

When Handwriting Challenges are Not Defiant Behavior



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Lighthouse Learning Resources

&

www.senso-science.com

 **What** is your child's or student's angst communicating about handwriting?

 Discomfort when writing, such as painful feelings in hands

 Unrecognized vision deficits, neuromuscular eye disorders

 Inability to recall stroke patterns; top/bottom, left to right. 

 Dyspraxia, neurodevelopmental condition in children - (developmental coordination disorder).

 Processing Speed, Working Memory...?

Executive function, letter knowledge, motor skills, and writing surface

 Behavior  Nonpreferred task 

Handwriting and Written Expression

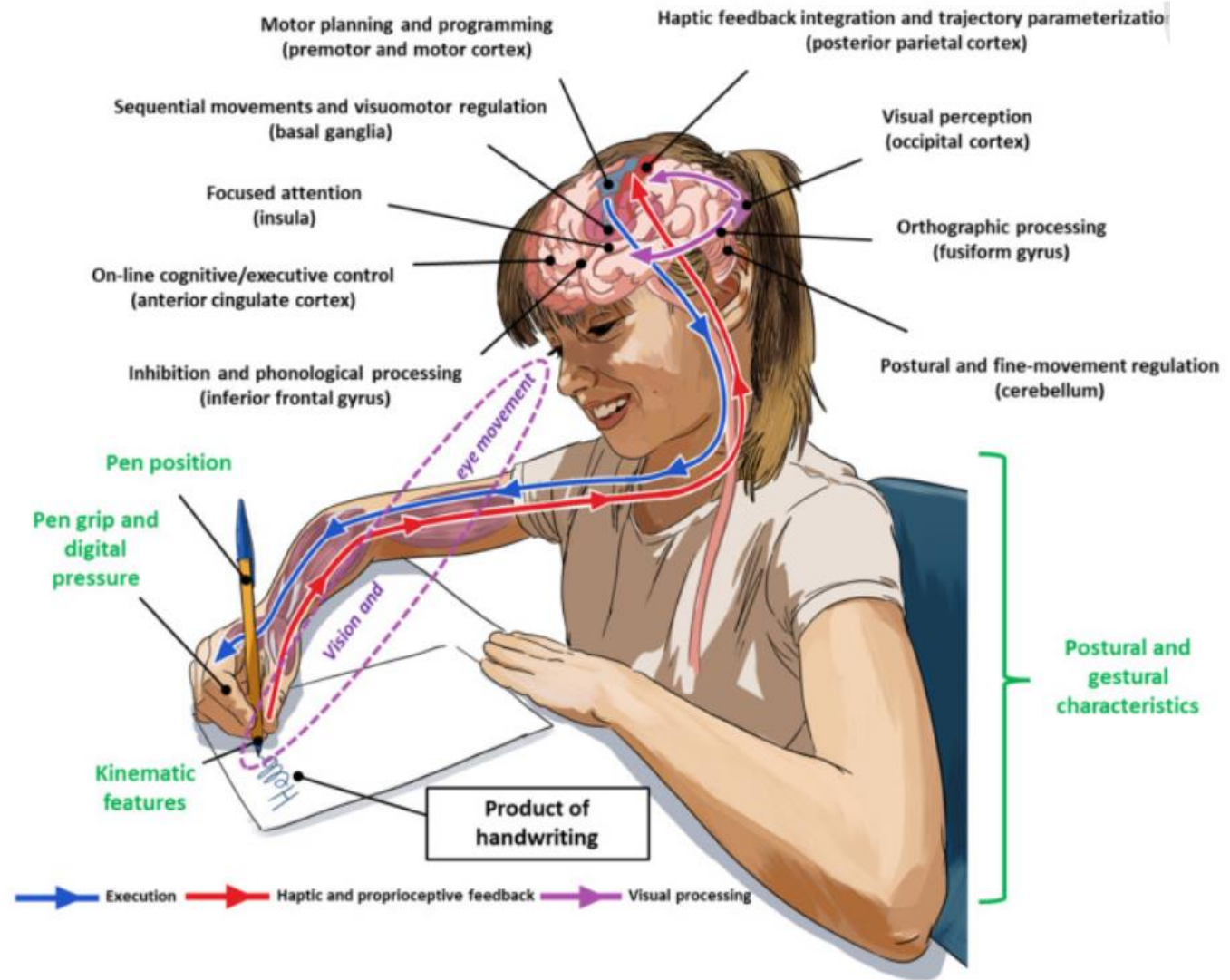
Handwriting: putting ideas on paper with a writing tool; pen, pencil, etc., which may or may not be legible for the reader determine the meaning of the form or content.

Written Expression: putting ideas on paper to convey thoughts or messages, a written form of communication.

Haptic - perception of objects by touch and proprioception, especially as involved in nonverbal communication.

Science - The more you write, the more neural connections are formed within your brain. When you pen words on paper, the neurons in your brain fire signals at rapid speed, thus enabling you to make more connections

Handwriting is an important activity, which requires complex sensorimotor, perceptual, and cognitive skills.



<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10813961/figure/children-11-00031-f001/>

ASSESSMENTS

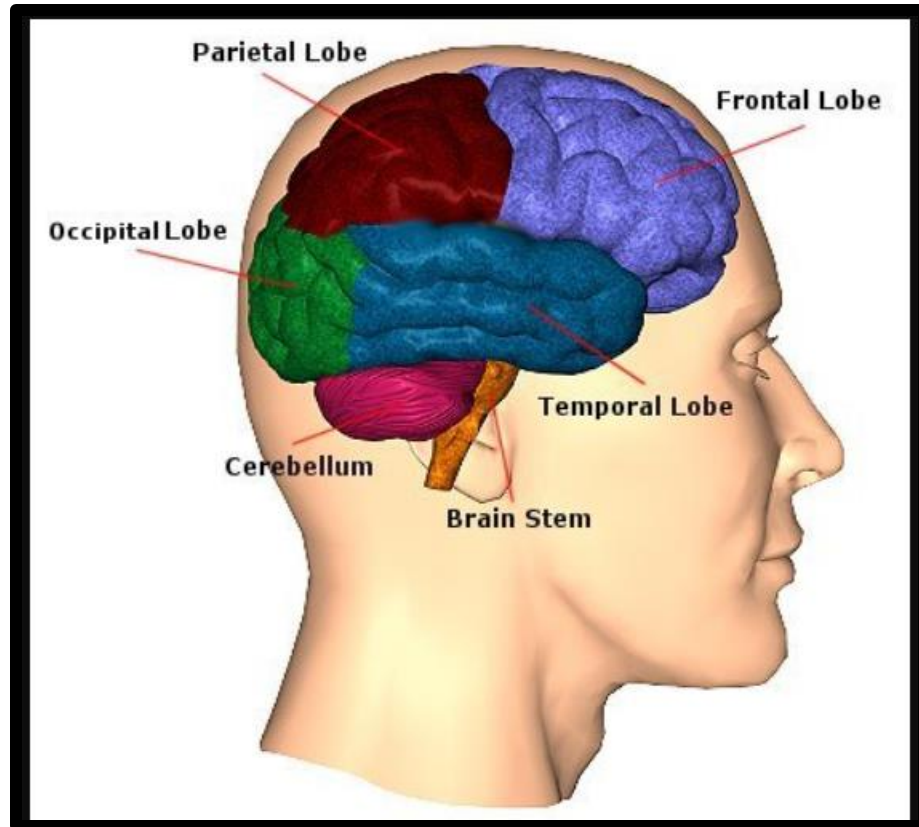
WRITTEN EXPRESSION

- ✎ TOWL Test of Written Language | Fourth Edition - writing achievement and read or hear a prepared story starter
- ✎ TOWE Test of Written Expression | Fourth Edition - spelling, punctuation, word usage, and quality

OCCUPATIONAL THERAPY

- ✎ Screener of Handwriting Proficiency – HWT, FREE!
(<https://www.lwtears.com/resources/screener-handwriting-proficiency>)
- ✎ THS-R; The Test of Handwriting Skills, Revised – untimed
- ✎ Beery VMI - Beery Buktencia Developmental Test of Visual Motor Integration – 6th Edition.

Georgia Writing Project (GaWP) provides educators in schools and/or districts with high-quality professional learning emphasizing teachers as writers to develop students as writers.



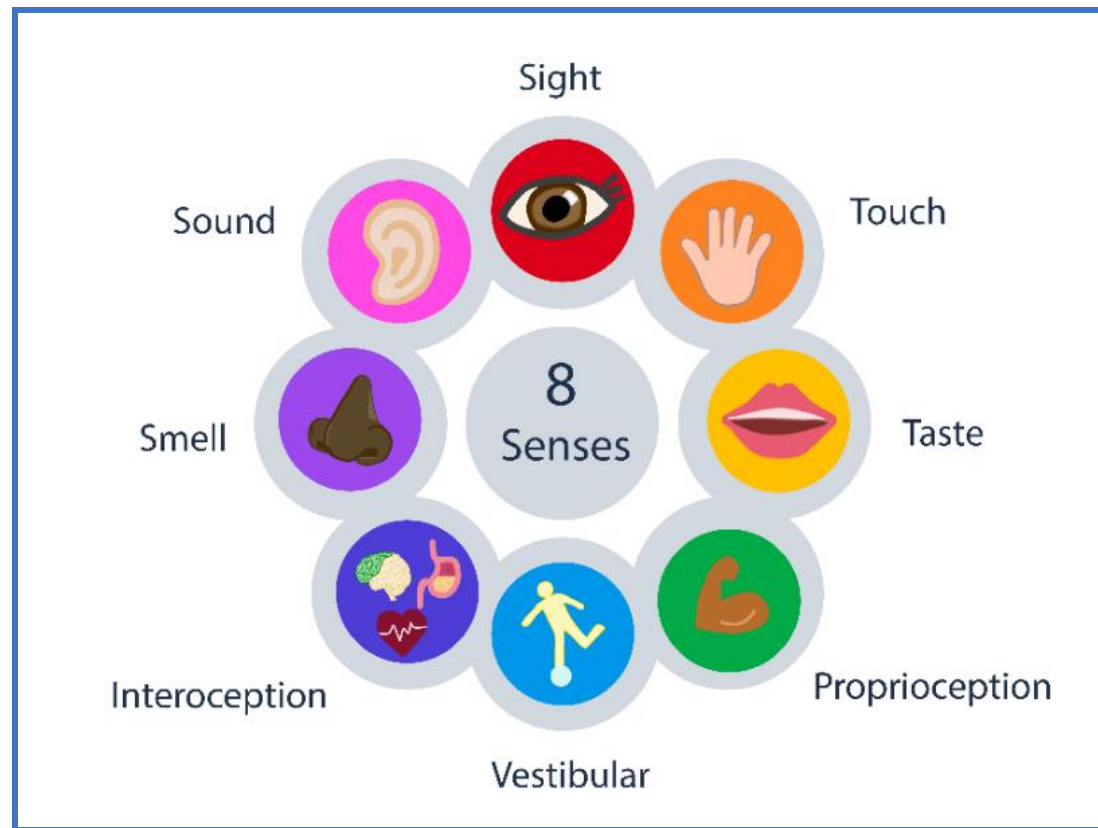
In utero: XX – human brain default is female brain, both sides of the brain are developing word ability – verbal.

XY chromosome testosterone comes in at about 4 months and reformats the male brain; when born, male brain has not developed verbal on the right side of the brain. Result is more males develop visual/spatial skills on the right side.

XX females utilize both sides of the brain use for word ability – verbal.

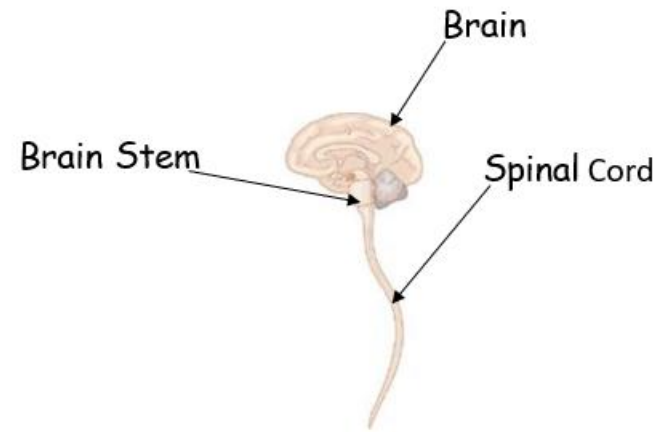
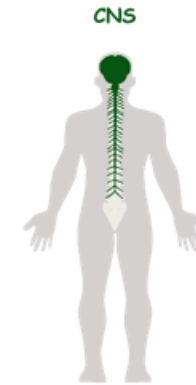
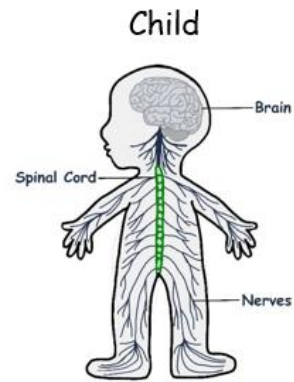
Parietal Lobe: near the back and top of the head above the ears; **the parietal lobe controls the ability to read, write, and understand spatial relationships.**

 Why is handwriting causing my child to meltdown?



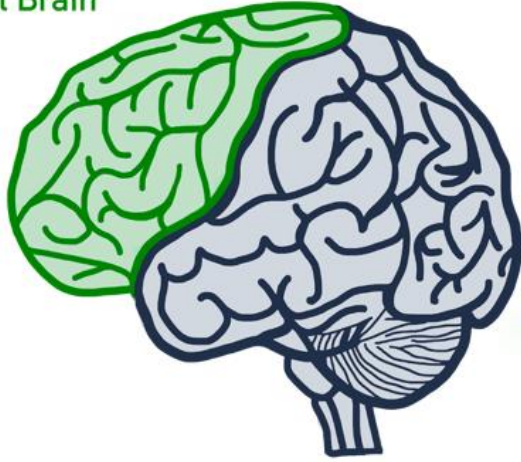
Contributing factors: Sensory Processing challenges, Memory (short/long) – Motor Planning, Executive Functioning - coping, Ocular Deficits, Processing Speed, Fluidity, Letter Reversal, and Case Substitutions, Phonological Processing, Auditory Process, Orthography, and other contributing conditions.

Body external stimuli process



Brain

Rational Brain



Emotional Brain

Global regions of the brain that interact to maintain self-regulation:
rational brain - prefrontal cortex and emotional brain - limbic system.

Prefrontal Cortex



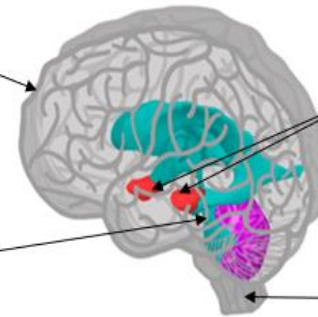
Amygdalas









Hippocampus



Brainstem



How is demystify handwriting challenges processes supportive?

-  Share the child's learning challenge with him/her – **Name it to tame it!**
-  ADHD, Autism, Disorder of Written Expression, Dysgraphia, etc.
-  Research with your child/students others who are diagnosed with similar needs.
-  “Challenges” and “Strengths”.
-  Encourage, teach, and demonstrate self-advocacy.
-  One-page-profile

The connection between ADHD and handwriting is so common that some researchers suggest that doctors include a handwriting analysis as part of testing for ADHD. Teachers often report immature, messy handwriting in students with ADHD.

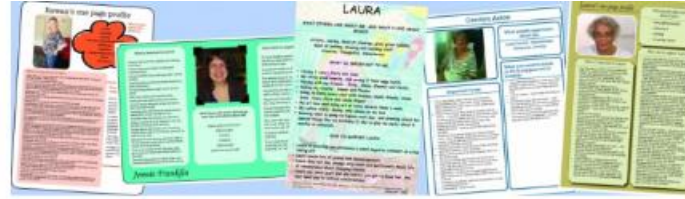
Before Writing



-  Prewriting Exercises
-  Draw ideas
-  Write

One-Page-Profile

- Child Creates
- Parent Facilitates
- Strength-based
- Challenges/Weakness



<https://onepageprofiles.wordpress.com>

Lighthouse Learning Resources encourages all students create one-page profile due to extensive benefits:

- Allows parent/guardian time to bond while working on child identifying personal skills.
- Encourages the child to think about him/herself in a positive and active manner.
- Dialogue is positive and continuous to encourage the child to create the profile entries, not parent/guardian.
- Suggested dialogue tips:
 - "Would you like to choose your own photo of yourself doing something or just being you?"
 - "What do you think are your good qualities?"
 - "What are your challenges?" (We ALL have challenges – adult should share their challenges)
 - "Why do you think...?"
 - "Tell me more about you. Could you add more to this section?"
 - "Is there anything else you want your teachers to know about you?"
- Demystifies child's learning challenges in a positive manner by listing strengths, challenges, and needs.
- Highlights the child's positive skills and allows the child to realize their own self-worth.
- Acquaints the child with his/her 504 Plan/IEP...support review of child's educational plan.
- Child supports emailing his/her one-page-profile to all educators who are in contact with your child.
- Supportive of teacher/student bonding – one page, easy for the educators to read, and sends a message that the student working on self-awareness.
- Teaches the skills of self-advocating for life.

Resources

Brain Structure and Function

<https://web.northeastern.edu/nutraumaticbraininjury/braintbi-anatomy/brain-functions/#:~:text=Parietal%20Lobe%3A%20near%20the%20back,write%2C%20and%20understand%20spatial%20relationships.>

Psychologically speaking: your brain on writing

<https://uwaterloo.ca/writing-and-communication-centre/blog/psychologically-speaking-your-brain-writing>

Sensitivity of Print Tool

<https://twu-ir.tdl.org/bitstream/handle/11274/10534/2009ChrismanOCR.pdf?sequence=5&isAllowed=y>

List of Occupational Therapy Assessment Tools

<https://www.pearsonclinical.com.au/products/occupational-therapy-and-physiotherapy.html>

Testing Written Expression: Myths and Misconceptions by Melissa Farrall, Ph.D.

<https://www.wrightslaw.com/info/test.written.lang.htm>

Types of Educational tests

<https://concordspedpac.org/TypesTests.html>

Videos

Childhood dyspraxia: James' story

<https://www.youtube.com/watch?v=ncnVYonMA5Y>

Michael Gurian on Brain Development and Writing

<https://www.youtube.com/watch?v=23gEcTPYFic>

CITATION

[Is There a Deficit in Product and Process of Handwriting in Children with Attention Deficit Hyperactivity Disorder?](#)

A Systematic Review and Recommendations for Future Research

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Affiliations

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