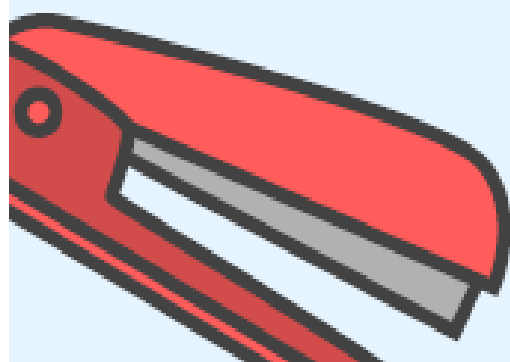




OCCUPATIONAL THERAPY
CHILDREN AND YOUNG PEOPLE

HANDWRITING

RESOURCE PACK
FOR SCHOOLS



Handwriting Resource Pack

Introduction

There is an expectation that most children will have consolidated their pencil grasp and control by age 7. However handwriting is a complex task with a variety of component parts which rely on many underlying motor and perceptual skills, including:-

- Balance and postural control
- Ability to move rhythmically
- Eye-motor control
- Arm/hand stability and finger dexterity
- Body/spatial awareness and directionality
- Attention and concentration
- Bilateral coordination (both sides of the body working together)
- Hand dominance
- Visual discrimination and recognition
- Motor planning

The focus of this resource pack is to provide information and practical tools/strategies for the most common difficulties experienced with the physical process of handwriting. If a child has difficulties with any of the above motor skills, please see our Motor Skills Packs for further guidance and advice.

It is acknowledged there are other wider elements which can impact on the development/ability or readiness to write that are not covered in this pack (i.e. cognitive elements, language composition, spelling, reasoning etc.). Education professionals are best skilled to address these areas.

Readiness for Writing

Many children coming into primary 1 exhibit variations in maturity and some have not fully developed the foundation skills for more formal learning.

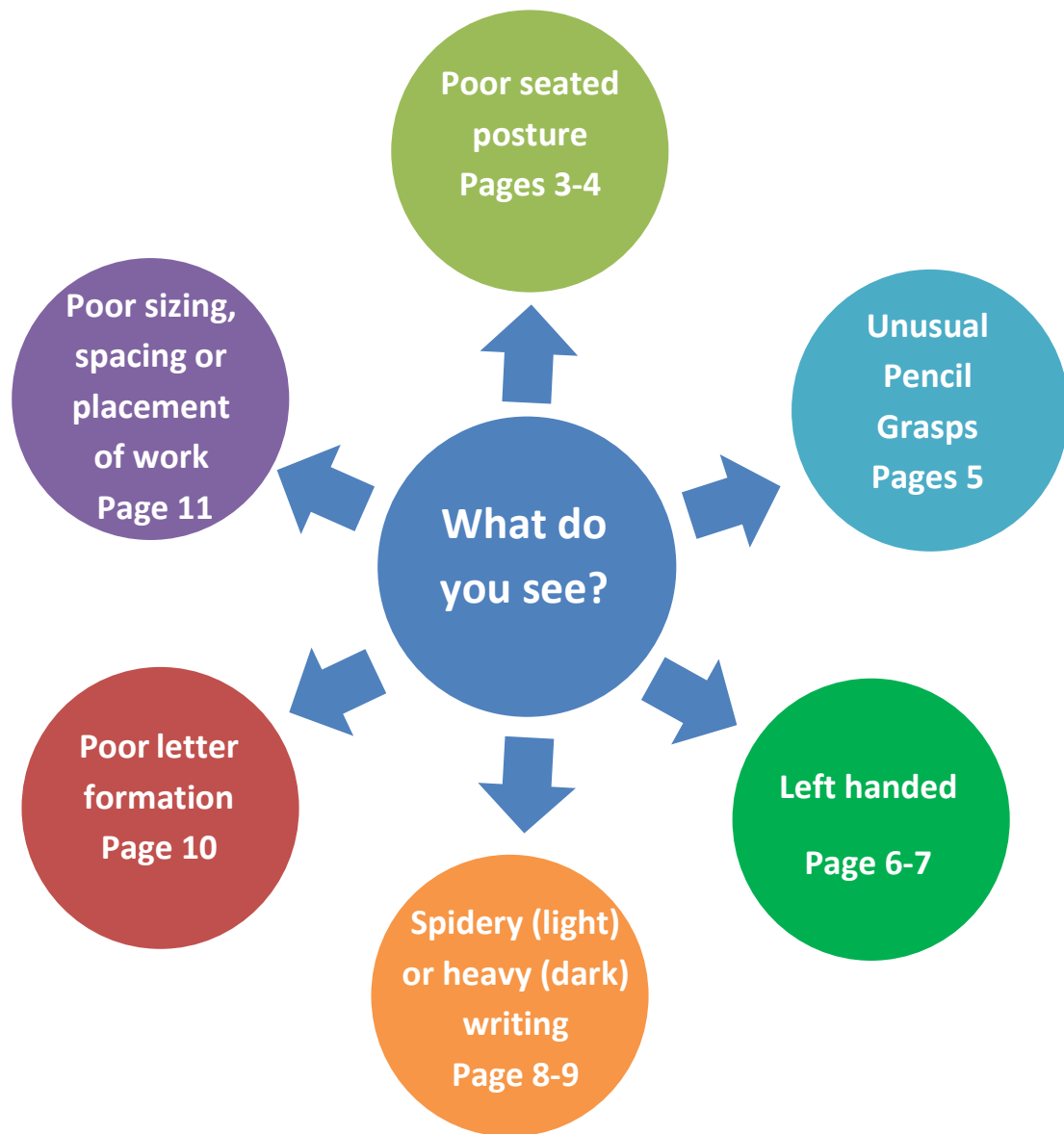
When children come to school, experience of letter shapes and writing varies. Some may know how to hold a pencil and form certain letters; others may have been encouraged to write before they are ready. Most children will benefit from practicing the foundation skills needed for writing.

If you feel a child is still at the pre writing stage, please see our Pre Writing Resource pack for further advice.

An evidence form can be found in Appendix 5 to help document which resources and activities have been trialled to help with skill development. If you feel you require further advice and/or assistance after using this pack, please contact the Occupational Therapy Department.

Contents Page

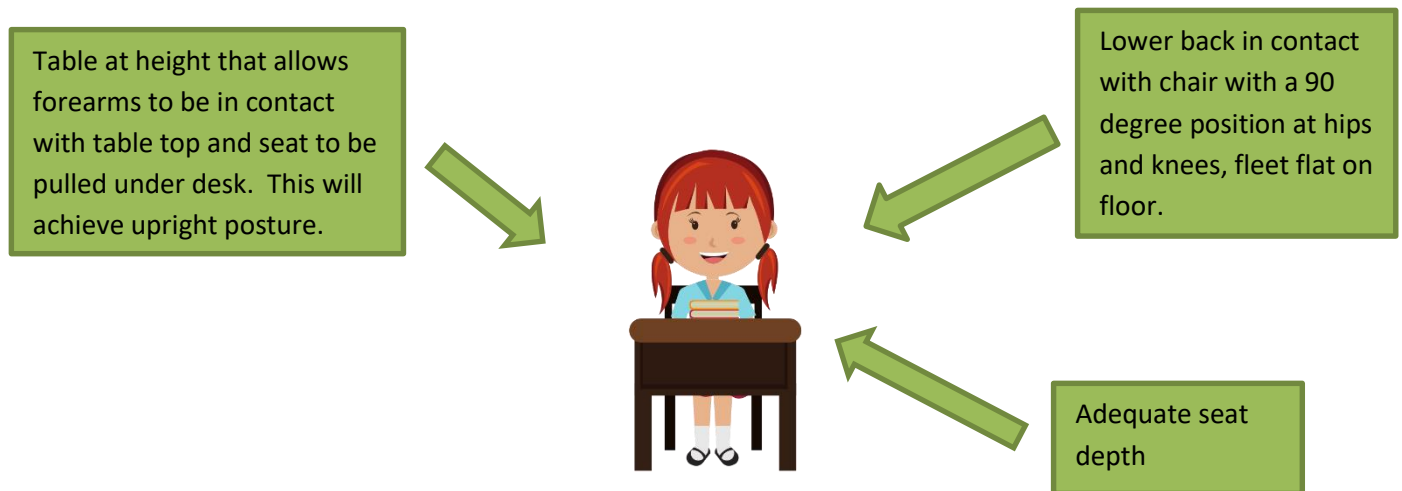
To use this pack use the “What do you see?” approach to identify the difficulty the child may have and the colour coded pages will offer practical advice and resources for the area you have identified.



What do you see? Poor Posture

Ergonomics

Good sitting posture provides children with a stable base. In the first instance it is important to consider the basic ergonomics of furniture and ensure effective seated posture.



If a child has poor seated posture, this can put stress on muscles and joints and can affect the quality of the work they produce. Please see below for a rough guide for suitable height furniture for different ages:



Age	4-6 years	6-8 years	8-11 years
Seat Height	31cm	35cm	38cm
Desk Height	53cm	59cm	64cm

What do you see? Poor Posture continued...

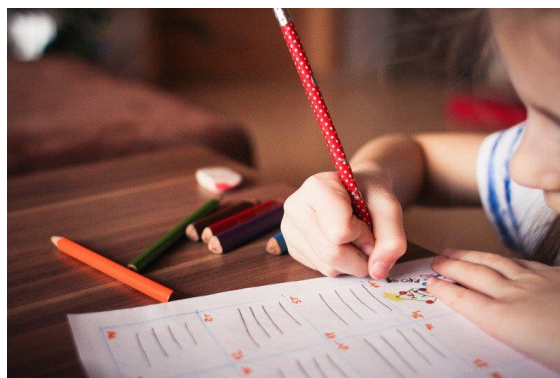
Other considerations

If the furniture is suitable and poor posture is still observed, it may mean the child is experiencing difficulties with their core strength and stability. Core strength, alongside shoulder stability, provide a stable base for controlling a child's arms, hands and ultimately pencil.

A child develops core and shoulder strength primarily through participation in gross motor activities. Activities to promote the development of core strength can be found in our Motor Skills Pack.

The table below offers suggestions for some of the presentations you may see in the classroom relating to poor posture:

Presentation	What to try?
1. Slouched forward with head close to the page	An angled board encourages more upright posture. Purchase information can be found in Appendix 1.
2. Slouched back in chair	Tilting a child's pelvis forward can improve posture at their lower and upper back. Initially we would recommend trying rolled up towel placed at the base of the child's back (lumber curve). The posture pack or wedge cushion will also help with correcting slumped posture. Purchase information can be found in Appendix 1.
3. Constant movement or shifting positions	Postural Alerting Strategies and regular movement breaks – see Appendix 2 Air filled cushion (allows a child to move but limits need to move excessively). Purchase information can be found on Appendix 1.



What do you see? Unusual Pencil Grasp

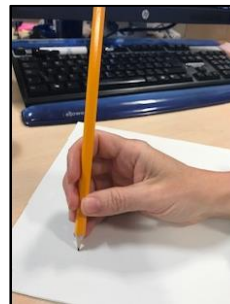
Most people will develop a tripod grasp. However, there are a number of different variations in grasp that people can adopt which are equally as efficient and effective as the tripod grasp. If a child's handwriting is legible and they are keeping up with the pace of work, there is no need to intervene.

Example of Tripod Grasp.



An example of an unusual grasp may sometimes be seen in children with hyper mobile fingers (fingers that bend more than average). These children often lack the stability in their joints to achieve an effective tripod grasp. Picture two below shows a grasp that is often adopted by children with hyper mobile joints. The wide spread grasp spreads the 'load' and allows children to control their pencil to the best of their ability. In cases like this it would be advised not to change the child's pencil grasp.

Example of a wide spread four fingered grasp:



However, if the child displays an unusual pencil grasp which does affect pencil control and stamina, there are a number of small aids on the market which may be beneficial. Please see below for the most common difficulties and suggestions to try:

Presentation	What to try
Unusual grasp causing Difficulties with handwriting.	There are a number of pencil grips that can be used to encourage a child to develop a dynamic tripod grip. A trial and error approach to selection of a pencil grip is recommended. Appendix 1 outlines the most common pencil grips that are used with success.
Pencil held out with web space and affecting stability	The use of a loose elastic band, or a 'Handiwriter' can be helpful to encourage a child to hold their pencil back into the web space of their hand. Appendix 1 offers purchase information for the 'Handiwriter'.
Wrist and/or forearm 'floating'	The use of an angled board can encourage wrist and forearm contact. Purchase information is available in Appendix 1.

What do you see?

Left handed

Approximately 10% of the population is left handed. This can make learning to write a more difficult process. Learning to write from left to right is harder; instead of pulling the pen across the paper, they have to push it, which can lead to difficulties with grasp position, smudged work and arm strain. Most left handed children will adapt their own style of pencil grasp, wrist and paper position to meet their own needs, however some children may benefit from some guidance. Please find below some advice or points to consider for a left handed child:

- Sit left handed children on the left. If the left handed child sits to the right of a right handed child their elbows will clash as they write.
- A left handed child may find to hold the pencil 2.5-3.5cm from the tip of the pencil (further up the shaft of the pencil than a right handed child). The preferred position can be marked with a small elastic band or by using a pencil grip or pen with an integral grip.
- Consider use of a Yoropen which will allow children to see their work more clearly – please see purchase details in appendix 1.
- The paper position should be to the left of their midline (centre of their body) and should be slanted to the left hand side parallel to their forearm as they write across the line. Many children see their writing better if their paper is slanted as much as 45 degrees.
- Place a dot at the start of the line. When they are learning to write left handed children often naturally write from right to left. Putting a dot at the beginning of the line prompts them of where to start.

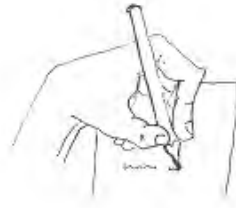


Correct grasp for left-handed child:



What do you see? Left handed continued...

Some left handed children may hold their pencil with a hooked grasp. This may result in: restricted arm and finger movements - having to move the whole arm when writing letters, increased fatigue, continual re-adjustment of hand position with jerky movements, reduce fluency and speed, aching in wrist and fingers with extended periods of writing, smudging of work and difficulty achieving neat writing and presentation.



Strategies to avoid a hooked grasp:

- Practise drawing /writing on vertical or sloping board to develop wrist extension
- Check paper position - angled correctly for left-hander
- try an angled surface on table
- experiment with softer pencils or alternative pens
- use relaxation techniques regularly (see below)

Further points to consider:

- A left handed children may form some letters differently from a right handed child. For example the letter "t", the vertical line will be formed as normal however the cross on the "t" would be from right to left.
- Left handed children benefit from having an alphabet line placed at their desk to refer to as example letters as their left arm is likely to obscure their handwriting therefore unable to see beginning of the line.
- If a child is having difficulty seeing their writing a Yoro pencil may be beneficial - please see appendix 4 for purchase details.
- If a child is using a finger spacer, for left handed children it is more beneficial to use from the top of their work-see appendix 4 for details.
- For high school children using pens, using a quick drying pen can reduce risk of smudging.

Useful resources for left handers can be found on:

www.Leftshoponline.co.uk
www.Anythinglefthanded.co.uk

What do you see?

Light and spidery writing or learning too heavily

Children may either lean too lightly or press too heavily when writing. The following factors may contribute to this:

- Poor shoulder stability
- Weak arm or hand muscles
- Poor sensory feedback

To help with the above issues please refer to our Motor Skills Activity Pack.

Light pressure may result in:

- Inability to make consistent marks on paper
- Poor pencil control
- Illegible, spidery script

The table below outlines strategies to address light pressure when writing.

Strategy	Explanation
Check seated posture	Good sitting posture provides children with a stable base. Please see page 2 for details.
Hand warm up/deep pressure activities	Prepare children's hands in preparation for handwriting. Please see appendix 2.
Try an angled surface	Provides improved postural support. Please see appendix 1 for purchase details.
Carbon paper	Carbon paper can be used to encourage children to lean more heavily through the page, having to get through to the second or third sheet of paper and make a mark.
Light up pens	Children are required to press with more force to light up the pen.
Weighted pen/pencil	May provide additional feedback and may dampen a tremor (shakiness).
Consider trying a pencil with a darker lead.	This will improve presentation of work.

What do you see?

Light and spidery writing or leaning too heavily continued...

Heavy pressure may result in:

- Increased tension (aching) in forearm and wrist
- Loss of fluency
- Difficulty writing for a sustained length of time
- Indentations or holes made in paper

The table below outlines strategies to address leaning too heavily when writing.

Strategy	Explanation
Check seated posture	Good sitting posture provides children with a stable base. Please see page 2 for details.
Try an angled surface	Provides improved postural support. Please see appendix 1 for purchase details.
Deep pressure activities	Appendix 2 gives a variety of activity ideas to try with children who apply too much pressure through the page prior to engaging in written tasks.
Carbon paper	Used to encourage children to apply less pressure by not going through to pages below.
Use larger diameter pen or pencil or pencil grip	This will reduce strain on finger joints. Please see appendix 1 for purchase details.
Consider using pens with easier ink flow e.g. fibre tip, gel pen or roller ball.	This will reduce friction and stress on hands.



What do you see? Poor Letter Formation

If a child is managing to form pre-writing shapes but is struggling to learn correct letter formation, they could be experiencing difficulties with motor skills and motor planning. Again please refer to our Motor Skills Pack for ideas and advice on how to best develop these skills.

Visual Perception

Visual perception is another skill area which may impact on handwriting and letter formation. Visual perception is the ability to organise, interpret and give meaning to what is seen. This is an important skill for handwriting and difficulties in this area may be observed in the following ways:

- Loses place when reading or copying
- Cannot visualise things mentally
- Difficulty remembering what is seen
- Confused by an abundance of visual stimuli
- Erratic spelling
- Difficulty working from written instructions
- Trouble reading from the board
- Work on paper appears disorganised

If you suspect a child has difficulties with visual perception please contact the Occupational Therapy Department to discuss.

The table below offers a range of tools/teaching techniques that could be helpful for all areas of letter formation. We find that using a mixture of the techniques most beneficial as they keep children engaged and offer opportunities for carryover of skills.

Tool/Teaching technique	Explanation
Letter grouping	Teaching focuses on similar letters from a formation perspective, and does not necessarily marry with the developmental teaching of phonics. Example – ‘a’, ‘c’, ‘d’, ‘g’, ‘o’ and ‘q’ start in the same place and go in the same direction. Appendix 3 gives more detail regarding letter grouping.
Roll ‘n’ write	A resource that can be used as part of a multi-sensory, letter grouping approach. A silver ball is placed at the start of chosen letter and rolled. The ball then independently rolls round the plastic letter form demonstrating correct formation. The child watches this, and then can repeat the form with their finger on the shape. Purchase information can be found in Appendix 1.
Letter formation apps	Similar concept to the roll and write. Can be used as part of a multi-sensory approach to letter grouping practise. Examples of Apps for the development of letter formation are given in Appendix 4.

What do you see?

Poor sizing, spacing and placement of work

Handwriting can be poorly sized, spaced or placed for a number of reasons. These may include difficulties with motor skills, motor planning or visual perception.




The table below outlines programmes/tools and ideas to help children improve with sizing/spacing and placement of their work. We find that using a mixture of the techniques most beneficial as they keep children engaged and offer opportunities for carryover of skills.

Tool/teaching technique	Explanation
Teodorescu Perceptual Motor Handwriting Programme 'Write from the Start'	The Write From The Start programme offers a different and effective approach that will guide children through the various stages of perceptual and fine-motor development to lay the foundations for flowing, accurate handwriting. The programme offers graded activities that develop the intrinsic muscles of the hand so that children gain the necessary control to form letter shapes and create appropriate spaces between words, alongside the following perceptual skills required to orientate letters and organise the page: hand-eye co-ordination, form constancy, spatial organisation, figure-ground discrimination, orientation and laterality. Purchase details can be found in Appendix 1.
Lined paper with a green line at the left of the page and red line at the right	Green (for 'go') and red (for 'stop') lines provide a visual prompt to remind a child to begin each new line at the left side of the page.
Raised lined paper	A raised line can provide a child with a tactile prompt to keep writing on the line. Template plastic sheets can be purchased from RNIB. Alternatively a thin layer of glue can provide a raised surface to provide sensory feedback.
Colour coding paper with different lines	This can be used to encourage good sizing and spacing of letters the coloured lines can help children learn to correct sizing and placement. An example would be to use Blue, Green and Orange and teach the following "Tall letters touch the sky", "Short letters stay in the grass" and "Long letters have roots in the underground". These can be removed and replaced with a faint line of colour before removing all together.
Graph or square paper	This paper can encourage the child to have a correct space between words encouraging them to use a box between words.
Finger spacers	Left handed children may find bringing the finger spacer in from the top rather than the bottom more helpful as it continues to let them see their work. Fingers spacers can be made out of a variety of resources, however purchase information has been provided in Appendix 1 for an example.

Appendix 1

Most Commonly Recommended Pencil Grip, Small Aids and Handwriting Programmes

We would recommend that you shop around at time of purchase as prices and suppliers vary. Type the name of the pencil grip into a search engine and a variety of suppliers will be found.

Problem	Recommendation	Examples of suppliers
Child has weak or unstable hands, or pencil is held out with web space	<u>Large Ultra Pencil Grip</u> 	Amazon The Dyslexia Workshop TTS Group
Student has adequate strength and fine motor skills but needs a "reminder" of how to place fingers	<u>Stubbi Pencil Grip</u> 	Ebay Amazon TTS Group
Base of thumb joint is very unstable or child experiences pain or fatigue when writing	<u>Pen Again</u> 	Amazon Online Ergonomics

Most commonly used for children aged 6+. The rounded end of the pencil grip fills the web space, offering support and stability. The standard Ultra Grip can be used for younger children

The Pen Again is usually successful for older children as it is designed for adult sized hands

Left handed children

Yoro Pen or Pencil



Amazon
Anything Left
Handed.com

Student experiences general discomfort perhaps due to a tight grip

Variety of Padded Grips



Amazon
Mobility Smart
Special Direct

There are a variety of cushioned grips on the market, gel or foam based

Thumb wrapped over index finger and causing problems with fatigue

Cross Guard Grip/Grotto Grip



TTS
Crossbow Education
Special Direct

Pencil out with web space affecting stability and control

Handiwriter



Amazon
Leftshop online
Special Direct

A loose elastic band around a wrist can often be an initial test to see if this prompt could work to help a child achieve improved stability

**Stooped posture
Write 'floating'**

Angled Board

A large lever arch file could be used as an initial test



Welcome Mobility
NRS

**Stooped posture,
sacral sitting
(hunched over with
spine in a 'c' shape**

Posture Pack

Back in Action



The posture pack is like the angled board, but also has a seat wedge that encourages a child to sit with improved posture in their full spine. Deep edge of seat wedge should be at the back of the chair

**Constant
movement,
fidgeting and/or
need for postural
alerting**

Air Filled Cushion

Amazon
Physio Room
Sensory Direct



Air filled cushions can help keep children alert and give 'fidgety' children the moment they require to improve their focus. They come in round or triangular forms. The triangle ones can be used to improve posture by tilting the pelvis forward (deep edge at back of chair)

**Difficulties with
Sizing, Spacing or
Placement of
Written Work**

Write from the Start

Amazon
Waterstones



Difficulties with

Roll 'n' Write

Smart Kids

letter formation



LDA
Hope

Finger spacing is
poor

Finger Spacer

Sensory Direct



Ice Lolly sticks can be effective and decorated by the child. Left handed writers may find it easier to bring in spacer from the top of the page.

Appendix 2

Postural Alerting Strategies

Deep pressure techniques

These help to “waken up” the system in readiness for work and stimulate the postural muscles. These activities provide feedback to the muscles and sensory system and are calming. They do not have to be completed all at the one time, but one or two before concentrated periods of work may be useful and can become part of the routine before pencil tasks.

These can improve a child’s focus and attention to task.

- **Hand presses:** get the child to press their hands together firmly and hold for 5 seconds, release and repeat
- **Shoulder press:** An adult can press down firmly on the child’s shoulders, hold, release and repeat
- **Press down on head:** the child can lift their arms above their head, bring their hands together on top of their head and press down
- **Resistance exercise:** get your child to push firmly against your hands, release and repeat
- **Wall push ups:** Arm push-up against safe part of wall 3 times.
- **Table press-ups:** do 5 press ups at the table
- **Chair presses:** At seat, you can provide gentle pressure to spine by gently pushing down on seat to lift body up to take partial weight off seat and hold for 2-3 seconds.
- **Stretches:** Entire body stretch standing reaching to the sky while up on toes or on floor to get full stretch of arms, spine and legs with toes pointed.
- **Self-hugs:** Stretch arms outward to full width stretch, then give self a big hug while pulling in toward the bellybutton afterward.



Appendix 3

Recommended Grouping for Practice

Letter Grouping	Letters within the group
<ul style="list-style-type: none"> Letters starting with a curved line moving from right to left 	a, c, d, g, o, q / f, s
<ul style="list-style-type: none"> Letters starting with a straight line moving from top to bottom 	(start at top) b, h, k, l, t (start at middle) u y i j m n p r
<ul style="list-style-type: none"> Letters starting with a diagonal line moving from top to bottom 	v w x
<ul style="list-style-type: none"> Letters starting with a horizontal line moving from right to left 	e & z



Appendix 4

Apps

LETTER FORMATION APPS	FOCUS
Letter School ★★ Letter formation – different prompt stages for the formation of a letter. Graded from very interactive prompts to mildly interactive prompts to minimal prompts.	Finger control, accuracy & letter recognition.
Eye/Brain Training – Form Constancy Matching letters of the alphabet – draw a diagonal line to connect the matching letters.	Letter recognition & finger control.
Dexteria VPP – Write It Follow lines to draw letters. Audio instructions & visual prompts to indicate finger movement.	Advanced finger control & hand movements, letter recognition.
Letter Reflex Teaches children to recognise the difference between letters that look similar (e.g. p/q, b/d, n/u).	Overcoming letter reversals, distinguishing left/right & practicing letter discrimination.
Letter Quiz Connecting capital letters to corresponding small letters using lines. Promotes recognition of letters with guided letter formation & identifying the sounds of the letters.	Letter recognition & finger control.
Little Writer Letter formation with picture & audio guidance. Shape formation (diamond, diagonal lines, square, love heart etc.) with guidelines. Word formation – guides the individual to form letters that create a word with visual guides.	Finger control, accuracy & dexterity, letter recognition.
Pocket Phonics Taking the first steps in reading & writing. App teaches the formation of a letter with a visual guide as well as an audio guide to teach the sound of the letter. Has guide line background to help with the sizing of the letters.	Finger control, accuracy, letter recognition, basic phonics.
Puzzle Blocks Simulates a building block with a letter of the alphabet, child to line up the block correctly to form the letter.	Finger control, letter recognition.
Dot to Dot Lite Connecting dots by numbers & letters. Connecting letters in alphabet order. Drawing horizontal, vertical & diagonal lines to connect the dots.	Finger control, letter recognition.
Puzzle Spelling Child to drag letters up to matching letter to create word with contextual pictures.	Letter/word recognition, finger control.

Appendix 5 Evidence Form

Please use this form and send as evidence of additional work completed with the child, prior to making a request for assistance to the Occupational Therapy Department.

Hours of Practice per week.....

Observed difficulty	Activities/Skills Practiced	Observations/progress
Example Difficulties with spacing of words	Use of finger spacers, square paper, start and stop paper indicators	Some improvements noted however continued difficulty with messy writing

Contact us:

If you have any questions or concerns regarding the resource pack, please contact the Occupational therapy Teams at Douglas Street Community Clinic, Hamilton on 01698 368705 or Coathill Hospital on 01236 707778.

Further information on the topics covered in this pack and a range of other useful resources can be found on the KIDS Scotland web page. The website is a specifically designed NHS website for Children and Young People hosted by NHS Greater Glasgow and Clyde.

<http://www.nhsggc.org.uk/kids/>

In addition we regularly post activity ideas and general information on our Facebook page and Twitter account.

Please follow our Social media Pages:



NHS Lanarkshire Children and Young People, Occupational Therapy



@OccupationalTh4

If you have any queries or concerns please contact NHS Lanarkshire Occupational Therapy, Children and Young People:

South Team – Douglas Street Community Health Clinic (01698) 368714/705

North Team – Glenorchy Building, Coathill Hospital (01236) 707778

