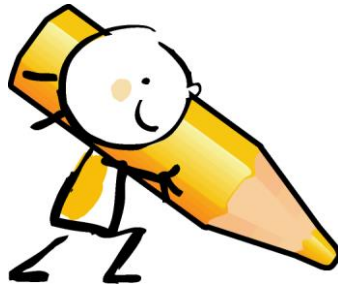


**Sunny Hill Health Centre for Children
Therapy Department**



Printing Like a Pro!

A Cognitive Approach to
Teaching Printing to
Primary School-Age Children

(For School Staff)



Developed by Ivonne Montgomery, Occupational Therapist,
and Jill Zwicker, PhD, OT(C)

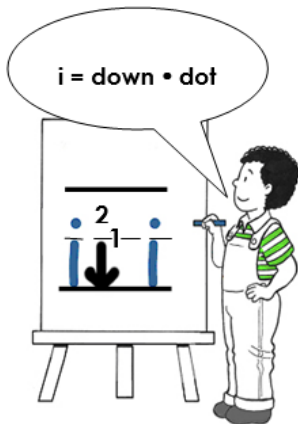
Worksheets and other supporting materials can be found at:
http://www.childdevelopment.ca/School-Age_Therapy_Practice_Resources.aspx

Printing Program Suggestions for School-Age Children

PRINTING LIKE A PRO! (School Staff Version)

- **Goal of this program:** To learn the correct way to form each letter so that printing becomes easier and more automatic. This can also help to make printing neater and quicker.
- **Who can use this program:** This printing program is appropriate for all types of learners in primary grades. It was, however, developed specifically for students with motor learning challenges. It can be used one-on-one, in small group work or with the entire class.
- **Teaching Strategies:** Cognitive strategies used in the program include **modeling, imitation, self-talk, self-monitoring** and **self-evaluation**
- **Structured teaching:** 20 minutes, three to five times a week is recommended. This regular teaching may help to prevent or correct “bad habits”. Printing practice should be done as a **separate activity** – focusing only on learning to print.

Teaching and Learning Strategies:



1. **Modelling:** Label and discuss lines, dotted interlines and spaces on a chalkboard or a whiteboard. Model a few times how to form each letter. **Include self-talk** (see next point) **and numbered arrows** that show correct letter formation as this provides a **good visual cue**. Use **Printing Like a Pro!** “**cue cards**” as an additional visual support.
2. **Self-Talk:** Encourage repetitive talking out loud of directions of proper letter formation, i.e. self-talk of direction of movement (e.g., “i= down • dot”). Verbally model the self-talk script and prompt the student(s) to talk out loud, repeating the same set of directions each time. Using the same **self-talk script** each time is important for best learning (see self-talk scripts on the worksheets and attached).
3. **Self-Monitoring and Self-Evaluation:** It is important for the student(s) to look at their work to see how closely their letter formation matches the target letter. Encourage your students to **self-monitor** that they are using “key strategies for neat printing”, such as printing slowly, forming letters from top to bottom and making sure letters are the correct size. Initially, do not worry about staying on the lines. As you notice improvements you can focus on this more. Please see example of “key strategies” cue sheet on Page 6 and others embedded in worksheet sets.

Self-evaluation can also be in the form of circling their best-formed letters. Discuss with the student(s) why they chose those letters.

4. **Practice:** Use the **Printing Like a Pro!** worksheets and lined paper.

All **Printing Like a Pro!** materials are available for download
from:http://www.childdevelopment.ca/School-Age_Therapy_Practice_Resources.aspx

Activities to Try:

How often?

- The following activities should be done for about **20 minutes, three to five times a week.**

What to use and what to do?

- **Materials:**
 - **Warm Up Practice:** Try to keep lessons fun by using a wide variety of writing tools/materials. Start with use of an *unlined* chalkboard with chalk; a white board with markers; paper using crayons, markers, pastels or use of a SMART board. Next practice using a chalk board or white board *with lines*. Alternately you can use the lined blank **Printing Like a Pro! “cue card”** (laminated – for ease of reuse) (available from the website). Students should practice each letter a few times, first without and next with lines, before using the worksheets.
 - **Worksheets:** The worksheets should be used progressing from lower-case Level I (typically grade 1) to Level II (typically towards the end of grade 1 and/or in grade 2). For students in kindergarten the *enlarged* lower-case Level I/kindergarten worksheet set should be used. For older students use the worksheets that best match their abilities.
- **Modeling:** For both warm up practice and when using the worksheets, ensure to model each letter a few times, on a chalk board or a white board using correct letter formation and numbered arrow cues. Use **Printing Like a Pro! “cue cards”** as an additional visual support.
- **Self-Talk:** Both when modeling and while practicing remember to use the self-talk phrases. Therefore, students should be consistently monitored to ensure that they are saying out loud and then later silently the self-talk scripts.
- **Self-Monitoring and Self-Evaluation:** It is important for the student(s) to analyze and critique any errors they have made (i.e., self-evaluation). Specifically, encourage your student(s) to self-monitor that they are using “key strategies for neat printing”, such as printing slowly, forming letters from top to bottom and making sure letters are the correct size. Initially, do not worry about staying on the lines. As you notice improvements you can focus on this more. Also make note of any letters the student(s) are struggling with so that more attention can be paid to learning these letters.

IMPORTANT:

- All printing **practice should be supervised** to ensure the student(s) remember to use “**self talk**” “**self-monitoring**” and “**self evaluation**” strategies.
- Having a letter strip with arrows showing letter formation on desks is also suggested for the classroom.

Letter Groupings and Teaching Lower Case Letters

Please work first on teaching lower case as lower case letters are used more in printing (and in reading) than upper case.

- It is important to teach the proper way to form each letter as shown on the **Printing Like a Pro!** worksheets, i.e., top to bottom, etc.
- Work on each group listed below **using the Level I lower-case worksheet** until you feel the student(s) have learned the group i.e., can easily remember how to correctly print each letter in the group.
- After practicing all the individual letters, it is good review to practice all letters from the group in typical and then random order. **Level II Printing Like a Pro! Worksheets (Letter Group Review)** can be used for this purpose.

The groups have been broken down from **easiest to most difficult** letters to form.

Following are the groups you can work on:

<u>Downers</u>	l i t f	easiest
(Group 1)		
<u>Rounders</u>	c o e a d	
(Group 2)		
<u>Curvers (special)</u>	s u	
(Group 3)		
<u>Curvers</u>	r n m h b	
(Group 4)		
<u>Diggers</u>	j g q p	
(Group 5)		
<u>Sliders</u>	v w y x z k	most difficult
(Group 6)		

IMPORTANT

- A good teaching tip is to **begin each session with a review of all letters already learned** as this helps the student remember all the basic motor patterns needed to print more challenging letters.
- It is important to **observe if the student(s) correctly forms** the letters in each group. If they have forgotten, you will need to go back and re-teach using the above strategies.
- **Once the student(s) have learned correct letter formation and can easily remember how to form letters, other parts of printing can then be addressed** such as staying on the line, spacing, and sizing.

Simple Words and Sentences

Once the student(s) can easily and automatically print letters, the next step is to work on simple words. Use of self-talk and numbered arrows should no longer be required. Use words that correspond to most of the letters in each group. For example, Group One/Downers - “if, it, lit, fit”, etc. This can be done on a sheet of lined paper. **Level II Printing Like a Pro! Worksheets (Word Practice)** can also be used for this purpose.

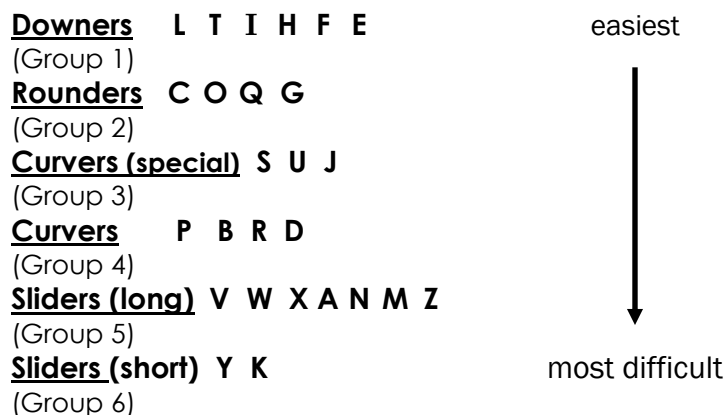
Encourage students to check if they are using “key strategies for neat printing”, such as printing slowly, proper positioning on the lines, consistent sizing and proper spacing between letters and words, i.e., use finger spacing or a Popsicle stick between words. Please see example of “key strategies” cue sheet on Page 6 and others included in worksheet sets.

You can next progress to having students print entire sentences. **Level II Printing Like a Pro! Worksheets (Sight Word Sentences)** can also be used for this purpose concentrating on:

- Proper letter formation and sizing
- Proper positioning on the line
- Proper spacing within and between the words
- Proper use of punctuation

Capital Letters

If needed, capital letters can be focused on lastly, using the progression below. Work from the easiest to the most difficult letters to form. Following are the groups you can work on:



- Follow the same steps as described before, regarding use of the **Printing Like a Pro!** worksheets with use of “key strategies for neat printing”.
- The last step is to work on words that begin with capital letters, later also practicing printing sentences. Printing Like a Pro! interlined and lined paper can be used (various widths) (available from website).
- If your student(s) are having difficulty with number formation, worksheets are available to practice numbers and number words (please see handouts entitled “Numbers”, also available from the website).

Your students should now be ready to **Print Like a Pro!**

Printing Like a Pro!

Sample of “Self-Talk” Directions for Lower Case Letters

The following are examples of the self-talk directions students can say aloud while printing.

Downers - Group 1

- l Down
- i Down • dot
- t Down • across
- f Around • down • across

Rounders - Group 2

- c Around • leave open
- o Around • close
- e Forward • around
- a Around • close • down
- d Around • close • up • down

Curvers (Special) - Group 3

- s Curve back • curve forward
- u Down • curve • up • down

Curvers - Group 4

- r Down • up • curve • stop
- n Down • up • curve
- m Down • up • curve • curve
- h Down • up • curve
- b Down • up • curve • close

Diggers - Group 5

- j Down • dig • curve • dot
- g Around • close • dig • curve
- q Around • close • dig • slide up
- p Down • dig • up • curve • close

Sliders – Group 6

- v Slide down • up
- w Slide down • up • down • up
- y Slide down • slide back • dig
- x Slide down • slide back
- z Forward • slide back • forward
- k Down • slide back • slide forward

Key Strategies for Neat Printing



My strategies for neat printing:



- Slow down
- Print letters from top to bottom
- Print letters on the line (no floaters)
- Print tall letters tall (b, d, f, h, k, l, t)
- Print small letters small (a, c, e, i, m, n, o, r, s, u, v, w, x, z)
- Print "digger" letters digging down below lower line (g, j, p, q, y)
- Leave a finger space between words
- Use correct capitalization and punctuation
- Skip a line (double space work)

How did I do?



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- Skip a line (double space work)

How did I do?



School Staff Printing Checklist of Best Practices For One to One, Small Group Work and Classroom Use

I Teach Students How to Write Each Letter by...

- Showing them how it is formed.
- Describing how it is similar to and different from other letters.
- Using visual cues, such as numbered arrows, as a guide to letter formation.
- Encouraging self-talk when learning letter formation.
- Providing practice imitating and copying, as well as writing the letter from memory.
- Keeping instructional sessions short, with frequent reviews and practice.
- Asking them to identify or circle their best-formed letter or letters.
- Encouraging them to correct or rewrite poorly formed letters.
- Monitoring their practice to ensure that letters are formed correctly.
- Reinforcing their successful efforts and providing corrective feedback as needed.

I Help Students Become More Fluent in Handwriting by...

- Providing them with plenty of opportunities to write.
- Having them copy a short sentence with letters they know, several times, trying to write it a little faster each time.

I Promote Handwriting Development by...

- Making sure that each student develops a comfortable and efficient pencil grip.
- Encouraging students to sit in an upright position, leaning slightly forward as they write.
- Showing them how to place or position their paper when writing.
- Teaching students to identify and name the letters of the alphabet.
- Teaching them how to write lowercase letters and then later upper case.
- Allotting 75 to 100 minutes per week to handwriting instruction (in grades 1 and 2).
- Providing students with plenty of opportunities to use different types of writing instruments and paper.
- Asking students to set goals for improving specific aspects of their handwriting.
- Implementing appropriate procedures for left-handed writers, such as how to properly place or position their paper when writing.
- Monitoring students' handwriting, paying special attention to their instructional needs in letter formation, spacing, slant, alignment, size and line quality.
- Dramatizing students' progress in handwriting through the use of charts or graphs, praise, or posting neatly written papers.

I Assist Students by...

- Coordinating my handwriting instruction with the efforts of other professionals, such as an occupational therapist.
- Placing special emphasis on teaching difficult letters as well as correcting reversals.
- Helping them develop positive attitudes about handwriting.

I Make Sure That I...

- Maintain a balanced perspective on the role of handwriting in learning to write.

References:

- BC Ministry of Education Performance Standards
http://www.bced.gov.bc.ca/perf_stands/writing.htm
- Berninger, V.W., Vaughan, K.B., Abbott, R.D., Abbott, S. P., Woodruff Rogan, L., Brooks, A., Reed, E., & Graham, S. (1997). Treatment of handwriting problems in beginning writers: transfer from handwriting to composition. *Journal of Educational Psychology*, 89, 652-666.
- Denton, P., Cope, S., & Moser, C. (2006). The effects of sensorimotor-based intervention versus therapeutic practice on improving handwriting performance in 6-11 year-old children. *American Journal of Occupational Therapy*, 60, 16-27.
- Fancher, L. A., Priestley-Hopkins, D. A., & Jeffries, L. M. (2018). Handwriting Acquisition and Intervention: A Systematic Review. *Journal of Occupational Therapy, Schools, & Early Intervention*, 1-20.
- Graham, S. (2009). Want to improve children's writing? Don't neglect their handwriting. *American Educator*, 20-27/40
- Graham, S. 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, 620 –633.
- Graham, S., & Weintraub, N. (1996). A review of handwriting research: Progress and prospects from 1980 to 1994. *Educational Psychology Review*, 8, 7-87.
- Hoy, M.P., Egan, M.Y., & Feder, K. (2011). A systematic review of interventions to improve handwriting. *Canadian Journal of Occupational Therapy*, 78, 13-25.
- Laverdure, P., & Wilmer, B. (2018). Using an outdoor voice. *Journal of Occupational Therapy Schools, & Early Intervention*, 11(5), 1–11.
- Montgomery, I., & Zwicker, J.G. (2011). Applying current research evidence into practice: Development of a handwriting intervention program. *Dyspraxia Foundation Professional Journal*, 10, 12-20.
- Montgomery, I., & Zwicker, J. G. (2019). Use of Printing like a Pro! in a School-Based Printing Club to Improve Handwriting Legibility in Primary Grade Students. *Journal of Occupational Therapy, Schools, & Early Intervention*, 1-15.
- Santangelo, T., & Graham, S. (2016). A comprehensive meta-analysis of handwriting instruction. *Educational Psychology Review*, 28, 225-265.
- Weintraub, N., Yinon M., Bar-Effrat Hirsch I., & Parush S. (2009). Effectiveness of sensorimotor and task-oriented handwriting intervention in elementary school-aged students with handwriting difficulties. *OTJR: Occupation, Participation, and Health*, 29, 125-134.
- Zwicker, J.G. (2011). Cognitive versus multisensory approaches for handwriting: Current state of the evidence. *Dyspraxia Foundation Professional Journal*, 10, 3-11.
- Zwicker, J.G., & Hadwin, A. (2009). Cognitive versus multisensory approaches to handwriting intervention: A randomized control trial. *OTJR: Occupation, Participation, and Health*, 29, 40-48.
- Zwicker, J.G., & Harris, S.R. (2009). A reflection of motor learning theory in pediatric occupational therapy practice. *Canadian Journal of Occupational Therapy*, 76, 29-37.
- Zwicker, J.G., & Montgomery, I. (2012). Application of Motor Learning Principles to Handwriting Instruction and Intervention, *Handwriting Today*, 11, 9-19.

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