

Effective Core Writing Instruction Handwriting Grades K-2

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Pennsylvania Training and Technical Assistance Network

PaTTAN's Mission

The mission of the Pennsylvania Training and Technical Assistance Network (PaTTAN) is to support the efforts and initiatives of the Bureau of Special Education, and to build the capacity of local educational agencies to serve students who receive special education services.

PDE's Commitment to Least Restrictive Environment (LRE)

Our goal for each child is to ensure Individualized Education Program (IEP) teams begin with the general education setting with the use of Supplementary Aids and Services before considering a more restrictive environment.

3

Effective Core Writing Instruction: Handwriting Grades K-2
Overview

As districts, schools, and individual teachers make decisions about handwriting instruction in schools, it is increasingly important to understand what the research tells us about this valuable component of K-2 instruction. Armed with the most up-to-date research, this webinar is equal parts valuable foundational research and best teaching practices. Participants will understand why handwriting instruction is important and how best to instruct students in its use.

4

Our Agenda

- ✓ Putting handwriting into context
- ✓ What the research tells us
- ✓ Positioning
- ✓ Stroke instruction
- ✓ Manuscript vs. cursive
- ✓ Recommendations for teaching & learning

PA Core Standards

English Language Arts

1.4 Writing

Students write for different purposes and audiences.
Students write clear focused text to convey a well-defined perspective and appropriate content.



Writing Scope & Sequence

Writing Scope & Sequence														
Writing		Scope and Sequence												
B - Beginning (Introduce)		D - Developing (Reinforce)					S - Secure (Mastery)							
Conventions		K	1	2	3	4	5	6	7	8	9	10	11	12
I. Spelling														
A. Apply phonetic patterns to spell words correctly	B	D	D	D	D	D	D	S	S					
B. Use conventional spelling for high frequency and other studied words				B	D	D	D	D	S					
C. Spell grade appropriate words correctly (consulting references as needed)			D	D	D	D	D	D	S					
II. Capitalization & Punctuation														
A. Capitalization														
1. Sentence beginnings	B	D	S											
2. Names of people, dates			B	D	D	S								
3. Proper adjectives							B	D	D	S				
4. Pronoun "I"	B	D	D	S										
5. Capitalize holidays, product names, and geographic names				B	D	D	D	D	S					
6. Dialogue					B	D	D	D	S					
7. Words in titles					B	D	D	S						
B. Punctuate with periods														
1. Use end punctuation	B	D	D	S										
2. Abbreviations					B	D	S							
3. Initials and titles of people				B	D	D	S							
4. Dialogue					B	D	D	D	S					
C. Punctuate with exclamation points														
1. Punctuate with exclamation points	B	D	D	S										
D. Punctuate with question marks														
1. Punctuate with question marks	B	D	D	S										
E. Punctuate with commas														
1. Separate items in a series														
a. Words	B	D	D	S										
b. Phrases & Clauses					B	D	D	D	D	S				

Connecting to Scope and Sequence

Conventions – Transcription Skills

E. Use handwriting.

F. Use keyboarding skills (i.e., touch typing)

Dysgraphia ▶ A Definition

Dysgraphia is a writing disability classified as a specific learning disorder (SLD) in the recent Diagnostic and Statistical Manual of Mental Disorders (DSM-5, 2013).

Dysgraphia is a motor-based writing disorder that affects the quality of handwriting overall and can be seen most readily in letter formation and spatial characteristics of letters of students' writing. Further, dysgraphia can impact students' spelling and the quality of their written language composition. It often accompanies dyslexia, but it may occur alone or with other learning disabilities.

9

Dysgraphia ▶ Risk Signs

Table 1. Risks Signs for Dysgraphia.

Risk Signs for Dysgraphia	
•	Poor fine motor skills
•	Lack of dominance
•	Letter reversals beyond the early stages of writing
•	Poor pencil grip
•	Spatial problems
•	Slow rate of speed while writing
•	Inconsistent spacing of letters
•	Lack of automaticity when writing beyond the early stages
•	Poorly connected letters when writing in cursive
•	Inconsistent slant of letters
•	Excessive erasures
•	Hand fatigue while writing

From: *Strategies for Teaching Handwriting to Children with Writing Disabilities*,
Jane Andrews and Linda Lombardino

10

Working Memory

“Writing is the act of dealing with an excessive number of simultaneous demands or constraints. Viewed this way, a writer in the act is a thinker on full-time cognitive overload.”

OK MK

(Flower and Hayes as cited by Torrance and Galbraith,
Writing Research 2008 Edition, 67)

11

Transcription Skills ▶ Some Observations

- Transcription skills, including spelling, mechanics, and handwriting, are not connected to intelligence, but difficulty with these skills interferes with working memory, preventing a student from putting her thoughts on paper effectively.
- Transcription skills distinguish speaking from writing and make writing a more difficult process for most.
- One essential reason for automatizing these transcription processes, then, is that it frees working memory for the higher-level writing skills.

Skills Required for Handwriting

- Planning to form letters
- Assessment of space requirements
- Incoming visual and touch sensory information
- The phonological-orthographic loop of working memory: integration
- Motor skills: planning movements, controlling movements during production, and executing the writing
- Combination of accuracy + speed = fluency

(Berninger, 2012)

13

Importance of Automaticity

- **Automatic** – occurs without voluntary control and interferes minimally with other processes
(Pashler, 1994b)
- **Spelling and Handwriting** – required in written production but not in speech (no correlation with IQ)
- **When written production less practiced, interferes with conscious retrieval process**
(Bourdin, 1999; Bourdin & Fayol, 1994, 1996, 2002)

14

Handwriting Impacts the Writing Process

- Students in grades K-3 benefit from direct and explicit handwriting instruction. (Graham, 2009-10)
- Handwriting in students 3rd grade and below (both regular ed and LD) may impede text generation. (Graham, 2009-10)
- OK MK • "...rapid, legible, and comfortable handwriting facilitates writing production. (Mather et al, 2009)
- Automatized handwriting significantly improves both the quantity and quality of writing. (Berninger 2012; Graham, 2009-10)



Steve Graham



Nancy Mather

15

Handwriting Impacts the Writing Process

A recent study argues that 2nd grade students (both those continuing with manuscript instruction and those learning cursive) showed advancement in language skills, including alphabet writing, spelling, and composing. Surprisingly, "a method of providing handwriting instruction embedded in other literacy activities, which previously was thought to be needed only for students with specific learning disabilities, has been shown to benefit typically developing writers in the general education classroom" as well. This study adds to the continuing body of research arguing in favor of handwriting instruction for ALL students.

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(Berninger, Wolf, & Abbott 2016)



Virginia Berninger



Beverly Wolf

16

Handwriting Impacts Reading

[Redacted]

- "Learning to form letters by hand improves perception of letters and contributes to better reading and spelling." (Berninger, 2012)



Virginia Berninger

- "Writing is essential for developing the networks involved in letter processing." (James, Jao, & Berninger, 2016)

OK MK

- "...learning to write and perceive letters during early childhood may affect learning to spell and read words during middle childhood." (James, Jao, & Berninger, 2016)

17

Handwriting vs. Keyboarding

[Redacted]

- Printing "recruits the letter/reading processing network" better than typing or tracing. (James, Jao, & Berninger, 2016)
- "...there is neuroscientific evidence for a writing route to reading as early as the preschool and kindergarten years. Also, results document the value of forming letters (handwriting) over pressing letters (key touch) in learning to perceive the letters." (James, Jao, & Berninger, 2016)

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18

Manuscript & Cursive

Handwriting engages more cognitive skills than keyboarding.

Print in Grades K-2

- Supports recognition of letter forms for reading
- Initially, may need as many as 2 weeks to learn and practice but pace will increase
- Group by form

(Berninger & Wolf, 2009)

Cursive in Grade 3(late 2)-4

- Continuous flow of cursive activates motor memory
- Useful for struggling spellers
- Reduces letter reversals
- Simplifies connecting the letters to form words, improved spacing
- Faster

(King, 2014)

19

Handwriting Instruction ▶ Lasting Effects

- "In grades 4 to 6, handwriting fluency still accounts for 42 percent of the variability in the quality of children's writing..." (Graham, 2009-10)
- "...students' handwriting speed continues to increase at least until Grade 9." (Graham, 2009-10)

OK MK

- In three separate studies, researchers found that college students who took notes by hand performed better on assessments than their peers who typed their notes. (Hotz, 2016)

20

Teacher Knowledge ▶ What Matters

- 90% of 1st-3rd grade teachers teach handwriting.
- More than half agreed that it is important.
- 39% of teachers said their students' handwriting was adequate.
- Disappointingly, 12% believe they received adequate preparation to teach handwriting in their college education courses.

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Graham & colleagues (2009-10)

21

What to Write On ▶ Tactile Surfaces

- Sand, finger paint in a bag, carpet squares, lap boards, etc.
- Vertical surface (cinder block wall, wall-mounted whiteboard)

MV



22

Getting into Position ▶ Pencil Grip

- Pencil grips, rubber bands, rubber balls, tissue, and more



Stenographer's grip

- Short pencils, #2 pencils, pencil flips, and the triangular grip

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Wikihow has great visuals with some animation of these suggestions:
<http://www.wikihow.com/Hold-a-Pencil>

Here's a Youtube video showing the tripod grip as well:

<https://www.youtube.com/watch?v=ZIxUtwO29r8>



Standard tripod grip

23

Getting into Position ▶ Body & Paper

Sit upright, both elbows on table

- Manuscript: paper slanted slightly to dominant hand
- Cursive: paper slanted 45° to dominant hand

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LLP: writing posture & grip; right-handed

24

Hand & Eye Dominance

A good diagnostician tests not only hand dominance but also eye dominance.

- Right-handed/right-eyed children will write with a pronounced right-hand slant. Left-handed/left-eyed children will write with a pronounced left-hand slant.
- ~~With~~ With proper paper position and pencil grip, a cross dominant child (left eye/right hand or right eye/left hand) will have handwriting with a less-pronounced slant.



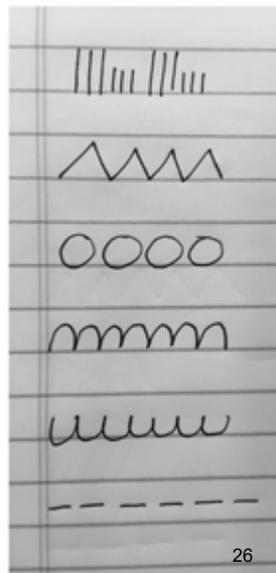
LLP: writing posture & grip; right-handed

25

Before You Form Letters ▶ Getting Ready to Print

- tall and short grass
Important – orientation for most starting strokes
- zigzags (separated or not)
- circles
- mountains (separated or not)
- waves (separated or not)
- dashes

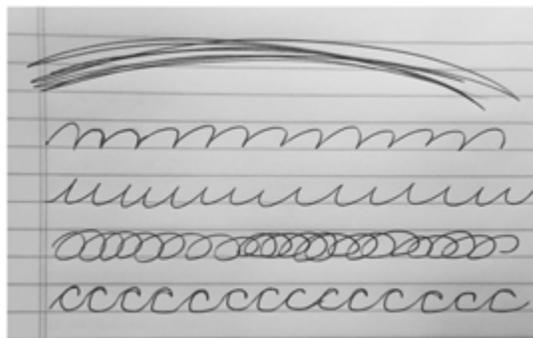
OK MK



26

Before You Form Letters ▶ Getting Ready to Write in Cursive

- windshield wipers
Important – activates hand/arm
- mountains
- waves
- circles
- OK MK
• c-stroke waves



These practice strokes warm up the arm. RELAX! Precision writing, writing within the lines, and so on are NOT important and will most likely detract from the usefulness of the task.

27

Instructional Sequence

Order of instruction will vary by handwriting method. If your focus is on letter formation, then letters should be clustered and ordered by motor-stroke family.

•For example, in manuscript b, h, k, l, and t are grouped together because they all begin with a top-to-bottom tall grass stroke. d would be grouped with c and a because, though it is tall, its beginning stroke is identical to the beginning stroke in a and c.

OK MK

•For example, in cursive a, c, d, g, and q would be grouped together, once again because they all begin with the same stroke – in this case a c-stroke wave.

28

Manuscript vs. Cursive

- Research is inconclusive regarding teaching manuscript versus cursive in mainstream students who do not struggle. (Graham, 2009-10)
- Research does indicate the following:
 - Students should not be taught both simultaneously.
 - Students need 2 years of instruction to automatize a handwriting process. (Berninger, Wolf, & Abbott 2016)
- Arguably, then, students could learn manuscript in K-2 and then cursive in late 2-4.

29

Explicit Instruction ▶ Introduction of Letter Form

I do it.

- Model the letter formation
- Stress orientation to the lines. (*Hair line, Belt line, Foot line*)
- Model letter formation a number of times. Use verbal prompts.

Watch me make a lower case p. I start at the belt line. Touch down. Touch around. Watch again. Touch down. Touch around. Say it as I write a lower case p. Touch down. Touch around.

(Archer, 2009)

30

Explicit Instruction ▶ Introduction of Letter Form

We do it.

- Using the verbal prompts (e.g., touch down, touch around), guide the students in forming the letter.
- Monitor the student's letter formation

(Archer, 2009)

31

Explicit Instruction ▶ Introduction of Letter Form

You do it.

- Have the students continue writing the letter as they say the letter name or its sound (depending on goal).
(Archer 2009)
- Continue until the letters are consistently formed correctly (Archer 2009)
- Note: Research does NOT support the student verbalizing the stroke. (Graham 2010)
- Research supports identifying a student's best letter and asking her identify her own as well.

Why Cursive for LD Students

- It cuts down on reversals (cursive b/d, m/w, etc.).
- In a proper lowercase alphabet, all letters begin on baseline.
- Spelling is better reinforced in the mind if continuous movement of cursive is used.
- It forces appropriate clustering of letters to create words and spacing between words.



33

A Useful Approach ▶ T.C.C.C.

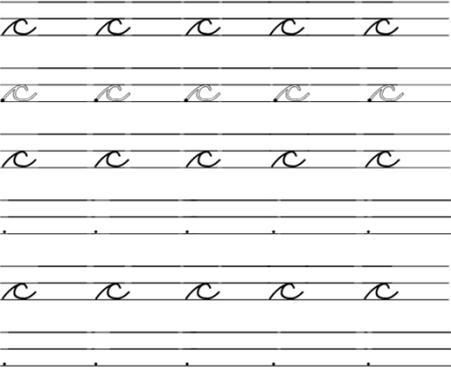
Follow a T.C.C.C. model, for both manuscript and cursive:

- Trace: Trace the provided letter, naming it as you trace.
- Copy: Underneath a provided model, copy the letter, naming it as you copy.
- Cover: Cover all written examples, and write from memory, naming the letter as you copy.
- Closed: With eyes closed or averted, write the letter, once again naming it as you write it.
- Remember that handwriting is a motor-language skill rather than a visual one.

34

T.C.C.C. - Cursive Right-Handed

 Go up around the clock to 2 o'clock; backtrack and swing forward.



Eyes Closed: 

Sample page from *Learning Cursive*, Diana Hanbury King

taken with permission from King & Leopold's
Learning Cursive, Right-Handed Edition



Diana Hanbury King

35

Say the Sound or Name the Letter

Ask Yourself These Two Questions:

1. Why speak at all?:

S.O.S. (or simultaneous oral spelling), a procedure discussed by Anna Gillingham in *The Gillingham Manual* and widely adopted in multi-sensory structured language approaches, adds two senses to the process of forming letters as the student must use kinesthetic speech as she forms the sound or letter and the auditory as she hears what she says.

Say the Sound or Name the Letter

Ask Yourself These Two Questions:

2. What is the goal of the handwriting activity?

- If you're working on letter formation, naming the letter makes sense. You are creating a letter, and naming it will help cue it.
- If you're working on spelling and reading, current research supports saying the sound. You are creating a written version of a phonologically sequenced word, and pronouncing it will help to cue the correct spelling. Spellings (orthography) become **bonded** to pronunciations (phonemes) and to meaning (semantics) in memory (Ehri).

37

Handwriting Recommendations

- Is handwriting currently taught in grades K-2?
- Is there a consistent and pervasive understanding of the importance of handwriting as it relates to the development and improvement of writing skills?
- How much time is allocated to handwriting instruction?
- Is there appropriate professional development in the teaching of handwriting?
- Does our district/LEA include handwriting in its written ELA curriculum?

38

Supplementary Materials

Be aware of these materials that may assist you with your work in handwriting at the grade, school, and district level.

- Team Worksheet #2 (to foster discussion of handwriting at the school and district level)
- Transcription Skills – Recommendation 1: Handwriting (fact sheet capturing important information about handwriting for use by administrations)
- Transcription Skills –Recommendation 2: Keyboarding (fact sheet capturing important information about handwriting for use by administrations)

39

Citations & Resources

- Adams, M.J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: The MIT Press.
- Archer, A. (undated). *Part 1: Writing foundations: Setting the stage for excellence*. Presentation retrieved 8/15/2015 from dcc-cde.ca.gov.
- Archer, A., & Hughes, C. (2011). *Explicit instruction*. New York: The Guilford Press.
- Berninger, V. (2012). Strengthening the Mind's Eye. *Principal*, 9(5), 28-31.
- Berninger, V., & Wolf, B. (2009). *Teaching Students with Dyslexia and Dysgraphia: Lessons from teaching science*. Baltimore: Brookes Publishing Company, Inc.
- Graham, G. (Winter 2009-10). Want to Improve Children's Writing? Don't Neglect Their Handwriting. *American Educator*.
- Graham, A., Harris, K. & Fink, B. (2000). Is Handwriting Causally Related to Learning to Write? Treatment of Handwriting Problems in Beginning Writers. *Journal of Educational Psychology*, 92(4), 62-63.
- Graham, S., Bollinger, A., Booth-Olson, C., D'Aoust, C., MacArthur, C., McCutchen, S., & Olinghouse, N. (2012), *Educator's Practice Guide: Teaching Elementary School Students to be Effective Writers*. IES National Center for Education Evaluation and Regional Assistance.

40

Citations & Resources (continued)

- Graham, S., Kihara, S., McKeown, D., & Harris, K. (2012). A Meta-Analysis of Writing Instruction for Students in Elementary Grades. *Journal of Educational Psychology*, Vol.104,No4,879-896.
- Hotz, Robert Lee. (April 4, 2016). Can Handwriting Make You Smarter? *The Wall Street Journal*.
- IDA Just the Facts: Understanding Dysgraphia. (2012).
<https://app.box.com/s/ew9gmxm2r63hrnhfshkr>.
- King, D. (2014). *Learning Cursive*. South Carolina: W.V.C.ED. (wvced.com)
- MacArthur, C. A., Graham, S., & Fitzgerald, J. (2006). *Handbook of Writing Research*, 1st Ed. New York: Guilford Press.
- MacArthur, C.A., Graham, S., & Fitzgerald, J. (2016). *Handbook of Writing Research*, 2nd. Ed. New York: Guilford Press.
- Nagy, W.E., and Scott, J. (2000). Vocabulary Processes. in Kamil, M. et al., *Handbook of Reading Research*, vol. III. Mahway, NJ.: Erlbaum.
- Schlagal, B., in Graham, S., MacArthur, C., & Fitzgerald, J. (Eds). (2013). *Best Practices in Writing Instruction*. 2nd ed., New York: Guildford Press.

41

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