

Development of a Fine Motor Program for Classrooms and for Occupational Therapy



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Program for Classrooms and for Occupational Therapy

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Introduction: The development of grasp patterns for graphomotor control in neurotypical development continues through age five to six. Tool use among children typically begins in the preschool years with the introduction of crayons, pencils, markers, and other graphomotor tools. There are many articles on the development of grasp, but the influence of early tool use in children is important for clinicians to understand. This article will look at the development of fine motor skills, and how to set up intervention plans within a classroom or therapy, to promote fine motor skills in young children

Article: Atypical grasps on pencils appears to a recent phenomenon and may be attributed to earlier tool use in children in the past 20 years due to an emphasis on educational readiness skills. In 1990, Bergmann found that in a study of 447 adults, 80 percent had a manipulative, tripod grasp pattern on pencils. Why then, is there is a prevalence of children who have non-manipulative grasp patterns on writing instruments? A generation ago, children entered kindergarten with some basic readiness skills, but there was not a significant emphasis on providing extensive readiness for kindergarten. The kindergarten curriculum was more developmental and provided a rich environment for students to develop fine motor skills. In current times when the kindergarten curriculum is more advanced and academic, fine motor skills need more emphasis during the preschool years, and there is an emphasis on tool use with preschoolers. It is important to understand the development of grasp in the preschool years and to recognize the influence of joint laxity on atypical grasp patterns.

The optimal grasp pattern for good manipulative skills has good separation between the two sides of the hand with the thumb, index and third fingers providing dynamic movement to control the tool, and the 4th and 5th fingers providing stability of the hand. Movement of the pencil requires the ability to isolate and grade individual finger and thumb movements (Case-Smith 1995). Separation between the two sides of the hand for manipulative skills occurs around age four. Mary Benbow describes a grasp on a pencil using three components, radial manipulation, ulnar stabilization and finger excursion or "translation", (Benbow, M., 1990). These skills are reported to be associated with kinesthetic and tactile input (Benbow 1995). The child learns to use the thumb, index and third fingers within a tripod grasp, to manipulate

objects (radial manipulation). Ulnar stabilization is the ability to stabilize the hand with the 4th and 5th fingers, while the thumb, index and third fingers manipulate objects. Finger excursion while using a writing instrument occurs around age 5 – 6, if a child uses a tripod grasp pattern. It involves dynamically moving the thumb, index and third fingers as a group to move forwards and backwards in the vertical plane, and sideways in the horizontal plane. To achieve finger excursion, a child must flex/extend the thumb, index and 3rd finger IP joints. Finger excursion is important to fluidity, and speed, and allows a child to write with less fatigue. The protocol of a functional grasp pattern as described by Benbow (1990, 1995) appear as follows:



- 4th, 5th fingers tucked in palm (ulnar stabilization)
- Pencil should rest on the lateral (radial) edge of the index MCP joint
- Wrist slightly elevated to 30 degrees
- Prehension between index and thumb with support from medial edge of 3rd finger (radial manipulation)
- Rounding of the thumb web space
- Flexion of the thumb interphalangeal joint and the index and third PIP and DIP joints
- Wrist stability
- Forearm stability

McCleskey (2002, 2008) describes eight types of grasp patterns predominant in children and adults. The grasp patterns can further be described by Benbow's paradigm, as manipulative or non-manipulative.

Lateral grasp - a grasp pattern where the child uses the side of the thumb instead of the tip of the thumb to hold a pencil.



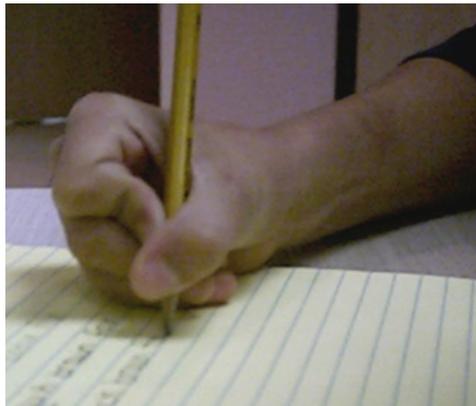
Pincer grasp - using the thumb and index finger for prehension, without assistance from the 3rd finger



Modified Tripod grasp - using the correct fingers to hold a pencil (thumb, index and 3rd finger, but keeping the 3rd finger on top of the pencil). This grasp is normal in three year olds.



Hyperextension of the index finger - occurs when the distal joint in the index finger hyperextends or bends backwards. Usually the thumb is too far down on the pencil, and the hyperextension improves if the tip of the thumb is brought up even with the tip of the index finger. The hyperextension of the DIP in this picture appears significant, with stress to the joint and blanching of the skin due to pressure. Many students will complain of pain to the DIP joint with sustained writing when hyperextension is significant. Moving the thumb upwards on the shaft to be even with the index finger will reduce the hyperextension and reduce stress to the joint.



Multi-finger grasp - this grasp pattern is used to categorize any grasp pattern that uses more than the thumb, index and 3rd fingers to hold a pencil. There are numerous varieties of this grasp pattern, but all are considered non-manipulative grasp patterns.



Closed thumb web space - a child may have a correct grasp, but a closed web space. This is normal for young children who have short fingers, but by age 5, a child needs to make a circle with their thumb and index finger. A closed thumb web space does not allow a manipulative grasp, and the child should be encouraged to abduct the thumb to open the web space.



closed



open

Hyperextension of the thumb interphalangeal joint (joint towards tip of thumb) - usually caused by joint laxity. The thumb locks into extension, allowing no flexion. This prevents a manipulative grasp and often the child substitutes other grasp patterns in order to achieve stability.



There are also pencil grasps which may deviate from the above categories, that are non-manipulative. An example would be the grip shown below – it could be a tripod grasp with three fingers on the pencil, but the hooking of the index finger would make this a non-manipulative grasp, with stress to the index PIP and MCP joints due to rotation.



Many grasp patterns may incorporate several grasp patterns. In the example below, the child is using a multi-grasp, with hooking of the index finger. Most importantly, the thumb IP joint is locked into extension. With locked extension of the IP joint or hyperextension (when there is joint laxity), a grasp cannot be manipulative. Optimal manipulation requires the ability to flex and extend the thumb IP joint. In the grasp pattern below, the child may attempt some manipulation of the pencil by moving the 4th finger to attempt dynamic control.



While many students may complain of fatigue during writing, few complain of pain during writing. When students do complain of pain, therapists should ask the student to localize the pain. The therapist should evaluate the dynamic control within grasp patterns, to determine if there is stress to a joint, joint laxity or a hand injury acquired through injury or congenital problems.

Developmental Characteristics of Grasp Patterns:

Fine motor skills are as important for kindergarten readiness as learning to say the ABC's and count. By understanding the development of grasp patterns, therapists, preschool teachers, parents and kindergarten teachers can prepare a child for writing. The developmental characteristics of grasp development are as follows:

- Forearm/wrist stability - developmentally comes about age 4 during coloring, with refinement around age 5.
- Tripod grasp - the child experiments with many grasp patterns prior to age 4. By age 3.5 to 4, therapists should be encouraging a tripod grasp on a pencil for all students. This is the window of opportunity where a child develops a kinesthetic awareness of a grasp on a pencil through practicing coloring and drawing. Learning a correct grasp later is much more difficult than learning a correct grasp initially.
- Radial manipulation/ulnar stabilization – begins to develop around age 4 1/2, and becomes more refined around age 5 to 5 1/2. Manipulative grasp

continues to develop, with additional increase in coordination for several years as finger excursion matures.

- Finger excursion – the ability to point and bend the IP joint of the thumb for dynamic control during writing or coloring may begin around age 5 but seems to refine around age 6 with coordination. Some children do not develop good finger excursion if they have a non-manipulative grasp.

Chart of the development of dynamic control of graphomotor tools

3.0 – 3.11 years

- Begins to show hand dominance, but hand switching continues
- Often begins to hold pencil with tripod grasp, but static posture (thumb and index, 3rd finger)
- Initiates coloring with shoulder movements to control graphomotor tools

4.0 – 4.11 years

- Begins to have some manipulative skills within a tripod grasp on a writing instrument
- Biomechanically begins to have an open web space on a tripod grasp due to increasing length of fingers/thumb due to growth.
- Initiates coloring with wrist extension/flexion to control graphomotor tools

5.0 – 5.11 years

- Preferred hand used more consistent
- Tripod grasp becomes more dynamic, more manipulative
- Initiates coloring with isolated finger movement (radial manipulation) to control graphomotor tools

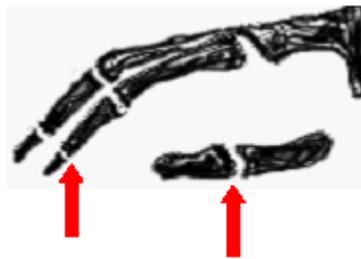
6.0 years

- Initiates coloring with finger excursion – dynamic control of the pencil with co-contraction of thumb IP flexion

Reasons Why Poor Grasp Patterns Develop:

As a child develops hand coordination, the intrinsic musculature in the hand strengthens. Children who enjoy drawing and coloring tend to develop strength in the hands and have good stability when holding a pencil. The reason for the development of a poor grasp pattern is often due to the child enjoying writing and coloring at an early age before the hand develops the coordination and proprioceptive awareness of a manipulative grasp. Other children who have little interest in fine motor skills, often are delayed in grasp development. Schneck (1991) found that children with immature grasping patterns and poor handwriting had decreased kinesthetic awareness. Decreased kinesthetic finger awareness may contribute to a need for stability within grasp patterns. To hold a writing instrument, young children resort to stabilizing the pencil in many ways. If a child closes the web space tight and uses a lateral grasp pattern, more stability is given to the pencil. The child, who uses the 4th or 5th finger to help with prehension, achieves more stability with using the pencil. Squeezing the pencil with a variety of tight grasp patterns gives more stability. Unfortunately, stability does not produce fluidity. When radial

manipulation and ulnar stabilization develop, a child is more able to stabilize the pencil with a tripod grasp due to better coordination. A young child can first be taught a tripod grasp, and then as development occurs, a child can learn to manipulate the pencil within the tripod grasp using radial manipulation and ulnar stabilization. Some children seek the proprioceptive feeling of stability by squeezing the pencil too hard. The child who has some hypotonia will usually compensate for weakness by using a more stabilizing grasp pattern. Children with joint laxity in finger joints also tend to use more stabilizing grasp patterns. Summers (2001) looked at the grasps of 55 7 y/o children to determine if joint laxity in the distal IP joint of the index and the IP joint and MCP of the thumb, influenced the development of grasps that deviated from the dynamic tripod. Laxity occurred in 71 % in at least 1 joint. The most common joint affected for joint laxity was the IP joint of the thumb with the index DIP joint being the second most commonly affected joint. The most common compensation for joint laxity in the thumb IP was the lateral grasp. Pencil grips incorporating thumb opposition were used more frequently when there was not joint laxity.



Distal interphalangeal joint in index finger (DIP joint)

Thumb interphalangeal joint

Stability through hyperextension of the thumb interphalangeal joint with locked extension should always be evaluated and worked on through intervention. Stability with non-manipulative or poor-manipulative grasp patterns may help a young child hold a pencil to achieve the desired outcome of drawing or coloring. However, early stability may produce a habitual non-manipulative grasp pattern, even when the child develops more mature coordination skills.

The first thing to observe within any grasp pattern, is whether the student has joint laxity of the thumb IP joint, and see if it possibly may contribute to a non-manipulative grasp pattern. A young child will usually seek stability in a grasp pattern, which usually gets kinesthetically locked in (a bad habit), and the first and foremost treatment goal would be to teach the child how to co-contract and flex and extend the thumb IP joint during manipulative activities. With young children, it is important to start with using a tripod grasp with some thumb flexion with tongs activities or writing tools. Once a therapist begins to observe the thumb IP joint of students when evaluating grasp patterns, the therapist will develop a keen sense of how often manipulation skills are affected when a student locks the thumb IP joint into extension.

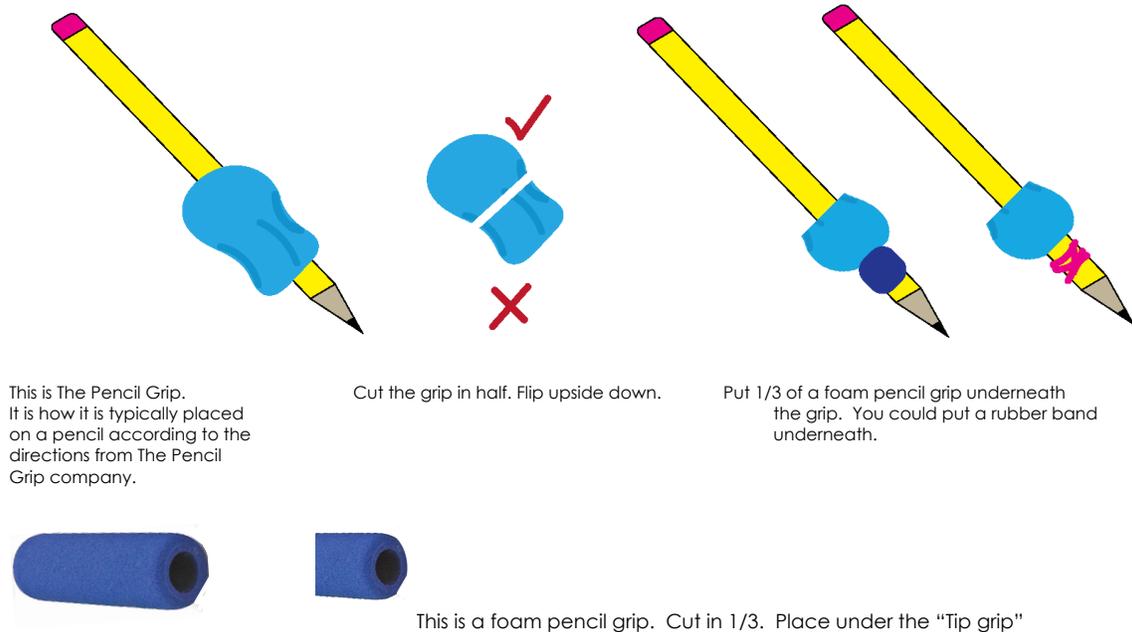
Benbow 1995, Ziviani, 1982—observed that when joint stability in the thumb is insufficient to control mobility, a lateral grasp is an effective adaptation. A lateral grasp allows finger excursion in the vertical plane, but decreased excursion in the horizontal plane. Do we teach a lateral grip to allow students more mobility, or do

we teach students with joint laxity in the thumb IP joint to compensate by developing the coordination to bend and extend the thumb IP joint, regardless of the joint laxity?

A good protocol is not to compensate for joint laxity by allowing maximum thumb flexion by teaching a lateral grasp as suggested by Benbow and Zivianni (Benbow 1995, Zivianni 1982), but to teach the child to flex and bend the thumb IP joint during manipulation of a pencil. Students can learn to co-contract this joint. In fact, often by passively allowing thumb IP flexion), students often can achieve a manipulative grip quickly. To get passive stability, McCleskey (2002, 2008) has developed a TIP grip protocol, to position the thumb in passive flexion, to prevent students from locking the thumb into extension or hyperextension. This allows the student to develop a more manipulative grasp. With practice, the student learns to co-contract and to develop the coordination to actively flex/extend this joint and can usually progress off the grip. In treatment planning, the primary goal, is to use activities that train active co-contraction.

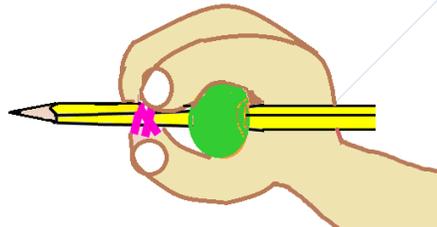
The "TIP" grip, is basically a commercially available grip, called "The Pencil Grip". The Pencil Grip is cut in 1/2, flipped upside down, and placed on a pencil. Half of a foam pencil grip is placed below the grip. Instead of calling this adapted version "the pencil grip flipped upside down, positioned on a pencil with a foam grip below the TIP grip", The Handwriting Clinic calls this adapted version a TIP grip, for "Thumb IP joint", to biomechanically describe the positioning of the adapted The Pencil Grip.

Instructions for use of the TIP grip:



Cut a regular or jumbo size The Pencil grip in half. Then position the more rounded end on a pencil with the rounded end towards the pencil tip. Discard the more triangular end, as it is not used on the pencil. This would be upside down from the

way The Pencil Grip is usually placed on a pencil, according to the manufacturer's instructions. Place 1/3 of a foam pencil grip or a rubber band below the "TIP grip". When encouraging a student to hold a pencil or crayon adapted with the TIP grip, it is important that the student place the tip of the thumb on the rubber band, forming a tripod grasp. The pencil shaft should rest touching the index MCP joint, and the TIP grip should be positioned completely within the web space of the hand.



The shaft of the pencil needs to rest on the index MCP joint (big knuckle). The index and thumb should be directly under the TIP grip.

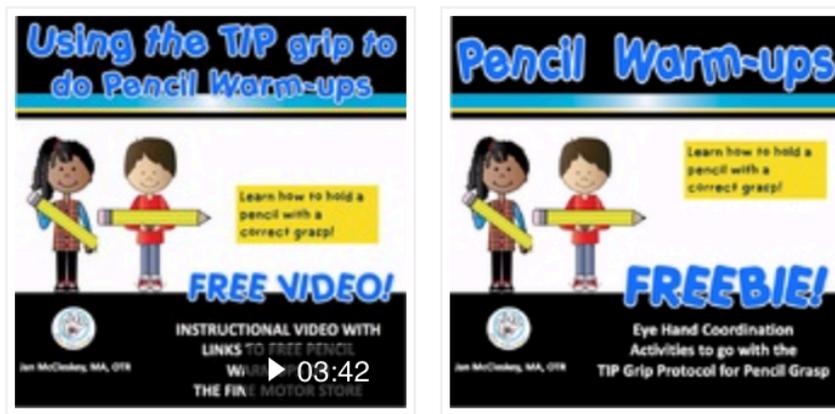
The Pencil Grip company sells two sizes of The Pencil Grip - Jumbo or Regular. When using the adapted TIP grip on writing tools, students that are six and above usually use the jumbo size TIP grip on writing tools, and progress to the smaller TIP grip. The jumbo size tends to work best initially, as students age six and above tend to have longer fingers and a larger web space. Students then progress to the smaller TIP grip, then to a rubber band on the pencil only, and finally no rubber band on the pencil. Students that are younger than six, are still developing a manipulative grasp, and usually the protocol is for students to stay on the TIP grip through age 5 1/2 or 6. Young three and four year old children may have a static tripod grasp with the thumb nicely positioned in some flexion, but it is not until approximately age 5 or above, when students begin to dynamically control the tripod grip with isolated finger movement and active thumb flexion/extension of the thumb IP joint.

The hand develops in preschoolers through age 6, to develop fine motor readiness for graphomotor skills. For this reason, students in preschool - kindergarten are appropriate to work through fine motor development activities - ex. tongs, tweezers and coloring labs in order to develop radial manipulation/ulnar stabilization and finger excursion. Students who use fine motor lab activities such as tweezers and tongs, often achieve stability through locking the thumb IP joint into extension or hyperextension - particularly when they have joint laxity in this joint. For this reason, the TIP grip protocol suggests that young children should have their thumb IP joint passively flexed in order to develop co-contraction and the ability to flex/extend the IP joint during manipulation. A good way to work on developing manipulation within a tripod grasp, is to encourage tongs activities in preschool - kindergarten, using a tripod grasp. To additionally encourage thumb IP joint flexion, tongs may be adapted with the TIP grip. Below are pictures of how to adapt tongs using the TIP grip.





Students in preschool through pre-k/kindergarten should participate in fine motor labs, to encourage radial manipulation and ulnar stabilization. The Fine Motor Store on Teachers Pay Teachers has numerous themed labs for scissors skills, coloring skills, eye hand coordination skills and tongs skills. The files are perfect for classroom centers or therapy. There is a free Fine Motor Warm-ups file to introduce use of the TIP grip.



Free 3.42 minute training video and free pencil warm-ups from The Fine Motor Store on www.TeachersPayTeachers.com.

The Fine Motor Store on Teachers Pay Teachers has a variety of printable fine motor labs, to work on tongs skills, scissors skills and coloring skills. Each fine motor activity blends fine motor skills with core curriculum objectives. A teacher can set up labs in a classroom for center time activities. The center time labs can be placed in rings (found in the gross motor section of educational catalogs), or on box lids. The following picture is an example of fine motor center time labs.



Tongs Labs:

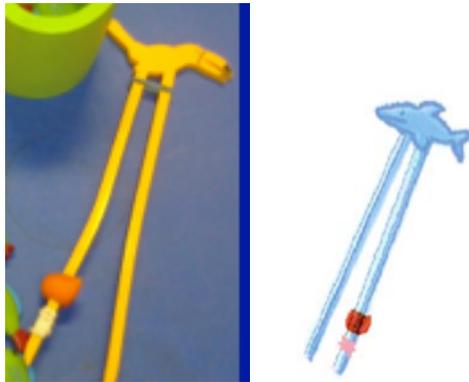
A teacher or therapist would need to purchase a few pairs of tongs. Wooden tongs from kitchen supply stores are excellent, as they have a light to medium resistance, and are easy to hold.



Easy grip safety tweezers, from Lakeshore Learning, also work well and are very economical.



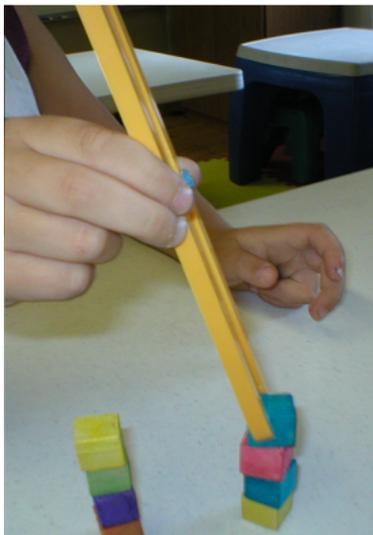
Fish or zoo animal tongs are sometimes a little too big and bulky, but are very cute and economical. Children seem to like the animals that are on top of the tongs. These are available from educational and therapy catalogs.



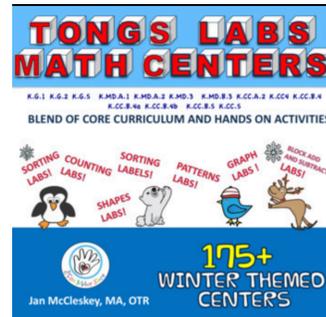
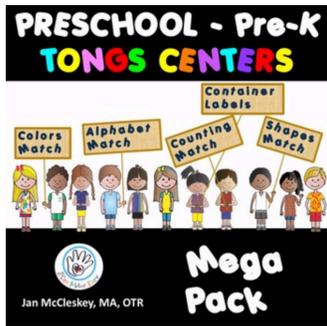
There are many tweezers and tongs available in educational and therapy catalogs. Be careful – some of the tongs are not well made, are too resistive, or are too large for children's hands.



The proper way to hold tongs is as follows:



On Teachers Pay Teachers, Jan McCleskey has a variety of printable tongs labs. A sample is as follows:



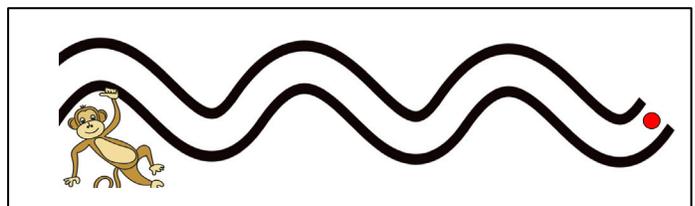
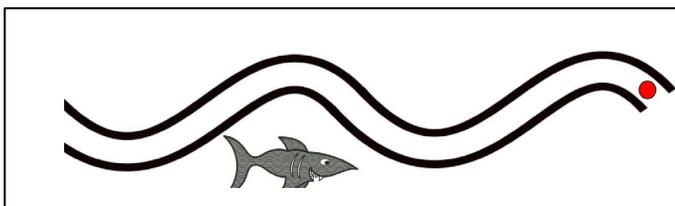
Scissors Labs: Scissors labs are important developmental skills and incorporate use of small muscles within the hand. The following chart outlines scissors skills in children:

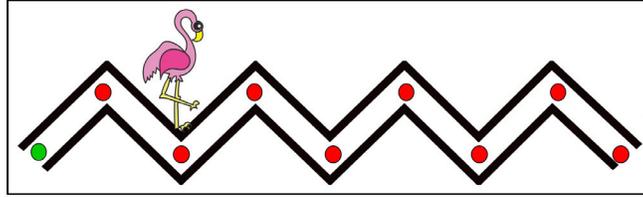
Age 3: Snips to cut forward across an index card. Often needs an adults help to position scissors in hand correctly. Often places thumb down, but will maintain a thumbs up pattern if directly monitored. Uses whole arm, shoulder, elbow movements to turn scissors.

Age 4: Emerging wrist flexion, extension to control movement of the scissors to turn but still often uses a whole arm approach. Beginning to use bilateral hand movements to position paper. Cuts curved lines but not complex angles. Ex, if cutting out a picture of a cat, might cut off the tail and the ears and some of the feet.

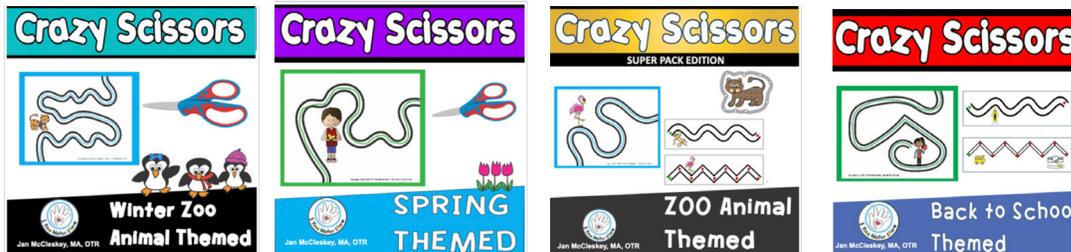
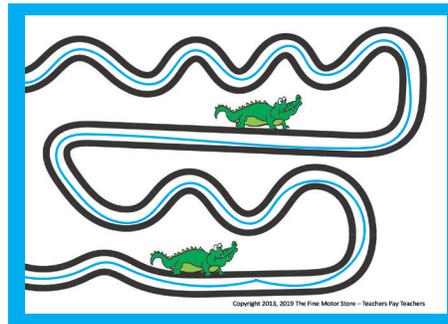
Age 5: Uses complex bilateral hand skills to turn scissors, position paper, insert and reposition scissors. Has nice wrist flexion and extension to assist in turning scissors. Uses correct grasp on scissors, with a thumb up pattern. Cuts out complex angles.

The Fine Motor Store has many developmental scissors skills activities on www.TeachersPayTeachers.com. All programs start with forward lines and progress to more complex patterns with angles and complex rotation of the paper for bilateral control. Some programs are easier programs that concentrate on forward, curved and angled lines:





The Crazy Scissors Labs (several different themes available) on Teachers Pay Teacher usually have more complex lines and require more complex bilateral control. These labs are appropriate for ages 4.5 and above. After the scissors activity has been cut, it can be glued onto construction paper to take home.



Some of the scissors files in The Fine Motor Store on TPT

Coloring labs:

Coloring labs are very important, as the skills needed in coloring, will be needed later on in handwriting. The developmental ages of coloring, are as follow:

Age 3:

- Does not need fluidity, just needs a stable grasp to do gross movements with graphomotor tools.
- Copies a circle
- Grossly colors "at" a general area. Rarely changes colors.
- Initiates control of the crayon or writing tool by using whole arm movements from the shoulder or elbow.

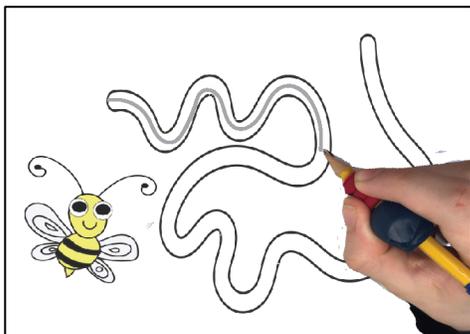
Age 4:

- Needs some fluidity to begin to write letters, name
- Copies a square
- Colors coloring pages, often with minimal change in colors
- Has trouble coloring within the lines
- Can be taught a tripod grasp on a pencil. Instructor will need to work with the student to tuck in the 3rd finger, as students tend to put the 3rd finger on the pencil shaft.
- Colors using wrist flexion and extension to initiate dynamic control. Minimal isolated finger movement.
- Often grasp patterns, whether effective grasps or ineffective grasps on writing tools, become habitual during the 4th year. However, grasp patterns are more easily changed at this age

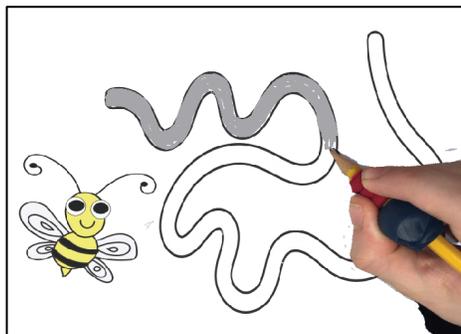
Age 5:

- Preferred grip should be a tripod grasp
- Student can bend and point the last joint of the thumb (thumb IP joint) to demonstrated isolated finger movement when coloring small areas, or in writing.
- Can copy a triangle (age 5.5) (This is when slant come into effect)

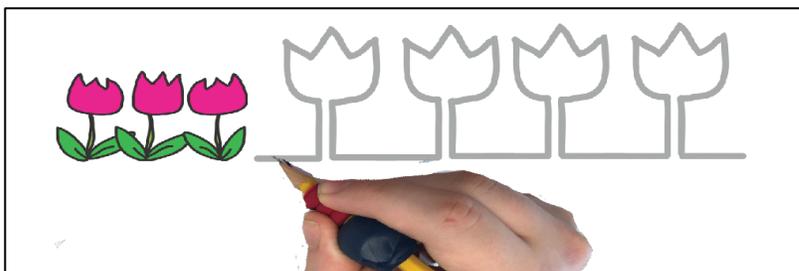
The Fine Motor Store has many coloring activities on www.TeachersPayTeachers.com. These activities are very specifically created to promote small motor movements to encourage dynamic grasp. Look for "Coloring Power" or "Pencil Power" files in The Fine Motor Store



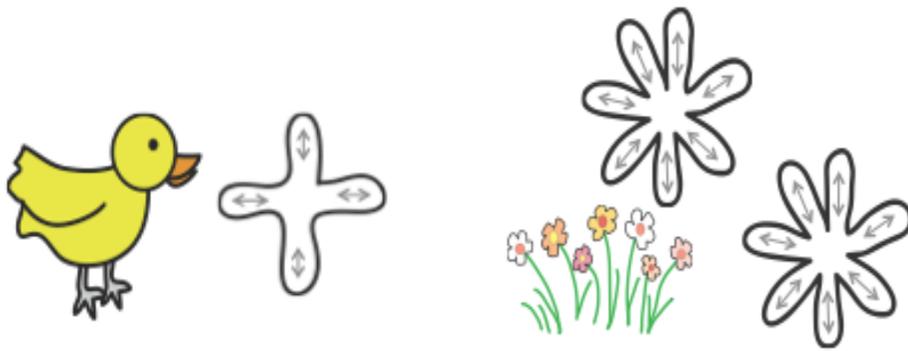
Trace activities



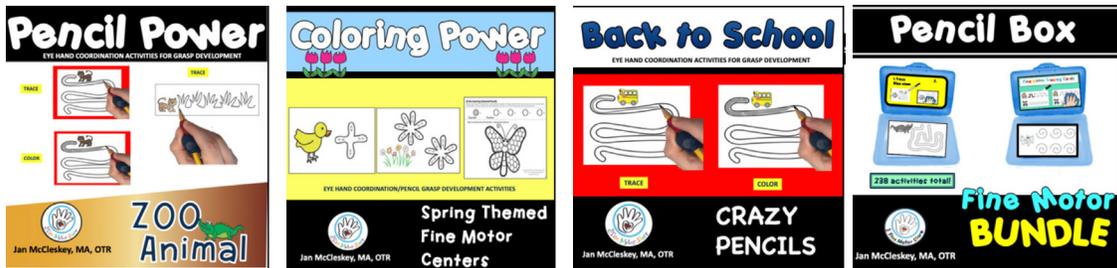
Color Activities



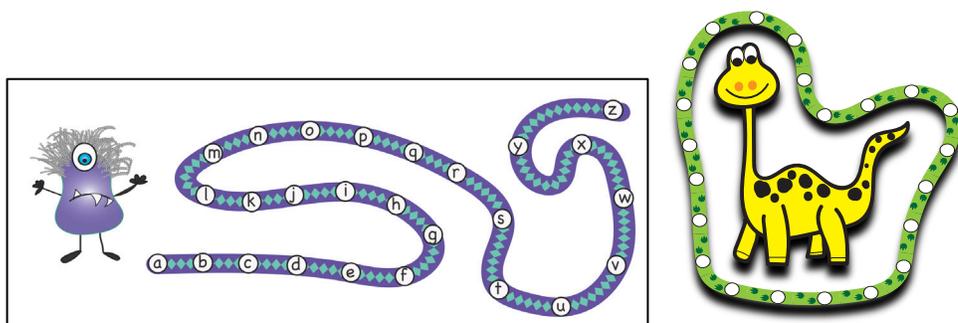
Trace activities



“Coloring Power” files in The Fine Motor Store – to promote a dynamic grasp, change of direction with pencil control.

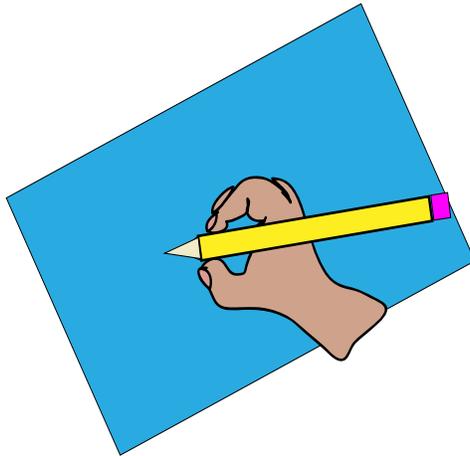


As an alternative to coloring, The Fine Motor Store also has dotted punch dot labs on Teachers Pay Teachers. These labs work on pencil control by having a student use a tool similar to a pencil (golf tee with rubber band and TIP grip), to punch holes. The punch dot labs work to improve finger strength against resistance. The following are some of the punch dot labs in The Fine Motor Store:



More complex hand skills:

To achieve better in hand manipulation of writing tools, it is often recommended that students write on a vertical surface. This puts writing more at eye level, and also allows wrist extension. By encouraging wrist extension, the student is less apt to hook their hand when writing. The wrist extension also allows for more thumb abduction and an open web space, allowing the thumb to work skillfully with the fingertips. Stable wrist extension and thumb opposition also facilitate arching within the hand for skillful manipulation of objects.

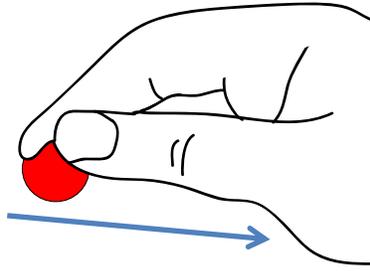


A 2 – 3" binder can be used to facilitate wrist extension.

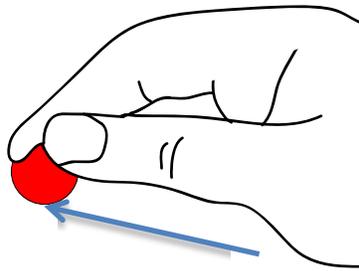
5 patterns of in-hand manipulation:

- ◆ Finger to palm translation
- ◆ Palm to finger translation
- ◆ Shift
- ◆ Simple rotation
- ◆ Complex rotation

Finger to palm translation: When objects are moved from the tips of the fingers, to the palm, this is called finger to palm translation.



Palm to finger translation: When objects are moved from the palm to the tips of the fingers, this is called palm to finger translation. An example would be holding multiple pennies in the palm, and moving one penny to the fingertips.



Shift: Linear movement of the object on the fingers to allow for repositioning of the object on the pads of the fingers is called shift. An example would be holding a pencil in the middle, then moving the fingers down the shaft towards the end of the pencil (using only one hand). Other examples would be threading a shoelace or threading beads on a string.

Simple rotation: While keeping fingers static, twisting or turning an object. An example would be loosening the cap to toothpaste or a cap of a water bottle.

Complex rotation: Lifting the fingers on and off an object in coordination, to turn and manipulate. An example might be turning a marble around 180 degrees. Another example might be to pick up a small peg, and then rotate and turn to place in a small hole. Another example might be flipping a pencil, to use the eraser end.

Wake-up Hands, Strong Hands, and Smart Hands:

A program was developed by the Newton Early Childhood program, sets a perfect example of how to combine fine motor activities to work with preschoolers. Children need to work on complex hand activities that require the use of the small muscles in the hand, often called the intrinsic musculature. There are long flexor and extensor muscles in the hand, which are very strong. A child can hang from the monkey bars and activate these strong muscles. Many children have an imbalance and use the long muscles/stronger muscles to aid in manipulation. An example would be a 5 year old child who is writing her name or coloring – if the child is using the long muscles, the child is holding the pencil in a static way, and then using the long muscles through manipulating the pencil through wrist flexion and extension. We would rather see a child hold the pencil in a secure manner using a tripod grasp, and then using isolated finger movements with thumb IP joint (last joint of the thumb) to hold and manipulate the pencil. In this pattern the small muscles of the thumb can be palpated. Try it yourself! Draw ½ half inch circles and palpate the intrinsic muscles of the thumb, and the first dorsal interossei. You will feel the muscles activating!



Myers, Carol Ann, [Hand Function in the Child \(Second Edition\)](#)
Foundations for Remediation
2006, Pages 267–290

Carol Ann Meyers, In *Hand Function in the Child*, describes treatment planning going through three different type of fine motor activities. First is “wake up hands”, with activities that might promote tactile awareness, or activities that might promote waking up certain muscles. For pencil control, the muscles that would need to be “woken up” would be the small muscles of the hand, within a tripod grasp. At The Handwriting Clinic in Richardson, Texas, we “wake up” hands through some of the following activities:

- ◆ Tactile input – feeling different textures
- ◆ Show “go fingers”
- ◆ Bowl with go fingers (tripod grasp on marble to knock down block bridge, etc)
- ◆ Relay race with go fingers
- ◆ Putting coins in a slot in a can (ex. bank)
- ◆ Pulling rubber bands
- ◆ Theraputty activities
- ◆ Showing how to use a tripod grasp to pick up objects with “go fingers” while “stop fingers” remain in the hand.

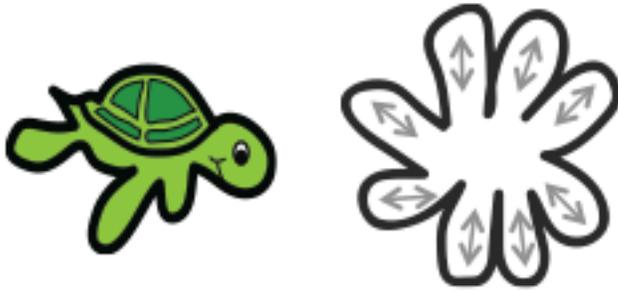
Next the student will do “strong finger” activities. Strong finger activities specifically target activating the small muscles in the hand. The following might be good strong finger activities:

- ◆ Tear paper for a craft
- ◆ Nuts and bolts
- ◆ Opening jars, lids
- ◆ Tongs activities (see tongs activities in Jan McCleskey’s store on Teachers Pay Teachers)
- ◆ Puncher – (see punch dot coloring activities in Jan McCleskey’s store on Teachers Pay Teachers)
- ◆ Scissors (see scissors activities in Jan McCleskey’s store on Teachers Pay Teachers.
- ◆ Hand squeezer
- ◆ Specific playdoh activities (intrinsic/ small muscles)
- ◆ Wring out sponges
- ◆ Find hidden objects in playdoh with tweezers or tongs

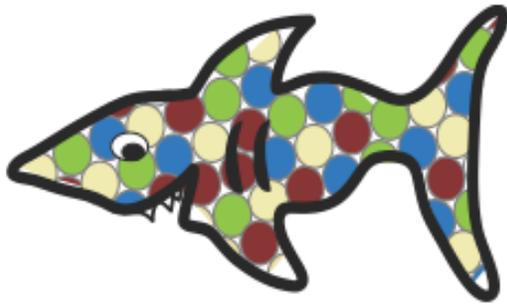
Finally the student would work on “smart fingers” activities. While Carol Ann Meyers describes activities like puzzles, pegboards, etc., at The Handwriting Clinic we focus on grapho-motor activities. These would be more complex activities for tracing, coloring, drawing or handwriting. The child will use “smart go fingers” to perform the tasks., preferably with a dynamic tripod grasp.



This is an example of a tracing activity.



This is an example of a coloring activity to warm up the fingers to do isolated finger movements.



This is an example of circle coloring activities where a child has to fill in circles, using a tripod grasp on crayons (usually adapted with the TIP grip). The child is encouraged to use a dynamic tripod grasp.

All the above activities are in Jan McCleskey's store, on Teachers Pay Teachers, or a nominal cost. A teacher or a therapist could download themed files, or could order a hard copy of the Pencil Gymnastics Kit. The Pencil Gymnastics Kit has many "smart fingers" activities to promote a dynamic tripod grasp.

Conclusion:

Hand skills are very important to Kindergarten and First Grade readiness. We need to set up the basis of a correct grasp, and manipulation skills, so that a child is ready to have sustained writing, without pain or fatigue in older grades. We do not know the effect of ineffective grasp patterns, that might have biomechanical stress to a joint, or an imbalance of sustained writing using mostly the stronger, long muscles of the arm versus the more manipulative, intrinsic, small muscles of the hand. Reaffirming a push to work on fine motor skills in the preschool years, should have a significant effect on developing the correct skills needed for fine motor skills in older grades. An iPad, or computer games, does not allow a child to develop the small muscles in the hand. Children should be exposed to many fine motor activities within their own play, and within educational readiness activities in preschool through Kindergarten. A teacher can have a significant impact on the hand skills needed for the future with a child!

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