Tasmanian Handwriting Guidelines

Handwriting as part of the Australian Curriculum: English

Tasmanian Government

ACKNOWLEDGEMENTS

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INTRODUCTION

'Some may argue that keyboarding has made handwriting obsolete. However, there is a plethora of evidence suggesting we cannot simply replace handwriting with keyboarding as they serve different purposes.' (Mackenzie, 2022, p. 288)

In today's world, most people use a combination of typing and handwriting at work or school, as well as texting on their phone and/or a digital tablet (Mackenzie & Spokes, 2018a). Children who do not develop handwriting competency at school are often disadvantaged in terms of self-esteem and academic learning (Feder & Majnemer, 2007), while those who are efficient at both handwriting and keyboarding are advantaged in being able to select the tool that best suits a task (Mackenzie, 2022).

'Handwriting has been weighed in the balance and found necessary. . . the specific movements needed to form each letter create a unique 'motor memory' that not only facilitates writing but also helps children recognise letters when learning to read.' (Schwartz, 2017, ACARA)

Handwriting, spelling and computer keyboarding, are the everyday transcription processes required for success in contemporary Australian classrooms. The specific outcomes for each stage are outlined in the Australian Curriculum: English and are discussed in this resource. This guide has been developed to expand on the first of these transcription skills: Handwriting. This Handwriting Booklet is an update of an earlier iteration published in 2016 and provides the research behind the need to teach handwriting as well as providing explicit guidance for teachers.

A Whole School Approach

To maximise the opportunities for learners to develop efficient handwriting skills it is important that schools have a whole-school approach to the teaching of handwriting.

This Handwriting Booklet provides a framework of core concepts and a guide to the development of handwriting skills from the early years to the middle years of education.

Implementation of a whole-school approach to handwriting instruction needs to be co-ordinated and planned in order that Tasmanian educators become familiar with handwriting expectations from the Australian Curriculum: English. There needs to be provision of, and access to, appropriate school-based professional learning, and time allocated each year to writing and/or reviewing the whole-school approach. Opportunities for staff sharing and coaching should also be developed, in both staff meetings and collaborative team learning situations. When appropriate, the involvement of an occupational therapist in workshops could also be helpful. It is important that the preschool or school community is informed about how handwriting skills are developed and how parents or carers, in particular, can assist their child/ren. This can be achieved through articles in newsletters, class newsletters, letters to parents/carers and information to the governing council. Information for parents/carers about handwriting is available for schools to utilise for school-based companion documents in

Intended audience

This resource is designed to help all educators, including preschool educators, support learners to develop skills in handwriting. It will help them understand the reasons for adopting the Tasmanian handwriting style and the benefits it provides for learners. It outlines possible areas for consideration when implementing the style in educational settings and provides detailed information regarding handwriting technique and style.

Research

Handwriting 'should be in the foreground not only at primary school stage but throughout pupils' secondary school education' because, 'good handwriting improves pupils' level of literacy, enhances creative skills and develops their sense of identity.' (Doug, 2019, p. 177)

Considerable research has been conducted into the need to teach handwriting. Some have been education researchers, for example:

- Quemart & Lambert, 2019
- Taneri & Akduman, 2018
- Malpique et al, 2017
- Medwell & Wray, 2014).

While others have come from a range of discipline areas including:

- Occupational therapy (eg. McMaster & Roberts, 2016)
- Neuroscience (eg. Gimenez et al, 2014; Marquardt et al., 2016)
- Paediatrics and child health (eg. Planton et al, 2017; Isaacs, 2013)
- Developmental medicine and child neurology (eg. Feder & Majnemer, 2007)
- Human movement (eg. Alamargot & Morin, 2015; Sita & Taylor, 2015)
- Psychology (eg. Limpo & Graham, 2020)
- Social and behavioural sciences (eg. Alonso, 2015).

Handwriting has been positively linked to:

- Cognitive and motor skills development (Fears et al., 2018)
- Learning generally (James & Englehardt, 2012; Kiefer, Schuler, Mayer, Trumpp, Hille & Sachse, 2015)
- The learning of letters (Fears et al., 2018; Labat et al 2015)
- Phonological processing (Gimenez et al., 2014)
- Spelling (Labat et al, 2015; Virginie et a., 2013)
- Learning words (Ihara et al, 2021)
- Reading and memory (Limpo & Graham, 2019; Labat et al, 2015;)
- Composition quality (Limpo et al., 2017)
- Academic success (Fears et al., 2018)
- Level of literacy, creative skills and sense of identity (Doug, 2019, p. 177)
- Writing quality and production concurrently and reading performance across time (Malpique et.al., 2019, p. 783)
- Quality writing (Limpo & Graham, 2019; Roessingh & Nordstokke, 2019)

Poor handwriting has been shown to:

- Increase cognitive load and reduce a student's ability to focus on the content of writing. (Fears et al., 2019)
- Impact a writer's planning and text generation. (Santangelo & Graham, 2016)
- Have a negative impact on a reader
- Create a mismatch between idea generation and recording
- Impose heavy demands on working memory
- Turn writing into a painful experience. (Limpo & Graham, 2020, p. 311)

Australian Research

A study conducted by Malpique and colleagues found that handwriting automaticity in the early years predicted 'writing quality and production concurrently and across time' as well as 'reading performance across time' (Malpique et.al., 2019, p. 783). Mackenzie and Spokes have examined the expectations of students entering Year 7 (Mackenzie & Spokes, 2018b) and discovered that:

- Year 7 students are expected to use both handwriting and keyboarding for writing in all subjects.

- Year 7 students are expected to be proficient in both handwriting and writing on a keyboard.

- Year 7 students are expected to be proficient at organization of bookwork, and to have the skills and knowledge to use computer hardware (mouse, keyboard), know how to use keystrokes, know how to organise files, folders and documents and editing tools (grammar and spell check).

- The speed at which students can handwrite and keyboard are both important.

- Poor transcription skills can disadvantage a student's learning opportunities.

- Students often do not get to choose if they write by hand or on a computer – the teacher makes this decision.

Handwriting in the Australian Curriculum

The teaching of handwriting in primary schools is a requirement of the Australian Curriculum: English V 9. The expectations for planning, teaching, and assessing handwriting are clearly stated in each of the Achievement Standard statements and related Content Descriptions from Foundation (Prep) to Year 4. In Year 5, handwriting is referred to in the year level description: "From Year 5 onwards, students continue to develop legible handwriting."

The F-10 Australian Curriculum: General Capabilities Literacy document describes the observable indicators of learners' sequence of skills in handwriting and keyboarding. Teachers can use the progression to support the development of targeted teaching and learning programs and to set clearer learning goals for individual learners.

Handwriting is a sub-element of the Writing element of the General Capabilities Literacy.

'*This sub-element describes how a student uses handwriting and keyboarding skills with increasing speed, accuracy and fluency to compose and edit text, or complete tasks for different purposes. It describes how a student develops a fluent, legible handwriting style, beginning with unjoined letters and transitioning to joined handwriting*.' (ACARA V9 Australian Curriculum: General Capabilities Literacy)

Guiding principles

The guiding principles for teaching and learning that assist handwriting are that handwriting:

- serves the writing process by allowing the writer to represent and communicate meaning

- is a physical skill which depends upon individual experience, development, appropriate instruction and modelling

- is valued as an art and a form of personal expression.

Educators should be aware of the following implications of these guiding principles (Cann 1996):

- How children learn dictates all teaching decisions.

- Learners should be encouraged to develop a legible, fluent handwriting style to enable them to record and communicate information, ideas and thoughts.

- Writing models should be offered for learners, and they should be offered opportunities to experiment with various implements and media, to practise letter formation and styles and to identify purposes for writing.

- Through interactive writing, learners can be engaged in creating written text and be encouraged to share the writing experience.

- Handwriting should be taught as a skill that relies on habituated physical action. Teaching should use the content descriptors of the Australian Curriculum and be responsive to the learner's progress in developing a handwriting style.

- Value is added to learners' writing when educators appreciate the craft of the form and acknowledge the skill and effort of the writer.

The components of handwriting

The components of handwriting are more complex than we might first think. The diagram that follows is an attempt to show each of the processes involved.

Figure 1 The components of handwriting (adapted from diagram created by R Spokes and provided by N. M. Mackenzie)
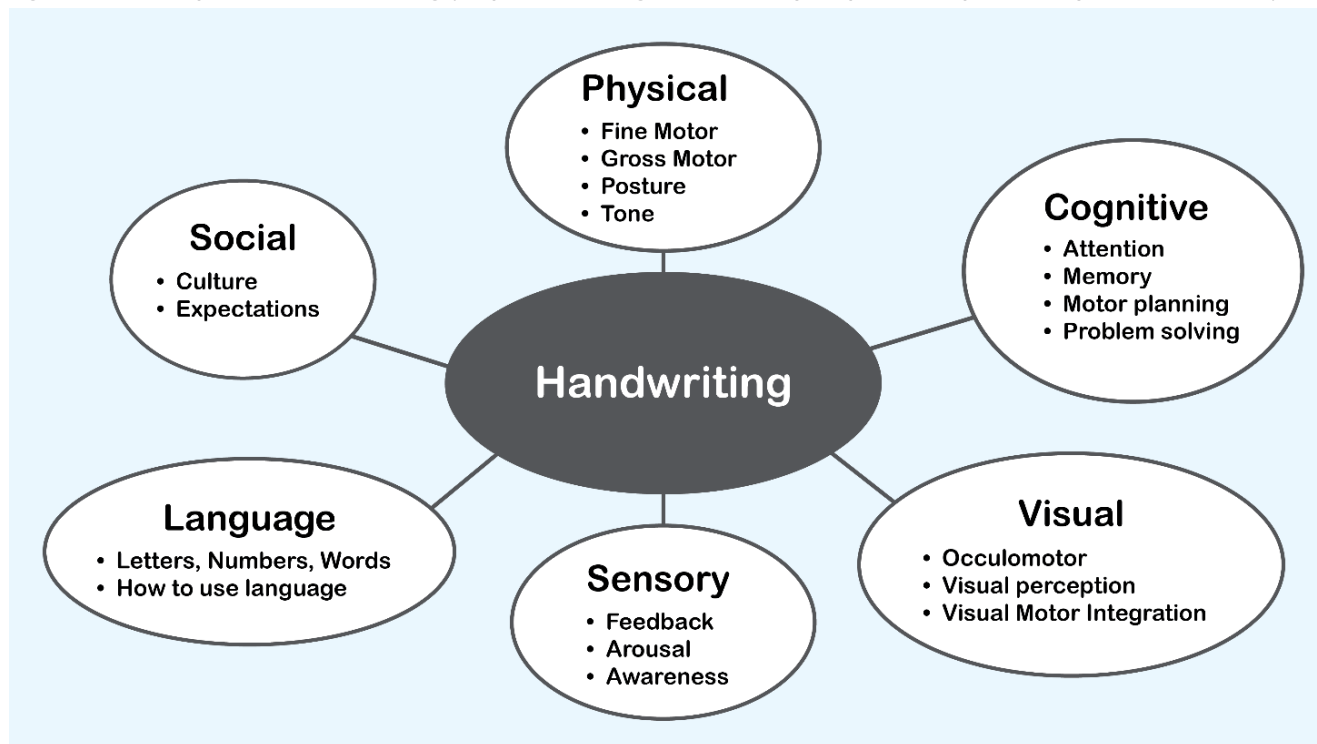
Physical strength and control

Fine and gross motor, posture and tone are all important when developing a handwriting style, stamina and control. Children with poor core strength find handwriting difficult.

Gross Motor Skills

For students to write by hand or on a keyboard, they need a stable base of support which is provided by strong core muscles (Smith-Zuzovsky & Exner, 2004). Core muscles include those in the back, abdominal region, and pelvic area. By strengthening these muscles, the body can be held stable while the student uses their arms and hands to write.

Examples of everyday activities that build core strength include:

- climbing frames and ropes
- monkey bars and swings
- trampolining
- walking on balance beams and uneven surfaces
- riding bicycles and scooters
- ball games
- running, jumping, skipping and hopping activities
- crawling through tunnels; parachute games; hopscotch, and hula hoop play. (Mackenzie & Spokes, 2018c)

Fine-Motor Skills

Small muscle movements by one or both hands are necessary for handwriting (and keyboarding), but also for drawing and 'performing everyday tasks such as eating, dressing, and manipulating objects and tools' (Ghanamah, et al., 2020, p. 2). Fine motor skills can be developed through a range of tasks that can also strengthen the hands and arms.

These include classroom and home activities such as:

- using a knife and fork
- threading
- managing fasteners on clothes, eg: zips and buttons
- using tongs to pick up small objects
- cutting with scissors
- drawing with a variety of implements
- age-appropriate construction toys such as Lego
- targeted paper tearing using the pincer grasp
- playdough
- finger painting
- pick up sticks
- handling playing cards
- pattern making games and materials.
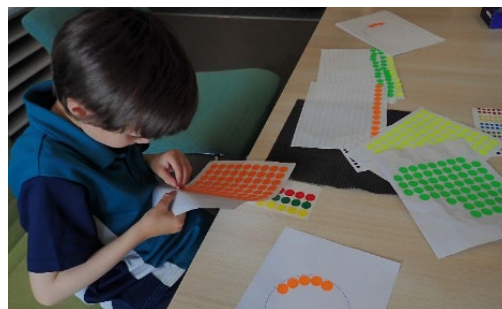
Posture

Handwriting requires 'sustained attention, sensory processing, and the presence of proper biomechanical components for posture and hand grip' (Lust & Donica, 2011, p. 560). Students should be supported and encouraged to develop good postural habits to minimise musculoskeletal discomfort, maximise upper limb range (Straker et al., 2010) and allow them to focus on the task of writing rather than controlling their body.

• Good posture requires *appropriate furniture* - teachers should check the sizes of student desks and chairs, and reconsider some of the free spaces learners may be sitting at when writing.

| Book supported on an angle | Feet flat on the floor | Feet on a support |

• Learners should have their feet flat on the floor, their back supported by the chair, and the table height should be appropriate to allow them to lean forward to rest on their forearms and easily view their work. Some students may need to be supported with a raised desk (or support) while others may need a raised foot-rest.

• Good posture supports free movement of the writing hand, allowing it to glide across the paper. The opposite hand should support balance and posture, while also supporting the paper or book so it does not move as handwriting speed increases. Learners need to be taught these processes and encouraged to develop habits that support their writing from a physical perspective. These can be taught when drawing.

Figure 2 Page position and other hand support

'Paper position' and 'other' hand support

Left handed   Right handed
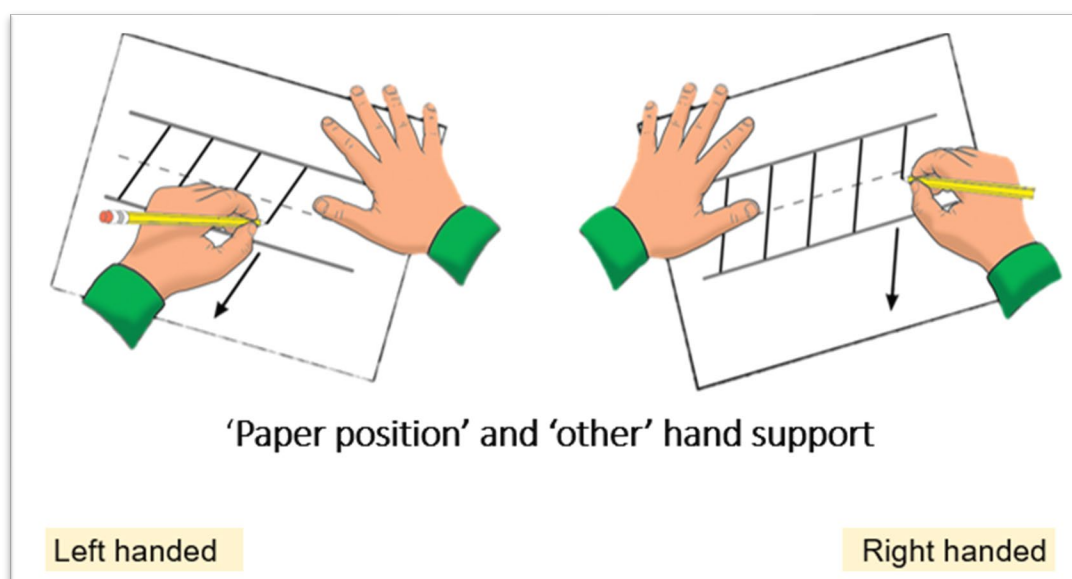
Cognitive benefits of writing by hand

To write by hand requires attention, memory, planning and problem solving.

Writing by hand has been described as a cognitive technology par excellence (Frank et al., 2008; Nickerson, 2005), 'made possible by creative uses of the body' (Wilson, 2008, p. 382). Children's cognitive development also benefits from handwriting. (Marquedt et al., 2016, p. 83) Marquedt and colleagues also suggest that the acquisition of 'handwriting skills seems to be a substantial factor that facilitates children's literacy and cognitive development'.

The beginning writer, 'tends to use most of the available cognitive capacity to form the individual letters, at the expense of a focus on content. However, as the motor patterns involved in handwriting are automatised, cognitive capacity is free to process content' (Mangen, 2015, p. 229). McCarroll and Fletcher (2017, p. 3) also argue that when handwriting is automatised, and 'working memory and cognitive energy are free, students are more able to focus on the content and fluency of their writing'.

> *Handwriting is a 'complex perceptual-motor skill encompassing a blend of visual-motor coordination abilities, motor planning, cognitive, and perceptual skills, as well as tactile and kinaesthetic sensitivities*
> (Feder & Majnemer, 2007, p. 313)

Visual requirements of handwriting

The similarities between letters in English require highly developed visual discrimination skills (Lyons, 2003). Print represents a new visual code for students to learn, an abstract visual code that is different from other things the child looks at in their world (Adams, 1994; Clay, 2005). Print must be scanned in culturally determined, rule-driven ways. When a student is learning how to write in English, he or she must learn to follow rules about the direction of writing, as well as sequence and position at the sentence, word and letter levels (Clay, 2005). When children are learning to write they rely on the integration of visual and motor skills to understand how to form letters (Benbow, 2006).

The visual skills required include the ability to:

- co-ordinate hand and visual skills (hand-eye co-ordination)

- recall how a shape looks (visual memory)

- copy and reproduce simple shapes: lines, squares, circles, crosses, triangles

- differentiate between similar shaped images (visual discrimination)

- visually scan along a line and a picture

- locate specific information within a larger picture (figure ground)

- identify an image that is partially shown (visual closure)

- understand how an object is positioned in relation to others (visual spatial relations)

- identify a shape regardless of size, colour, rotation (visual form constancy)
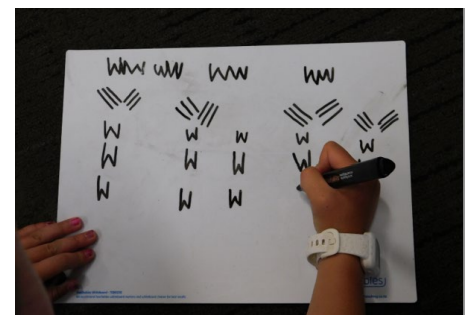
Activities that promote visual skill development include:

- book reading and read aloud opportunities where the child is able to see the text
- writing and drawing opportunities, for example painting letters with water on a fence or paint on paper, making letters in sand or salt trays,
- dot to dots and spot the difference activities
- copying shapes
- construction tasks
- jigsaw puzzles
- mazes and scavenger hunts (Mackenzie & Spokes, 2018c).

Explicit instruction in how to form the letters of the alphabet correctly is needed: size, position and direction as well as where to start, which way to go, and where to finish each of the 52 lower- and upper-case letters (Mackenzie, 2019).

See Appendices 1–3 for detailed information about the formation of each letter.

'Automaticity of letter formation leads to greater control of the letters of the alphabet. Instruction and practice are necessary for a child to develop automaticity' (Mackenzie, 2019, p.160).

Sensory requirements of handwriting

Lust and Donica (2011 p.560) identified the need for 'sustained attention, sensory processing, and the presence of proper biomechanical components for posture and hand grip'. 'Traces in memory are multi-modal because they remain grounded in the motor and sensory components (perception and action) as well as in the emotional component of the episode' (Labat et al., 2015, pp 382-383).

The sensory requirements of handwriting include control of the pencil, smooth movements, and knowing how to hold the pencil in terms of pressure, not too hard or too light, and the same with the pressure of the pencil on the page. When learners hold the pencil too tightly or press too hard when they write, they may have difficulties with proprioception and good tactile discrimination, and they will not achieve automaticity and their hand will also tire very quickly.

See Appendix 4 for more information about supporting the sensory requirements.

Language requirements of handwriting

While these may seem obvious, it is important that terms are used consistently and are coupled with clear directions. When teaching letters, teachers should use the names of the letters, not phonemes that the letters may represent in words.

Teachers need to ensure that learners recognise and understand the language used as verbal prompts for letter formation – oval, upper case, slope, stroke, line, link, tall, straight, curve etc. Ideally, this will be consistent across the school. See Appendix 3 for an example.

Social and cultural role of handwriting

'Every country has established its history and its cultural characteristics through writing. The recording of thoughts and ideas is a form of reflective activity' (Doug, 2019, p. 178). Handwriting is also a forensic indicator like a signature that gives the external world signs of individual personalities and characters (Quigley, 2016). Handwriting is 'interchangeable with fingerprints … In scrutinising someone's pattern of writing, the reader can visualise and sense them as living entities even if they are historical figures. One can 'feel' their closeness' (Doug, 2019, p. 178). 'Handwriting can reveal personality and emotions, develop students' technical accuracy and cognitive skills, accentuate their identity and support creativity' (Doug, 2019, p. 184).

In France, in both primary and secondary schools:

'A longer time is devoted to developing the fine and gross motor skills needed for joined handwriting. Once these are in place, we see a new quality in our children's work both in the communication of their thoughts and in their presentation – speed, spelling, punctuation and grammar. It is as though, having automated the hand, the children's minds are 'liberated' to release their ideas more effectively and creatively on paper.' (Doug, 2019. p. 183 with reference to Thomas, 1997)

Pre-requisite physical skills for handwriting

If you are noticing a learner is experiencing difficulties, then check these pre-requisite skills are in place. See also Appendix 4**.**

Using sensory play

The learner enjoys a wide range of sensory play with hands; particularly being able to tolerate many textures and sensations and not avoiding involvement in messy play.

To promote this:

- Learners should participate in a wide range of sensory play activities, such as finger painting, water play, sand play, play dough, rice play, gloop, cooking, corn flour and water.

- If the child is reluctant, gently encourage small amounts of involvement until their tolerance increases.

- In extreme cases, start with a zip lock bag containing finger paint, or similar, so the experience avoids getting messy.

Fine finger grasp

The learner can pick up tiny objects between thumb and index finger. This may be faster and more accurate with the dominant hand. When grasping a small object, the thumb and finger form a rounded shape.

To promote this:

Any activity which requires the learner to grasp small objects will encourage the consolidation of these skills. If a student uses a raking movement, the small objects can be placed in small shallow dishes such as eggs cups, or ice cube trays, so the fingertips are used to pick the item up.

Activities include:

- Making collage pictures using pieces of wool or string

- Decorating iced biscuits with small cake decorations

- Posting small items into narrow necked bottles (food colouring bottles are ideal)

- Small peg boards

- Games which include small sorting activities, such as 'Hamer' beads.
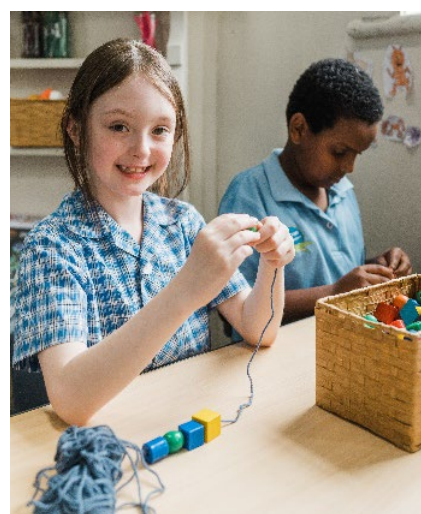
Controlled release

The learner can control the release of objects to stack more than 10 small blocks using the fingertips.

To promote this:

- Posting activities such as shape sorters

- Inset puzzles

- Stacking games

- Games such as 'Pick up Sticks'.

Proximal stability at shoulders, elbows and wrist joints

The learner can support weight on arms playing 'wheelbarrows' or hang from a monkey bar supporting their own weight, without discomfort.

It is important to keep the shoulders still and relaxed, while moving the arm and wrist to perform a range of actions.

To promote this:

Any activity which requires the learner to bear weight with their arms, for example:

- Wheelbarrows - the child walks forward using their arms, while an adult holds the legs

- The child rolls over a fit ball, supporting their weight with their arms and walking forward, as far as possible

- Any drawing activity, in the vertical plane

- Making patterns in the air with a ribbon twirler.

Bilateral use of hands with dominance emerging

The learner chooses one hand fairly consistently for activities, such as eating, throwing and drawing. The educator should note if:

- The learner uses both hands, one to hold the pencil and one to stabilise the paper when child is drawing at a table

- The child crosses the midline when needed.

To promote this:

Any activity which requires the learner to use both hands, for example:

- Threading

- Cutting with scissors

- Sewing or lacing

- Screwing and unscrewing the lids of jars.

Any activity which requires the learner to cross the midline, for example:

- Making a figure of 8 in the air with a ribbon twirler
- Hitting a suspended balloon across the body
- Copying body movements in Simon Says - type games
- Clapping pattern games.

Uses wrist extension to support the hand when using a pencil

The learner's wrist is slightly extended to enable the fingers to grasp efficiently.

To promote this:

Encourage the use of vertical surfaces for pre-writing activities, for example:

- 'Painting' an outside wall with a paintbrush and small bucket of water.
- Provide experiences that experiment with drawing materials attached to the wall, if easels are not available.
- Whiteboard markers or chalk on blackboards can be used if they can be fixed at accessible heights for students to reach.

Uses a storage grasp and in-hand manipulation skills

The learner is able to hold a small object in the palm with their little and ring fingers, while using the index and thumb to do something else.

The learner is able to move small objects from the palm of one hand to the fingertips with increasing ease.

To promote this:

- Provide posting activities with small objects, such as coins and 'tiddly winks', and small containers with slotted lids.
- The child holds the container in one hand, and posts the coins with the other hand, in increasing numbers, until they can post a handful into the jar, one by one.

Uses a tripod grasp

The learner is able to use this grasp to hold a writing tool and maintain it while forming some shapes.

To promote this:

- Use triangular pencils in early childhood classes.
- Encourage the child to hold a cotton ball in their palm with the little and ring fingers; this leaves only the thumb, index and middle fingers available to form a tripod grasp.

Uses the intrinsic muscles of the hand

The learner is able to use the tiny muscles in the hand to produce the finger movements which are required for highly dextrous activities. These are seen in isolated use when the fingers are spread apart and moved back together, and when the hand forms a pyramid, with fingers straight, on a flat surface.

To promote this:

Finger exercises can be used, such as:

- making a 'duck's bill' shape out of the thumb and fingers
- making the hand into a 'caterpillar' and crawling across the desk
- making circles out of the thumb and each finger in turn
- spreading fingers apart while flat on the desk and then slide them back together again.

Practical tasks where the fingers move forward and back, such as when threading a needle or making dots on paper with a marker.

The warmup exercises in this document promotes these skills. (See Appendix 9 on page 76).

Pencil Grasp

A mature pencil grasp provides a balance between stability and the ability to manipulate the pencil with finger-based movements. The way a learner grasps the pencil will influence the way they can control the pencil. However, correcting an established pencil grasp is very difficult after 8 years of age - so the earlier any problems are remedied the better. Those who have had lots of experience with drawing will probably have developed a functional tripod pencil grasp prior to starting school. In contrast, a learner who has had little experience with drawing and writing implements may not be sure how to hold a pencil and may still be working out which hand to use.

It is important that teachers help students to develop and refine their pencil grasp to avoid long term hand or arm injuries. Teachers should model, instruct, and monitor how learners hold their pencil for drawing and writing. An effective way to support a student to change their grasp is by using a vertical board with a thick chalk or thick marker.

Dynamic Tripod Grasp

Figure 3 Dynamic Tripod Pencil Grasp

- The thumb and index finger control the movement of the pencil and the third finger supports the pencil from the side.

- Curved fingers allow finger movement.

- The shaft of the pencil rests in the webbing of the hand.

- Slight extension of the wrist allows movement of the hand.

- The thumb and index finger sit approximately 1.5cm from the tip pf the pencil (3cm for left handers).

While the Dynamic Tripod is the most common pencil grasp (Figure 3), the Dynamic Quadrupod (Figure 5) and Lateral Tripod (Figure 4) are less common but also acceptable. Schwellnus et al. (2012) found that pencil grasp patterns did not influence handwriting speed or legibility in their research of typically developing children. This finding adds to the body of evidence that alternative grasps may be acceptable for fast and legible handwriting. The aim is for the student to develop a pencil grasp that allows them to write comfortably for a length of time, without excessive fatigue or wrist, arm or shoulder pain. If in doubt, seek advice from a Paediatric Occupational Therapist (see Appendix 4).

Figure 5 Dynamic Quadrupod Pencil Grasp

Figure 4 Lateral Tripod Grasp

Writing Tools

'Children need the opportunity to explore writing and drawing with a variety of good quality tools, pencils of different sizes as well as different writing surfaces. Through exploration, children will identify the types of writing tools they find most comfortable and efficient for them. Feeling comfortable when holding and manipulating a tool requires minimal effort in order to produce improved legibility and speed. Younger children may prefer pencils with a large diameter, as they are easier for them to hold, and triangle pencils can promote the development of a mature grasp. In contrast, pencils with a thinner diameter encourage greater refinement of movements. Pencils with raised dots, grooves and built-in grip encourage the development of a mature pencil grasp.' (Mackenzie & Spokes, 2018c p. 147)
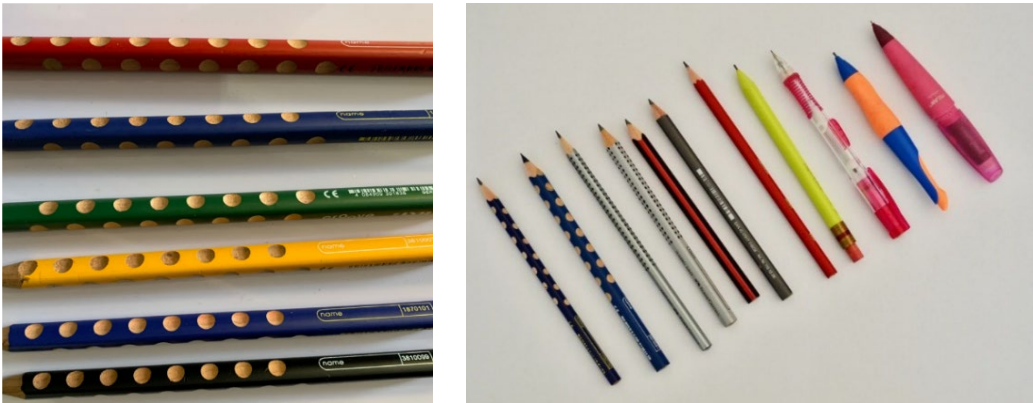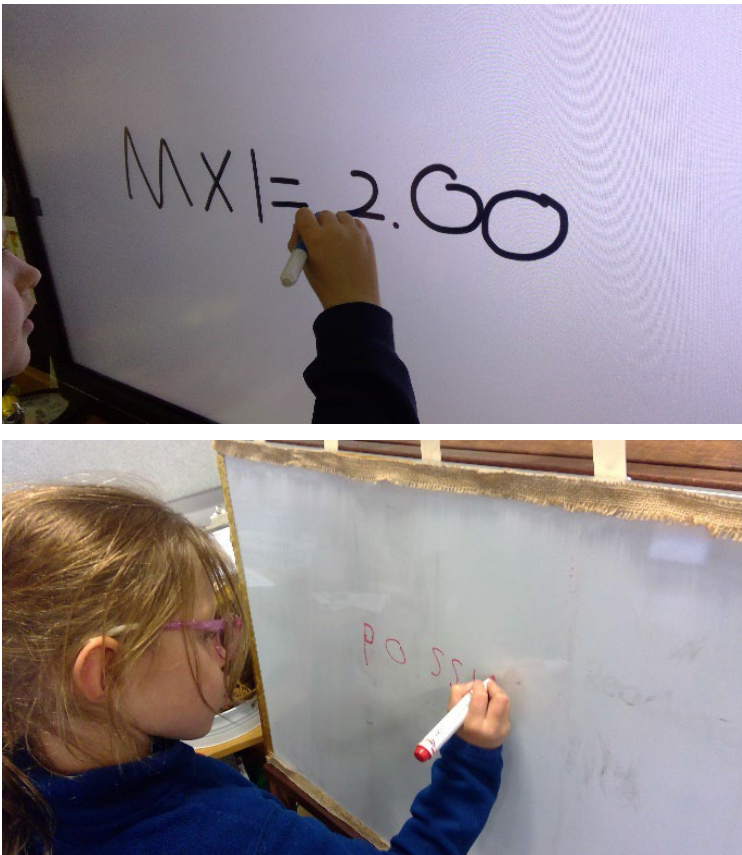

Figure 6 Pencils to support an efficient pencil grasp

Supporting a left-hander

Hand preference in handwriting is one form of individual difference. The left-handed writer can learn to write as rapidly and legibly as the right-handed writer.

Learners who are left-handed frequently find themselves attempting to imitate directions intended for right-handed students. This imitation can cause incorrect pencil grasp and paper position and will eventually result in a twisted wrist or left-handed hook.

Some ideas to support and guide learners who are left-handed:

• Find a left-handed educator, parent or carer who writes well, using the appropriate grasp, and movements as an assistant for the left-handers in the class. This person can show the correct pencil grasp.

• Position the paper to the left of the midline of the body for a comfortable writing position.

• So, the writing is not obscured, ask the learner to hold the implement at least 3cm (a rubber band can mark the spot) from the tip, or use a commercial triangular implement grasp placed far enough up the barrel that the learner can see around his or her hand.

• Use a fibre-tip pen or softer pencil (eg 2B, 4B or 6B) which causes less 'digging' into the paper.

• Use a lower writing surface (lower the desk or have the learner sit higher).

• Seat the left-hander to the left of a right-handed student, so that their elbows do not bump each other.

• Check that the light comes from their right-hand side, so they are not writing in their own shadow.

Left-handed writers differ from right-handed writers in some natural directional movements. These movements are the horizontal left to right movement and the circling movements. Left-handed children may require more encouragement and assistance over a longer period of time than right-handed writers.

Figure 7 Check that left and right-handed students are seated so that their elbows do not bump into each other – these students would be more comfortable if they changed places!

Birth to 4 and Kindergarten

A focus for Kindergarten is developing the pre-requisite skills for handwriting and providing a wide range of experiences to develop an interest in drawing and writing.

The Early Years Learning Framework is a primary reference for Birth to 4 and Kindergarten teachers:

Early Years Learning Framework

Outcome 5: Children are effective communicators

- *Children express ideas and make meaning using a arrange of media*

- *Children begin to understand how symbols and pattern systems work*

Kindergarten Development Check

The Kindergarten Developmental Check includes a writing marker:

- *KDC marker17 - copies circle and cross with accuracy*

Teachers can access more information through the DECYP intranet: Critical Marker 17

Teachers in the Birth to 4 and Kindergarten areas will consider the aspects of handwriting earlier in this document as a part of a developmental continuum and support young learners to develop the foundational skills that will allow them to become users of handwriting.

More information specific to these age groups is found in the Kindergarten and Launching Into Learning (LiL) CANVAS spaces.

Teachers can access these spaces with the following links:

LiL Canvas space:

https://canvas.education.tas.gov.au/enroll/9E4P4X

Kindergarten Canvas space:

https://canvas.education.tas.gov.au/enroll/REKJ7C

Stages of Writing

Early Years – Birth to Age 5

Hill (2006) describes learning to write or to represent language in written symbols as involving learning to use a writing tool, to hold it properly and to create letters, words and sentences to convey meaning to others.

Emergent drawing and writing skills are crucial in the development of handwriting. Children will make marks on paper from an early age and call it 'their writing'. Marie Clay describes their repetitive squiggles or attempts at adult writing as the 'recurring principle' (Hill, 2006, p. 281). Hand–eye co-ordination is important in the development of handwriting. Young children should be supported in the development of their hand–eye co-ordination, balance, spatial awareness and fine and gross motor skills.

Susan Hill (2006, pp. 283–286) proposes the following developmental model that represents stages in young children's writing:

- Beginning writing
- Early emergent writing
- Emergent writing
- Early writing
- Transitional writing
- Extending writing.

The first four stages, which are applicable to the birth to age five group, are described below. It is important to remember that children will progress through the different stages at different rates and ages, depending on their experiences and developmental abilities.

In a Kindergarten classroom, it is likely that there will be learners demonstrating features across these stages. There may also be students who are beyond these stages and are beginning to be interested in refining their letter formations. Kindergarten educators should also be aware of the Australian Curriculum expectations on the following pages. Brochures to support families are available.

Figure 8 Three-year-old Freya picked up her mother's notebook of shopping lists and copied the format to make her own list.

1. Beginning writing

This stage is when young children use drawings to represent and communicate a message while 'reading out' their narrative relating to the drawing. The writing can occur as different shapes or in scribble-like lines that may follow a left to right pattern. As children engage with the writing process, they are exploring the process they have observed adults engaging in.
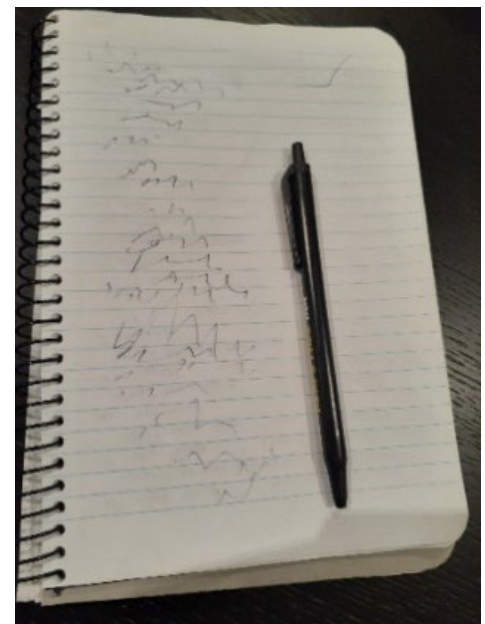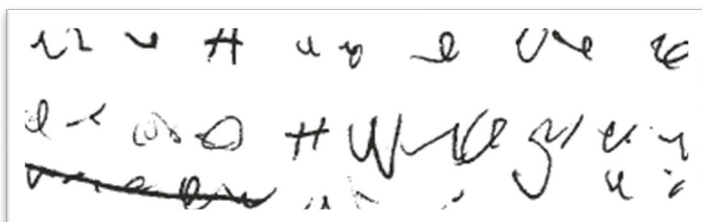
2. Early emergent writing

In this stage, children begin to explore the use of symbols (both drawings and letters) to represent words. The child may draw a picture and then write some of the letters that represent that picture. By doing this, the child demonstrates an understanding of directionality and placement of the picture and understands the concept of a written word as a separate entity.

3. Emergent writing

In this stage, children begin to create more letter-like shapes, with spaces between the letters. Children may begin to use sequences of letters such as those in their own name and repeat each letter several times as they refine the way that letters are made.
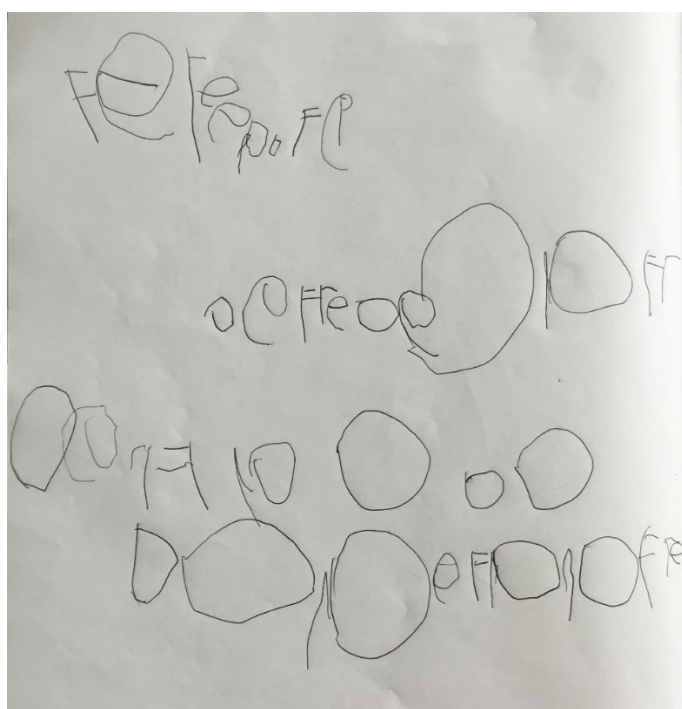
4. Early writing

In this stage, children continue to create or invent spellings of words. Differences between capitals and lower-case letters become apparent. Spacing between words becomes more consistent. As they continue to explore their understanding of the concepts of written language, they enjoy copying letters, words and sentences.

Early School Years – Preparatory to Year 2

The focus for Years P-2 is developing automaticity of correct letter formations so that they are able to write efficiently and legibly. This reduces the cognitive load when writing for a purpose. Developing an effective pencil grasp supports the learner to write fluently and for an increasing amount of time.

The teaching of handwriting in primary schools is a requirement of the Australian Curriculum: English V 9. The expectations for planning, teaching, and assessing handwriting are clearly stated in each of the Achievement Standard statements and related Content Descriptions from Foundation (Prep) to Year 2 (see Table 1 below).

Teachers should also be familiar with The F-10 Australian Curriculum: General Capabilities Literacy which describes the observable indicators of learners' sequence of skills in handwriting and keyboarding. Teachers can use the progression to support the development of targeted teaching and learning programs and to set clearer learning goals for individual learners.

Australian Curriculum: English (Version 9)

Table 1: Extract from Australian Curriculum: English – Foundation to Year 2 (ACARA, 2022)

	Foundation	Year 1	Year 2
Achievement standard	Students form letters.	Students write words using unjoined upper and lower-case letters.	Students write words using consistently legible unjoined letters.
Content description	Form most lower-case and upper-case letters using learnt letter formations.	Write words using unjoined lower-case and upper-case letters.	Write words legibly and with growing fluency using unjoined upper-case and lower-case letters.
Elaboration	• following clear demonstrations of how to construct each letter; for example, where to start and in which direction to write • developing a functional pencil grip/grasp	• continuing to develop a functional pencil grip/grasp	• consolidating a functional pencil grip/grasp

Educators of beginning and emergent writers, who are learning to recognise, form and name letters and numerals, emphasise the purposes of legible handwriting. They plan explicitly for handwriting, including specific lessons on correct letter and numeral formation, posture, paper placement, seated position and pencil grasp. This instruction and practice will require 10 to 15 mins daily. (See pages 30-32 for planning guidance.)

In the early years, learners will practise letter formations with varying degrees of support:

• **Imitation** - watch a teacher writing a letter and then imitate the movements needed, maybe even at the same time especially if a rhyme is being used for cues.

• **Tracing over** – write over a model with dots and arrows to show them where to start and which direction to go. This includes tracing inside a shape.

• **Copying** – the learner sees a letter or shape and reproduces it without seeing how it was done.

• **Hand over hand** – for some learners, having an educator guide their hand through the letter formation is helpful.

Depending on learners' strengths and skill development, educators focus on particular aspects of handwriting to support:

- the purpose of legible writing

- the ability to differentiate between drawing and writing

- an understanding that writing can represent thoughts, ideas, messages and speech

- the development of fine motor co-ordination

- a writing-hand preference

- awareness of the terms and concepts relating to written and printed material – spaces, words, letters, direction

- letter formation:

  » starting and finishing points, and direction and number of strokes
  » slope, size, shape, proportion, placement and spacing of letters
  » letter links, if appropriate
  » the equal-size relationship of heads (ascenders), bodies and tails (descenders)

- numeral formation

- appropriate pencil grasp

- paper placement and hand, arm and sitting positions (relating to left-handers and right-handers)

- a visual memory of letter shapes

- movements that form the basis of later automatic processes in handwriting

- the ability to identify and correctly form lower-case and upper-case letters.

Educators will need to be aware of possible disparities between the development of some learners' handwriting skills and their ability to compose a text. Some learners may be able to create texts that are well beyond their ability to write by hand. To help avoid frustration, specific handwriting tasks, appropriate to their physical abilities, can be planned while learners' composing abilities are recognised. Additional methods of recording their writing, such as scribing or using a computer or recording device can be considered. Other learners may develop proficient handwriting skills yet require additional support with the composing aspects of writing.

Figure 9 Beginner's Tas Font Alphabet
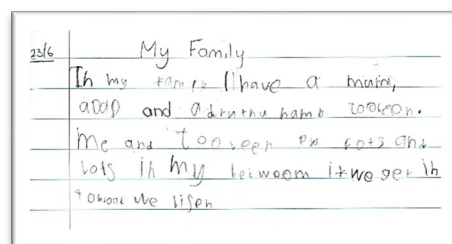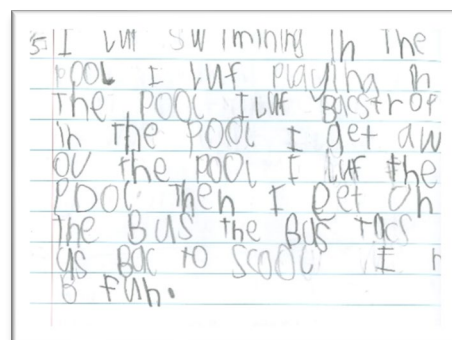
Primary Years – Years 3 to 5

In Years 3-5 there continues to be a focus on developing efficient, fluent, legible handwriting. Teaching learners to use cursive or joined script provides an opportunity to review and correct letter formations. In these years, an effective pencil grasp and automaticity of handwriting enables them to write for extended periods of time. All learners in these years need to develop their keyboarding skills alongside their handwriting skills. For learners who are impacted by their ability to express their thinking by the effort it takes to handwrite, it is especially important that they develop efficient keyboarding skills.

The teaching of handwriting in primary schools is a requirement of the *Australian Curriculum*: English V9. The expectations for planning, teaching, and assessing handwriting are clearly stated in each of the Achievement Standard statements and related Content Descriptions from Foundation (Prep) to Year 4. Table 2 below contains these for Years 3 and 4. In Year 5, handwriting is referred to in the year level description: "From Year 5 onwards, students continue to develop legible handwriting."

Teachers should also be familiar with The F-10 Australian Curriculum: General Capabilities Literacy which describes the observable indicators of learners' sequence of skills in handwriting and keyboarding. Teachers can use the progression to support the development of targeted teaching and learning programs and to set clearer learning goals for individual learners.

Australian Curriculum: English (Version 9)

Table 2: Extract from Australian Curriculum – English Year 3 – 4 (ACARA, 2022)

	Year 3	Year 4
Achievement standard	They write texts using letters that are accurately formed and consistent in size.	They write texts using clearly formed letters with developing fluency
Content description	Write words using joined letters that are clearly formed and consistent in size	Write words using clearly formed joined letters, with developing fluency and automaticity

Handwriting lessons continue to be important through the primary years of schooling. Learners need time to consolidate their personal style, build stamina and to move from print to cursive handwriting. Differentiated opportunities in small groups allow for the teacher to tailor instruction that is responsive to learner growth and goal setting. Handwriting three times per week will develop a personal style, fluency and automaticity.

They are working to:

* understand the terms and concepts relating to written and printed material – spaces, words, letters, chunks of letters and directionality
* identify and form correctly the 26 lower-case and upper-case cursive letters
* develop automaticity with letter patterns that appear regularly in English
* develop sufficient legibility and fluency to enable them to focus on the message, form and purpose of the writing
* develop further an understanding of the purposes of legible writing.

Once basic letter shapes and letter sequences have become 'automatic' to the point of legibility and fluency, learners can be shown how the letter shapes that they have learned initially may be joined. Learners are ready to join letters when they:

- can form correctly the 26 lower-case letters to write words, using an efficient pen grasp,

- show consistent use of slope, size, spacing and letter alignment,

- show signs of trying to join the letters together,

- have developed an understanding of common letter patterns.

To avoid the development of inappropriate linking techniques, the teaching of linking should begin as soon as the learner displays these characteristics, and usually this will occur around the beginning of Year 3. The links that form the exit from the letter are the precursors to linking and are usually introduced towards the end of Year 2.

Educators will need to be aware of possible disparities between the development of some learners' handwriting skills and their ability to compose a text. Some learners may be able to create texts that are well beyond their ability to write by hand. To help avoid frustration, specific handwriting tasks, appropriate to their physical abilities, can be planned while learners' composing abilities are recognised. Additional methods of recording their writing, such as scribing or using a computer or recording device can be considered. Other learners may develop proficient handwriting skills yet require additional support with the composing aspects of writing.

Figure 10 Cursive Tas Font Alphabet
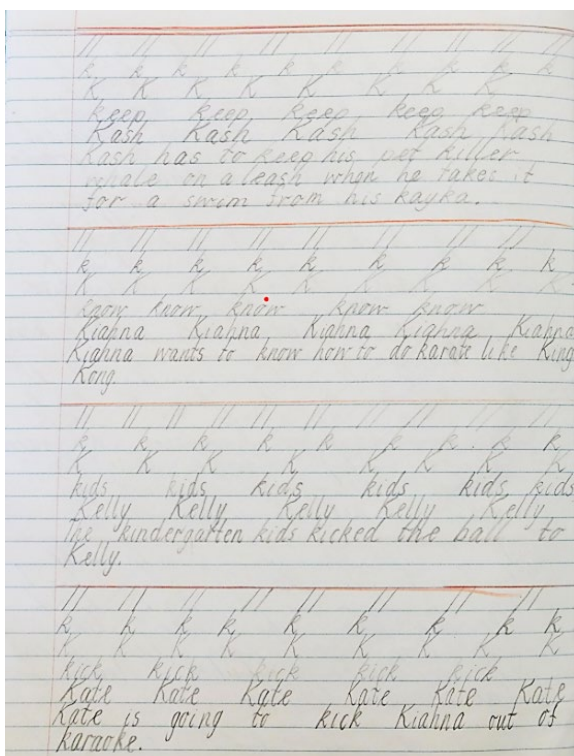
Middle Years – Year 6 to 9

Australian Curriculum English (Version 9)

By Year 6, many learners will have established an efficient, fluent and legible personal handwriting style. Some learners may need further explicit instruction and support. Developing keyboarding skills as an additional means of presenting their work is important for all learners. (See notes about Australian research on page 8 of this guide) For students who find handwriting particularly difficult, giving them the option to work on a device allows them to demonstrate their learning across the curriculum.

The teaching of handwriting in primary schools is a requirement of the Australian Curriculum: English V 9. In Year 5, handwriting is referred to in the year level description: "From Year 5 onwards, students continue to develop legible handwriting."

Teachers looking for more guidance should consult the Literacy Capability: Australian Curriculum | Literacy.

Literacy Capability: Handwriting and keyboarding:

• Level 7: writes with a legible, fluent, personal handwriting style

• Level 8: uses handwriting efficiently in formal and informal situations

Once learners have a well-developed standard form, usually during the middle years of schooling, they may be encouraged to personalise their handwriting. They may build on the basic style and adapt it to suit their writing purposes.

Learners at this stage may be:

• Developing a personalised style which is legible, fluent, durable and aesthetically pleasing.

• Using efficient deviations from the model form, if appropriate.

• Using embellishments and alternative styles for different purposes, if appropriate.

• Experimenting with different writing instruments, surfaces and styles, and to note the effects of writing with speed.

• Practising notetaking at speed with telephone messages, recorded interviews, broadcasts and short lectures.

• Developing and/or practising speed loops.
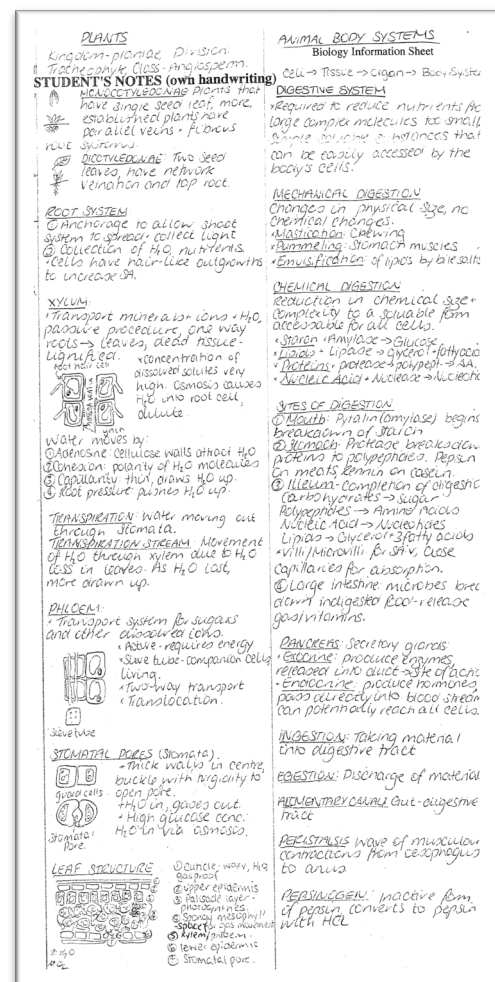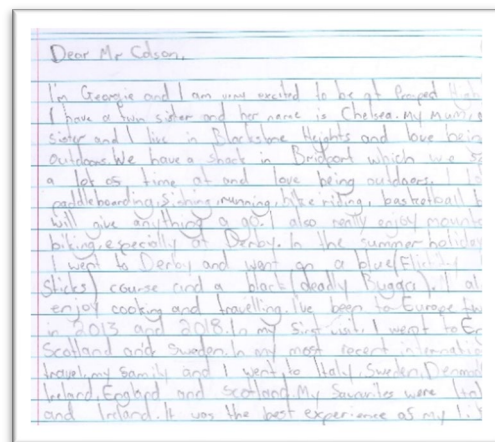
Planning for handwriting instruction

When planning for classroom handwriting educators will need to consider:

- using the curriculum to develop learning intentions

- organising the timetable and resources

- placing handwriting in context

- monitoring and assessing learners' handwriting and progress

- reflecting on and evaluating the instruction.

Educators also need to become familiar with a language for teaching handwriting that is used across the whole school. See Appendix 3 for an example.

Organising the timetable and resources

Learners need explicit opportunities to learn and practise letter formation. Short, focused sessions are more effective than long sessions designed to cover many aspects of the process. Focused teaching of handwriting is most effective when educators provide dynamic handwriting demonstrations, forming the letters in front of learners. This provides the correct models for learners.

Handwriting, however, has no purpose unless it is used for the development of authentic texts within the handwriting programme. Educators can consistently use and display models of handwriting and take advantage of the many opportunities throughout the school day for reinforcing handwriting skills.
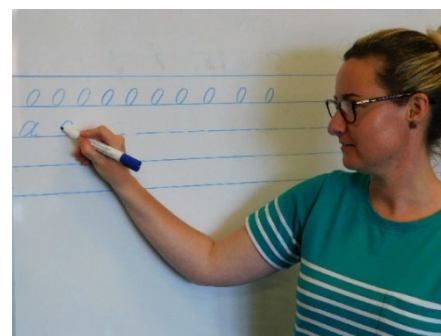
Handwriting instruction

Regular timetabled instruction and practice:
> Prep to Year 2: 10 to 15 mins per day. Teach little and often.
> Years 3 to 6: 15 to 20 minutes at least three times a week.

Blank paper – until basic movements are fluent:
> Folded or lined paper to refine size and spacing.

Explicit instruction (with clear learning intentions and success criteria):
> Provide lots of modelling, describing the letter formation, articulating the process and ensuring that learners are viewing the correct directions.
> Repetition to develop fluency and automaticity. Models to trace over are useful in the early years. Do not rely on copying.

Observation of learners as they write to monitor and correct formation.

Small group lessons for hand and paper position, close observation and to support learners who need extra practice.

Teaching during co-construction or modelled writing lessons (eg Interactive Writing).

Opportunities for learners to write for a range of purposes and to develop stamina. (Adapted from Mackenzie & Spokes, 2018c)

The blank page

Paper should be chosen to support learners' stage in learning to handwrite. While teachers and parents may feel that lines on paper help children to produce a better product when beginning to learn correct letter formations, Clay (1993, 2002, 2013, 2019) found that some children find motor control difficult. Writing within lines forces children to carry out difficult motions of the hands and eyes (Clay, 2019, p. 21). Start handwriting instruction with a blank page in Prep to Year 2 and move to lined paper when the initial movements are fluent. Individual whiteboards are a useful alternative to blank paper and can be used to warm up and practise patterns and letter formations before moving to lined paper to refine the letter shapes.

Transition to lined paper only when the letter starting points and formation is correct. Folds across a blank page can be helpful as letter formation is becoming more established and automatic. Dotted thirds paper may help some learners. Slope cards ([Appendix 10](#)) may be helpful when placed under the writing page to develop a consistent style. As learners develop more fluent and refined formations, lines can become narrower. A general pattern for line width is:

- Prep: Blank paper, folded lines, 25mm lines
- Year 1: 18mm lines or 24mm dotted thirds
- Year 2: 12-14mm lines or 18mm dotted thirds
- Year 3: 10-12mm lines
- Year 4 and above: 8mm lines

When handwriting is not easy, the task of writing strictly within lined paper may be overwhelming (Thompson, (2018 p257). Clay (2019, p 21) suggests that students should continue to be offered 'opportunities to write' without the restrictions of lines and the added pressure of print size, direction, straight lines and page layout. When using a blank page, teachers do not give up their expectations for well-formed writing, be patient and provide instruction about the correct formations of letters and numerals.

Assessment

'The best way to be certain of a student's development in handwriting and keyboarding, is to observe a student as they write. The final product may be misleading. In terms of handwriting, you are looking for efficiency, fluency, and legibility.

This requires observation of the following:

- Posture
- Pen or pencil grasp
- Letter formation (and in the case of cursive writing – the joins) – correct and automatic
- Size of letters, spacing and position
- Time and effort taken to write (efficiency).

Measures of handwriting fluency usually include accuracy and speed of the number of legible letters or words produced accurately and quickly within a specified time. Fluency is assessed by measuring the number of legible letters produced within a specified time and is best measured outside text production. For example, The Alphabet task: Students are asked to write the letters of the alphabet (in order, in lower case letters) in 15, 30 or 60 seconds. Speed and legibility can be monitored over time. Older students could graph their progress once per term.' (Mackenzie, 2022, p. 301-2)

Automaticity

Handwriting instruction and practice is aiming to develop automaticity – 'the ability to do something without conscious thought. In handwriting, achieving automaticity is about being able to recall the letter forms and replicate these forms without consciously thinking about them.' (Mackenzie and Spokes 2018,c p150)

Handwriting milestones

Children who meet the following milestones are developing automaticity:

At the beginning of Year 1, a child should be able to:

•   Form all the letters correctly and easily when copying

•   Recite and write the alphabet in correct order.

At the end of Year 2, a child should be able to:

•   Form all the letters correctly and easily when copying and in response to letter names

•   Write the whole alphabet from memory using correctly formed letters in alphabetical order in under one minute (this is a test of automaticity)

•   Decide when it is appropriate to use neat handwriting. (Mackenzie and Spokes, 2018c p. 151)

Ideas to support developing automaticity:

•   Quickly writing the alphabet starting from the beginning or from a middle letter.

•   Copying single sentences or groups of sentences at speed.

•   Writing as much as possible, as quickly as possible, about topics of interest without other writing concerns (eg ideas quality, spelling, syntax).

•   Writing as the teacher dictates with a focus on handwriting, not spelling. Adapted from (Mackenzie, 2022, p. 297-298)

Example Lesson Outline – Year 1

Learning Intention: Review and refine formation of lower-case p

Success Criteria: Write lower case p with tail below line and body on the line

	Teaching Strategies	Example
Tuning in	Warm up exercises for hand, fingers. Finger play or rhyme. Fluency pattern practice. Air writing, finger on carpet, small whiteboards – aiming for free-flowing rhythmic movement	Fingerplay rhyme: Five fat peas in a pea pod pressed… *mmmm* down, over, over
Explicit teaching	Teacher models letter formations drawing attention to starting points and direction. May write on top of pattern and then write without pattern. Repeat with upper case letter formation if it will be needed in the lesson.	Letter p is a down over letter. It goes down a long way, trace up, over and around to the middle of the line. Capital letter P stands on the line. Start at the top. Go down. Lift your pencil. From the top, go out, around and back to touch the middle of the downstroke.
Guided practice	Teacher may guide learners to practise formation by air writing or finger on carpet before writing the letter on whiteboard or paper. Start big and trace over several times. Practise smaller sized letters with or without lines depending on stage. Teacher observes and corrects formation as needed.	Write a big letter p on your whiteboard: 'down, trace up, over and around' Trace over it as we say the words …down, trace up… On your paper – start in the middle of the line, go down under the line, trace up, over, round. Sit the oval on the line.
Letter in context	Use the letter within some words or a sentence. This could be a line from a rhyme or sentence from a mentor text. Draw attention to spacing, relative letter size as relevant.	*Pop, pop, pop. Pea pods pop.* Repeat for fluency.
Review	Learners to self-assess their work following teacher prompts such as: *Did you start in the right place? Put your finger under your best letter and show it to a partner.*	Which is your best letter p? What makes it the best?
After the lesson	Revisit the formation during modelled, shared and interactive writing. Provide additional practice to groups and individuals as needed. Notice when learners write the letter accurately in other contexts.	

Example Lesson Outline – Year 3

Learning Intention: To link letters 'l' and 'i' to following letters

Success Criteria: Link letters 'l' and 'i' within words

	Teaching Strategies	Example
Tuning in	Fluency pattern practice. Air writing, finger on carpet, small whiteboards. Aim for free-flowing rhythmic movement	*uuuu* Emphasise strong down, lighter up
Explicit teaching	Teacher models letter formations drawing attention to key features.	Letters 'l' and 'i' have an exit stroke that links to the next letter *l i lit*
Guided practice	Teacher guides learners to practise formation of individual letters and in groups and words. Remind learners of pencil grasp, paper position and posture. Teacher observes and corrects formation as needed.	*l l l l l i i i* *ill ill ill lit lit lit in in* *in lip lip lip*
Letter in context	Practice the focus formation in a short text – teacher constructed or from a mentor text. Write more than once for fluency.	*Lily lived in a lovely villa.*
Review	Teachers asks learners to self-assess their work. What went well? What needs more practice?	

Writing patterns

Writing patterns have been designed to help:

- gain control of the implement and develop hand eye co-ordination and fine motor strength
- learn directional sequences and movements (eg top to bottom, left to right, clockwise and anti-clockwise rotation)
- develop speed and fluency.

Like many other beginning handwriting styles, Tasmanian Basic Handwriting Style is based on a small number of movements:

1. anticlockwise oval
2. clockwise oval
3. sloped downstroke.
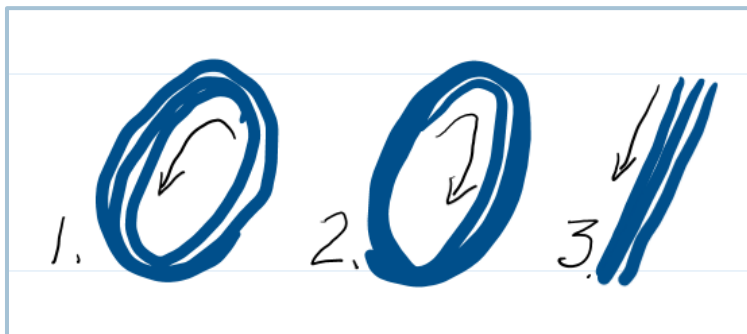
Figure 11 Writing patterns

When repeated while moving to the right, variations such as spirals and loops can be made. If the patterns are combined, arches and waves are formed. (Figure 12, Writing Patterns and Figure 13, Variations on basic patterns.)
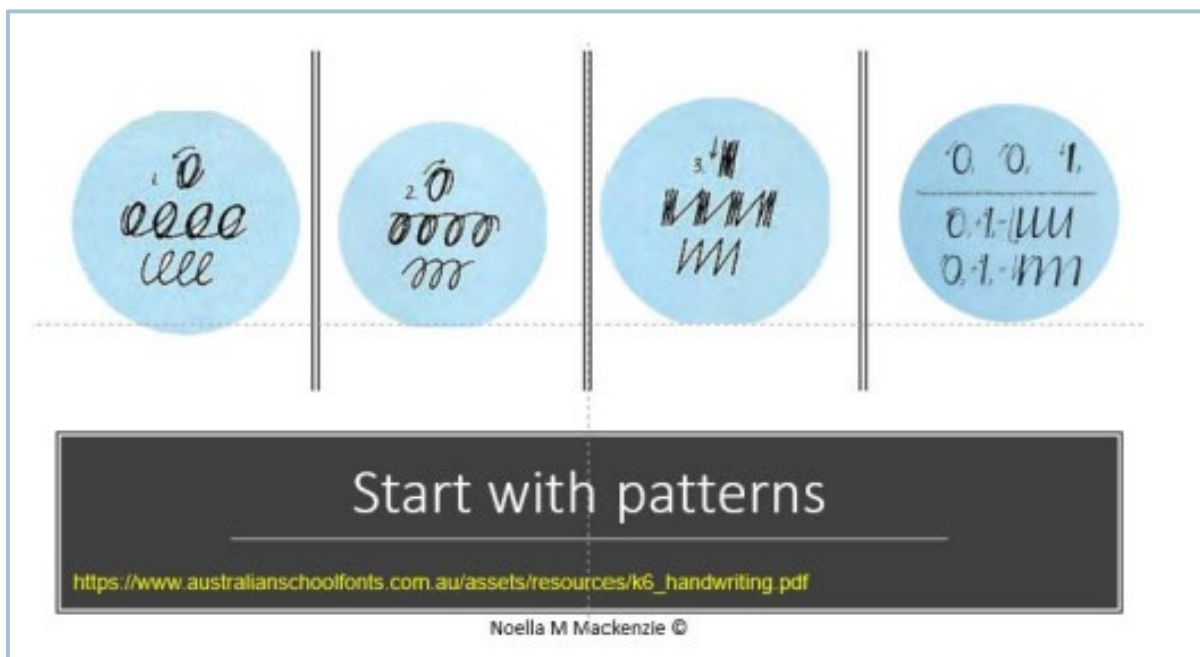
Figure 12 Writing patterns provided by N. M. Mackenzie
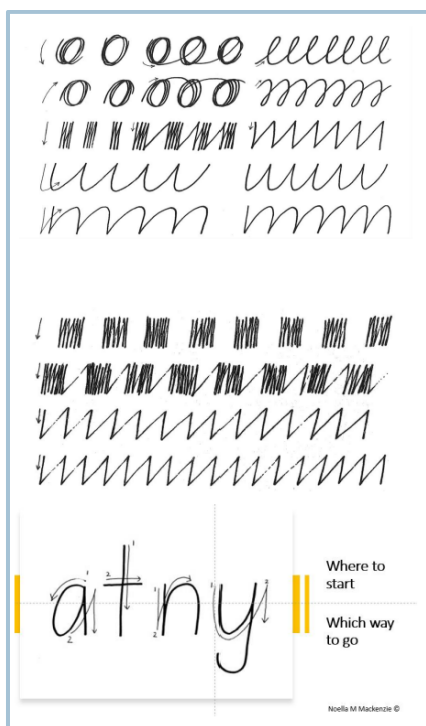
Figure 13 Variations on basic patterns

In the early years, writing patterns are best practised on blank paper to avoid restricted movements. Start with larger movements using the whole arm and gradually refine these until the shapes can be made using only finger movements. Writing on vertical surfaces – whiteboards, chalkboards and easels with large sheets of paper – is helpful to encourage correct pencil grasp and larger movements. As learners develop control and fluency over patterns, they can be practised lined paper as part of the handwriting lesson.

In the primary years, when practising linking patterns, it is preferable to write about 3-5 shapes, then lift the writing implement. It is unrealistic to insist on long lines of continuously linked letters. Learners should be given the opportunity to relax the pencil/pen.

The connection between basic shapes, combined shapes and letters is demonstrated below (Figure 14). When planning handwriting lessons, select patterns that relate to the letter formation to be taught.
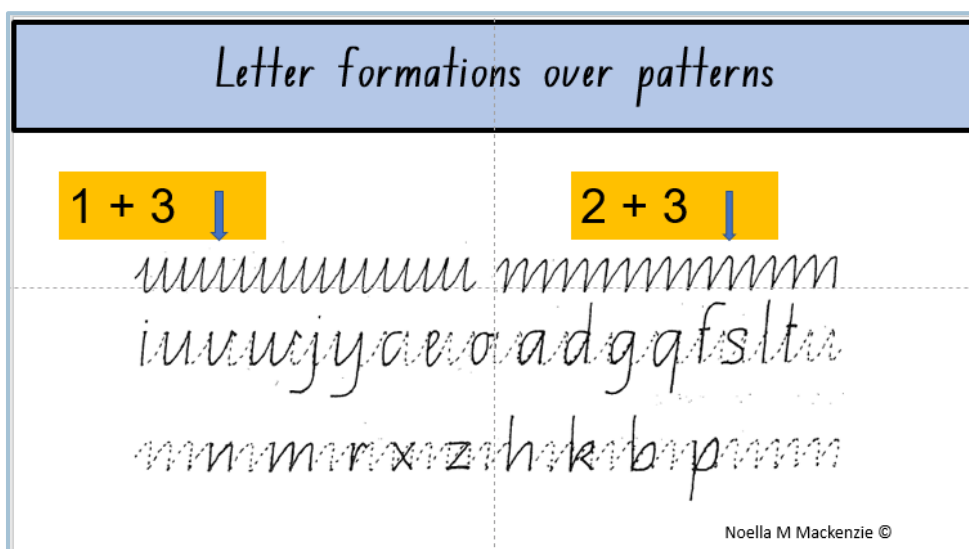
Figure 14 Letter formation over patterns

Introducing Letter Formations

Introducing the letters based on the hand and finger movements used to form the letters is particularly helpful for learners with poor fine motor skills. It may be that all of the clockwise letters are not introduced together but in two or more 'groups', interspersed with groups of letters that require a different basic movement.

Possible groupings are:

The 'stick' letters: *l i t j*

The anti-clockwise letters: *c o a d   g q   e s f*

The 'wave' or down-up letters: *u y*

The clockwise letters: *r n m   h p b k*

The diagonal letters: *v w x z*

These groupings are particularly useful for the revision of letter formation in the following years, even if not used as a sequence for the introduction of the letters. If the similarities of movement are pointed out, the learners are able to develop a meta-cognitive awareness of letter formation that can support the practice of letter writing.

Letter Formation

Teaching correct letter formation provides learners with opportunities to talk about the names and features of letters and the sounds they represent. This enhances letter recognition in texts, on computer keyboards and in the environment. When learners practise forming letters, they develop a visual and motor memory of their important features. Looking at the letters and undertaking the movement of writing then helps learners see and feel how each letter is formed, fixing the letter in the learner's visual memory for future identification and reproduction.

The formation of letters involves starting and finishing points, direction of movement and the number of strokes per letter. These are important aspects if linking fluency and speed are to develop with ease. An oval body shape is recommended with a 2 o'clock starting position for all anti-clockwise ovals.

Pen lifts

All lower-case letters are completed without lifting the pen except for f, t and x, which require two strokes, and the letters i and j which are completed by placing a dot above the initial stroke

Pen lifts occur in handwriting even though the writer may not be aware of them. These natural pauses relax the hand and help avoid illegibility. Individuals develop pen lifts to suit their personal style and technique. They will occur at various intervals within words, but not always before the same letter.

Learners should be discouraged from making a pen lift during the formation of an individual letter, other than where specifically indicated. As learners increase the speed at which they write, they will develop pen lifts naturally. Educators should be aware of the functions of pen lifts and encourage learners to use them where necessary.

Size

Letter shapes should be in proportion. Within letters, the heads, bodies and tails should be of equal proportions. This means letters will maintain relativity in both width and height to each other.

Larger letter shapes help in the establishment and maintenance of combined finger–hand–arm movements in handwriting. Small letter shapes, less than 2mm, may be the result of a tense pen hold and will make the task of identifying incorrect letter shape formation more difficult.

Slope

A slight slope to the right is the outcome of a well-developed cursive technique for learners who are using a relaxed finger–hand–arm movement. Slope should be consistent for each individual. However, a variation of 5 to 15 degrees in the slope to the left or right of vertical is acceptable between individuals. (See Appendix 10)

Spacing

Consistent spacing enhances the legibility and appearance of handwriting. Spacing within words, between words, between lines of writing, and the use of blank space on the page should be highlighted to learners.

Alignment

The visual pattern of words becomes more consistent when hooks, links, descending letters and ascending letters are positioned accurately in relation to each other.

Speed of handwriting

Learners should be given time to practise handwriting in situations such as brainstorming, where speed is necessary.

Reversals

Letter reversal is usually age related, and often evident in the writing of students aged between five and eight. This is partly because young children have to become aware that unlike things in the environment which remain the same if reversed, letters do not; for example, a chair remains a chair even if turned around. When letters are copied or drawn from memory, the construction of most letters, shapes or figures follows the pattern: begin at the top left, start with a vertical downstroke, or begin with an anticlockwise movement. (Victorian, Dept of Education and Training, 2018).

Strategies for correcting reversals

Letter reversals are a normal occurrence for some children between the ages of five and eight. They remind us that students' behaviour generally follows rules that are simply different from our own. Given time and adequate support they generally self-correct.

If letter reversals are hindering the students' learning, correction strategies can be used. These include the following:

- Teacher demonstration – that is, viewing a moving model.

- Bringing models of specific letters currently being reversed as close to the student as possible; for example, having them copy from a model on their table.

- Continuing to emphasise correct letter formation – where to start, where to move and how to complete the movement (describing the movement aloud can help).

- Emphasising that almost every lower-case letter starts at the top, as do the upper-case letters. The only exceptions to the top start rule are d and e. If d is being reversed, emphasise that it doesn't start at the top like b, h or k but starts at the top of the body of the letter (or at the two o'clock starting position). The letter d can be related to the other two o'clock starting letters which face left and are formed with an anti-clockwise movement.

- Developing cues to help learners remember which way letters are formed. Sometimes a mnemonic can help; for example, do the bat first then the ball for b.

- Emphasising the completion point of the lower-case letters. Nearly every letter finishes with an exit movement to the right.

- Relating the lower-case letters to their upper-case equivalents.

Due to the difficulty of the writing task, handedness and the starting position of some letters, some students will require specific and ongoing support in order to correct reversals (Victorian, Dept of Education and Training, 2018).

Cursive Style

The correct stroke sequence for each letter should be learned in order to develop a legible, consistent cursive style.

The differences between the beginners' alphabet and cursive formation are apparent:

- in the letter f

- and in the exits of a h i k m n o r t u v and W.

Letters d and l in the beginners' alphabet already have exits.

When cursive formation is being taught, two points should be considered:

- special attention will be required for letters with exits

- more attention will be required in the spacing of letters.
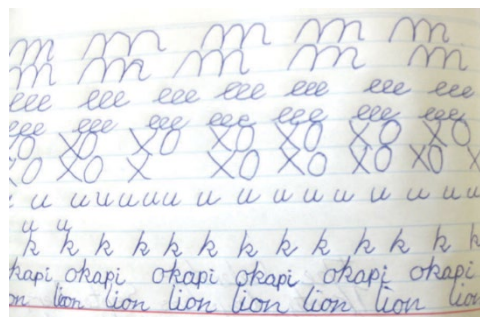
Linking

The introduction of links should not be a slow and laborious process because letter shapes themselves do not change. There should not be any deliberate drawing of lines between letters. When learners have developed a good handwriting technique, whole groups of links may be introduced concurrently, as the letter shapes are already quite familiar.

Important things to remember about linking:

- There is no link from upper-case letters to lower-case letters.

- Small groups of letters should be practised by linking two letters at a time or writing short words.

- Letters that link to the following letter should link directly from the end of the letter to the beginning of the next letter.

- The point at which the exit links to the following letter should be no higher than the exit of o.

- Do not dot the i or cross the t until the **end** of the word.

- Do not link S or Z.

Letters with links

1. **Horizontal links from**

   o v w r f

   join to all letters **except** *e s* and *z*.

   on   voice   went   word   ran

2. **Diagonal links from:**

   i u e m n h

   l k t a c d

   join to all letters **except** *s* and *z*.

   These letters never join to the top of tall letters.

   in   under   many   like   kite   ant

3. **Letters that do not link to following letters**

   p b s g j x y z

   pencil   bread   salt   yabby

Letter connections

Aa	aa ab ac ad ae af ag ah ai aj ak al am an ao ap aq ar as at au av aw ax ay az
Bb	does not join to the following letter
Cc	ca cc cd ce ch ci ck cl co cq cr cs ct cu cw cy cz
Dd	da dc dd de df dg dh did dk dl dm dn do dp dq dr ds dt du dw dy dz
Ee	ea eb ec ed ee ef eg eh ei ej ek el em en eo ep eq er es et eu ev ew ex ey ez
Ff	fa fe ff fh fi fj fl fn fo fp fr fs ft fu fy
Gg	does not join to the following letter
Hh	ha hb hd he hi hl hm hn ho hp hq hr hs ht hu hy
Ii	ia ib ic id ie if ig ih ii ij ik il im in io ip ir is it iu iv iw ix iy iz
Jj	does not join to the following letter
Kk	ka kd ke kf kg kh ki kk kl kn ko kp kr ks kt ku ky
Ll	la lb lc ld le lf lg li lk ll lm ln lo lp ls lt lu lv lw ly lz

Mm	ma mb mc md me mf mg mh mi mk ml mm mn mo mp mr ms mt mu mw my
Nn	na nb nc nd ne nf ng nh ni nk nl nm nn no np nq nr ns nt nu nw nx ny nz
Oo	oa ob oc od oe of og oh oi oj ok ol om on oo op oq or os ot ou ov ow ox oy oz
Pp	does not join to the following letter
Qq	does not join to the following letter
Rr	ra rb rc rd re rf rg rh r irk rl rm rn ro rp rr rs rt ru rv rx ry rz
Ss	does not join to the following letter
Tt	ta tb tc td te tf tg th ti tj tk tl tm tn to tp tq tr ts tt tu tv tw tx ty tz
Vv	va vc ve vg vh vi vl vm vo vp vr vs vt vu vv vw vy
Ww	wa wb wc wd we wf wg wh wi wk wl wn wo wr ws wt wu wx wy wz
Xx	does not join to the following letter
Yy	does not join to the following letter
Zz	does not join to the following letter

APPENDIX 1: Formation of letters

The following pages describe the formation of letters and numerals in the Tasmanian style of handwriting. This section uses teacher language and information. Appendix 3 contains child friendly prompts to use during handwriting lessons.

Notes on letter formation

- All letters have a slope, this should be consistent in the elements of each letter.

- All uppercase letters are full height – twice the height of lower case 'o'. When written in lines they touch both the top and bottom lines. Uppercase letters with horizontal lines (E, F, L, T) are the same width as lower case 'o'. Letters with curves are slightly wider.

- Lowercase letters are half the height of capital letters unless they have ascenders or descenders. When written in lines, they sit on the bottom line.

- Lowercase letters with ascenders (tall letters) are the same height as uppercase letters except for t.

- Lowercase letters with descenders (letters with tails) sit on the line with the descender hanging below. Descenders are equivalent in length to the height of the letter body – ie lower case 'o'.

- As handwriting becomes more fluent and refined, writers using lined paper might not use the full height of the space, but the letters should remain in proportion.

Decisions about letter shapes

Since this handwriting style was introduced into Tasmanian schools in the mid-1980s, there have been a number of changes to the letter formations in the Beginner Alphabet. For this update, the following decisions were made in consultation with the Early Years and Literacy Teams:

- Uppercase I has serifs (top and bottom lines) to minimise confusion with numeral I and lower case l in the early years of school.
- Lowercase l has an exit link to minimise confusion with numeral I and uppercase I in the early years.
- Lowercase d has an exit link to minimise reversals and confusion with lowercase b.

The following description of each letter includes the number of movements and pen lifts to write each letter. In cases where a letter contains two or more individual strokes (where the pencil/pen must change direction or leave the page) numbers indicate which stroke is to be written first, second and so forth.
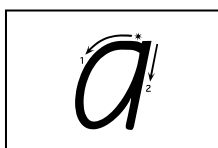
A **cross** illustrates the starting point.
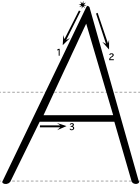
An **arrow** indicates the direction to follow when writing the letter or numeral.
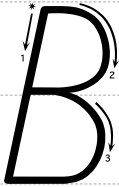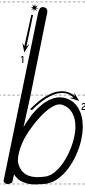
Over time, writers will develop a personal style and may write letters in different ways. As long as they can write legibly, fluently and efficiently, this is acceptable. Some alternative stroke orders are noted on the following pages.
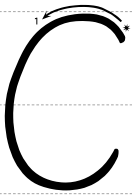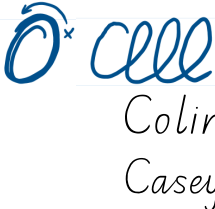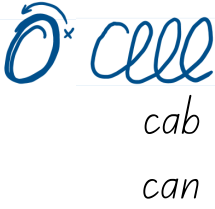
Use the following links to access the different Tas font Alphabet Charts:
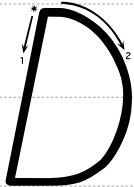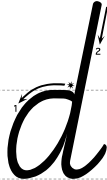
- Beginner's Alphabet Chart: Handwriting - Beginners - Alphabet chart A3
- Cursive Alphabet Chart: Handwriting - Cursive - Alphabet chart A3
- Capital Alphabet Chart: Handwriting - Capital - Alphabet chart A3
- Number Chart: Handwriting – Number chart A4
- Alphabet Strips: Handwriting – Beginner Alphabet Strips
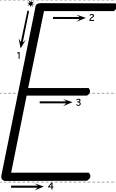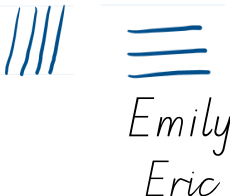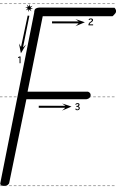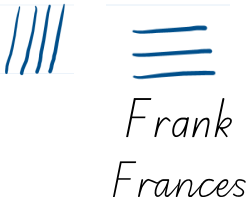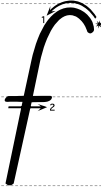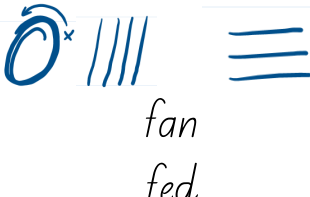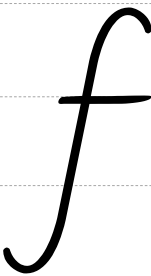
UPPER CASE	LOWER CASE	CURSIVE LINKED
Three movements	**Two movements**	**Two movements**
Two pen lifts	No pen lifts	No pen lifts
• Two diagonal strokes	• An oval completed by a downstroke	• An oval completed by a downstroke and a link
• A horizontal bar below the height of a lower case 'o'.	• Commence at the 2 o'clock position	• Commence at the 2 o'clock position
	Note: Not joining the oval causes illegibility.	Note: Emphasise correct starting point so that oval is joined.
Amy Adam	all ant	all ant

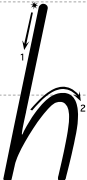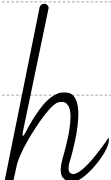| UPPER CASE	LOWER CASE	CURSIVE LINKED
Three movements	**Two movements**	No change for cursive
One pen lift	No pen lifts	
• A downward stroke	• A downward stroke	
• Two outward swings	• A clockwise oval from the base.	
Note: The outward swings are equal and commence and end with a horizontal stroke.	Note: Emphasise the starting point to minimise reversal.	Note: Practise starting and completion points to develop accurate letter shape. Not:
Ben Brie	bat bed	bat bed
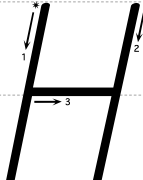
UPPER CASE	LOWER CASE	CURSIVE LINKED
C	*c*	*c*
One movement	**One movement**	**One movement**
• A segment of an oval • Commence at the 2 o'clock position	• A segment of an oval • Commence at the 2 o'clock position	• Lengthens to link
Note: The beginning and ending points conform to the slope	Note: Emphasise curl at top and bottom to assist formation of other anti-clockwise letters	
Colin *Casey*	*cab* *can*	*can* *ace*

UPPER CASE	LOWER CASE	CURSIVE LINKED
D	*d*	*d*
Two movements	**Two movements**	No change for cursive
One pen lift • A downstroke • A horizontal line, segment of an oval, a horizontal line.	No pen lifts • An oval that sweeps up to twice the height of a lower case 'o' • A downstroke that retraces the upward sweep and ends with a link • Commence at the 2 o'clock position	
Note: Horizontal strokes avoid a squashed appearance	Note: Not joining the oval causes illegibility. Failure to retrace causes illegibility	Note: May develop a pen lift before downstroke
Danika *Dan*	*dad* *dive*	*dad* *dive*

UPPER CASE	LOWER CASE	CURSIVE LINKED

Four movements

Three pen lifts
- A downward stroke
- Top, central and bottom horizontal bars. Central bar shorter.

Note: Three movements also acceptable. Begin like upper case L before lifting pen to add top and central bars

Emily
Eric

One movement

No pen lifts
- A slanted upstroke completed by a segment of an oval.

Note: Failure to join oval segment to initial stroke causes illegibility
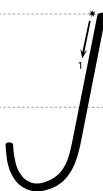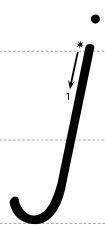
ear
eel

One movement
- Lengthens to link

eat
heel
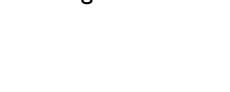
UPPER CASE	LOWER CASE	CURSIVE LINKED

Three movements

Two pen lifts
- A downward stroke
- Top and central bars, central bar shorter

Note: Central bar is at height of lower case 'o'.

Frank
Frances

Two movements

One pen lift
- An oval segment completed by a downstroke
- Commence at the 2 o'clock position
- A horizontal bar at the centre

Note: Keep downstroke straight.   Not:

fan
fed

Two movements

One pen lift
- An oval segment completed by an extended downstroke with a hook
- A horizontal bar

Note: Bar becomes exit. Link the crossbar for double f

fan
food
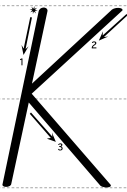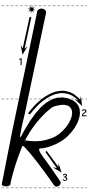
UPPER CASE	LOWER CASE	CURSIVE LINKED
Two movements	**Two movements**	No change for cursive
No pen lifts • A segment of an oval followed by a downstroke	No pen lifts • An anticlockwise oval completed by an extended downstroke with a hook • Commence at the 2 o'clock position	
Note: The short downstroke conforms to the slight diagonal slope	Note: The downstroke is consistent with the slope. Not…	Note: Do not link from the hook.
Gabrielle *Geoff*	*gone* *give*	*good* *give*

UPPER CASE	LOWER CASE	CURSIVE LINKED
Three movements	**Two movements**	**Two movements**
Two pen lifts • Two downward strokes • A central horizontal bar	No pen lifts • A downward stroke • Trace up and over to compete the letter with an arch the height of lower case 'o'. Note: May be confused with 'n' if downstroke is short.	No pen lifts • A downward stroke • An arch ending with a link
Hobart *Holly*	*hat* *home*	*hand* *hug*
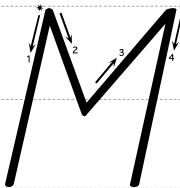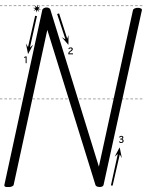
UPPER CASE	LOWER CASE	CURSIVE LINKED
Three movements	**Two movements**	**Two movements**
Two pen lifts	One pen lift	One pen lift
• A downstroke	• A downstroke	• A downstroke with an exit link
• Top and bottom horizontal bars (serifs)	• A dot directly above the downstroke	• A dot directly above the downstroke
Note:		Note: Correct starting point and development of exit point
• Addition of serifs avoids confusion with lower case 'l' and numeral 1.		
• Serifs may be omitted as handwriting becomes fluent.		
Ian	*ice*	*ill*
Isabelle	*him*	*him*
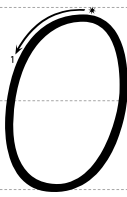
UPPER CASE	LOWER CASE	CURSIVE LINKED
One movement	**Two movements**	No change for cursive
No pen lifts	One pen lift	
• A downstroke with a hook	• An extended downstroke with a hook	
	• A dot directly above the downstroke	
	• Commence at the height of lower case 'o'.	Note: Does not link to the following letter
Jane	*jam*	*jar*
Jacob	*jet*	*junk*

UPPER CASE	LOWER CASE	CURSIVE LINKED
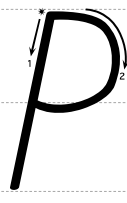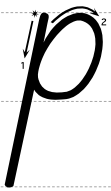
K (upper case with stroke numbers) / **k** (lower case) / **k** (cursive linked)

Three movements

One pen lift
- A downstroke
- A diagonal stroke to middle of downstroke followed by diagonal away to form an arrowhead; diagonals of equal length.

Note:
- Arrowhead intersects the downstroke at the height of a lower case 'o'
- Teach where to begin arrowhead

Kate
Kevin

Three movements

No pen lift
- A downstroke.
- Trace up and out to form small oval joined to downstroke
- An angled downstroke

Note: Trace up a small distance to keep top of oval to height of lower case 'o'.

kid
keep

Three movements

No pen lift
- A downstroke
- Trace up and out to form small oval joined to downstroke
- An angled downstroke and exit link

key
milk

UPPER CASE	LOWER CASE	CURSIVE LINKED

L (upper case with stroke numbers) / **l** (lower case) / **l** (cursive linked)

Two movements

No pen lift
- A downstroke
- A horizontal base

Note: Pen stays on paper until completion of letter

Luke
Linda

Two movements

No pen lift
- A downstroke with an exit link

Note: Keep downstroke straight

leg
look

No change for cursive

Note: Keep exit small

like
level
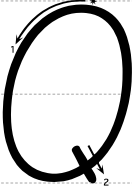
UPPER CASE	LOWER CASE	CURSIVE LINKED
Four movements	**Three movements**	**Three movements**
One pen lift • A downstroke • A diagonal downstroke to height of lower case 'o'. • A diagonal upstroke to match height of first stroke. • A downstroke Note: • The two top points are the same height • Outside downstrokes are parallel	No pen lift • A downstroke • Trace up and complete with two arches Note: • Downstroke and arches are the same height. • Emphasise regular size and movement • Lifting pen inhibits fluency • Failure to retrace leads to illegibility	No pen lift • A downstroke • Trace up and complete with two arches and an exit link
Mary *Michael*	*man* *mug*	*mum* *some*
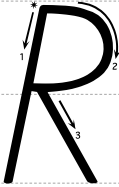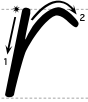
UPPER CASE	LOWER CASE	CURSIVE LINKED
Three movements	**Two movements**	**Three movements**
Two pen lifts • A downstroke • A diagonal downstroke followed by an upstroke. Note: • The two top points are the same height • Outside downstrokes are parallel	No pen lift • A downstroke • Trace up and complete with an arch Note: • Height of downstroke and arch are equal • Sprawl must not be too wide	No pen lift • A downstroke • Trace up and complete with an arch and an exit link
Ned *Nellie*	*net* *nap*	*nut* *none*

UPPER CASE	LOWER CASE	CURSIVE LINKED
O	o	σ
One movement	**One movement**	**One movement**
• An anticlockwise oval commenced at the 2 o'clock position	• An anticlockwise oval commenced at the 2 o'clock position	• An anticlockwise oval commenced at the 2 o'clock position and ending with a link
Note: The 2 o'clock position promotes the oval shape and slope.		
Olive Otto	out one	owl moon
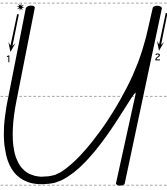
UPPER CASE	LOWER CASE	CURSIVE LINKED
P	p	p
Two movements	**Two movements**	No change for cursive
One pen lift • A downward stroke • An outward swing from top to centre of downstroke	No pen lifts • A downward stroke twice the height of a lower case 'o' • Retrace to near top and finish with a clockwise oval	
Note: The outward swing commences and ends with a horizontal stroke.	Note: • Emphasise the starting point to minimise reversal. • Continuous movement aids fluency	
Peter Penny	pat pen	pest apple
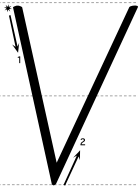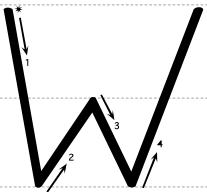
UPPER CASE	LOWER CASE	CURSIVE LINKED
Two movements	**Two movements**	No change for cursive
One pen lift	No pen lifts	
• An anticlockwise oval commenced at the 2 o'clock position	• An anticlockwise oval completed by an extended downstroke with an exit link	
• A short, angled downstroke at the 5 o'clock position.	• Commence at the 2 o'clock position	
Note: The 2 o'clock position promotes the oval shape and slope.	Note: Not joining the oval causes illegibility. Emphasise continuous movement to avoid reversal	
Quinn	quick	quiet
Queen	quilt	equal

UPPER CASE	LOWER CASE	CURSIVE LINKED
Three movements	**Two movements**	**Two movements**
One pen lift	No pen lift	No pen lift
• A downward stroke	• A downstroke	• A downstroke
• An outward swing from top to centre of downstroke	• Trace up and complete with top of an arch	• Trace up and complete with an arch and a slight hook
• An angled downstroke		
Note: The outward swing commences and ends with a horizontal stroke.	Note:	
	• Top of arch is a segment of a circle – finishes at 2 o'clock	
	• Height of downstroke and arch are equal	
	• No retracing leads to illegibility	
Ruth	ran	rag
Riley	red	are

UPPER CASE	LOWER CASE	CURSIVE LINKED
S	*s*	*s*
One movement	**One movement**	No change for cursive
No pen lift	No pen lift	
• Commence at 2 o'clock and curve anticlockwise	• Commence at 2 o'clock and curve anticlockwise	
• Cross down and curve clockwise	• Cross down and curve clockwise	
Note:	Note:	Note:
• Emphasise starting point – like letter 'c'	• Emphasise starting point – like letter 'c'	• Does not link to the following letter
• Letter fits inside an oval	• Letter fits inside an oval	
Sam	sad	said
Sarah	see	asked

UPPER CASE	LOWER CASE	CURSIVE LINKED
T	*t*	*t*
Two movements	**Two movements**	**Two movements**
One pen lift	One pen lift	One pen lift
• A downward stroke	• A down stroke ¾ the height of tall letters	• A down stroke ¾ the height of tall letters followed by an exit link
• Top horizontal bar	• A horizontal bar, height of a lower case 'o'.	• A horizontal bar, height of a lower case 'o'.
		Note: Cross the 't' at the end of writing the word
Tania	the	that
Tom	tell	toy

UPPER CASE	LOWER CASE	CURSIVE LINKED
One movement	**Two movements**	**Two movements**
No pen lift • A downward stroke that continues into an anticlockwise curve to make an inverted arch • A downstroke Note: The downstroke retraces part of the arch	No pen lifts • A downward stroke that continues into an anticlockwise curve to make an inverted arch • A downstroke Note: The downstroke retraces part of the arch	No pen lifts • A downward stroke that continues into an anticlockwise curve to make an inverted arch • A downstroke with an exit link Note: The downstroke retraces part of the arch
Una *Uncle*	*up* *under*	*use* *out*
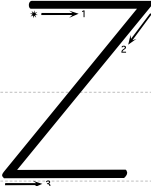
UPPER CASE	LOWER CASE	CURSIVE LINKED
Two movements	**Two movements**	**Three movements**
No pen lifts • A diagonal downward stroke • A diagonal upstroke	No pen lifts • A diagonal downward stroke • A diagonal upstroke	No pen lifts • A diagonal downstroke • A diagonal upstroke • An exit link
Victor *Vera*	*vet* *vase*	*van* *over*

UPPER CASE	LOWER CASE	CURSIVE LINKED
Four Movements No pen lifts • Four diagonal strokes commencing with a down stroke. • Internal strokes are half the height of the outside strokes. William Wendy	**Four Movements** No pen lifts • Four equal height diagonal strokes commencing with a downstroke Note: Sprawling may cause illegibility wig way	**Three Movements** No pen lifts • A downstroke • An upstroke • An exit link was away

UPPER CASE	LOWER CASE	CURSIVE LINKED
Two Movements One pen lift • Crossed diagonals starting at the top Note: • The top points are level • The base points are level • Intersection of diagonals occurs at height of lower case 'x' Xanthe Xavier	**Two Movements** One pen lift • Crossed diagonals starting at the top Note: • The top points are level • The base points are level • Intersection of diagonals occurs at the middle of diagonals axe fox	No change for cursive Note: • Does not link to other letters fix exit

UPPER CASE	LOWER CASE	CURSIVE LINKED
Two movements	**Two movements**	No change for cursive
One pen lift • A short diagonal downstroke • A long diagonal downstroke	No pen lifts • A downward stroke that continues into an anticlockwise curve to make an inverted arch • An extended downstroke with a hook	
Note: The short downstroke meets the midpoint of the long downstroke at the height of a lower case 'o'.		Note: Does not link to other letters
Yolla *Yvette*	*you* *yet*	*young* *boy*

UPPER CASE	LOWER CASE	CURSIVE LINKED
Three movements	**Three movements**	No change for cursive
No pen lifts • A horizontal bar • A diagonal downstroke • A horizontal bar	No pen lifts • A horizontal bar • A diagonal downstroke • A horizontal bar	
Note: The horizontal bars are of equal length.	Note: The horizontal bars are of equal length.	Note: Does not link to or from other letters
The points should be sharp.	The points should be sharp.	
Zack *Zara*	*zip* *zoo*	*zebra* *fizz*

Appendix 2: Formation of numerals

All numerals are written with a slight slope and sit on the line. In most computer fonts, numerals are generally the same height as upper case letters. In handwriting, numerals are often shorter – about the height of a lower case 't'. The relative size of numerals and letters is less important than the accurate, efficient and legible formation. Numerals are complex to write and learners will need plenty of practice to refine them and develop automaticity.

0	1	2	3	4
One movement No pen lift • An oval commenced at the 2 o'clock position	**One movement** No pen lift • A downstroke	**Two movements** No pen lift • An oval segment commenced at the 10 o'clock position that continues into a diagonal line • A horizontal bar **Note**: Emphasise the stop and sharp change of direction before the horizontal bar.	**Three movements** No pen lift • A horizontal bar • A diagonal downstroke • An oval segment **Note**: Emphasise the stops and sharp changes of direction.	**Three movements** One pen lift • A diagonal downstroke • A horizontal bar about the same length as the diagonal downstroke • A downstroke which bisects the horizontal bar **Note**: Emphasise the stop and sharp change of direction before the horizontal bar.
5	6	7	8	9
Three movements One pen lift • A downstroke • An oval segment • A horizontal bar **Note**: Emphasise correct starting point to prevent breakdown at speed.	**One movement** No pen lift • A curved downstroke that continues into an inward curve. **Note**: Emphasise the continuous movement.	**Two movements** No pen lift • A horizontal bar • A diagonal downstroke **Note**: Emphasise the stop and sharp change of direction.	**One movement** No pen lift • An oval segment and diagonal curve followed by another oval segment and diagonal curve. **Note**: Emphasise the continuous movement.	**Two movements** No pen lift • An anticlockwise oval commenced at 2 o'clock position • A downstroke **Note**: Emphasise the starting point

APPENDIX 3: Verbalisation prompts to support correct letter formation

An understanding of the terminology relating to handwriting and print will help learners to learn during explicit teaching. The words are only labels for the basic concepts themselves (eg left, right, up, down, straight, round, etc) and it cannot be taken for granted that children beginning school already understand these concepts. In practice, planned activities and classroom discussions are necessary to help some learners to master the ideas over a year or so. The following terminology describing words, sentences, spaces, letters and lines is also useful. Explicit and systematic introduction of terminology and concepts in the context of discussions about handwriting will be beneficial to both reading and writing.

Basic Conventions of print

1. Directionality

Directional schema of English is left to right, top to bottom on the page. Writing, like reading, starts at the left side of the page and moves to the right side. Writing and reading start at the top of the page. Most letter formations begin at the top.

Other terms that may be used include *up, down, tall, short, beginning, end, around, clockwise* and *anticlockwise*. Understanding the basic direction of a clockface can promote an awareness of clockwise and anticlockwise movements.

2. More concepts about print

Students learn that:

- *words* are made up of *letters*

- *spaces* between words make writing readable

- a *sentence* is a group of words which expresses a complete thought. Sentences begin with a *capital letter* and usually end with a *full stop* or a *question mark*.

For additional information about concepts of print, see Mackenzie, N.M. (2019) Learning to 'look at' and 'write' the letters of the alphabet.

3. Aspects of Letter Formation

The writer will form letters more successfully if the following are explicitly taught and understood:

- Where to begin

- In which direction to move the pen

- How many movements to make

- When to lift the pen

- How to complete the movement.

These aspects should be demonstrated and described whenever letter formations are introduced and practised. The starting point of most lower-case letters is at or near the top, with the emphasis on a downward movement.

While most lower-case letters require a change of direction, very few need a pen lift:

f i j t x.

4. Teaching Letter Formation

Teaching and practising letters of the alphabet in formation groups rather than in alphabet order helps make the spatial and planning aspects of writing easier for learners. This method also reduces the risk of the visual confusion of letters that are closely positioned within the alphabet (b/d and p/q).

Suggested formation groups are:

The 'stick' letters:	*l i t j*
The anticlockwise letters:	*c o a d g q e s f*
The 'wave' or down up letters:	*u y*
The clockwise or down over letters:	*r n m h b p k*
The diagonal letters:	*v w x z*

Verbalising the key aspects of forming a letter is helpful for some children. This table contains suggested prompts for the formation groups. These prompts assume that handwriting shapes are taught first on blank paper with a focus on shape and direction of the movement. Once lines are introduced prompts such as '*tall letters start on the top line*' and '*short letters start in the middle*' can be used. After initial teaching, just a few prompts should be enough to support students. For example, letter a:'*curl around, up, down*.'

The 'stick' letters

l i t j	This group all start at the top and go down. This movement is generally easy for learners and reinforces that letters usually start at the top.
l	This is a tall letter. Start at the top and go straight down with a little flick at the bottom.
i	This is a short letter. Start at the top, go straight down and add a dot.
t	This is a middle-sized letter. Start at the top, go straight down. Lift your pencil and make a cross from left to right,
j	This letter has a tail (that goes under the line). Start at the top, go down and curl around to make a hook. Lift your pencil and add a dot.

The anticlockwise letters

c o a d g q	These letters all begin with the shape of letter c. If referencing to a clock face, these letters start at about 2 o'clock.
c	This is a short letter. Start near the top. Curl back, go down and curl up.
o	This is a short letter and starts like letter c. Start near the top. Curl back, go down and curl up and join to make an oval.
a	This is a short letter and starts like letter c. Start near the top. Curl back, go down and curl up past the join. Stop your pencil and go straight down.
d	This is a tall letter and starts like letter c. Start like a c. Curl back, go down and curl up past the join to make a long stick. Stop your pencil and trace back down and add a flick.
g	This letter has a tail and starts like letter c. Start near the top. Curl back, go down and curl up past the join. Stop your pencil and go straight down to make a tail. Curl under to make a hook.
q	This letter has a tail and starts like letter c. Start near the top. Curl back, go down and curl up past the join. Stop your pencil and go straight down to make a tail with a flick at the bottom.

Other anticlockwise letters

e s f	This group has more complex movements.
e	This is a short letter and uses the letter c shape. Start low on the side. Slant up. Curl back, go down and curl up.
s	This is a short letter and starts like letter c. Start near the top. Curl back, slope down and curl around the other way.
f	This is a tall letter and starts like letter c. Start near the top. Curl back. Go straight down to make a stick. Lift your pencil and make a crossbar from left to right.

The 'wave' or down-up letters

u y	These letters also contain an anticlockwise movement.
u	This is a short letter. Start at the top. Go down, curl around and go up. Stop your pencil and go straight down.
y	This letter has a tail and starts like letter u. Start at the top. Go down, curl around and go up. Stop your pencil and go straight down to make a tail. Curl under to make a hook.

The clockwise or down over letters

r n m h b p k	This group all contain a stick and a clockwise curl. Letter r is a useful reference for this group.
r	This is a short letter. Start at the top. Go down, Stop your pencil. Trace up and curve over.
n	This is a short letter that starts like letter r. Start at the top. Go down, Stop your pencil. Trace up, curve over and go down.
m	This is a short letter that starts like letter r. Start at the top. Go down, Stop your pencil. Trace up, curve over and go down. Stop your pencil. Trace up, curve over and go down again.
h	This is a tall letter that uses the same shapes as letter r. Start at the top. Go down to make a tall stick. Stop your pencil. Trace halfway up, curve over and go down.
b	This is a tall letter that uses the same shapes as letter r. Start at the top. Go down to make a tall stick. Stop your pencil. Trace halfway up, curl over, and around to join.
p	This letter has a tail and starts like letter r. Start at the top. Go down to make a tail, Stop your pencil. Trace up to near the top, curl over and around to join in the middle.
k	This is a tall letter that uses the same shapes as letter r. Start at the top. Go down to make a tall stick. Stop your pencil. Trace halfway up, curl tightly around to join the stick. Stop and go out.

The diagonal letters

V W X Z	Diagonal lines are harder for children to write.
V	This is a short letter. Start at the top. Slant down. Stop your pencil. Slant up.
W	This is a short letter that starts like letter v. Start at the top. Slant down. Stop your pencil. Slant up. Stop. Slant down. Stop. Slant up.
X	This is a short letter. Start at the top. Slant down. Lift your pencil. Slant down in the other direction to make a cross.
Z	This is a short letter. Start at the top. Go across. Stop. Slant back and down. Stop. Go across.

Regardless of what order letters are chosen to be taught, it is important that students know the names of individual letters and the sounds that each one can represent. Letter names and their 'most common' sounds serve as a memory cue and assist the retrieval of the motor-program required to successfully write a given letter. (Graham, 2010).

This appendix draws on information in: *The Teaching of Handwriting Revised Edition. Vic*

The role of verbalisation is further explained in this extract from the New Zealand Ministry of Education handwriting document: *Teaching Handwriting* 2008.

Verbalisation

In the context of handwriting, verbalisation means that the children watch and listen as the teacher models the letter and describes the movements, "Start at the top, down to the line, up, over, down, stop."

The children then repeat the directions aloud as they practise the letter. As their confidence grows, they can assist in describing the sequence of movements. Research confirms that language has a vital place to play in focussing a young child's attention on letter shapes and movements (Markoff) and that learning is more effective if the children verbalise while they copy than if they do not verbalise. (Furner).

Verbalisation should include reference to the starting point, direction of stroke, and stopping point. Both teacher and pupils should verbalise to reinforce the important visual cues. Immediate feedback and correction is vital so that children do not fix incorrect forms in their minds by repeating them. This is particularly important when children are first learning to write.

The technique should not become an unthinking, ritual chant. Verbalisation should be discontinued when starting points and direction of movement become established. (NZ Ministry of Education, 2008 p. 9-10)

APPENDIX 4: Assessing and monitoring

Common Handwriting Issues

Handwriting is a complex task requiring multiple skills working together. Learners will develop handwriting skills at different rates, but teachers need to be aware of learners who may be experiencing difficulties in writing during daily classroom tasks. Observing children as they write and noticing the accuracy of formation and the effort required to achieve this is an important source of information. Teachers may find the checklists at the end of this appendix useful for tracking the progress of some students.

Teachers should be aware of common handwriting issues including:

- Poor pencil grasp
- Incorrect pressure
- Unclear hand dominance
- Limited bilateral coordination
- Poor posture
- Difficulty with letter formation
- Difficulty copying from the board.

Specialised support

p.a.n.d.a.therapy (Home - p.a.n.d.a. therapy (pandatherapy.com.au) is contracted to provide services to DECYP schools. Teachers can set up an account using their DECYP email and access high quality support materials.

The following information has been provided by p.a.n.d.a.therapy and outlines the skills that underpin handwriting development and the resources available to support teachers.
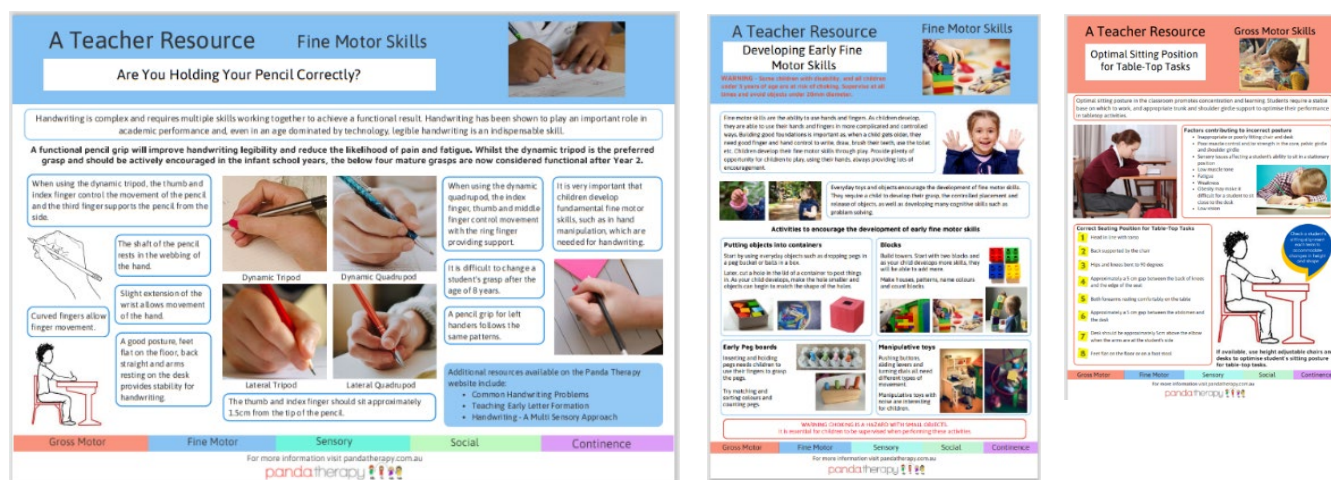
Figure 15 Examples of p.a.n.d.a. therapy resources

Pre-requisite developmental skills for handwriting

If you are notice that a student is experiencing difficulties in learning **beginning writing**, then check that the student has acquired these fine motor skills.

If skills are delayed in these areas additional opportunities for learning may enable the student to progress.

This does not include the cognitive and language-based skills such as sound or letter recognition.

Pre-writing skills include:

- Established hand dominance
- Adequate attention and engagement to sit and participate in tabletop activities
- Postural control
- A functional pencil grasp and some early pencil control, evidenced by early colouring and tracing skills
- The ability to accurately copy shapes that will be required for letter formation
- A storage grasp and emerging in-hand manipulation skills.

These pre-writing areas are supported by Teacher Resources at www.pandatherapy.com.au

- Determining Dominance
- The Importance of Executive Function for Learning
- Optimal Sitting Position for Tabletop Tasks
- Developing a Pencil Grasp
- Are you Holding Your Pencil Correctly?
- Developing Early Drawing Skills
- Pre-Writing Line and Shape Formation
- Teaching Early Letter Formation
- Developing in Hand Manipulation

In some cases, earlier developmental skills may impact on handwriting development. These may include the ability to:

- Engage in a wide range of sensory play such as, play dough, sand and rice play, water play, corn flour and water and other messy play.
- Identify and discriminate between objects using the tactile sense.
- Spontaneously use a fine pincer in preference to a raking grasp when picking up tiny objects.
- Use a controlled placement (controlled release) when completing a stacking task or a puzzle.
- Have a stable trunk and shoulder girdle.
- Have adequate hand and finger strength and endurance.
- Use well developed visual skills inclusive of:
    » Tracking a moving object
    » Fixating on objects at different focal lengths.
- Coordinate bilateral skills and crossing the midline in both the fine and gross motor areas.
- Effectively control early tool use inclusive of:
    » Scissors
    » Spoon
    » Fork etc.

These earlier developmental skills can be supported by Teacher Resources at
www.pandatherapy.com.au

- Handwriting – a Multi-Sensory Approach
- The Early Development of a Pincer Grasp
- Developing Early Fine Motor Skills
- Further Developing a Pincer Grasp
- Motor Planning
- Postural Control
- Proprioception and Body Awareness
- Developing Hand and Finger Strength
- Early Ball Skills
- Developing Bilateral Coordination Skills
- Pre-Scissor Skills
- Beginning to use Scissors
- Developing Scissors Skills – Cutting Lines and Shapes

Further information available at www.pandatherapy.com.au

More detailed information is contained in training webinars including –

- Fine Motor Development 0-2 years
- Fine Motor Development 3-5 years
- Fine motor Issues in the older student – Handwriting versus Keyboarding
- Motor Planning
- Developmental Coordination Disorder

Fiona O'Keeffe

Occupational Therapist

2PS Program

PANDA Therapy

Handwriting Observation Guide – Kinder to Year 2

Name	Year level	Date
Hand preference	**L**	**R**
Code	• Correct	• Not yet evident

General handwriting skills	Code	Comments
Sitting position / posture		
Pencil grip		
Paper placement		
Uses spacing appropriately		
Correct orientation		

Lower case letter formation

Anti-clockwise letters	a	d	g	q	c	e	o	s	u	y	f	Comments
Formation: Starting place Direction Shape Finishing place												
Size (consistent and in proportion)												

Stick letters	l	i	t	j						
Formation: Starting place Direction Shape Finishing place										
Size (consistent and in proportion)										

Clockwise letters	m	n	r	h	p	b				
Formation: Starting place Direction Shape Finishing place										
Size (consistent and in proportion)										

Diagonal letters	k	v	w	x	z					
Formation: Starting place Direction Shape Finishing place										
Size (consistent and in proportion)										

Upper-case letters

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Numerals

0	1	2	3	4	5	6	7	8	9

Handwriting Observation Guide – Year 3+

Name	Year level	Date
Hand preference	**L**	**R**
Code	• Correct	• Not yet evident

General handwriting skills	**Code**	**Comments**
Sitting position / posture		
Pencil grip		
Paper placement		
Uses spacing appropriately		
Correct orientation		

Lower case letter formation

Anti-clockwise letters	a	d	g	q	c	e	o	s	u	y	f	**Comments**
Formation: Starting place Direction Shape Finishing place												
Size (consistent and in proportion)												
Slope												
Links												
Fluency												

Stick letters	l	i	t	j			
Formation: Starting place Direction Shape Finishing place							
Size (consistent and in proportion)							
Slope							
Links							
Fluency							

Clockwise letters	m	n	r	h	p	b	
Formation: Starting place Direction Shape Finishing place							
Size (consistent and in proportion)							
Slope							
Links							
Fluency							

Diagonal letters	k	v	w	x	z	
Formation: Starting place Direction Shape Finishing place						
Size (consistent and in proportion)						
Slope						
Links						
Fluency						

Upper-case letters

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Numerals

0	1	2	3	4	5	6	7	8	9

APPENDIX 5: Frequently Asked Questions (FAQs) For School Leaders

What are transcription skills and why are they necessary?

Transcription skills include handwriting, computer keyboarding and spelling, and research evidence suggests that these skills impact learning. (James & Englehardt, 2012; Kiefer, et al., 2015; Limpo, et al., 2017)

If a learner is concerned about how to write a letter or spell a word, they may lose their thoughts – working memory is used up trying to remember how to write something rather than what to write.

- Good transcription skills support learning
- Poor transcription skills have been shown to constrain thinking, planning and translating processes.

Why continue to teach handwriting?

'… *handwriting has been weighed in the balance and found necessary*' (Schwartz, 2017).

Handwriting is a 'complex perceptual-motor skill encompassing a blend of visual-motor coordination abilities; motor planning; cognitive and perceptual skills; as well as tactile and kinaesthetic sensitivities' (Feder & Majnemer, 2007) requiring 'sustained attention, sensory processing, and the presence of proper biomechanical components for posture and hand grip' (Lust & Donica, 2011).

International research across multiple disciplines demonstrates that handwriting helps to support and promote:

- Cognitive and motor skills development (Fears et al., 2018)
- The learning of letters (Fears et al., 2018) and words (Ihara et al, 2021)
- Phonological processing (Gimenez et al., 2014)
- Reading and memory, (Limpo & Graham, 2019; Malpique et.al., 2019)
- Composition quality (Limpo et al., 2017; Malpique et.al., 2019)
- Literacy skills (Doug, 2019)
- Academic success (Fears et al., 2018)
- Apelling (Virginie et al., 2013).

Handwriting also enhances creative skills and develops their sense of identity (Doug, 2019).

Which disciplines have researched and support continued instruction in handwriting?

- Occupational therapy (McMaster & Roberts, 2016; Patton et al., 2015)
- Neuroscience (Marquardt, et al., 2016)
- Paediatrics and child health (Isaacs, 2013)
- Developmental medicine and child neurology (Planton et al., 2013; Feder & Majnemer, 2007)
- Human movement (Alamargot & Morin, 2015; Sita & Taylor, 2015)
- Psychology (Labat et al., 2015; Santangelo & Graham, 2016)
- Early childhood literacy (Reutzel, Mohr & Jones, 2017; Dinehart, 2014; Stevenson & Just, 2014)
- Learning difficulties (Limpo, Alves & Connelly, 2017)
- Social and behavioural sciences (Alonso, 2015)
- Education (Quemart & Lambert, 2019; Taneri & Akduman, 2018, Malpique et al, 2017; Medwell & Wray, 2014).

Has any of the research been conducted in Australia?

Yes, a recent Australian research study found that handwriting automaticity predicted 'writing quality and production concurrently and across time' as well as 'reading performance across time' (Malpique et.al., 2019, p. 783). Another Australian study investigated the expectations of Year 7 students (Mackenzie & Spokes, 2018b) and discovered that Year 7 students were expected to be proficient in both handwriting and writing on a keyboard but very few students were proficient at either. Many of the students were frustrated with their lack of skill in handwriting and keyboarding.

> *"I was **kind** of taught half and half [in primary school] . . . which was bad - because it meant that I didn't learn enough keyboarding skills to be good at keyboarding, **and . . . I didn't get enough handwriting skills to be good at handwriting**."* (Mackenzie and Spokes 2018b, p. 14).

Is keyboarding replacing handwriting?

No, it is not. In recent times, a shift in how we write means that most people are using a combination of typing and handwriting throughout their day, as well as texting on their phone and/or using a touch screen on a digital tablet. (Mackenzie & Spokes, 2018c)

Do we need to teach keyboarding?

Yes, we do – in addition to handwriting. They are complementary skills. While there is no research connecting keyboarding skills to academic learning, reading or literacy development, there are advantages in being able to touch type and therefore use a computer keyboard efficiently. However,

> *to assume that students are 'digital natives' who do not need instruction in how to efficiently use a computer would be a mistake. It has been noted by teachers that some students find typing and the use of a computer mouse quite challenging. While many students live in homes with at least one computer, more common are tablets and smart phones. Home computers may not be used for writing: some are used exclusively for gaming, while others may be used for searching for information.'* (Mackenzie, 2018, p. 2)

- The efficient use of the keyboard may enable students to spend time thinking about what they are writing and to check, edit and improve their work as they write.
- Students who can touch-type on digital devices write faster than those using pen and paper (Wollsheid et al., 2016).
- The advantages of keyboarding are only evident when students are taught how to type efficiently.
- Without specific keyboarding instruction and the time needed to develop typing automaticity, the quality of students' compositions may be poorer by up to two years than handwritten texts (Connelly et al., 2007).
- Keyboarding may also engage reluctant writers or students who have poor handwriting.

When should handwriting be taught?

Handwriting should start with patterns and then letter formation in the first full time year of schooling (Prep) and continue throughout primary school as per curriculum guidelines. Printing is the handwriting focus from Prep to Year 2, with cursive script introduced in Year 3 and consolidated through Year 6 so that students begin Year 7 with a "legible, fluent, personal handwriting style". (Literacy Capability)

Further details are provided in the earlier parts of this guide.

> *'The purpose of handwriting instruction is to help children develop a handwriting technique that is efficient, automatic and legible so that they can focus on the content of writing tasks rather than the physical act of writing'* (Mackenzie & Spokes, 2018c, p. 141).

When should computer keyboarding be taught?

The Writing Progression: Handwriting and Keyboarding (ACARA 2022) suggest students should learn the placement of computer keys in Years 1 and 2. https://v9.australiancurriculum:general-capabilities-literacy-v9.docx

> "*Young students starting school have small hands, are still learning their letters, are unsure of the locations of the keys, and often have difficulty coordinating their fingers to press keys in the correct order. They may still be learning their letters at this early stage and handwriting has been demonstrated to support this learning. This can make young students who are expected to type on a keyboard and manage a computer mouse very frustrated and disengaged from the writing process (Berninger & Wolf, 2009)*" (in Mackenzie, 2018b p. 6).

- In Year 1, students are expected to demonstrate keyboarding skills by typing short letter clusters and short common words as single units (eg "er", "ing", "the", "my") and type using spaces between words and sentence punctuation.

- In Year 2, students are expected to recognise and use keys to show more complex punctuation or symbols.

- In Year 3, students are expected to use a range of digital applications to compose and edit and self-correct using appropriate keyboard and screen functions.

- In Year 4, students should demonstrate automaticity when using keyboarding and screen functions.

Freeman (et al., 2005, p. 119) suggests that the upper primary age is an appropriate time to start teaching keyboarding. Students require '25–30 total hours of instruction' and a considerable amount of practise if they are to become automatic at keyboarding, able to touch-type and work with critical computer keystrokes and actions as identified above. While primary age students benefit from lessons of 20–25 minutes, older students may be better off with lessons of 45 minutes in length (Donne, 2012). Christensen (2004) demonstrated that 8 weeks of intensive keyboarding instruction with small groups of students was effective.

The goals of keyboarding instruction include 'correct form, speed, and accuracy' (Donne, 2012, p. 202). Knowing where the keys are so that it is possible to find them and use them automatically requires a lot of practice. There are many software packages available for use by schools or individuals (search for 'learn to type' in your browser). Games are also available online (search for 'typing games online') that help teach students to keyboard efficiently. Choose carefully, trialling any programs or games before using them with children: they are not all equal in quality" (Mackenzie, 2018, p. 6).

Key Reference:

Mackenzie, N. M. & Spokes, R. (2018b). *Handwriting and keyboarding skills: The tools for writing required in high school*: a collaboration between Charles Sturt University and Trinity Anglican College, Albury.

Mackenzie, N.M. (2018). Handwriting and Keyboarding: skills for writing. Best Advice: Leading Learning Improvement. http://tiny.cc/BestAdviceLit

APPENDIX 6: Handwriting information for parents and carers

Key Messages for Parents and Carers

These messages can be shared with families via newsletters and social media platforms. The messages have been organised under the following headings:

1. Handwriting
2. Gross Motor Skills
3. Fine Motor Skills
4. Posture
5. Prep to Year 2
6. Years 3 – 6
7. Year 7 and beyond

Schools may wish to share other information from this document including p.a.n.d.a therapy resources in Appendix 4.

1. Handwriting

Handwriting is an important life skill. Writing by hand requires attention, memory, planning and problem solving. At school your child will be supported to develop an effective and legible writing style.

Everyday activities build the muscles and skills that support handwriting.

These include:

- opportunities to draw and write using a range of materials eg. pencil, paint, chalk, making letters in sand

- mazes, dot to dots and spot the difference activities

- copying shapes

- building using Lego, blocks

- jigsaw puzzles.

2. Gross Motor Skills

To be able to write by hand or use a key board children need strong core muscles. Support your child to develop their core strength by encouraging them to:

- climb, use monkey bars and swings

- use a trampoline

- ride bicycles and scooters

- play ball games

- run, jump, skip and hop

- crawl through tunnels.

3. Fine Motor Skills

Developing small muscle movements in children's hands supports them to use pencils to write and draw.

Everyday activities that support this include:

- using a knife and fork
- threading
- managing fasteners on clothes, eg zips and buttons
- using tongs to pick up small objects
- cutting with scissors
- drawing with a variety of implements
- construction toys eg Lego
- playdough
- games eg pick up sticks
- handling playing cards.
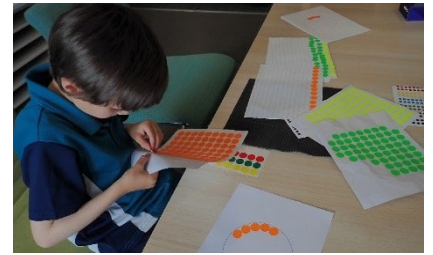
4. Posture

Good posture enables us to write for longer periods of time. To do be able to do this we need strong core muscles and good posture.

Ideas to support this:

- Create a space for your child to write and draw in.
- Choose furniture where the child can:
  - » Have their feet on the floor (or on a raised footrest)
  - » Their back supported by a chair
  - » Write at a table that allows them to rest their forearms and easily view their writing or drawing .
- When writing in other places eg the floor, coffee table, kitchen bench, try and make the experience comfortable.
- Show your child how to keep the paper still. One hand holds the pencil and the other hand rests on the paper, keeping the page still whilst the other hand writes.

'Paper position' and 'other' hand support

Left handed   Right handed
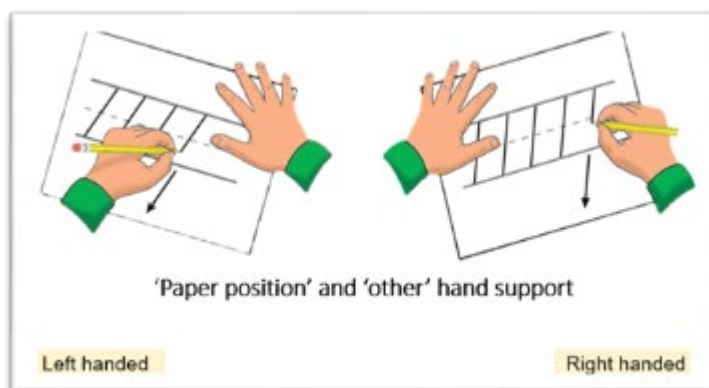
5. Prep to Year 2

- In Prep to Year 2, children are learning to correctly write the letters of the alphabet.

- Writing letters automatically allows children to focus on the content of what they are writing, rather than how to write the letters.

- Developing an effective pencil grasp supports children to write.

- Even sized letters and spacing take time and practice to develop.

If you are concerned about your child's handwriting speak with your classroom teacher.
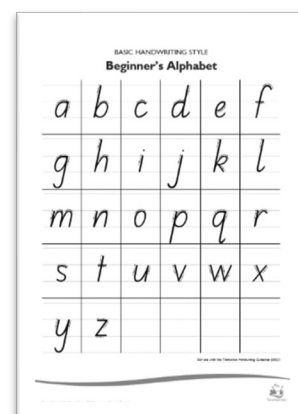
6.   Primary Years

- In Years 3 to 6 students are learning to write using cursive or joined letters. Joining letters makes writing faster.

- During this time students are revising and refining the formation of letters to link them. This is an opportunity to relearn letter formations that may have caused difficulty.

- An effective pencil grasp combined with automatic handwriting allows them to write for extended periods of time.

- Students are developing their keyboarding skills alongside their handwriting skills.

If you are concerned about your child's handwriting speak with your classroom teacher.

7. Year 7 and Beyond

- During high school and beyond students continue to develop their own writing style.

- Handwriting and keyboarding are both important in these years.

- Students need to be able to write quickly, for extended periods of time and neatly enough for a reader, including themselves, to read it.

- Handwriting should be fluent. Students who find that writing for extended periods causes discomfort may need additional support.

- Students need to know and make choices about how to present their work for different purposes.

APPENDIX 7: Activities to improve arm, hand and finger strength for writing

Also see the p.a.n.d.a.therapy resources in .

- Popping plastic bubble wrapping material using a pincer grasp.

- Squeezing clothes pegs (helping to hang up or take down clothes on the clothesline or similar activity).

- Using a hole puncher for art activities.

- Open and hold the school door for the teachers or class.

- Help erase the blackboard or whiteboard.

- Pouring activities eg water plants.

- At home, digging in the garden, raking, sweeping, cleaning windows, carrying groceries etc.

- Finger Painting – using individual fingers, do shapes, pre-writing patterns.

- Drawing with a variety of implements.

- Play dough-squeezing, rolling, and pinching.

- Use a rainbow ribbon to make circles and figures of eight (8) in different positions.

- Climbing and monkey bar games where the arms have to pull up the child's bodyweight.

- Playing 'wheelbarrows' or other games where the child bears his bodyweight through his arms.

- Animal walks, obstacle courses and crawling.

- Crab walks in all directions (tummy in air).

- Making bridges with their bodies.

- Making letter shapes with their bodies; this will teach them about shapes and improve core strength.

APPENDIX 8:

Also see the p.a.n.d.a.therapy resources in Appendix 4.

The function of the intrinsic muscles of the hand

The intrinsic muscles of the hand are the tiny muscles in the hand, which are responsible for many of the fine finger movements. These include:

- The ability to spread the fingers out wide and bring them back together.

- The ability to move a hand, that starts flat on the table, to make a pyramid, with the knuckles at the apex, fingertips touching the table, and the palm raised from the table surface. The thumb moves into contact with the side of the index finger as the pyramid is raised.

- These movements can be seen functionally, when the hand is stabilised on the table, and the fingers move a pencil to write, and when the fingers make fine movements to thread a needle.

- The intrinsic movements can best be observed in activities that require the tip of the thumb, index finger and middle finger to be touching, while performing small movements in mid-range flexion and extension, at the MCP joints (the knuckles joining the fingers to the hand).

    These movements are performed best with the wrist in the slightly extended Functional Position.

Activities and exercises to promote the use of the intrinsic muscles

- Rest hand flat on the table and raise the palm up into a pyramid, while the fingertips, little finger and thumb, all stay in contact with the table.

- The student can try to 'open the door' of the pyramid with his thumb by slowly moving it away from the hand in an arc as far as possible.

- The student interlocks the straight fingers and thumbs of both hands, and, as he slowly moves his hands apart, he tries to hold his fingers together by squeezing his fingers against each other.

- The student holds a piece of card, fabric, or paper between two fingers, and tries to hold it for as long as possible, while the teacher slowly draws it out. This is repeated between each pair of fingers on both hands. Initially it will be easier if materials with more resistance are used, such as corrugated cardboard, thin foam, non-slip mat etc.

- The student uses both hands to make a large "ball" by keeping the joints softly bent, touching all the fingertips, and arching the palms. When this position can be found easily, the student can begin to move in and out of it, in various ways, for example:
    » move the hands from the 'ball' to the 'prayer' position
    » move the palms away keeping the fingertips touching by moving them closer together, forming a long hollow cage out of the two hands, and repeat to show a movement like a jellyfish.

APPENDIX 9: Warm-up activities

Also see the p.a.n.d.a.therapy resources in Appendix 4.

Finger warm-ups

Put on imaginary writing gloves

Pull on the 'gloves', applying firm pressure to the fingers, as well as the back and palm of each hand. This exercise provides tactile feedback and prepares the muscles for movement.

Spider push-ups

Place fingertips together, bend and straighten the fingers while pushing the finger-tips against each other.

Pencil Olympics

Twirl the pencil like a baton, spinning it both horizontally and vertically.

Inchworm

Using a tripod grasp, move the fingers along the pencil from one end to the other. Do not use the other hand to hold or support the pencil.

Piano

Drum the fingers on the desk as if playing a piano. Ensure each finger-tip touches the desk.

Shoulder warm-ups

Shoulder warm-ups prepare the arm for writing and may help to release tension in the neck and shoulders.

Shoulder shrugs

Shrug shoulders forwards, then backwards.

Crocodile snaps

Start with one arm straight above the head and the other extended down one side of the body, then snap the hands together meeting above the head, like a crocodile snapping its jaws.

Repeat with reversal of arm positions.

Air-traffic controller

Start with the elbows bent and the hands in a fist in front of each shoulder. Then straighten the elbows, moving one arm out to the front of the body and the other arm to the side of the body. Alternate the movements.

Butterflies

Begin with arms extended straight in front of the body. Link the thumbs to make an 'x' and turn the palms to face out. Using the shoulders to move, make small circles with the hands, moving the hands to the left and right in unison (the fingers lie side by side and are not moving — the movement is coming from the shoulders).

Chair push-ups

Begin by sitting up straight in the chair with hands grasping the sides of the chair, thumbs facing forwards and fingers pressing against the underside of the chair. Using the strength in the arms, push the bottom up from the chair. The feet should come up from the floor.

Desk push-ups

Start with hands flat on the desk, with the tips of the thumbs and index fingers facing each other to create a triangle. Bend the elbows to bring the nose towards the triangle and then push up with the arms to straighten the elbows again.

NOTE: The warm-up activities described are based on the work of Laura Stevens, occupational therapist, in Hands up! (2004), a description of a handwriting project for Torrensville Primary School, South Australia.

APPENDIX 10:

Slope Card 1 – Early Years
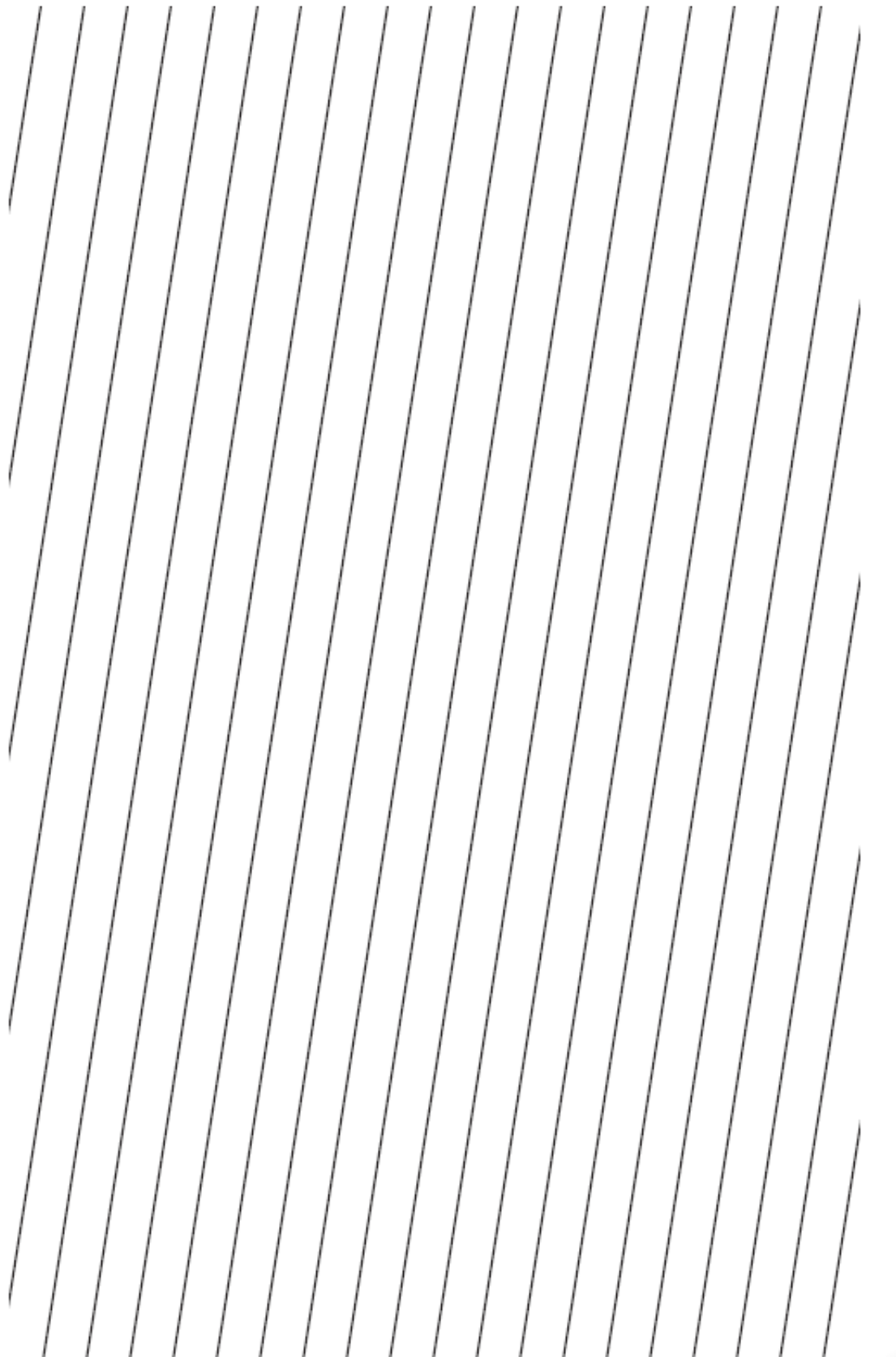
Slope Card 2: Cursive writing
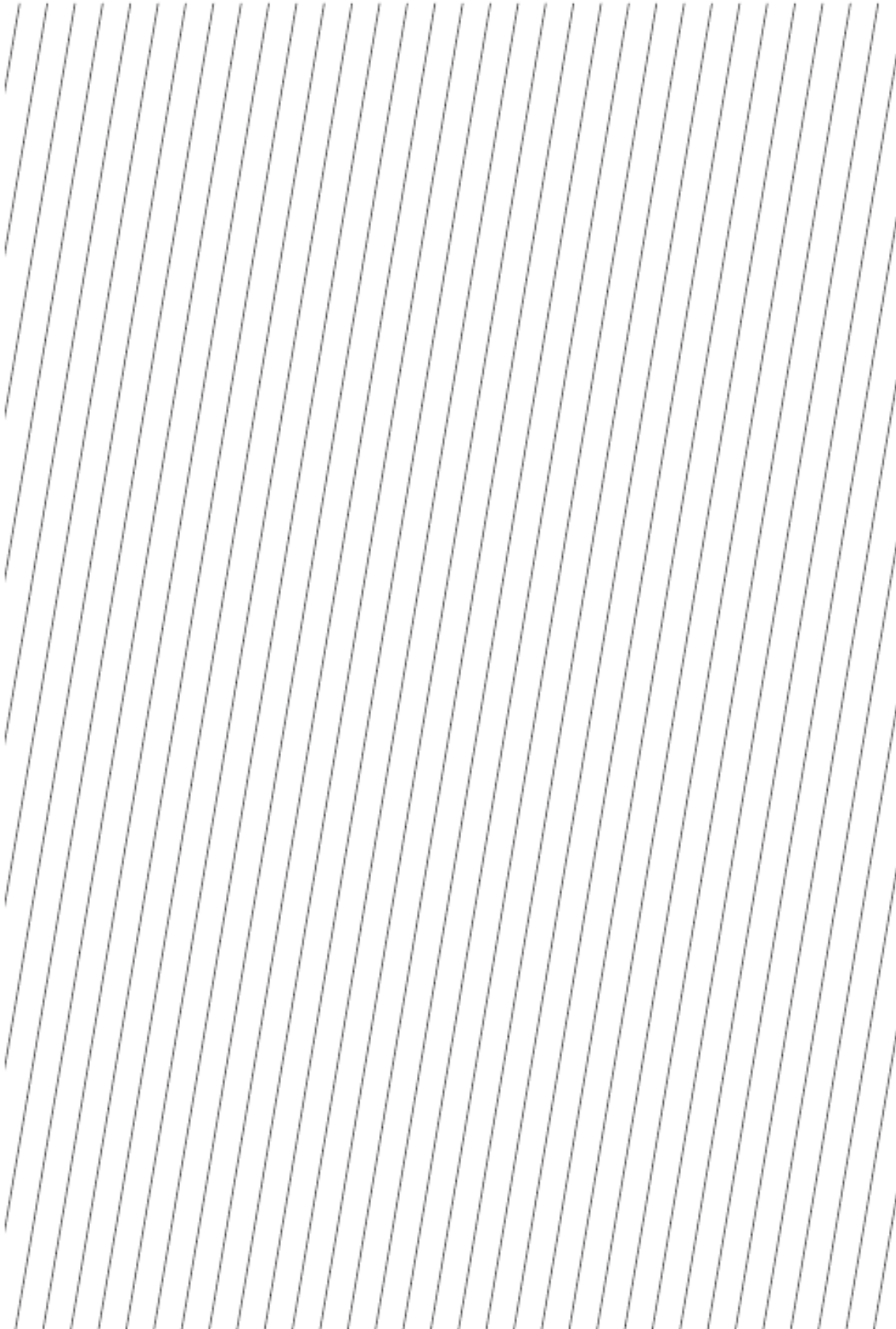
Glossary of terms

Automaticity

Automaticity is the ability to do something automatically and without conscious thought as a result of habitual learning, repetition and practice. Handwriting automaticity takes years of instruction and practice, as shown by studies assessing handwriting throughout schooling. (Limpo & Graham, 2019)

Handwriting

Handwriting is the process of writing by forming letters and words using a tool such as a pen or pencil. Handwriting requires sensory-motor processes (haptic, motor, visual, etc.) to accurately reproduce the shape of a letter legibly and automatically with a pen or pencil (Mackenzie, 2022, p. 287). Although handwriting is intricately related to the process of composing a text, it is discussed in this guide as a discrete skill.

Teaching Handwriting

Teaching handwriting refers to teaching skills in using appropriate tools to form letters and words. Instruction should be explicit and begin when children start school and continue throughout primary and secondary school. (Mackenzie, 2022, p. 292)

Transcription

Transcription is the externalisation of language through written text. Transcription involves the retrieval, and selection of orthographic symbols, as well as the execution of motor movements required by a particular writing tool (pen, pencil, or keyboard) to produce those symbols. Handwriting, spelling and computer keyboarding are all transcription skills.

Writing

Writing refers to the complex process of text creation. Contemporary writing incorporates a variety of traditional, digital, multimodal and visual literacy forms. However, for the purpose of this Handwriting Guide the focus is on the act of transcription by hand or handwriting.

Scaffolding strategies for the early years:

Hand over hand – an educator places their hand over the learner's hand and guides their hand through the letter formation.

Imitation – the learner watches an educator write a letter and then imitates the movements needed, maybe even at the same time especially if a rhyme is being used for cues.

Tracing over – the learners traces over a model with dots and arrows to show them where to start and which direction to go. This includes tracing inside a shape.

Copying – the learner sees a letter or shape and reproduces it without seeing how it was done. Teachers need to be aware that the learners can produce 'perfect' handwriting with unusual stroke direction and order. Copying without monitoring can reinforce poor letter formation.

Recommended resources

Further reading

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p.a.n.d.a. therapy https://www.pandatherapy.com.au/
p.a.n.d.a. therapy is contracted to provide services to DECYP schools. Teachers can set up an account using their DECYP email and access high quality support materials.

Computer fonts

Sets of computer fonts are available from a number of commercial producers. These include the basic fonts as well as fonts that include numbers, various guidelines or are in outline or dots. Each provider develops their own sets and therefore the number of options and resources for Tasmanian Fonts varies between them.

We are aware that the following producers have provided fonts to Tasmanian schools in the past. These producers have all been provided with information about the updates in these guidelines to enable their fonts to be consistent with these current DECYP guidelines.

• Australian School Fonts – Australian School Fonts - Instant Download Aussie Handwriting Fonts

• EdAlive – Aussie School Fonts Plus: Aussie School Fonts Plus (PC/MAC) - EdAlive Online Learning

• School Fonts – Schoolfonts

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