



# HANDWRITING SUPPORT



# LEARNING OBJECTIVES

1

Understand why handwriting is important and how it develops.

2

Name aspects of handwriting to consider for handwriting success.

3

Name practical interventions to assist a child struggling with handwriting.

# HANDWRITING

## MAJOR OCCUPATION OF CHILDHOOD

**Handwriting is a complex process requiring the following skills:**

- Organization
- Differentiation
- Sequencing
- Memory
- Postural Control
- Eye-Hand Coordination

\*\*Readiness for handwriting is diverse--most typically ready by age 5-7 years old.

# WHY IS HANDWRITING IMPORTANT?

NECESSARY COMPONENT OF DAILY LIFE!

## Consider this:

- We use handwriting to complete tasks.
- We use handwriting for communication.
- We use handwriting for computation/math.
- We use handwriting as an occupational tool.

# DEVELOPMENT OF HANDWRITING

## Pre-writing and Handwriting in Young Children

- Scribbles on paper: 10-12 months
- Imitates horizontal, vertical, and circular marks on paper: 2 years
- Copies a vertical line, horizontal line, and circle: 3 years
- Copies a cross, square, left diagonal line, some letters, & some numbers: 4-5 years
- Copies a triangle, prints name, copies most lower and uppercase letters: 5-6 years

\*Age levels are an approximation.

# HANDWRITING READINESS

## CONFLICTING PROFESSIONAL OPINIONS

A study suggested that if a child can complete the first 9 figures on the Beery VMI, the children were also able to copy significantly more letters than those who were unable to copy the first 9 figures.

Based on the study results, typical readiness can occur in the latter half of the kindergarten school year.

The OT will incorporate activities into therapy to help develop handwriting readiness.

The activities are aimed at improving:

- Fine motor control
- Isolated finger movements
- Promoting pre-writing strokes
- Enhancing right-left discrimination
- Improving orientation to printed language

# MEASURING HANDWRITING PERFORMANCE

**OTs utilize various standardized assessments to determine handwriting proficiency:**

- ETCH
- The Print Tool
- The Developmental Test of Visual Motor Integration (Beery VMI)
  - 3 subtests (Visual Perception, Motor Coordination, & Visual Motor)

# MEASURING HANDWRITING PERFORMANCE

The following areas need to be examined by an OT:

## 1. Domains of Handwriting

- a. Writing upper/lowercase letters, including numbers
- b. Copying letters and numbers from a model
- c. Near-point copying from same page or same horizontal surface
- d. Far-point copying from the board
- e. Dictation utilizing verbal/auditory input
- f. Composition to generate sentences

## 2. Legibility components

- a. Letter formation
- b. Line adherence
- c. Spacing
- d. Sizing

## 3. Writing speed

## 4. Ergonomic factors

- a. Writing posture
- b. Upper-extremity stability & mobility
- c. Pencil grip



# FOUNDATIONS FOR FINE MOTOR SKILLS

Good FM skills help children gain confidence & increase independence!

- **Shoulder Stability/Core:** A solid, strong core and shoulders enable children to develop good FM skills.
- **Tactile Perception:** Children may be over or under reactive to the feel of objects. Children learn through touching.
- **Hand Strength:** Improve hand strength through squeezing, pushing, & pulling activities.
- **Bilateral Coordination:** To effectively use our hands, one hand holds or stabilizes and the other hand works.
- **Tripod Grasp:** When the tips of the thumb & first 2 fingers meet to hold and manipulate an object.

# THE HAND

## OUR “TOOLS” TO ENGAGE THE WORLD AROUND US!

**Fine Motor (FM) skills rely on patterns of movement that work in conjunction with our vision, cognition, and tactile sense.**

### Patterns of Movement

- Reach: extension and movement of the arm for grasping or placing objects.
- Grasp: attainment of an object with the hand.
- Carry: transportation of a hand-held object from one place to another.
- Voluntary Release: intentional letting go of a hand-held object at a specific time and place.
- In-hand Manipulation: adjustment of an object in the hand after grasp.
- Bilateral Hand Use: use of 2 hands together to accomplish an activity.

# TYPES OF GRASPS

As the child's grasp develops, it helps to support handwriting success!

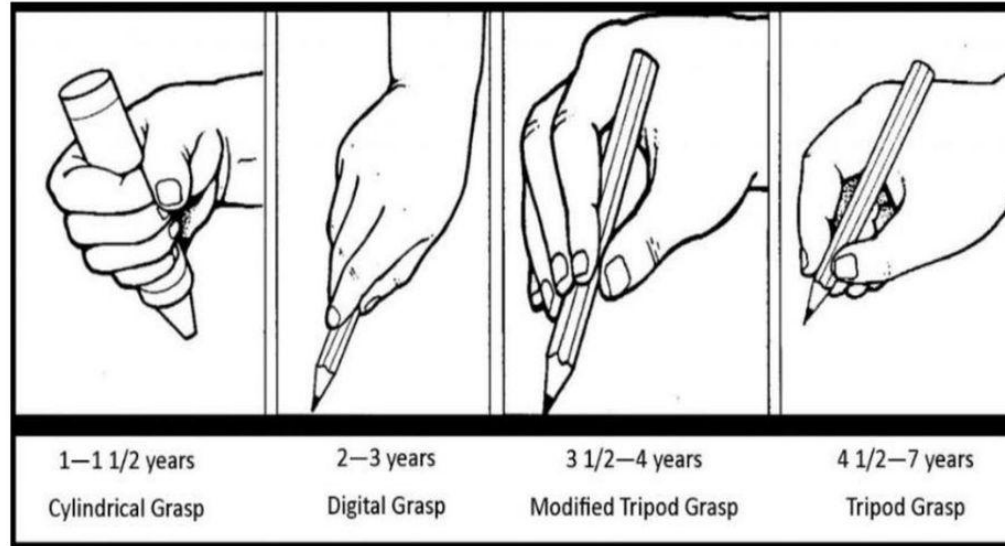
## TYPICAL PENCIL GRASP DEVELOPMENT FOR HANDWRITING



# PENCIL GRIP PROGRESSION

- Dynamic Tripod
- Quadrupod
- Adaptive Tripod

## Pencil Grip Development



# INSTRUCTIONAL METHODS

## FOR HANDWRITING

An OT can still get a referral for handwriting with a child that never had formal instruction.

Most educators are not instructed on how to teach handwriting.

Common Methods:

- Zaner-Bloser
- Palmer
- D'Nealian
- Handwriting Without Tears

# PRE-WRITING CAUTION

## ESPECIALLY FOR PRESCHOOLERS

Many educators and parents are concerned that they are not drilling the pre-writing strokes to develop handwriting typically--OT says, "Don't Worry"!

- Preschool development is not about, "Sit here and draw these crosses and squares until they have all 90-degree angles!"
- It's about facilitating holistic development, including fine motor and visual motor development in hands-on activities that also include things like coloring, drawing, painting, tracing, and more.
- To be honest, in general, if a child is progressing in their ability to create pre-writing strokes that are recognizable as such, I would encourage parents and teacher not to worry too much.
  - For example, if the circle looks like a circle, or the cross looks like 2 intersecting lines that are relatively straight, then most kids will be pretty much on track with that.

# HANDWRITING INTERVENTION

## COPYING FROM THE BOARD (FAR SPACE)

A child may present with poor accuracy and/or speed when copying from the board for many reasons.

- Copying requires good visual acuity and the ability to shift your gaze from a far space to a near space.
- Requires the student to view, and then recall what was seen before writing it on paper.

### **Strategies:**

- Confirm that the student does not have corrective lenses.
- Allow student to sit in front of class.
- Write larger and use colored chalk/markers to enhance certain words/passages.
- Reduce visual clutter on the board to allow student to easily locate what is to be copied.
- If possible, also provide a paper copy for student to have a closer reference.
- Slowly read out loud what is to be copied while pointing to each word.
- Teach the student to view and copy in “chunks” instead of one letter/digit/word at a time.
- Play games to enhance memory.

# HANDWRITING INTERVENTION

## COPYING FROM A BOOK (NEAR SPACE)

A student may present with poor accuracy and/or speed when copying from a book or handout on desk.

### **Strategies:**

- Confirm the child does not have corrective lenses.
- For R handed child, encourage slight slant of the paper toward the left.
- For L handed child, encourage slight slant of the paper toward the right.
- Place the handout/book to be copied in close proximity to the paper.
- Try to use paper to cover up the area not required to be viewed.
- Reduce visual clutter on the child's desk.
- Encourage the child to use their finger/ruler to keep place while copying.
- Provide white paper/index card with a window cut out to block off other info.



# HANDWRITING INTERVENTION

## IDEAS FOR PROPER PENCIL GRASP

Various reasons such as weak arm muscles, unstable torso, or poor coordination in the hand muscles may contribute to an immature grasp of a pencil.

### Strategies:

- Teach the correct way to hold a pencil using a tripod grasp through...
  - Visual demonstration with hand over hand assist
  - Pinch the pencil with the thumb and index finger for alignment
  - The pencil should rest along the base of the inside of the middle finger
  - Last 2 fingers should be tucked into the student's palm
- Provide a photo of correct pencil grasp and tape to desk or post in the classroom.
- To maintain the mature tripod grasp, have the student occasionally hold a cotton ball/pom within the palm using ring and little finger.
- Clip paper on a binder with the highest slant furthest away from student--helps to minimize fatigue and improve pencil grip.
- Ensure good 90-90-90 posture with hips, knees, and feet.
- Experiment with different writing tools--try shorter/thinner pencil/crayon.

# HANDWRITING INTERVENTION

## IDEAS FOR LINE ADHERENCE

Legibility of written work is often due to poor line placement of letter and words. Difficulties can be attributed to FM skills interfering with start/stop of strokes or difficulties with visual perception.

### Strategies:

- Use visual cues that various handwriting programs offer, such as the top left corner is indicated by a smiley face. Another option is color coded lines representing “Dirt-Grass-Sky”.
- When teaching lower case letters, be consistent with terminology...
  - Tall Letters-b,d,f,h,k,l,t
  - Short Letters-a,c,e,i,m,n,o,r,s,u,v,w,x,z
  - Go Under Letters-g,j,p,q,y
- Use words such as “floating letters” or “popcorn letters” to describe incorrect line placement above/below baseline.
- Experiment with different types of paper-highlighting each line in a different color, raised line paper for tactile cue to “bump” the line.

# HANDWRITING INTERVENTION

## IDEAS FOR LETTER REVERSALS AND ORIENTATION

Reversals are not uncommon during the early years of writing and should resolve in later grades. If the problem persists, this may indicate visual perception deficits in the areas of position in space, visual discrimination, form constancy, and/or spatial relations.

### Strategies:

- When instructing during the early years of writing, designate the top left corner of the paper with a visual cue.
- Ongoing practice in correct formation, including use of correct starting and ending points.
- Have the student highlight the common reversed letter when viewing a handout or newspaper.
- Practice using “motor memory” by having the student close their eyes to practice form.
- Play games to reinforce right vs. left on self, others, and space around them.
- When you write on the board, you can increase awareness of the reversed letter in a different color.
- Complete puzzles and visual exercises working on areas listed above that may be impaired.
- Place a letter strip on the desk.

# EXAMPLE OF INTERVENTIONS

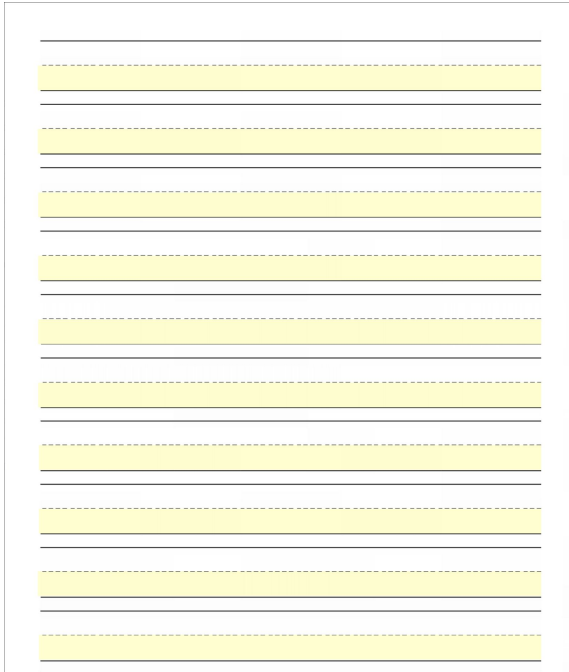
## IDEAS FOR LETTER PRACTICE

### Strategies:

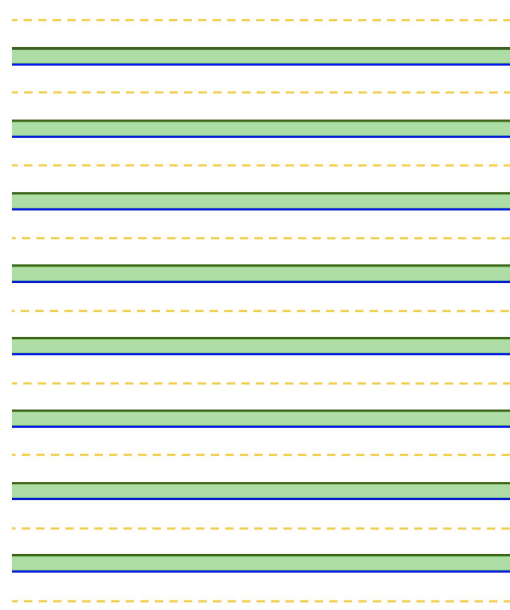
- Use fingers to write in salt, sand, and shaving cream.
- Use playdough to form letters or carve into playdough with pencil.
- Use dry erase tracing cards.
- Use magna doodles or similar device.
- Use wiki sticks to build letters or go over letters on a card.
- Use sidewalk chalk outside.
- Use magnets to follow letter form.
- iPad programs for letter practice games--iTRACE app

# EXAMPLE OF INTERVENTIONS

## PAPER OPTIONS FOR HANDWRITING PRACTICE



Name: \_\_\_\_\_ Date: \_\_\_\_\_

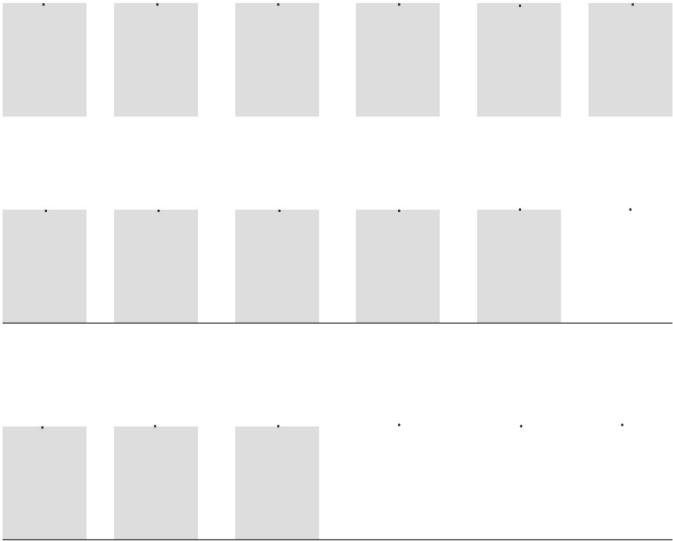


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# EXAMPLE OF INTERVENTIONS

## PAPER OPTIONS FOR HANDWRITING PRACTICE

Name: \_\_\_\_\_



This form is designed for handwriting practice. It features a 'Name:' label followed by a horizontal line. Below this, there are three rows of gray rectangular blocks. Each block has a small black dot at its top center. The first row contains six blocks, the second row contains five blocks, and the third row contains three blocks. A horizontal line runs across the bottom of each row of blocks.

Name: \_\_\_\_\_ Date: \_\_\_\_\_



This form is designed for handwriting practice. It features a 'Name:' label followed by a horizontal line, and a 'Date:' label followed by a horizontal line. Below these labels, there are ten rows of horizontal lines. Each row consists of a solid top line, a dashed middle line, and a solid bottom line. A gray rectangular block is placed between the solid top line and the solid bottom line of each row.

# REVIEW

OH YEAH!

Let's review:

- **Handwriting is a complex process requiring many different skills including:**
  - Organization
  - Differentiation
  - Sequencing
  - Memory
  - Postural Control
  - Eye-Hand Coordination

\*\*Readiness for handwriting is diverse--most typically ready by age 5-7 years old.

# REVIEW

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- **Why is handwriting important?**
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# REVIEW

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Let's review:

- **Measuring Handwriting Success**
  - Domains of Handwriting
  - Legibility components
  - Writing speed
  - Ergonomic factors

# REVIEW

OH YEAH!

Let's review:

- **Fine Motor Foundations**
  - Shoulder Stability/Core.
  - Tactile Perception
  - Hand Strength
  - Bilateral Coordination
  - Tripod Grasp
  
- **The Hand + Patterns of Movement**
  - Reach
  - Grasp
  - Carry
  - Voluntary Release
  - In-hand Manipulation
  - Bilateral Hand Use

# TYPES OF GRASPS

## TYPICAL PENCIL GRASP DEVELOPMENT FOR HANDWRITING



# REVIEW

OH YEAH!

Let's review:

- **Handwriting Intervention**
  - Copying from the board
  - Copying from a book
  - Proper pencil grasp
  - Line adherence
  - Letter reversals
  - Letter practice
  - Paper options

# ACTION STEPS

1

Evaluate the opportunities you are providing in the classroom and home setting to allow development of these skills.

2

Handwriting is an important occupation for children. Look through the pictures and resources again to see where the child aligns to determine if further occupational therapy services may be needed.



**THANK YOU!**

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