

Pencil Control Concepts

What are they? Pencil control concepts are the different aspects which underpin the way in which you hold and manoeuvre the pencil on the page in a purposeful manner.

Why are they important? Research shows that learning can be hindered if too much information is presented at once to a learner. Focusing on pencil control concepts helps to build solid foundations before adding in the additional cognitive demands associated with letter formation and then handwriting.

Reflection opportunity: Write a short sentence really slowly, ignore what you are writing but focus on the way the pen/pencil is moving on the page. Think about all the messages you are sending to the muscles in your fingers and hand in order to move the pencil across the page. How many different pencil strokes do you use?

Stages of Motor Learning

Handwriting is a motor skill, therefore it is important to think about the stages of motor learning that children experience. Initially, children need to go through these stages with the *pencil control concepts*, they then need to start at stage one again to apply it to *letter formation* and then again into *handwriting*.

Stage 1: Thinking about it (cognitive stage)

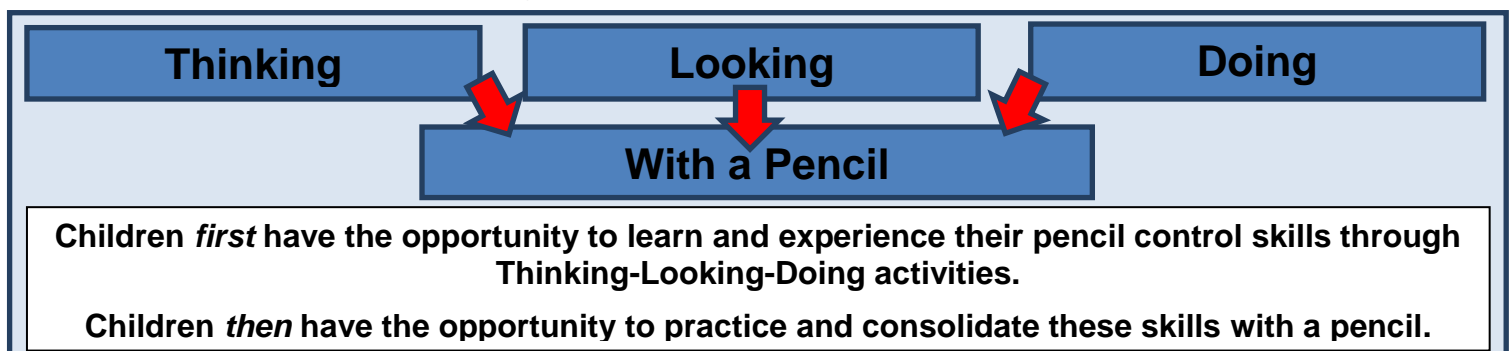
- Children gain understanding and knowledge about different aspects of the skills.
- Activities that can help at this stage are ones that include thinking (asking questions and reflecting), looking (attending to different aspects) and doing (experiencing the movement).
- Feedback is very important. This can be either internal or external, from another child or an adult.

Stage 2: Practising it (associative stage)

- Children rely on their knowledge and previous experiences to refine their skills.
- Repetition **is not the same** thing as practice. Repetition can lead to mistakes that can become embedded and difficult to correct. Practice involves thinking and making changes.
- This stage of learning may take a long time. For handwriting, it is expected that this will take several years.

Stage 3: Doing it automatically (autonomous stage)

- Once children have reached this stage, they are able to focus on **what** they are writing, rather than on **how** they are writing.



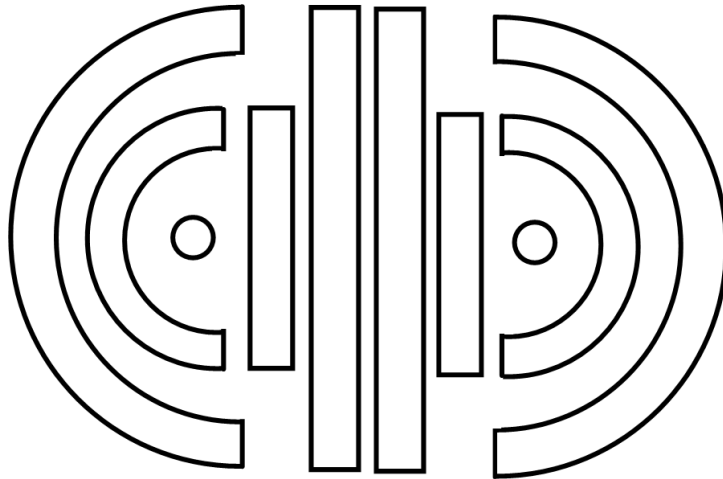
Shape Formation

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What is it? Shape formation is the ability to create simple shapes using controlled pencil strokes. These are shapes that involve different straight and circular pencil strokes.

Why is it important? Every letter of the alphabet is made up of a combination of straight lines and circles. Letter formation involves taking parts of lines and circles and learning how to put them together.

Reflection opportunity: Using the shapes below, make every lower and upper case letter of the alphabet. You could print the shapes on card and cut them out, draw them or make them out of a different material, e.g. pipe cleaners. Were you able to do it?



Shape Manipulation

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What is it? Shape manipulation is the ability to change the way a shape is formed. This includes making it bigger or smaller, only forming part of it or changing its position and/or angle.

Why is it important? Letter formation involves taking bits of shapes and being able to create them in different ways. The more understanding and control children have over changing aspects of the shape, the easier it will be for them to apply this to letter formation.

Reflection opportunity: Pick any word you like and write it down. Take each letter and think about how you would have to change it to make it fit into the shapes above. Ask yourself:

- Does it have lines/circles/both?
- Do I use a whole shape, part of a shape or more than one of the same shape?
- Where do I start and stop in the shape?
- Do I have to rotate it?
- Do I have to make bits bigger and/or smaller?

Directionality

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What is it? Directionality is the ability to control and change the direction of the pencil on the page. This includes; changes in direction during one pencil movement, forming the same shape but in different directions and following prepositions in relation to positioning and direction.

Why is it important? Handwriting is a very dynamic process and directionality plays a large part in correct and efficient letter formation that allows one letter to lead on to the next. This leads to efficient and fluid handwriting. Language relating to direction and positioning is relied upon heavily in handwriting instruction.

Reflection opportunity: Think of any letter, describe it to someone else (without telling them which letter it is). How accurate were they? How many directional or positional words did you use? Try again without using any directional or positional words. Did you manage?

Fluidity of Movement

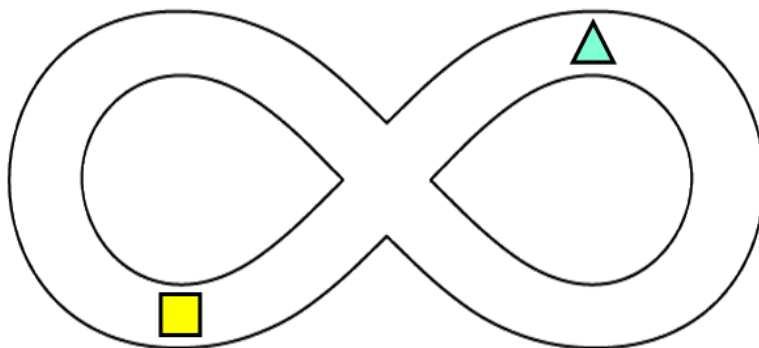
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What is it? Fluidity of movement is about training the body and mind to perform a movement the same way every time. It is about using the right muscles for the movement, and excluding any movements that are not required. In handwriting, it is about creating smooth, consistent pencil strokes that use as little effort as possible.

Why is it important? Fluidity of movement allows for practice and consolidation of skills. It enables movements to become less effortful, more automatic, therefore taking up less working memory capacity. Fluidity of movement is an important part of creating legible writing and helping children to increase their handwriting speed in the future.

Reflection opportunity: Using your finger and then a pencil, make this loop pattern and keep going multiple times. Then try in the opposite direction (i.e. start at the square and go up to the triangle, then start at the triangle and go down to the square).

Were you able to keep going in a smooth movement? Were your patterns the same every time?



Pressure Control

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What is it? In order for writing implements to make marks on the page, a certain amount of force has to be applied. The muscles in the hand and fingers have to learn the right amount of pressure to use in order for mark making to occur but without using too much effort.

Why is it important? If children struggle with pressure control, it will be difficult for them to develop fluidity of movement. Without an understanding of pressure control, children are likely to have difficulties with legibility and are likely to have a slower handwriting speed, in part because they will have to carry out frequent corrections. Too heavy pressure can also lead to fatigue, hand pain and ripping of the paper.

Reflection opportunity: Using a pencil, try writing with light and with heavy pressure. Reflect on what it would feel like to write like that all the time. How do you adjust your pressure? Which muscles do you use?

Fine Motor Skills

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What are they? Fine motor skills are the small movements used for control and precision during activities. Fine motor skills include hand dominance (“doing hand, helping hand”), hand separation (“busy fingers, sleepy fingers”), an efficient grasp (pincer and tripod) and in-hand manipulation (“fiddly fingers”).

Why are they important? Fine motor skills are the skills that control the pencil in the fingers and hand. Handwriting relies on fine motor skills being established. If a child does not have good fine motor skills they will find it difficult to develop an effective grip and pencil control.

Reflection opportunity: Try doing up a button using all your fingers (including your ring and little finger). How much control do you have? Try doing it with only one hand. How easy/hard is it? You could try the same with other activities, e.g. putting coins in a money box or doing up your shoelaces.

Now write a sentence, keeping your fingers still and controlling the pencil with your arm. How much control do you have?

Try writing on a piece of paper with your non-dominant hand and without holding the paper still. How easy/hard is it?

Pencil Grip

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What is it? Pencil grip is the way in which someone holds and manipulates a pencil. There is no one “correct grip”, however, there are some things that make some pencil grips more efficient than others.

- A grip should feel relaxed and comfortable - something that can be maintained over a long period.
- A grip should be able to control the pencil in precise, controlled movements.
- A grip should be dynamic – with the movements coming from the ‘busy’ fingers (thumb, index & middle), whilst the ‘sleepy’ fingers (ring & little) stabilise the hand on the page. The rest of the hand and arm should stay relatively still, moving along the page as required.

Why is it important? The pencil grip itself is not important, what is important is that a child has a comfortable grip so that they can maintain it over time and that the grip means that they have efficient control over the pencil.

Reflection opportunity: Write a sentence using a different pencil grip (such as the ones in the photos below). Think about it in relation to the points above.

