



Serpentine
Primary School

Instructional Playbook 2024

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**Perpetine
Primary School**

SCHOOL VISION

OUR SCHOOL



Moral Purpose

To ensure ALL students achieve academic success, to enable better life outcomes.

3 Imperitives of Student Engagement

All staff will ensure:

- Students are safe, have trust, respect and feel valued
- Students have work at their level
- Students have friends at school

4 Pillars of School-wide Pedagogy

- Teacher directed learning
- Explicit, Direct Instruction
- Moving student's knowledge from short-term to long-term memory
- Positive teacher-student relationships

6 Givens

Strong Relationships

High Expectations

Appealing Classroom Displays

Effective, Immediate Feedback

Positive Classroom Tone

Excellent Presentation

6 GIVENS FOR EVERY LEARNING ENVIRONMENT

1. Strong Relationships:

Respect, Collegiality, Professionalism and Partnerships

- Students are safe, have trust, respect and feel valued.
- Students have work at their level.
- Students have friends at school.
- Parents feel welcome and informed.
- Staff speak positively about the school.
- Active participation and involvement in our school community.
- Staff and students embrace cultural diversity.
- Share ideas and work as a team.
- Make time for your colleagues and yourself.

2. High Expectations and Excellent Classroom Practice:

Pride, Professionalism, Consistency and Presentation

- Every day matters – attendance 90%.
- Students and staff on time and well prepared.
- Enforce school/classroom routines and practices.
- Demand the best from every student.
- Expect and demand excellent behaviour.
- Ensure a supportive environment and differentiate for individual needs—support & extension.
- Use data to inform your practice.
- Ensure adequate resources.
- Explicitly teach every literacy and numeracy lesson.
- Follow the timetable.
- High quality, organised classroom display.
- Excellent handwriting and presentation.

6 GIVENS FOR EVERY LEARNING ENVIRONMENT

3. Positive Classroom Tone:

Positive, Powerful learning environment

- Set consistent, clear classroom expectations and routines.
- Embed the essential skills in classroom management.
- Greet students and parents. Be in classroom with doors open from 8:30am.
- Model respect, courtesy, manners and honesty.
- Model enthusiasm and resilience.
- Explicitly teach appropriate language and classroom behaviour through Participation Tactics.
- Automatic and immediate response by all students to teacher directions and requests.
- Implement all Positive Behaviour Support strategies and lessons.

4. Quality Feedback for Students:

Professionalism, Improvement and Success

- Effective feedback requires daily relationships.
- Feedback is constructive, honest and always starts with a positive.
- Clear expectations are provided prior to lesson. Learning Objective, Success Criteria & Why?
- Meaningful, written and verbal statements are provided to students about what to do next to guide improvement.
- Feedback must be immediate—over the shoulder marking, whole class plough backs.
- Students must set personal literacy and numeracy goals in collaboration with the teacher.

5. Appealing Classroom Display:

Pride, Professionalism and Presentation

- Desks are positioned so students can clearly see the board.
- Learning spaces are clearly defined e.g. reading corner, group areas...
- Classroom is clean, free of rubbish and unnecessary storage of files and equipment.
- Behaviour – classroom values and expectations are displayed, reflective behaviour processes displayed.
- Whole class displays include—PBS, Moral Purpose, Daily Review Checklist, Phonics International Alphabetic Code Chart (Years 1-6), sound wall (Pre-Primary and Kindergarten), Syntax charts (Years 3-6).
- All print is meaningful.
- Student work is displayed, is current and presentation is valued.
- Daily timetable is on the board.

6 GIVENS FOR EVERY LEARNING ENVIRONMENT

6. Excellent Bookwork and Daily Correction:

Pride, Professionalism, Consistency and Presentation

Pre-Primary to Year 2

- A sharp lead pencil is used for writing.
- Writing is neat, well sized, close together and spaced correctly – NSW Foundation Font.
- Posture for handwriting – feet flat on the floor, back straight (leaning forward slightly), bottom well back in the chair and hand stabilising the book or paper.
- Tripod pencil grip ensures handwriting is neat and consistent.
- If a mistake is made use a single line to cross it out (NO ERASERS).
- There are no blank pages.
- Sheets are glued into books properly – the corners not flapping, sheets are straight.
- Work is to be corrected regularly.
- Drawings and colouring reflect best effort.
- All work is dated in the top left hand corner.
- From Year 1 a straight margin using a ruler and red pencil is expected.
- Work is to be corrected daily.
- Sign/initial work and provide verbal or written feedback.
- Reinforce bookwork expectations.

Years 3 to 6

- A sharp lead pencil/biro (blue or black) is used for writing.
- Writing is neat, well sized, close together and spaced correctly – speed loops/ joins.
- Posture for handwriting – feet flat on the floor, back straight (leaning forward slightly), bottom well back in the chair and hand stabilising the book or paper.
- Tripod pencil grip ensures handwriting is neat and consistent.
- If a mistake is made use a single line to cross it out (no erasers/whiteout).
- There are no blank pages.
- Sheets are glued into books properly – the corners not flapping, sheets are straight.
- Exercise books and pads should contain a 2.0cm margin which is to be ruled in red biro from the top line to the bottom line. The top line and second line should be ruled in red and a heading and date placed in this row using lead pencil, blue or black biro. When an activity is finished for that day a line is to be ruled under the work in red biro from the margin to the edge of the page.
- Targeted, explicitly taught work is to be corrected daily.
- Sign/initial work and provide verbal or written feedback.
- Reinforce bookwork expectations.

PLANNING REQUIREMENTS

Informed, knowledgeable and well-planned teachers get the most out of every student every day. The following represent the planning expectations of every teacher at SPS.

- Complete planning prior to the commencement of a unit.
- Implement the mandated school curriculum programs and assessments.
- Implement explicit instruction and daily reviews.

Prior to Planning

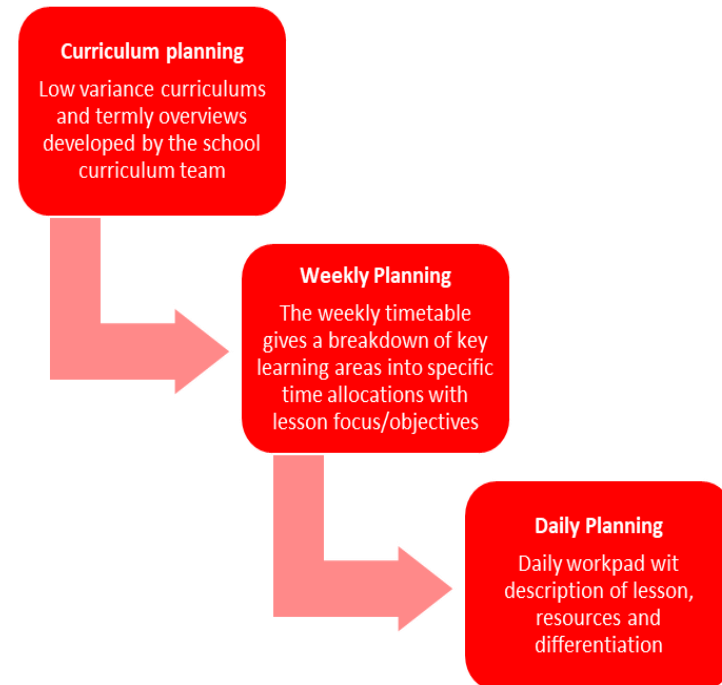
- Familiarise yourself with your year level timetable.
- Familiarise yourself with the SPS curriculum plans and resource banks (**most resources are already created**)
- Establish students' levels of knowledge and understandings.

During Planning

- Be clear as to what content / essential learning is being assessed and what benchmarks and standards you are moving all students towards.
- Organise your lessons to cater for all learners – document how you are catering for differentiation.
- Take responsibility for identification and referral of students to the LSC for intervention processes. Implement and monitor individual education plans, where required. Meet with the LSC and support staff as needed.
- Have a clear and detailed weekly/daily plan available.
- Organise resources in advance for each lesson.

During Teaching

- Implement daily reviews and explicit instruction into all English, Mathematics and specialist lessons.
- Teach the minimum time allocation for each learning area.
- Ensure activities are marked and corrected at point of error, recorded for assessment and regular feedback is provided to students and parents.





Serpentine
Primary School

PROFESSIONAL GROWTH MODEL

PROFESSIONAL DEVELOPMENT CYCLE

Performance and Development is the continuous process of reflecting, goal setting, improving professional practice and learning, feedback and review about an individual's performance in achieving organisational goals. Staff regularly demonstrate accountability for their performance and have access to growth and development opportunities, guided by system initiatives and school planning and priorities.

| Timeline | Date/s |
|--|--------|
| Goal Setting (Term 1) | |
| Lesson observation (Term 1) | |
| Goal Setting Meeting (Term 1) <i>Teachers, in consultation with their instructional coach, use the High Quality Teaching to evaluate their current level of performance and set targets for improvement.</i> | |
| Professional Practice & Learning (Terms 2) | |
| Term 2 Formal Lesson observation | |
| Term 2 Check-In | |
| Professional Practice & Learning (Terms 3) | |
| Term 3 Video Reflection <i>Teachers video a lesson related to their personal goals and review the lesson with their instructional coach using the provided template.</i> | |
| Term 3 Check-In | |
| Feedback & Review Meetings (Term 4) | |
| Term 4 Formal Lesson observation | |
| Term 4 Review Meeting <i>A meeting discussing achievement of or progress towards individual goals and gains made on the high quality teaching matrix.</i> | |
| End Of Year Data Review Meeting (principal) <i>A meeting discussing student progress and achievement across the year and the value adding which has occurred.</i> | |

INSTRUCTIONAL COACHING MODEL

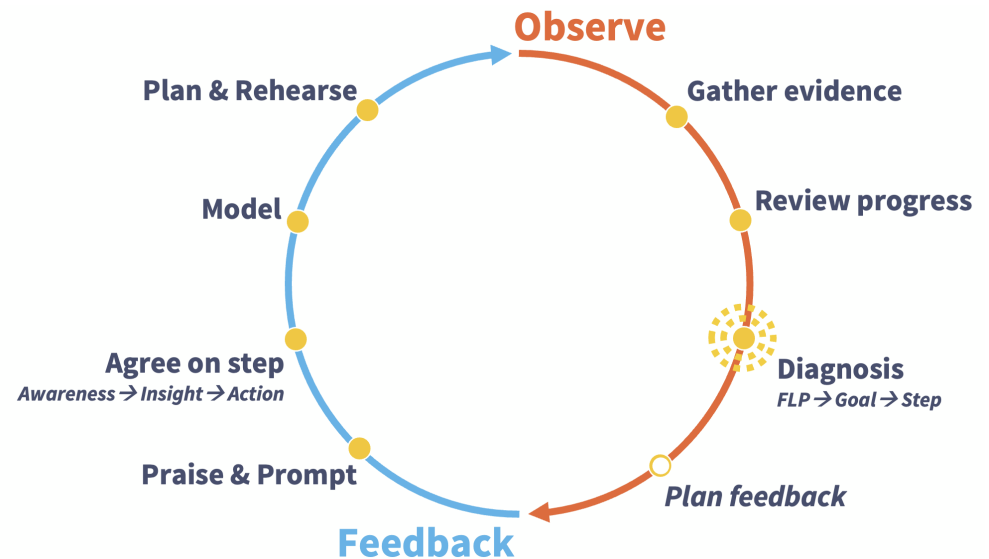
All teachers at Serpentine PS have access to high level one-on-one instructional coaching. One-On-One Coaching involves in-depth work with a dedicated instructional coach, timetabled planning sessions and scheduled classroom opportunities classroom for co-teaching, modelling, or observation. The focus of these sessions is driven by school priorities, student data and teacher professional development goals. Central to the coaching model is our instructional approach and instructional routine checklists. By having an agreed upon Serpentine PS approach to various routines and structures throughout the day, we take the subjectivity out of coaching.

Whole School Professional Learning and Coaching:

- School Development Days
- PLIP (Professional Learning in Practice) Meetings x 3 per term
- Participation in instructional coaching throughout the year

New/Graduate Staff:

- Serpentine PS Science of Learning workshops
- Online Professional Learning Modules (school website)



Used with permission from StepLab.

A beginners Guide to Instructional Coaching, StepLab, 2022
(Access online at steplab.co/beginners-guide)



INSTRUCTIONAL MODEL

COGNITIVE LOAD THEORY & EXPLICIT INSTRUCTION

At Serpentine PS, staff have an understanding of Cognitive Load Theory and the practical implementations this has on instruction. "Cognitive load" relates to the amount of information that working memory can hold at one time. Sweller said that, since working memory has a limited capacity, instructional methods should avoid overloading it with additional activities that don't directly contribute to learning.

Cognitive Load Theory is supported by a robust evidence base which shows that students learn best when they are given explicit instruction accompanied by lots of practice and feedback. Researchers have identified a number of strategies that can help teachers to maximise student learning. These strategies work by optimising the load on students' working memories.

Strategy 1: Tailor lessons according to students' existing knowledge and skill.

Strategy 2: Use worked examples to teach students new content or skills.

Strategy 3: Gradually increase independent problem-solving as students become more proficient.

Strategy 4: Cut out inessential information.

Strategy 5: Present all the essential information together.

Strategy 6: Simplify complex information by presenting it both orally and visually.

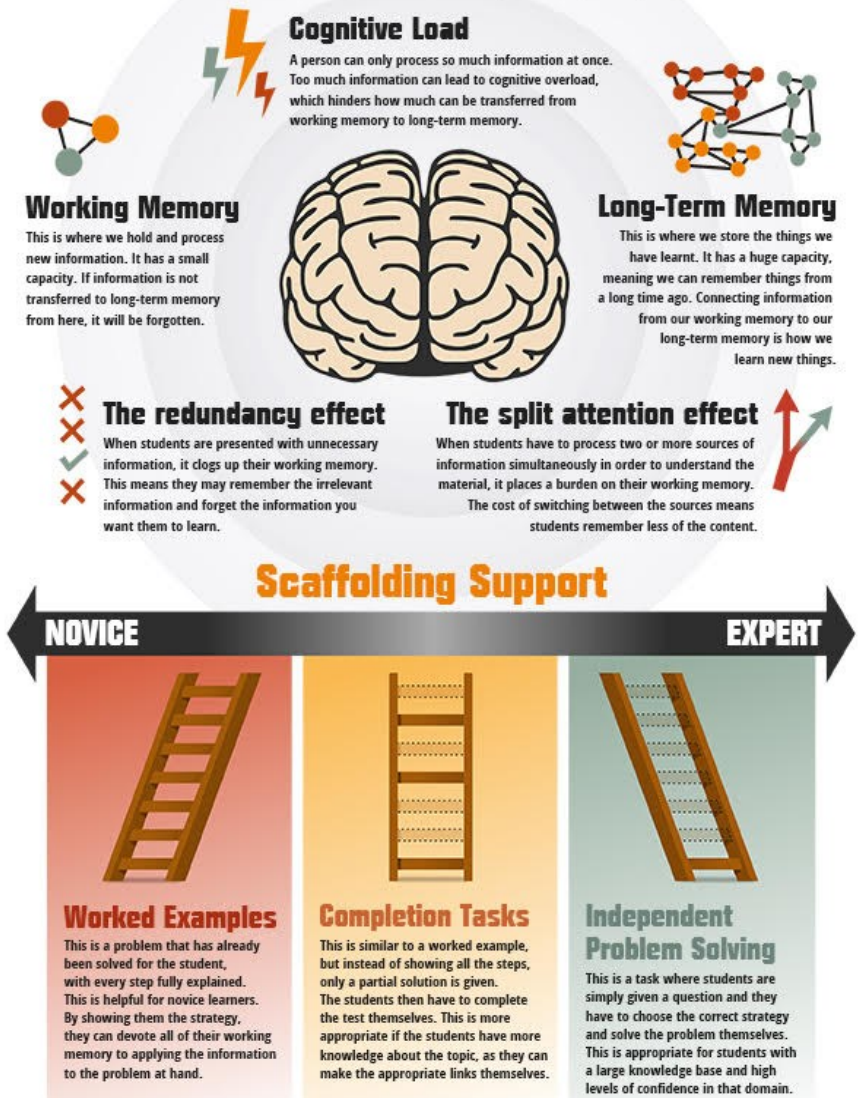
Strategy 7: Encourage students to visualise concepts and procedures that they have learnt.

Recommended reading:

1. Cognitive Load Theory in practice (NSW Department of Education, 2017)
2. Sweller's Cognitive Load Theory in Action (Oliver Lovell, 2020)
3. Cognitive Load Theory in action—LDA Bulletin Volume 52 No. 3 (Oliver Lovell, 2021)

COGNITIVE LOAD THEORY: KEY TERMS

by @inner_drive | www.innerdrive.co.uk



EXPLICIT LESSON DESIGN

| Lesson component | Description |
|-------------------------|---|
| Concept Development | <p>Teach the concepts of the lesson- definitions, examples, non-examples and resources. At this point in the lesson, make sure that examples and non-examples are of the concept.</p> <p>Examples of the skill execution go into the I DO - WE DO - YOU DO. In a skill-focused lesson, the concept will most likely be shorter to explain or less complex than the skill, so should not need as much instructional time.</p> <p>A hinge-point question can be used to determine whether conceptual understanding is understood well enough to continue in the skill progression.</p> |
| I do | <p>Model: The teacher needs to model completing the task using the exact steps given to the students. While completing this, the teacher should narrate their thinking.</p> <p>CFU: Checks for Understanding and participation at this stage of the lesson require students to explain back to the teacher what has been shown to them.</p> |
| We do | <p>Guided: this is the heart of a skill-based lesson and will be where the bulk of instructional time is spent. In a WE DO, students start by solving the task step by step at the same time as the teacher. As the teacher moves through multiple examples, they gradually release the responsibility of completing the task/ applying the concept.</p> <p>CFU: use of mini-whiteboards and questioning throughout, and hinge-point question for each variation.</p> <p>Hinge-point question: can be used to determine whether students are capable of moving onto independent practice (You do)</p> |
| You do | <p>Independent: Students complete task(s) independently while the teacher observes, responds to questions, and checks after completion.</p> |
| Objective demonstration | <p>At the end of a learning sequence, the teacher must check that all students can prove that they can apply the concept and execute the skill from the learning objective. This is the final CFU a teacher does before releasing the students to work on homework, assessments tasks, or moving onto the next lesson. There will have already been multiple checks for understanding with Hinge Point tasks throughout the lesson, but this task must assess all elements of the learning objective. Therefore, students may need to complete multiple or combined tasks to demonstrate their success with the learning objective.</p> |

RETRIEVAL, SPACED & INTERLEAVED PRACTICE

Retrieval practice:

Rosenshine (2012) describes the importance of a Daily Review; a fast paced review of previously learned material. In order to ensure that students efficiently acquired, rehearsed, and connected knowledge, teachers need to incorporate fast paced Daily Reviews so students' knowledge is transferred from their short term to long term memory; resulting in automatic recall. The expectation at Serpentine PS is for teachers to consistently use a Daily Review at the beginning of Reading, Writing and Mathematics lessons, and specialist subject lessons.

Spaced practice:

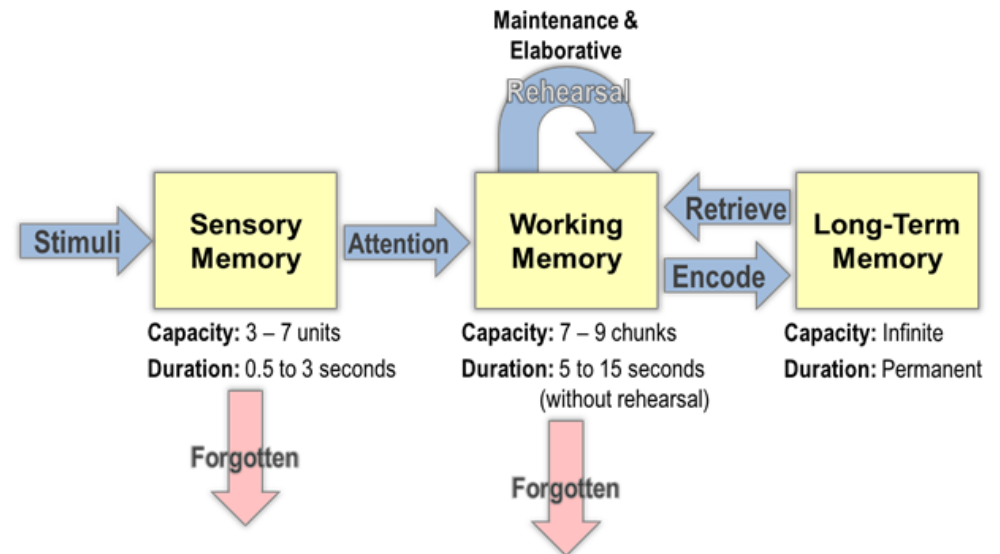
Learning should also be revised through spaced practice. When teachers space content for review, or spread it out over time, the same amount of retrieval practice will result in more long-lasting learning. For example, if you teach Analog Time in Term 1, it should be reviewed in the weeks immediately following, as well as at spaced intervals throughout the year so that the knowledge and skills are not forgotten.

Interleaved practice:

Retrieval practice should also incorporate interleaved practice, particularly in Mathematics. Practice problems are interleaved if the problems are arranged so that consecutive problems cannot be solved by the same strategy. For example, if one problem is solved using addition, the next problem requires a different strategy, such as solving using subtraction.

Recommended reading:

1. LearningScientists.org
2. Spaced, Interleaved and Retrieval Practice: The Principles Underlying the Daily Review- LDA Bulletin Volume 52 No. 3 (David Morkunas, 2021)

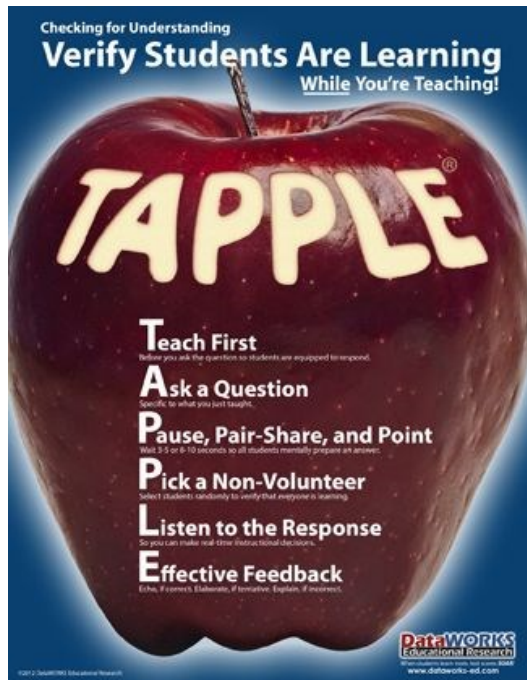


FULL PARTICIPATION TACTICS

In order to maintain engagement and accountability, Full Participation tactics are to be used throughout all daily reviews and lessons. The Teach Well Full Participation poster is to be displayed in every classroom to serve as a reminder/cue for teachers to use them.

Teachers must be checking for understanding regularly throughout all components of a lesson. This is achieved through the selection of non-volunteers, whiteboard responses, pair-share (followed by non-volunteer responses), and/or a physical demonstration.

The TAPPLE process can also be used to guide the CFU process:



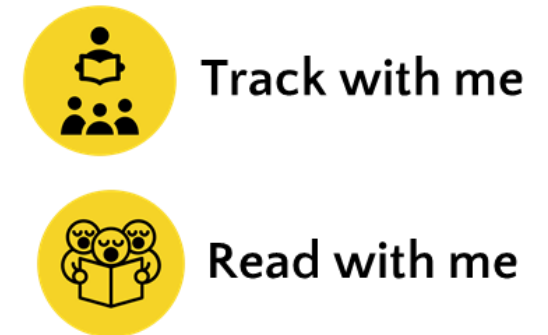
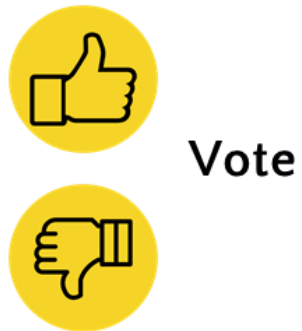
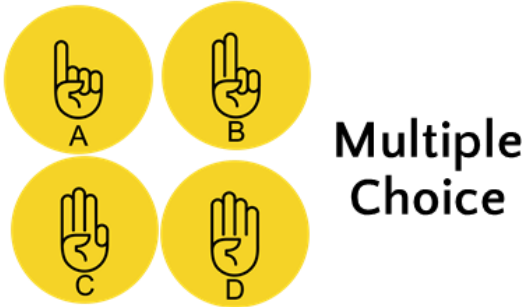
FULL PARTICIPATION

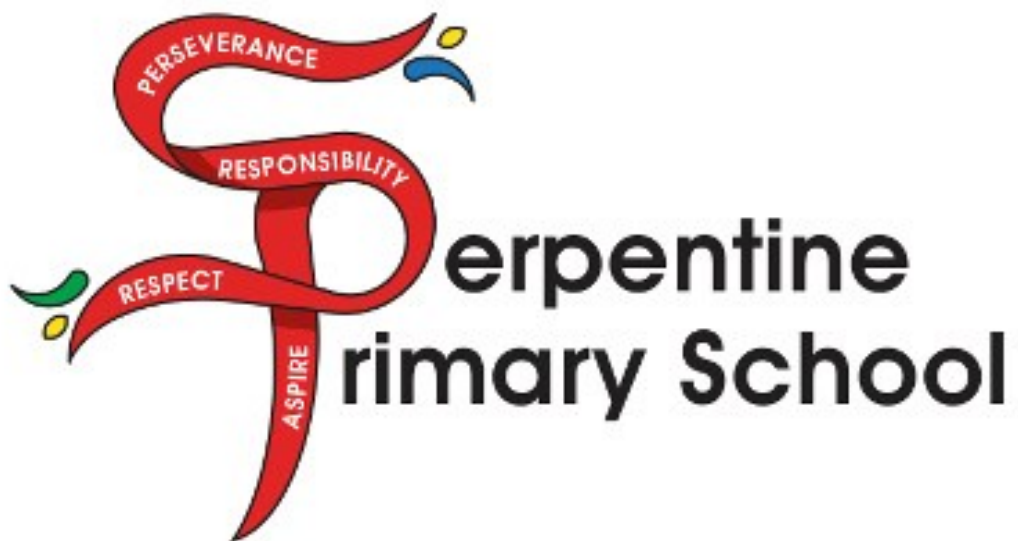
All students interacting meaningfully with critical content throughout whole-class instruction.



| Participation Principles | |
|-------------------------------|--|
| Obligatory | Participation is a pre-requisite for learning, as students must first attend to lesson content if it is to enter working memory - which it must, if it is to be encoded into long-term memory (underlying goal of teaching). Because thinking is slow and unreliable (Willingham, 2015), most students will opt-out from the learning if allowed to and must actively be drawn in by the teacher. |
| Critical Content | Establishing a full participation learning environment takes time and effort. It is imperative that this investment is maximised through a focus on critical content. Use of the participation tactics should peak when students are engaging with their most important content. Non-curricular games or tasks, mindless repetition of surface-level facts, and passive listening are to be avoided. |
| Frequent | Maintaining full participation is a dynamic task that requires the teacher to frequently (seemingly constant) use appropriate participation tactics to ensure ALL students are attending to the learning. Frequent practice builds fluency and automates the tactics to long-term memory, which unburdens working memory and creates capacity for more meaningful thinking. |
| Cues & Routines | Each participation tactic represents a routine that has an accompanying cue, which must be thoughtfully taught to students before it is embedded in classroom instruction. Outcomes are dramatically improved when these cues & routines are clearly established for students. |
| Sense of Urgency | If many students are below grade-level or are ready to be accelerated past it - the teacher must take students through content with a sense of urgency. Not fast for the sake of it, but moving at a brisk pace helps to hold student attention while moving through a lot of critical content. |
| Text Tactics | |
| Pro-nounc-ing | Not just for "little kids", but applicable whenever there is a word that is unfamiliar to students - as these words (concepts) create a significant load on working memory that can be particularly detrimental to novice learners. It helps to have an instructional routine for this process, which might include syllabifying the word and include a brief definition. |
| Active Tracking | Students benefit from tracking the text that they are engaging with, whether it a teacher, peer, or themselves doing the reading. Tracking using a finger or pencil may be more appropriate for younger or less developed readers - whereas older students may just track with their eyes. |
| Choral Reading | Choral reading is appropriate for all grade-levels, and although it may seem "babyish", the research suggests that the benefits of choral reading apply to all ability levels. It is important that the teacher models high expectations for choral reading (prosody + quality of reading aloud). |
| Inclusive Reading | When teachers are faced with longer texts, it may be beneficial to break up the task in a variety of ways. Depending on the context, the teacher might model the reading and then move between individual and groups of students reading, boys or girls, or rows or groups of desks. |
| Short and the Same | |
| Choral Response | Also called 'who checks', whole-class choral responses are applicable to all learning areas and age groups. Choral responses act to direct student focus and help to 'mobilise' critical content in students' working memories. Choral responses occur with a high-frequency and can be used in a variety of contexts. They work best when combined with other short & the same tactics like reversal. |
| Choral Reversal | Also known as a 'flipped choral response', the reversal is simply when the teacher's question and the student response are swapped. The reversal represents a small and yet important lift in cognitive effort for students who must attend carefully to teacher instruction in order to 'catch' the content needed for the reversal. 'The ball is red, what colour is the ball? - What object is red? The ball'. |
| Gesture | Typically made with the hand or arm, gestures are used to help make a concept more concrete, or to attach a physical anchor to the learning that makes it more memorable/retrievable. In addition, gestures are visible and offer a type of participatory accountability, as it is easy to see whether students are following teacher direction or not. |
| Movement | This is one tactic that is intended more for younger students. Movement is a great way to manage and monitor participation, or even to get simple responses from students. It is not encouraged that you use movement with older students as a type of checking for understanding, as this can often lead to undesirable outcomes (e.g. move to this side of the class if you agree). |
| Comprehension Demonstration | |
| Non-Volunteers | A non-volunteer system establishes a powerful mechanism of accountability and supports an equal opportunity learning environment. It replaces both cold-calling student names and hand raising volunteers. The teacher poses a question to the whole-class so that all students prepare an answer, before the teacher randomly samples non-volunteers using a physical mechanism like pop sticks or name cards to ensure the sample is truly random. |
| Whiteboards | Our absolute favourite tool at Teach Well for formative assessment. The whiteboards allow teachers to quickly assess the understanding of ALL students both quickly and accurately. Effective whiteboard use (whiteboard etiquette), includes teaching students how to effectively engage with their whiteboards using cues like 'hover', 'chin it', 'bin it', and 'park it' - which act to streamline whiteboard use and increase student fluency. |
| Pair Share | Pair shares promote student safety and naturally provide for think time, collaboration, and rehearsal. This tactic works best for content that is new or challenging to students, and for which they would benefit from some deliberation time. It can be helpful to be a little strategic about how you organise pairs, which might mean considering student ability and temperament. |
| Physical Demonstration | In some specialist learning areas and contexts, the most appropriate way for students to demonstrate their understanding of critical content is through a physical demonstration. This would usually consist of students representing a series of sequential steps of a skill or process using a physical demonstration. |

FULL PARTICIPATION TACTICS ICONS





DAILY STRUCTURE

Lower Primary Example Timetable

| Time | Monday | Tuesday | Wednesday | Thursday | Friday |
|-------------|--|--|--|--|---|
| 8.20-8.45 | Daily Edit: complete daily edit based on syntax/punctuation and/or phonics goals from previous week. | Daily Edit: complete daily edit based on syntax/punctuation and/or phonics goals from previous week. | Daily Edit: complete daily edit based on syntax/punctuation and/or phonics goals from previous week. | Daily Edit: complete daily edit based on syntax/punctuation and/or phonics goals from previous week. | Daily Edit: complete daily edit based on syntax/punctuation and/or phonics goals from previous week. |
| 8.45-8.50 | School Expectations | School Expectations | School Expectations | School Expectations | RAP Show- Student led school news broadcast |
| 8.50-9:10 | Literacy Daily Review <ul style="list-style-type: none"> Phonemic awareness Letter-sounds (GPCs) Decoding & encoding Morphology & spelling patterns HFWs Fluency Vocabulary Parts of Speech | Literacy Daily Review <ul style="list-style-type: none"> Phonemic awareness Letter-sounds (GPCs) Decoding & encoding Morphology & spelling patterns HFWs Fluency Vocabulary Parts of Speech | Literacy Daily Review <ul style="list-style-type: none"> Phonemic awareness Letter-sounds (GPCs) Decoding & encoding Morphology & spelling patterns HFWs Fluency Vocabulary Parts of Speech | Literacy Daily Review <ul style="list-style-type: none"> Phonemic awareness Letter-sounds (GPCs) Decoding & encoding Morphology & spelling patterns HFWs Fluency Vocabulary Parts of Speech | Morphology lesson (15 mins) Morphograph + meaning Decoding & encoding |
| 9.10-9.25 | Phonics lesson <ul style="list-style-type: none"> Letter sound knowledge Decoding Encoding HFW Sentence level reading | Phonics lesson <ul style="list-style-type: none"> Letter sound knowledge Decoding Encoding HFW Sentence level reading | Phonics lesson <ul style="list-style-type: none"> Letter sound knowledge Decoding Encoding HFW Sentence level reading | Phonics lesson <ul style="list-style-type: none"> Letter sound knowledge Decoding Encoding HFW Dictation in exercise books | Core Knowledge/ Serpentine Knowledge Unit <ul style="list-style-type: none"> Explicit vocabulary Big Idea Questioning the Author Embedded writing task |
| 9.25-9.35 | Paired Partner Fluency: (differentiated) Each partner reads for 3 mins & swap A → B B → A | Paired Partner Fluency: (differentiated) Each partner reads for 3 mins & swap A → B B → A | Paired Partner Fluency: (differentiated) Each partner reads for 3 mins & swap A → B B → A | Paired Partner Fluency: (differentiated) Each partner reads for 3 mins & swap A → B B → A | |
| 9.35 – 9:45 | Handwriting: Model on sky, grass, dirt whiteboard New letter: Revision: 2 x lines of each and a silly sentence | Handwriting: Model on sky, grass, dirt whiteboard New letter: Revision: 2 x lines of each and a silly sentence | Handwriting: Model on sky, grass, dirt whiteboard New letter: Revision: 2 x lines of each and a silly sentence | DOTT | |
| 9.45-10.25 | Core Knowledge/ Serpentine Knowledge Unit <ul style="list-style-type: none"> Explicit vocabulary Big Idea Questioning the Author | Core Knowledge/ Serpentine Knowledge Unit <ul style="list-style-type: none"> Explicit vocabulary Big Idea Questioning the Author Embedded writing task | Core Knowledge/ Serpentine Knowledge Unit <ul style="list-style-type: none"> Explicit vocabulary Big Idea Questioning the Author | DOTT | Other Learning Area taught by CT |
| 10.25-10.45 | Phonics Intervention/Spelling Mastery | Phonics Intervention/Spelling Mastery | Phonics Intervention/Spelling Mastery | Phonics Intervention/Spelling Mastery | Library |
| 10.45-11.05 | Recess | Recess | Recess | Recess | Recess |
| 11.05-12:05 | Writing: Syntax & punctuation focus (following writing scope & sequence) | Writing | DOTT | Maths Daily Review Think Mentals Ninja Facts PRIME lesson (double) | DOTT |
| 12:05-1:05 | Maths Daily Review Think Mentals Ninja Facts PRIME lesson | Maths Daily Review Think Mentals Ninja Facts PRIME lesson | Maths Daily Review Think Mentals Ninja Facts PRIME lesson | Maths Daily Review Think Mentals Ninja Facts PRIME lesson | Maths Weekly Review (focus on basic fact automaticity & word problems with bar model) Ninja Facts |
| 1:05 – 1:45 | Lunch | Lunch | Lunch | Lunch | Lunch |
| 1:45-2.50 | DOTT | DOTT | Writing | Writing | Whole School Sport |

Upper Primary Example Timetable

| Time | Monday | Tuesday | Wednesday | Thursday | Friday |
|-------------|---|---|---|---|--|
| 8.20-8.45 | Daily Edit: complete daily edit based on syntax and punctuation focus from previous weeks OR Touch typing practice | Daily Edit: complete daily edit based on syntax and punctuation focus from previous weeks OR Touch typing practice | Daily Edit: complete daily edit based on syntax and punctuation focus from previous weeks OR Touch typing practice | Daily Edit: complete daily edit based on syntax and punctuation focus from previous weeks OR Touch typing practice | Daily Edit: complete daily edit based on syntax and punctuation focus from previous weeks OR Touch typing practice |
| 8.45-8.50 | School Expectations | School Expectations | School Expectations | School Expectations | School Expectations |
| 8.50-9.20 | Literacy Daily Review <ul style="list-style-type: none"> • Letter-sounds (GPCs)- decoding & encoding • Morphology & suffixing conventions • Homophones/contractions/ commonly misspelled words • Fluency • Vocabulary • Parts of speech • Sentence level writing | Literacy Daily Review <ul style="list-style-type: none"> • Letter-sounds (GPCs)- decoding & encoding • Morphology & suffixing conventions • Homophones/contractions/ commonly misspelled words • Fluency • Vocabulary • Parts of speech • Sentence level writing | Literacy Daily Review <ul style="list-style-type: none"> • Letter-sounds (GPCs)- decoding & encoding • Morphology & suffixing conventions • Homophones/contractions/ commonly misspelled words • Fluency • Vocabulary • Parts of speech • Sentence level writing | Literacy Daily Review <ul style="list-style-type: none"> • Letter-sounds (GPCs)- decoding & encoding • Morphology & suffixing conventions • Homophones/contractions/ commonly misspelled words • Fluency • Vocabulary • Parts of speech • Sentence level writing | RAP Show- Student led school news broadcast |
| | Handwriting: formation & fluency (30 mins total) | Handwriting: formation & fluency (30 mins total) | Handwriting: formation & fluency (30 mins total) | Handwriting: formation & fluency (30 mins total) | Handwriting: formation & fluency (30 mins total) |
| 9:20-9:30 | Paired Partner Fluency: (differentiated) Each partner reads for 3 mins & swap A→ B B→A | Paired Partner Fluency: (differentiated) Each partner reads for 3 mins & swap A→ B B→A | Paired Partner Fluency: (differentiated) Each partner reads for 3 mins & swap A→ B B→A | Paired Partner Fluency: (differentiated) Each partner reads for 3 mins & swap A→ B B→A | Handwriting: formation & fluency (30 mins total) |
| 9.30-9.45 | Morphology (15 mins) Following Serpentine PS Morphology sequence -Prefixes, suffixes, bases/roots, assimilated prefixes, suffixing conventions | Core Knowledge/ Serpentine Knowledge Unit <ul style="list-style-type: none"> • Explicit vocabulary • Big Idea • Questioning the Author • Embedded writing tasks | Core Knowledge/ Serpentine Knowledge Unit <ul style="list-style-type: none"> • Explicit vocabulary • Big Idea • Questioning the Author • Embedded writing tasks | Core Knowledge/ Serpentine Knowledge Unit <ul style="list-style-type: none"> • Explicit vocabulary • Big Idea • Questioning the Author • Embedded writing tasks | Other Learning Area taught by CT  Serpentine Primary School |
| 9.45-10.25 | Writing: Syntax & punctuation focus (following writing scope & sequence) | | | | |
| 10.25-10.45 | Spelling Mastery Lesson Read from teacher guide. Students complete in book. Mark as a class. | Spelling Mastery Lesson Read from teacher guide. Students complete in book. Mark as a class. | Spelling Mastery Lesson Read from teacher guide. Students complete in book. Mark as a class. | Spelling Mastery Lesson Read from teacher guide. Students complete in book. Mark as a class. | Other Learning Area taught by CT  Serpentine Primary School |
| 10.45-11.05 | Recess | Recess | Recess | Recess | Recess |
| 11.05-12:05 | DOTT | Writing: Paragraph and text level focus (following writing scope & sequence) | Writing: Paragraph and text level focus (following writing scope & sequence) | Maths Daily Review Think Mentals Ninja Facts PRIME lesson | DOTT |
| 12:05-1:05 | Maths Daily Review Think Mentals Ninja Facts PRIME lesson | Maths Daily Review Think Mentals Ninja Facts PRIME lesson | Maths Daily Review Think Mentals Ninja Facts PRIME lesson | | Maths Weekly Review (focus on basic fact automaticity & word problems with bar model) Ninja Facts |
| 1:05-1:45 | Lunch | Lunch | Lunch | Lunch | Lunch |
| 1:45-3 | DOTT | DOTT | 3-6 CLUBS | DOTT | Whole School Sport |

*Although writing doesn't have its own period every day, writing must be embedded into knowledge units & specialists Learning Areas every day.

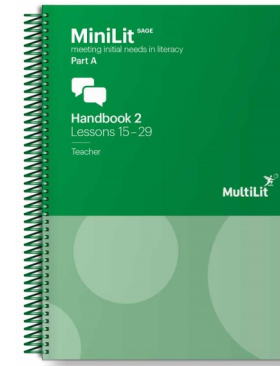
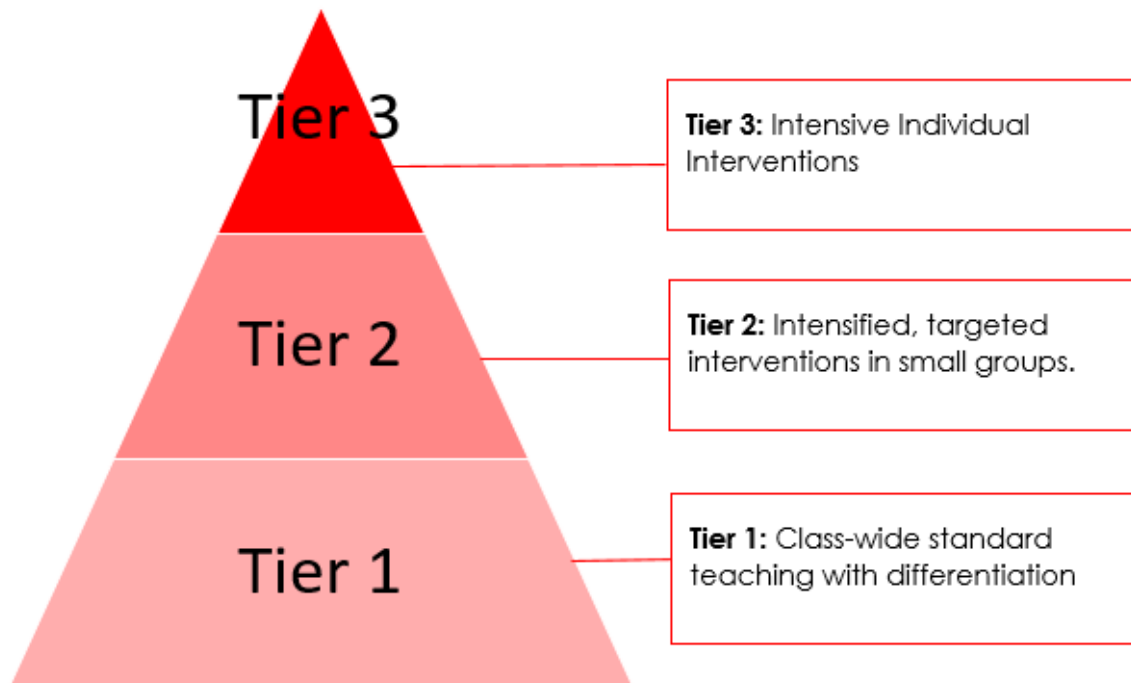


RESPONSE TO INTERVENTION MODEL

Multi-Tiered Systems of Support

At Serpentine Primary School, we follow a Response to Intervention process to support students. This includes:

- Universal screening and monitoring—including oral language screening and literacy and numeracy screening (Acadience Reading and Math, MiniLit screening)
- Prioritising students for small group intervention based on screening processes. Small group interventions for literacy include MiniLit and the Phonic Book Catch-Up resources.
- Regular progress monitoring using Acadience Progress Monitoring tools.





Serpentine
Primary School

ENGLISH

LITERACY DAILY REVIEW SCHEDULE

| | Kindy | Pre-Primary | Year 1-2 |
|------------------------|--|--|--|
| Phonological Awareness | <p>Word level: Compound words: segment, blend and manipulate</p> <p>Syllable level: Segment, delete & manipulate</p> <p>Phoneme level: Judge, identify (initial, final, medial sound VC & CVC words) blend & segment VC and CVC words (Following Heggerty sequence)</p> | <p>Phoneme level: Identify (initial, final, medial sound)</p> <p>Phoneme blending and segmenting CVC, CCVC, CVCC. CCCVC etc.</p> <p>Phoneme manipulation (deletion, substitution, addition)</p> | <p>Phoneme level: Blending and segmenting of polysyllabic words</p> <p>Phoneme manipulation</p> <p>Phoneme manipulation (deletion, substitution, addition)</p> |
| Phonics & Morphology | <p>Initial Phoneme-Grapheme correspondences (GPCs)- letter sounds & names</p> <p>Term 4- decoding VC and CVC words</p> | <p>Decoding & encoding</p> <p>High Frequency Words</p> <p>Whole class sentence reading and dictation</p> <p>*based on Serpentine PS Phonics, Morphology & HFW sequence</p> | <p>Decoding & encoding</p> <p>High Frequency Words</p> <p>Homophones</p> <p>Whole class sentence reading and dictation</p> <p>*based on Serpentine PS Phonics, Morphology & HFW sequence</p> |
| Fluency | | <p>Read short decodable sentences/ passages</p> | <p>Read short decodable passages</p> <p>Repeated reading of texts (decodable)</p> |
| Semantics & Vocabulary | <p>Semantics: Labelling, functions, attributes, associations, similarities & differences, categories</p> <p>Tier 2 words – selected from shared reading</p> <p>Shades of meaning</p> | <p>Semantics: Labelling, functions, attributes, associations, similarities & differences, categories</p> <p>Tier 2 words – selected from shared reading/ knowledge units</p> <p>Shades of meaning</p> | <p>Tier 2 words – selected from shared reading/ knowledge units</p> <p>Synonyms & antonyms</p> <p>Shades of meaning</p> |
| Syntax & punctuation | <p>Early nouns (familiar objects), verbs (common verbs), adjectives, prepositions (in, on, under, over, in front, behind etc.), pronouns (I, it, me, he, she, your, they etc.)</p> | <p>Parts of speech terminology & sentence/ punctuation knowledge and skills</p> <p>*based on Serpentine PS Syntax & Punctuation Scope & Sequence.</p> | <p>Parts of speech terminology & sentence/ punctuation knowledge and skills</p> <p>*based on Serpentine PS Syntax & Punctuation Scope & Sequence.</p> |

LITERACY DAILY REVIEW OVERVIEW

| Year 3—6 | |
|--|--|
| Phonics & Morphology | <p>Letter-Sounds (GPCs) - encoding & decoding</p> <p>Morphographs based on Serpentine Morphology Sequence (prefixes, suffixes, bases/roots)</p> <p>Word building with morphemes</p> <p>Applying spelling rules/suffixing conventions to word sums</p> <p>Homophones</p> <p>Commonly misspelled words</p> |
| Fluency | <p>Repeated reading of fiction and non-fiction texts.</p> <p>Linked to paired-reading fluency routine.</p> |
| Vocabulary | <p>Tier 2 words – selected from reading-knowledge units</p> <p>Synonyms and antonyms</p> |
| Parts of speech/ syntax & punctuation | <p>Word contractions</p> <p>Parts of speech terminology</p> <p>Sentence punctuation skills</p> <p>Sentence level writing (syntax)</p> <p>*based on Serpentine PS Syntax & Punctuation Scope & Sequence.</p> |

READING OVERVIEW: THEORY

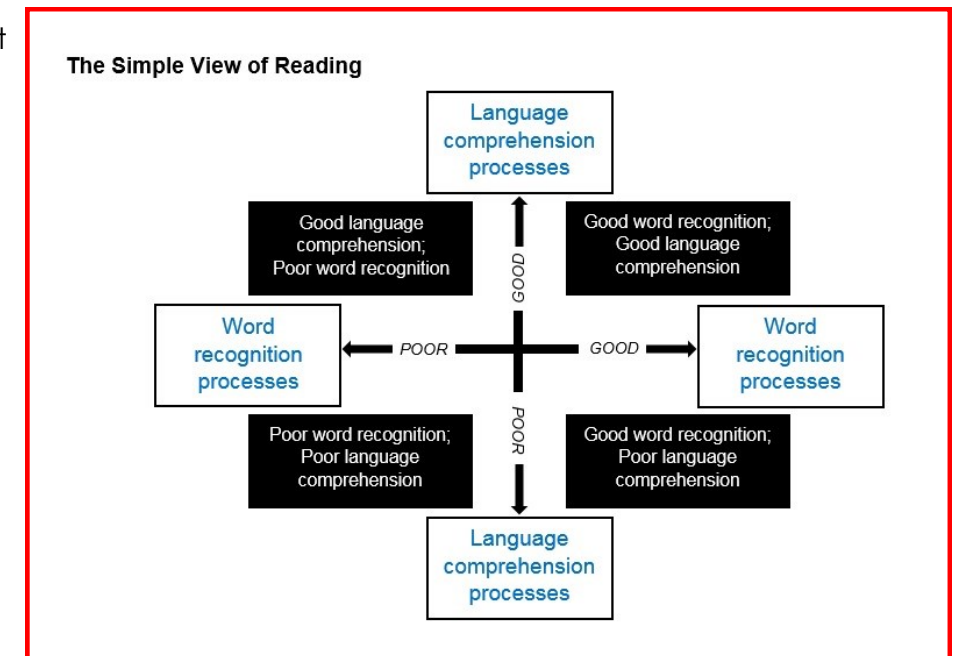
Reading is a multifaceted skill, gradually acquired over years of instruction and practice (Scarborough's Reading Rope 2001). Skilled readers display fluent execution and coordination of word recognition and text comprehension. Language comprehension becomes increasingly strategic as readers acquire more skills and word recognition becomes increasingly automatic. As explained by the Simple View of Reading, learning to read requires two overarching abilities – correctly identifying words (decoding) and understanding their meaning (comprehension). Acquisition of these two broad abilities requires the development of more specific skills. An extensive body of research on reading instruction shows that there are five essential skills for reading and that a high quality literacy program should include all five components. These five components need to be explicitly taught, in addition to providing a strong foundation in oral language and a knowledge-rich curriculum.

Five essential skills for reading:

1. **Phonemic Awareness:** The ability to identify and manipulate the distinct individual sounds in spoken words
2. **Phonics:** The ability to decode words using knowledge of letter-sound relationships
3. **Fluency:** Reading with accuracy, speed and expression.
4. **Vocabulary:** Knowing the meaning of a wide variety of words and the structure of written language
5. **Comprehension:** Understanding the meaning and intent of the text

Recommended reading:

1. The Independent Review of the Teaching of Early Reading (Rose, 2006)
2. Ending the Reading Wars: Reading Acquisition From Novice to Expert (Castles, Rastle, & Nation, 2018).
3. Read about it: Scientific evidence for effective teaching of reading (Hempenstall & Buckingham, 2016).
4. Reading for Life (Stone, 2018)



PHONEMIC AWARENESS: THEORY

Phonological Awareness

Phonological awareness is the sensitivity to the sounds and sound patterns of language. It is the ability to perceive and manipulate the following word parts (Stone, 2018):

- Syllables (phonological sensitivity)
- Onsets (phonological sensitivity)
- Rimes (phonological sensitivity)
- Phonemes (phonemic awareness)

Phonemes are the smallest discernible unit of sound in speech, and phonemic awareness is the ability to hear and identify those individual sounds in spoken words. Beginning readers must develop an understanding that spoken words are composed of individual and distinguishable sounds, rather than perceiving each word as a single sound stream. Students need to be able to combine individual phonemes to construct a spoken word, like s-i-t and when given a spoken word, break it down into its constituent phonemes. (Five from Five)

The tasks associated with early phonological awareness (phonological sensitivity tasks), while serving as “red flags” or indicators of potential reading problems, are only moderately associated with early reading and spelling. Learning to be better at them is not necessarily going to lead to proficiency in what really counts. It is **phonemic awareness** – specifically, the ability to say the individual phonemes in words, to pull them apart, and to put them together – that enables kids to read and spell in an alphabetic writing system like English (Moates, 2020).

Good phonemic awareness makes it easier for beginning readers to understand that written words are composed of graphemes (printed letters and letter combinations) that correspond to phonemes - a concept called the ‘alphabetic principle’.

Recommended reading:

1. Reading for Life (Stone, 2018)
2. Speech to Print, Language Essentials to Teachers, (Moats, 2020)
3. FivefromFive.com.au

PHONICS: THEORY

Phonics:

Phonics refers to the relationship between the 26 letters of the English alphabet, and the 44 speech sounds they represent. The sounds of the English language are known as phonemes and the letters and letter combinations are known as graphemes. Grapheme-phoneme correspondences (GPCs) are represented by approximately 250 different spellings (Moats, 2010). Beginning readers need to be explicitly taught how our speech sounds map to the different spellings or GPC's in a *logical* and *sequential* order. One a set of these have been explicitly taught (e.g. SATIM), students should be provided with a number of explicit learning opportunities to decode (read) and encode (spell) using these graphemes (five from five). Although it is letter-sounds that directly relate to the skill of reading, letter-names are still an important concept to teach so students have the language to describe which letters make a grapheme (e.g. the S and the H spell the /sh/ sound in this word). Letter-naming ability is also a predictor of later reading success (National Early Literacy Panel, 2010).

High Frequency Words:

The concept of 'sight words' is often misunderstood in education. In effective readers, words aren't learnt by memorising words as whole units; they are decoded and through multiple decoding repetitions they are mapped as a Mental Graphemic Representation (MGR) through a process called orthographic mapping (Ehri, 2014). Often when educators are talking about 'sight words', they are actually referring to high frequency words. In common classroom practices, lists of high frequency words are practised in class and sent home for students to memorise as whole units. This strategy is not aligned with the research as it doesn't lend itself to students transferring decoding skills to new words through self-teaching (Self Teaching Hypothesis). Many evidence-based phonic sequences still systematically introduce 'tricky words'. Tricky words can be termed as such for a few main reasons

1. The graphemes haven't been introduced to students yet through the sequence. For example, the word 'he' may be introduced before the students are explicitly taught the different spellings that make the long /ee/ sound.
2. The word contains some irregular spelling due to an etymological reason, and this may be a complex concept for students to grasp when first learning the phonics code. For example, the word 'two'. This is an irregular word, as we don't pronounce the /w/ sound, like we do in the cognates 'twin', 'twelve', 'twenty' (notice these words are all related to the word two).
3. Another reason a word may be deemed as tricky is that it is a homophone. Homophones sound the same, but they have different meanings and spellings.

In early reading instruction, there is a need to introduce a handful of high frequency words (e.g. I, a, said) because students haven't yet learnt the specific grapheme-phoneme representations to decode these words independently. However, these words can still be explicitly taught through modelling the decoding process, linking to other words containing the same grapheme (e.g. my, by, fly) and/or linking to the word's cognates (words that have common etymological origin).

Recommended reading:

1. Reading for Life (Stone, 2018)
2. Speech to Print, Language Essentials to Teachers, (Moats, 2020)

PHONEMIC AWARENESS & PHONICS: PRACTICE

Literacy Daily Review (Kindergarten—Year 6)

Literacy Daily Reviews revise:

- Phonemic awareness
- Phoneme-Grapheme correspondences
- Morphology & spelling patterns
- Decoding & encoding
- HFWs
- Fluency
- Vocabulary

Heggerty (Kindergarten only)

Heggerty is a highly structured and systematic direct instruction program focused on phonemic awareness.

Serpentine PS Phonics, Morphology and HFW Sequence (Pre-Primary – Year 2)

The Serpentine PS Phonics, Morphology and HFW Sequence is a low variance document with weekly targets. In Kindergarten, students begin to learn single grapheme letter-sounds. In Pre-Primary to Year 2, this progresses to a range of digraphs, trigraphs, quadgraphs, spelling rules, positional frequency patterns and morphographs.

Phonics: Lesson overview, following the Serpentine PS Phonics, Morphology and HFW Sequence:

- Explicitly teach Grapheme-Phoneme Correspondences/ Morphograph
- Decoding with target GPCs
- Encoding (Word Building Flip Chart)
- High Frequency word – using decoding and heart word method (identifying tricky elements of the word). Explain irregular spelling based on etymology where appropriate (as per Serpentine PS Phonics, Morphology and HFW Sequence)
- Sentence level reading
- Sentence level writing (dictation)

Phonics International Alphabetic Code Chart

In all classrooms in Years 1-6, the Phonics International Alphabetic Code Chart will need to be displayed.

READING FLUENCY: THEORY

The National Literacy Learning Progression in the Australian Curriculum described fluency as:

“how a student becomes increasingly faster, smoother, more accurate and expressive in their reading aloud of progressively complex print texts. At higher levels of the progression, students demonstrate comprehension of a text through confident use of intonation, pausing, accuracy and pace” (Australian Curriculum & Assessment Reporting Authority).

Text or passage reading fluency is defined by having three components:

- Accuracy
- Rate and
- Expression (or prosody)

It is important to note that we cannot target prosody in emergent readers, until we have sufficient accuracy and rate. Sounding out and ‘robotic reading’ are signs that students are practising their decoding skills, which will in turn result in more fluently executed reading. Children who read very slowly are devoting most of their cognitive attention to the subskills of decoding and word recognition. This places such a load on their working memory, that they have no cognitive capacity remaining to attend to what the text actually means (Konza, 2010) . A reading rate of at least 90–100 words per minute is required for reading comprehension (Armbruster et al. 2001, p.29), a rate that usually develops by the end of Year 2 for simple text.

The relationship between fluency and reading comprehension has been established in multiple studies. This is a two-way relationship: when children read more fluently, they understand what they read better, and when children understand what they are reading they read with more prosody and expression. However, fluency has a stronger effect on comprehension than vice versa (Five from Five).

Evidence-based strategies to improve fluency include: repeated reading, choral reading, echo reading, and paired-partner reading.

Recommended reading:

1. Research into Practice: Understanding the Reading Process (Konza, 2010)
2. [ReadingRockets.org/teaching/reading-basics/fluency](https://www.readingrockets.org/teaching/reading-basics/fluency)
3. www.lidaustralia.org/reading/fluency/
4. Fivefromfive.com.au

READING FLUENCY: PRACTICE

Daily fluency routine:

Whole class:

- Teacher models fluent reading of the passage/text
- Whole class choral reading (students read aloud in unison as whole class) and/or
- Whole class echo reading (having students read aloud each sentence after teacher reads it).

Paired-partner reading (repeated readings over four days a week):

- Students are paired (this pairing remains similar over the term to ensure it's a tight routine every day). Each partner has a label (Partner A, Partner B) and sits in the same spot each day.
- Partner A reads to Partner B for 3 minutes. While Partner A is reading, Partner B must be tracking along on their own copy of the text. If they read the text before the 3 minutes is over, they read it again.
- Partner B then reads to Partner A for 3 minutes.
- While the students are reading, the teacher is listening to specific students.
- The teacher must announce to the class when the time is up for each partner, in order to stick to the tightly controlled routine each day.

Text considerations:

Phonic complexity: for students still developing their decoding fluency, the text should be decodable. Differentiate the paired fluency routine by having different students on different decodable reader levels. Within a pair, each student needs to be on the same text.

Complexity of vocabulary, grammar and sentence structure: texts with complex grammar and vocabulary may not be suitable for fluency practice. These texts are best used in comprehension lessons.

Dialogue: text with lots of dialogue often provide a lot more opportunities for expressive reading.

Length: texts should be between 50-200 words, but may be less than this for emergent readers (on decodable readers).

Text variation: use an assortment of texts for fluent decoders, including poems, plays, short stories and non-fiction articles.

READING FLUENCY: text selection

What texts should I use for paired reading fluency in F-2

Phonic Books placement test

Are students fluent decoders based on Phonic Book placement test?

NO

Decodable readers based on Phonic Book placement testing

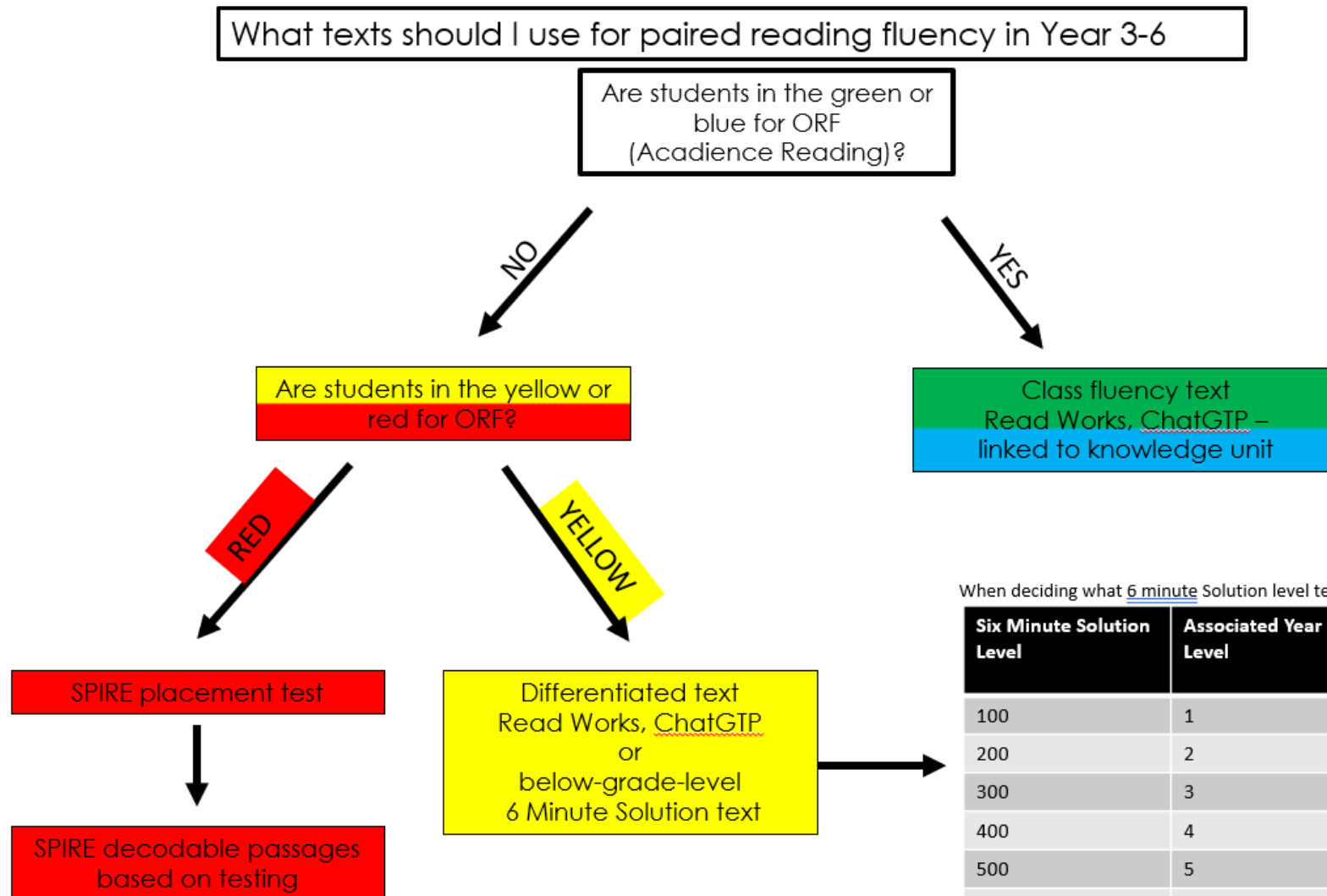
YES

Authentic text or above-grade-level 6 Minute Solution text

When deciding what 6 minute Solution level text to use- use this as a guide:

| Six Minute Solution Level | Associated Year Level | Average Acadience ORF for end of Year Level |
|---------------------------|-----------------------|---|
| 100 | 1 | 47 |
| 200 | 2 | 87 |
| 300 | 3 | 100 |
| 400 | 4 | 115 |
| 500 | 5 | 130 |
| 600 | 6 | 120 (decreases as texts get harder) |

READING FLUENCY: text selection



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| 100 | 1 | 47 |
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VOCABULARY: THEORY

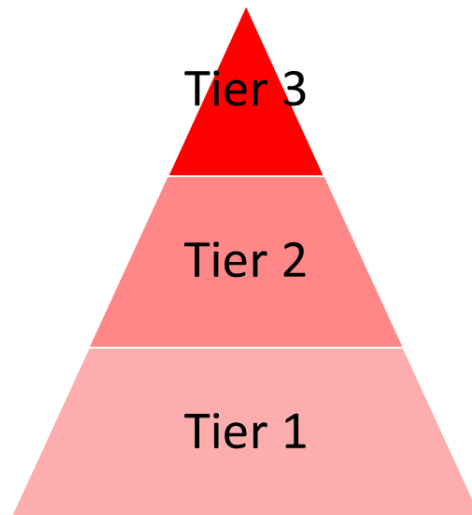
Explicit vocabulary instruction is an essential component of developing the language and literacy skills necessary to succeed in school. A child's vocabulary growth is directly linked to his or her overall school achievement. The more words a child knows, the more information the child has access to. (Beck, McKeown, Kucan, 2002).

Semantic mapping (the pairing of sound with meaning) happens via what is called fast and slow mapping (E McLean, 2020):

- Fast mapping: when students first hear a new word, they store its phonological form and begin to map semantic features to that form.
- Slow mapping: students refine the phonological, semantic and orthographic representation of the word and they encounter it in various contexts. It is a deeper understanding of the word which occurs over an extended period.

Students require:

- Multiple exposures to the orthographic representation
- Multiple exposures to the word in a variety of sentence types (varying syntax)
- Multiple exposures to the word's diverse morphology (i.e. to understand how the word can be modified and to what effect)



Tier 3 words: Low-frequency words that are limited to a specific 'domain'. They often pertain to a specific content area. These words are best learnt within the context of the lesson or subject matter. Examples: atom, molecule, metamorphic, sedimentary, continent.

Tier 2 words: High-utility words that occur across contexts. They are used by mature language users and are more common in writing than in everyday speech. They are important for students to enhance comprehension texts. Examples: endure, despair, fortuitous

Tier 1 words: Words we use everyday in our speech. These words are typically learnt through conversation. Examples: come, see, happy, table

At Serpentine PS, we explicitly teach and revise tier 2 words, as part of our knowledge-based reading model.

Recommended reading:

1. Bringing Words to Life– Robust Vocabulary Instruction (Beck, McKeown, Kucan, 2002).
2. Robust Comprehension Instruction with Questioning the Author (Beck, McKeown, Sandora, 2021)
3. How to teach vocabulary for reading comprehension (eminamclean.com)

VOCABULARY: PRACTICE

Explicit instruction of tier two vocabulary

Tier two vocabulary should be selected from texts used in the Knowledge Reading Model. Explicit vocabulary instruction is undertaken every day for four days as part of the Knowledge-based reading model, with the fifth day being review. A format should include the following parts and should use multiple participation tactics:

- Students chorus the word together
- Students say the sounds, letters and syllables of the word
- Students chorus the meaning (Use Collins COBUILD for child-friendly definitions)
- Students chorus an example sentence
- Students identify morphemes
- Provide examples of the words in different sentence contexts with different morphological structures
- Provide students with examples and non-examples
- Provide high frequency encounters over time. Learners need six meaningful exposures to a new word during the initial lesson phase and a further 30 other exposures to remember the word

Suggested follow-up tasks:

- Use pictures and sentence stems to support the students using the word appropriately in a sentence.
- Justify answers by creating compound and complex sentences (learning the word requires exposure, repetition, contextualisation and authentic reasons to use the word.)
- Pick two words to put into a sentence (words with pictures). Try to choose pictures that demonstrate the word.

The Serpentine Vocabulary templates (PowerPoints) must be used for explicit vocabulary lessons.

The image displays a series of six PowerPoint slides for the word "envy".

- Slide 1:** Shows the word "envy" with four dots below it.
- Slide 2:** Provides the definition: "a feeling of wanting what someone else has." and includes two images: one of a woman looking at another woman's necklace, and one of a boy looking at a dog.
- Slide 3:** Titled "Example or Non-Example?", it shows an image of two children with a dog.
- Slide 4:** Titled "sentences:", it lists three sentences: "After coming second in the swimming race, Zach couldn't help but feel envy towards the winner.", "Although I knew it was wrong, I felt envy towards my sister when she got so many birthday presents.", and "I could see the couple living next door had a feeling of envy when we got a new pool." It also includes four small images labeled A, B, C, and D.
- Slide 5:** Lists three multiple-choice options: "A When Emily's newborn brother was born, she felt envy towards him because of all the attention he was getting.", "B On my birthday, my family brought me a new bike and they were so envy for me.", and "C The envy dog loved its new chew toy."
- Slide 6:** Shows the morphological breakdown "envy" into "en/vy", a diagram showing "en" as "from Old French envyer" and "vy" as "to be envious of", and a definition: "Noun a feeling of wanting what someone else has" with synonyms: "jealousy, resentment".

COMPREHENSION: THEORY

Comprehension is as much an outcome as it is an area to directly target in instruction. That is, it is the result of a student's phonemic proficiency & decoding fluency, vocabulary, understanding of language structures, and background knowledge.

The key reading comprehension strategies, as described by Oakhill, Cain, Elbro, 2015, are:

- Build vocabulary and background knowledge
- Knowledge of sentence structure and how to make connections between sentences and paragraphs (local and global cohesion)
- Knowledge of text structure and text types (genres)
- Inferencing skills
- Self-monitoring of comprehension / questioning
- Summarisation

In line with the Simple View of Reading & The Reading Rope model, comprehension is largely targeted through spoken language for emergent readers. Oral Reading Fluency rates of less than 90 words per minute significantly impact reading comprehension. Once a child is a fluent decoder, reading comprehension becomes largely dependant on their background knowledge.

“We need to see the reading comprehension problem for what it primarily is—a knowledge problem. There is no way around the need for children to gain broad general knowledge in order to gain broad general proficiency in reading” *E. D. Hirsch, Jr., The Knowledge Deficit (2006)*

Advantaged students who arrive in the classroom with background knowledge and vocabulary will understand what a text or teacher is saying and will therefore learn more. Disadvantaged students who lack such prior knowledge will fail to understand and thus fall even further behind, relative to their fellow students. Only by specifying the knowledge that all children should share can we guarantee equal access to that knowledge (ED Hirsch, 2006).

There is also evidence that writing about material read improves students' comprehension of it; that teaching students how to write improves their reading comprehension, reading fluency, and word reading; and that increasing how much students write enhances their reading comprehension (Graham, Hebert, 2011). In this way, reading and writing instruction must be linked.

Recommended reading:

1. The Knowledge Gap, Wexler (2019)
2. Understanding Reading Comprehension: A Handbook (Oakhill, Cain & Elbro, 2014)
3. Robust Comprehension Instruction with Questioning the Author (Beck, McKeown, Sandora, 2021)
4. Reading Reconsidered (Lemov, 2016)
5. The Reading Comprehension Blueprint (Hennessy, 2021)

COMPREHENSION: PRACTICE

A Knowledge-Based Reading Model

Comprehension lessons are organised into knowledge units and novel studies. Some knowledge units are adapted from Core Knowledge, and others are Serpentine-Greenfields PS created units. Units are mapped out across the year, with two unit completed per term. All knowledge units/novel studies are created using the consistent **Junior or Senior Knowledge Template** (Serpentine-Greenfields PS collaborative knowledge project). Each unit has a post-unit assessment which must be completed prior to commencing next unit.

Novel studies are also frequently planned across Years 3-6, with complementary texts chosen to develop background knowledge to allow for a deeper understanding of the text. Regardless if it is a non-fiction knowledge unit, Core Knowledge unit, or novel study, there is a similar lesson overview followed:

| Knowledge lesson overview |
|---|
| <p>Before reading:</p> <ul style="list-style-type: none"> Explicit vocabulary instruction |
| <p>During reading:</p> <ul style="list-style-type: none"> Lesson objective Activate Prior Knowledge/ Need to know information Read text with pause-points -Questioning the Author (QtA). Pause points, questions and queries need to be pre-planned. Frequent CFU points (pair share, non-volunteer responses) |
| <p>After reading:</p> <ul style="list-style-type: none"> The Big Question– class discussion Writing for Comprehension: The Writing Revolution strategies, Read-Write-Discuss cycles, ACE strategy. |

APK  Read Passage
Discuss and Read Question

In today's fairy tale, and in another fairy tale you will be listening to later, you will hear about spinning and spinning wheels. Spinning wheels are tools used to spin thread and yarn.

People use parts of certain plants, such as cotton and flax, wool from animals like sheep and alpacas. Pieces of thread are made by spinning—or tightly twisting—the plant fibres, wool, or hair around and around until they form a long piece. Most thread is made by machines in factories today, but some people still use spinning wheels to make their own thread.



Teacher to point out the following:

- The spindle, the stick-like tool on the spinning wheel where the thread goes after it is spun.



Teacher read to students.



What do some people use to make thread?



Most thread is made in factories but _____

Most thread is made in factories but some people still use a spinning wheel.

COMPREHENSION: PRACTICE

Questioning the Author (QtA):

Question the Author (QtA) is a comprehension technique that asks students to pose queries *while* reading a given text, helping to solidify their knowledge and challenge their understanding, rather than *after* reading. QtA engages students with the text to create deeper meaning by allowing students to critique the authors' writing.

QtA procedure:

1. Pre-plan pause points– these are points in the text where you think students need to stop, think, and gain a deeper understanding of the text.
2. Create questions/queries that can be asked of the students at each pause point to encourage Higher Order Thinking. Examples of appropriate queries are below.

Initiating Queries (get a discussion started):

Does this make sense to you?

What do you think the author is attempting to say here?

Follow-up Queries:

Why do you think the author chose to use this phrase or wording in this specific spot?

Did the author explain this clearly?

Did the author tell us why?

Why do you think the author tells us this now?

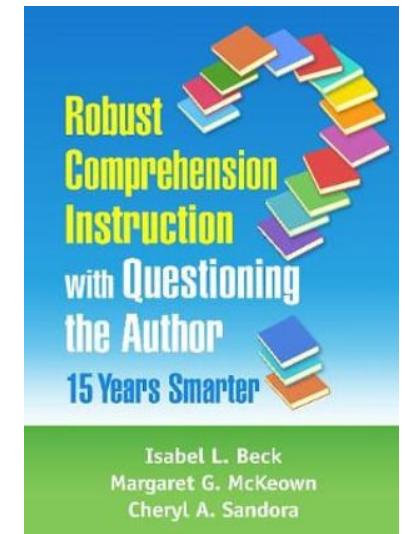
Narrative Queries (help students think about character and craft):

How do things look for this character now?

How has the author let you know that something has changed?

How has the author settled this for us?

Once the teacher preparation is complete, display the chosen passage to students, along with one or two of the questions/queries that were created. Model for the students how one should read the passage and think through the queries (you may wish to use the "Think Aloud" strategy). Share some immediate thoughts or ideas about the passage and queries with students.



COMPREHENSION: PRACTICE

QtA planning process

1. **Identify major understandings** - these are the key inferences, ideas and messages that are needed to understand the author's point.



2. **Anticipate potential obstacles** - anticipate problematic portions of a text, such as unfamiliar words, unfamiliar content, transitions between paragraphs that don't make connections clear, inferences that may be hard to draw, and inferences where specific background knowledge may be needed.



3. **Segment the text**- when segmenting a text, or identifying pause points, it is the major understandings and potential obstacles that drive decisions about where to stop reading and initiate discussions- not paragraph breaks or where the text ends on a page. Segmenting should occur after reading enough text to provide a grist for discussion.



4. **Develop queries and follow-up queries**- the teacher plans queries at each pause point to initiate discussion. Queries are open-ended questions to invite student reaction to the text. Follow-up queries are then designed to draw more information/discussion from the original query.



COMPREHENSION: PRACTICE

Habits of Discussion (Teach Like a Champion):

By incorporating these habits of discussion, educators can create an inclusive and engaging learning environment where students are encouraged to think critically, articulate their thoughts, and learn from one another (Lemov, 2021)

- ⇒ **Frame the Discussion:** Clearly define the topic or question for discussion to provide focus and direction. Setting clear objectives helps participants stay on track.
- ⇒ **Frequent, Cold Call:** Encourage active participation by randomly calling on students without prior warning. This keeps everyone engaged and prepared to contribute.
- ⇒ **Accountable Talk:** Encourage students to support their arguments with evidence and reasoning. This helps develop critical thinking skills and fosters a respectful environment for discussing differing opinions.
- ⇒ **Wait Time:** Allow students sufficient time to think and formulate their responses. Silence can be powerful in encouraging thoughtful contributions.
- ⇒ **Turn and Talk:** Provide opportunities for students to discuss topics in pairs or small groups before sharing their thoughts with the whole class. This promotes active engagement and helps shy or hesitant students gain confidence.
- ⇒ **Stacking:** Build on students' responses to create a coherent discussion. Acknowledge and connect contributions to maintain the flow of the conversation. Teachers can introduce and post a set of sentence starters to help students connect their comments, "I understand why you'd say that, but..." "I want to build on what you said..." "I'd like to build on ___'s idea..."
- ⇒ **Whole Group Participation:** Ensure that every student has a chance to participate in the discussion. Use techniques like popcorn-style responses to involve all students.
- ⇒ **Summarising and Synthesising:** Encourage students to verbally summarise key points of the discussion. This helps consolidate learning and reinforces important concepts.
- ⇒ **Account for Everyone:** Be aware of each student's participation and provide opportunities for quieter students to contribute. Balance the discussion to include diverse perspectives.
- ⇒ **Debrief:** After the discussion, reflect on the key takeaways and learning points. This helps reinforce learning and provides closure to the discussion.

COMPREHENSION: PRACTICE

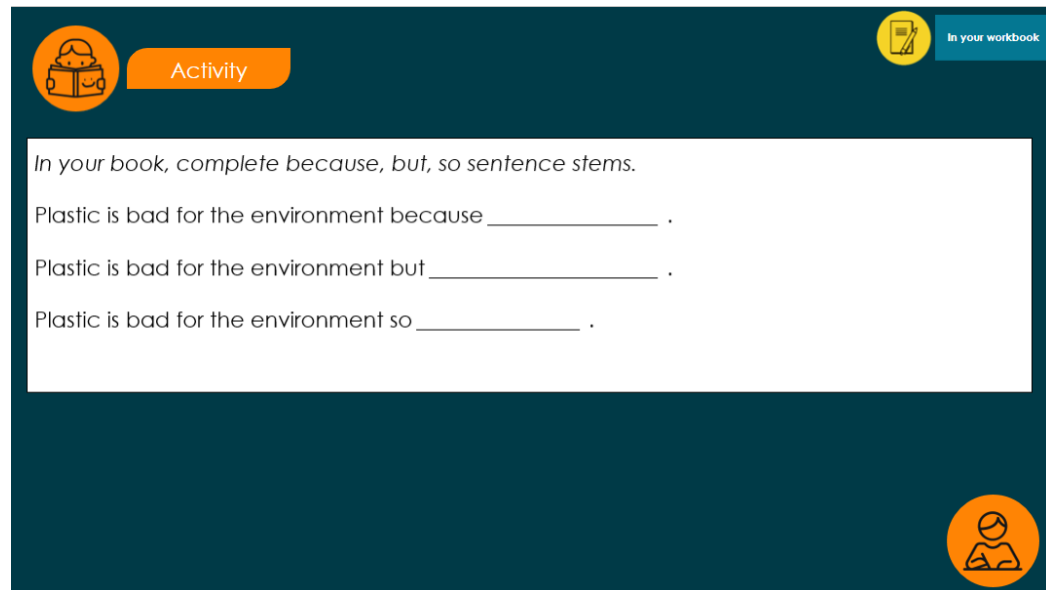
The Writing Revolution strategies:

The Writing Revolution sentence-level strategies are embedded in the knowledge-based comprehension model. Once these strategies are explicitly taught as part of the Serpentine PS Grammar & Punctuation sequence, students can apply them within comprehension lessons. When using these strategies within comprehension lessons, the Serpentine TWR sentence templates should be used.

- Fragments & Sentences
- Scrambled Sentences
- Sentence Types
- Developing Questions
- Basic Conjunctions
- Subordinating Conjunctions
- Appositives
- Sentence Combining
- Sentence Expansion

In years 3-6, students will also apply the three summarising techniques within comprehension lessons.

- Sentence summary
- Single Paragraph Outline
- Combined Outline (Year 4-6)



The image shows a worksheet titled 'Activity' with a dark blue background. At the top left is an icon of a book and a pencil. At the top right is a yellow circle with a pencil icon and the text 'In your workbook'. The main content area is white and contains the following text:

In your book, complete because, but, so sentence stems.

Plastic is bad for the environment because _____ .

Plastic is bad for the environment but _____ .

Plastic is bad for the environment so _____ .

At the bottom right of the worksheet is an icon of a person sitting at a desk.

COMPREHENSION: PRACTICE

Read-Write-Discuss-Write Cycles (Years 3-6):

In Years 3-6, Read-Write-Discuss-Revise cycles are incorporated into comprehension lessons. The RWDR procedure:

1. Teacher poses a question about the text (one that requires an extended response or an opinion).
2. The timer is set for 2-5 minutes, and students answer the question. This can then be followed by an opportunity to pair-share.
3. A class discussion is facilitated by the teacher—calling upon non-volunteers. As this is happening, students can write notes from the discussion.
4. The timer is set again, and students answer the same question—this time, incorporating ideas from the class discussion.

The concept of the RWDW cycles is to incorporate many opportunities for low-stakes writing based on material the students have read. Students should be encouraged to write their own opinions and ideas. This is then scaffolded through the class discussion so they can build on their response.

ACE strategy (Years 3-6):

Students are given a question about the text that requires them to state their opinion and support it with evidence from the text.

Answer the Question:

- Make sure that you completely answer the question
- Use key words from the question in your response

Cite evidence from the text to support your answer

- Use readings, graphs, or illustrations to support, prove or explain

Expand; extend; explain your answer

- Connection between the information cited and the answer



Read-Write-Discuss-Revise cycle

Everybody writes #1: Insert question here.

Notes from class discussion:

Everybody writes #2: Insert the same question here.
This time, include ideas from the class discussion.

Adapted from Teach Like a Champion

Serpentine RWDR cycle template

KNOWLEDGE UNIT EXAMPLE

| Year Group | 1 | Unit Number | 1 | Unit Focus | Language Arts |
|------------|--|--|---|-------------|---|
| Topic | Fables and Stories (Core Knowledge) | | | | |
| Resources | Core Knowledge Anthology Read Aloud Book (bound) | | | | |
| Lesson # | Title | Learning Objective | Big Question | Vocab | Embedded Writing Task |
| 1 | Domain introduction | I can explain that fables are made to teach a lesson. | Why do we tell fables? | prank | Complete a simple sentence (who + what doing) by adding the who. |
| 2 | The Boy Who Cried Wolf | I can describe the moral in the 'Boy Who Cried Wolf'. | What is the moral of 'The Boy Who Cried Wolf'? | startled | Complete a simple sentence (who + what doing) by adding the what doing. |
| 3 | The Maid and the Milk Pail | I can describe the moral in the 'The Maid and the Milk Pail'. | What is the moral of 'The Maid and the Milk Pail'? | balanced | Because sentence stem |
| 4 | The Goose and the Golden Eggs | I can describe the moral in the 'Goose and the Golden Eggs'. | What is the moral of 'The Goose and the Golden Eggs'? | greedy | Add an adjective to describe the noun |
| 5 | The Dog in the Manger | I can describe the moral in the 'Dog in the Manger'. | What is the moral of 'The Dog in the Manger'? | budge | Sentence expansion |
| 6 | The Wolf in Sheep's Clothing | I can describe the moral in 'The Wolf in Sheep's Clothing'. | What is the moral of 'The Wolf in Sheep's Clothing'? | disguise | Sentence expansion |
| 7 | The Fox and the Grapes | I can describe the moral in 'The Fox and the Grapes'. | What is the moral of 'The Fox and the Grapes'. | lunged | Sentence expansion |
| 8 | Pause Point | | | | |
| 9 | The Little Half Chick (Medio Pollito) Part 1 | I can describe the human actions in the 'Little Half Chick' that water can do. | Why can non-human things do human actions in fiction stories? | abandoned | Because sentence stems |
| 10 | The Little Half Chick (Medio Pollito) Part 2 | I can describe the moral in 'The Little Half Chick'. | What is the moral of 'The Little Half Chick'? | stubborn | Expand a sentence with an adjective |
| 11 | The Crowded Noisy House Part 1 | I can describe the moral in 'The Crowded Noisy House'. | What is the moral in 'The Crowded Noisy House'? | pondered | Edit sentences for boundary punctuation |
| 12 | The Crowded Noisy Part 2 | I can describe the moral in 'The Crowded Noisy House'. | What is the moral in 'The Crowded Noisy House'? | stunned | Because sentence stems |
| 13 | The Tale of Peter Rabbit Part 1 | I can describe the moral in 'The Tale of Peter Rabbit'. | What is the moral in 'The Tale of Peter Rabbit'? | mischief | Sentence expansion |
| 14 | The Tale of Peter Rabbit Part 2 | | | sobs | Sentence expansion |
| 15 | All Tales Are Anansi's Part 1 | I can describe the moral in 'All Tales are Anansi's'. | What is the moral in 'All Tales are Anansi's'? | quarrelling | Match adjectives to noun |
| 16 | All Tales Are Anansi's Part 2 | | | satisfied | Expand a sentence with an adjective |
| 17 | Assessment | | | | |

SPELLING: THEORY

Research has shown that learning to spell and learning to read rely on much of the same underlying knowledge—such as the relationships between letters and sounds. Research also bears out a strong relationship between spelling and writing: writers who must think too hard about how to spell use up valuable cognitive resources needed for higher level aspects of composition. Poor spellers may restrict what they write to words they can spell, with inevitable loss of verbal power, or they may lose track of their thoughts when they get stuck trying to spell a word (Moates, 2005).

The spelling of words in English is more regular and pattern-based than commonly believed. According to Hanna, Hanna, Hodges, and Rudorf (1966), half of all English words can be spelled accurately on the basis of sound-symbol correspondences alone, meaning that the letters used to spell these words predictably represent their sound patterns (Moats, 2005).

The spelling of almost any word can be explained if one or more of the following five principles of English spelling is taken into account:

- 1) Words' language of origin and history of use can explain their spelling (etymology)
- 2) Words' meaning and part of speech can determine their spelling
- 3) Speech sounds are spelled with single letters and/or combinations of up to four letters (phonics)
- 4) The spelling of a given sound can vary according to its position within a word (positional frequency)
- 5) The spellings of some sounds are governed by established conventions of letter sequences and patterns (spelling rules/patterns)

Recommended reading:

1. How Spelling Supports Reading (Moats, 2005)
2. Spelling for Life (Stone, 2021)
3. Learning to read and learning to spell: Two Sides of a Coin (Ehri, 2000)

SPELLING: PRACTICE

Serpentine PS Phonics, Morphology and HFW Sequence (Pre-Primary – Year 2)

The Serpentine PS Phonics, Morphology and HFW Sequence is a low variance document with weekly targets. In Kindergarten, students begin to learn single grapheme letter-sounds. In Pre-Primary to Year 2, this progresses to a range of digraphs, trigraphs, quadgraphs, spelling rules, positional frequency patterns and morphemes. Etymology is also embedded to explain some irregular spelling.

Serpentine Morphology Sequence (Years 3-6)

This is a continuation of the Serpentine PS Phonics, Morphology and HFW Sequence from K-2. In Years 3-6, students continue to learn more prefixes and suffixes, as well as Latin, Greek and Anglo-Saxon bases/roots. Suffixing conventions/rules are reinforced using the target morphemes.

Spelling Mastery (Years 1-6)

Spelling Mastery uses a combined approach of phonemic, morphemic and whole-word strategies, to assist students in understanding the relationship between sounds, word parts and spelling patterns. Students are taught in small steps, using sufficient practice, so that they comprehend how spelling works and can become proficient writers. Spelling Mastery runs for approximately 20 minutes, four days per week.

WRITING: THEORY

The construction of an extended text is a complex process which draws upon many skills/processes. These processes can be divided into three main categories:

- Ideation– ideas they bring to the text from their established schemas
- Language structures– understanding of vocabulary, syntax (sentence structure) & morphology, and text structure
- Mechanics– handwriting, phonics and spelling knowledge, punctuation, keyboard skills

Judith Hotchman (2017) describes 6 principles of instruction:

1. Students need explicit instruction in writing, beginning in the early elementary grades.
2. Sentences are the building blocks of all writing.
3. When embedded in the content of the curriculum, writing instruction is a powerful teaching tool.
4. The content of the curriculum drives the rigor of the writing activities.
5. Grammar is best taught in the context of student writing.
6. The two most important phases of the writing process are planning and revising.

Every clause contains one **subject** and **predicate**, and every sentence contains at least one clause. The predicate expresses the action or the being and contains the verb. From Year 2 onwards, students are taught to identify the subject and predicate in various clauses/ sentences.

All sentences, no matter how complex, can be categorised into four main types:

1. Declarative sentences– statement of an idea or argument
2. Imperative sentences– gives advice or instructions or expresses a request or command
3. Interrogative sentences– asks a question and always ends with a question mark
4. Exclamatory sentences– expresses force or a strong emotion and ends with an exclamation mark.

Within these types, there are further sub-types:

1. Simple sentences: consists of one main clause. E.g. *the man walked to the shop*
2. Compound sentences: minimum of two independent clauses that are connected with the help of a coordinating conjunction (and, for, but, nor, yet, so, or) or with a semi-colon. E.g. *I ran quickly, but I missed the bus*
3. Complex sentences: made up of one main (independent) clause and one or more subordinate clauses, connected by a subordinating conjunction or relative conjunction. E.g. *My car stopped at the school building, which was red and huge.*

Recommended reading:

1. The Writing Revolution (Hotchman & Wexler, 2017)
2. Writing Matters (Van Cleave, 2015)

WRITING: PRACTICE

Writing genre sequence:

Writing genres are mapped out to each of the Knowledge Units and can be found on the Knowledge Unit Overview document. Sentence, paragraph and text level writing is taught systematically, linking to the Knowledge Unit content.

Daily edits: (Years 1-6)

The Daily Edit is completed by students between 8:30-8:45 (before the bell). The Daily Edit is a passage or sentence that students have to edit for spelling and grammar mistakes, based on the spelling and grammar focus from the previous week. For emergent readers and writers, these sentences/passages are decodable.

Serpentine Syntax & Punctuation Sequence (Pre-Primary-Year 6)

The Serpentine PS Grammar & Punctuation Sequence is a low variance document with weekly targets. Explicit grammar lessons are taught using the Serpentine PS explicit lesson framework once a week (Monday) and revised in Daily Reviews and in daily edits. The syntax targets include strategies from The Writing Revolution and Writing Matters strategies, and are embedded into learning/reading content once explicitly taught.

Formulas for Frames- Fremantle Speech Pathology (Year 1-6)

A methodology for teaching students the why and how of employing specific grammatical and literary devices within a narrative genre.

The Writing Revolution (Pre-Primary-Year 6):

Writing lessons are based on the Hochman approach (The Writing Revolution) and directly linked to the knowledge-based reading model. That is- students write using the knowledge they have learnt from comprehension lessons. Knowledge-unit overviews dictate exactly what writing skills to target and how this relates to the reading material. Specific writing techniques, genres, and literary devices are set out for every knowledge unit across the year.

LANGUAGE DEVICES: NARRATIVE

Language Devices for Narrative Texts: Grouped According to Function (Fremantle Speech Pathology, 2021)

1. Dynamic Action

- Upgraded verbs
- Adverbs of manner

2. Reflection + Planning

- Mental verbs – cognitive, emotional and sensory verbs

3. Orientation

- Adverbs of time
- Adverbs of place

4. Specificity

- Upgraded nouns
- Theme-related words

5. Imagery

- Pre modifying adjectives
- Post modifying phrases
- Similes / metaphors
- Personification
- Onomatopoeia

6. Connectivity for Establishing...

- Reason
- Consequence
- Adversity
- Time
- Condition
- Addition

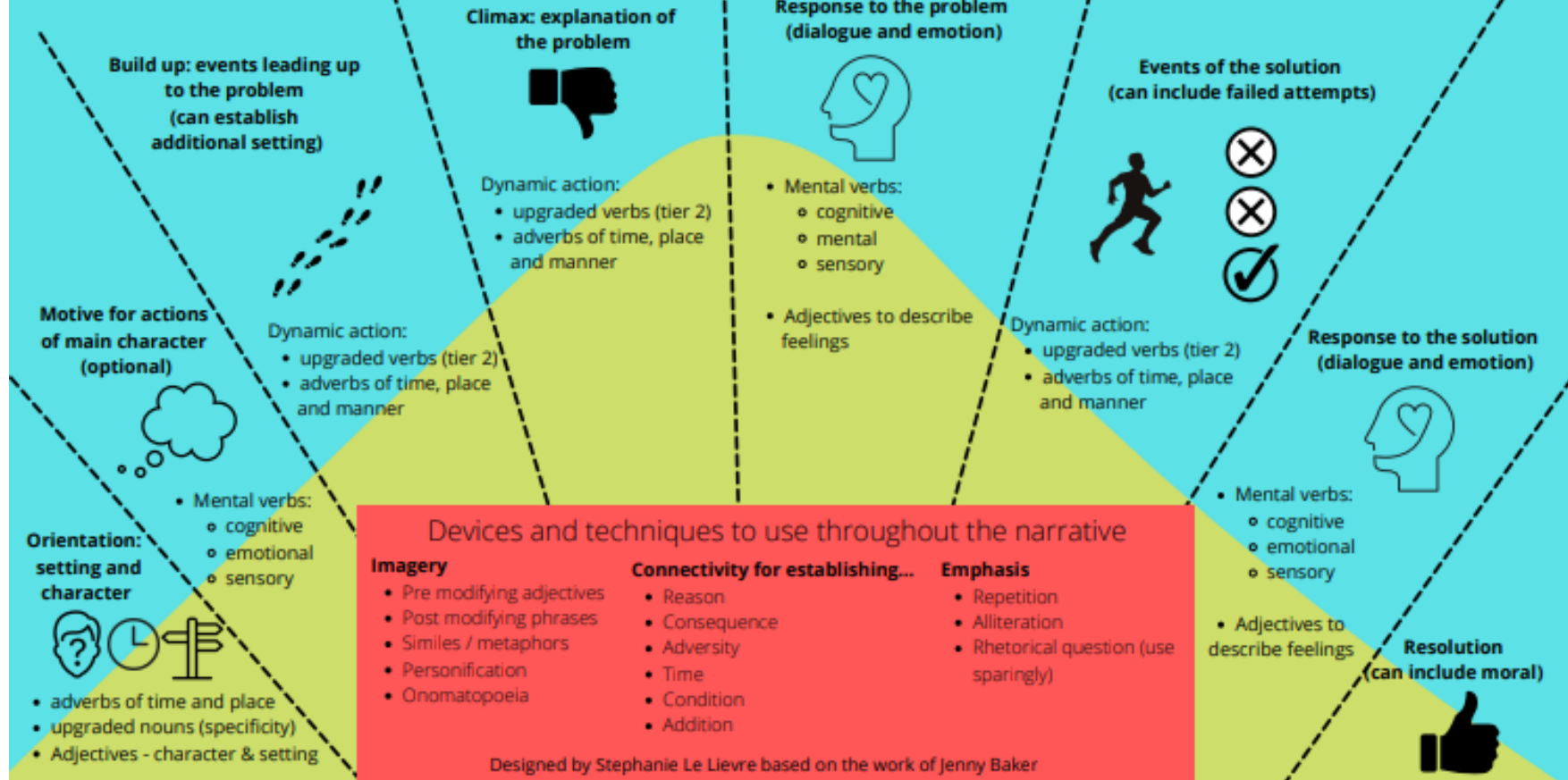
7. Emphasis

- Repetition
- Alliteration
- Rhetorical question

WRITING FRAMEWORK: NARRATIVE HILL



The Narrative Hill



WRITING FRAMEWORK: SINGLE & MULTI PARAGRAPH OUTLINES



Single-Paragraph Outline

Name: _____ Date: _____

T.S. _____

1. _____

2. _____

3. _____



Single-Paragraph Outline

Name: _____ Date: _____

T.S. _____

1. _____

2. _____

3. _____

4. _____

C.S. _____

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Years 1-2 template

Years 3-6 template

WRITING FRAMEWORK: SINGLE & MULTI PARAGRAPH OUTLINES



Multiple-Paragraph Outline (3 Paragraphs)

Name: _____ Date: _____

Topic: _____

Thesis Statement: _____

| Main Idea | Details |
|---------------------|---------|
| Introduction ¶ 1 | |
| ¶ 2 | |
| Conclusion ¶ 3 | |

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Years 2-3 template



Multiple-Paragraph Outline (5 Paragraphs)

Name: _____ Date: _____

Topic: _____

Thesis Statement: _____

| Main Idea | Details |
|---------------------|---------|
| Introduction ¶ 1 | |
| ¶ 2 | |
| ¶ 3 | |
| ¶ 4 | |
| Conclusion ¶ 5 | |

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Years 4-6 template

WRITING VISUALS

All classrooms from Year 3-6 will have these displays on their wall to refer to during explicit grammar and writing lessons.

simple sentence

I

Remember: each clause must have a subject and verb/predicate

1 Independent clause

The man ate his lunch.

Peter came first in the running race and high jump.

compound sentence

I,

for
and
nor
but
or
yet
so

I

Remember: each clause must have a subject and verb/predicate

Independent clause + FANBOYS + Independent clause
(separated with a coordinating conjunction)

comma required

*I am starving, **but** the fridge is empty!*

complex sentence

D,I

Remember: each clause must have a subject and verb/predicate

Dependent clause + Independent clause
(preceded with a subordinating conjunction)

comma required

Whenever I go for a walk, it starts to rain.

complex sentence

ID

Remember: clause must have a subject verb/pred

Independent clause + Dependent clause
(separated with a subordinating conjunction)

no comma required

It starts to rain whenever I go for a walk.

complex sentence

I
^
D

Remember: each clause must have a subject and verb/predicate

Dependent clause used to define the subject or object
(using a relative pronoun or relative adjective)

commas required for non-essential relative clauses

*Suzie, who was an avid reader, couldn't wait to read the class novel.
Suzie loved any book that included magic or adventure.*

HANDWRITING: THEORY

Handwriting is an important aspect of the Western Australian English Curriculum. Just as effortful word decoding may impair reading comprehension, laboured handwriting creates a drain on mental resources needed for higher-level aspects of writing, such as attention to content, elaboration of details, and organisation of ideas. Ten minutes of explicit handwriting per day can assist in preventing later writing problems, including difficulties with high-level composition skills. In Kindergarten to Year 1, The Peggy Lego pre-writing patterns and letter formation programme is implemented.

Here are a few specific suggestions for teaching handwriting:

1. Teach children consistent formation of letters using a continuous stroke if possible
2. Focus initially on learning the motor pattern rather than perfect legibility or size.
3. Initially, the sequence of introduction of letter forms should follow the structured synthetic phonics (SSP) program utilised in the classroom. For example, the first eight letter-sound relationships taught are s, a, t, p, i, n, m and d. Once every letter of the alphabet has been taught, appropriate letter formation should be reinforced by practising similarly shaped letters together (e.g. a, c and d).
4. For emergent writers, use letter formation rhymes to assist students in learning how to form each letter (Peggy Lego mnemonics)
5. Separate reversible letters such as b and d.
6. Use written arrow cues to help children remember how to form letters.
7. For children at beginning stages of reading and spelling, integrate handwriting instruction with instruction in phonics.
8. In teaching cursive, explicitly teach connections between letters as well as formation of single letters.
9. Aim for speed as well as legibility.

HANDWRITING: PRACTICE

Daily explicit handwriting lesson (Kindergarten– Year 2)

This is a short (10 minute) routine linked to the phonics sequence. Use of Peggy Lego prompts for letter formation, and focus on formation accuracy and high number of repetitions.

Weekly explicit handwriting lesson (Years 3-6)

This is a longer routine linked to the Targeting Handwriting NSW (Pascal Press) sequence. Explicitly teach skill and model on the board. Teacher models each component of the Targeting Handwriting page on the board, with students practicing in their books. Students not to do the whole page independently. It is fully guided 20-30 minute lesson.

Handwriting style progression:

Kindergarten—Year 1: NSW print

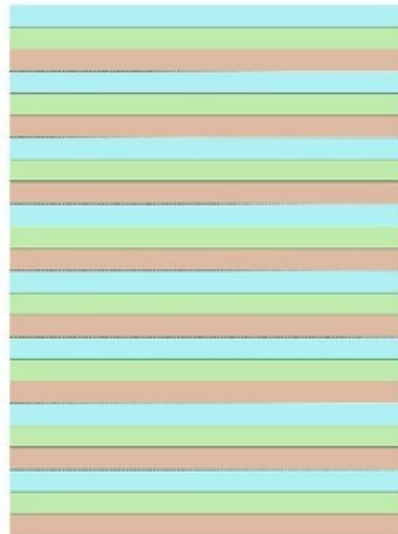
Year 2: NSW pre-cursive

Year 3: NSW cursive

Year 4: NSW cursive

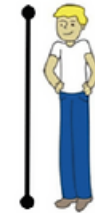
Year 5: NSW cursive speed loops

Year 6: NSW cursive speed loops



Years 1-2 write on Sky, Grass, Ground paper

TALL MAN



Starts at the top, pulls
down and stops.

JACK AND JILL



Jack and Jill went up the hill,
and down the hill.

SIDWAYS SIDWAYS



Sidways, sideways,
to the magic land.

UNDER THE GATE



Down and under the gate.

STARTS WITH A
CLICK



Starts with a click,
goes around and stops.

OVER THE GATE



Up and over the gate.

Peggy Lego Prompts (lil-peeps.com.au)



Serpentine
Primary School

MATHEMATICS

MATHEMATICS: THEORY

Explicit Instruction (fully guided instruction):

Decades of research clearly demonstrate that for novices (comprising virtually all students), direct, explicit instruction is more effective and more efficient than partial guidance. So, when teaching new content and skills to novices, teachers are more effective when they provide explicit guidance accompanied by practice and feedback, not when they require students to discover many aspects of what they must learn (Clark, Kirschner, Sweller 2012).

Young children begin to understand abstract mathematical concepts through concrete representations, and learn to apply what they know in new contexts by gradually transitioning from concrete to visual to abstract. Manipulatives – physical objects – can be useful tools for understanding mathematical problems when used in a structured, guided context. Objects used as manipulatives for counting should progress from simple and uniform to complex and varied. For a given concept, young children need to understand that symbols and abstract representations represent quantity, and these symbols should gradually replace manipulatives and concrete representations in how they think about quantity. This is called concreteness fading (Deans of Impact).

Focus on basic facts knowledge

Our memory is divided into working or short-term memory and long-term memory, with only a small amount of what is in our working memory being retained and transferred into our long term memory. Our working memory can only process a certain amount of information before some of what is in our working memory must be either transferred into our long term memory or dropped from our conscious memory. When answering a Maths question which requires multiple steps, if part of the question can be answered by drawing upon our long-term memory, then we have more cognitive capacity to complete the task. For example, if a student has a question such as $6 \times 4 (3-6 \times 24)$ and they can draw upon their long-term memory to know that 6×4 is 24, then their working memory is free to focus on the remainder of the question. At Serpentine PS, we have a large focus on developing basic facts knowledge (addition, subtraction, multiplication and division facts).

Mathematics Block

Based on this research our Mathematics Block Shedule has been arranged to consist of the following core elements:

- Mental Maths
- Concept Development (PriMe)
- Daily Review
- Assessment / Review

Recommended reading:

1. Deans of Impact: The Science of Learning & The Science of Early Learning
2. Teaching Math with Examples (*Michael Pershan, 2021*)
3. Putting Students on a Path to Learning: The Case for Fully Guided Instruction (*Clark, Kirschner, Sweller (2012)*)
4. How I wish I'd taught maths: Lessons learned from research, conversations with experts, and 12 years of mistakes (*Craig Barton 2019*)
5. Reflect, Expect, Check, Explain: Sequences and behaviour to enable mathematical thinking in the classroom (*Craig Barton 2020*)

MATHEMATICS PRACTICE: Mental Maths

Mental Maths

Think Mentals

Think Mentals is the friendly approach to quick and efficient mental computation, with explicitly taught strategies and plenty of scaffolded practice.

Structure and consistency across the week

Monday *Strategy (I Do, We Do)*

Each week begins with a new strategy. Provides a friendly explanation of the strategy (use strategy videos if available) followed by worked examples related and practice questions (on the IWB). Once you are satisfied the students have grasped the strategy call non-volunteers to self-talk the answers for questions 1 – 10 (provide feedback and remodel the strategy where necessary). If students are correctly applying the given strategy move to pair-share approach (e.g., A tell B, B tell A) for the remaining 10 questions. Mark the questions by calling on non-volunteers to self-talk the strategy.

Tuesday – Thursday *Practice (I Do, We Do, You Do)*

The focus strategy is consolidated with more practice questions. Previous strategies are reinforced with revision questions. Teacher self-talks question one and picks two non-volunteers to self-talk questions 2/3 to model the use of the weekly strategy. If correct allow the students to complete the remainder of the questions independently, if incorrect continue the process until students answers two questions correctly in a row. Mark the questions by calling on non-volunteers to self-talk the strategy for questions 4 – 10.

Friday *Assessment*

The weekly test combines focus, revision and general fluency questions. Time and record students' weekly performance on the test and enter this data into GradeXpert.

MATHEMATICS PRACTICE: Mental Maths

Ninja Facts

Ninja Facts is a daily routine whereby students practise their basic facts. There are 11 levels in total, organised by colour. The first 3 colours/levels (green, pink and orange) only contain addition and subtraction operations. These are aimed at Year One and Two students only. The remaining colours/levels include all four operations of increasing complexity.

| Level | Operations | Time limit (minutes) |
|--------|------------|----------------------|
| GREEN | + - | 2 |
| PINK | + - | 2 |
| ORANGE | + - | 2 |
| BLUE | + - x ÷ | 1 |
| YELLOW | + - x ÷ | 1 |
| PURPLE | + - x ÷ | 1 |
| RED | + - x ÷ | 1 |
| CREAM | + - x ÷ | 1 |
| SILVER | + - x ÷ | 2 |
| GOLD | + - x ÷ | 3 |
| BLACK | + - x ÷ | 4 |

Structure and consistency across the week

Mon – Thurs : Consolidation and practice

Each day has a different operation focus and alternates between written and oral response modes. Teachers should adhere to the schedule outline below:

Levels Green – Orange (Pre-Primary -2)

| Monday | Tuesday | Wednesday | Thursday | Friday |
|----------|----------|-------------|-------------|------------|
| Addition | Addition | Subtraction | Subtraction | Assessment |

Levels Blue – Black (Year 2-6)

| Monday | Tuesday | Wednesday | Thursday | Friday |
|----------|-------------|----------------|----------|------------|
| Addition | Subtraction | Multiplication | Division | Assessment |

Friday: Assessment

- Students start each year at the level they completed the previous year. If students passed some operations at higher levels (but did not achieve the level) these will need to be repassed.
- Students can only pass an individual operation on a Friday – and must attempt the operation for which they are at the lowest level.
- If a student passes a single operation within a level, but not the entire level, they receive a sticker (from their classroom teacher). Students can be on different levels for different operations and students can only pass a maximum of one operation per week.
- Students who pass all the different operations for a given level in the classroom will sit their interleaved assessment with a member of the admin team during the allocated time on Friday. To pass a level, they must score 90% on the interleaved assessment for that level within the time limit. Students who pass this assessment will be awarded their badge for this level, students scoring less than 50% on the assessment are not able to resit the test for another two weeks to allow them time to practice and consolidate their understandings.

MATHEMATICS PRACTICE: Daily Review

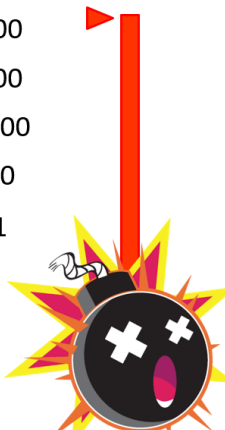
Daily reviews are an integral part of our approach to teaching mathematics and should take place every day prior to commencement of teaching any new content in order to consolidate past teaching of mathematical concepts, including:


- Number recognition
- Place Value—renaming, expanded notation, partitioning
- Basic facts knowledge
- Operations—computation
- Mathematic vocabulary
- Statistics & probability
- Measurement
- Word problems – bar model

Structure and consistency across the week

Daily reviews should take approximately 20 minutes and are done daily prior to the introduction of new content. Daily Reviews should reflect the **Serpentine PS Math Daily Review Sequence**, the **Serpentine PS Basic Facts Fluency Schedule (Year 1-6)** and incorporate interleaved practice with varying levels of difficulty (30/40/30 guide). Teachers should follow the schedule as closely as possible – allowing for alterations to suit the individual needs of the cohort.

BEAT THE BOMB

| NORMAL | 200 | CHALLENGE |
|---------------|---|-------------|
| double it 400 |  | 85% of 170 |
| double it 800 | | ÷ 5 34 |
| + 200 1000 | | +50% 51 |
| ÷ 100 10 | | ÷ 10 5.1 |
| - 9 1 | | - 4.8 0.3 |
| - 0.9 | | square it |
| 0.1 | | 0.09 |



Slide courtesy of David Morkunas (2023)

MULTIPLICATION FACTS—SETS

| | |
|----------------|---|
| Rule 1 | 0x When a number is multiplied by zero, the product is always zero. |
| Rule 2 | 1x When a number is multiplied by one, the product is always the original number |
| Rule/pattern 3 | 10x |
| Rule/pattern 4 | 11x |
| Set 1 | 2 x 2, 2 x 3, 2 x 4, 2 x 5, 2 x 6, 2 x 7 (doubles) |
| Set 2 | 2 x 8, 2 x 9, 2 x 10, 2 x 11, 2 x 12 (doubles) |
| Set 3 | 5 x 3, 5 x 4, 5 x 5, 5 x 6, 5 x 7, 5 x 8, 5 x 9 |
| Set 4 | 3 x 3, 3 x 4, 3 x 6, 3 x 7, 3 x 8, 3 x 9 |
| Set 5 | 4 x 4, 4 x 6, 4 x 7, 4 x 8, 4 x 9 |
| Set 6 | 6 x 6, 6 x 7, 6 x 8, 6 x 9 |
| Set 7 | 7 x 7, 8 x 8, 9 x 9 |
| Set 8 | 7 x 9, 8 x 9, 7 x 8 |
| Set 9 | 3 x 12, 4 x 12, 5 x 12, 6 x 12 |
| Set 10 | 7 x 12, 8 x 12, 9 x 12, 12 x 12 |

MATHEMATICS PRACTICE: Concept & skill based lessons

Structure and consistency across the week

Monday – Thursday PR1ME: Lessons

PR1ME is a highly sequenced and scaffolded Mathematics program implemented across the school from Pre-Primary to Year 6. It is based on the concrete → pictorial → abstract approach and provides multiple opportunities for problem solving (application of the explicit skill/concept taught). Teachers use PR1ME, while following the Serpentine PS Mathematics Sequence and are expected to teach lessons using the Serpentine PS Explicit Instructional model when implementing PR1ME lessons. The introduction of all new content should include the use of worked examples, in particular the use of Example-Problem Pairs.

Plough back & written reflections.

The plough back is a key and often forgotten component of maths lessons and is essential in ensure consolidation of taught content and retention of information. It is an expectation that all students engage in a comprehensive plough back at the conclusion of lessons with explicit links back to the learning intention.

Friday: Assessment/Weekly Review

| K – 2 | 3 – 6 |
|--|---|
| Students complete whole class/partner reflection at the conclusion of the lesson on their reflections on the lessons, what was learnt and key takeaways. Can be either oral or written and should be appropriate to the age and capabilities of the students. | Students keep a mathematical diary of their reflections on the lessons, what was learnt and key takeaways. This can include a variety of different formats, e.g.: <ul style="list-style-type: none">• explain to someone who has never learnt about area how to calculate the area of a rectangle. |

Teachers need to deliver a quick quiz/assessment of the content covered throughout the week. This should take no more than about 10 minutes and should be completed independently by students in test conditions. The remainder of the session should serve as a review of the content covered throughout the week in order to further consolidate student learning and should be informed by students responses on the weekly assessment. This should include a range of items such as:

- diagnostic questioning
- example-problem pairs etc.

This session should also provide an opportunity to strategically plan extension opportunities for higher achieving students.

MATHEMATICS PRACTICE: Worked Examples

Worked examples are a research-informed way to teach a procedure for solving a Mathematical problems. Compared to traditional teacher-only explanations and practice approach, this approach promotes more learning, especially for novice learners. This approach improves:

- **Procedural Knowledge:** *ability to carry out steps in order to solve a problem*
- **Conceptual knowledge:** *ability to understand the “why” behind correct problem solving approaches*

Worked-example procedure:

- 1. Anticipate student misconceptions:** at what point in the problem solving will these arise? These anticipated misconceptions will guide the prompts to students during the explanation phase of the worked example procedure.
- 2. Get ready:** Show the problem, covering up everything besides the problem itself. Ask students to begin thinking about how they'd approach the problem before revealing the worked solution.
- 3. Read:** Choral read the question, and then students read the question and worked solution to themselves. Ask students to offer a 'quiet thumb' to let us know that they finished reading.
- 4. Discuss:** Students pair-share to discuss the worked example line by line (ensure careful pairing so a stronger student is matched with a weaker student).
- 5. Explain:** prompt the students at every stage of the worked example to explain the step (cold calling non-volunteers).
- 6. You Try (problem pairs).** This is where students try it on their own using a different problem/sum (just changing surface-details while keeping the underlying ideas/problem type constant). The working out procedure for the first problem is kept on the board, and the second problem is next to it to allow students to follow the same steps. CFU through mini-whiteboards, and non-volunteers (asking for explanation).

MATHEMATICS PRACTICE: Worked Examples

In addition– these strategies should be included where appropriate (particularly for multi-step procedures).

Fading out a worked example (backwards fading): providing the first steps of the working out, and gradually fading until students have to complete all the steps on their own. This is good for moving from guided to independent practice.

Provide incorrect answer (with the incorrect worked-solution): this is when your anticipated misconceptions come into play. Ensure your incorrect worked-solution reflects these potential misconceptions. Have students explain why it is incorrect (pair-share) and scaffold responses through prompting.

Example-Problem Pairs Procedure

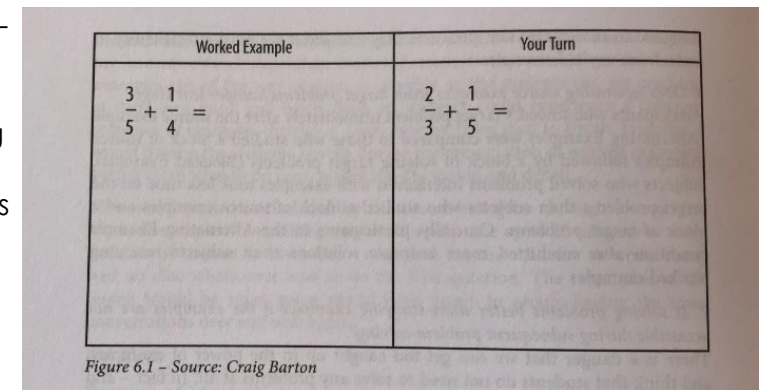
- Split the whiteboard in two (headed Worked Example and Your Turn)
- On the left, the teacher works through an example (this will usually involve using concrete or pictorial representations alongside abstract ones).
- After having explained this, children copy down this example into their books (or on to their whiteboards) so that they can refer to it later and also get practice of setting it out correctly.
- On the right is a mathematically almost identical example for pupils to try themselves immediately after.
- The teacher then circulates to help anyone who is struggling.
- If the majority of the class is stuck, the teacher stops the class to unpick the misconception, but otherwise children then go on to work through a series of very carefully chosen, structurally similar examples for independent practice.

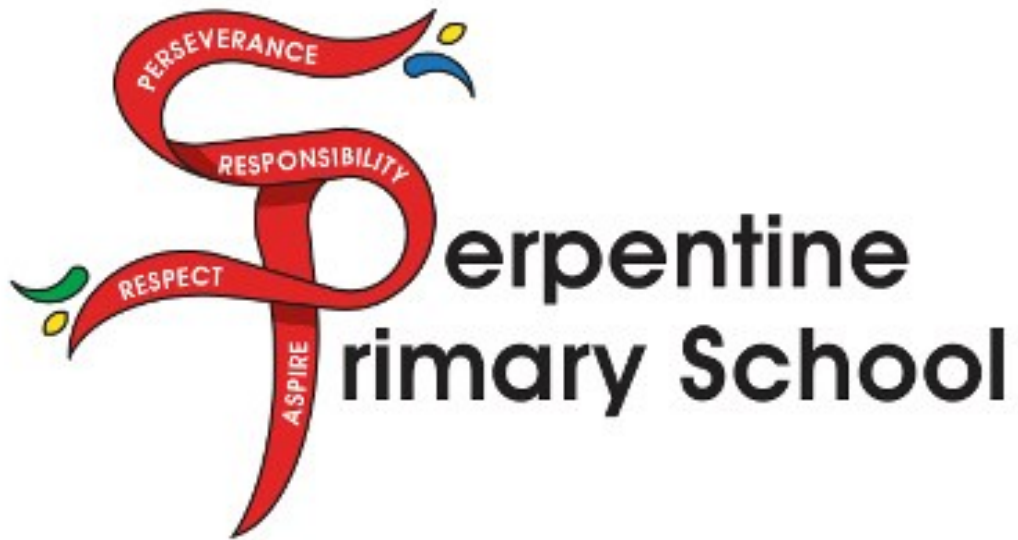
Sample Prompts

Although it is acceptable to ask procedural questions, be sure to ask students to explain and/or justify their reasoning.

1. Why is _____ not included in the answer?
2. What did [student name] _____ do as his first step?
3. What should [student name] have done to _____?
4. Would it have been OK to write _____? Why or why not?
5. Why did [student name] combine _____ and _____?
6. Why did [student name] first _____ then _____?
7. Is _____ the same expression as _____? Explain.
8. Would [student name] have gotten the same answer if he (or she) _____ first?
9. Why did [student name] change _____ to _____?
10. Explain why _____ would have been an unreasonable answer.

Teaching Math with Worked Examples (Pershan, 2021)





APPENDIX:

Instructional Routine Checklists

(in development)

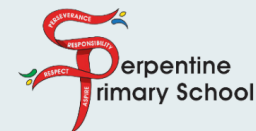
Instructional Routine Checklist (IRC): PP-2 Phonics Lesson

- Explicitly teach grapheme-phoneme correspondence/s.
- Model articulation of phoneme (if applicable).
- Teach letter formation with verbal prompts.
- Decode 10-15 words using continuous blending.
- Encode 5-10 words using phoneme or syllabic segmentation.
- Word chains (manipulation task with graphemes)-encoding.
- High frequency words: using decoding and heart word method/ etymology (as per Serpentine PS Phonics, Morphology and HFW Sequence).
- Phrase/sentence level reading.
- All steps follow I do, We Do, You Do sequence.
- Participation tactics/engagement norms and CFU throughout.



Instructional Routine Checklist (IRC): PP-2 Dictation

- Review target grapheme-phoneme correspondence/s.
- Read the sentence/passage (in full) as a class-tracking and choral reading
- Identify high frequency words in the passage.
- Cover the sentence/passage so students cannot see.
- Teacher to read the sentence/passage (one word or one phrase at a time depending on year level). Students write on lined paper.
- Teacher walking around and over-the-shoulder marking at the point of need.
- Reveal the correct sentence/passage on the board.
- Students edit their work one word at a time in red pencil (Year 1-2 only).
- Participation tactics/engagement norms and CFU throughout.



Instructional Routine Checklist (IRC): PP-2 Handwriting

- Introduce letter name to students.
- Sky write lower case letter in air with verbal prompts (I DO, WE DO)
- I DO: Model letter formation using verbal prompts. Sky, Gmass, Ground used to show letter sizing.
- WE DO: students write letter 5 times on lined paper - saying verbal prompts as a class. Teacher walking around checking formation of each student
- YOU DO: students write one line of the lower case letter on lined paper.
- REPEAT: repeat process for capital letter (from PP term 3 onwards)
- Model silly sentence on the board.
- Students copy silly sentence onto lined paper.
- Participation tactics/engagement norms and CFU throughout.



Instructional Routine Checklist (IRC): 1-6 Paired Reading Fluency

Whole Class reading (class text)

- Teacher models fluent reading of a passage/text.
- Whole class choral reading (students read aloud in unison as whole class) and/or
- Whole class echo reading (having students read aloud each sentence after teacher reads it).

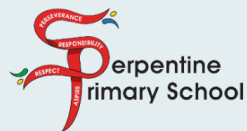
Paired-partner reading (differentiated texts)

- Students sit in pairs (pairing pre-determined).
- Partner A reads to Partner B for 3 minutes & swap.
- While one partner is reading, the other must be tracking along on their own copy of the text.
- While the students are reading, the teacher is listening to specific students.
- Teacher must announce to the class when the time begins and ends for each partner.



Instructional Routine Checklist (IRC): Spelling Mastery

- Teacher following script with pace.
- Students choral responses.
- Use of gestural cue (e.g. click for responses).
- CFU for each section with non-volunteers.
- Over-the-shoulder marking & corrections- all students.
- Students self-mark in red pencil (as whole class) after each section.
- Complete one lesson per day (as minimum).



Instructional Routine Checklist (IRC): Morphology Lesson – base/root focus

- Choral read learning criteria.
- Revise relevant affixes that will appear in the lesson.
- Teach morphology concepts and base/root meaning (concept development) with CFU.
- Choral reversal of meaning: "when I say port, you say carry. port-carry... carry-port".
- Follow I Do, We Do, You Do sequence to identify affix/es and base/s within words.
- Follow I Do, We Do, You Do sequence for word building/ word sums using word matrix.
- Provide extension opportunity: writing sentences with specific words containing the target base/root.
- Use a combination of mini-whiteboards and exercise books for tasks.
- Follow Serpentine PS lesson template (Morphology Project).
- Participation tactics/engagement norms and CFU throughout.



Instructional routine checklist (IRC): Syntax & Punctuation Lesson

- Choral read learning criteria.
- Teach syntax/punctuation concepts.
- Model examples and non-examples. Ask students why/why not an example.
- Follow I Do, We Do, You Do sequence for sentence/punctuation skill.
- Ask Hinge-Point Question/s to determine if re-teach or reclarification required (multiple choice).
- Use a combination of mini-whiteboards and exercise books for tasks.
- Follow Serpentine PS lesson template (Syntax Project).
- Participation tactics/engagement norms and CFU throughout.

Instructional routine checklist (IRC): Explicit Vocabulary

- Students chorus the word together.
- Students say the sounds, letters, syllables, and morphemes together.
- Students identify the morphemes in the word.
- Students chorus the meaning (Use Collins CO-BUILD for child-friendly definition).
- Choral read sentences containing the word (simple, compound & complex sentences).
- Examples and non-examples provided: I Do and We Do.
- Hinge point question- examples & non-examples OR which sentence makes sense (multiple choice).
- Students to put the word in a sentence (picture prompts).
- Participation tactics/engagement norms and CFU throughout.

Instructional routine checklist (IRC): Facilitated Discussion with Questioning the Author

- Pause points pre-established with queries.
- Teacher reads (Early Years) or alternating between teacher, choral, or individual student reading.
- Pause at regular intervals and pose queries: E.g. What has happened here? What do you think the author means by...? Why do you think the author included...?
- Pair-share or straight to non-volunteer.
- During pair-share, walk around the classroom and tune into responses.
- Strategically call upon students to respond (non-volunteer cold calling).
- Stacking- build upon student responses through the use of sentence starters to help students connect their comments to each other (Habits of Discussion).
- Frequent summarising- students to verbally summarise key points/parts of the text as a self-monitoring strategy.
- Participation tactics/engagement norms and CFU throughout.



Instructional routine checklist (IRC): Read Write Discuss Write cycle (Year 4-6)

- Teacher poses a question (and breaks down).
- Quick Write #1: before any discussion, students have 2-3 minutes to write notes on the question.
- Facilitate a class discussion: students can pair-share ideas, before being called upon (through Cold Calling and Habits of Discussion).
- Students note-taking during discussion to record ideas.
- Quick Write #2: Students write their final answer to the same question. They are required to build in at least two ideas that were discussed by others in the class.
- Participation tactics/engagement norms and CFU throughout.



Instructional routine checklist (IRC): Mathematics Worked Examples

- Get ready:** Show the problem. Ask students to begin thinking about how they'd approach the problem before revealing the worked solution.
- Read:** Choral read the question, and then students read the question and worked solution to themselves.
- Ask students to offer a 'quiet thumb' to let us know that they finished reading.
- Discuss:** Students pair-share to discuss the worked example line by line (stronger student matched with a weaker student).
- Explain:** prompt the students at every stage of the worked example to explain the step (cold calling non-volunteers). Scaffold responses through prompting.
- Problem pairs:** Students try problem of their own. CFU with whiteboards and non-volunteers (explanations).
- Participation tactics/engagement norms and CFU throughout.

Other strategies if appropriate:

- Backward Fading:** providing the first steps of the working out, and gradually fading until students complete all the steps on their own (guided -> independent practice)
- Incorrect worked examples** based on common misconceptions: Students explain why it is incorrect.



Instructional routine checklist (IRC): Years 2-6 phonics intervention

Students are placed on the correct remedial decodable reader series and grouped accordingly.

- Choral read the title of the text.
- Choral read the vocabulary section and discuss each word briefly as a group.
- Choral read the text as a group.
- Paired-Partner fluency read of text. Educator to listen to focus on one student per day.
- Error correction process followed for decoding: pause, prompt by drawing attention to grapheme, model.
- Dictation: dictation task using the same text (students to put text away). Refer to dictation instructional routine checklist.

