaches, these may need to be explicitly and carefully negotiated to establish a safe working relationship for both the learner and tutor. Working with an EAL learner with different values and expectations may be challenging and require skills in interacting sensitively and diplomatically. Early interactions with a new EAL learner provide an opportunity to discuss communication expectations and to work out how to navigate these.

Note: It is not appropriate for a tutor to expect to learn about a learner's culture by asking them to **discuss** it. It is **the tutor's responsibility** to become informed through independent learning and preparation, before asking a learner about their culture. This will enable a tutor to explore similarities and differences more freely. When tutors are informed about another culture, it can enhance communication and open up conversations. This will help put the learner at ease and build rapport.

## Resources

### *More information about culture*

The SBS Cultural Atlas has some very helpful information and strategies tutors can use when working with learners from a diverse cultural background.



SBS Cultural Atlas. <https://culturalatlas.sbs.com.au/countries>



To learn more about Aboriginal and Torres Strait Islander cultures, the following sources of information might be useful:



Explore. AIATSIS corporate website.  
<https://aiatsis.gov.au/explore>



The AIATSIS journey. AIATSIS corporate website.  
<https://aiatsis.gov.au/aiatsis-journey>



Aboriginal and Torres Strait Islander culture and history.  
Victorian State Government.  
<https://vpsc.vic.gov.au/wp-content/pdf-download.php?postid=173862>



Tasmanian Aboriginal Centre.  
<https://tacinc.com.au>



## **4. Developing skills for communication and interaction across cultures**

### **Cultural sensitivity**

Tutors need to be sensitive to a range of potential issues when working with an EAL learner. Tutors can be culturally sensitive by:

- developing an awareness and knowledge of a learner's culture and background
- reading about their language and learning greetings and farewells in their primary language
- studying a map of their country and near neighbours
- learning about relevant festivals and religious events and beliefs
- learning about cultural communication expectations – high- or low-context culture, gender roles, active listening, adapting tutoring style and approach, respectful communication etc.

### **Relationship building**

Successful tutor–learner relationships are critical to the success of tutoring. Trusting relationships are particularly important for EAL learners who have had difficult experiences or who are feeling vulnerable in an unknown culture. Ensuring that a safe learning environment is established will build trust and rapport. This includes being aware of cultural differences in non-verbal communication (e.g. eye contact, gestures).

### **Avoid assumptions**

Respectful and safe tutor–learner relationships are focused on the unique individual. Learning plans are tailored for each learner, based on their goals and learning needs. While it is possible to generalise about a culture, people are individuals within this.

- Treat learners as individuals, avoiding cultural stereotypes.
- Allow space for learners to express unique cultural identities.
- Value your own cultural heritage and share if appropriate.

There needs to be a certain amount of caution about promoting the idea of an Australian culture. There are a wide range of cultural groups in Australia, including diverse Aboriginal and Torres Strait Islander groups. An intercultural understanding does not support the promotion of one dominant group which would be considered representative or the norm. Conversations with learners can be exploratory and acknowledge the range of cultural viewpoints. It is likely that a tutor's own cultural background includes roots in cultures from places other than Australia, and insight into their own cultural roots can help provide a more nuanced view of culture.

“Just because I am Australian does not mean I love Vegemite, going to the beach and the footie!”

### **Trauma and EAL learners**

Some EAL learners have experienced trauma (Achren et al., 2012). Learning about someone's culture may provide some clues about what they might have experienced. It is likely to be difficult for a learner to discuss trauma-related topics and so tutors are advised to stay focused on topics that will support learning. Learners who need support to talk about and deal with trauma should be referred to appropriate services. It is not a tutor's role to engage in this part of a learner's life.

#### ***Examples of trauma***

War and conflict

Personal trauma

Family separation and loss

Religious and political conflict

Health-related trauma

Poverty and financial struggles

Detention and asylum-seeking process

Racism and discrimination

Trauma influences how learners are able to learn, recall and apply what is learnt (Kerka, 2002). To be present and connected during learning, learners need to feel that the learning environment is safe in order for them to feel comfortable enough to ask questions and learn (Daloz, 1999). Tutors need to create a safe learning space that does not cross boundaries. A tutor's role is focused on learning, not counselling. Sometimes, tutoring sessions give a learner a break from the difficulties they are experiencing in their lives – their brain has a break from the stress and focuses on something manageable, enjoyable and that helps them gain a sense of control over their lives.

Tutors themselves need to be emotionally well regulated to provide relational consistency and predictability. When a tutor is calm and self-regulated it helps a learner maintain a similarly regulated state. When a learner cannot focus on learning in their session because they are dysregulated, the tutor can stop the session and suggest to meet again another time. Tutors should talk with any support staff they may be working with to follow up with an appropriate referral.

More detailed information on trauma and adult learners can be found in Chapter 10 in Part Two.



### Stop and think

How could you enhance your cultural competence to prepare for working with an EAL learner?

### ***Scenario 1: Cultural conflict over religious belief***

A learner openly disagrees with a tutor's teaching materials because they believe the content conflicts with their religious values (e.g. images of certain animals or themes they find inappropriate).

#### **How this could be managed**

##### ***Tutor's response (adapting and showing respect)***

1. Acknowledge the learner's concern: "I understand that this material might feel uncomfortable for you because of your beliefs. Thank you for sharing your thoughts. Please help me understand why this image/theme is a problem."
2. Discuss alternatives: "Would it help if we worked on an example that feels more appropriate to you? Could you suggest something you feel more comfortable with?"

##### ***Learner's response (mutual adaptation)***

The learner might agree to propose culturally acceptable examples while still participating in lessons.

#### **Outcome**

The exchange fosters mutual understanding and respect, ensuring learning objectives are met without alienating the learner.

## **Scenario 2: Lack of respect for a female tutor**

A male learner from a culture where women are not traditionally seen in authority roles refuses to make eye contact or follow the female tutor's instructions.

### **How this might be managed**

#### ***Tutor's response (setting boundaries and building rapport)***

Acknowledge cultural background: "I understand that in some cultures, interacting with a female teacher might feel unfamiliar."

Set clear expectations: "In this learning environment, we treat everyone with respect and collaborate as a team. Let me know if there's something specific I can do to help you feel comfortable."

Demonstrate expertise calmly: Consistently deliver well-prepared lessons to establish credibility through competence.

#### ***Learner's response (adapting over time)***

Through observation and interaction, the learner begins to see the tutor's authority as based on skill and knowledge rather than gender.

### **Outcome**

The learner gradually adjusts their behaviour as mutual respect is established, and the tutor demonstrates cultural sensitivity while maintaining professional authority.

## **Resources**

### **Further reading**



Culturally and linguistically diverse thinking. Deakin University blog. <https://blogs.deakin.edu.au/iccb/toolkit/who/teaching-international-cald-students/>



Learning and teaching across cultures. Australian Government Office for Learning and Teaching. <https://ieaa.org.au/common/Uploaded%20files/Research%20Publications/2013/PUB-IEAA-Learning-and-Teaching-Across-Cultures-Quick-Guide.pdf>



# Language acquisition theories

## *Theories of language and learning*

Language acquisition theories have evolved over time, moving from structural approaches like grammar-translation to communicative methods and task-based learning (emphasising interaction as both the means and goal of language learning) (Zone of Education, 2023).

The evolution of language acquisition theories reflects debate about language teaching:

- Is a second language learnt or acquired?
- Is it best taught with a focus on grammar and practice?

OR

- Is it best to immerse learners in a relaxed environment with a focus on communication?

Answers to these questions involve reviewing the evidence about the effectiveness of each approach as well as considering the age of the learner, the level they are at, their motivation, their educational culture and the learning environment itself (Harmer, 2001). Children are generally exposed to much more language in context than adults and can generally acquire languages more easily and without formal instruction. Adults find it more difficult to learn an additional language, so studying language outside of immersive communication contexts can be useful (Krüger, 2023, Chapter 4, p. 51).

Generally, a mix of communicative and language study is helpful, but which approach is emphasised depends on the learner. For example, someone wanting to study for their IELTS exam will be highly motivated and focused on language study, whereas a learner wanting to engage with the community will be interested in learning communicative tasks. EAL learners have diverse goals and starting points, from building oral communication skills to developing reading and writing skills. The starting point varies, based on whether a learner is literate in their own language, their level of schooling and whether they have completed further education in their first language.

## Task-based learning: principles and practices

The language acquisition debate was driven by dissatisfaction with teacher-led and grammar-based instruction, which on its own is unlikely to lead to fluent language use (Thornbury, 2019). This led to explorations of alternative approaches for instruction. In the 1980s, task-based language teaching (TBLT) was promoted as a learner-centred and experiential alternative, focusing on the social aspects of language learning. TBLT shifts the focus from grammar and drills to meaningful tasks that reflect real-world language use (East, 2023). In the context of a library literacy service, for example, task-based learning can be integrated into tutoring and English conversation groups. Activities can be designed to reflect everyday language needs, such as asking directions, shopping or accessing community services. The approach taken in these groups is to facilitate active learning through topic-based discussion, rather than teacher-led instruction. A task-based approach aims to enable learners to practise language as a tool for a communicative outcome rather than studying language itself (Ellis & Shintani, 2014). In the context of an English conversation group, the group can identify everyday language questions and request commonly recurring topics and tasks.

Ellis and Shintani (2014, pp. 135–136) have provided a four-criterion definition of the **task-based language teaching** approach:

1. Meaning is the primary focus: most attention is on receiving and expressing the essential messages (i.e. processing input and generating output), rather than on linguistic/grammatical form.
2. Gaps: there are three types of gap – an information gap, an opinion gap (information is shared but opinions differ), and a reasoning gap (reasoning is critical to work out what is required and how to resolve the problem at hand – both understanding and communicating are needed).
3. Learners' own resources: there is freedom to use gestures and *any* language that learners choose to engage with the task, rather than having to produce specific language.
4. Communicative outcome: language is a tool to reach the outcome, but not the end in itself, meaning that learners are not principally focused on having to use language correctly but, rather, on reaching the goal of the task. The outcome is non-linguistic, e.g. following a direction or buying an item.

## Supporting learners with different levels of competency

Language instruction should be tailored to the learner's goals and proficiency level.

Approach	Focus	Learner activity	Likely outcomes
<b>Task-based learning</b>	Completing meaningful tasks using language as a tool. Focuses on achieving communicative outcomes.	Learners perform tasks like asking for directions, shopping, or solving problems collaboratively.	Practical language skills for real-world situations; gradual grammar acquisition through context.
<b>Communicative language teaching</b>	Using language for real-life communication. Focuses on fluency and interaction.	Learners engage in role-plays, discussions and interactive activities.	Improved conversational skills; may lack explicit grammar knowledge.
<b>Grammar-translation</b>	Memorising grammatical rules and vocabulary. Focuses on accuracy and written language.	Learners translate texts, memorise vocabulary, and practise grammar drills.	Strong knowledge of grammar rules; limited speaking and listening fluency.

Each of the above approaches has its merits depending on learner needs and goals.

For example, a tutor may find that a learner requires a blend of grammar and communicative language teaching. Regardless of the language teaching approach, the focus needs to be on the approaches and teaching strategies that will best assist the learner to achieve their goals.

For lower-level learners, **input-based** tasks, such as listening and following instructions, can help build foundational vocabulary before learning to speak or write English – enabling vocabulary and grammar learning and building procedural ability (Shintani, 2012). For example, a listen and do activity might involve asking a learner to listen to instructions or descriptions and then perform a task, like pointing to a picture or making a physical gesture. For more advanced learners, it will be possible to use more focused tasks to develop grammar skills, while providing corrective feedback (Ellis & Shintani, 2014). This approach structures tasks to progressively challenge learners, both cognitively and in terms of task complexity/demand, aligning with real-world scenarios. The number of elements involved in tasks will increase as previous knowledge becomes automated (Robinson, 2005).

## Teaching grammar

Communicative language instruction on its own is unlikely to enable an adult to become fluent in a new language. For EAL learners engaging in tutoring, instruction will need to include grammar-based instruction, combined with the social context approach. Grammar is not just a set of rules but also performs important social, discoursal and interpersonal functions and is best learned and practised in social contexts with real-life communication (Thornbury, 2019). In individual tutoring, session plans can be based on the learner's broader learning to support language learning that is shaped by their social context.

## Implicit and explicit learning

Implicit and explicit learning can be integrated by bringing together grammar-based and communicative approaches in tutoring. The terms implicit and explicit learning refer to the level of awareness and focus of a learner when learning.

- **Implicit learning** involves engaging with conversation or everyday tasks without focusing on language rules. In natural settings, using everyday language, learners can focus on social participation, observation, communication and understanding, leading to incidental, unconscious learning. The rules aren't explicitly learned or named, but the learner becomes familiar with them when language feels right (Ellis, 2008).
- **Explicit learning** is a conscious process with learners paying attention to the development of concepts and rules. Formal instructions are often seen as crucial for learning grammar in a new language, as they explicitly teach the rules and structures of the language (Thornbury, 2019). Things learned implicitly may be drawn on with an explicit focus to build and consolidate language learning more formally (Ellis, 1999).

Simply engaging in implicit and unstructured learning does not usually result in language fluency, given that adults may not have enough opportunities for implicit learning (Thornbury, 2019). Both implicit and explicit instruction should be integrated in tutoring to support adults' language learning (Dörnyei, 2009; Loewen, 2015). Tutors can include both conversation and focused, formal instruction within learning sessions.

Current thinking suggests that:

- where instruction focuses primarily on meaning, this should be balanced with a focus on form (e.g. in the form of corrective feedback)
- where instruction is already largely form-focused, instruction should be balanced with plenty of opportunities for meaning-focused, communicative interaction (Thornbury, 2019).

The balance of instruction in tutoring varies depending on the needs and motivation of the learner. When tutoring an EAL learner who is focusing on developing reading and writing skills, the approach may be more intentional, with explicit teaching of the language concepts and rules of English. The reading and writing pedagogies outlined in the Reading and Writing chapters draw on research-informed approaches and will support work with EAL learners. However, EAL learners will usually need more focus on developing spelling, grammar, vocabulary and syntax skills. It is important to note that foundation and phonics materials designed for non-EAL learners will need to be adapted to support the specific needs of the EAL learner.

Some **incidental learning** often occurs alongside the focus of an activity. For example, learners might pick up new words from conversations or from reading. Incidental learning can also occur in explicit teaching when a new word or phrase is encountered that was not the target of the learning activity. Incidental learning can happen alongside implicit as well as explicit and more formal learning processes.

## Providing feedback

When providing feedback to learners, the evidence suggests that explicit correction or metalinguistic explanation is more effective than implicit feedback (Thornbury, 2019). Effective feedback is specific and focuses on building understanding of how to complete a task (AITSL, n.d.). In a tutoring session focused on explicit learning, feedback will be more useful if explanations for corrections are provided, particularly when focusing on grammar.

**Recasting** phrases is a form of implicit feedback, where a tutor might repeat what a learner has just said (incorrectly), but without the error. This can enable conversation to flow without stopping to focus on instructional explanations. For example:

Learner: I want read.

Tutor: Oh, you want **to** read?



## Plurilingualism

Plurilingual awareness refers to a person's ability to use their knowledge of different languages, which can help them communicate and learn (Department of Education Victoria, n.d.). EAL learners are adding English to the language(s) they already speak and use.

As they develop proficiency in English, their plurilingual awareness develops too.

The concept of **translanguaging** is useful – allowing a learner to draw on their own language skills as well as English enables richer and higher-level communication. Learning some key words and phrases from your learner's language can be a way of demonstrating respect for their knowledge of language and can enable interactions that draw out knowledge of their own language structures. Translanguaging reflects how a learner may communicate in everyday life, and you can support them to build skills in drawing on all their language resources for communicating (Bui & Tai, 2022).

**Generally, EAL learners can be understood even when their English is not perfect, so being able to communicate is the primary goal rather than perfect English.**

Plurilingualism is a broader concept and extends into strategies that draw on a learner's own language(s) for learning, and these skills can be taught. Plurilingual strategies include any activity that brings the learner's languages into tutoring to enhance teaching and learning (Department of Education Victoria, n.d.). For example, learners can be encouraged to use bilingual dictionaries and to look for similarities and differences in the language(s) they know and the language they are learning. Tutors can also encourage their learner to use their home language(s) at certain times, for instance, when they are learning new concepts.

## EAL learner assessment

When beginning work with a learner, it will be important to assess what they know, what their goals are and what skills need to be developed to help them reach their goals. In addition to assessing reading, writing and numeracy skills, the oral skills – speaking and listening – of an EAL learner are considered more carefully. Learners who are literate in their own language are more likely to be confident learners and understand how to go about learning. Those who have no literacy or low literacy in their own language may not have a good set of learning strategies, and they will need more support to develop learning strategies as well as undertaking the hard work of learning English.

EAL learners can loosely be grouped as beginners, intermediate learners and advanced learners.

**Beginners** are usually focused on learning communication to meet everyday needs. Their vocabulary is limited to basic everyday words and phrases. They are likely to be working on sentence structure and verb tenses. They may have difficulty understanding English at natural speed and might rely on visual or context to grasp meaning. Their speech may be slow, with a number of mistakes, and they may rely on memorised phrases. They will be learning to read simple sentences with familiar words. They may be able to write very simple sentences.

**Intermediate** learners can engage in more detailed conversations but struggle with more complex language structures and topics. They will have a broader range of vocabulary and more understanding of basic grammar, including tenses and simple sentences. They will be learning to speak and write more complex sentences. They will be able to understand slower speech and to follow more structured conversations. Fast speech, idioms and regional accents will still be difficult. They will be reading simple texts and are beginning to engage with more complex texts, such as news articles, but will need to learn unknown words. They will be working on writing more coherent paragraphs but will have some errors in punctuation and grammar.

**Advanced** learners are working on fluency and more nuanced communication but are still making minor mistakes. These learners will have more extensive vocabulary, including idiomatic expressions and specialised terminology related to work, study or personal interests. Their command of grammar is strong with only occasional mistakes. They can understand speech, including fast speech, idioms and different dialects. They may need clarification of technical or academic terms. Speaking will be fluent, and they will be able to discuss topics in detail. Minor punctuation or vocabulary challenges might be apparent. They can read and write advanced texts, including reports and essays, and will only occasionally need to look up words or grammatical points.

### ***Common speaking barriers for EAL learners***

**Pronunciation and accent:** Difficulty with sounds and intonation in English

**Limited vocabulary:** Struggling to find the right words during conversation

**Confidence:** Fear of making mistakes or being misunderstood

**Grammar:** Challenges with sentence structure and tenses

**Speed of speech:** Difficulty understanding or responding to fast-paced conversations

### ***Common listening barriers for EAL learners***

**Language proficiency:** Difficulty understanding complex vocabulary or unfamiliar accents

**Cultural differences:** Misinterpretation due to differing cultural norms, gestures, or communication styles

**Speech rate:** Feeling overwhelmed by fast-paced speech, reducing comprehension

**Anxiety or stress:** Nervousness or fear of misunderstanding, impacting focus and understanding

**Lack of context:** Difficulty following a conversation where contextual information or background knowledge is missing

There are **pronunciation checklists** for many languages which highlight the common errors that will occur. Vowels might be spoken differently. Some of the sounds we use in English may not occur in another language and will be very difficult for the learner to hear and say. Conversely, the learner may have different sounds used in their language that are not used in English at all. An assessment checklist helps identify which particular sounds can be difficult for a learner, which enables tutoring to focus on these. The checklist will also identify difficulties with the rhythm of speaking – placing the stress in words in the right place, pausing appropriately and linking words in ways that demonstrate comprehension. Intonation – letting the voice lift and fall at appropriate places – helps a speaker be understood. For example, yes/no questions lift at the end whereas sentences drop at the end.

A learner's ability to understand instructions is also relevant, as this will make it easier to engage in tutoring sessions. When a learner finds it hard to understand what is being said, a tutor will need to draw on supportive tutoring strategies, like slowing down speech, repeating or emphasising words, and using images, a picture dictionary or perhaps a translation app.

Assessment information can inform development of a learning plan. The learning plan should outline learner strengths, interests and goals as well as their learning needs in relation to these goals. Activities and resources will be identified for each learner that can help you develop session plans. These focus on the needs of the learner:

- Do they initially just need to be understood in the community?
- Are they planning on undertaking study that involves written work, and what level of grammar will be required?
- Are they working towards taking the IELTS test?

### ***Key points for working with EAL learners***

- Teach one concept at a time, using real-life examples and context.
- Avoid cognitive overload.
- Allow plenty of practice.
- Integrate speaking, listening, reading and writing activities in relation to the focus skill being taught.
- Encourage learning with real-life homework tasks, build in ongoing practice and check for skill mastery.

# Speaking and listening

## Communicative approach to language learning

English conversation groups can be task-based and centred around topics and conversations relating to everyday situations, while individual tutoring provides additional opportunities for more explicit instruction and support. This can include work on speaking and listening skills, based on everyday language needs and language learning goals.

All languages have ways of highlighting the most important information in spoken language. English relies heavily on melodic clues. Changes in pitch provide cohesion, contrast and orientation. When learners are taught to use intonation when they speak, they will understand and tune into intonation when listening.

As a tutor you can model speaking clearly and listening carefully. Repeating words so that learners clearly hear pronunciation and intonation is important. You can ask a learner to repeat the word they are learning to get pronunciation and intonation right. You can also check whether a learner has understood by asking open questions (questions that require more than a yes/no answer).

## Pronunciation

Three factors influence effective communication:

1. **Intelligibility:** speaker uses sound patterns that are recognisable as English.
2. **Comprehensibility:** listener can understand the meaning of what is said.
3. **Interpretability:** listener can understand the intent of what is said.

Referring to Chapter 3: Reading, we know that English is based on an alphabetic code which has 44 main speech sounds and several hundred spelling patterns for these sounds. This is hard enough to master without the complications of:

- a first language that might not have some English sounds, e.g. consider Asian languages, which don't have 'r' or 'l' sounds
- varying word stress, which can affect meaning, e.g. 'hottle' instead of 'hotel'
- coarticulation – when an individual sound is influenced by those it sits next to, e.g. can, ham (nasal sounds), toys (z not s)\*
- misunderstandings through our habit of running words together with no spaces, e.g. 'wouldyoulikefrieswiththat?' 'inthisdayandage...'

\*Coarticulation can mean we are using two or more primary places of articulation at once – e.g. the back of the throat and the tongue on the teeth, in preparation for the following sounds. It is a bit like body movement, which is not isolated. There are different coarticulation movements in different languages.

To be understood a learner needs to be able to:

- produce English speech sounds and sound patterns
- use correct sentence stress, intonation patterns and rhythm
- select appropriate words and sentences for the audience, situation and subject matter
- organise and express thoughts in logical, grammatical sequence
- use the language fluently without too many pauses.

### ***Strategies to build pronunciation skills***

There are four areas of focus when developing pronunciation skills:

1. Sounds within words
2. Learning where to place the stress in words
3. Learning what words to stress in sentences
4. Linking sounds within and between words.

#### ***1. Sounds within words***

As you learnt in Chapter 3: Reading, words are made up of a number of individual sounds, called phonemes. For example, in the word ‘stop’, there are four sounds: /s/ /t/ /o/ /p/.

When helping learners pronounce sounds that are new to them, show them the parts of the mouth involved in making each sound.

For EAL learners, it is often the vowel sounds that are tricky: a e i o u can be pronounced as short or long sounds, e.g. /a/ as in cat or /A/ as in day. Vowels are made as the mouth opens and the mouth shape changes. In contrast, consonants are made with complete or partial closure of the mouth, with the tongue (/t/ or /k/), lips (/p/), throat (/h/) or by moving through the nose (/m/ or /n/) or mouth (/f/ or /s/). Consonants might include the voice (/v/ as in van) or be unvoiced (/f/ as in fan).

Important factors in teaching pronunciation with lower-level learners are:

- moderate correction: no need to correct everything, only those things which interfere with communication
- good explanations: show the mouth movement/tongue position
- lots of practice.

Be aware of the common errors an EAL learner might make, based on the first language they speak.

Raise learner awareness about how pronunciation contributes to making certain types of meaning.

Encourage learners to monitor their needs and develop personal strategies for improving different aspects of their pronunciation.

Introduce learners to a metalanguage and notation system that will help them learn more about pronunciation independently, both in tutoring sessions and in the wider world.

### Everyday English phrases

#### Resources



Teaching troublesome sounds. ELT Concourse teacher training. [https://teflconcourse.com/training/inservice/pronunciation/troublesome\\_sounds](https://teflconcourse.com/training/inservice/pronunciation/troublesome_sounds)



Pronunciation. UTS.  
<https://www.uts.edu.au/globalassets/sites/default/files/pronunciation-e-booklet.pdf>



## 2. Word stress

Words with more than one syllable often place more stress on one part of the word, and EAL learners may need to learn which syllable is stressed in a word.

Word stress in English can be tricky; some general rules can help.

### Two-syllable words:

- **Nouns and adjectives:** Stress is usually on the first syllable.
- Examples: TAble, HAPpy
- **Verbs and prepositions:** Stress is often on the second syllable.
- Examples: to reLAX, to deCIDE, beTWEEN

### Compound words:

- **Noun + noun:** Stress is usually on the first part.
- Examples: POSTman, BLACKbird
- **Adjective + noun:** Stress is usually on the second part.
- Examples: bad-TEMpered, old-FAshioned

There are some words which change their meaning depending on where the stress is placed.<sup>28</sup>

## 3. Sentence stress

Using intonation helps a listener hear when someone is asking a question or when they are making a statement. Intonation rises at the end of a yes/no question and falls at the end of a sentence.

Generally, the most important part of a sentence is stressed. Typically, stress is placed on nouns, the main verbs, adjectives and adverbs. Less important words are not usually stressed.

Sometimes a speaker will choose to emphasise a word in a sentence which may also change the meaning (Burns & Claire, 2003). Contrastive stress highlights a difference or makes a correction.

For example, “I want a **red** car, not a blue one.”

<sup>28</sup> *Change the stress, change the meaning: 35 words that change meaning* | engVid. <https://www.engvid.com/english-resource/35-words-stress-changes-meaning/>

Emphatic stress shows importance or strong feelings.

For example, “This is **really** important.”

AND

Can **you** take the scissors? (not someone else)

Can you take the **scissors**? (not the knife)

#### 4. Linking sounds and words

The way words are joined in everyday speech may also need to be learnt.

#### Resources



Video: Teaching linking in English pronunciation  
<https://www.youtube.com/watch?v=7HFZjosS9Js>



Some examples of connectors include:

- consonant to vowel (an\_Australian\_animal)
- consonant to consonant (next\_week)
- vowel to vowel (where\_are (r)\_you?)
- shortened sounds (when do they arrive?)
- elided (omitted) sounds (does (h)e like soccer?) (Burns & Claire, 2003).

More detailed information on ways to help improve pronunciation can be found in the document, ‘Clearly speaking’.<sup>29</sup>

<sup>29</sup> Burns, Anne & Claire, Stephanie. (2003). *Clearly speaking: Pronunciation in action for teachers*.  
[https://www.researchgate.net/publication/282332684\\_Clearly\\_speaking\\_Pronunciation\\_in\\_action\\_for\\_teachers](https://www.researchgate.net/publication/282332684_Clearly_speaking_Pronunciation_in_action_for_teachers)

## Error correction

It is not necessary to correct every error. Choosing which ones to correct will depend on previous learning and the current focus of an activity.

Speaking errors may be corrected either directly or indirectly, depending on the context and focus of learning. Indirect correction models the correct pronunciation or stress.

For example, if a learner says, “I come from EsSpain,” indirect correction is, “So you come from Spain.” Direct correction is, “When you say ‘Spain’, I hear Es-Spain. In English, we just say Spain.”

## Building listening skills

EAL learners are also likely to have difficulty listening to spoken English. Some of the sounds of English may be new to them. Vocabulary and sentence structures will also be unfamiliar.

When learning English, EAL learners use different listening strategies, depending on what stage of development they are at (Ellis, 2008). For various reasons, listening and understanding what is being said can be difficult:

- The learner may be working on understanding every word.
- Native speakers talk quickly, and it can be hard to keep up as the learner is trying to process the words they hear.
- They may need to hear something more than once to understand it fully.
- They are using all their cognitive capacity keeping up, with no space for thinking ahead.
- They may already be anxious or stressed, and the difficulty of trying to understand may contribute to this stress.

An EAL learner will already be using some strategies for listening. If a tutor can find out what strategies the learner is using, then additional strategies can be taught to develop their listening skills.

## **Strategies for teaching listening skills**

### **Active listening**

Encourage learners to focus fully on the speaker and avoid distractions. They should nod, make eye contact, and show interest through facial expressions to stay engaged. They may be able to infer meaning based on related vocabulary.

### **Predicting content**

Before listening, have learners predict what they will hear based on the context.

### **Listening for the main idea**

Train learners to listen for the main idea of the conversation or audio. They should try to identify who is speaking, what the topic is, and what the key points are.

### **Notetaking**

Encourage learners to jot down key words or phrases while listening. This helps them remember important details and focus on comprehension.

### **Chunking information**

Teach learners to break down what they hear into smaller, manageable parts. This could involve listening for specific sentences or phrases and understanding their meaning.

### **Shadowing**

Learners listen to a recording and then immediately repeat what they hear. This practice improves pronunciation, intonation and comprehension.

### **Using context clues**

Encourage learners to use context to guess the meaning of unfamiliar words or phrases. They should pay attention to the tone of voice, body language and surrounding words.

### **Identifying key vocabulary**

Before listening, introduce key vocabulary that is likely to appear in a listening exercise.

### Practising with varied listening materials

Use different types of audio materials such as podcasts, news reports, conversations, songs and stories to expose learners to different accents, speeds and contexts.

### Listening repeatedly

Allow learners to listen to the same audio multiple times. Each time, they can focus on different aspects, such as the general meaning, specific details, main idea, stress, intonation or vocabulary.

### Teach clarification skills

Excuse me, could you repeat that?

Did you say \_\_\_\_\_?

How do you say \_\_\_\_\_ in English?

So you want me to \_\_\_\_\_ (repeat instruction)

Can you speak more slowly please?

### Vocabulary, syntax and grammar for speaking and listening

When developing session plans, start with the learner's immediate and everyday needs. Who and what are they engaging with? For example, do they need to be able to make and navigate a doctor's appointment? The common words, specific vocabulary, phrases, grammar and colloquialisms related to the content focus can be identified in the session plan. Preparing the learner with the language and phrases could then be practised by role-playing. Teaching phrases promotes fluency and supports working memory. Examples include: 'How are you?', 'See you later', 'Can I have...' (Lewis, as cited in Harmer, 2007).

Some everyday contexts might include having conversations at the library, at home, at the shops, in the street, on holiday, at a birthday party, making an appointment, telling the time, meeting up with a friend, asking directions, using money, planning dates etc.

Beyond these practical situations, a tutor could consider sessions focused on language and expressions for:

- feelings
- opinions
- personal details
- functions: giving advice, expressing hope, telling stories
- daily routines
- describing: people, places, objects, habits.

Researchers have identified the 400 most common words to learn in any language. These 400 words cover 75% of conversational speech.

Tutors can prioritise these words when working with a learner and use them in the context of the work they are doing. The words will be more memorable and meaningful for the learner when used in context. The list is not designed for learners to learn by rote. Knowing words is only one aspect of learning language. A learner will also need to understand how they are put together – syntax and grammar are important.

Note: Contractions should be taught, otherwise they will be confusing. For example, ‘it is’ becomes ‘it’s’.

In a session, the tutor can prepare a learner for a task they need to perform in the world. The learner and tutor can practise together. They can go and undertake the task, then come and talk about how it went. Any difficulties or language gaps can be identified and learnt so they are better prepared for next time. Remember that learners will need to repeat new information so that it is retained in long-term memory.

## Resources



400 most common words in any language.  
Fast Language Mastery blog. <https://fastlanguagemastery.com/400-most-common-words/>



List of standard contractions in English.  
Editor's Manual blog. <https://editorsmanual.com/articles/contractions-list/>



### **Summary checklist of interactive pedagogical skills**

- Building vocabulary with visuals
- Using templates to practise target words, phrases and sentences
- Relating learning to real-life tasks
- Ensuring plenty of repetition and encouraging opportunities to use language in different settings
- Giving corrective feedback in an unambiguous but supportive fashion
- Intervening in, but not interrupting, fluency tasks
- Recasting learners' output while maintaining conversational flow
- Eliciting grammar explanations, examples and translations (where appropriate)
- Using visual prompts (timelines, gesture, graphic organisers etc.) to illustrate grammatical concepts clearly and/or to prompt self- or peer-repair
- Modelling and drilling example structures
- Checking understanding using concept checking questions
- Maintaining a balance between example and real questions

Adapted from Thornbury (2019).



### **Stop and think**

How would you decide what topics to focus on to develop speaking and listening skills with your learner?

## Reading and writing skills

Teaching EAL learners reading and writing skills requires an understanding of the difference between working with an EAL learner as opposed to a foundational English-speaking learner who has a large spoken vocabulary. Many of the underlying teaching strategies learnt in the reading and writing modules will be useful; however, a tutor will need to select teaching materials which specifically support the EAL learner. For example, a phonics lesson for an EAL learner must include vocabulary support for building meaning, practice in speaking the word, and integrating it into spoken and written language use.

EAL learners may need further support or emphasis in additional areas of learning. For EAL learners whose first language uses a different script or with different language origins and therefore different grammatical structures, learning in these areas will be important. Instruction in spelling, punctuation and grammar will generally be needed. For learners not literate in their own language, the starting point will be very different – strategies for these learners are outlined below. These learners may have very little experience in learning environments and may also need to build skills in explicit learning.

EAL specific resources should be used when working with EAL learners, as these will include instructional activities across the range of learning needs of EAL learners – phonic as well as vocabulary, punctuation and grammar.<sup>30</sup>

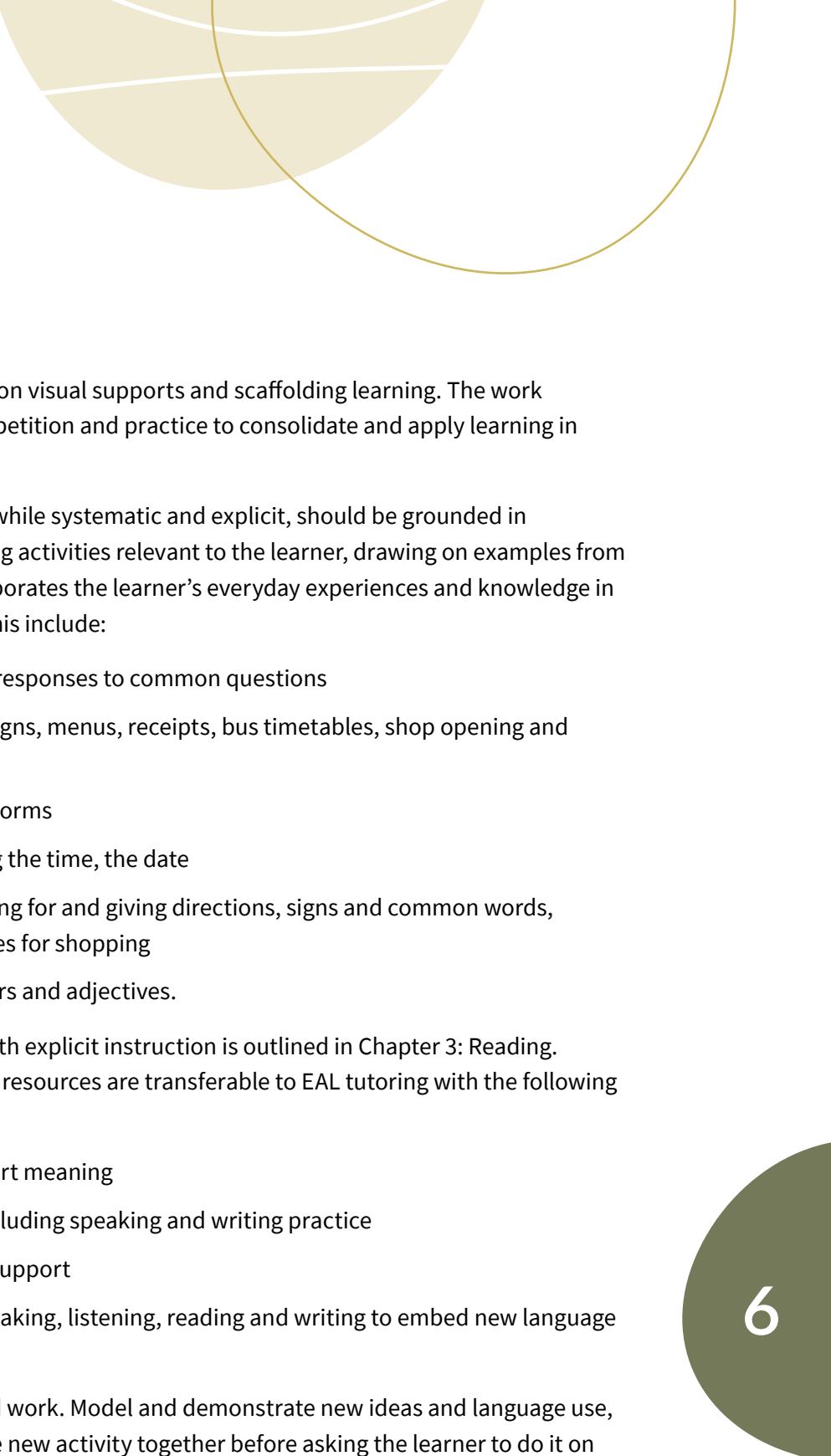
### Learners who are not literate in their own language

These learners will need to begin with oral communication based on everyday language needs, as reading and writing are more difficult skills. This work will need to accommodate the need for the learner to also learn English pronunciation, and if there are sounds that don't exist in their own language, this will present an extra challenge.

Once they have built some facility in speaking and listening to English, they may want to focus on building reading and writing skills. This work will begin by focusing on letter recognition and sound-letter correspondences. Starting points are everyday useful language, vocabulary and basic information. Reading and writing development will be based on everyday language needs, connecting spoken language with written representation. The general phonic materials that we use will be part of a teaching toolkit for working with EAL learners, but they will need to be adapted to include concurrent vocabulary learning. There are also many resources specifically designed for EAL learners which support the need

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<sup>30</sup> *Teaching grammar to adults*, Cambridge University Press. 2019. [https://www.cambridge.org/us/files/7815/8106/3284/CambridgePapersInELT\\_TeachGrammarAdults\\_2019\\_ONLINE.pdf](https://www.cambridge.org/us/files/7815/8106/3284/CambridgePapersInELT_TeachGrammarAdults_2019_ONLINE.pdf)



for meaning making, drawing on visual supports and scaffolding learning. The work includes ensuring plenty of repetition and practice to consolidate and apply learning in everyday situations.

Phonics knowledge building, while systematic and explicit, should be grounded in meaningful reading and writing activities relevant to the learner, drawing on examples from everyday contexts. This incorporates the learner's everyday experiences and knowledge in sessions. Some examples of this include:

- personal information – responses to common questions
- environmental texts – signs, menus, receipts, bus timetables, shop opening and closing times
- Australian culture and norms
- numbers, money, telling the time, the date
- social conventions, asking for and giving directions, signs and common words, creating simple dialogues for shopping
- parts of the body, colours and adjectives.

Building phonic knowledge with explicit instruction is outlined in Chapter 3: Reading. These teaching strategies and resources are transferable to EAL tutoring with the following adjustments:

- visual material to support meaning
- vocabulary building, including speaking and writing practice
- specific pronunciation support
- plenty of practice in speaking, listening, reading and writing to embed new language and concepts.

Learning new concepts is hard work. Model and demonstrate new ideas and language use, provide examples, then do the new activity together before asking the learner to do it on their own (gradual release of responsibility). Some learners will need to be taught how to learn, particularly those who have had limited previous education. It can be helpful talking about learning strategies, so that learners can become more independent learners over

time. Revising new information and practising using new words and concepts help move information into long-term memory. Phonic knowledge, new vocabulary and new grammar concepts will need to be repeated to enable a learner to remember – both in oral and written contexts. Reading and writing are best taught together. Reading supports learning to write, and writing supports learning to read. Drawing on both reading and writing when learning new information helps consolidate learning.

## Writing for purpose

It is helpful to focus on communication needs and tasks that have meaning when deciding what is most important for a learner. Commonly, these will be everyday tasks, such as writing a short message, a list or filling out a form. Teach different forms of writing based on learner needs – such as emails, letters, reports and narratives with a clear purpose. Teaching sentence structure will be helpful – beginning with simple sentences and focusing on the subject-verb-object order that is typical in English.

### *Example exercises for writing for purpose*

**Personal:** Write an email to a friend or family member in English, explaining how they've settled in Australia and what their daily routine looks like.

**Social:** Write an invitation to invite a friend for a birthday party.

**Professional:** Write a note to their child's teacher explaining their absence. Write a short email to their employer, asking for time off for an appointment.

Tasks need to be broken into steps and examples should be provided and discussed. Remember that speaking and listening supports reading and writing. These activities can be integrated. For example, the tutor might begin with a learner by practising dialogue in a shopping context – how to ask for things or to find things. Then, when the learner is ready to focus on the reading demands in this context, a text with a simple dialogue could be read or a food label or the shopping receipt can be used to practise reading. Moving on to writing, the learner might begin writing a shopping list in English and then to write a request. To begin with the learner can copy writing from a model, then they may be able to use a sentence starter to complete a sentence with support, before being able to do the task themselves.

## Teaching grammar

EAL learners need explicit teaching of vocabulary, grammar and language structures. Focusing on the structures of the English language includes working on punctuation and sentences. Other languages might put verbs, nouns, adjectives etc. in different positions in the sentence, so explicit teaching of word order in English sentences will be useful. This will begin with a focus on simple sentences and constructing questions and then move into understanding the more complex structures of compound and complex sentences. It will also include work to define how verbs are used to indicate tense – past, present and future. Understanding the EAL learner’s language structures will help guide the tutoring. For example, if the learner’s first language involves a different sentence word order, the tutor will need to explicitly teach sentence word order in English (subject-verb-object).

Fluent English speakers have an intuitive grasp of grammar and may not know how to teach this explicitly. Tutors will need to ensure they are prepared to teach grammar. The suggested EAL resources are designed to teach grammatical rules clearly. Using these resources will show tutors how to teach skill development and grammar effectively.

## Learners who are literate in another language

The starting point for these learners will be different. They will have learnt to read and write in their first or other languages and will understand their print concepts. Please note, if their script is different, for example Arabic, they will need to begin by learning Roman script. A learner’s knowledge of English can range from limited to more developed vocabulary and knowledge of English language structures.

Based on the assessment, the learner’s learning plan will outline what skills they need to develop and the resources and activities that will support this. This will be the basis of tutoring work with them. The Reading and Writing chapters provide more detailed information on teaching strategies that will support EAL learners.

New grammar

New vocabulary



## Scenario 1: Tutoring a beginner EAL learner focused on basic communication

### Context

Your learner is a beginner in English, highly motivated to develop everyday communication skills. They have little formal education in their first language but are keen to participate in conversations at the local library and in the community.

### Goals

Build vocabulary for basic tasks (e.g. introducing oneself, asking for directions).

Develop confidence with essential phrases.

### Tutoring approach

#### 1. Task-based approach

Use simple, real-life tasks, e.g. role-playing ‘shopping at the supermarket’ or ‘greeting a neighbour’.

Focus on *meaning first*: Encourage the learner to use gestures or limited vocabulary without worrying about perfect grammar.

#### 2. Recasting for implicit learning

If the learner says, “I want apple,” recast with correct grammar: “You want *an* apple?” Repeat without explicitly correcting them.

#### 3. Balance explicit grammar instruction

Use visual aids (e.g. pictures of food with labels) to reinforce vocabulary.

Gradually teach articles like ‘a’ and ‘an’ as part of a brief, explicit mini-lesson tied to the task, e.g. “We use *a* before words that start with a consonant sound.”

#### 4. Engage in concept checking

Ask questions like: “If you go shopping, what do you say to ask for help?”

Guide the learner to form simple sentences, praising effort.

## **Scenario 2: Tutoring a learner preparing for IELTS**

### **Context**

Your learner is an intermediate-level English speaker preparing for the IELTS exam. They need targeted grammar instruction, as well as strategies to write essays and complete oral tasks.

### **Goals**

Improve grammatical accuracy in writing and speaking.

Develop confidence in sentence structure and syntax.

### **Tutoring approach**

#### **1. Explicit grammar teaching for IELTS tasks**

Select one key grammar point per session (e.g. using conditionals or improving subject-verb agreement).

Use example sentences relevant to IELTS prompts: “If I were to visit a new city, I would...”

#### **2. Interactive grammar practice**

After teaching, ask the learner to rewrite incorrect sentences in practice essays or to reformulate sentences verbally during mock speaking tests.

#### **3. Feedback and repetition**

Provide explicit feedback, e.g. “You said, ‘He don’t like reading.’ Instead, say, ‘He doesn’t like reading.’” Explain why the change is necessary.

Use drilling to reinforce structures, e.g. repeat: “He doesn’t like reading” in different tones or contexts.

#### **4. Simulated task-based scenarios**

Use IELTS-style questions during sessions, e.g. describe a recent holiday. Focus on *fluency first* but add targeted correction on grammar afterwards.

## ***Scenario 3: Supporting a learner with limited literacy in their first language***

### **Context**

Your learner is a beginner English speaker who has limited literacy skills in their first language. They find writing and reading in English very challenging and struggle to understand grammatical concepts.

### **Goals**

Build basic oral communication skills.

Gradually develop letter recognition and grammar awareness.

### **Tutoring approach**

#### **1. Listen-and-do tasks**

Use input-based tasks: Give instructions and ask the learner to act them out, e.g. “Pick up the red pen” or “Point to the word *bus*”. This helps with vocabulary and builds confidence in following directions.

#### **2. Visual and multisensory grammar teaching**

Use picture cards and gestures to teach basic sentence patterns: e.g. “I have a/an [object].” Show an image of a person holding an apple and model the sentence.

#### **3. Gradual, explicit grammar focus**

Teach grammar situationally, e.g. “Let’s talk about things we *have* – I have a pen, I have a phone.” Start with one verb structure and expand.

#### **4. Feedback through recasting**

If the learner says, “I *has* book,” gently model the correct phrase: “Oh, you *have a* book. That’s great!”

# Resources and reading

## Choosing appropriate reading and writing resources for EAL learners

Using general adult phonics and phonemic awareness materials for EAL adults can present several challenges.

1. Cultural and linguistic bias: Many phonics materials are designed for native English speakers and may include vocabulary, idioms or cultural references that are unfamiliar or irrelevant to EAL learners, making them harder to relate to.
2. Foundational literacy focus: Adult phonics programs often assume the learner has no literacy skills at all, which may not be the case for EAL adults. Many EAL learners are literate in their own language and may need a different approach that builds on existing literacy skills rather than starting from scratch.
3. Mismatch with learning goals: EAL learners often prioritise communication and vocabulary building over phonemic awareness drills. General phonics materials may not address their immediate needs, such as pronunciation, fluency or communication in real-life situations.
4. Phonological differences: EAL learners may face unique challenges based on their first language. For example, certain English sounds may not exist in their native language, and some phonics materials may not provide enough targeted practice for these sounds.
5. Overemphasis on decoding: General phonics materials may focus heavily on decoding skills (sounding out words) rather than other critical language skills like listening comprehension, syntax and semantic understanding, which are often more relevant for EAL learners.
6. Lack of context: Many phonics exercises use isolated words or nonsense syllables, which can be confusing for EAL learners who need contextual and meaningful language use to retain new information effectively.
7. Insufficient focus on oral proficiency: Phonics programs often emphasise reading over speaking or listening, which can leave EAL learners without adequate practice in oral communication and pronunciation. Isolated word lists or drills can be less engaging and less effective than exercises that use words within sentences, stories or real-life scenarios.
8. Pace and complexity: General adult phonics programs may move too quickly or slowly for EAL learners, depending on their existing skills. Materials may not offer enough scaffolding or differentiation for varying levels of English proficiency.

## **Recommendations**

- Use or adapt phonics programs tailored for EAL learners that integrate cultural context, vocabulary development and real-life scenarios.
- Supplement phonics instruction with pronunciation practice and listening activities that focus on the specific needs of the learner's first language.
- Include materials that balance phonemic awareness with meaningful language use in speaking, reading and writing.
- Focus on high-frequency words and relevant vocabulary to make learning practical and immediately useful.

Resources to support EAL instruction can be found in Part Three.

## **Tutoring resources for building speaking and listening skills**

### **For translating support**

Google Translate: <https://translate.google.com/>

Babelfish: <https://www.babelfish.com>

English Picture Dictionary with +15,000 images: <https://dictionary.langeek.co>

### **For English conversation groups**

ESL Vault – 250+ fun conversation topics: <https://eslvault.com/conversation-topics/>

Topic suggestions for conversation groups: <https://immi.homeaffairs.gov.au/amep-subsites/Files/amep-home-tutor-scheme-resources-topic-packs-overview.pdf>

### **For individual tutoring**

*Teaching Pronunciation: A handbook for trainers.* Three Frameworks for an integrated Approach. Tafe NSW. 2001.

*Clearly Speaking: Pronunciation in Action for Teachers.* Anne Burns and Stephanie Claire. AMEP research Centre. 2003. [https://www.researchgate.net/publication/282332684\\_Clearly\\_speaking\\_Pronunciation\\_in\\_action\\_for\\_teachers](https://www.researchgate.net/publication/282332684_Clearly_speaking_Pronunciation_in_action_for_teachers)

*Teaching Pronunciation to Adult Learners of Foreign Languages.* Robin Worth. 2011.

*Teaching Pronunciation using the Prosody Pyramid.* Judy B Gilbert. 2021

*Tree or Three* (elementary) & *Ship or Sheep* (intermediate) (for pronunciation & vocabulary building). Anne Baker. 2006.

*English Pronunciation in Use.* Jonathan Marks (Elementary) & Mark Hancock (Intermediate). 2017.

*Understanding Everyday Australian – Books 1-3* (to support speaking confidence intermediate level). Susan Boyer.

*The Oxford Picture Dictionary* (vocabulary development, available in various languages). Oxford University Press.

### **Tutoring resources for building reading and writing**

Authentic materials like packaging of commonly bought items, shopping catalogues, receipts, newspapers, online materials, newspapers.

*English Made Easy 1 & English Made Easy 2* (for beginners). Jonathan Crichton & Pieter Koster.

*English Grammar in Use* – basic, intermediate & advanced (for more serious/ intermediate learners). Raymond Murphy.

*True Stories.* Sandra Heyer, Pearson Longman.

### **English news and easy articles for students of English**

BBC Learning English: <https://www.bbc.co.uk/learningenglish/>

Urban Lyrebirds: <https://www.urbanlyrebirds.com/>

English Language Partners NZ: <https://www.englishlanguage.org.nz>

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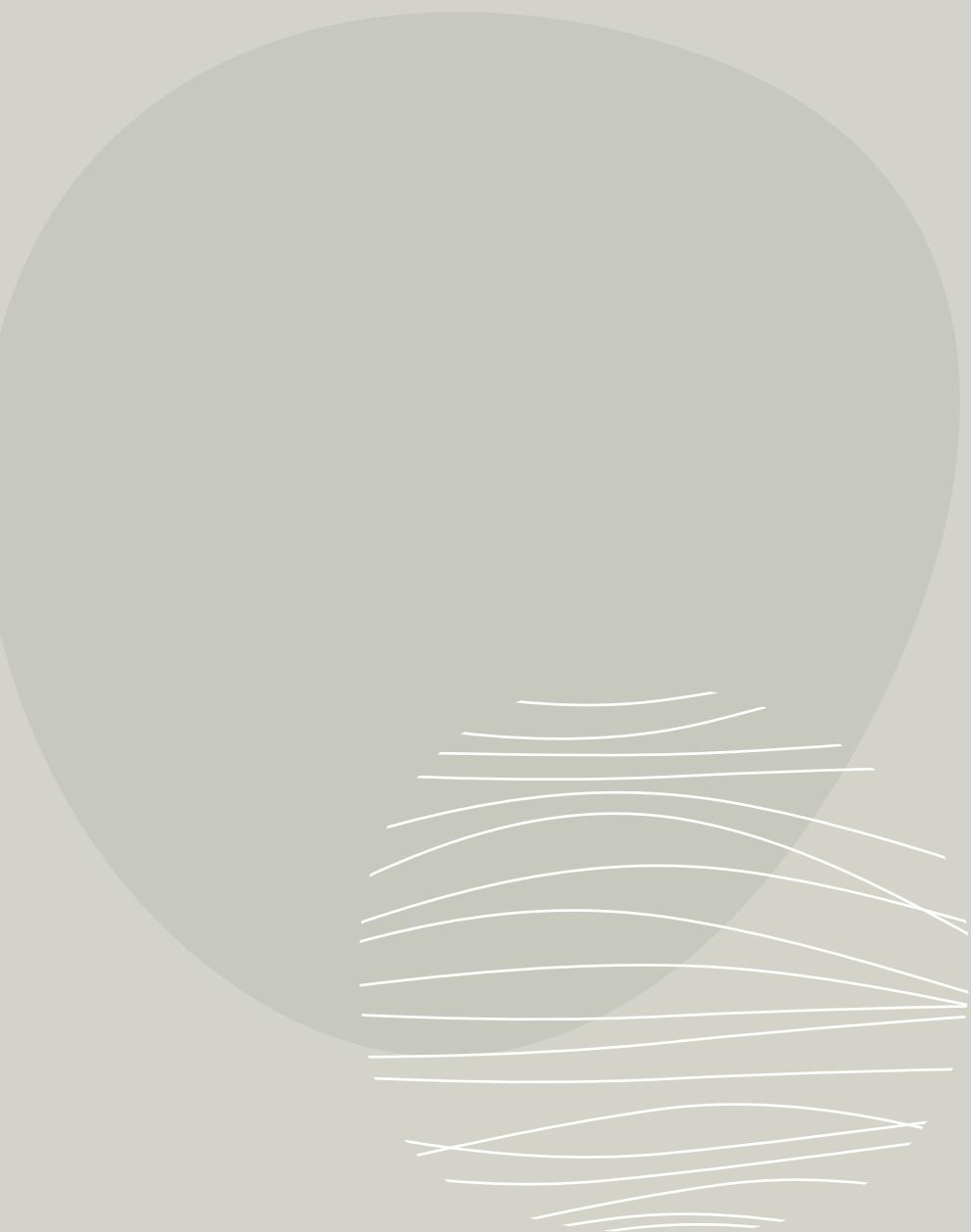
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# Chapter 7

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## Session planning



## Main points

- Work with adult learners should be based on each learner's goals.
- Assessment should identify learning needs.
- SMART goals enable learners and tutors to notice progress and build motivation.
- An individual learning plan brings learner goals, skills, strengths, challenges and learning needs together to create a map for tutoring work.
- A session plan draws on learning plan information to step out the sequence of activities that build learners' skills to meet their goals.
- It is important to manage cognitive load in sessions to enable learning.

# Introduction

This chapter focuses on bringing everything together.

Every adult learner is different and will have individual goals and learning needs. Their skill gaps will also be different. It is important to work out what each learner needs as they begin to engage in learning. Adult learners should be interviewed to identify their learning goals, strengths, interests and learning needs. Informal assessment provides information about their existing knowledge as well as their skill gaps. An individual learning plan can then be created for each learner. This should include clear information about what each learner needs to focus on and can include suggested activities and resources. The learning plan is then a map for the work to do with each learner and will help guide session planning.

In this chapter we will look more closely at information that will be useful on a learning plan and the specific information you will need to develop your session plans. We look at how to build a good session plan to build a learner's skills to enable them to reach their goals. We will look at creating learner SMART goals and why we work with these. You will be introduced to the principles of good lesson design and its implications for instruction, metacognitive thinking and the value of reflective practice.

## Beginning to work with a new learner

There are several initial steps that will enable you to build a trusted relationship with a new learner and gather information about their goals and learning needs. These include:

- an initial interview
- informal assessment over several sessions
- conversations about the learning that will enable them to reach their goals
- breaking this learning into achievable steps, defined as SMART goals
- writing a learning plan which assembles all this information, and identifying activities which will support learning to create a map for learning
- drawing on the learning plan to write session plans.



## Learner interview

The first conversations with a new learner are critical. When they come to ask for help, they are usually very nervous and unsure whether to trust you. They will not be sure whether what you offer will be what they need. Adult learners who do not have strong literacy and numeracy skills have often had difficult, even traumatic, experiences at school or post-school learning situations like TAFE. In these first conversations they will be assessing you as much as you are assessing them. You will need to pay close attention to body language, listen carefully and work out how to make them feel comfortable. This might mean providing clear information before asking them to share their information with you. Each learner will be different, and some will want to share a lot of personal information that may not be relevant to the literacy focus that you have. Strong interpersonal skills will help you navigate these interactions as you work to build rapport with each learner. It will be important to ensure that early activities are achievable for the learner, so they see that they will be able to successfully learn.

In the initial interview, as well as contact information, information that will be helpful to find out about includes their previous level of education and educational experiences – what were successful learning experiences as well as their challenges, and what has helped them before? They probably have some ideas about what they want to learn, although their goals at this stage may be vague and broad. You can find out about their skills and interests, which will help you focus reading material and session content later. Talking about things they are familiar and confident about already helps them feel like you see them as competent and is the basis for a strengths-based approach. You will also need to know how often they would like to do tutoring work. If you are already working within a program, there may already be an interview form with questions that ask for relevant information.

# Assessment

An initial interview with the learner helps establish their initial goal/s, and an informal skills assessment can be undertaken over the first few sessions. Even filling out a form that asks about their contact information provides information about their reading and writing skills. Informal assessment tasks need to be presented in a non-confronting way, as adult learners are often quite anxious about learning and their ability to learn. Assessment information provides insight into a learner's knowledge and skill gaps, their other skills and interests as well as any challenges they face.

If using ACSF validated assessment tools, assessment information provides an indication of the learner's skill levels against the *Australian Core Skills Framework* (ACSF). When a learner is reassessed after a period of tutoring work, perhaps every six months, their skill increases can be tracked against the ACSF. It is important to note that it is generally not helpful to share the ACSF assessment information with the learner as this is meaningless to them. Progress against the ACSF also takes significant work and time, and if this is the measure shared with a learner, it is likely to be disheartening as progress will not be rapid. The ACSF can simply help a tutor track learner progress over time.

Once this assessment information has been gathered and the learner is engaged, it is easier to discuss learning goals again and to break these down into SMART goals. All of this information, including SMART goals, can be collated on individual learning plans.

## Assessment tools

A number of validated ACSF informal assessment tools have been developed to assess learners in the core skills of reading, writing and numeracy. These have been listed at the end of this chapter.

In addition to the information gathered with these tools, it will be useful to find out more about learners' phonemic awareness and phonics knowledge, which will help tutors to find the starting point for work in these areas with each learner.

**Phonemic awareness screener:** It is important to screen learners for difficulties in hearing the sounds within words. As discussed previously, difficulty hearing the sounds in words affects the process of learning to read. Decoding and encoding are tricky when a learner cannot distinguish all the sounds within a word. Phonemic awareness can be developed to build this skill.

**Phonic skills:** There are a number of tests that provide information about a learner's phonic knowledge for reading and for spelling. The specific phonic patterns that the learner needs to focus on will be included in the learning plan.

# Learning plans

The following information helps create a good picture of learner goals, skills and needs to inform development of a learning plan. The learning plan will largely be created by the tutor but should be written so that it can be shared with the learner. It should reflect the conversations that have been had with the learner. It would be good to use the learner's actual language when listing their broad goals, but the rest will be written in the tutor's own words. It should be written with non-judgemental language, essentially documenting what has been observed, assessed and discussed.

## Learner characteristics

This can highlight specific information relating to learning goals, skills and cognitive challenges, which have been gathered during the interview and assessment process. This section provides a picture of the learner's strengths and any learning challenges, with strategies to consider when planning and preparing lesson plans. It may be relevant to include information about verbal working memory, dyslexia or dyscalculia, which can present challenges for some learners who will need accommodations and strategies for learning.

## Learner strengths

This section can highlight specific strengths the learner brings to learning, which have been identified or communicated during the interview and assessment process. This information provides insight into their self-awareness as a learner, their motivation/persistence, and preferred approaches to learning.

## Barriers and strategies

This section highlights any barriers that the learner has identified during the interview and assessment process, that may influence their ability to engage in tutoring sessions. Any strategies they have identified will be useful to support them in overcoming these barriers are also listed in this section.

## Main goals

The main goal is the learner's overall long-term goal. Goals might be in the areas of study, work or life. Each learner will probably have at least one broad longer-term goal, although this might be vague initially, for example, 'Wanting to improve spelling'.

## Short-term goals (SMART)

After gathering information about the learner's skills and discussing their main long-term goals, the skills required to reach these goals can be identified and broken down into achievable steps, articulated as short-term SMART goals. These goals should have relatively short timelines so that the learner can see their progress. The SMART goals generally relate to the Big Six or the Big Ideas in Number. SMART goals can be revised every six months or whenever new goals are set. There is more about SMART goals in the next section of this chapter.

## Learner needs and activities

This section of the learning plan highlights the activities that will build the skills identified for each SMART goal. These are also used as a basis for identifying resources to use when developing a session plan for the learner. Activities listed can draw on resources that the tutor can use to achieve effective results in learning. Learning plans will vary widely depending on learner goals and their learning needs.

### Learning plan



#### Remember...

- The goals on the learning plan are developed from the learner's initial interview, assessment and the SMART goals identified.
- Learning plans outline the focus for work with learners and should form the basis of conversations about learner progress.
- Tutors can use learning plans, specifically the recommended activities and resources, as a guide for session planning.

# More about SMART goals

## Why are goals important?

Working with adults is more effective when working with the goals that the learner has. They are more likely to persist with their learning if it is based on their own life goals. They will also be motivated to apply their developing skills to real-life literacy and numeracy tasks. Practice Engagement Theory is based on research that shows that adults make significant gains in literacy when they apply their new skills to everyday life demands. This strongly supports literacy development over time (Reder, 2020a).

In tutoring, there is no curriculum and there are no obvious milestones or certificates that mark learner progress. Identifying clear goals sets up clear markers of progress, which support learners to feel successful. When a learner breaks their goal down into achievable milestones, learners will know when they make progress. This enables them to feel successful, which helps generate motivation and persistence.

## Establishing learning goals with learners

Often, a learner will have a broad or vague goal, like wanting to improve their reading, spelling or writing. Goals might be personal or related to work or ideas about study. For example, they may talk about wanting to help their child learn to read, or they might want to be able to do particular maths calculations at work, or they might want to brush up on skills so they are confident to enrol in a course. Longer-term goals like these can be broken down into shorter, achievable steps or milestones that show progress towards their longer-term goal. Learners need to feel they can do the work that is asked of them, so identifying goals that can be achieved within short time frames supports this.

Assessment helps work out what skills a learner will need to develop to reach their goal. This will help identify the learning steps to achieve their goals and help create a realistic picture of what they can expect to be doing. Learners often have an open-ended goal as a starting point, and SMART goals help identify next steps for achieving their goal. Tutors need to ensure this does not feel overwhelming to learners. Goals can also be changed as they are met or other goals take priority.

## SMART goals

SMART is an acronym that identifies the qualities of effective goals.

### **SMART**

**Specific:** simple, sensible, significant

**Measurable:** meaningful, motivating

**Achievable:** agreed, attainable

**Relevant:** reasonable, realistic and resourced, results-based

**Time-bound:** time-based, time-limited

For example, the broad goal of reading books to their child might become practising reading a specific book every session, so they are able to read it to their child within four weeks.

Conversation with the learner can also make clear the other steps that support the process of building reading fluency – building automaticity with sound–letter knowledge, practising decoding, and developing word analysis skills. An additional SMART goal might be to ensure they have learnt a set of the most common sound–letter patterns by a certain date.

### **Examples of SMART goals**

- Learning the spelling of words needed to write a letter to someone specific by the end of the month.
- Learning the spelling and vocabulary needed for writing their résumé over the next six weeks/sessions.
- Reaching the next level in a reading series in three weeks.
- If working through a manual, e.g. Turning Pages, reaching an identified section or page number by a certain date.
- Navigating the TV guide to find the info needed in three weeks.

- Learning to add two 2-digit numbers and being able to do 20 additions correctly in the next four sessions.
- Learning to count to 100 by fives and being able to do this correctly three times within two months.
- Writing a complete sentence with correct punctuation and capitalisation without needing help from the tutor.
- Use a cafe menu to identify what to buy and calculate costs by the end of eight weeks.

### SMART goals



#### Remember...

- Setting and achieving goals helps build and maintain a learner's motivation and persistence, as they can see they are making progress.
- SMART goals link the application of new skills to everyday literacy and numeracy demands, supporting longer-term skill development.
- Helping learners achieve goals also enables tutors to feel effective as practitioners.
- Tutors need to talk regularly with learners about progress, and celebrate learners reaching their goals.



#### Stop and think

How will you link your learner's goals with activities that build the skills they need to achieve these?

# Session plans

## Why do a session plan?

The learning plan brings learners' broad goals, their SMART goals and assessed learning needs together to create a map for what a tutor and learner will work on together. SMART goals identify specific learning needs and the activities that will build learner skills. Learning plans should identify and embed evidence-informed instructional approaches and resources to support learning.

The purpose of a session plan includes:

- to define a carefully sequenced learning progression for working towards learner goals
- to help tutors be well-prepared for the session
- to give tutors a framework to work with in the lesson, acknowledging that flexibility will sometimes be needed as not all sessions will go to plan!
- to remind tutors of what has been done in previous lessons, to prompt revision of concepts as needed
- to help learners know what to expect
- to help a new tutor if you end your relationship with that learner and need to hand over to someone else.

## What is in a session plan?

A session plan is a record of what you will do in a session with your learner. It should include:

- the focus for the session (what you hope the learner will achieve)
- an outline (or more detail if you need prompts) of the activities you intend to do
- approximate times for each activity
- the resources you will need
- reflections on the session.

Each session plan should clearly link to the learner's SMART goals and support learning in the areas that have been identified in the learning plan. Understanding your learner's motivation and interests will help you tailor the tasks and content to their needs. Discussing the links between the goals and activities at the start of the lesson can help the learner engage.

[Session plan](#)

[Session plan example](#)

# Metacognition

## What is metacognition?

Metacognitive skills involve being aware of one's own cognitive processes. This includes recognising one's own abilities and limitations regarding a task and being able to think and talk about it. These skills help a person understand and regulate learning. The ability to think about thinking is a characteristic that distinguishes successful learners from less successful ones.

Adults have a greater capacity than children or adolescents for metacognitive thinking, which means they can reflect on their learning. Adults are often interested in how the brain works and find discussions about learning and learning strategies interesting and useful. This can help learners understand why learning might have been difficult before. They can discuss and reflect on their learning, and transfer the skills they identify to other reading and writing tasks. Engaging in metacognitive thinking supports adults to become active and more persistent in their learning.

## What this means for instruction

It is useful to teach explicit learning strategies and when to apply them. The strategies used for various tasks should be made explicit and discussed with the learner, so they learn to use these strategies independently. This helps learners to self-monitor and recognise when their learning breaks down, enabling them to choose and apply a strategy to address the issue. This is useful for learners at every level, although the strategies taught will depend on the learning focus.

Effective teaching involves the tutor firstly modelling the strategy, providing opportunities for supported practice and then prompting independent practice. This is the gradual release of responsibility model (I do, we do, you do). Skills learnt can be transferred to other tasks with similar learning demands. This enables an adult to become an independent learner.

Strategies are usually taught one at a time and practised until learnt. Skills should be taught and practised initially in isolation and then in context. Metacognitive thinking can be applied to real-life demands. Applying skills and strategies in the learner's real-life context beyond the session will support ongoing learning. Research has shown that significant gains in literacy are found three to five years after literacy training, when learners apply their skills to their everyday lives (Reder, 2020b). Research has also shown that the strategies that we teach adults to use become hardwired and become the strategies they will continue to practise (Yoncheva et al., 2015). We know from Steven Reder's (2020a) work on Practice Engagement Theory that adults need to continue to practise their skills in order to see improvements in the longer term.

Within a learning session, it can be useful to ask a learner to reflect on what worked best for them. This reinforces their own learning as well as giving you insight as a tutor into what they learnt and what worked well. There are a range of ways of prompting reflection, and it can be equally useful to ask what didn't work for them in a session and what you could do differently next time. This can reveal useful information about something that will need further discussion in a future session and the development of strategies for future work.



### Remember...

- Talk with learners about how they learn.
- Help learners to develop strategies for learning – teach them how the brain works and align strategies with information on how the brain works.
- Talk about specific strategies for tasks.
- Encourage learners to apply strategies for similar tasks.
- Teach learners to monitor their own learning.
- Teach adults to apply metacognitive thinking to real-life tasks.
- Encourage learners to reflect on what worked, what didn't and what they could do next time.

# The science of learning

Adults who are still building foundation knowledge in literacy and numeracy will benefit from approaches informed by the **science of learning**, as discussed in Chapter 2: Pedagogy (AERO, 2023a and 2023b; Jha, 2024; Weinstein et al., 2018). Several key understandings from cognitive science and educational psychology can inform session planning. In Chapter 2 we discussed the point that learners who are still establishing foundation knowledge learn best with explicit instruction and well-sequenced and knowledge-focused learning (Jha, 2024). Inquiry-based learning becomes possible once foundation knowledge has been developed. **Explicit instruction** and the **gradual release of responsibility** approach provide a model for structuring teaching within each session, ensuring that the learner is actively engaged in building their skills (Duke & Pearson, 2002). Please revisit Chapter 2 to revise this information.

## Rosenshine's principles of instruction

In 2010, Rosenshine published *Principles of Instruction: Research-based strategies that all teachers should know*. This was based on work he had done to review the evidence about what made instruction effective. He drew on research in cognitive science, explicit instruction, research on the practices of master teachers, and research on cognitive support to help novice learners to learn complex tasks. These principles point to instructional practices that provide clear guidance for explicit instruction, building learner success. They are a set of useful principles to draw on when session planning.

### Rosenshine's principles of instruction

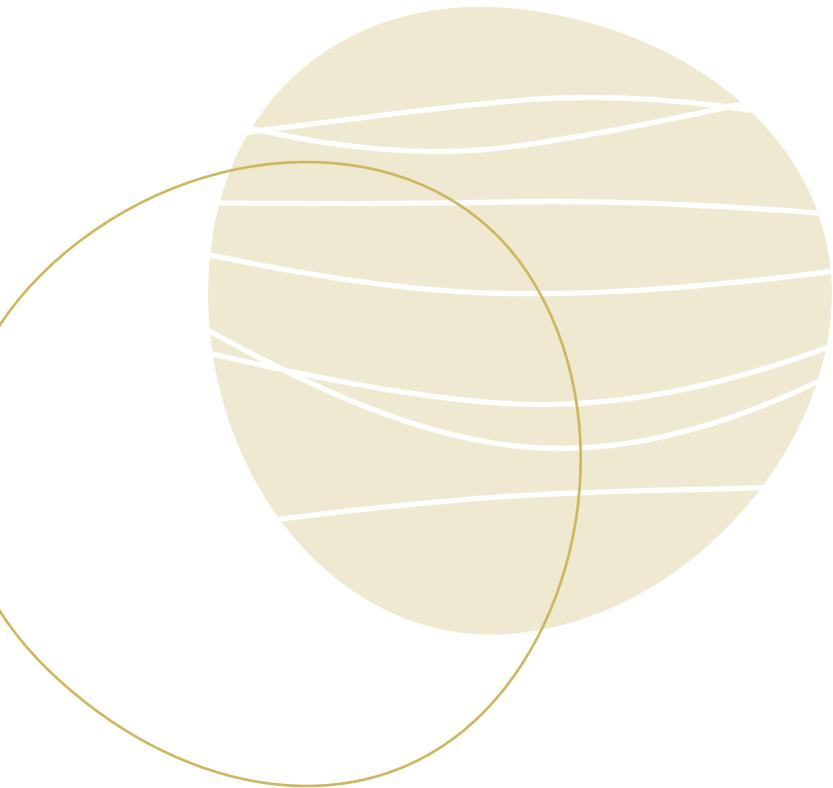
1. Begin the lesson with a review of previous learning.
2. Present new material in small steps.
3. Ask a large number of questions.
4. Provide models and worked examples.
5. Practise using the new material.
6. Check for understanding frequently and correct errors.
7. Obtain a high success rate.
8. Provide scaffolds for difficult tasks.
9. Facilitate independent practice.
10. Do weekly and monthly reviews.

Adapted from Rosenshine (2010).

## Supporting adult learners to become independent learners

Explicit instruction involves providing clear information, explaining concepts and activities, and ensuring that learners understand what is being taught. Steps involved in a gradual release of responsibility approach incorporate explicit instruction:

- Present what the learning intention for the activity is.
- Explain the purpose of the learning.
- Activate any prior knowledge and link to what has been taught previously.
- I DO – explain and demonstrate the concept using worked examples.  
Check for understanding by asking questions and reteach if needed.
- WE DO – work through examples together and provide feedback.
- YOU DO – learner undertakes the activity independently.
- Review the intent of the lesson and what was covered.



## What is reflective practice?

“Reflective practice is the ability to reflect on one’s actions so as to engage in a process of continuous learning” (Schön, 1983).

Reflective practice is the conscious process of thinking carefully about what you are doing and what you have done with the intention of learning more about this. In the tutoring scenario, the aim of reflection is to focus on developing effective sessions for learners. Each learner has individual learning needs and different skills and will therefore need a unique approach. While tutoring, you will notice how a learner responds to different activities or learning challenges. New information about what they know and how they learn emerges every session. This knowledge should be incorporated into your thinking and inform your session planning.

Reflection is also about thinking about what went well, what was tricky, what you learnt about your learner and what could be done next. It helps to:

- try new things and identify what worked and what didn’t
- learn from your experiences
- create time to think of new ways of doing things
- challenge our own assumptions
- move on from mistakes.

## Why is it important?

Theoretical knowledge provides pointers to more effective practice approaches, but knowing how to put this into practice relies on your thinking, judgement and understanding of how instruction works. Reflection can help improve the impact of your tutoring.

Schön (1983) expands on the concept of reflective practice. Reflection includes reflecting in action, while tutoring. Based on your observations of the learner within each session, you will:

- consider the situation, noting how your learner is responding
- decide what to do, based on your understanding of the learner and of practice approaches
- take action, which might mean simply explaining something differently.

Reflection also includes reflecting after action, once the tutoring session is over.

Reflecting after the session is an opportunity to:

- reconsider the situation and what you noticed
- think about what needs to happen in the next session to support your learner.

## Embedding reflection into session planning

Taking brief notes during a learning session will help capture what you covered together and what you notice your learner struggled to do. Adding your reflections after the session to these notes will build a clearer picture of how your learner is progressing and their emerging learning needs. These notes should then inform planning for the next session.

- Keep notes and make time after each learning session to reflect on practice. This can be quick – a few dot points about lessons or strategies that went well and why. Equally important, make notes of what was unsuccessful and why. When planning the next session, go over these notes and use what you have learnt to inform your next (few) session plan(s).
- Talk with your learner and encourage them to reflect on their learning. This will give you insight into how they are learning. Discussion of what is going well is as important as discussion of what is difficult.

## How do I do all of this?

It is possible that you have experienced cognitive overload as you have worked through this training manual! There are a lot of concepts that inform our approach to tutoring instruction. We don't expect that you will have understood these to the point that you feel you can begin working with a learner right away. This manual provides an orientation and overview of what is involved in literacy instruction. It is also a resource that you can revisit when you have specific questions when you are working with a learner. Ideally, you find someone with tutoring experience who can mentor you as you begin to do some literacy or numeracy tutoring.

It is probably useful to note at this point that while this background knowledge can seem overwhelming, the reality of a session with a learner is much simpler. Remember, a learner who is working on foundation skills just needs simple, clear information presented in a logical way. Sessions cannot be complicated!

# Resources

## Assessments

Digit span test:

<https://www.staffordshire.gov.uk/Education/Access-to-learning/Graduated-response-toolkit/School-toolkit/Cognition-and-learning/SEN-support-in-school/Auditory-Memory-Digit-Test.pdf>

ACSF assessment tools:

Precision Consultancy (2013) ACSF Assessment Tasks

<https://accellier.edu.au/free-acsf-assessment-tools/>

Corrections Victoria (2008) *Language, Literacy and Numeracy Toolkit*.

<https://www.voced.edu.au/content/ngv%3A3574>

## Podcast

Science of Reading: The Podcast: S8 E11: Cognitive load theory: Four items at a time, with Greg Ashman on Apple Podcasts

<https://podcasts.apple.com/au/podcast/s8-e11-cognitive-load-theory-four-items-at-a-time/id1483513974?i=1000647356960>

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# List of acronyms

Acronym	Full title
ABS	Australian Bureau of Statistics
ACSF	<i>Australian Core Skills Framework</i>
ADHD	attention deficit hyperactivity disorder
AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
CALD	culturally and linguistically diverse
CVC	consonant vowel consonant
DLD	developmental language disorder
EAL	English as an additional language
IELTS	International English Language Testing System
OECD	Organisation for Economic Co-operation and Development
PIAAC	Programme for the International Assessment of Adult Competencies
TBLT	task-based language teaching
UDL	Universal Design for Learning

# Glossary

Literacy and numeracy terminology	Meaning
Affix	A morpheme (prefix or suffix) added to the beginning or end of a word to change its meaning or make a new word.
Algorithm	A set of steps to solve a particular mathematical problem.
Alphabetic principle	The understanding that the relationships between written letters in words represent spoken sounds in a more or less predictable way.
Andragogy	A method and practice for teaching adult learners.
Antonym	A word that means the opposite of another word, e.g. fast is the opposite of slow.
Array	A set of numbers or objects that follow a pattern, presented as an arrangement of rows and columns.
Base word	The smallest part of a word that has meaning. It may have prefixes or suffixes added but can stand on its own, e.g. help, helpful, unhelpful (compare ‘root word’).
Blend (consonant)	A group of 2 or 3 commonly occurring consecutive consonant letters in a word that are not digraphs or trigraphs – they each represent a sound, e.g. the /b/ and /l/ in ‘black’ or the /n/ and /d/ in ‘send’.
Blend (sounds)	The ability to say the individual sounds in a word or together to rapidly form a whole word, e.g. the sounds /c/ /a/ /t/ are blended to say the word ‘cat’. An important reading skill.
Coarticulation	The natural overlap of mouth movements when we speak, such that neighbouring sounds blend into each other. While saying one sound in a word, the lips and tongue are starting to form the following sound in that word. For example, in the word ‘ham’, as you are saying the open-mouthed /a/ sound, you are starting to form the closed-mouthed /m/ sound.
Cognitive load – extraneous	Any additional load added to a task that makes it more difficult for the individual, e.g. background noise or information that is not relevant.

Literacy and numeracy terminology	Meaning
Cognitive load – germane	Information that helps the learner link new information with what they already know, e.g. worked examples of the task.
Cognitive load – intrinsic	The complexity or difficulty of the task for the individual.
Cognitive load theory	An explanation of how learning happens when new information moves from working memory to long-term memory. This informs instructional practices that will support learning.
Cohesive ties/cohesive devices	Words or phrases used to connect ideas between different parts of a text. They can be pronouns that refer to a noun mentioned previously; a synonym used for a previously mentioned noun; or a transition word such as ‘and’, ‘so’, ‘because’ or ‘but’.
Complex trauma	The long-term impacts from experiencing multiple or repeated traumatic events.
Consonant	A speech sound that is made by obstructing breath – the tongue, lips or soft palate stop the air flowing easily through the mouth.
Contraction	A combination of two words into one shorter word by leaving out one or two letters and replacing them with an apostrophe, e.g. ‘do not’ becomes ‘don’t’.
Cultural competence	The ability to understand, communicate with and effectively interact with people from different cultural backgrounds.
Decoding threshold	The point at which a learner can read text accurately and fluently enough to focus on comprehension rather than word recognition.
Decoding	The process of translating written words into speech using knowledge of letter patterns, ‘sounding out’ when reading words.
Deletions	An exercise to build phonemic awareness in which a learner is asked to identify the word made when one sound is deleted. For example, the word ‘black’ without the /l/ sound makes the word ‘back’.
Denominator	The number below the line in a fraction.

Literacy and numeracy terminology	Meaning
Developmental language disorder	Persistent difficulties using words and sentences to express information and understanding spoken or written information.
Digraph	Two consecutive letters that represent one sound, e.g. <th>, <sh>, <ee>, <oa>.
Diphthong	A vowel sound that combines two vowel sounds in a glide. For example, in the words 'oil' and 'boy', the /o/ and the /i/ are co-articulated, making the distinct sound /oi/.
Dissociate/dissociation	A trauma response involving disconnection or detachment from your sense of identity, your surroundings, thoughts, feelings or memories.
Dyscalculia	A learning disability making it hard to understand and work with numbers.
Dysgraphia	A neurological condition causing difficulties with fine motor coordination and the physical act of writing or the expression of thoughts in written form.
Dyslexia	A learning disability involving difficulty reading and spelling despite having the ability to learn.
Encoding	The process of converting spoken words to write them, transcribing each sound by representing it with a written letter/s. Important for spelling.
Escape velocity	The point at which a learner has enough phonic knowledge to learn from reading with less and less supervision. Less phonics instruction is needed after this.
Etymology	The study of word origins.
Expressive language	The ability to put thoughts into words and sentences, both spoken and written, that make sense and are grammatically correct.
Expressive vocabulary	Words that a person understands and uses in spoken or written communication.

Literacy and numeracy terminology	Meaning
Factor	A whole number that divides exactly into another number, e.g. 3 and 5 are factors of 15.
Graph	A single written letter representing one sound in a word.
Grapheme	A letter or letter combination (spelling pattern) that corresponds to one sound (phoneme) in a printed word. Graphemes can be 2-4 letters, e.g. <ch> makes the sound /ch/, <igh> makes the sound /I/.
Graphic organiser	A visual tool that helps learners organise their ideas and information on a topic, such as a mind map.
Homophone	Words that sound the same but are spelled differently and have different meaning, e.g. to, too and two (homo = same + phone = sound).
Intergenerational trauma	The lasting psychological and emotional impact of trauma experienced by one generation that is passed down to the next generation.
Irregular word	A word that has spelling patterns that do not follow most common patterns, e.g. 'young', 'said'. Note that only 4% of words are truly irregular.
Learner agency	The capacity to take the initiative, set goals and reflect on learning, involving choice and responsibility for one's own learning.
Linguistics	The study of the structure and development of a language.
Long-term memory	The process of storing information permanently in the brain. This enables quick recall of information, events, skills, procedures and concepts. Long-term memory is unlimited.
Metacognition	Being aware of and understanding your own thinking processes – thinking about thinking. This enables learners to choose learning strategies and problem-solve.
Metalanguage	The technical language used to describe a language, e.g. grammar, sentence, noun, motifs, imagery.

Literacy and numeracy terminology	Meaning
Metaphor	A figure of speech that compares two unrelated things, stating that one thing is another, e.g. ‘the exam was a piece of cake’, or ‘life is a rollercoaster’.
Mnemonic	A technique or strategy to help remember something e.g. <b>Every Good Boy Deserves Fruit</b> for remembering the names of the musical notes that are placed on the line (E, G, B, D, F).
Morpheme	The smallest unit of meaning in a word, e.g. ‘munched’ contains 2 morphemes, ‘munch-’ meaning to chew and ‘-ed’ meaning in the past.
Morphological family	A group of words that contain the same base word, e.g. writer, written, writing, writes, rewrite, unwritten.
Morphology	The study of the smallest meaningful parts of words and how different meanings are created by combining these word parts with each other or when they stand alone.
Neurodiversity/ neurodivergent	The differences in the way people’s brains work and the idea that people experience and interact with the world around them in different ways because of these differences.
Numerator	The number above the line in a fraction.
Onsets (and rimes)	Onset-rime refers to the division of a syllable into two parts – the onset and the rime.
	Onset – the initial consonant sound/s before the vowel in a syllable e.g. /ch/ in ‘chop’ and /scr/ in ‘scrap’.
	Rime – refers to the vowel sound and all the other sounds after it in a syllable e.g. /op/ in ‘shop’, ‘top’ and ‘flop’ and /ap/ in ‘scrap’, ‘map’ and ‘clap’. Teaching onset and rime is a strategy for building sound awareness in words but is not necessary. Instead, we focus on hearing the individual phonemes in words.

<b>Literacy and numeracy terminology</b>	<b>Meaning</b>
Orthographic mapping	The process the brain uses to store words permanently in memory for instant retrieval by linking the individual sounds of words with their spelling.
Orthography – transparent, opaque	<p>Orthography – The accepted conventions for writing and spelling words, e.g. words never end in &lt;v&gt;, they almost always end in &lt;ve&gt;.</p> <p>Transparent orthography – A writing system where there is a consistent and predictable correspondence between letters and sounds, making reading and spelling very easy to master.</p> <p>Opaque orthography – A writing system in which the pronunciation of a word may not always be predictable from its spelling and there are many exceptions to general spelling rules. English has more opaque orthography. In English, meaning also influences spelling.</p>
Part–whole knowledge	The understanding that a number can be broken into smaller parts e.g. the number 7 can be 2 + 5 or 3 + 4 or 1 + 6.
Partitioning – additive, multiplicative	<p>Partitioning – The ability to divide an object or objects into smaller groups or parts, e.g. 48 can be partitioned into 4 tens and 8 ones.</p> <p>Additive partitioning – A strategy for adding and subtracting numbers by breaking them into smaller, more manageable parts, e.g. 43 is 4 tens and 3 ones.</p> <p>Multiplicative partitioning – A strategy for multiplying and dividing numbers by breaking them into smaller, more manageable parts, e.g. for <math>27 \times 6</math>, first break 27 into <math>20 + 7</math>, then <math>20 \times 6 = 120</math> and <math>7 \times 6 = 42</math>, then add <math>120 + 42 = 162</math>.</p>
Pedagogy	The method and practice of teaching/instruction, including the strategies used to promote learning, based on understanding learners' needs and adapting teaching accordingly.
Phoneme	The smallest distinct speech sound in words, e.g. pot has three phonemes /p/ /o/ /t/.
Phonemic awareness	The understanding and ability to identify and manipulate individual phonemes/sounds in speech. This is an important subset of phonological awareness.

Literacy and numeracy terminology	Meaning
Phonics	A body of knowledge focused on sound-letter relationships in text. Also used to describe instruction that teaches this knowledge.
Phonological awareness	Awareness that spoken words are made up of parts – syllables, onsets and rimes and phonemes – and the ability to identify and mentally manipulate those parts.
Phonology	The study of sound patterns in speech and how those speech sounds are organised in the mind as words and used to express meaning.
Place value	The value of each digit in a number depending on its position in that number, e.g. in the number 379, the digit 7 has a value of 70 units.
Proportional reasoning	The ability to understand the relationship between numbers in terms of being double or half or five times greater.
Prosody	The particular patterns of stress and intonation of a spoken language – speaking and reading with expression.
Punctuation	The writing symbols that clarify meaning in text, indicating pauses and intonation. They make sentences easier to read and help readers to separate ideas. Examples are full stops, commas, question marks and exclamation marks.
Quadgraph	A four-letter combination that represents one sound in a word, e.g. /ough/ in 'nought'.
Quotient	The number result of dividing one number by another number.
Reading vocabulary	Words that a person can easily read or decode and understand but cannot clearly define.
Receptive language	The ability to understand language that is heard or read.
Receptive vocabulary	Words that a person can recognise and understand when reading or listening.
Rime (onset and)	see Onset and rime.

Literacy and numeracy terminology	Meaning
Root word	Holds the core meaning of a word and has prefixes or suffixes added. It cannot stand on its own, e.g. aud-, audio, audible, auditorium (compare ‘base word’).
Schema	A knowledge structure built from simpler pieces of information, helping to organise knowledge. For example, the word frog is built from four specific sounds and their associated letters. It is the name of an amphibious animal that hops and can be described... More information can be added to schema over time.
Schwa	A short vowel unstressed sound that sounds like /uh/. It appears in the unstressed syllable of a multisyllabic word, e.g. the second <e> in elephant or the <a> in about.
Science of Reading	Refers to the consensus of scientific evidence that helps us to understand how reading develops in both typical and atypical learners, how we learn to read and effective instructional strategies for teaching reading.
Scope and sequence	A summary of what should be taught and in what order to meet the intended learning outcomes, e.g. the order of teaching phonic knowledge, starting with simpler patterns and progressing to more difficult ones.
Segmenting (sounds)	Being able to hear and articulate the individual sounds separately in words, e.g. the word sprint is made of the sounds /s/ /p/ /r/ /i/ /n/ /t/. This supports spelling.
Semantics	The meaning and interpretation of words, phrases and expressions of a language.
Set for variability	A strategy for reading to support decoding. This builds on the understanding that some spelling patterns can represent more than one sound, e.g. <ea> can sound like /E/ or like /A/. When decoding, the learner can try either of the sounds to work out the word they are reading.
Short-term memory	The temporary storage of a small amount of information in the brain, kept available for a short period of time, typically a few seconds.

Literacy and numeracy terminology	Meaning
Sight vocabulary	The bank of words stored in long-term memory that a person can identify immediately and effortlessly.
Sight word	Any word that a reader knows and can read automatically without needing to actively decode it.
Sound–letter correspondences	The letter or combination of letters that each represent a sound in English.
Split digraph	A spelling pattern that represents a long vowel sound made of a vowel and the letter ‘e’ divided or ‘split’ by a consonant letter e.g. the <a-e> pattern in <i>same</i> or <o-e> pattern in <i>hope</i> .
Strength-based approach	A teaching strategy that focuses on the learner’s abilities, strengths and resources rather than their weaknesses or deficits, prioritising empowerment and growth.
Subitising	The ability to look at a small group of up to six objects and instantly know how many are in the group without counting them.
Syllable(s)	The individual beats in a word. Every syllable contains a vowel sound. Words can have one syllable such as <i>dog</i> , <i>tree</i> , <i>met</i> and <i>well</i> , or more than one syllable such as <i>won.der</i> , <i>daff.o.dils</i> , <i>hipp.o.pot.a.mus</i> .
Syllables – stressed	The part of a multisyllabic word that has more emphasis, e.g. <i>table</i> has the emphasis on the first syllable: <b>ta.ble</b> .
Syllables – unstressed	Sometimes called an unaccented syllable. Where the vowel sound in the syllable is reduced to a schwa sound, such as the /uh/ in <i>holiday</i> or <i>market</i> .
Synonyms	A group of words that have similar meaning e.g. <i>fast</i> , <i>quick</i> , <i>rapid</i> .
Syntax/syntactic awareness	Sentence structure. An awareness that different words have differing roles in a sentence e.g. nouns, verbs, adjectives, prepositions etc.
Synthetic phonics	A method of teaching English spelling that first teaches letter–sound correspondences and simultaneously teaches how to blend these sounds to make words. It takes a systematic and structured approach to build reading skills.

Literacy and numeracy terminology	Meaning
The big ideas in number	A framework that describes the critical elements learners need to learn about, understand and use to build numeracy skills.
Trauma	The long-term emotional response to extremely stressful, frightening or distressing experiences which overwhelmed someone's ability to cope with the situation.
Trigraph	Three consecutive letters that represent one sound e.g. 'igh' for the long /i/ sound in <i>night</i> .
Variable	A symbol, usually a letter of the alphabet, that is used to represent an unknown number in a mathematical equation.
Vocabulary	The words we need to know and understand to communicate effectively – knowledge of words and meanings.
Voiced/unvoiced consonants	Voiced – a speech sound that is made by vibrating the vocal cords such as /m/, /v/, /j/. Note that all vowel sounds are voiced.
	Unvoiced – a speech sound that is made without vocal resonance e.g. /b/, /f/, /th/.
Vowel	A speech sound made by vibrating the vocal cords without much restriction by the tongue, lips or soft palate.
Working memory	Draws on short-term memory but adds processing and manipulation functions. The average person can typically manage to process four pieces of information in working memory. Important to remember when managing cognitive load.



