



Principles of Handwriting Development



Children's Occupational Therapy



Attention and Concentration

General Principles

- Before a child can be expected to learn a new skill, they need to be able to attend to the task. They need to achieve a calm alert state of arousal (readiness to learn).
- If a child has attention and concentration difficulties, other strategies are likely to have limited benefit unless attention and regulation strategies are implemented first.
- Attention difficulties can be a result of developmental delay, attention based disorder, sensory processing difficulties, sleep deprivation, anxiety and / or medication.
- The child's underlying difficulties and any prior medical advice should be taken into consideration when planning intervention.

Strategies to Improve Attention

Planning and Pacing

- Activities should be completed in short frequent bursts. Little and often is best
- Consider movement breaks and ensure child knows when to expect breaks
- Consider visuals, now and next, choice based rewards (e.g. child gets to choose next activity from list)



Auditory

- Sit child away from auditory distractions open doors, windows, ticking clocks, vents.
- Consider using ear defenders/headphones for specific activities e.g. periods of self-directed work, big write etc.

Visual

- Sit child near the front of the class to minimise visual distractions
- Consider removing, reducing or covering wall decorations
- Use privacy boards if necessary
- Use sloped writing board, or place instructions on a music stand if copying from the blackboard is tricky

Movement Breaks

- Heavy muscle work (proprioception) is most effective
- Carry some books, a box or bag of items
- Send a message to the office
- A short walk
- Sensory circuits
- Moving furniture
- Chair and desk press ups / pull ups

Basic Sensory Tools

- Move n' sit cushion
- Theraband around legs of chair
- Theraputty/blue tac
- Chewlery/chew toys for end of pencils
- Weighted lap pads, bean bags, ankle/wrists weights



Physical Development

Body Awareness

- Understanding of where the body is in space
- Required for core postural control
- Coordination of hand and arm movements

Laterality and Bilateral Integration

- Understanding of right and left
- Ability to coordinate the two sides of the body together
- Hand dominance
- Letter placement, orientation and formation

Core Stability

- Trunk muscles to maintain upright posture against gravity
- Maintains posture, stabilises body and improves control of the arms and hands

Shoulder Stability

- Sufficient strength and stability to control movements of arm
- Required for sustained writing tasks

Visual Perception

- Understanding of basic shapes and how they fit together
- Required to understand letters, where to place them and how to form them.

Hand strength

- Required to form a functional pencil grasp
- Required to maintain a functional grasp
- Required for sustained writing tasks

Utensil grasp



- Functional grasp is always required to control pencil movement

Positioning for Activities

In order to undertake any handwriting or fine motor activity the child must be able to maintain an upright posture when seated. A well-supported trunk and symmetrically aligned body are essential for good shoulder control. Poor sitting posture can have a huge effect on handwriting or other fine motor activities.

The Chair

It is important that the chair is a suitable size, to provide stability when working at a table:

- Hips bent at 90 degrees
 - Feet flat on floor and hip width apart
 - Bottom and back supported
 - Chair tucked in under the table
 - Elbows supported on the table
 - Consider using a cushion if the chair depth is too long or seat is too low.
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- Consider using a step, box, pile of books etc. under the child's feet if chair is too high and their feet are not quite reaching the floor.



The Table

- Ensure that your child is sat close to the table
- Ensure that the table is at the right height
- Elbows should rest comfortably on the table (approx. 2" above elbow)

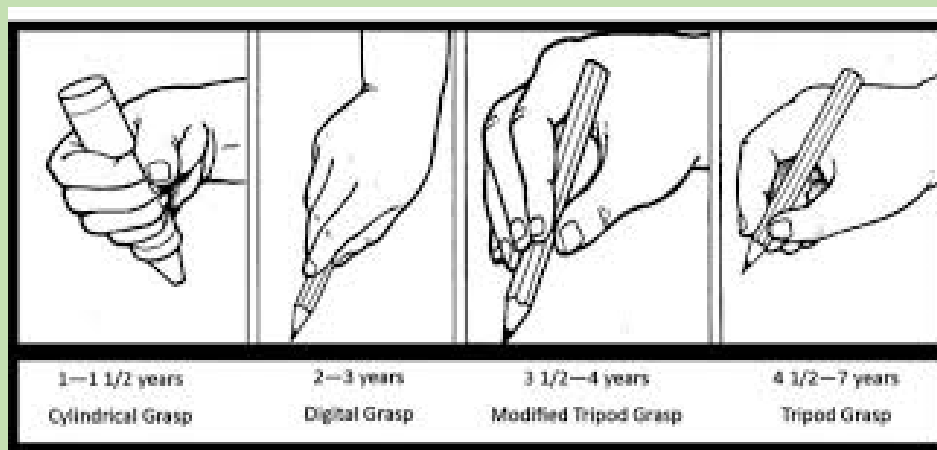


- Keep the table space clear from clutter, this will encourage the child to concentrate on the task in hand.

Pencil Grasp

General Principles

- A tripod grasp is the most efficient way to hold a pencil.
- It allows us to move our fingers with minimal effort
- We encourage children to use a tripod grasp to reduce the risk of developing difficulties.
- It is difficult to alter a pencil grasp once it is established. This is usually the case once a child is writing sentence.
- Don't try and change a developed pencil grasp
- Many people who use alternative grasps don't have any difficulties, so if a child has established an alternative grip that is working for them, then don't worry



Strategies to Develop Pencil Grasp

- Participate in fine motor activities which involve pinching movements, e.g. threading beads
- Add resistance to increase control and proprioceptive feedback e.g. pinching putty (comes in different strengths)
- Encourage lots of pincer grasp activities

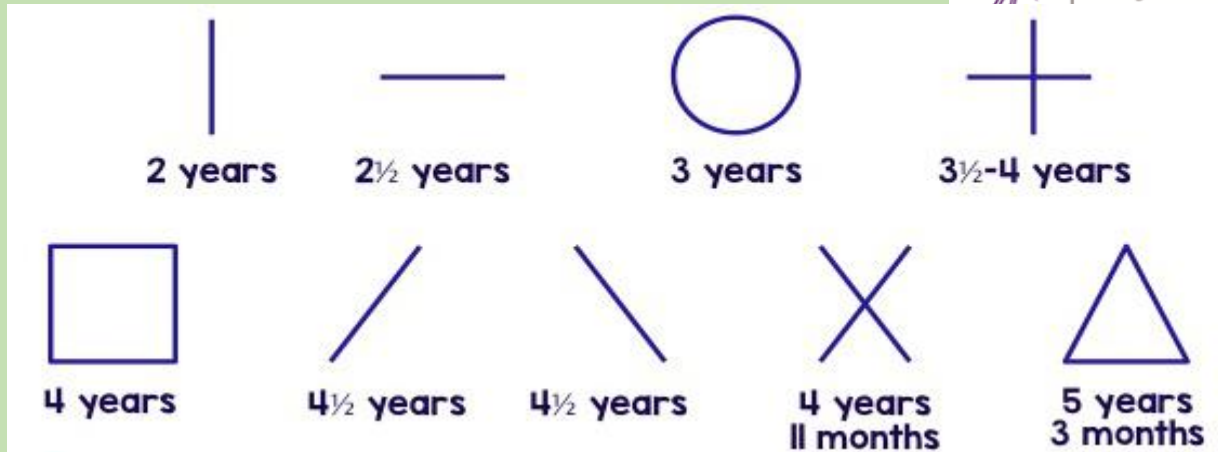


- Pencil grips can be trialled if child has difficulty positioning fingers correctly or if they experience pain / fatigue
 - Short, stubby pencils and crayons encourage tripod grasp
 - Triangular pencils can encourage tripod grasp
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- Encourage child to hold a piece of blu-tack / pompom etc. in the palm, using their ring and little finger tucked into the palm of the hand to prevent their fingers dragging along the page, and to strengthen the arch in their hand for stability when writing.



Pre-writing Skills

This includes the ability to write straight lines, curved lines, zig-zags and shapes. These skills are building blocks for letter formation during handwriting tasks. These types of activities help to fine-tune the intricate fine motor skills needed for handwriting. If a child is not yet able to form a diagonal line, strictly speaking they are not developmentally ready to be forming letters.



Strategies

- Painting and colouring
- Tracing, dot to dots and mazes
- Textured substances; draw in sand, foam, sandpaper
- Big shapes, walking shapes on floor, drawing on board
- Making shapes from play-doh
- Tracing shapes on palms of hands or back
- Use spray bottles with a trigger, spraying letters on large wall outside

Handwriting Skills

Formation

- Use letter outlines or trace 3D shapes e.g. fridge magnet alphabet shapes
- Stick a copy of handwritten alphabet to desk
- Walk through the sequence / pattern outdoors, repeat the pattern large on board before doing it small on paper
- With index finger, trace letters on sand paper repeating correct directionality

Writing Pressure

- Activities that involve putting pressure through hands
- Wheelbarrow walks, press ups, animal walks



- Trial sloped writing board and soft lead pencils

Orientation (Common until age 7)

- Child to write problem letters/numbers on flash card
- Child to go through work and circle reversed letters via self-identification and correction

Spacing

- Child to place finger between each word
- Rhyme to remind child to place leave space

Placement (use of the line and margin)

- Write on raised line paper
- Use paper with coloured margin
- Repeated reminders 'is your 'a' on the line, above the line or below the line?...Try again, I want the bottom of your 'a' sat on the line just like mine' (demonstrate).

