



# Maximizing Fine Motor Skills in the Classroom

## Introduction:

- Hand skills are very important, both for school activities and for activities of daily living - managing buttons, laces, handling money, taking the top off your toothpaste and so on...
- Hand skills refers to strength and dexterity in the hands. It involves the use of the small muscles within the hands to perform isolated/skilled movements and the muscles in the forearm to provide strength and stability in the hand. For skilled movement, one must be able to coordinate and use both types of muscles to perform a variety of tasks including skilled pencil control, scissor use, handling of coins and managing fasteners such as buttons. The thumb, index and middle fingers perform the skilled movements while the ring and baby finger side of the hand provide the strength or stability. It is also important to develop strength and control in the upper body and shoulders.
- In addition to developing handskills, we need to have well developed strength and control in our upper body, our shoulders and arms. We need to be able to stabilize ourselves so that we can use our hands to manipulate and control objects in a very precise manner.
- The small muscles within the hands themselves need to be developed - sometimes a parent or teacher may say that Johnny does do fine motor activities but how he does those activities and whether or not he actually is using the muscles within his hand may need to be examined.
- We also need to receive sensory information from our hands so that we know exactly where our hands are, how they are moving so that we can then perform an activity without strongly relying on our vision. Many activities that we do with our hands need to be at an almost automatic level so that we can focus on the process or concepts at hand. This is very true of printing and writing. It is important to progress through the drawing stage of letters so that you can concentrate on the ideas or concepts that you want to record.
- Proprioception/kinesthesia refers to the subconscious awareness of our body and how it is moving in space in relation to gravity. Receptors in the muscles, tendons and joints along with tactile and vestibular (whole body movement) sensory information let us know where our bodies are in space and how we are moving them without relying solely on vision. This way we are able to make subtle adjustments or changes to enhance our coordination and muscle control.

## Common delays or difficulties that affect how well we can use our hands include:

1. **poor thumb stability** - this means we can't keep our web space open so that our thumb is able to touch the tips of the fingers for precise manipulation (video game playing may contribute to this as the muscles that we use to bring our thumb to the side of our hand are used more than those that we use to oppose our fingertips for precise control) - often a child may be expected to use a pencil before he has the motor skills to do so - use of a pencil grip may help to better position the pencil by keeping the web space open
2. **lack of development** of the muscles that keep our hands **arched** - this is important as the arches align our fingers for precise control
3. **wrist position** that is flexed - again, a wrist that is neutral or slightly bent up will help to align the fingers in an optimal position (try writing or cutting with your wrist bent down)
4. lack of ability to use the thumb index and middle fingers for **refined movements** while the ring and baby fingers help to **stabilize the hand** - try doing up buttons without being able to hold the baby finger

side of your hand steady

- 5. **lack of established hand dominance** - this usually indicates delayed maturation - functionally it means that neither hand works well and that two handed activities are often difficult as well. (to experience this try cutting with non-dominant hand)

### **How can you adapt activities to develop these skills?**

- **Working on a vertical surface** - at or above eye level will bring the wrist and hand into a better position to practice and strengthen movements and control that we need for printing etc.- it will also strengthen the shoulder and arm muscles at the same time - mount flannel boards, use table top easels while seated, free standing easels when standing, chalkboards, flipcharts, sticker games, magnadoodles, letter and number magnets, pegboards, lacing cards, stencils etc. etc.
- **Tummy lying** with arms propped on forearms to read books, colour or do puzzles - good for the trunk and neck muscles as well as shoulders and arms
- For **table top activities** - make sure that the table and chair are the right size - feet should rest on the floor and the forearms should rest comfortably on the table top (at approx. elbow level). For children who are printing or writing - use of a slanted work surface will help to position their wrist and fingers in a better position for improved pencil control. You can easily provide a slanted surface by taking a 2 - 2 1/2" binder and turn it sideways so that the spine faces away from you. Use a paper clip if necessary to secure paper on the binder. 
- When **learning new skills** - use **modelling** of the skill, allow for lots of **repetition**, and provide some **physical guidance** so they can feel how to perform the necessary movements. Use **direct teaching** for such skills as left and right, directionality, correct pencil grip, how to colour and draw, how to print and write, how to organize or set up a page, and how to do two handed activities such as cutting and stabilizing the paper while printing
- Modify activities so that **use of the fingers** is encouraged - while playing with lego, puzzles etc. have your child rest his forearms on the table to manipulate the pieces - discourage whole arm movement for these types of activities. Lacing activities with large beads and small plastic tips on the strings also encourages refined in and out movement of the thumb and fingers.
- To further develop a **tripod grip**, use small pieces of crayon or chalk for drawing - small pieces will help him better position his fingers. If you need to, you might have him hold a small sponge or poker chip in the palm of his hand using his ring and baby fingers so that he stabilizes that side of his hand. Drawing on vertical surfaces at or above his eye level such as a blackboard, paper on the wall/easel or mounting a MagnaDoodle upside down are good ways to develop better shoulder and arm control as well as hand and finger skills. Use magnetic clips to mount work or activities on the blackboard. (Drawing, simple mazes, Sticker Playsets, stencils).
- Instead of picking up one game piece at a time and playing it - pick up 2 or 3, one at a time and move them into the palm of your hand - you then need to move each piece out one at a time to your fingertips to play it.
- When learning about money concepts or actually handling money, have your child pick up coins one at a time and move them into the palm of his hand. Have him release the coins one at a time by moving them out to his fingertips while holding the others in his hand (you may need to start with one coin at a time only). Inserting coins into a piggybank or a pop/candy machine is a good way to practice this. You might have him insert the coins according to amounts or type of coin. You can use this technique to develop basic counting skills as well. Cut a slit in the top of a margarine container and have him insert poker chips while counting or sorting by colour.
- Provide playdoh, rice tubs etc and hide pennies or other small object in it for a child to find - good for increasing awareness of the hands and how they are moving.

- For printing and writing - practice large arm movements to get the motor pattern before going to pencil and paper. Practice letter and word formation with eyes closed to make it more automatic.
- To help a child **modulate the pressure** that he uses for printing and drawing, have him use a paintbrush with soft bristles (sable works well) to paint lines of various colours from left to right across paper. Encourage him to use consistent pressure so that each line is the same width across the page, and to use only the tip of the brush (not to flatten the bristles). Help him to circle places where the width varies and have him attempt to improve performance so that fewer width changes occur on successive attempts. When he can quickly paint several lines with little variation in width, have him add finger movements to paint wavy lines. Finally, have him work on keeping pressure consistent with eyes closed, using only the "feel" for guidance.
- Rub crayons on paper over textured shape templates (these are commercially available in a variety of animal, car, dinosaur, and other shapes) or you can use coins, keys, leaves etc. If too much pressure is used, the paper is likely to rip; if too little pressure is used, the image does not come through clearly onto the paper. After achieving the "perfect" pressure when watching, have him try to maintain the same pressure without looking. You can point out inconsistencies in pressure which are visible as dark or light places on the completed rubbing, and the child can try to make one with more consistent colouring.
- Draw letters on sandpaper, on carpet squares etc to provide increased sensory input.
- Make a feely bag using common objects for younger kids to help develop their kinesthetic sense. Pushing, pulling and lifting large objects of various weights will help provide proprioceptive stimulation. Carrying things to the office, rearranging desks and chairs, collecting recycling boxes and pushing the audiovideo cart are some ways of incorporating this into school activities.
- Look at the activities that you already have in your classroom and think about how you can position them or adapt them to help children develop better hand skills that will lead to an easier time manipulating the tools and objects that we encounter in day to day life.

### ***Suggestions to Develop Printing Skills***

- Children vary in the timing and rate that they develop printing skills. For a child with fine motor difficulties and difficulties with motor planning, this skill can be a challenge to master. Suggestions to facilitate development of printing skills include:
  1. Model the correct letter formation and provide simple verbal cues. Use a green dot to show where you start the letter. Sometimes arrows help to make it easier to follow. Have him trace your letter formation before trying his own.
  2. Use paper that has 3" squares on it to practice individual letters in. When the letter formation is mastered, lines can be introduced. Try a variety of lines - a simple black line, black lines with a dotted middle divider or lines that have visual cues for letter formation and placement may help to increase printing success.
  3. Practice letter formation on a blackboard using chalk, fingers to trace over letters and wet paintbrushes to paint or erase the letters.
  4. Make letters out of sandpaper, glue, string etc. so that they can be traced with a finger. Start with eyes open and then present them with eyes closed to see if he can recognize the letter without looking.