Australian Education Research Organisation

Supporting secondary student reading: Screening, monitoring and intervention

May 2024

The Australian Education Research Organisation (AERO) is Australia's national education evidence body, working to achieve excellence and equity in educational outcomes for all children and young people.

Acknowledgements

AERO's work is made possible by the joint funding it receives from Commonwealth, state and territory governments.

AERO is grateful to the following schools for sharing their experiences: Como Secondary College (WA), Parramatta Marist High School (NSW), Parafield Gardens High School (SA), Craigmore High School (SA), Mount Rowan Secondary College (VIC), East Loddon P–12 College (VIC) and Reece High School (TAS).

AERO would like to acknowledge the contribution of the Dyslexia-SPELD Foundation (DSF) in developing content for this practice guide. AERO would also like to acknowledge Professor Anne Castles, Jessica Colleu Terradas and Melanie Henry for providing expert reviews of this content.

Acknowledgement of Country

AERO acknowledges the Traditional Custodians of the lands, waterways, skies, islands and sea Country across Australia. We pay our deepest respects to First Nations cultures and Elders past and present. We endeavour to continually value and learn from First Nations knowledges and educational practices.

Authors

Australian Education Research Organisation and Dyslexia-SPELD Foundation

How to cite

Australian Education Research Organisation and Dyslexia-SPELD Foundation. (2024). *Supporting secondary student reading: Screening, monitoring and intervention*. Australian Education Research Organisation. https://www.edresearch.edu.au/research/research-reports/supporting-secondary-student-reading

Publication details

ISBN 978-1-923066-29-8 (online)
Cover image: AERO

Contents

Figures

Tables

Nearly 1 in 5 Australian students starts secondary school at or below minimum standards for literacy or numeracy. This puts them at least 3 years behind their peers. When students struggle with literacy and numeracy, particularly at a foundational level, they can become disengaged and fall further behind their peers, making it difficult for them to catch up.

The Australian Education Research Organisation (AERO) recommends the use of a multi-tiered system of supports (MTSS) to better assist Years 7 to 9 students struggling with foundational literacy and numeracy skills.

About these resources

AERO has developed a suite of guidance in partnership with the Dyslexia-SPELD Foundation (DSF) for secondary school leaders and teachers looking to support students struggling with foundational literacy skills. The resources are designed to equip school leaders to effectively implement and deliver MTSS for reading instruction in secondary schools.

This publication collects these resources, including:

An evidence **explainer**, which uses evidence to explain important topics and concepts related to supporting students struggling with foundational skills:

- Why Some Secondary Students Struggle With Reading outlines the specific skills gaps and difficulties that cause secondary students to struggle with reading.

MTSS practice guides, which outline effective evidence-based practices when delivering MTSS for reading instruction, and help schools identify next steps in delivering MTSS effectively:

- Choosing Reading Assessments in MTSS
- Choosing, Monitoring and Modifying Reading Interventions in MTSS.

MTSS practice resources, which provide practical guidance for implementing and building proficiency in delivering MTSS for reading instruction in schools:

- MTSS Decision Tree
- Example Reading Assessment Tools in MTSS
- Example Interventions for Word Reading
- Example of Tier 2 Intervention for Subject-Specific Reading Comprehension.

A **methodology** section is also included in this document which outlines the process DSF used to create AERO's MTSS reading resources.

Why some secondary students struggle with reading

This explainer outlines the specific skills gaps and difficulties that cause some secondary students to struggle with reading.

Key points

At least 1 in 5 students enter secondary school without the reading skills they need to understand the written curriculum.

Evidence-informed frameworks for reading comprehension suggest that these skills relate to word reading, comprehension, or both.

Difficulties with word reading and comprehension are often related to problems with spelling, writing and mental health.

When a student starts secondary school, they're expected to read words and sentences accurately and fluently, allowing them to focus on the meaning of written texts ('reading comprehension'). However, around 1 in 5 students start secondary school without the skills they need to understand the meaning of their curriculum texts. This proportion is higher for students from low socio-economic backgrounds, from regional areas, and for First Nations young people (Australian Curriculum, Assessment and Reporting Authority [ACARA], 2023).

Secondary students may struggle with reading comprehension for different reasons. Some may not have received best-practice reading instruction in primary school (Coltheart & Prior, 2006), have experienced interruptions to schooling, or have a cognitive, physiological or psychological difficulty that prevents them from benefiting from best-practice instruction.

Regardless of the reason, students with reading difficulties can benefit from an MTSS (Scammacca et al., 2015; Solis et al., 2014; Vaughn et al., 2012). An MTSS approach provides high-quality reading instruction for all students, assessments to determine why a student is struggling with reading, and targeted intervention to support student learning needs. Our case study videos, Parafield Gardens High School (SA) and Mount Rowan Secondary College (VIC), are 2 examples of schools supporting students with reading using an MTSS framework.

A simple framework for reading comprehension

There are many frameworks that link skills (directly or indirectly) to reading comprehension. Some useful models include the Simple View of Reading (Gough & Tunmer, 1986), the Cognitive Foundations Framework (Hoover & Tunmer, 2020), Scarborough's Reading Rope (Scarborough, 2001), and the Reading Systems Framework (Perfetti et al., 2005).

Different frameworks of reading comprehension have different goals and, therefore, vary in complexity. However, they all divide the skills that contribute to reading comprehension into 2 main categories: word reading and language comprehension. Subsequent sections of this explainer outline these categories of skills students require to achieve reading comprehension.

Word reading

Word reading can be defined as the ability to read words accurately and fluently. This skill typically develops in tandem with the ability to spell words accurately and fluently.

A student's ability to read and spell accurately and fluently is dependent on their knowledge of the language of instruction's alphabetic system. Students need to develop a working knowledge of the letters or letter strings (graphemes) used to represent the speech sounds (phonemes) that occur in spoken English. This knowledge is often called 'phonic knowledge', commonly referred to as 'phonics'.

For example, if a student is trying to read the written word 'SHIP' for the first time, they need to know that the letters 's' and 'h' should be grouped together into a single grapheme **SH**, which corresponds to the phoneme **/sh/**. They also need to know that the grapheme **I** corresponds to the phoneme **/i/**, and the grapheme **P** corresponds to the phoneme **/p/**. Then they need to blend the phonemes **/sh/ /i/ /p/** together to form the word **'ship'**.

If a student is trying to spell the spoken word 'ship', they need to break the spoken word into its phonemes **/sh/**, **/i/ /p/**, then translate each phoneme into its grapheme **SH I P**, and then write those graphemes as the single word **SHIP**.

Each time a student reads or spells a new or novel word, their orthographic representation/knowledge (spelling) of that word gets stronger. At some point, this knowledge becomes so strong that a student no longer needs to read that word grapheme-by-grapheme or spell it phoneme-by-phoneme. Instead, they can read or spell that word almost 'automatically', which makes their reading or spelling of that word both accurate and fluent (Dehaene, 2013).

In addition to phonic knowledge and orthographic knowledge, to read and spell accurately and fluently, students need to understand morphology, which is knowledge of the units of meaning in a word, including prefixes (**RE**), roots (**MARK**), and suffixes (**ABLE**). This knowledge supports the accurate reading and spelling of new words. For example, imagine seeing the word 'CONSTITUTION' for the first time. If you can read the word 'CONSTITUTE', and you know that the letter 't' followed by the morpheme **ION** results in a syllable pronounced **/shun/**, there's a good chance you'll read this new word accurately. You may also get some clues about the meaning of that word from its root.

By middle primary, it's expected that students will have learned the orthography of many common words and have the phonic and morphological knowledge needed to read new words successfully (Castles et al., 2018). However, many students enter secondary school without these foundational word reading skills (Vaughn & Fletcher, 2012), and addressing comprehension alone isn't sufficient to support students who are unable to decode words (White, 2010).

Language comprehension

Language comprehension is the ability to use linguistic knowledge to understand what's being read. It's a complex construct, requiring knowledge of syntax (i.e., word order within a sentence), text organisation (the sequence of ideas across a text), text type (e.g., fiction, non-fiction, essays, poetry), and verbal reasoning (e.g., figurative language, making inferences). However, the most critical components of comprehension are relevant background knowledge and vocabulary (Perfetti & Stafura, 2014). Vocabulary knowledge alone accounts for 50–60% of the variance in reading comprehension (Stahl & Nagy, 2006).

It's important to note that some secondary students' reading comprehension difficulties are caused by weaknesses in spoken comprehension skills alone. Some students may have a specific difficulty that impairs their ability to acquire spoken language skills (For more information on Developmental Language Disorder, see for example, Adlof & Hogan, 2018; Calder et al., 2022). And some students may have long-term reading difficulties that impede their development of the comprehension skills that emerge from reading (Adlof & Hogan, 2018; Cunningham & Stanovich, 1998).

Students need targeted intervention when their language comprehension levels limit access to year-level curriculum. While some commercial off-the-shelf interventions (see Example Interventions for Word Reading) have shown effects in research settings, students who receive commercial language comprehension interventions generally need further intervention in curriculum-specific knowledge (Donegan & Wanzek, 2021). Current evidence suggests that efficient support for comprehension should embed intervention within core curriculum. Figure 1 provides a simple framework for reading comprehension that outlines skills supporting word reading and comprehension.

Figure 1: Framework for reading comprehension skills supporting word reading and comprehension

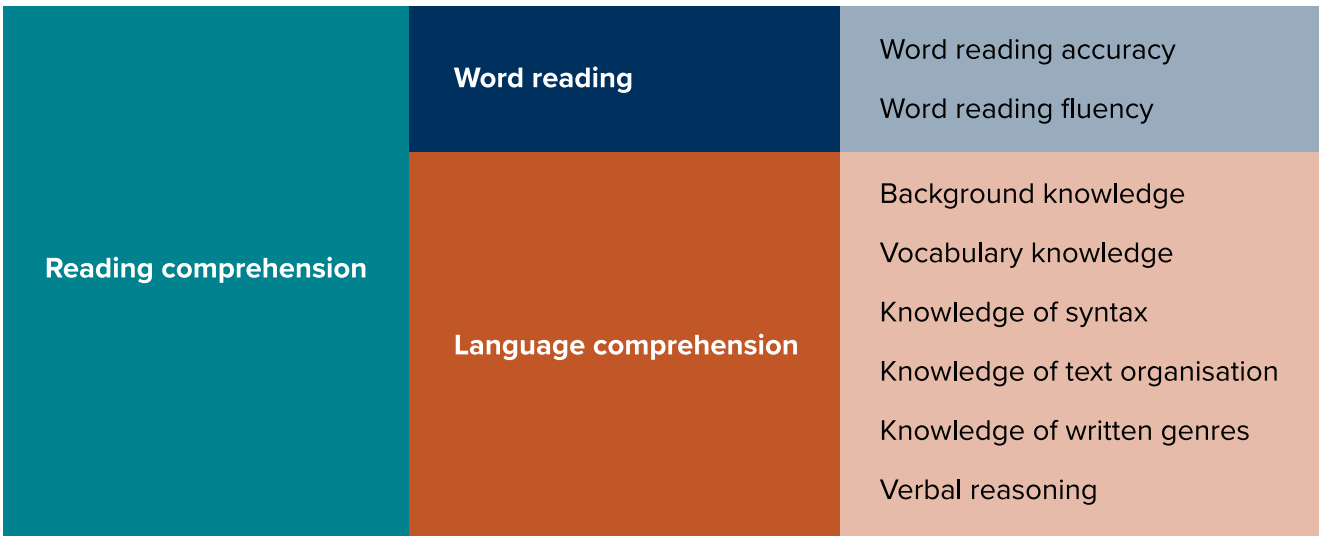


Table 1 is designed to help schools match best-practice reading instruction (as explained in AERO's resources) with evidence-informed frameworks and curriculum documents.

Table 1: Alignment between reading frameworks and curriculum documents

Reading framework			Curriculum document		AERO guidance
Simple View of Reading	**Cognitive Foundations Framework**	**Scarborough's Reading Rope**	**ACARA**	**National Literacy and Numeracy Learning Progressions Version 3**	**AERO Supporting Secondary Student Reading resources**
Word Recognition	Phonemic Awareness	Phonological Awareness	**Language:** Phonics and Word Knowledge	Phonological Awareness PhA1 – PhA5	Not directly addressed; incorporated into assessment measures and intervention resources targeting overall word reading skill
	Knowledge of the Alphabetic Principle	Decoding (and Spelling)	**Language:** Phonics and Word Knowledge Expressing and Developing Ideas **Literacy:** Interpreting, Analysing, Evaluating and Creating Texts	Phonic Knowledge and Word Recognition PKW1 – PKW8 Fluency FlY1 – FlY6 Understanding Texts UnT4 – UnT6	Why Some Secondary Students Struggle with Reading Figure 1: Accurate word reading (decoding) and automatic word recognition (fluency) Screening and assessment: Inclusion of measures evaluating word reading accuracy and/or spelling (phonics and orthographic knowledge), reading fluency and reading rate Intervention: Inclusion of programs that target phonics, orthography, reading accuracy and spelling
		Sight Word Recognition			

<table>
<tr><th colspan="3">Reading framework</th><th colspan="2">Curriculum document</th><th>AERO guidance</th></tr>
<tr><th>Simple View of Reading</th><th>Cognitive Foundations Framework</th><th>Scarborough's Reading Rope</th><th>ACARA</th><th>National Literacy and Numeracy Learning Progressions Version 3</th><th>AERO Supporting Secondary Student Reading resources</th></tr>
<tr><td rowspan="4">Language Comprehension</td><td rowspan="2">Linguistic Knowledge
Phonological Knowledge
Syntax Knowledge</td><td>Language Structures</td><td rowspan="4">Language:
Language Variation and Change
Language for Interaction
Text Structure and Organisation
Expressing and Developing ideas
Literature:
Literature and Context
Responding to Literature
Examining Literature
Creating Literature
Literacy:
Texts in Context
Interacting with Others
Interpreting, Analysing, Evaluating
Creating Texts</td><td rowspan="4">Understanding texts
UnT3 – UnT11</td><td rowspan="4">Why Some Secondary Students Struggle with Reading Figure 1: Background knowledge; vocabulary knowledge; knowledge of syntax; knowledge of text organisation; knowledge of written genres; and verbal reasoning
Screening and assessment: Inclusion of measures evaluating oral language, listening comprehension, and reading comprehension</td></tr>
<tr><td>Vocabulary</td></tr>
<tr><td rowspan="2">Background Knowledge and Inferencing Skills</td><td>Verbal Reasoning</td></tr>
<tr><td>Background Knowledge</td></tr>
</table>

Spelling and writing

Reading skills (wording reading and language comprehension) and writing skills (spelling and written expression) are closely related. While the relationship between these 2 skills is often reciprocal, they're not simply 'two sides of the same coin' (Ehri, 2000, p. 19). In fact, spelling assessments and interventions can be more sensitive tools for developing word reading, which is why spelling is included in further guidance on assessment and intervention.

Reading comprehension and its written counterpart – written expression – are also closely related. Successful writing is a product of the fluent and coordinated execution of separate skill areas: transcription (including handwriting, spelling, and punctuation) and composition (including vocabulary, topic knowledge, syntax, text organisation, genre and audience awareness) (Berninger et al., 2002). (See AERO's literature review on writing and writing instruction for more information.) The coordination of these skills requires strong executive functioning – planning, organising, and monitoring performance – and places high loads on working memory (Berninger et al., 2002).

It's an oversimplification to say that reading comprehension and written expression are reversible processes. However, many of the instructional tasks that target written expression have benefits for reading comprehension, and vice-versa. For example, engaging in close reading, analysis and discussion of well-written texts within academic disciplines has been found to be effective for teaching knowledge of different writing genres (Graham et al., 2019). Practise applying the sentence patterns (syntax), vocabulary, organisational structures and 'voice', or style, of well-written texts also reinforces comprehension of these texts (Kamil et al., 2008). This means that written expression instruction is likely to have considerable benefits for reading comprehension. AERO's guidance on writing instruction provides further information on supporting students' writing development.

Mental health

Reading skills and mental health are also closely related. Difficulties with reading may have a causal effect on a student's self-concept, anxieties about reading and writing, and their ability to engage with reading instruction (McArthur, 2022).

There are few assessments, and even fewer evidence-based interventions, to support self-concept, anxiety or levels of engagement in students with reading difficulties (Anderson et al., 2023). However, there may be practical things schools can do to minimise the negative impact of reading and writing difficulties on secondary students' wellbeing. There are experts in both reading and mental health who may have the expertise to carefully combine targeted and intensive reading and wellbeing training in a way that minimises the use of written materials. This is a critical consideration since many clinical interventions for student wellbeing depend heavily on training via text, which denies access to students with reading difficulties.

Summary

Many students enter secondary school with word reading and comprehension abilities below the level they need to comprehend the texts that help deliver the curriculum. Research suggests that an MTSS for reading can improve outcomes for reading and spelling (Solis et al., 2014; Vaughn & Fletcher, 2012; Scammacca et al., 2015).

References

Adlof, S. M., & Hogan, T. P. (2018). Understanding dyslexia in the context of developmental language disorders. *Language, Speech, and Hearing Services in Schools, 49*(4), 762–773. https://doi.org/10.1044/2018_LSHSS-DYSLC-18-0049

Anderson, L. L., Meline, M., & Harn, B. (2023). Student engagement within adolescent reading comprehension interventions: A systematic literature review. *Journal of Education, 203*(2), 258–268. https://doi.org/10.1177/00220574211032327

Australian Curriculum, Assessment and Reporting Authority. (2023). *NAPLAN 2023 commentary*. https://www.acara.edu.au/reporting/national-report-on-schooling-in-australia/naplan-national-results

Berninger, V. W., Abbott, R. D., Abbott, S. P., Graham, S., & Richards, T. (2002). Writing and reading: Connections between language by hand and language by eye. *Journal of Learning Disabilities, 35*(1), 39–56. https://doi.org/10.1177/002221940203500104

Calder, S. D., Brennan-Jones, C. G., Robinson, M., Whitehouse, A., & Hill, E. (2022). The prevalence of and potential risk factors for developmental language disorder at 10 years in the Raine Study. *Journal of Paediatrics and Child Health, 58*(11), 2044–2050. https://doi.org/10.1111/jpc.16149

Castles, A., Rastle, K., & Nation, K. (2018). Ending the reading wars: Reading acquisition from novice to expert. *Psychological Science in the Public Interest, 19*(1), 5–51. https://doi.org/10.1177/1529100618772271

Coltheart, M., & Prior, M. (2006). Learning to read in Australia. *Australian Journal of Learning Disabilities, 11*(4), 157–164. https://doi.org/10.1080/19404150609546820

Cunningham, A., & Stanovich, K. (1998). What reading does for the mind. *American Educator*, 22, 8–15.

Dehaene, S. (2013). Inside the letterbox: How literacy transforms the human brain. *Cerebrum*, 7. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3704307/

Donegan, R., & Wanzek, J. (2021). Effects of reading interventions implemented for upper elementary struggling readers: A look at recent research. *Reading and Writing, 34*(8), 1943–1977. https://doi.org/10.1007/s11145-021-10123-y

Ehri, L. C. (2000). Learning to read and learning to spell: Two sides of a coin. *Topics in Language Disorders, 20*(3), 19–36.

Gough, P. B., & Tunmer, W. E. (1986). Decoding, reading, and reading disability. *Remedial and Special Education, 7*(1), 6–10. https://doi.org/10.1177/074193258600700104

Graham, S., MacArthur, C., & Hebert, M. (2019). *Best practices in writing instruction* (3rd ed.). Guilford Press.

Hoover, W. A., & Tunmer, W. E. (2020). *The cognitive foundations of reading and its acquisition*. Springer International Publishing. https://doi.org/10.1007/978-3-030-44195-1

Hudson, C., & Angelo, D. (2020). From the periphery to the centre: Securing the place at the heart of the TESOL field for First Nations learners of English as an Additional Language/Dialect. *TESOL in Context, 29*(1), 5–35. https://doi.org/10.21153/tesol2020vol29no1art1421

Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., & Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices* (IES Practice Guide NCEE 2008-4027). National Center for Education Evaluation and Regional Assistance. https://ies.ed.gov/ncee/wwc/practiceguide/8

McArthur, G. (2022). Poor reading and anxiety (PRAX): Building a theory and practice. *Australian Journal of Learning Difficulties, 27*(1), 169–180. https://doi.org/10.1080/19404158.2022.2054834

Perfetti, C., & Stafura, J. (2014). Word knowledge in a theory of reading comprehension. *Scientific Studies of Reading, 18*(1), 22–37. https://doi.org/10.1080/10888438.2013.827687

Perfetti, C., Landi, N., & Oakhill, J. (2005). The acquisition of reading comprehension skill. In M. J. Snowling, & C. Hulme (Eds.), *The science of reading: A handbook* (pp. 227–247). Blackwell Publishing. https://doi.org/10.1002/9780470757642.ch13

Scammacca, N., Roberts, G., Vaughn, S., & Stuebing, K. (2015). A meta-analysis of interventions for struggling readers in grades 4–12: 1980–2011. *Journal of Learning Disabilities, 48*(4), 369–390. https://doi.org/10.1177/0022219413504995

Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman, & D. Dickinson (Eds.), *Handbook for research in early literacy* (pp. 97–110). Guilford Press.

Solis, M., Miciak, J., Vaughn, S., & Fletcher, J. M. (2014). Why intensive interventions matter: Longitudinal studies of adolescents with reading disabilities and poor reading comprehension. *Learning Disability Quarterly, 37*(4), 218–229. https://doi.org/10.1177/0731948714528806

Stahl, S. A., & Nagy, W. E. (2006). *Teaching word meanings.* Lawrence Erlbaum Associates Publishers.

Vaughn, S., & Fletcher, J. M. (2012). Response to intervention with secondary school students with reading difficulties. *Journal of Learning Disabilities, 45*(3), 244–256. https://doi.org/10.1177/0022219412442157

Vaughn, S., Wexler, J., Leroux, A., Roberts, G., Denton, C., Barth, A., & Fletcher, J. (2012). Effects of intensive reading intervention for eighth-grade students with persistently inadequate response to intervention. *Journal of Learning Disabilities, 45*(6), 515–525. https://doi.org/10.1177/0022219411402692

White, N. C. (2010). The educational therapist in practice. In M. Ficksman, & J. U. Adelizzi (Eds.), *The clinical practice of educational therapy: A teaching model* (pp. 215–236). Routledge. https://doi.org/10.4324/9780203855492

Willingham, D. T. (2006). The usefulness of brief instruction in reading comprehension strategies. *American Educator, 30*(4), 39–50.

Multi-tiered system of supports decision tree

This practice resource explains how to support students struggling with these skills using an MTSS approach.

This MTSS decision tree is based on a simple framework of reading comprehension. It presents guidance on how to provide:

- universal screening of students to identify reading difficulties
- diagnostic assessment of identified students to better understand the nature of their reading difficulties
- intervention that targets their specific reading difficulties.

Tier 1 refers to evidence-based instructional practices and supports delivered to all students in general education classrooms that facilitate achievement of learning defined in the curriculum. High-quality evidence-based instructional practices and supports are outlined in AERO's Teaching for How Students Learn learning and teaching model.

Tier 2 interventions are generally provided to small groups in addition to the high-quality instruction received by all students at Tier 1. Tier 2 instruction comprises the same evidence-based, high-quality instructional practices previously described in this explainer and supplements Tier 1 – it does not replace it. Tier 2 instruction includes:

- additional support through evidence-based interventions, which may:
  - be aligned in content to the curriculum taught in Tier 1
  - address specific prerequisite knowledge and skills gaps, along the same progression of learning as Tier 1 content
- greater intensity through increased frequency (number of intervention sessions per week), length (how long each intervention session goes for) and duration (total time span of intervention), as well as smaller instructional group size
- closer monitoring of progress.

Tier 3 interventions are further intensified and targeted to meet specific individual learning needs. The evidence-based interventions at Tier 3 are informed by data such as results from universal screening assessments. Like Tier 2, Tier 3 occurs in addition to the high-quality instruction received by all students at Tier 1 and Tier 2.

The high-quality explicit instruction and evidence-based interventions at Tier 3 are further intensified over and above those provided at Tier 2. This is achieved by increasing the frequency and/or length of each session, duration of the intervention, and/or lowering group size (to either very small groups, or one-to-one). There is also greater frequency of progress monitoring.

Two examples of schools using an MTSS framework to support reading are Craigmore High School and Parafield Gardens High School.

The decision-making process (Figure 2) begins with a screening phase that sources as much information as possible about each student's reading ability. Information gathered can be considered in one of 2 possible categories.

Category A information includes universal screening assessments. Universal screening assessments provide objective data about the reading skills of an entire student population.

Category B is supporting information which may include previous NAPLAN results, recent school reports, writing samples, and any other available assessments or prior diagnoses. It's recommended that universal screening assessments are administered for all students, and Category B information supplement results from Category A.

If Category A and B information raise no concerns, a student will continue in Tier 1 instruction and their progress will be monitored within that context. No further action is required, other than teachers continuing to monitor progress in the Tier 1 classroom.

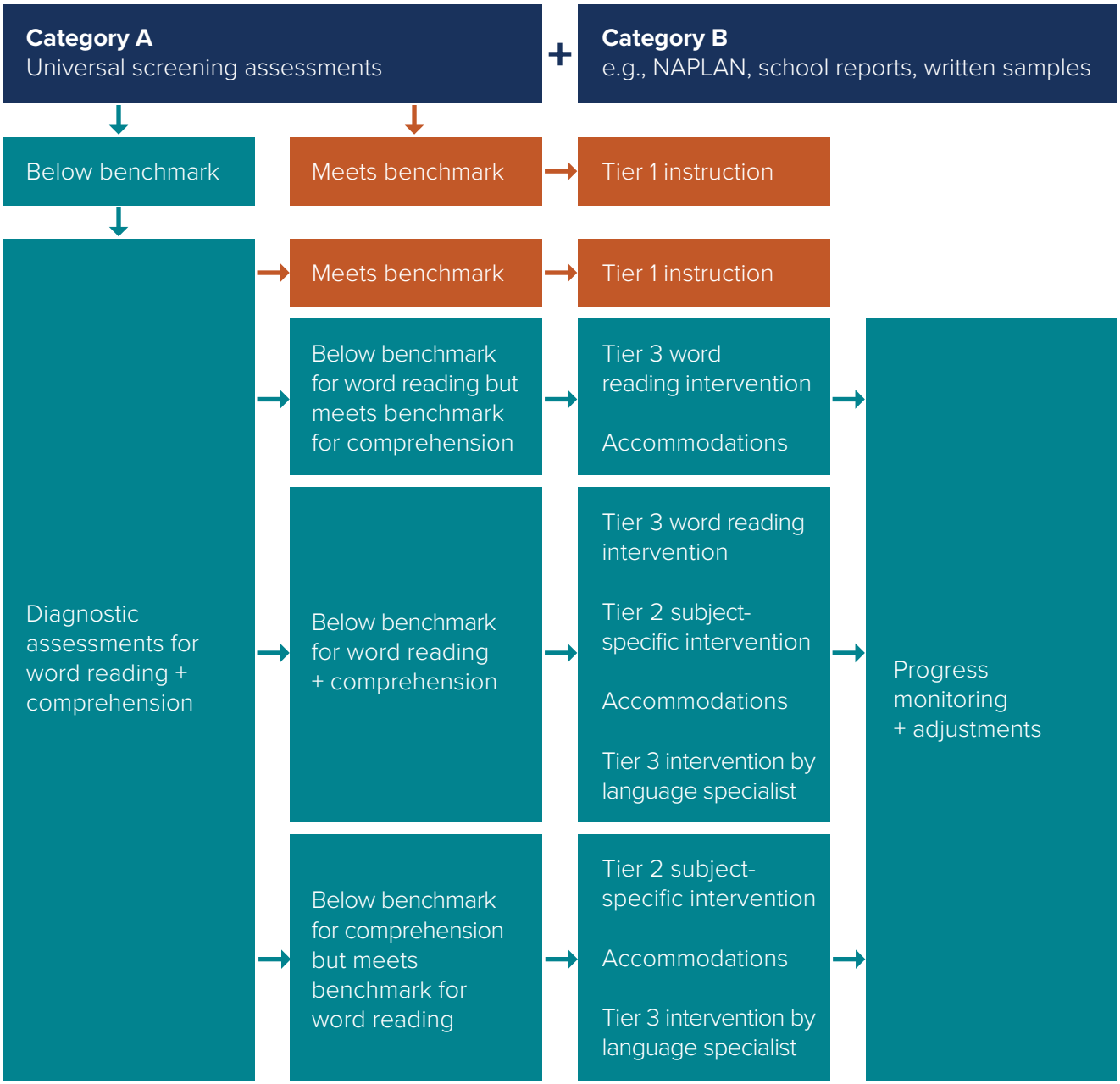
If a universal screening assessment (Category A) indicates that a student's reading falls below an established benchmark for their age or grade, then a diagnostic assessment is needed to determine where the difficulty lies. Category B information, such as NAPLAN results, student reports or a writing sample, can also be used to better understand the student's learning needs and potential next steps.

If a student falls below benchmark in their diagnostic assessment for word reading, they will benefit from Tier 3 word reading intervention with progress monitoring and modifications. Students in this group may also require accommodations for additional learning needs. (For more information, see Accommodations in our Choosing, Monitoring and Modifying Reading Interventions in MTSS practice guide.)

If a student falls below benchmark for comprehension, they will benefit from Tier 2 comprehension intervention with progress monitoring, modification, and accommodations to access the curriculum. Some students may also need to be referred to assessment for Tier 3 comprehension intervention with a specialist in speech and language.

If the diagnostic assessment reveals that a student falls below benchmark for both word reading and comprehension, then they will benefit from all the supports suggested above. Choosing, Monitoring and Modifying Reading Interventions in MTSS provides more information on recommended next steps.

Figure 2: An MTSS decision tree for reading in secondary school



Choosing reading assessments in MTSS

This practice guide explains universal and diagnostic student reading assessments, and how to best select them for use in an MTSS framework.

AERO's MTSS decision tree covers 3 types of assessment: universal screening, diagnostic, and progress monitoring.

This practice guide provides criteria for selecting and assessing assessments, and points to some example assessments for screening and diagnosis. Progress monitoring is covered separately in AERO's Choosing, Monitoring and Modifying Reading Interventions in MTSS practice guide because it's a critical part of the support provided directly to students through intervention. It's not recommended that teaching staff develop their own progress monitoring tools – not only because the process is time-consuming, but also because it's difficult to maintain quality and consistency.

Universal screening

Universal screening assessments provide objective data about the reading skills of a student population. They're usually administered at the beginning of the school year or upon entry to a school as a new student.

Universal screening assessments are designed to identify students whose reading attainments fall below a minimum benchmark. The results of an individual student are compared to cohort-wide data collected from a large group of students the same age or grade. If a student meets the minimum level expected for their age or grade, they don't need intervention. If they don't reach this level, they would benefit from a diagnostic assessment to inform targeted intervention.

Screening assessments are effective when they're designed to be administered in a short period of time to students individually or in a group, in-person or online. Administration and scoring should be easy (possibly automated) and not require advanced qualifications. However, instruction on how to administer, score and interpret a specific screening assessment is needed to ensure validity and reliability.

Some universal screening assessments suggest benchmarks ('cut-off scores') to identify students who need further diagnostic assessment. A common benchmark used in practice and research is one standard deviation below the expected mean level for a student's age or grade ('-1 SD'). This equates to the 16th percentile.

Universal screening with a single test may run the risk of missing a proportion of students who need help. For example, some students who struggle with word reading can correctly answer questions on a reading comprehension test by simply using their verbal reasoning skills ('logic'). Using a broad universal screener that assesses multiple components of reading (for example, word reading and comprehension) can guard against the collection of unreliable data. Drawing on Category B information (as defined in AERO's MTSS decision tree – NAPLAN data, school reports, written samples) can also provide further data to inform decision-making.

Diagnostic assessments

Universal screening assessments are designed to provide information about students struggling with reading, but often don't give much information about which reading-related skills need developing.

Diagnostic assessments are so-named because they diagnose the nature of a student's difficulties with word reading and/or comprehension. They're designed to provide information about the reading-related skills responsible for a student's reading difficulties. This informs decisions about which interventions are needed to target those skills.

Diagnostic assessments focus on specific skills (such as word reading and decoding), so a student may need to complete a suite ('battery') of diagnostic assessments to accurately profile their reading skills. Diagnostic assessments often take longer to administer than universal screening assessments and are typically administered in a one-to-one or small group setting by someone trained in standardised assessments.

Like universal screening assessments, diagnostic assessments compare a student's results to the average level expected for their age and grade. Ideally, assessments should be specifically designed or adapted for secondary school students. However, some diagnostic assessments designed for upper primary school students may be suitable. For example, if a secondary student scores below the mean level expected for Year 6 students on a word reading test, then their word reading is below that required for secondary school.

It should be noted that diagnostic assessments aren't diagnostic in the sense of being able to diagnose underlying conditions such as specific learning disorders. If a student fails to benefit from targeted intervention at school or is suspected to have a learning disorder, they should ideally be referred for evaluation by a trained specialist in reading or spoken language.

Selecting reading assessment tools in MTSS

Many universal screening or diagnostic assessment tools are available in Australia. When selecting a screening assessment tool (either universal or diagnostic) for use in secondary school, there are several factors to consider. The National Centre on Improving Literacy has created a resource to guide American educators in selecting or assessing a screening assessment for their school context.[1] This information is summarised in Table 2, along with additional considerations related to cost, access and the Australian context. See Example Reading Assessment Tools in MTSS for specific examples.

Table 2: Criteria for selecting an assessment tool (universal and diagnostic)

Consideration	What to look for
What's the student cohort of interest?	The assessment should be designed for students of the same age and grade as the population it will be used with. It's also important to consider whether the test has been designed with Australian students and diverse populations in mind. A test that hasn't been evaluated with students from culturally and linguistically diverse populations may over- or under-estimate student performance.
What's the scope of the assessment?	Assessments may cover a broad range of reading skills (accuracy, rate, comprehension), or only assess one or 2 skills closely. They may evaluate concepts and knowledge ranging from early to advanced or target a narrow set of skills to pinpoint instructional needs and determine short-term response to intervention (e.g., Curriculum Based Measures). Selection of assessment should be based on a clear understanding of how the assessment has been designed and what it is (and isn't) intended to measure.
Is the assessment reliable?	It's essential that the tool consistently yields accurate and stable results over time. The outcomes should not vary notably when administered by different people. A reliable tool minimises measurement error and provides educators with confidence in the data, enhancing the accuracy of screening decisions and subsequent interventions within the MTSS framework.
Is the assessment valid?	The assessment tool should be an accurate, or reasonable, measure of the skill/s it claims to evaluate. Valid assessments offer educators confidence that the data generated reflects students' actual reading proficiency.
Is the assessment sensitive and specific when identifying students whose academic skills are less developed than expected for their age and grade?	The tool should be *sensitive* – that is, able to accurately identify students who need intervention, minimising false negatives (such as students who achieve average-range results despite below-average reading abilities). It must also be *specific* – that is, able to correctly identify students who don't need intervention, reducing false positives. This balance is crucial for effective decision-making within the MTSS framework, preventing both under-identification and over-identification of students needing support.
Is the assessment suitable for the school context in terms of financial, resource and staffing demands, expected reading skills, and the number of students requiring assessment?	This will vary between schools. However, assessment tools that are cost-effective, efficient, and easily scalable have obvious advantages. Consider whether the tool is available in Australia and the tool's alignment with Australian educational standards and curricula to ensure its relevance and suitability for the Australian context.
Is the assessment user-friendly and accessible?	Ease of administration, scoring and data interpretation is another key criterion. Accessibility to test materials is crucial, including whether the assessments are available in multiple formats, such as digital and paper-based, to accommodate various school settings and student needs.

Example reading assessment tools in MTSS

This practice resource provides examples of reading assessments for an MTSS framework. We recommend that you read AERO's Choosing Reading Assessments in MTSS practice guide before this practice resource.

Table 3 lists several assessment tools we've evaluated according to our recommended criteria for choosing reading assessments and choosing reading interventions. These tools meet many (but may not meet all) criteria. All were identified as providing scoring criteria or benchmarking.

This list is intended to provide examples of assessment tools that are suitable for secondary students in Australia. It's not exhaustive, and schools are encouraged to evaluate the tools currently being utilised in their schools to determine suitability, and any additional assessment tools that may be needed. Schools will also need to consider the qualifications required by individuals administering these tests.

Inclusion on this list doesn't indicate that these assessment tools (or assessment tools and intervention resources associated with these assessments) are endorsed by AERO or DSF Literacy and Clinical Services.

Table 3: Example assessment tools for reading

Assessment type (US, DX, PM)*	Population of interest	Targeted skills	Sensitivity and specificity	Reliability	Validity	Format (F, O, I, G)**	Length	Suitability for		Cost (as of March 2024)
								Secondary context	Australian context	
Acadience Reading Diagnostic: Comprehension, Fluency and Oral Language (CFOL) (Voyager Sopris)										
DX	Grade F–6	Word reading fluency Comprehension Vocabulary	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I	10 min	Designed for younger students but suitable diagnostic tool for lower-level readers	US norms and content but suitable diagnostic tool for specific skill deficits	US$68 for kit US$1.20 per student/ administration
Acadience Reading Diagnostic: Phonological Awareness and Word Reading (PA & WRD) (Voyager Sopris)										
DX	Grade F–6	Phonemic awareness Word reading accuracy	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I	10 min	Designed for younger students but suitable diagnostic tool for lower-level readers	US norms and content but suitable diagnostic tool for specific skill deficits	US$108 for kit US$1.20 per student/ administration

* US = universal screening, DX = diagnostic assessment tool, PM = progress monitoring
** F = delivered face-to-face, O = can be delivered online, I = individually administered, G = can be administered in a group

Assessment type (US, DX, PM)*	Population of interest	Targeted skills	Sensitivity and specificity	Reliability	Validity	Format (F, O, I, G)**	Length	Suitability for		Cost (as of March 2024)
								Secondary context	Australian context	
Acadience Reading 7–8 (Voyager Sopris)										
US, PM	Grade 7–8	Word reading accuracy and fluency Reading comprehension	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I, G	10–50 min	Designed for secondary students	US norms and content but suitable screening tool for general reading ability and fluency	US$132 per kit (one kit per year level) US$3.60 per student/ administration
CUBED Dynamic Decoding Measures										
US, PM	Grade 1–8	Phonemic awareness Word reading accuracy Orthographic knowledge	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I	5–15 min	Designed for secondary students	US norms and content but suitable screening tool for general reading ability and fluency	Free to download and print

* US = universal screening, DX = diagnostic assessment tool, PM = progress monitoring
** F = delivered face-to-face, O = can be delivered online, I = individually administered, G = can be administered in a group

Assessment type (US, DX, PM)*	Population of interest	Targeted skills	Sensitivity and specificity	Reliability	Validity	Format (F, O, I, G)**	Length	Suitability for		Cost (as of March 2024)
								Secondary context	Australian context	
CUBED Narrative Language Measures										
US, PM	Grade 1–9	Oral language Reading Vocabulary Writing	Shows promise (nears selection criteria)	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I	5–15 min	Designed for secondary students	US norms and content but suitable screening tool for general reading ability and fluency	Free to download and print
Dynamic Indicators of Basic Early Literacy Skills (DIBELS), 8th edition										
US, PM	Grade F–8	Word reading accuracy Reading fluency Reading comprehension	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I, G	2 min (ORF) 5 min (Maze)	Designed for secondary students	US norms and content but suitable screening tool for general reading ability and fluency	Free to download and print

* US = universal screening, DX = diagnostic assessment tool, PM = progress monitoring
** F = delivered face-to-face, O = can be delivered online, I = individually administered, G = can be administered in a group

Assessment type (US, DX, PM)*	Population of interest	Targeted skills	Sensitivity and specificity	Reliability	Validity	Format (F, O, I, G)**	Length	Suitability for		Cost (as of March 2024)
								Secondary context	Australian context	
EasyCBM										
PM	Grade F–8	Passage reading fluency Reading comprehension	Shows promise (nears selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, O, I, G	1 min (Fluency) 15 min (Vocab) 30 min (Comp)	Designed for secondary students	US norms and content but suitable screening tool for general reading ability and fluency	Free to register a Lite account with access to most tests US$49 a year to upgrade
Gates MacGinitie Reading Tests, 4th edition (Nelson Assessments)										
DX	Grade F–12	Vocabulary Reading comprehension	Limited information available as open access	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I, G	55 min	Designed for secondary students	US norms and content but suitable diagnostic tool for specific skill gaps	US$395 for kit US$4 per student/ administration
Gray Oral Reading Test, 5th edition (GORT-5) (Pro-Ed Australia)										
DX	Grade 1–12	Reading comprehension	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I	20 min	Designed for secondary students	US norms and content but suitable diagnostic tool for specific skill gaps	A$654 for kit $6.50 per student/ administration

* US = universal screening, DX = diagnostic assessment tool, PM = progress monitoring
** F = delivered face-to-face, O = can be delivered online, I = individually administered, G = can be administered in a group

Assessment type (US, DX, PM)*	Population of interest	Targeted skills	Sensitivity and specificity	Reliability	Validity	Format (F, O, I, G)**	Length	Suitability for		Cost (as of March 2024)
								Secondary context	Australian context	
Martin and Pratt Nonword Reading Test (MultiLit)										
DX	Grade 2–10	Phonological awareness Decoding	Meets or exceeds selection criteria	Limited information has been reviewed	Limited information has been reviewed	F, I	10 min	Designed for secondary students	Currently being re-normed via MultiLit	Being republished by MultiLit Cost TBD
Castles and Coltheart 2 (CC2) (Digital: MOTiF, Print: SPELD organisations in Australia)										
DX	6–11 years of age	Word reading accuracy Phonics	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, O, I	10 min	Designed for younger students but suitable diagnostic tool for lower level readers	Australian-based test	Free to download
The Diagnostic Spelling Test for Irregular Words (DiSTi) (MOTiF)										
DX	Grade 1–7	Spelling of irregular words	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, O, I, G	10 min	Designed for Year 7 students but suitable diagnostic tool for lower-level older readers	Australian-based test	Free to download

* US = universal screening, DX = diagnostic assessment tool, PM = progress monitoring
** F = delivered face-to-face, O = can be delivered online, I = individually administered, G = can be administered in a group

Assessment type (US, DX, PM)*	Population of interest	Targeted skills	Sensitivity and specificity	Reliability	Validity	Format (F, O, I, G)**	Length	Suitability for		Cost (as of March 2024)
								Secondary context	Australian context	
The Diagnostic Spelling Test – Morphology (DiST-m) (MOTiF)										
DX	Grade 3–10	Morphological spelling rules	Meets or exceeds selection criteria	Limited information has been reviewed	Limited information has been reviewed	F, I, G	10 min	Designed for secondary students	Australian-based test	Free to download
The Diagostic Spelling Test – Nonwords (DiSTn) (MOTiF)										
DX	Grade 1–7	Non-word spelling	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I, G	10 min	Designed for Year 7 students but suitable diagnostic tool for lower-level older readers	Australian-based test	Free to download
The Macquarie University Advanced Adults Spelling Test (MAAST) (MOTiF)										
DX	Post-secondary	Spelling	Meets or exceeds selection criteria	Limited information has been reviewed	Meets or exceeds selection criteria	F, I, G	10 min	Designed for adults but suitable diagnostic tool for older students	Australian-based test	Free to download

* US = universal screening, DX = diagnostic assessment tool, PM = progress monitoring
** F = delivered face-to-face, O = can be delivered online, I = individually administered, G = can be administered in a group

Assessment type (US, DX, PM)*	Population of interest	Targeted skills	Sensitivity and specificity	Reliability	Validity	Format (F, O, I, G)**	Length	Suitability for		Cost (as of March 2024)
								Secondary context	Australian context	
The Test of Orthographic Choice (TOC) (MOTiF)										
DX	Grade 1–6	Orthographic knowledge	Meets or exceeds selection criteria	Limited information has been reviewed	Limited information has been reviewed	F, I, G	10 min	Designed for younger students but suitable diagnostic tool for lower-level readers	Australian-based test	Free to download
New Group Reading Test (NGRT) (GL Assessments; PAA Australia)										
US, PM	Grade 1–10	Word reading accuracy Reading comprehension	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	O, I, G	45 min (paper) 30 min (online)	Designed for secondary students	UK norms and content but suitable for Australian students	A$22 per student if assessed 2 times a year
New Group Spelling Test (NGST) (GL Assessments; PAA Australia)										
US, PM	Grade 2–10	Spelling	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	O, I, G	20 min	Designed for secondary students	UK norms and content but suitable for Australian students	A$11.50 per student if assessed 2 times a year

* US = universal screening, DX = diagnostic assessment tool, PM = progress monitoring
** F = delivered face-to-face, O = can be delivered online, I = individually administered, G = can be administered in a group

Assessment type (US, DX, PM)*	Population of interest	Targeted skills	Sensitivity and specificity	Reliability	Validity	Format (F, O, I, G)**	Length	Suitability for		Cost (as of March 2024)
								Secondary context	Australian context	
Progressive Achievement Test – Reading (PAT-R) (ACER)										
US	Grade 1–10	Reading comprehension Vocabulary	Limited research evidence available	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I, G	45–60 min	Designed for secondary students	Australian-based test	A$9 per student/ administration
PAT Spelling Skills (updated version of PAT-S) (ACER)										
US	Grade F–10	Spelling	Limited research evidence available	Meets or exceeds selection criteria	Meets or exceeds selection criteria	O, I, G	20 min	Designed for secondary students	Australian-based test	A$9 per student/ administration
Progress Test in English in Secondary Schools (PTE) (GL Assessments)										
US, PM	Grade F–10	Spelling Grammar Punctuation Reading comprehension	Limited research evidence available	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, O, I, G	45–60 min	Designed for secondary students	UK norms and content but suitable for Australian students	Approx A$10 per student/ administration

* US = universal screening, DX = diagnostic assessment tool, PM = progress monitoring
** F = delivered face-to-face, O = can be delivered online, I = individually administered, G = can be administered in a group

Assessment type (US, DX, PM)*	Population of interest	Targeted skills	Sensitivity and specificity	Reliability	Validity	Format (F, O, I, G)**	Length	Suitability for		Cost (as of March 2024)
								Secondary context	Australian context	
Test of Integrated Language and Literacy Skills (TILLS) (DSF; ACER)										
DX	Grade 1-12	Phonological awareness Vocabulary Spelling Reading comprehension Reading fluency Language comprehension Expressive writing Memory Social communication	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I	20–45 min depending on use	Designed for use with secondary students	US Norms and Content but suitable as a diagnostic tool for specific skill deficits	A$915 for Kit A$9 per student / administration

* US = universal screening, DX = diagnostic assessment tool, PM = progress monitoring
** F = delivered face-to-face, O = can be delivered online, I = individually administered, G = can be administered in a group

Assessment type (US, DX, PM)*	Population of interest	Targeted skills	Sensitivity and specificity	Reliability	Validity	Format (F, O, I, G)**	Length	Suitability for		Cost (as of March 2024)
								Secondary context	Australian context	
Tests of Reading Comprehension (TORCH), 3rd edition (ACER)										
US, PM	Grade 3–10	Reading comprehension	Limited research evidence available	Limited information has been reviewed	Limited information has been reviewed	F, I, G	30–45 min	Designed for secondary students	Australian-based test	A$125 for digital manual A$19.95 per test booklet (reusable) A$1.75 per student/ administration
Test of Word Reading Efficiency (TOWRE), 2nd edition (Pearson Clinical; Pro-Ed Australia)										
DX, PM	Grade F–12	Word reading accuracy Decoding	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I	5 min	Designed for secondary students	US norms and content but suitable diagnostic tool for specific skill gaps	A$640 for kit A$4 per student/ administration

* US = universal screening, DX = diagnostic assessment tool, PM = progress monitoring
** F = delivered face-to-face, O = can be delivered online, I = individually administered, G = can be administered in a group

Assessment type (US, DX, PM)*	Population of interest	Targeted skills	Sensitivity and specificity	Reliability	Validity	Format (F, O, I, G)**	Length	Suitability for		Cost (as of March 2024)
								Secondary context	Australian context	
Wheldall Assessment of Reading Passages (WARP) (MultiLit)										
US, PM	Grade 2–5 and older students with lower-level reading ability	Reading fluency	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I	5 min	Designed for younger students but suitable diagnostic tool for lower-level readers	Australian-based test	A$290 per kit A$2 per student/ administration
Wechsler Individual Achievement Test, 3rd edition (WIAT-III) (Pearson Clinical)										
DX	Grade F–12	Word reading accuracy Decoding Spelling Writing Reading comprehension Language	Shows promise (nears selection criteria)	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I	5–60 min depending on use	Designed for secondary students	US-based test with Australian norms Suitable diagnostic tool for Australian students	A$1418 per physical kit A$15 per student/ administration A$150 per year for digital kit license A$9.10 per student/ administration (dependent on use)

* US = universal screening, DX = diagnostic assessment tool, PM = progress monitoring
** F = delivered face-to-face, O = can be delivered online, I = individually administered, G = can be administered in a group

Assessment type (US, DX, PM)*	Population of interest	Targeted skills	Sensitivity and specificity	Reliability	Validity	Format (F, O, I, G)**	Length	Suitability for		Cost (as of March 2024)
								Secondary context	Australian context	
Woodcock Johnson Tests of Achievements – IV (WJ-IV ACH) (PAA Australia)										
DX	Grade F–12	Word reading accuracy Spelling Writing Reading comprehension Language	Shows promise (nears selection criteria)	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I	5–60 min depending on use	Designed for secondary students	US-based test with Australian norms Suitable diagnostic tool for Australian students	A$1320 per kit A$9 per student/ administration
Woodcock Johnson Tests of Oral Language – IV (WJ-IV OL) (PAA Australia)										
DX	Grade F–12	Oral language Phonological processing Language comprehension	Shows promise (nears selection criteria)	Meets or exceeds selection criteria	Meets or exceeds selection criteria	F, I	5–60 min depending on use	Designed for secondary students	US-based test with Australian norms Suitable diagnostic tool for Australian students	A$770 per kit A$4.50 per student/ administration

* US = universal screening, DX = diagnostic assessment tool, PM = progress monitoring
** F = delivered face-to-face, O = can be delivered online, I = individually administered, G = can be administered in a group

Assessment type (US, DX, PM)*	Population of interest	Targeted skills	Sensitivity and specificity	Reliability	Validity	Format (F, O, I, G)**	Length	Suitability for		Cost (as of March 2024)
								Secondary context	Australian context	
York Assessment of Reading for Comprehension (YARC) – Secondary (DSF Literacy and Clinical Services; PAA Australia)										
DX	Grade 7–12	Word reading accuracy and fluency Reading comprehension	Meets or exceeds selection criteria	Meets or exceeds selection criteria	Shows promise (nears selection criteria)	F, I	20–30 min	Designed for secondary students	UK norms but has been adapted to Australian context	A$755 per kit A$7.50 per student/ administration

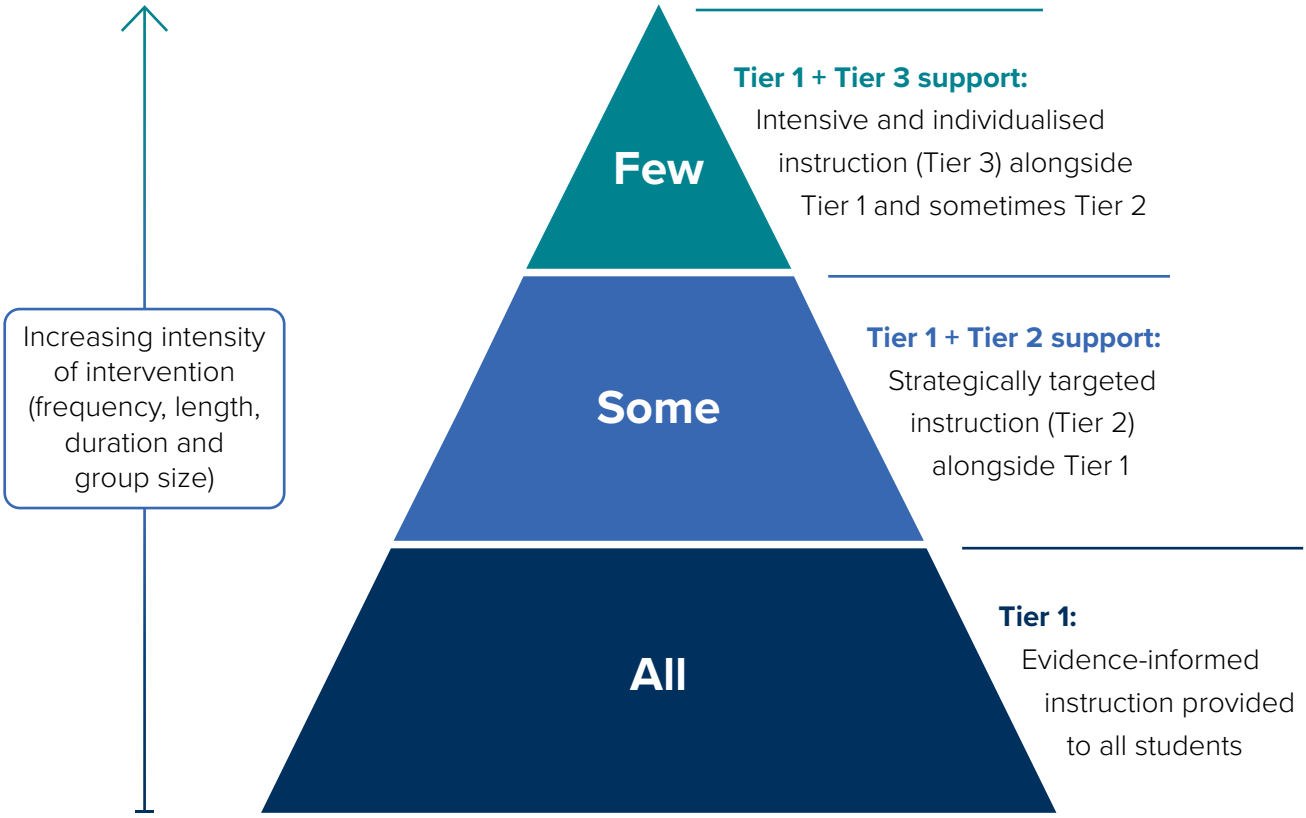
* US = universal screening, DX = diagnostic assessment tool, PM = progress monitoring
** F = delivered face-to-face, O = can be delivered online, I = individually administered, G = can be administered in a group

Choosing, monitoring and modifying reading interventions in MTSS

This practice guide explains how to provide targeted intervention to support the needs of students struggling with these skills. It provides a set of criteria to choose an intervention, and also how to adjust your approach based on the tracking of progress.

In MTSS, Tier 2 and Tier 3 interventions are additional supports provided to students to address targeted needs. A good diagnostic assessment can identify these needs, providing insight into the component(s) of reading students are having difficulties with. This will allow you to choose an intervention that ideally targets students' specific area(s) of difficulty. Students should receive the tier of intervention (Figure 3) that matches their needs.

Figure 3: Tiers in MTSS



MTSS tiers aren't necessarily hierarchical, meaning a student shouldn't necessarily have difficulty responding to intervention at Tier 2 before progressing to Tier 3. For example, some secondary students with word reading difficulties have been unable to fully access the curriculum since middle primary school and will likely require intervention at Tier 3 as soon as possible.

Often, instructional and intervention programs that are very simple are better received by students.

Criteria for choosing reading interventions

The number of intervention programs available for reading is extensive and ever-expanding. This set of criteria (Table 4) will enable schools, school leaders and teachers to evaluate the suitability of an intervention program or instructional resource. These criteria are adapted from Understanding Learning Difficulties – A Practical Guide[1] by DSF Literacy Services (2021) and are consistent with AERO's review Supporting Students Significantly Behind in Literacy and Numeracy: A Review of Evidence-Based Approaches (2023).

Table 4: Criteria for selecting a successful intervention

Consideration	What to look for
Is the intervention evidence-based or evidence informed?	The effectiveness of a program should be supported by independent review – not just the evidence of the program manufacturer. In cases where an instructional approach or intervention hasn't been independently reviewed, it should be able to demonstrate consistency with evidence-based frameworks of reading.[2, 3]
Does the intervention utilise explicit and direct instructional methods?	A student who requires intervention in reading is considered a novice learner in particular reading skills. Novices experience higher cognitive load than experts when completing tasks,[4] and teaching practices that reduce cognitive load, such as explicit instruction[5] and direct instruction,[6, 7] result in better learning outcomes for novices.
Does the intervention follow a cumulative, systematic sequence?	The intervention builds on prior knowledge, ensuring that all skills and concepts required to succeed at the task are explicitly taught, and regularly revisited.[8, 9]
Is the scope of the intervention sufficiently broad to cover early, intermediate and advanced skills?	Students at secondary level may require remediation for low-level reading skills (e.g., basic phonics). However, if they're to succeed academically, secondary school students will also require instruction in the higher-order skills and knowledge possessed by typically achieving readers.[10, 11] Intervention programs with insufficient scope may limit what a school can achieve when responding to the needs of students struggling with reading.

Consideration	What to look for
Does the intervention increase the opportunities students have to review and revise concepts?	Students requiring intervention need *more* opportunities for practise and *more* revision of concepts than is expected for most students their age. This practice must have a high rate of success – students need to practise getting it *right*, instead of rehearsing errors, which are hard to shift.[12] Intervention must seek to increase these factors.
Does the intervention increase the intensity of instruction?	Similarly, students who require intervention are those who require an increase in instructional intensity – group size, frequency, length and duration.[13, 14, 15]
Is the intervention delivered at a pace that enables the achievement gap to close, while still allowing opportunity to practice?	By the time they reach secondary school, the gap between students struggling with reading and their peers may be large[16, 17] at a time when rate of annual gains in performance is slowing.[18, 19] Pacing must be suitably matched in response to student need while also allowing reasonable opportunity to practice.
Does the intervention include regular, ongoing assessment to facilitate progress monitoring?	Many off-the-shelf interventions programs come with their own assessment tools. The most ideal progress monitoring tools should evaluate student progress over very short periods (weeks or even days, rather than months), providing data that can be used to intensify and individualise intervention. It's not recommended that teaching staff develop their own progress monitoring tools,[20] but they can supplement results from existing tools with in-school data (such as curriculum grades, feedback from Tier 1 teaching staff and universal screening results).
Are the resources designed in a way that is appropriate for use with adolescents?	An effective intervention doesn't need to be specifically designed for adolescents, particularly if the skills being taught relate to knowledge of the phonic code. However, some reading programs have resources that are designed to appeal to very young children, in terms of materials, instructions and explanations. Receiving intervention that appears 'babyish' is unlikely to be protective of self-esteem for students who have spent many years struggling to maintain the progress of their peers. In secondary schools, instructional and intervention programs that are very simple (even bland) may be better received by students.
Is the intervention suitable for the school context in terms of financial, resource and staffing demands, and the number of students requiring the intervention?	This will vary between schools. However, intervention programs and instructional resources that are cost-effective, efficient and easily scalable have obvious advantages. It's strongly suggested that schools consider the level of need and their available resources before selecting an intervention approach. Resourcing interventions appropriately impacts the effectiveness of implementation.

Example interventions for word reading

There are many instructional programs designed to target word reading skills, which are usually intended for lower primary students receiving initial reading instruction, or older primary students requiring intervention. Few intervention programs and resources targeting reading accuracy and fluency have been specifically designed for secondary students, although there are high-quality examples. Many schools use programs such as Macqlit.[21] However, the underlying skills required for accurate and successful word reading don't differ between primary and secondary students.[22] For this reason, interventions don't need to be developed specifically with secondary students in mind to be suitable. The essential criterion for an appropriate intervention program is that it targets the skill gap the student presents with.

A sample of intervention programs that may be considered to target word reading skills and meet many of the criteria for selecting a successful intervention program are available in AERO's Example Interventions for Word Reading practice resource. This resource doesn't refer to extra resources – such as apps, decodable reading materials, and activity packs – that might be used to complement interventions by encouraging students to further practise their skills in reading connected text.

Example interventions for comprehension

This practice guide recommends interventions for language comprehension that directly target 2 critical components of comprehension – relevant background knowledge and vocabulary – embedded in the disciplinary literacy and curriculums of the core secondary school subjects. These interventions are largely Tier 2, curriculum-based, and should be delivered by a teacher with expertise in that subject.

Such interventions may not be readily available as an off-the-shelf program, due to the subject-specific nature of effective comprehension interventions. The important components to try to build into interventions are:

- incorporating higher levels of scaffolding, repetition and opportunities for practise in a smaller instructional group
- likely to incorporate instruction aimed at filling gaps in knowledge for that subject
- explicitly teaching vocabulary central to the subject
- featuring comprehension strategies and study of literary devices, organisational patterns, and English syntax, intended to help understand the content, rather than as a goal in and of themselves.

Tier 2 interventions will vary based on the subject being targeted and the constraints in a school's unique context. AERO's practice resource provides an example of how a Tier 2 subject-specific intervention for language comprehension (vocabulary and background knowledge) can be designed with reference to the Australian Curriculum.

Progress monitoring

The goal of progress monitoring is to evaluate how the student's skills are responding to intervention, and determine whether the intervention should continue, be modified, or be faded out or removed. It's not recommended that teaching staff develop their own progress monitoring tools.[23]

Progress monitoring can be carried out by a teacher delivering an intervention or another educator familiar with the content. It can be administered one-to-one, in a small group, or to a whole class (such as an intervention withdrawal class). Assessment conditions may be less formal than universal and diagnostic assessments.

Progress monitoring assessments may include staff-evaluated formative assessments embedded in each lesson, such as weekly (Tier 3) or fortnightly (Tier 2) curriculum-based measures of skills taught explicitly in an intervention,[24] and progress monitoring tools provided by intervention programs. Reliable and valid standardised assessments can be used to compare student results to a normative sample 2–3 times per year. More frequent use of standardised assessments isn't recommended since they may be insensitive to small improvements over shorter time frames. Compared to younger students, older students' progress may be slower to show on monitoring assessments, so monitoring improvements in raw scores and not just standardised results can be helpful.

The results of these progress monitoring assessments can be combined with:

- observations in intervention lessons
- feedback from subject-specialist teachers regarding the generalisation of intervention gains to their subjects
- observations from parents and the students themselves
- performance on formal assessments that aren't part of the MTSS assessment schedule (e.g., NAPLAN, school examinations).

Curriculum-based measures will necessarily differ between states and education jurisdictions that use different versions of the Australian Curriculum and related documents (e.g., the National Literacy and Numeracy Learning Progressions). Why Some Secondary Students Struggle With Reading shows how schools can match best-practice reading instruction (as explained in AERO's resources) with evidence-informed frameworks and curriculum documents. AERO has also captured videos of schools across Australia using progress monitoring.

Modifications to intervention

Deciding whether changes need to be made to an intervention program, and what those changes should be, is dependent on how much progress the student is making and how well they're able to generalise this new knowledge to the reading process outside of the intervention setting.
The decision to continue, modify or fade out an intervention should be intentionally made, based on the student's progress towards a learning goal or benchmark rather than a predetermined time frame.
Intervention can be modified based on several levers:[25]

- it can be made more or less intensive (modify the group size, frequency, length and/or duration of intervention sessions)
- the focus can be adjusted (to target prerequisite or more advanced skills)
- student groupings can be changed
- a different intervention program can be selected
- if the student exceeds the learning goal, intervention can be faded out altogether.

Monitoring should continue even after you make a modification or fade out an intervention, in case the student falls behind again.

Accommodations

Students with reading difficulties may struggle to access the curriculum, and demonstrate their skills, knowledge and understanding on an equal basis to their peers without reading difficulties. For this reason, students with reading difficulties may require 'accommodations', or adjustments, in addition to intervention.

Accommodations include the use of information and communications technology, such as reading pens and text-to-speech apps; instructional adjustments, such as modifications to the way information is delivered in the classroom setting; and examination accommodations, such as additional working time.

They're intended to reduce the functional impact of the student's reading difficulties, so accommodations that are appropriate for one student may not be effective for another, based on their profile of learning strengths and weaknesses. More information is available from DSF Literacy Services, AUSPELD and the Australian Government Department of Education.

More information

For examples of interventions that can be used to support the needs of students struggling with reading, see AERO's Example Interventions for Word Reading practice resource.

Example interventions for word reading

This practice resource offers examples of programs that can be used to support the needs of students struggling with reading, and unpacks strengths and weaknesses of each. We recommend reading AERO's Choosing, Monitoring and Modifying Reading Interventions in MTSS practice guide before this practice resource.

Within an MTSS model, all students receive Tier 1 instruction in the curriculum, some students receive Tier 2 intervention to develop comprehension (typically within year-level curriculum contexts), and a few students receive Tier 3 intervention for word reading. There are many intervention programs available in Australia that save schools time in programming, planning and developing resources.

Table 5 provides a list of intervention programs and resources that have been evaluated according to AERO's suggested criteria for selecting a successful intervention program. All use explicit and direct instruction and are deemed suitable for a secondary context. This list is intended to provide examples of intervention programs that are suitable for secondary students in Australia. It's not exhaustive, and schools are encouraged to evaluate the resources and programs they use to determine suitability and any resources that may be needed. Inclusion on this list doesn't indicate that these programs (or any associated additional intervention or assessment tools resources) are endorsed by AERO or DSF Literacy and Clinical Services.

Table 5: Detailed list of example interventions for word reading skills

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
Barton Reading and Spelling System										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Phonemic awareness through to morphology and etymology	Yes	F, I, G	Increased Suitable for intervention	Yes	2 or more sessions a week 45–60 min	US$300–400 for single tutor/ teacher US$1200–1700 for school site licence	Minimal Online tutorials available	**Pros** Specifically designed as intervention **Cons** American English spelling and pronunciation

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
Language! Live										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Phonemic awareness through to morphology and etymology Comprehension of subject-relevant texts Written expression for secondary students	Yes	F, I, G	Increased Suitable for intervention	Yes	One or more sessions a week 45–90 min	US$500 plus US$100 per student	Teachers No training needed to deliver program	**Pros** Specifically designed for adolescents Comprehensive scope encompassing reading and writing **Cons** American English spelling and pronunciation Alignment with US curriculum Access to resources and training may be difficult in Australia

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
MacqLit										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Initial to extended phonics code Basic morphology	Yes	F, G	Increased Suitable for intervention	Yes	4 sessions a week 60 min	A$1980 for initial training and resources	2-day training for teachers	**Pros** Specifically designed as intervention for older readers Australian **Cons** Initial training costs are relatively high
Morpheme Magic										
CFF, SRR	Yes	Anglo-Saxon, Latin and Greek morphemes – spelling and meaning	No	F, G, C	Explicit guidance not provided	No	At least 2 sessions a week 20–45 min	US$90 for manual	None	**Pros** Targets concepts often not covered in systematic phonics instruction **Cons** Relatively limited scope

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
Read Write Inc. Fresh Start										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Initial to extended phonics code	Yes	F, I, G	Increased Suitable for intervention	Yes	Daily sessions 25 min	A$715 for bundle	Teacher preferred No training specified but online tutorials available	**Pros** Specifically designed as intervention for older readers UK spellings and pronunciations **Cons** Access to training and support may be limited in Australia

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
95 RAP (HillRAP)										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Phonemic awareness Initial and extended phonics code Vocabulary Comprehension	Yes	F, O, I, G	Increased Suitable for intervention	Yes	4–5 sessions a week 40 min	Unclear	Unclear	**Pros** Promising results from program evaluations **Cons** American English spelling and pronunciation Access to resources and training may be difficult in Australia
Reading Mastery Transformations										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Initial and extended phonics code Vocabulary Comprehension	Yes	F, I, G	Increased Suitable for intervention	Yes	Daily sessions 30–45 min	Starting at A$500 for resources	Teacher	**Pros** Promising results from program evaluations **Cons** Must be adapted for use as intervention

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
Reading Tutor Program										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Initial and extended phonics code	Yes	F, I	Increased Suitable for intervention	Yes	4–5 sessions a week 50 min	A$480 for training	Teacher	**Pros** Specifically designed as an intervention for older readers Australian **Cons** Relatively limited scope
Reinforced Reading										
SRR	No (Dependent on teacher interpretation)	Dependent on teacher interpretation	Yes	F, I	Increased Suitable for intervention	No	Daily sessions 20 min	A$36 per book	Teacher	**Pros** Provides structured reading practice **Cons** Significant teacher input required

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
Rewards										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Application of phonic code to multi-syllabic words, fluency, comprehension, and writing	Yes	F, I, G	Increased Suitable for intervention	Yes	At least 2 sessions a week 50–60 min	US$150 a year plus US$16 per student book	Teacher	**Pros** Specifically designed as intervention for older students Covers multiple areas of literacy **Cons** American English spelling and pronunciation Alignment with US curriculum Access to resources and training may be difficult in Australia

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
Sounds-Write										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Initial to extended phonics code Option to move into morphological instruction	No (Must be modified)	F, I, G, C	Must be modified by teacher to increase pace	Yes	At least one session a week 50–60 min (shorter if more frequent)	A$1100 for training	Teacher preferred 4 days training in person or online	**Pros** Highly structured program with strong error correction processes **Cons** Initial training costs are high
SPELD-SA Intensive Literacy Program										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Initial and extended phonics code Basic sentence grammar and punctuation	Yes	F, I, G	Increased Suitable for intervention	Yes	At least one session a week 30 min	Free	None	**Pros** Highly accessible Designed for older students **Cons** Relatively limited scope

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
Spelling Mastery										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Initial and extended phonics code through to morphology and etymology	Yes	F, I, G	Increased Suitable for intervention	Yes	Daily sessions 15–20 min	A$350	Teachers Education Assistants	**Pros** Comprehensive scope Highly structured program supporting instructional reliability **Cons** Designed as spelling program, but skills practice targets word reading as well

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
Spelling Through Morphographs										
CFF, EPRD, SRR	Yes	Anglo-Saxon, Latin and Greek morphemes – spelling and meaning	No (Must be modified)	F, I, G, C	Must be modified by teacher to increase pace	Yes	Daily sessions 15–20 min	A$570 plus A$36 per student	None	**Pros** Targets concepts often not covered in systematic phonics instruction **Cons** Designed as spelling program, but skills practice targets word reading as well

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
SRA Corrective Reading										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Initial to extended code Comprehension	Yes	F, G, C	Increased Suitable for intervention	Yes	Daily sessions 45 min	A$570 plus A$66 per student	Teachers Education Assistants	**Pros** Highly structured program supporting instructional reliability **Cons** Support for comprehension may not transfer to other subjects
Toe by Toe/Stride Ahead/Stareway to Spelling										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Each book covers limited skill set and phonic knowledge	Yes	F, I	Increased Suitable for intervention	Yes	Daily sessions 20 min	A$70 per book	None	**Pros** Very accessible in terms of cost and delivery requirements **Cons** Relatively limited scope

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
Word Wasp										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Each book covers limited skill set and phonic knowledge	Yes	F, I	Increased Suitable for intervention	Yes	Daily sessions 20 min	A$59 per book	None	**Pros** Very accessible in terms of cost and delivery requirements **Cons** Relatively limited scope

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
UFLI Foundations										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Initial to extended phonics code Basic morphology	Yes (with modifications)	F, I, G, C	Must be modified by teacher to increase pace	Yes	At least one session a week 50–60 min (shorter if more frequent)	A$121 per manual	Teacher preferred Non-compulsory F2F and online training Online tutorials	**Pros** Lessons provided in full with all resources **Cons** American English spellings and pronunciations Must be adapted for use as intervention and with older students

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Alignment with frameworks (SVR, CFF, EPRD, SRR, 4PPM)*	Cumulative, systematic sequence	Targeted skills	Opportunities for review/ practice	Format (F, O, I, G, C)**	Pace of instruction	Includes regular assessment	Time (frequency and length)	Cost (as at Sept 2023)	Training requirements	Pros and cons
Word Connections										
SVR, CFF, EPRD, SRR, 4PPM	Yes	Application of phonic code to multi-syllabic words and fluency	Yes	F, I, G	Increased Suitable for intervention	No	At least one session a week 40 min	Free	None	**Pros** Very accessible in terms of cost and delivery requirements **Cons** Relatively limited scope

* SVR = Simple View of Reading, CFF = Cognitive Foundations Framework, EPRD = Ehri's Phases of Reading Development, SRR = Scarborough Reading Rope, 4PPM = Four Part Processing Model
** F = delivered face-to-face, O = can be delivered online, I = individually – one-on-one, G = small group, C = whole class

Example of Tier 2 intervention for subject-specific reading comprehension

This practice resource provides an example of how a teacher could plan and implement Tier 2 assessment and intervention for Year 7 Humanities and Social Sciences: Civics and Citizenship, based on the Australian Curriculum.

Developing reading comprehension

Interventions targeting secondary students' reading comprehension are very effective, but an intentional time investment is required to ensure that the skills and knowledge developed can be translated to a range of contexts.[1, 2] One way to improve reading comprehension for secondary school students at risk is to embed intervention in subject-specific curriculum. This can be done as a Tier 2 intervention delivered to groups of students with the aim of addressing gaps in subject knowledge, vocabulary and familiarity with the way information is expressed in the subject.

The example in this practice resource may not be perfectly applicable to any given school's unique context, so professional judgment should be made to ensure the best possible support for students in a specific cohort. AERO's video snapshots show how 7 schools across Australia use interventions.

Identify curriculum requirements and background knowledge

The Australian Curriculum for Civics and Citizenship (Version 9) includes the following Year 7 Content Description for Knowledge and Understanding under Government and Democracy: 'the key features of Australia's system of government, including democracy, the Australian Constitution, responsible government and federalism' (AC9HC7K01).[3]

Accessing the Year 7 course of study on this topic requires background knowledge and understanding of government and democracy which is expected to be covered in earlier years. In version 9 of the Australian Curriculum, this knowledge and understanding is addressed in Year 6, with the following concepts explored through 'significant individuals, events and ideas that led to Australia's Federation, the Constitution and democratic system of government' (AC9HS6K01).[4] It includes the following elaborations:

- exploring how the United States of America's model of federalism (the Washington system) contributed to the ideas for Andrew Clark's first draft of the Australian Constitution
- investigating how Australia's system of law and government has origins in the Magna Carta, the English Civil War and the Westminster system and, therefore, why we have a constitutional monarchy, as well as why there was a separation of powers (legislative, executive, judiciary).

To be ready to access the Year 7 curriculum, students require knowledge of vocabulary and concepts including, federalism, alternative systems of government, democracy, the levels of government in Australia, the way politicians are elected in Australia and voting, including who is allowed to vote. They also require broader knowledge regarding Australia's colonisation and federation, our connection to Britain and why the Westminster system was used as a model, the formation of the United States of America and the importance of a constitution in that process, and what role governments fulfil in society. Key vocabulary they must know includes *democracy, government*, *elector*, *representative/ representation*, *vote*, *politician*, *responsibility*, *roles* and *systems*.

Diagnostic assessment

A curriculum-based assessment is needed to gauge students' existing background and vocabulary knowledge. This is most practically achieved via written tasks, which are also less likely to overestimate knowledge than a reading comprehension task. Students whose spelling difficulties prevent them from completing written tasks should be asked to complete tasks verbally. This assessment might only be administered to students who have been flagged through universal screening as requiring intervention for comprehension, or it could be administered to a whole student cohort.

Vocabulary knowledge includes knowing how to define a keyword and use it in discourse (speech or writing). This means a well-planned vocabulary assessment is likely to require students to both define a keyword and use it in context.[5] This type of assessment has the added benefit of assessing a student's background knowledge, which is needed to produce a contextually appropriate sentence. One option would be to ask students to complete a sentence stem to demonstrate their understanding of a word, rather than generate a unique sentence. This prevents students from writing sentences featuring the word without understanding it (e.g., *'I like governments.'*).

A simple version of a vocabulary assessment, relevant to determining which students require a Tier 2 vocabulary intervention for Year 7 Civics and Citizenship is presented in Box 1.

Box 1: Tier 2 assessment: Year 7 Civics and Citizenship

Define *government*: .....

Finish this sentence: *Australia has 3 levels of government, which* .....

.....

Students' performance on these assessments can reveal whether they need Tier 2 intervention in each subject, and what knowledge teachers should target. It can also be used as a baseline for ongoing progress monitoring.

Tier 2 intervention

Tier 2 intervention may be most effective when it starts prior to a unit of study in the Tier 1 classroom, because this allows at-risk students to start to develop the baseline knowledge their classmates already possess. This is sometimes known as 'pre-loading'. However, it can still be effective to start Tier 2 instruction at the same time or a little later than when the topic is introduced in general education classroom teaching.

Instructional materials may be drawn from recommended Australian Curriculum resources from previous academic years, or other sources that cover the required content in appropriate detail using accessible language. Teaching staff may need to be prepared to read aloud or use assistive technology to help students access texts, given that many students who require Tier 2 comprehension intervention will have underdeveloped word recognition or language comprehension skills. The chosen texts may be read several times, with teaching staff frequently pausing to:

1. discuss or elaborate on information
2. generate teacher–student discussion by calling for predictions or inferences
3. assist students with identifying and verbally expressing the main idea of the paragraph or the whole text.[6]

A selection of new keyword meanings (i.e., vocabulary) should be explicitly taught using an evidence-informed model, using the text to provide context.[7] The information gained from the text should be directly and explicitly linked back to the Tier 1 curriculum content to support students to succeed in general education classroom lessons on the same topic. Ideally, lessons would end with students composing a short text (written or spoken) expressing the main idea from the lesson. These written samples clarify students' understanding of the topic by requiring them to process it, and allow teachers to conduct formative assessment of students' response to intervention.

Box 2 presents an example lesson plan relevant to providing Tier 2 intervention for Year 7 Civics and Citizenship. The aim of this lesson is to develop students' prerequisite knowledge for accessing curriculum content. The lesson may be delivered over one or multiple sessions, depending on time constraints.

Box 2: Tier 2 intervention: Year 7 Civics and Citizenship

Students and teaching staff have copies of the text The Responsibilities of the Three Levels of Government, a fact sheet published by the Parliamentary Education Office (2023).

Teaching staff prepare a set of questions to ask at critical junctures of the text that:

- **link to prior knowledge** – for example, 'It says the third level of government is local councils, which might also be known as "shires". Think for a moment and then tell your partner which council our school is in.'
- **support students to make inferences** – for example, 'Can anyone see a problem with having different governments in each state and territory? Think for a moment and then write your idea down.'

» **assist students with making within-text inferences** – for example, 'It says here "Each level is responsible for providing services". What is meant by "levels"?'

The teaching staff member reads the text aloud while students follow along. At key points, the teaching staff member pauses to ask these pre-planned questions, and engages students in discussions to clarify thinking, find evidence in the text, or connect with prior knowledge and experience. Comprehension strategies, such as graphic organisers, paraphrasing, and collaborative discussion are employed as appropriate, starting with modelling by teaching staff and then guiding students through their use. Following discussion, students write or verbally provide a short response to the question or idea being explored.

During the lesson, the word g*overnment* is taught explicitly. It should be taught after it's encountered in the text, using the following procedure:

» **Explain the word in context** – 'This text is discussing Australia's *government*. In this text, *government* means the groups of people that rule the people living in Australia. Everyone, say *government.*'

» **Define the word** – '*Government* means "The system of ruling a country or part of a country". Let's say that together: "A government is a system of ruling a country or part of a country". What is the system of ruling a country or part of a country? (A government.) What is a government? (The system of ruling a country or part of a country.)'

» **Provide examples and elaborations** – 'A government may be a democracy, where every adult gets to vote for the people in the government. Australia is a democracy. A government could also be a dictatorship, in which one person takes over without being voted in fairly and makes all the decisions. Adolf Hitler ruled Germany as a dictatorship. To be a government, it must make the decisions for part or all of a country. Australia has 3 levels of government: one that rules the whole country, one that rules each state and territory, and one that rules local communities, like the towns and cities we live in. Spain is another example of a country that has a government for the whole country, but also a separate government for different regions, such as the Catalonian region.'

» **Ask students to engage with examples** – 'Does the United States of America have a government?' (Yes.) 'Does Indonesia have a government?' (Yes.) 'Does China have a government?' (Yes.) 'Does Woolworths have a government?' (No.) 'That's right. The United States, Indonesia and China are all countries, and they're all ruled by governments. Woolworths is not a country so the organisation that runs it isn't a government.'

» **Ask students to use the word** – 'Complete this sentence: "A government is important because _". Think of your answer, and then write it in your book.'

» **Link this information** about the 3 levels of government back to the concept of separation of powers, which is part of the Year 7 Civics and Citizenship curriculum. Separation of powers refers to the division of responsibilities across the 3 levels of government in Australia. Finish the lesson by asking students to write a sentence summarising the 3 levels of government.

Monitoring progress

Student progress can be monitored using formative assessment, which includes their verbal responses during lessons and written responses during activities. Written evidence is particularly important for evaluating progress over time. The student's progress in Tier 1 (general education classroom) lessons and their performance in year-level assessments should also be monitored for evidence of the impact of the Tier 2 intervention. Any curriculum-based measures used to assess instructional needs can also be used to track progress over time.

More information

AERO's MTSS resources provide further information and advice about using MTSS to support students:

- Using Assessments to Support an MTSS Framework
- Supporting Student Wellbeing and Engagement in MTSS
- Designing an intervention approach: Making Staffing and Timetabling Decisions.

Five from Five's Reading Pledge also contains guidance on reading assessment and intervention for primary school students.

Appendix A: Methodology

Work on this project was completed in 9 stages.

Stage 1: Background research

The aim of the first stage was to understand how to build upon the outputs of previous AERO projects:

- Supporting Secondary Students to Develop Foundational Literacy and Numeracy Skills
- AERO's Introduction to a Multi-Tiered Systems of Supports practice guide, published in May 2023 (revised and replaced in February 2024 with an Introduction to a Multi-Tiered System of Supports explainer)
- Standards of Evidence.

In the first stage of this project, our goal was to familiarise ourselves with numerous reviews, reports, and research studies, including existing AERO resources.

Stage 2: Interview rubric

We used this documentation to develop a series of structured interview questions (with input from AERO) to collect information from experts related to the aims of this project. For each aim, the questions focused on what is currently occurring in secondary schools, what might be considered ideal practice, and what barriers exist to ideal practice. We also included a question about the types of evidence schools are using to make decisions about how to support literacy in secondary schools.

After piloting these questions with DSF, we created an interview rubric that allowed DSF interviewers to monitor the interview process to ensure all necessary and relevant questions were asked, with some modifications to the language in response to differing practice contexts and experiences. General questions were added at the start and end of the interview that eased the interviewee in and out of the interview process in a socially comfortable way.

Stage 3: Expert interviewees

We identified 3 types of experts for the interview phase: subject matter experts with knowledge about current research findings and directions (N = 6); clinical experts with knowledge about supporting literacy in secondary school students (N = 8), and secondary-school leaders and teachers with expertise in resource allocation, leadership school-wide decision-making, or the delivery of reading instruction (N = 4). As some interviewees had more than one type of expertise, the balance of expertise across expert types was more even than these categories suggest. In sum, each category of interviewees was represented by 6–8 experts.

Stage 4: Interviews

Each expert was initially sent an email that briefly described the aim of the project, asked if they would be willing to be interviewed, and if so, arrange a date and time for a Zoom session. Each session began with an explanation of the project – if required – and discussions about whether the expert gave consent for the Zoom interview to be recorded so it could later be transcribed before deletion. Most interviews were completed in an hour, although some were longer if the expert was keen to continue.

Stage 5: Interview transcription

Videos of the interviews were stored in a secure folder on the DSF server. These videos were initially transcribed using Microsoft Stream (v1). The researchers then edited these transcriptions to ensure words were correctly transcribed, and sentences were associated with the correct speaker (v2). They were further edited to remove filler words ('um') or conversational text, combine disjointed sentences to form a coherent narrative, and clearly delineate what question was related to that narrative (v3). All transcripts were anonymised.

Stage 6: Interview summaries

The final versions (v3) of the interview transcripts were used to create individual summaries of the interviews. We did this by creating summaries of each key point experts made and copying those points into the appropriate section of the interview rubric table, meaning there was one summary table per expert.

Each individual summary table was transferred into a group summary table. This revealed which points had been made by multiple experts. To reduce the size of the table, we marked points made by multiple interviewees and deleted repeated mentions. This helped to discriminate between common points made by multiple experts (emerging themes) as well as unique points made by individual experts.

Stage 7: AERO feedback

We presented emerging themes from our interviews to the AERO Project Advisory Group (PAG) in late June 2023, and the PAG again as well as the Panel of Educators, Teachers and Leaders (PETL) in late August 2023. The PAG included key representatives from Catholic, independent and government education jurisdictions well-positioned to provide informed and diverse feedback on themes. Both PAG and PETL provided positive feedback and raised additional questions and considerations that we integrated into the project.

In addition to this feedback, DSF held weekly meetings with the AERO project team to discuss progress and work through complex issues. The feedback and recommendations of these meetings have all been integrated into this project.

Stage 8: Assessing the evidence

As we moved through the stages, we collected evidence (e.g., research reviews, empirical studies, and practice guidance reports, as captured in the reference list, below) related to the aims of the project. In Stage 1, we drew from AERO's research. In Stage 4, interviewees recommended further references that informed this resource suite. In Stage 7, the expert panel provided further studies for consideration.

It became clear as the project progressed that the largest evidence gap related to the production of a table of interventions. The key reason for this gap is the lack of methodologically sound studies of reading interventions for secondary students. Most of the example interventions are evidence-informed rather than evidence-based. In developing criteria for selecting a targeted intervention, decades of practical experience in providing effective reading interventions for secondary students were drawn upon. These criteria can be viewed with confidence.

Lack of scientific evidence was not an issue for producing a table of assessments. Many of these assessments are commercially available, widely used, or well-established, and hence provide evidence – via manuals or published studies – of appropriate reliability and validity. Thus, the example assessments can also be considered with confidence.

Producing a decision tree for selecting interventions relied heavily on evidence provided by interviewees, whose collective experience represents centuries of learning and wisdom. We would like to acknowledge and thank these busy people for making time to support this project.

Stage 9: Document drafts and feedback

The researchers submitted Draft 1 to AERO on 7 August 2023. AERO then shared it with external reviewers who are experts in reading science. AERO provided feedback from these reviewers to DSF on 23 August 2023 and requested that DSF deliver an initial version (Version 1) of Draft 2 for review by the AERO PAG and PETL on 13 August 2023. DSF continued to refine Version 1 of Draft 2 to produce Version 2 for a second review by the subject matter experts. This was submitted to AERO on 3 October 2023. The final content was then crafted into a series of resources for school leaders and teachers, including a research report, a research summary, practice guides, practice resources and an interactive tool, which were published on the AERO website in April 2024

References that informed this resource suite

Adlof, S. M., & Hogan, T. P. (2018). Understanding dyslexia in the context of developmental language disorders. *Language, Speech, and Hearing Services in Schools, 49*(4), 762–773. https://doi.org/10.1044/2018_LSHSS-DYSLC-18-0049

Australian Curriculum, Assessment and Reporting Authority. (n.d.) *Civics and Citizenship 7–10 (Year 7)*. https://v9.australiancurriculum.edu.au/f-10-curriculum/learning-areas/civics-and-citizenship-7-10/year-7

Australian Curriculum, Assessment and Reporting Authority. (n.d.) *HASS F–6 (Year 6).* https://v9.australiancurriculum.edu.au/f-10-curriculum/learning-areas/hass-f-6/year-6

Australian Curriculum, Assessment and Reporting Authority (2023). *NAPLAN 2023 commentary*. https://www.acara.edu.au/reporting/national-report-on-schooling-in-australia/naplan-national-results

Berninger, V. W., Abbott, R. D., Abbott, S. P., Graham, S., & Richards, T. (2002). Writing and reading: Connections between language by hand and language by eye. *Journal of learning disabilities*, *35*(1), 39–56. https://doi.org/10.1177/002221940203500104

Cain, K., & Oakhill, J. (2011). Matthew effects in young readers: Reading comprehension and reading experience aid vocabulary development. *Journal of Learning Disabilities, 44*(5), 431–443. https://doi.org/10.1177/0022219411410042

Calder, S. D., Brennan-Jones, C. G., Robinson, M., Whitehouse, A., & Hill, E. (2022). The prevalence of and potential risk factors for developmental language disorder at 10 years in the Raine Study. *Journal of Paediatrics and Child Health*, *58*(11), 2044–2050. https://doi.org/10.1111/jpc.16149

Castles, A., Rastle, K., & Nation, K. (2018). Ending the reading wars: Reading acquisition from novice to expert. *Psychological Science in the Public Interest*, 19(1), 5–51. https://doi.org/10.1177/1529100618772271

Coltheart, M., & Prior, M. (2007). Learning to read in Australia. *Australian Journal of Learning Disabilities*, *11*(4), 157–164. https://doi.org/10.1080/19404150609546820

Cunningham, A., & Stanovich, K. (1998). What reading does for the mind. *American Educator*, *22*(1–2), 8–15.

Daniel, S., Walsh, A., Goldston, D., Arnold, E., Reboussin, B., & Wood, F. (2006) Suicidality, school dropout, and reading problems among adolescents. *Journal of Learning Disabilities*, *39*(6). https://doi.org/10.1177/00222194060390060301

Dehaene, S. (2013). Inside the letterbox: How literacy transforms the human brain. *Cerebrum, 7*, 1–16. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3704307/

Donegan, R., & Wanzek, J. (2021). Effects of reading interventions implemented for upper elementary struggling readers: A look at recent research. *Reading and Writing*, *34*(8), 1943–1977. https://doi.org/10.1007/s11145-021-10123-y

Dyslexia SPELD Foundation. (2021). *Understanding learning difficulties: A practical guide*. https://dsf.net.au/resources/online-store/item-details/understanding-learning-difficulties-a-practica-(1)-3942e498

Edmonds, M., Vaughn, S., Wexler, J., Reutebuch, C., Cable, A., Tackett, K., & Schnakenberg, J. (2009). A synthesis of reading interventions and effects on reading comprehension outcomes for older struggling readers. *Review of Educational Research*, *79*(1), 262–300. https://doi.org/10.3102/0034654308325998

Ehri, L. C. (2000). Learning to read and learning to spell: Two sides of a coin. *Topics in Language Disorders*, *20*(3), 19–36.

Fletcher, J. M., Lyon, G. R., Fuchs, L. S., & Barnes, M. A. (2007). *Learning disabilities: From identification to intervention*. Guilford Press.

Gough, P. B., & Tunmer, W. E. (1986). Decoding, reading, and reading disability. *Remedial and Special Education*, *7*(1), 6–10. https://doi.org/10.1177/074193258600700104

Graham, S., MacArthur, C., & Hebert, M. (2019). *Best practices in writing instruction* (3rd ed.). Guilford Press.

Hoover, W. A., & Tunmer, W. E. (2020). *The cognitive foundations of reading and its acquisition*. Springer International Publishing. https://doi.org/10.1007/978-3-030-44195-1

Jung, P. G., McMaster, K. L., Kunkel, A. K., Shin, J., & Stecker, P. M. (2018). Effects of data-based individualization for students with intensive learning needs: A meta-analysis. *Learning Disabilities Research & Practice*, *33*(3), 144–155. https://doi.org/10.1111/ldrp.12172

Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., & Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices* (NCEE 2008-4027). National Center for Education Evaluation and Regional Assistance. https://ies.ed.gov/ncee/wwc/practiceguide/8

Kirschner, P., Sweller, J., & Clark, R. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist*, *46*(2), 75–86. https://doi.org/10.1207/s15326985ep4102_1

McArthur, G. (2022). Poor reading and anxiety (PRAX): Building a theory and practice. *Australian Journal of Learning Difficulties*, *27*(1), 169–180. https://doi.org/10.1080/19404158.2022.2054834

McNeill, B., Gillon, G., & Gath, M. (2023). The relationship between early spelling and decoding. *Language, Speech, and Hearing Services in Schools*, *54*(3), 981–995. https://doi.org/10.1044/2023_LSHSS-22-00161

Moats, L. C. (2005). How spelling supports reading. *American Educator*, *29*(4), 12–22, 42–43. https://www.aft.org/ae/winter2005-2006/moats

Parliamentary Education Office. (2023) *The responsibilities of the three levels of government.* https://peo.gov.au/understand-our-parliament/how-parliament-works/three-levels-of-government/the-responsibilities-of-the-three-levels-of-government/

Perfetti, C., Landi, N., & Oakhill, J. (2005). The acquisition of reading comprehension skill. In M. J. Snowling & C. Hulme (Eds.), *The science of reading: A handbook* (pp. 227–247). Blackwell Publishing. https://doi.org/10.1002/9780470757642.ch13

Perfetti, C., & Stafura, J. (2014). Word knowledge in a theory of reading comprehension. *Scientific Studies of Reading*, *18*(1), 22–37. https://doi.org/10.1080/10888438.2013.827687

Petscher, Y., & Suhr, M. (2022). Considerations for choosing and using screeners for students with disabilities. In C. J. Lemons, S. R. Powell, K. L. Lane, & T. C. Aceves (Eds.), *Handbook of special education research* (Vol. 2, pp. 83–96). Routledge. https://doi.org/10.4324/9781003156888-8

Pyle, N., & Vaughn, S. (2012). Remediating reading difficulties in a response to intervention model with secondary students. *Psychology in the Schools*, *49*(3), 273–284. https://doi.org/10.1002/pits.21593

Rosenshine, B. (2010). Principles of instruction. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000190652

Rosenshine, B. (2012). Principles of instruction: Research-based strategies that all teachers should know. *American Educator*, *36*(1), 12–19. https://www.aft.org/ae/spring2012/rosenshine

Scammacca, N., Roberts, G., Cho, E., Williams, K., Roberts, G., Vaughn, S., & Carroll, M. (2016). A century of progress: Reading interventions for students in grades 4–12, 1914–2014. *Review of Educational Research*, *86*(3), 756–800. https://doi.org/10.3102/0034654316652942

Scammacca, N., Roberts, G., Vaughn, S., Edmonds, M., Wexler, J., Reutebuch, C., & Torgesen, J. (2007). Interventions for adolescent struggling readers: A meta-analysis with implications for practice. *Center on Instruction*. https://eric.ed.gov/?id=ED521837

Scammacca, N., Roberts, G., Vaughn, S., & Stuebing, K. (2015). A meta-analysis of interventions for struggling readers in grades 4–12: 1980–2011. *Journal of Learning Disabilities*, *48*(4), 369–390. https://doi.org/10.1177/0022219413504995

Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman, & D. Dickinson (Eds.), *Handbook for research in early literacy* (pp. 97–110). Guilford Press.

Snowling, M. J., Stothard, S. E., Clarke, P., Bowyer-Crane, C., Harrington, A., Truelove, E., & Hulme, C. (2012). *York assessment of reading for comprehension: Passage reading* (Australian ed.). GL Education. https://www.gl-education.com/assessments/products/yarc-australia/

Solis, M., Miciak, J., Vaughn, S., & Fletcher, J. M. (2014). Why intensive interventions matter: Longitudinal studies of adolescents with reading disabilities and poor reading comprehension. *Learning Disability Quarterly*, *37*(4), 218–229. https://doi.org/10.1177/0731948714528806

Spencer, M., Quinn J. M., & Wagner R. K. (2014). Specific reading comprehension disability: Major problem, myth, or misnomer? *Learning Disabilities Research & Practice*, *29*(1), 3–9. https://doi.org/10.1111/ldrp.12024

Stahl, S. A., & Nagy, W. E. (2006). *Teaching word meanings*. Lawrence Erlbaum Associates Publishers.

Sweller, J. (1988). Cognitive load during problem-solving: Effects on learning. *Cognitive Science*, *12*(2), 257–285. https://doi.org/10.1207/s15516709cog1202_4

Vaughn, S., & Fletcher, J. M. (2012). Response to intervention with secondary school students with reading difficulties. *Journal of Learning Disabilities*, *45*(3), 244–256. https://doi.org/10.1177/0022219412442157

Vaughn, S., Kieffer, M. J., McKeown, M., Reed, D. K., Sanchez, M., St Martin, K., … & Yañez, A. (2022). Providing reading interventions for students in grades 4–9. Educator's (WWC 2022007). What Works Clearinghouse. https://ies.ed.gov/ncee/wwc/practiceguide/29

Vaughn, S., Wanzek, J., Wexler, J., Barth, A., Cirino, P. T., Fletcher, J., … & Francis, D. (2010). The relative effects of group size on reading progress of older students with reading difficulties. *Reading and Writing*, *23*, 931–956. https://doi.org/10.1007/s11145-009-9183-9

Vaughn, S., Wexler, J., Leroux, A., Roberts, G., Denton, C., Barth, A., & Fletcher, J. (2012). Effects of intensive reading intervention for eighth-grade students with persistently inadequate response to intervention. *Journal of Learning Disabilities*, *45*(6), 515–525. https://doi.org/10.1177/0022219411402692

Weldon, P. R., Heard, J., Thompson, J., & Stephenson, T. (2023). *Implementing effective tiered interventions in secondary schools: Survey of school and support staff*. Australian Education Research Organisation. https://www.edresearch.edu.au/research/research-reports/implementing-tiered-interventions-secondary-schools-survey

Wexler, J., Vaughn, S., Edmonds, M., & Reutebuch, C. K. (2008). A synthesis of fluency interventions for secondary struggling readers. *Reading and Writing*, *21*(4), 317–347.

Wexler, J., Vaughn, S., Roberts, G., & Denton, C. A. (2010). The efficacy of repeated reading and wide reading practice for high school students with severe reading disabilities. *Learning Disabilities Research & Practice*, *25*(1), 2–10. https://doi.org/10.1111/j.1540-5826.2009.00296.x

White, N. C. (2010). The educational therapist in practice. In M. Ficksman, & J. U. Adelizzi (Eds.). *The clinical practice of educational therapy: A teaching model* (pp. 215–236). Routledge. https://doi.org/10.4324/9780203855492-20

Willingham, D. T. (2006). The usefulness of brief instruction in reading comprehension strategies. *American Educator*, *30*(4), 39–50. https://www.aft.org/ae/winter2006-2007/Willingham

Endnotes

Choosing reading assessments in MTSS

1 Petscher, Y., & Suhr, M. (2022). Considerations for choosing and using screeners for students with disabilities. In C. J. Lemons, S. R. Powell, K. L. Lane, & T. C. Aceves (Eds.), *Handbook of special education research* (Vol. 2, pp. 83–96). Routledge.

Choosing, monitoring and modifying reading interventions in MTSS

1 Dyslexia-SPELD Foundation Literacy Services. (2021). *Understanding learning difficulties: A practical guide*. https://dsf.net.au/resources/online-store/item-details/understanding-learning-difficulties-a-practica-(1)-3942e498

2 Castles, A., Rastle, K., & Nation, K. (2018). Ending the reading wars: Reading acquisition from novice to expert. *Psychological Science in the Public Interest*, *19*(1), 5–51. https://doi.org/10.1177/1529100618772271

3 de Bruin, K., Kestel, E., Francis, M., Forgasz, H., & Fries, R. (2023). *Supporting students significantly behind in literacy and numeracy*. Australian Education Research Organisation. https://www.edresearch.edu.au/research/research-reports/supporting-students-significantly-behind-literacy-numeracy

4 Sweller, J. (1988). Cognitive load during problem-solving: Effects on learning. *Cognitive Science*, *12*(2), 257–285. https://doi.org/10.1207/s15516709cog1202_4

5 Kirschner, P., Sweller, J., & Clark, R. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist*, *46*(2), 75–86. https://doi.org/10.1207/s15326985ep4102_1

6 Rosenshine, B. (2010). *Principles of instruction*. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000190652

7 Rosenshine, B. (2012). Principles of instruction: Research-based strategies that all teachers should know. *American Educator*, *36*(1), 12–19. https://www.aft.org/ae/spring2012/rosenshine

8 Rosenshine, B. (2010). *Principles of instruction*. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000190652

9 Rosenshine, B. (2012). Principles of instruction: Research-based strategies that all teachers should know. *American Educator*, *36*(1), 12–19. https://www.aft.org/ae/spring2012/rosenshine

10 Castles, A., Rastle, K., & Nation, K. (2018). Ending the reading wars: Reading acquisition from novice to expert. *Psychological Science in the Public Interest*, *19*(1), 5–51. https://doi.org/10.1177/1529100618772271

11 de Bruin, K., Kestel, E., Francis, M., Forgasz, H., & Fries, R. (2023). *Supporting students significantly behind in literacy and numeracy*. Australian Education Research Organisation. https://www.edresearch.edu.au/research/research-reports/supporting-students-significantly-behind-literacy-numeracy

12 de Bruin, K., Kestel, E., Francis, M., Forgasz, H., & Fries, R. (2023). *Supporting students significantly behind in literacy and numeracy*. Australian Education Research Organisation. https://www.edresearch.edu.au/research/research-reports/supporting-students-significantly-behind-literacy-numeracy

13 de Bruin, K., Kestel, E., Francis, M., Forgasz, H., & Fries, R. (2023). *Supporting students significantly behind in literacy and numeracy*. Australian Education Research Organisation. https://www.edresearch.edu.au/research/research-reports/supporting-students-significantly-behind-literacy-numeracy

14 Scammacca, N., Roberts, G., Cho, E., Williams, K., Roberts, G., Vaughn, S., & Carroll, M. (2016). A century of progress: Reading interventions for students in grades 4–12, 1914–2014. *Review of Educational Research*, *86*(3), 756–800. https://doi.org/10.3102/0034654316652942

15 Solis, M., Miciak, J., Vaughn, S., & Fletcher, J. M. (2014). Why intensive interventions matter: Longitudinal studies of adolescents with reading disabilities and poor reading comprehension. *Learning Disability Quarterly*, *37*(4), 218–229. https://doi.org/10.1177/0731948714528806

16 Pyle, N., & Vaughn, S. (2012). Remediating reading difficulties in a response to intervention model with secondary students. *Psychology in the Schools*, *49*(3), 273–284. https://doi.org/10.1002/pits.21593

17 Solis, M., Miciak, J., Vaughn, S., & Fletcher, J. M. (2014). Why intensive interventions matter: Longitudinal studies of adolescents with reading disabilities and poor reading comprehension. *Learning Disability Quarterly*, *37*(4), 218–229. https://doi.org/10.1177/0731948714528806

18 de Bruin, K., Kestel, E., Francis, M., Forgasz, H., & Fries, R. (2023). *Supporting students significantly behind in literacy and numeracy*. Australian Education Research Organisation. https://www.edresearch.edu.au/research/research-reports/supporting-students-significantly-behind-literacy-numeracy

19 Scammacca, N., Roberts, G., Vaughn, S., Edmonds, M., Wexler, J., Reutebuch, C., & Torgesen, J. (2007). *Interventions for adolescent struggling readers: A meta-analysis with implications for practice*. Center on Instruction. https://eric.ed.gov/?id=ED521837

20 Jung, P. G., McMaster, K. L., Kunkel, A. K., Shin, J., & Stecker, P. M. (2018). Effects of data-based individualization for students with intensive learning needs: A meta-analysis. *Learning Disabilities Research & Practice*, *33*(3), 144–155. https://doi.org/10.1111/ldrp.12172

21 Weldon, P. R., Heard, J., Thompson, J., & Stephenson, T. (2023). *Implementing effective tiered interventions in secondary schools: Survey of school and support staff*. Australian Education Research Organisation. https://www.edresearch.edu.au/research/research-reports/implementing-tiered-interventions-secondary-schools-survey

22 Vaughn, S., & Fletcher, J. M. (2012). Response to intervention with secondary school students with reading difficulties. *Journal of Learning Disabilities*, *45*(3), 244–256. https://doi.org/10.1177/0022219412442157

23 Jung, P. G., McMaster, K. L., Kunkel, A. K., Shin, J., & Stecker, P. M. (2018). Effects of data-based individualization for students with intensive learning needs: A meta-analysis. *Learning Disabilities Research & Practice*, *33*(3), 144–155. https://doi.org/10.1111/ldrp.12172

24 de Bruin, K., Kestel, E., Francis, M., Forgasz, H., & Fries, R. (2023). *Supporting students significantly behind in literacy and numeracy*. Australian Education Research Organisation. https://www.edresearch.edu.au/research/research-reports/supporting-students-significantly-behind-literacy-numeracy

25 Shapiro, E. S., Zigmond, N., Wallace, T., & Marston, D. (2011). *Models for implementing response to intervention: Tools, outcomes, and implications*. Guilford Press.

Example of Tier 2 intervention for subject-specific reading comprehension

1 Donegan, R., & Wanzek, J. (2021). Effects of reading interventions implemented for upper elementary struggling readers: A look at recent research. *Reading and Writing*, *34*(8), 1943–1977. https://doi.org/10.1007/s11145-021-10123-y

2 Edmonds, M., Vaughn, S., Wexler, J., Reutebuch, C., Cable, A., Tackett, K., & Schnakenberg, J. (2009). A synthesis of reading interventions and effects on reading comprehension outcomes for older struggling readers. *Review of Educational Research*, *79*(1), 262–300. https://doi.org/10.3102/0034654308325998

3 Australian Curriculum, Assessment and Reporting Authority. (n.d.-a). *Civics and citizenship 7–10 (Year 7)*. https://v9.australiancurriculum.edu.au/f-10-curriculum/learning-areas/civics-and-citizenship-7-10/year-7

4 Australian Curriculum, Assessment and Reporting Authority. (n.d.-b). *HASS F-6 (Year 6)*. https://v9.australiancurriculum.edu.au/f-10-curriculum/learning-areas/hass-f-6/year-6?detailed-content-descriptions

5 Beck, I., McKeown, M., & Kucan, L. (2013). *Bringing words to life: Robust vocabulary instruction* (2nd ed.). Guilford Publications.

6 See Beck, I., McKeown, M., & Sandora, C. (2020). *Robust comprehension instruction with questioning the author: 15 years smarter*. Routledge.

7 Such as that outlined by Beck, I., McKeown, M., & Kucan, L. (2013). *Bringing words to life: Robust vocabulary instruction* (2nd ed.). Guilford Publications.

For more information visit
edresearch.edu.au

010724.CH.AA.V2