







Part Two of Two

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Surrey Teachers Association
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Level II

Level II

- After learning how to generally form and print each lower-case letter, students' skills are becoming refined and movements become more consistent, and errors begin to decrease (Poole, 1991)
- To further facilitate handwriting development, a second set (Level II) of classroom friendly worksheets was developed.

Level II

Letter Group Review, Word & Sentence Worksheets

Review, Word & Sentence Worksheets

- Ideally, use once a student can form most individual letters using correct letter formation
- Late Grade 1 or early Grade 2 or later as needed
- Provide additional practice within letter groupings (review worksheets) to further focus on consistency in letter formation as well all components of legibility

Practice - Random

- Random practice is felt to be most effective for students in the later stages of refining an already learned skill (Baker, 1999)
- Therefore, random order of practice of individual letters was incorporated into the letter and word review worksheets (38 worksheets in this set)

Practice - Word & Sentence Worksheets

Additionally, after each letter group review practice, students can begin to combine all skills learned in practice of handwriting words (as per letter groupings) and then sentences for best Carryover (Graham et al., 2000; Graham, 2009)

Handwriting word & sentence practice reinforces letter formation and generalization (Graham et al., 2000; Graham, 2009; Montgomery & Zwicker, 2011)

Words used in worksheets:

- The majority words utilized in the worksheets are:
 - Sitton's High –Frequency Writing Words list
 - DOLCH word lists
 - Common words in the English language list

Word and Sentence Worksheets

- The words were selected with extensive consultation with experienced educators
- High frequency and "sight" words were chosen to reinforce early reading skills (Dolch "Pre-Primer" and "Primer" words)
- Initial words and sentences are short, simple, and very easy to read and write
- The words were grouped in "word families" whenever possible

Word and Sentence Worksheets

- Over the course of the worksheets, the words and sentences become more challenging to read and write
- Font is then decreased (until size of a standard "scribbler") and sentences become progressively longer and more challenging to read and write
- Interlines gradually fade away

> 75 % of the top Dolch Words used – many more than once

All 220 Dolch words by grade in frequency order

Pre-Primer		1	Primer		First Grade		Second Grade		Third Grade	
the	one	he	now	of	take	would	write	if	full	
to	my	was	no	his	every	very	always	long	done	
and	me	that	came	had	old	your	made	about	light	
a	big	she	ride	him	by	its	gave	got	pick	
1	come	on	into	her	after	around	US	six	hurt	
you	blue	they	good	some	think	don't	buy	never	cut	
it	red	but	want	as	let	right	those	seven	kind	
in	where	at	too	then	going	green	use	eight	fall	
said	jump	with	pretty	could	walk	their	fast	today	carry	
for	away	all	four	when	again	call	pull	myself	small	
up	here	there	saw	were	may	sleep	both	much	own	
look	help	out	well	them	stop	five	sit	keep	show	
is	make	be	ran	ask	fly	wash	which	try	hot	
go	yellow	have	brown	an	round	or	read	start	far	
we	two	am	eat	over	give	before	why	ten	draw	
little	play	do	who	just	once	been	found	bring	clean	
down	run	did	new	from	open	off	because	drink	grow	
can	find	what	must	any	has	cold	best	only	together	
see	three	so	black	how	live	tell	upon	better	shall	
not	funny	get	white	know	thank	work	these	hold	laugh	
		like	soon	put		first	sing	warm		
		this	our			does	wish		(;)-	
		will	ate			goes	many			
		yes	say						X	
		went	under							
		are	please							

Fading of explicit visual cues

- In Level II worksheets, less guidance is provided, and the student is allowed to make errors to increase independence (Poole, 1991)
- Therefore guidance and explicit visual cues are gradually faded (i.e., numbered arrows, dotted interline)
- Additionally, reliance on self-talk (speech bubble) is faded to self-thought (thought bubble) and to no instructional cueing for letter formation

Self-Correction

 The student is requested to not only circle their best formed letters (self-evaluation)

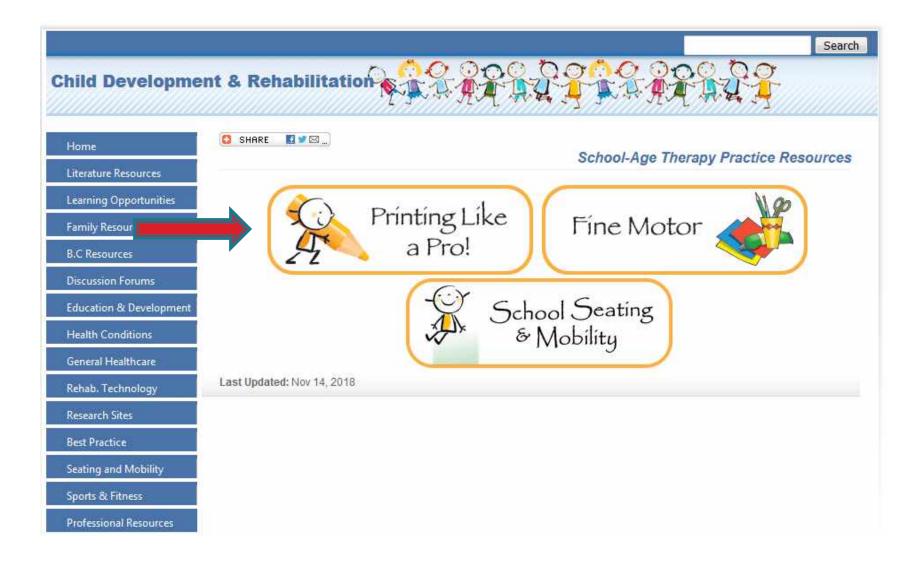
but also

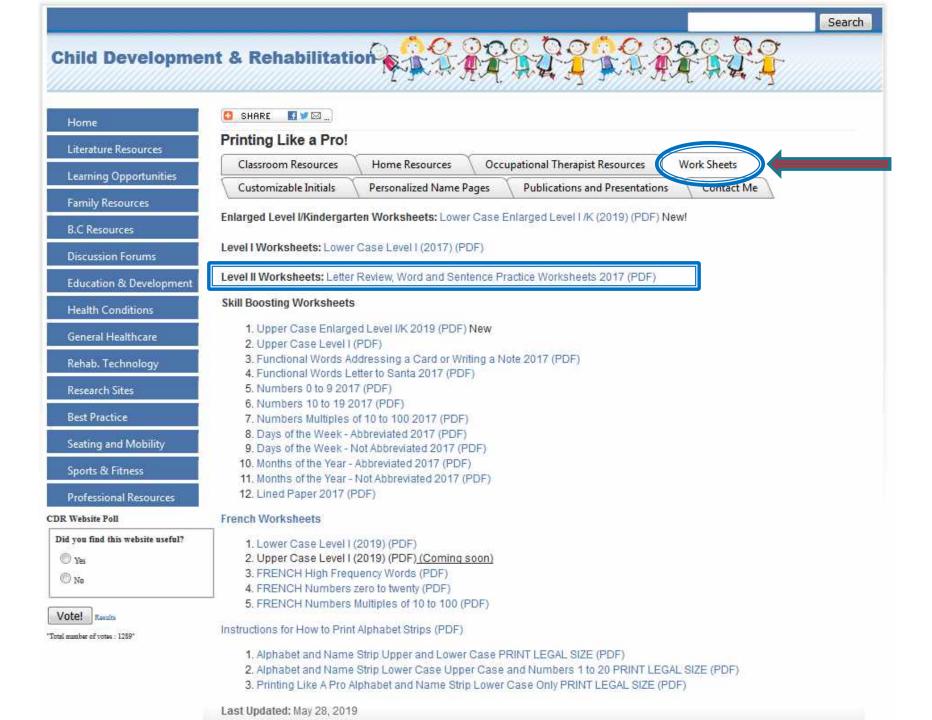
- Requested to "redo" a poorly written letter or word to match the target letter,
- Therefore utilizing both error-detection and selfcorrection

Review and Word Practice Worksheets

- These worksheets have been designed in 3 phases of practice:
 - <u>Phase 1 Non-random letter review</u>: Review practice of all letters within a group in the same order as before
 - Phase 2 Random letter review: Random review practice of all letters within a group
 - Phase 3 Word and sentence practice

http://www.childdevelopment.ca/School-Age_Therapy_Practice_Resources.aspx





Sunny Hill Health Centre for Children Therapy Department



LEVEL II

Letter Group Review, Word and Sentence Practice Worksheets



Printing Like a Pro!

By Ivonne Montgomery, OT and Jill Zwicker, PhD, OT (C)
Sunny Hill Health Centre for Children, 2017
Created Using: Educational Fontware, 2012
May be reproduced for instructional purposes.
Worksheets and other supporting materials can be found at:
http://www.childdevelopment.ca/School-Age_Therapy_Practice_Resources.aspx

Letter Review and Word Practice Worksheets -Downers

l, i, t, f





Group 1

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Key Strategies for Neat Printing - Downers



My strategies for neat printing of Downers:



☐ Slow do	wn
-----------	----

- ☐ Print letters from top to bottom
- ☐ Print letters on the line (no floaters)
- Print tall letters tall (I, t, f)
- Print small letters small (i)

How did I do?







My strategies for neat printing of Downers:



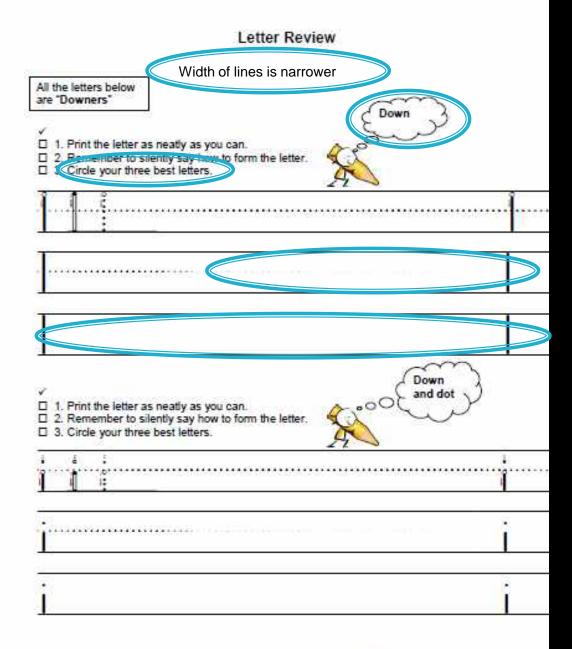
- ☐ Slow down
- Print letters from top to bottom
- Print letters on the line (no floaters)
- Print tall letters tall (I, t, f)
- Print small letters small (i)

How did I do?



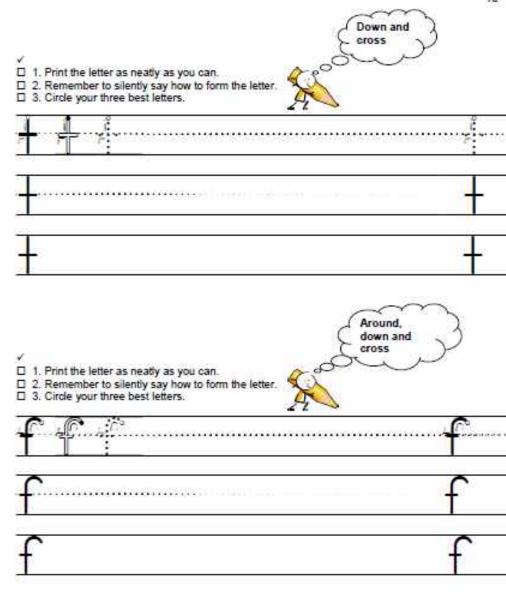
Blocked practice of same letter

Blocked practice of same letter

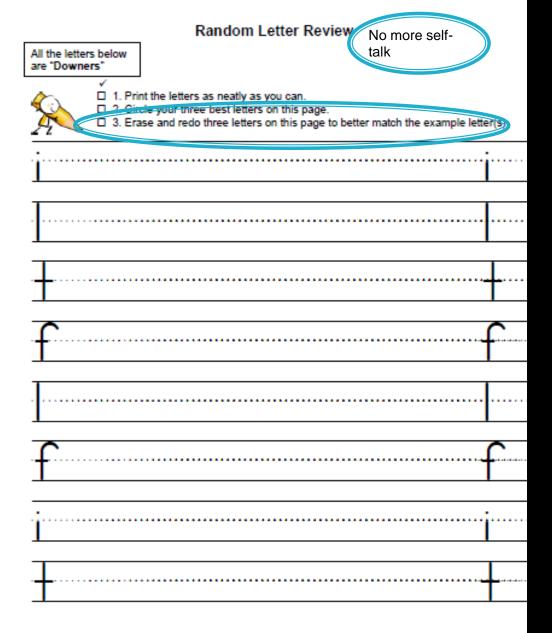


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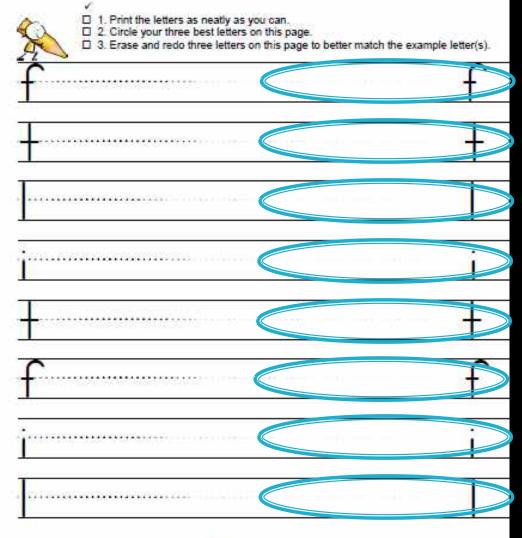
Blocked practice of same letter



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Random practice of letters



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R	ar	ıde	or	n
pr	ac	tic	e	of
	let	te	rs	

1. Print the letters as neatly as	you can.
3. Erase and redo three letters	s you can. s on this page. s on this page to better match the example letter(s).
1	4
- <u>1</u>	<u> </u>
	9
4	la l
<u></u>	<u> </u>
$\overline{}$	
	<u></u>
1	
1	
<u>+</u>	<u> </u>
1	
1	
f '	f



Word Practice

Di	word Pract	ice	
All the words below use "Downer Letters"			
V			
1. Print the v	vords as neatly as you <mark>ca</mark> n. nger space between the wo		
□ 3. Circle you	r three best words.	NUS.	
2 4. Erase and	r three best words. I redo one word to better m	atch the example.	
if		***************************************	
i +			
Tat			
<u> </u>		***************************************	*********
fit			
	MAC TO THE REAL PROPERTY OF THE PERTY OF THE		

Printing Like a Pro! Developed by: Ivonne Montgomery, MRSc, OT and Jill Zwicker, PhD, OT, (C) Sunny Hill Health Centre for Children, 2017; Created using: Educational Fontware, 2012 http://www.childdevelopment.ca/School-Age_Therapy_Practice_Resources.aspx Letter Review and Word Practice Worksheets -Rounders

c, o, e, a, d





Group 2

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Key Strategies for Neat Printing - Rounders



My strategies for neat printing of Rounders:



☐ Print letters from top to bottom

Print letters on the line (no floaters)

Print tall letters tall (d)

Print small letters small (c, o, a, e)

How did I do?







My strategies for neat printing of Rounders:



$\overline{}$	100					
	100	-		-	-	wn
_	- 3	Ю	w	u	Ю	wn

Print letters from top to bottom

Print letters on the line (no floaters)

Print tall letters tall (d)

Print small letters small (c, o, a, e)

A

How did I do?

Word Practice

0.0	Troid Flaction		
All the words below use "Rounder Letters"			
×	oderne e comprese de la comprese de		
☐ 2 Leave a finor	rds as neatly as you can. er space between the wor	rds	
☐ 3. Circle your th	hree best words.		
22 🗀 4. Erase and re	hree best words. edo one word to better ma	tch the example.	
of			
T			
let	***************************************		**********
I			
10			
	en i da i da i da i		
do			

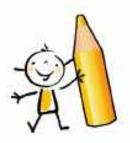
1. Print the words as neatly as you can. 2. Leave a finger space between the words.	
2. Leave a finger space between the words. 3. Circle your three best words.	
3. Circle your three best words. 4. Erase and redo one word to better match the example	
at	

cat	
<u></u>	
ted	******************
T 1	
led	
\$	





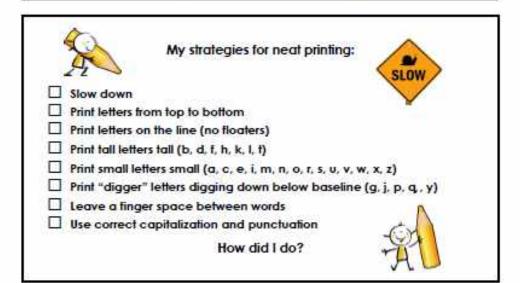
Sight Word Sentences



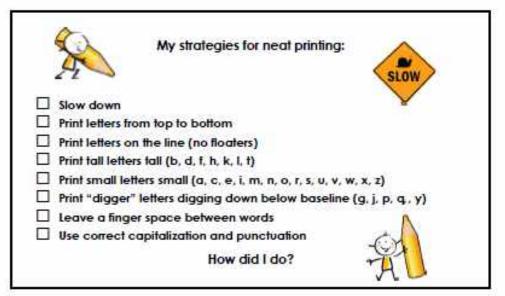
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Key Strategies for Neat Printing of Sentences







Sight Word Sentences



- Print the sentences as heatly as you can.
- 2. Use correct capitalization and punctuation.
- 3. Leave a finger space between the words.
 4. Circle your neatest sentence.
 - 5. Describe why it is your neatest sentence

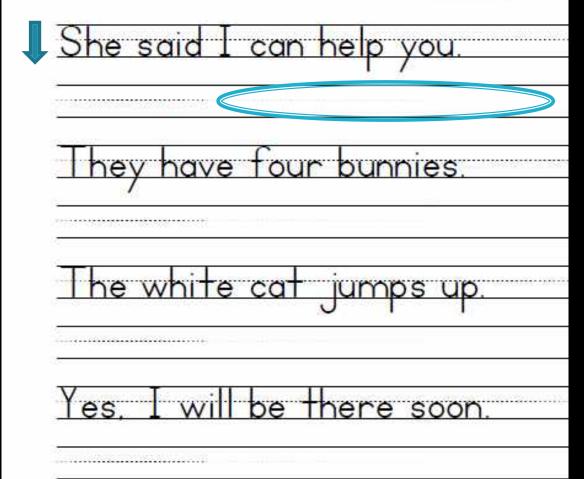


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- 1. Print the sentences as neatly as you can.
- 2. Use correct capitalization and punctuation.
- 3. Leave a finger space between the words.
- 4. Circle your neatest sentence.
- 5. Describe why it is your neatest sentence.



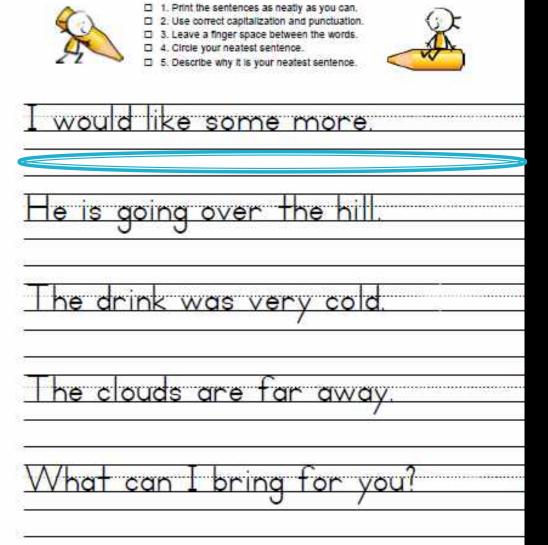




- ☐ 1. Print the sentences as neatly as you can.
- 2. Use correct capitalization and punctuation.
- 3, Leave a finger space between the words.
- 4. Circle your neatest sentence.
- 5. Describe why it is your neatest sentence.



I like to run fast.	******
He put on his coat.	*******
Do you live near by?	
Every day I eat lunch.	120733
It is very nice outside.	X1188





- □ 1. Print the sentences as neatly as you can.
- □ 2. Use correct capitalization and punctuation.
- 3. Leave a finger space between the words.
- 4. Circle your neatest sentence.
- 5. Describe why it is your neatest sentence.



You should go before me.

He could not open the jar.

She went around the tree.

The bird will eat the worm.

I think I will walk to school.

Sunny Hill Health Centre for Children Therapy Department



Upper Case Letter Worksheets

A Cognitive Approach to Teaching Printing to Primary School Aged Children



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Developmental Groupings - UPPER CASE letters

LTIHFE **Downers** (Group 1) easiest COQG **Rounders** (Group 2) Curvers (special) S U J (Group 3) **Curvers** B R D (Group 4) Sliders (long) V W X A N M Z (Group 5) **Sliders** (short) most difficult YK (Group 6)

Level III

Skill Boosting

- Automatic, legible handwriting allows fluent writing and enables more advanced composition (Berninger et al, 1997)
- Handwriting needs to be at an autonomous level so that a student is free to concentrate on spelling, and to focus on higher-level thought, written expression, and content (Sheffield, 1996)



- The skill requires little, if any, cognitive processing, so it is less susceptible to interference (Poole, 1991)
- Not cognitively fatiguing
- Very little working memory required
- Once letter formation and legibility components have become automatic, the student can print while either processing auditory directions or cognitively composing
- Functional practice should be focused on increasing speed without sacrificing accuracy

- At this stage, learning is transferred through writing practice in the classroom:
 - Continue to remind students to self-evaluate & selfmonitor their work:
 - Use "strategies for neat printing"
 - Especially correct sizing and alignment
 - As well:
 - Teach and remind students to skip a line/double space

- Additionally, Printing Like a Pro!
 - "Skill boosting" worksheets can be used (i.e., Number worksheets, Functional Words);
 - Gradually progressing to narrower width paper (all available from the website)
- These were all developed to focus on classroom friendly activities to further increase legibility and specially to increase speed
- Increase in speed can only come with time and practice

Numbers

0 - 9

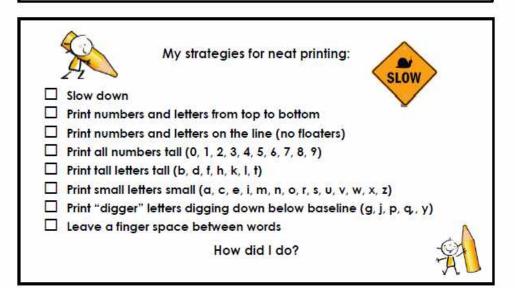


Single Digit Numbers

Printing Like a Pro!

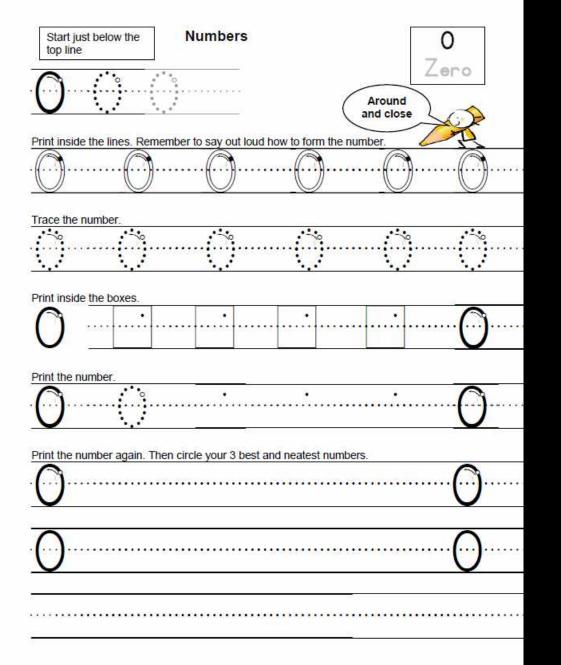
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Key Strategies for Neat Printing of Numbers and Number Words





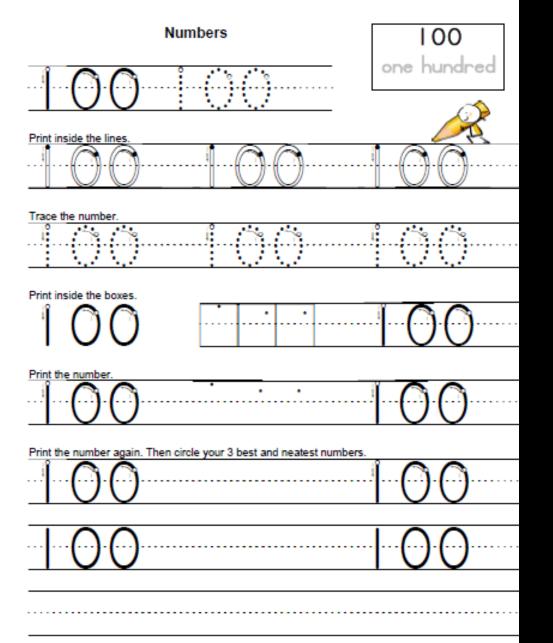
My strategies for neat printing: Slow down Print numbers and letters from top to bottom Print numbers and letters on the line (no floaters) Print all numbers tall (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) Print tall letters tall (b, d, f, h, k, l, t) Print small letters small (a, c, e, i, m, n, o, r, s, u, v, w, x, z) Print "digger" letters digging down below baseline (g, j, p, q, y) Leave a finger space between words How did I do?



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	Words	
~~~~		zero
Zero		*
zero	Z O PO	zero
Trace the word.		
		6-1-16-16-16-16-16-16-16-16-16-16-16-16-
Print inside the boxes.	-	
zero		<u> </u>
Print the word.		
zero		
Print the word again. Then circle	your 3 best and neatest words.	
zero		
zero		

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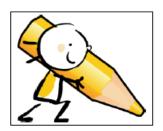


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Words	one hundred
nundred Print inside the lines.	
race the word.	
nundred	<del></del>
nundred	
numates word again. Then circle your 3 best and neatest wo	ords.
nundred	

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## **Functional Words**



# Months of the Year Abbreviated

#### Printing Like a Pro!

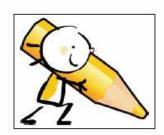
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#### Functional Words: Months of the Year

1. Print the word as neatly as you can.2. Leave a finger space between the words. □ 3. Circle your three best words.

## **Functional Words**



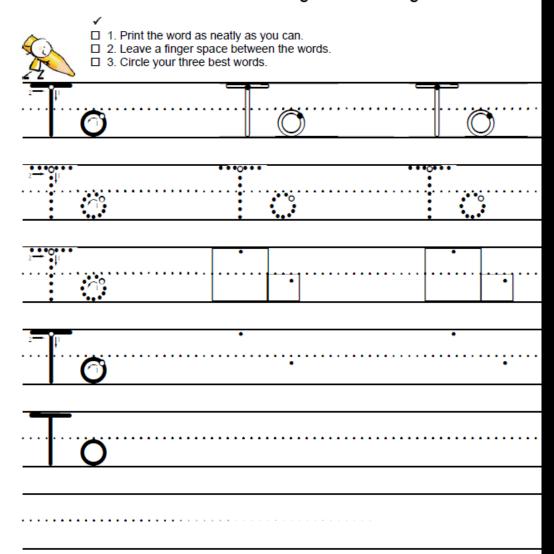
## Addressing a Card/ Writing a Note

#### Printing Like a Pro!

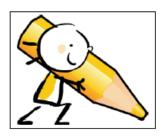
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Тс

#### Functional Words: Addressing a Card/Writing a Note



# **Lined Paper**



Half Page with Interline,
Full Page with Interline, Full
Page with Fading Interline,
and Full Page without
Interline

#### Printing Like a Pro!

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# Learn to Write You<u>r Name</u>

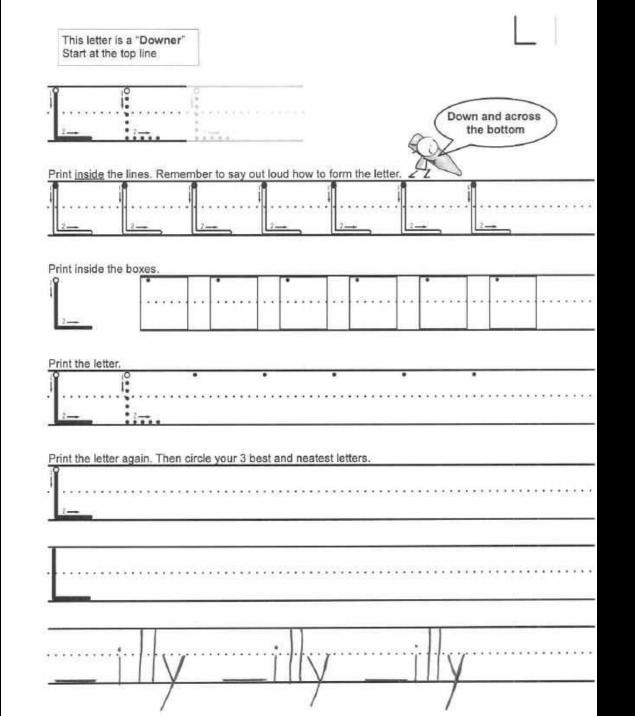


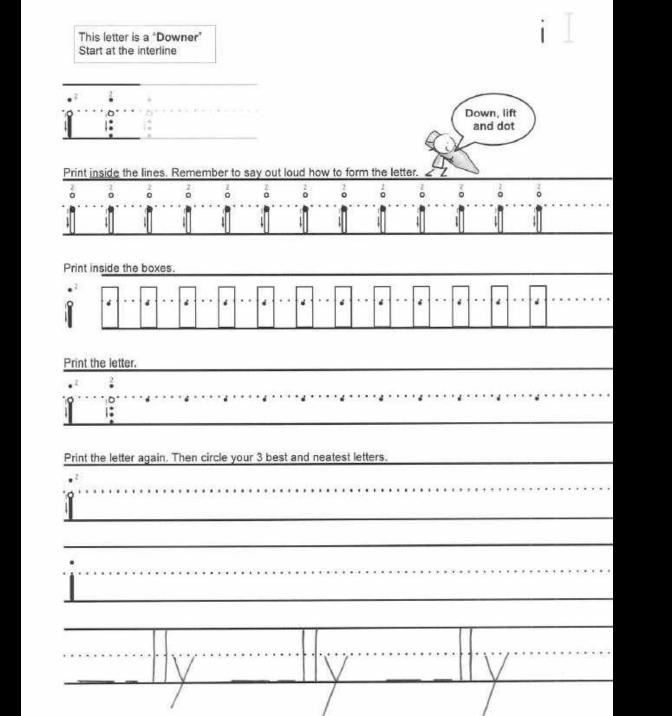


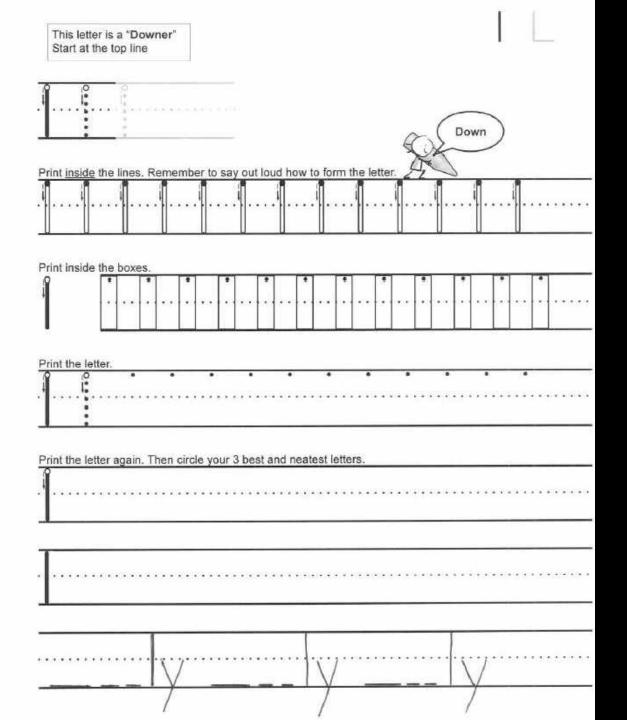
### Printing Like a Pro!

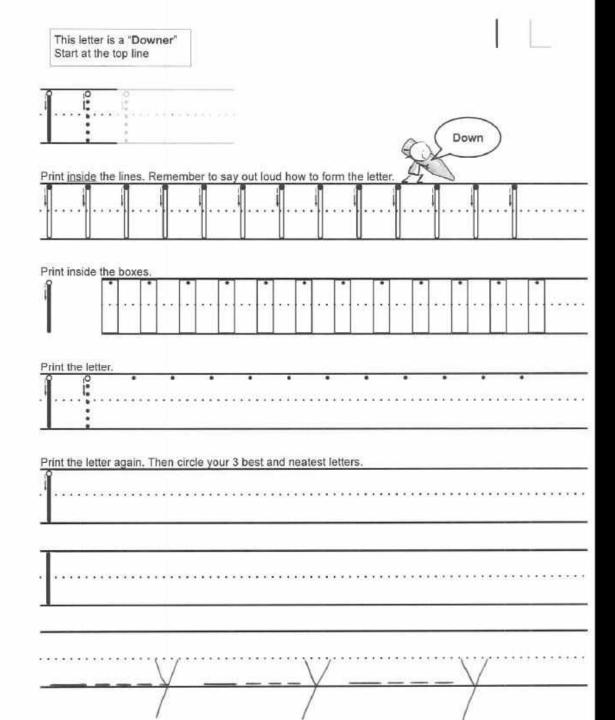
A Cognitive Approach to Teaching Students How to Print their Name

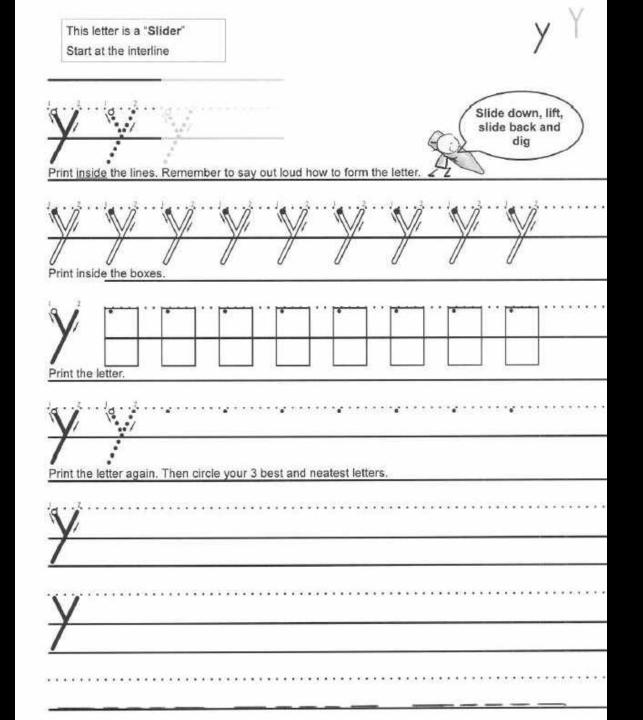


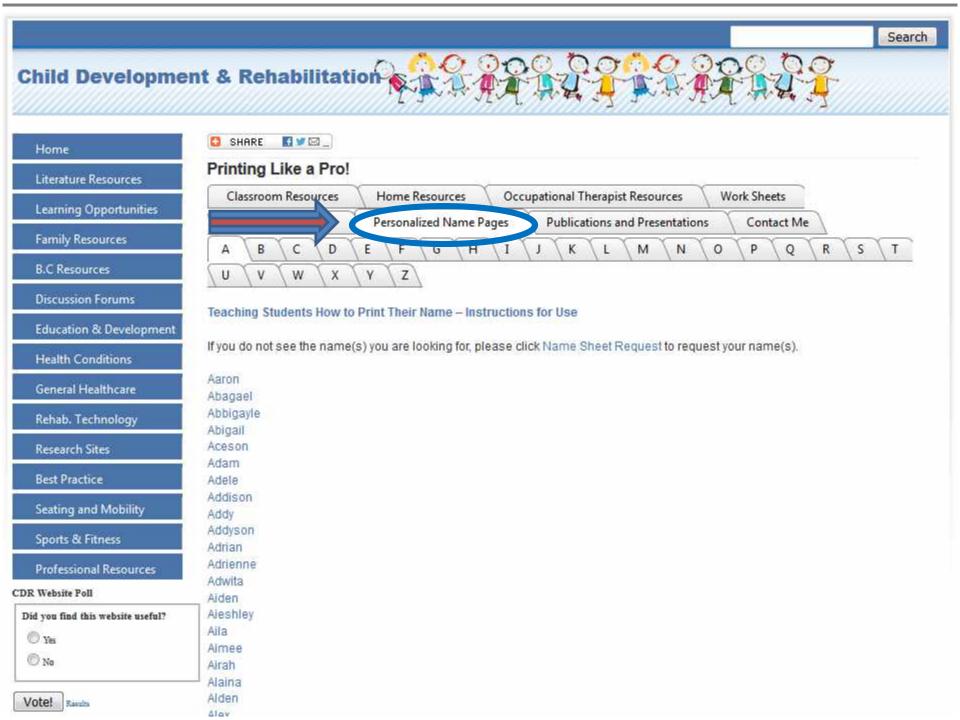


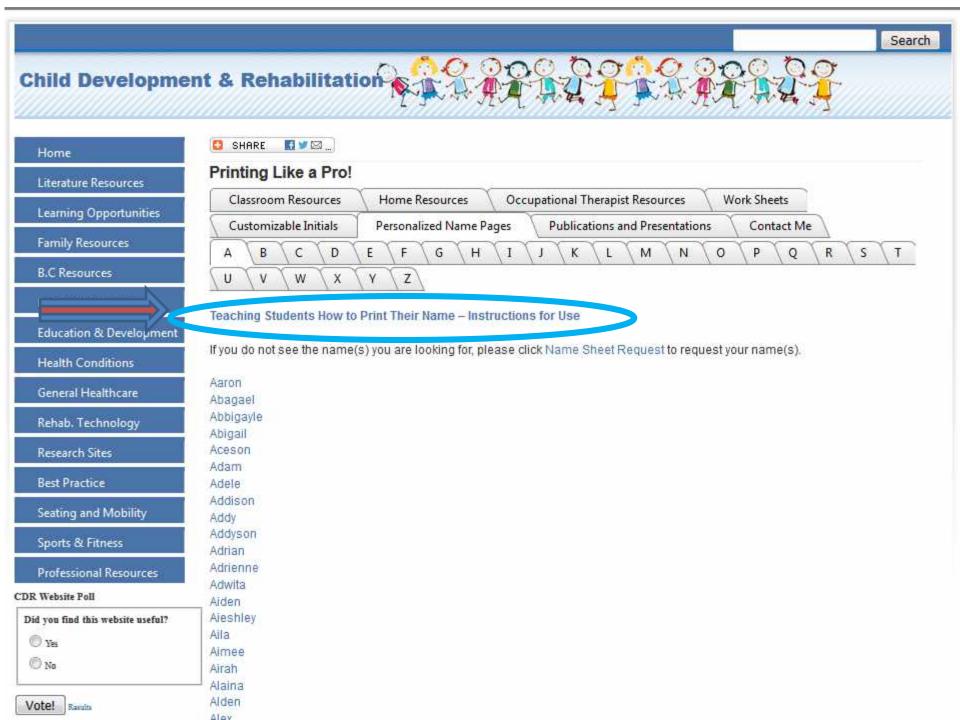








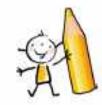




#### Printing Like a Pro!



#### A Cognitive Approach to Teaching Students How to Print their Name



#### Supplemental Name-Writing Practice

- The goal of Printing Like a Pro! personalized name worksheets is for students to learn and remember the correct way to form and neatly print each letter in their name, using correct capitalization.
- With practice, using cognitive strategies, printing of their name will become automatic, efficient, and neat.
- Printing Like a Pro! personalized name worksheets are appropriate for all students in the primary grades. They were however developed specifically for students with motor learning challenges. They can be used one-on-one or in group work.
- Structured teaching and practice, ideally daily, will help the student learn how to independently write their name.
- Regular practice should be done as a separate structured activity (supplemental practice) using a Printing Like a Pro! personalized namewriting worksheet. These are available from:

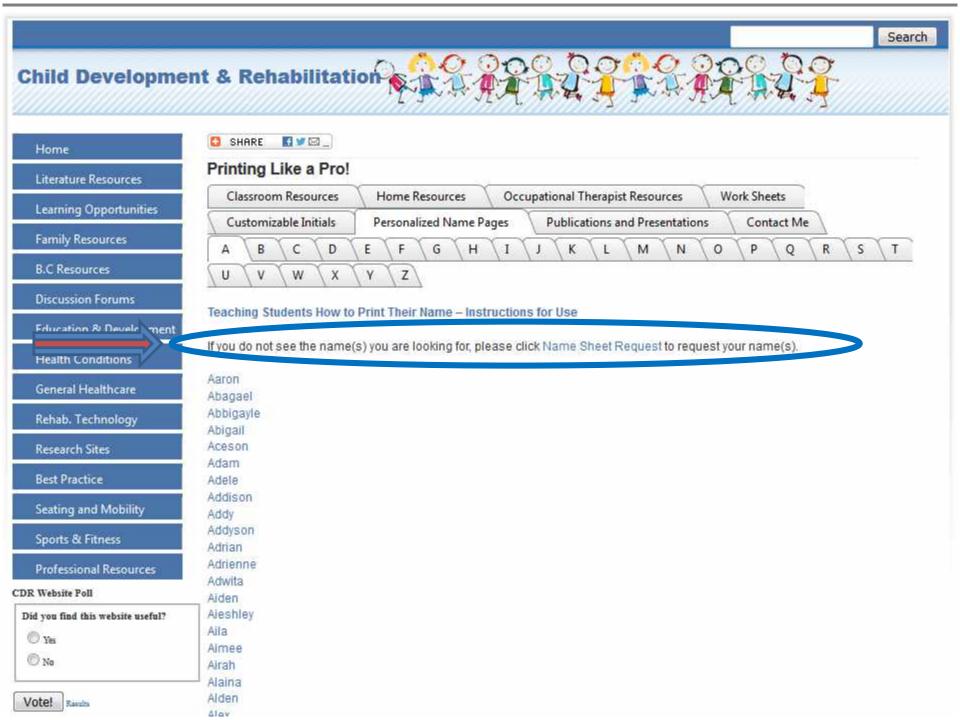
http://www.childdevelopment.ca/School-Age_Therapy_Practice_Resources.aspx

#### Teaching Strategies

Cognitive teaching strategies include:

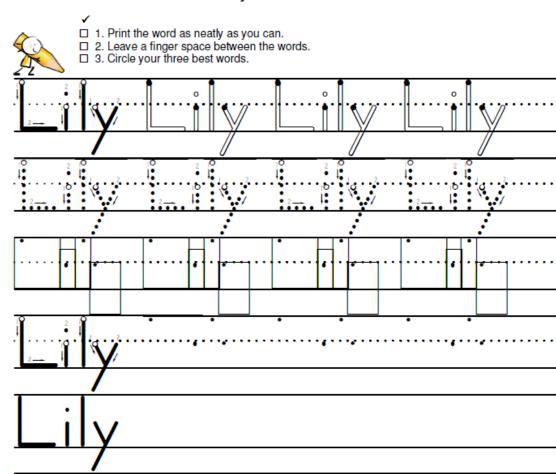
- modeling
- imitation
- numbered arrow cues
- bubble and letter box cues
- self-talk and
- self-evaluation

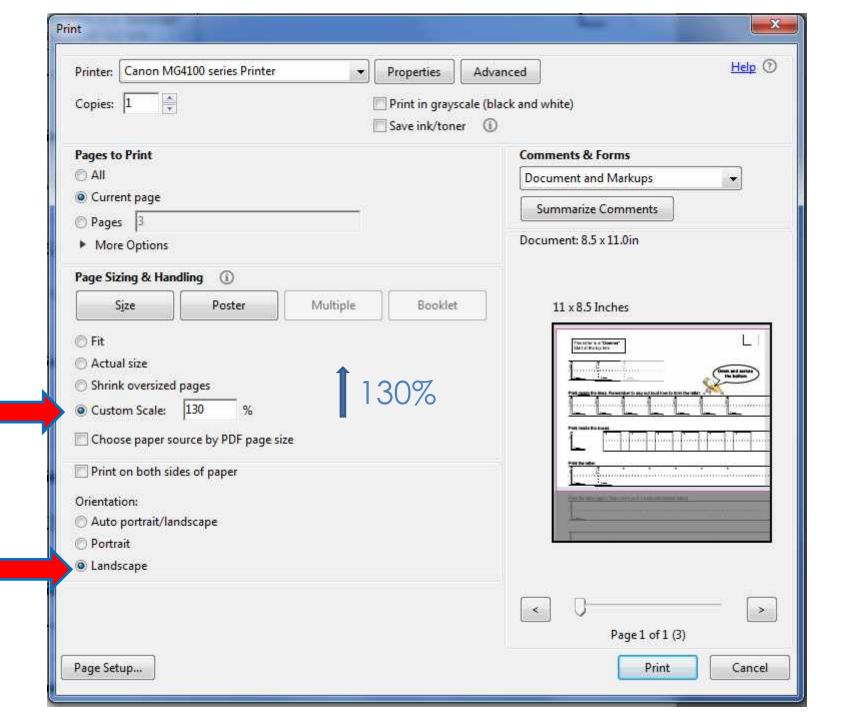
Additionally, using a variety of writing tools can be used.

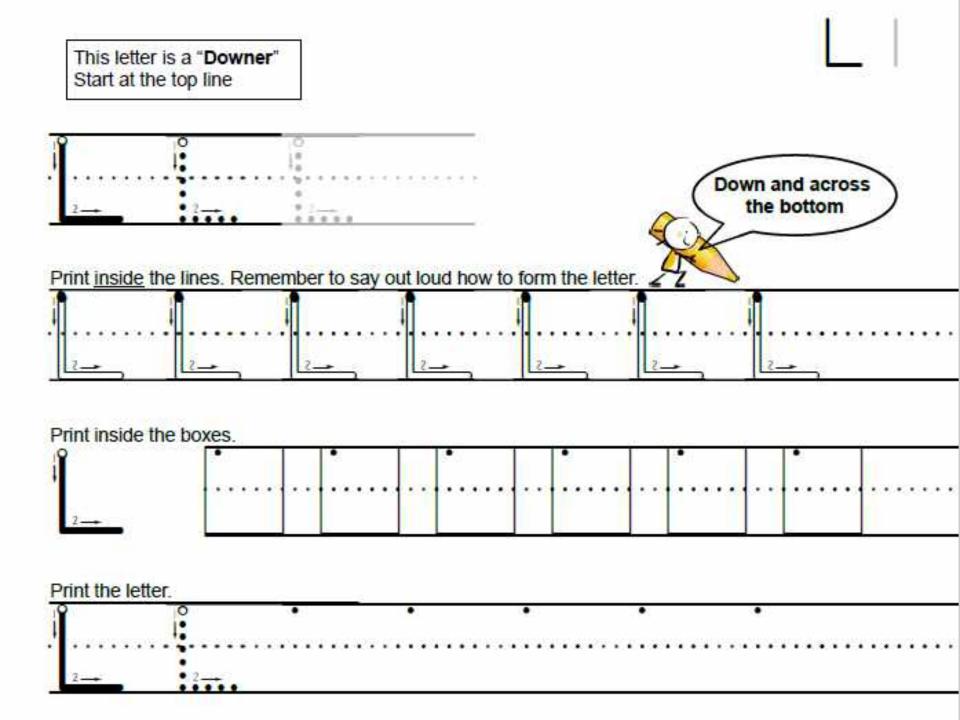


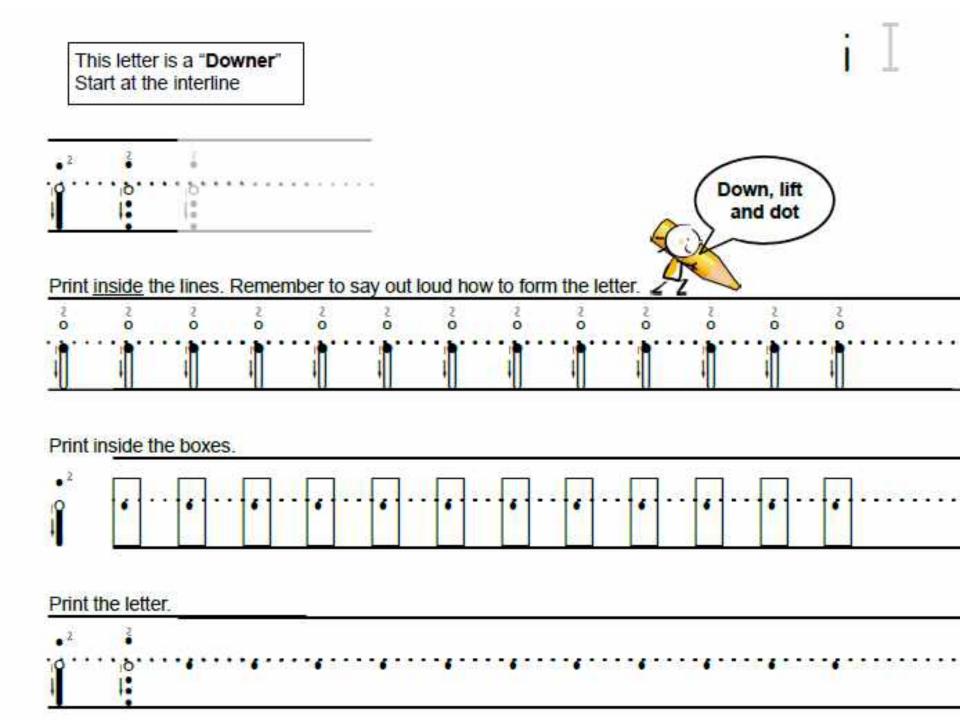
Lily

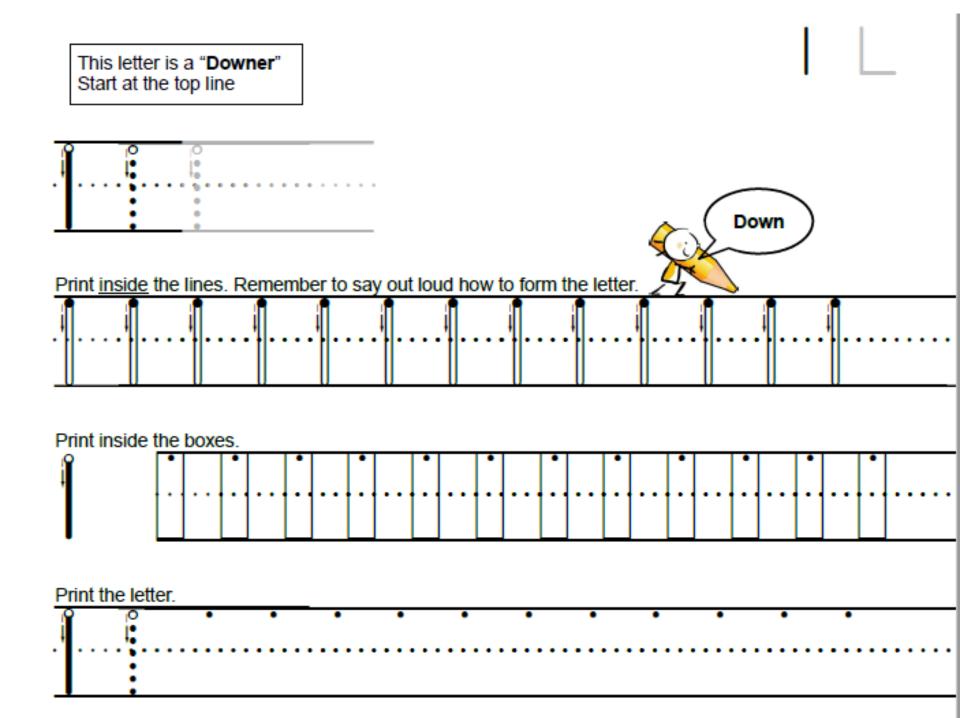
#### "Lily's Worksheet"

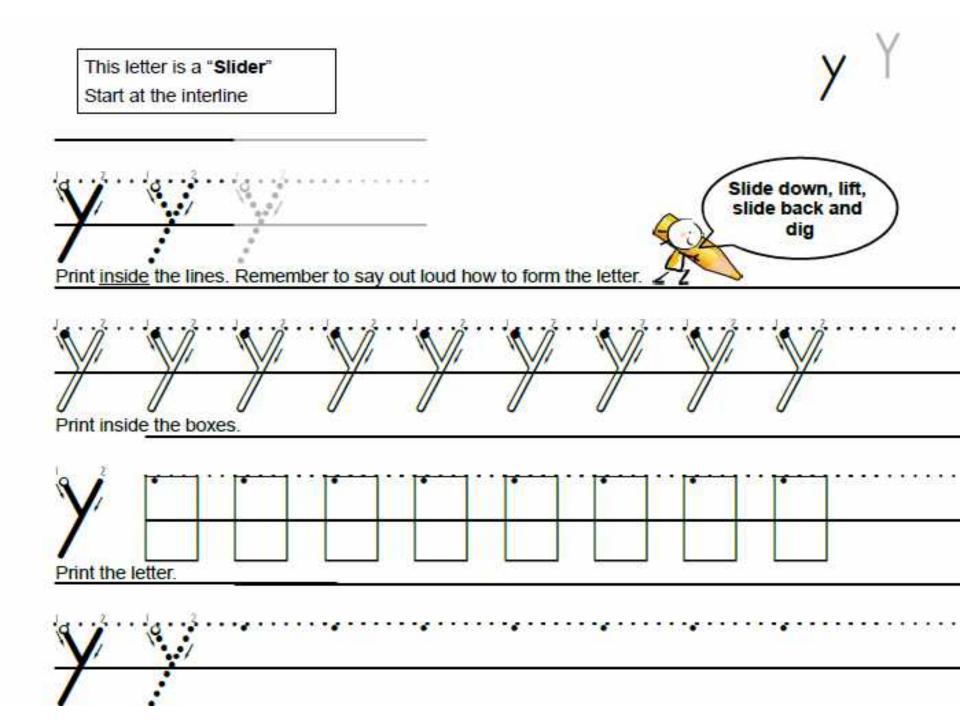








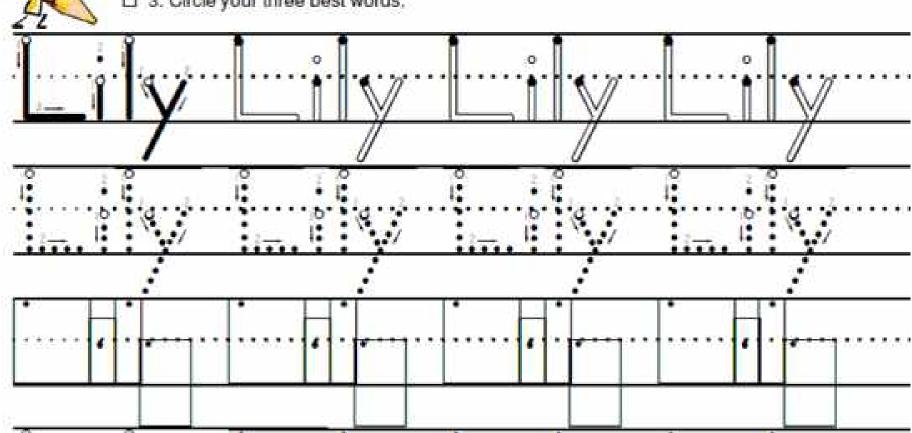




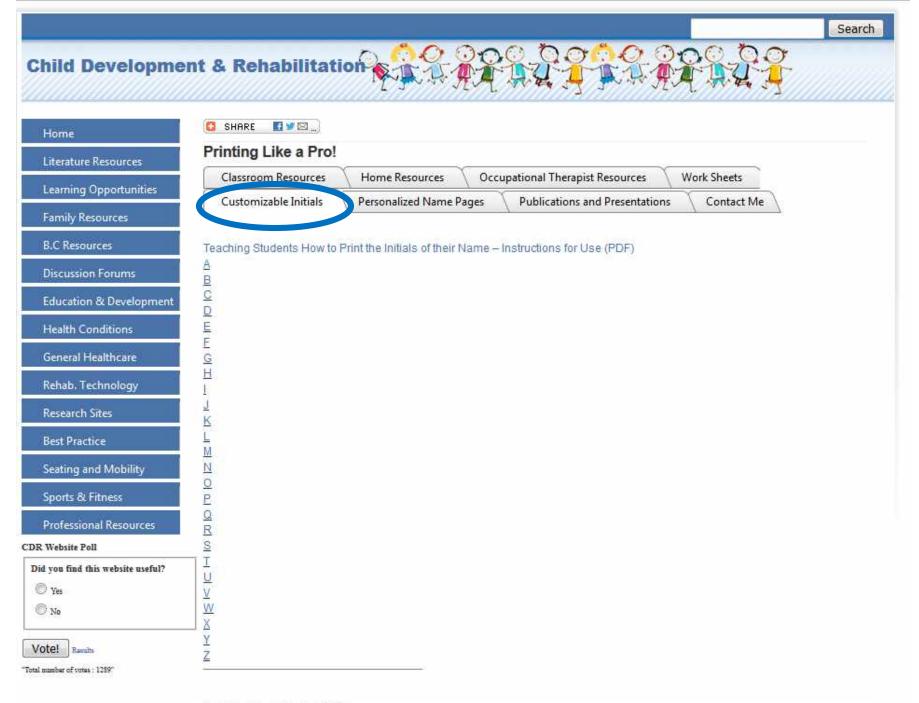


## "Lily's Worksheet"

- □ 1. Print the word as neatly as you can.
   □ 2. Leave a finger space between the words.
   □ 3. Circle your three best words.



# Learn to Write Your Initials



Last Updated: May 24, 2019

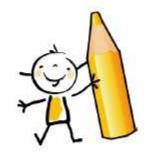


Last Updated: May 24, 2019

#### Printing Like a Pro!



A Cognitive Approach
to
Teaching Students
How to Print the
Initials of their Name

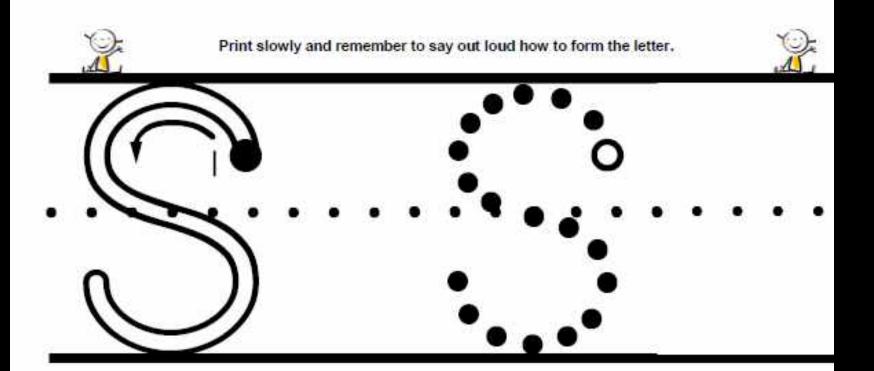


- The goal of the Printing Like a Pro! customizable initial writing worksheet sets is for students to learn and remember the correct way to form and neatly print their initials, using correct capitalization.
- With practice, using cognitive strategies, printing of their initials will overtime become automatic, efficient, and neat.
- Printing Like a Pro! customizable initial writing worksheets were developed specifically for students with motor learning challenges who are not yet able to print their entire names. Therefore, printing their initials can be taught and learned as an adaptation to printing their name.
- Individual structured teaching and practice, ideally daily, will help the student learn how to independently write their initials.
- These are available from:

http://www.childdevelopment.ca/School-Age_Therapy_Practice_Resources.aspx



#### 8 page customizable worksheet set





S is for S





Curve back and curve forward

S is for S







. . . .

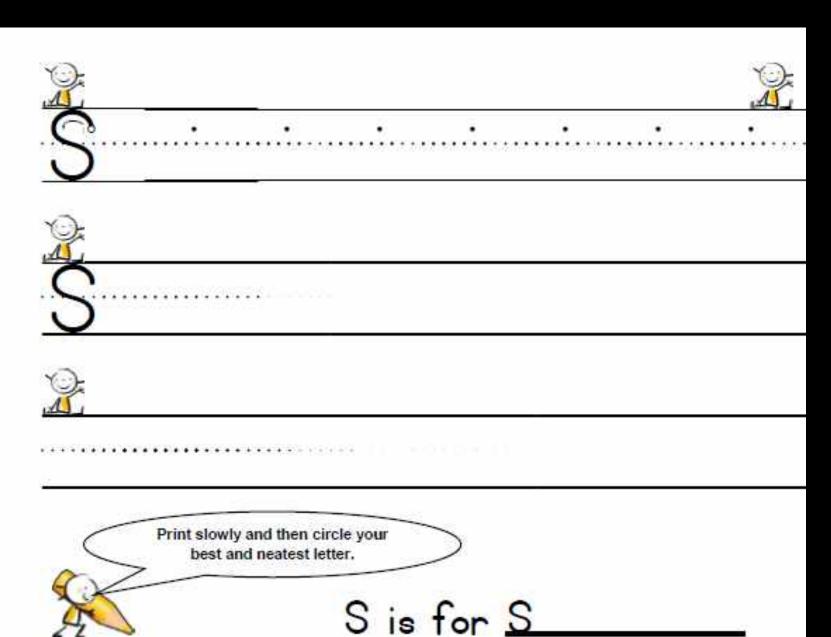
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. . . . . . . . .

Print slowly and then circle your best and neatest letter.



S is for S

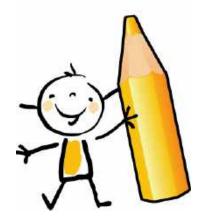


### Summary

- Task specific practice active letter formation NOT tracing
- Graded approach
- Cognitive supports (esp. self-monitoring and self-evaluation) that gradually fade
- Focus on lower case letters
- Kindergarten: Lowercase Worksheets (Enlarged Level I)
- Grade 1: Lowercase Worksheets (Level I)
- Grade 1/2: Lowercase Review, Words & Sentences plus Skill Boosting Sheets (Level II)
- Intensity very important (2-3 times per week; aim for 75 100 minutes per week)
- Legibility before speed

### Other Printing Programs

- There are other programs available
- Add this resource to the mix
- Provides for consumer choice



# Printing Like a Pro!

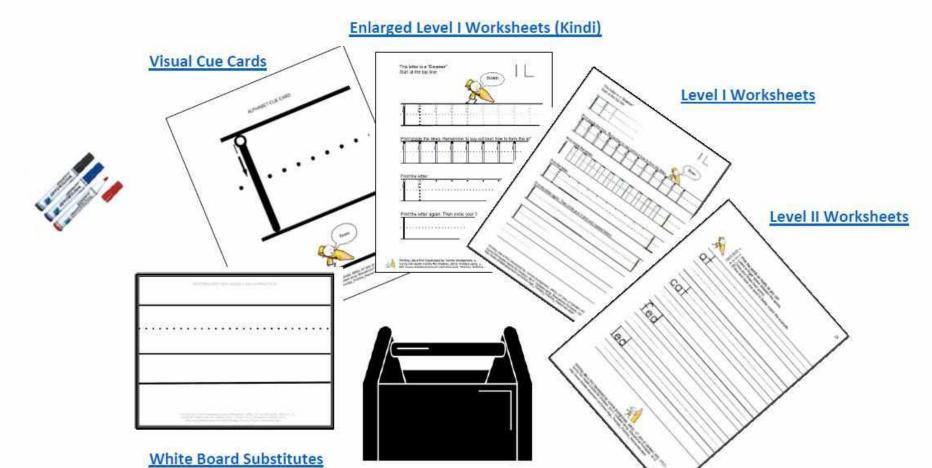
# Standard Lesson Plan for One on One or Small or Large Groups



#### Printing Like a Pro!

#### **Teaching Toolkit Essentials**



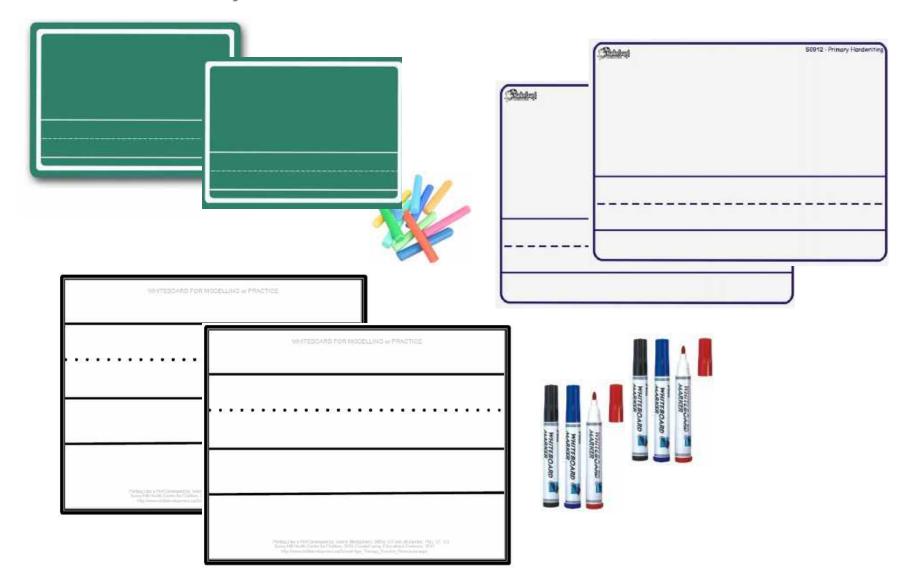




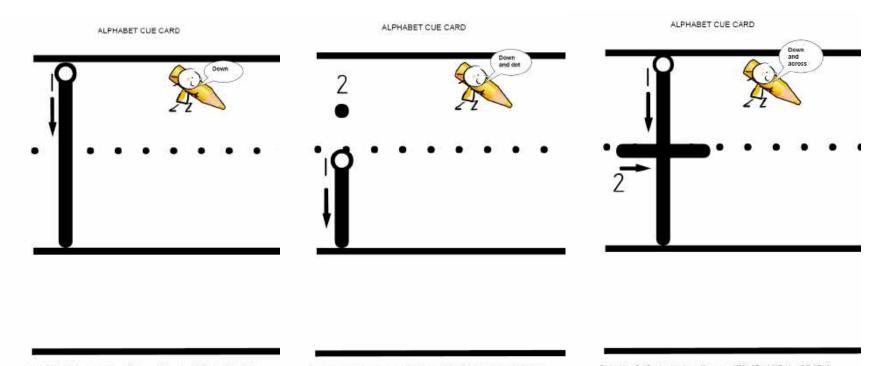
# 1) Preparation

#### **Materials:**

2 sets; one for you to model with and one for each student

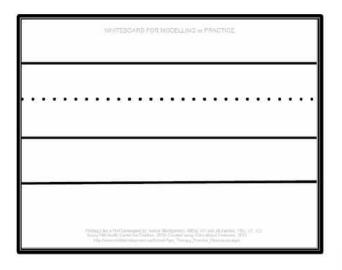


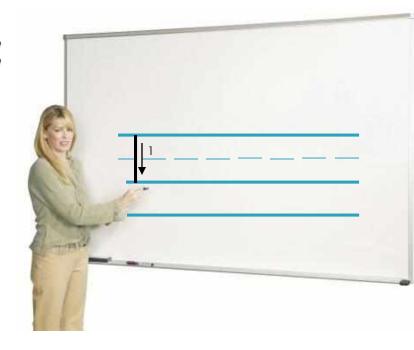
### Alphabet Cue Card(s) for modeling

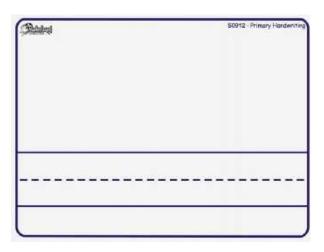


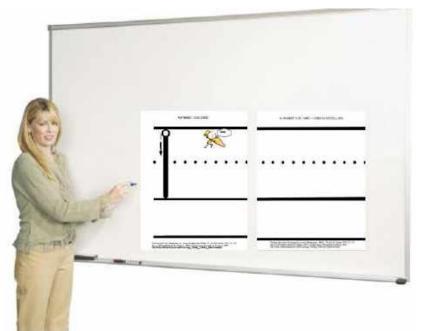
Printing Like a Prof Developed by Income Montgamery, MRSc, OT and Jil Zwicker, PhD, OT, (C) Surry HB Health Centra for Children, 2017; Chaladid using Educational Forkman, 2012. http://www.triabde-elopment.cs/School-Age_ Printing Like a Prof Developed by Honnie Montgoniery, MRSc, OT and All Zwicker, PsD, OT, (C) Surey Hill Health Carlet for Children, 2017; Created using: Educational Fertinate, 2012 http://www.hildewistgoniers.ca/School-Spc Thrange; Practice Pleasuress and Children Programme (C) 2012; Programme (C) 2014; Programme (C) Printing Like a Psot Developed by Norsie Montgomery, MRSc. OT and All Zwicker, PsD, OT. (C) Surrey Hill Health Cedite for Children, 2017; Created using: Educational Forthware, 2012 http://www.dishdeeleptimest.ca/School-Age. Therapy, Practice, Resources and Control Resources and Contr

### **Prepare Interlined Lines:**





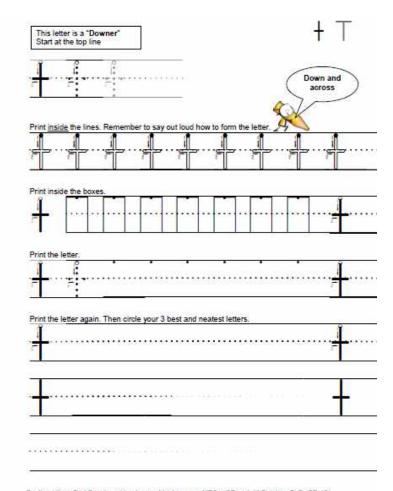




# Prepare/print worksheets:







Printing Like a Pro! Developed by: Ivonne Montgomery, MRSc, OT and Jill Zwicker, PhD, OT, (C) Sunny Hill Health Centre for Children, 2017; Created using: Educational Fontware, 2012 http://www.childdevelopment.ca/School-Age_Therapy_Practice_Resources.aspx

# 2) Introduction

#### Discussion:

- Write target letter on the whiteboard or board clearly or use cue card
- Discuss what "group" the letter is in
- Label and talk about the lines and spaces on the board
- Discuss size/height ("tall" or "small"), alignment, and form
- Discuss "key strategies for neat printing" start a list

#### **Key Strategies for Neat Printing**

- Example:
- Lower case Downers "I"
  - Should I print fast or slow?
  - Is it a "tall" letter or "small" letter?
  - Where do I start ? (top or bottom)
  - Where does the letter sit? (on the line or floats)
- Key Strategies for Neat Printing the letter "I":
  - Print slowly
  - Print tall letters tall
  - Start at the top
  - Letters sit on the line

#### **Key Strategies for Neat Printing**

- Example:
- Lower case Downers "i"
  - Is it a tall letter or small letter?
  - Where do I start ? (top or bottom)
  - Where does the letter sit? (on the line or floats)
- Key Strategies for Neat Printing "i"
  - Print small letters small
  - Start at the top
  - Letters sit on the line

### **Key Strategies for Neat Printing**

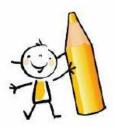


#### My strategies for neat printing:



- 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?



### Modeling:

- Self-talk (script)
  - Students repeat (check for understanding)
- Model letter with script (can use cue card)
- Slowly write the letter several more times
  - Include letters with obvious errors in form
  - Ensure to model circling the best one
- Discussion including key strategies

# 3) Activities

#### 3) Activities:

- Writing Warm-ups:
  - Write on your knee or a partner's back
  - Mini white boards or chalk boards
- Finger and Pencil Warm-ups:



#### FINE MOTOR



#### IN-HAND MANIPULATION

#### Pencil Aerobics

This resource has been developed by a team of occupational therapists at Sunny Hill Health Centre for Children. The information and activity ideas included in this handout were compiled based on current research and expert clinical opinion.

Definition: in-hand manipulation allows us to move or reposition a pencil for writing using just one hand, such as when repositioning a pencil to write after using a pencil top eraser.

To develop these skills, it is best to practice regularly. If you are not sure which exercises to use or how often they should be done, please talk to your occupational therapist.

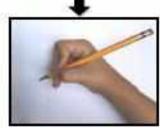
These activities should be done with the dominant hand. Encourage your child to do these activities without using their other hand, body or table to help.

#### Pencil Funt

#### Pencil Shift and Rotation:

- Pencil Pick Up! Grasp pencil with thumb, index and middle fingers and practice "walking fingers" (shifting) all the way up and down the pencil. Go slowly at first and then more quickly.
- Race with the Eraser! Using a pencil with an eraser on the end, encourage the child to use one hand to turn the pencil back and forth from tip to eraser. Have the child spot mistakes in a word or pattern and race to erase and then fix each one.





#### Worksheets:

- Ensure cue cards are visible
- Review expectations and remind re key strategies for that letter
- Repeat self-talk and encourage student(s) to use self-talk

# 4) Assessment

#### 4) Assessment:

- Monitor printing encourage self-monitoring
- Intervene when necessary
- Take note of letter formation
- When students are finished:
  - circle their best 3 letters
  - raise their hand for a sticker or stamp or happy face

### 4) Assessment:

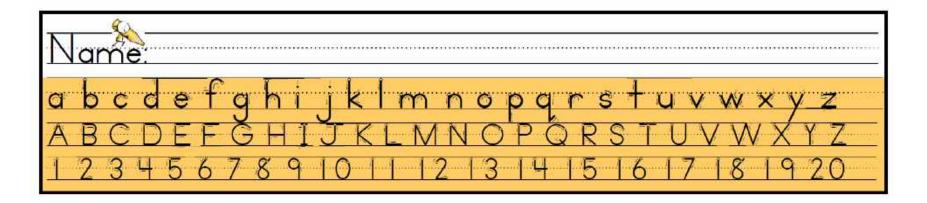
- Before receiving a sticker/stamp, each student should verbalize their reasoning (use of key strategies)
- Teacher/EA/parent puts a sticker/stamp next to the one they think is best out of student's chosen three with explanation of reasoning

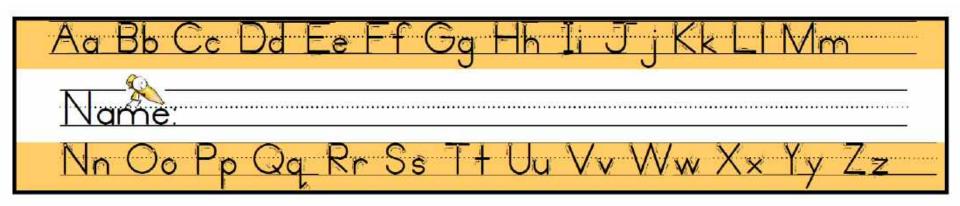
# 5) Closure

#### 5) Closure:

- Clean up
- Discussion:
  - what was done well?
  - What was difficult? What was easy?
  - What could we focus on next time?
- Compliment the group on things they did well!

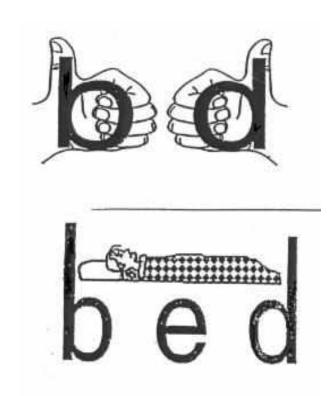
### Letter Strips on Desks





# Resources for Letter Reversals and Teaching Directionality

### For Desk Top:

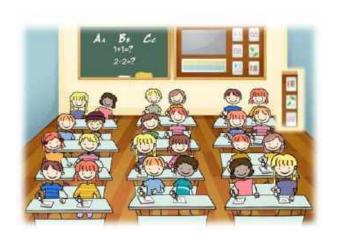


# **Application of Printing Like a Pro!**

Whole classrooms

**Small Printing Groups** 

One on One







# **Applied Learning**

### Scenario 1:

- 1) Kindergarten student with Williams Syndrome
  - Weak fine motor and visual-motor integration skills
  - Can draw vertical and horizontal lines and a circle
  - All marks on the page are large
  - Can identify a few letters including the letters in the initials of his name
  - Has in class Education Assistant (EA) support
- Concern: Not yet able to print his name:

Terrance O'Callaghan



# Scenario 1 - Intervention Plan:

IEP Goal: Writing name - Terrance O'Callaghan

### Individual Intervention:

- Work on just initials (T & O) to start, using a chalk board and white board and then the individual letter sheets (T & O), enlarged at first
- Later can increase challenge by no longer using enlarged sheets
- Can also use letter stamps or a name stamp
- Eventually can work on all letters in first name using the individual letter sheets, then lastly a custom name sheet

# WHITEBOARD FOR MOCELLING or PRACTICE Profession and Applications of the Control of Contro



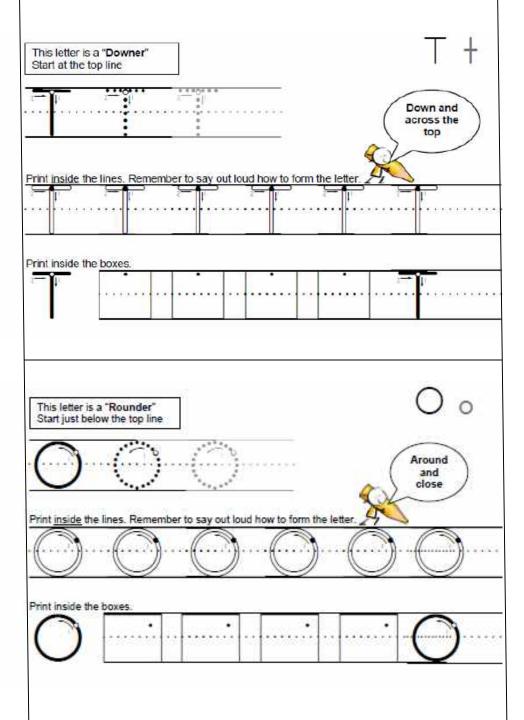
### **Materials**

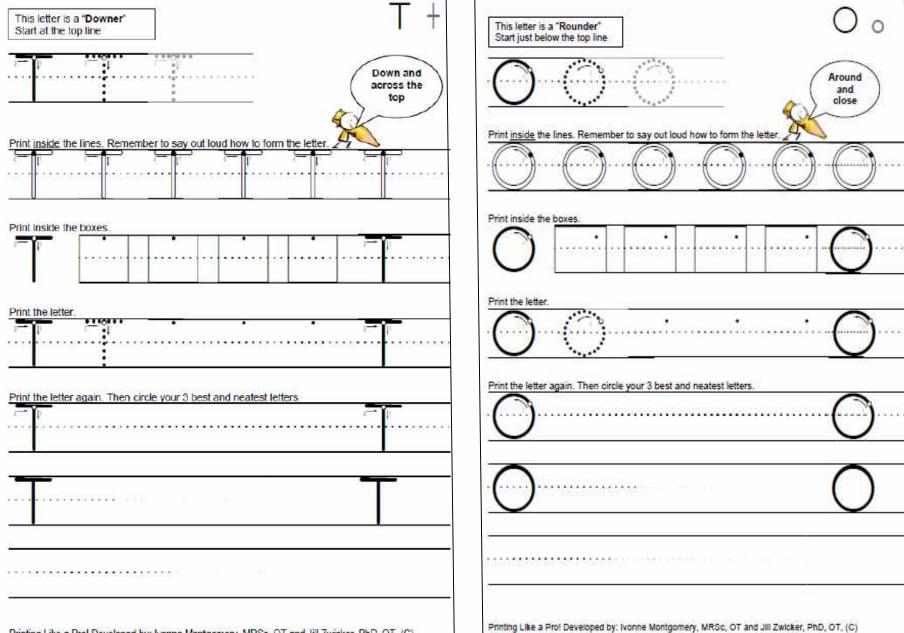


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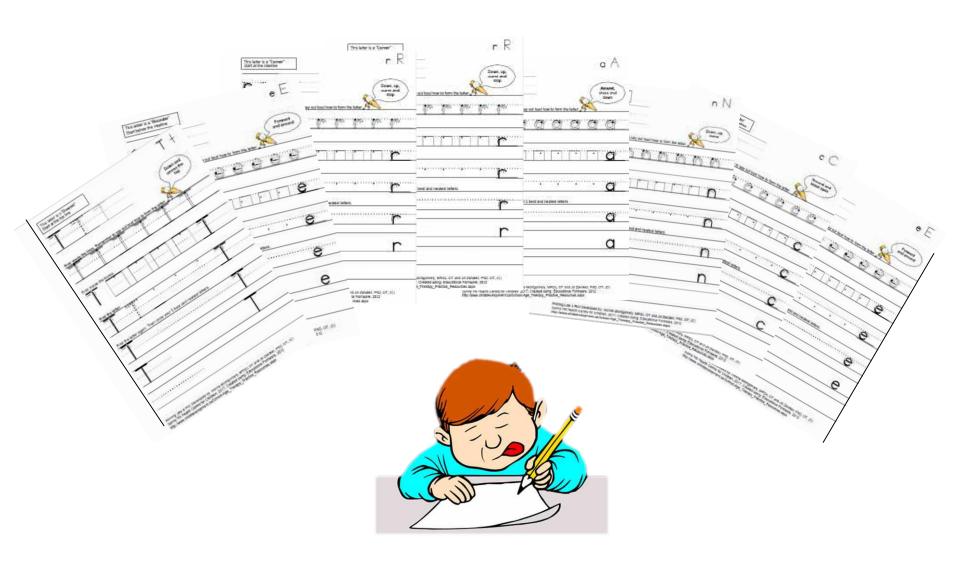


Sunny Hill Health Centre for Children, 2017; Created using: Educational Fontware, 2012

http://www.childdevelopment.ca/School-Age_Therapy_Practice_Resources.aspx

Printing Like a Pro! Developed by: Ivonne Montgomery, MRSc, OT and Jill Zwicker, PhD, OT, (C) Sunny Hill Health Centre for Children, 2017; Created using: Educational Fontware, 2012 http://www.childdevelopment.ca/School-Age_Therapy_Practice_Resources.aspx

# Terrance

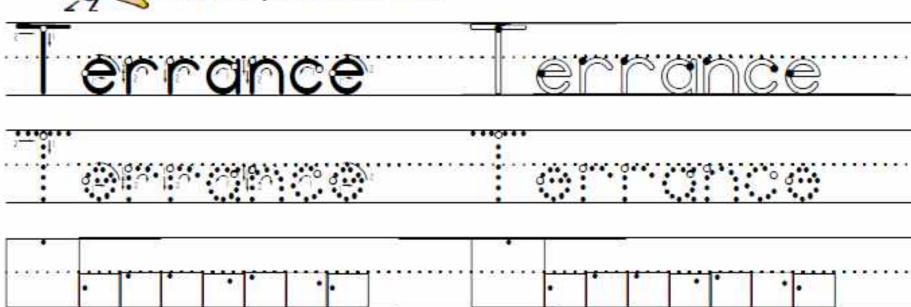


Terrance

### "Terrance's Worksheet"



- □ 1. Print the word as neatly as you can.
- 2. Leave a finger space between the words.
- 3. Circle your three best words.



Terrance

### "Terrance's Worksheet"



- □ 1. Print the word as neatly as you can.
  □ 2. Leave a finger space between the words.
  □ 3. Circle your three best words.

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Printing Like a Pro! Developed by: Ivonne Montgomery, MRSc, OT and Jill Zwicker, PhD, OT, (C) Sunny Hill Health Centre for Children, 2017; Created using: Educational Fontware, 2012 http://www.childdevelopment.ca/School-Age_Therapy_Practice_Resources.aspx

### Scenario 2:

- Grade 1 student who has Autism is very bright and able to read well. By the spring he has learned to print but it is very laborious.
- Sample next slide.
- Additionally, he can not yet print numbers independently aside from 0,1, & 2. He requires help from the EA during most pencil tasks and worksheets.
  - Concern: Printing legibility challenges
  - Goal: Independent and legible printing and number writing

# Scenario 2:

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# Scenario 2 - Intervention Plan:

Grade 1 student who has Autism and is bright but laborious printing.

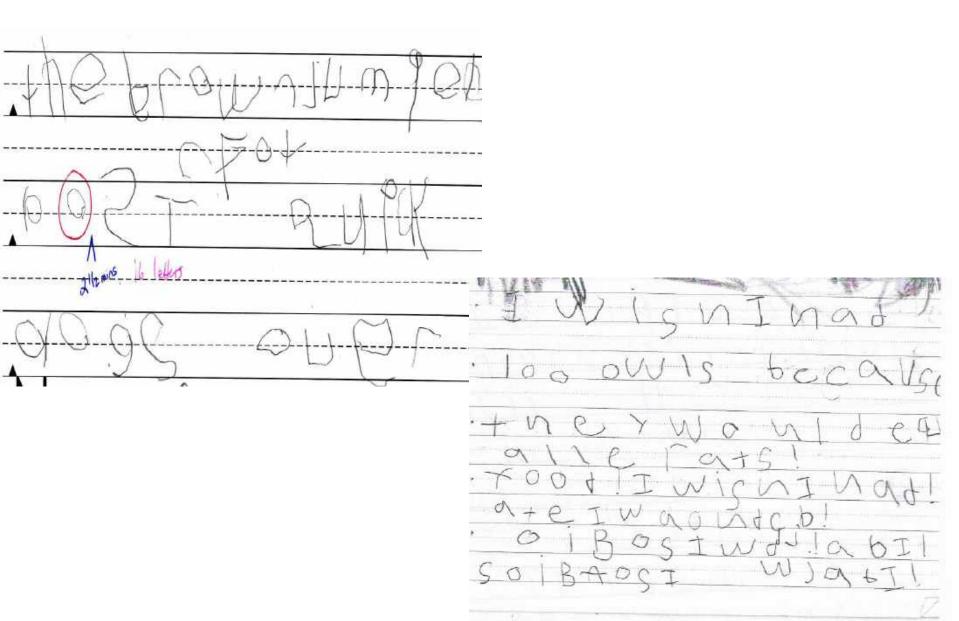
- Goal: Independent and legible printing and number writing
- Level II worksheets as well as numbers 3-9, done one one with EA, 3-4 times per week, in class.
- Use cue cards (laminate for ease of re-use in demonstrations)
- During practice & in all class writing, focus on "Key Strategies for Neat Printing" especially:
  - Sizing, spacing between words and "diggers"
  - Use checklist at desk

# Scenario 3:

### Several Grade 2 students in two classrooms

- Very poor printing and fine motor skills see next slide
- Anxiety with writing
- EAs work with the students (usually the EA writes in highlighter and the students trace over the highlighted letters and words)
- Literacy skills are also decreased
- Concern: Printing legibility challenges
- IEP Goal: Legible independent printing

# **Examples of Writing Samples**



# Scenario 3 - Intervention Plan:

Two Grade 2 students with very poor printing

- Goal: Legible independent printing
- ▶ EA: Small group work
- Level I individual letter worksheets followed by Level II set (letter review, words and sentences) done 2-3 times a week
- EA Support: In the classroom scribe each word on whiteboard and have students copy (not trace); use interlined paper (wider if needed); focus on quality not quantity
- Focus on transferring "Key Strategies for Neat Printing" esp. double spacing (highlight lines on which to write) into classroom writing

### Scenario 4:

- Student in grade 5 with an acquired brain injury. Minimal writing.
- Literacy skills are also very limited.
- Can print his first name with fair legibility although prints very slowly and laboriously.
- Enjoys classroom based tasks and wants to participate with classmates.
  - Concern: Not yet able to print/sign his full name.
  - Goal: Writing name Eric Siry

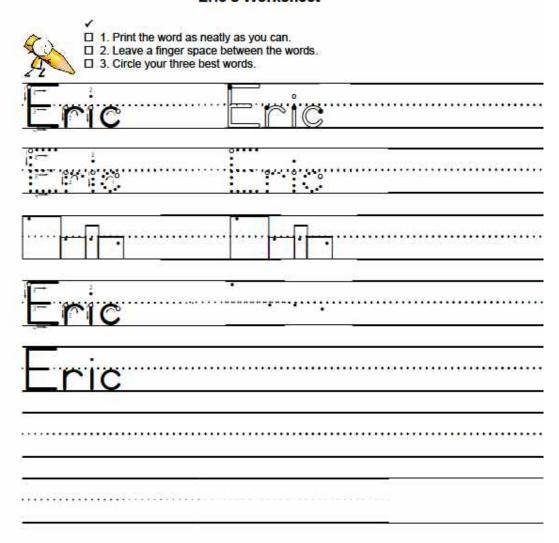
## Scenario 4 - Intervention Plan:

Grade 5 student with an acquired brain injury and minimal writing.

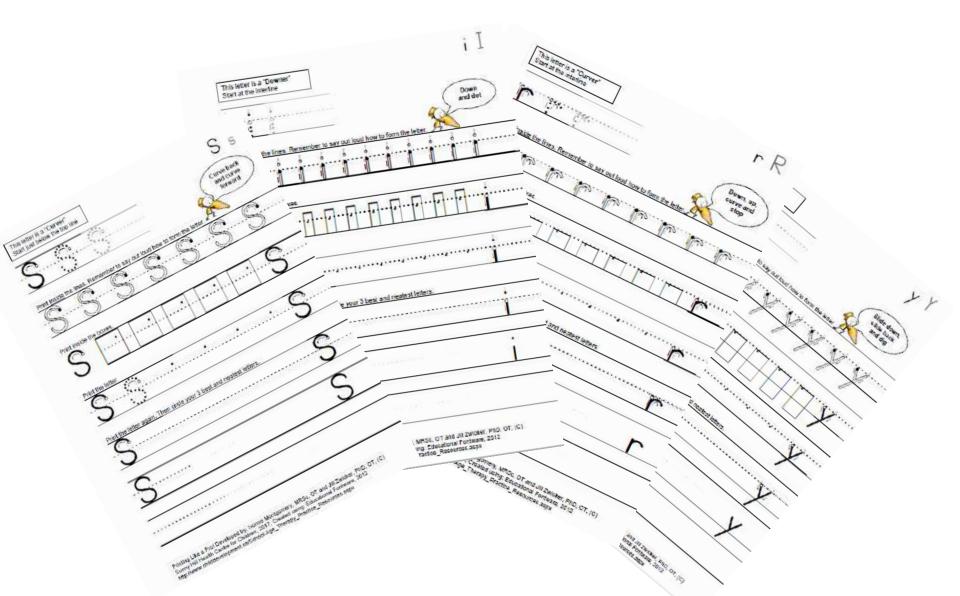
- Goal: Full signature (first and last name)
   "Eric Siry"
- Practice first name to increase speed.
- One on one work with EA with a focus on individual letters of his last name and then custom name sheet for last name (enlarged 130% at first)
- Functional words set (writing a card/note)

Eric

### "Eric's Worksheet"



### Practice Individual Letters of his Last Name – Siry

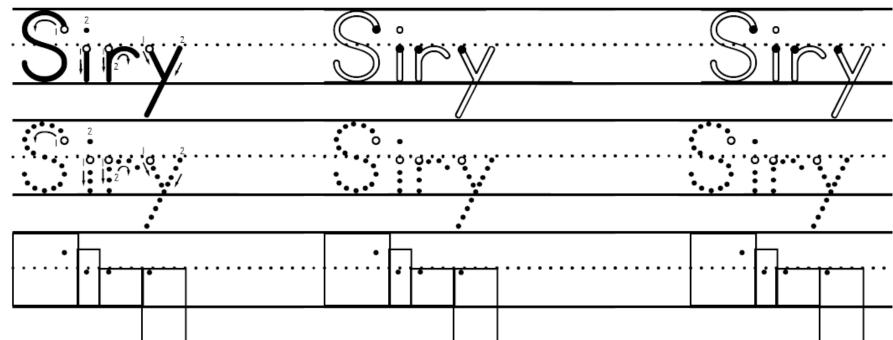


130%

Siry

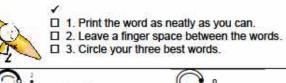
### "Eric Siry's Worksheet"

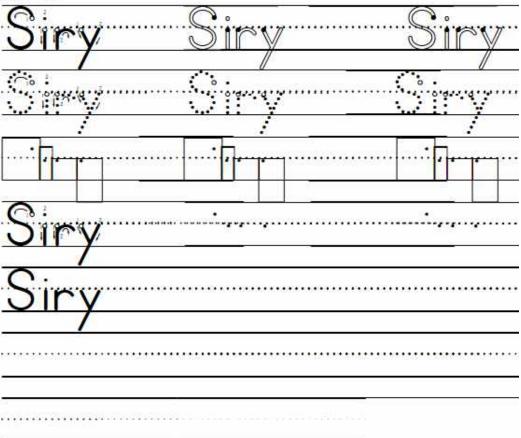
- $\ \square$  1. Print the word as neatly as you can.
- ☐ 2. Leave a finger space between the words.
- ☐ 3. Circle your three best words.



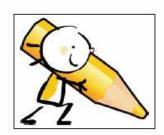
Siry

### "Eric Siry's Worksheet"





# **Functional Words**

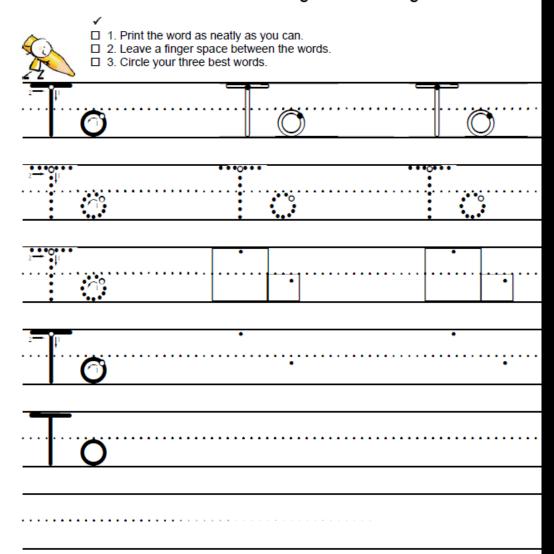


### Addressing a Card/ Writing a Note

### Printing Like a Pro!

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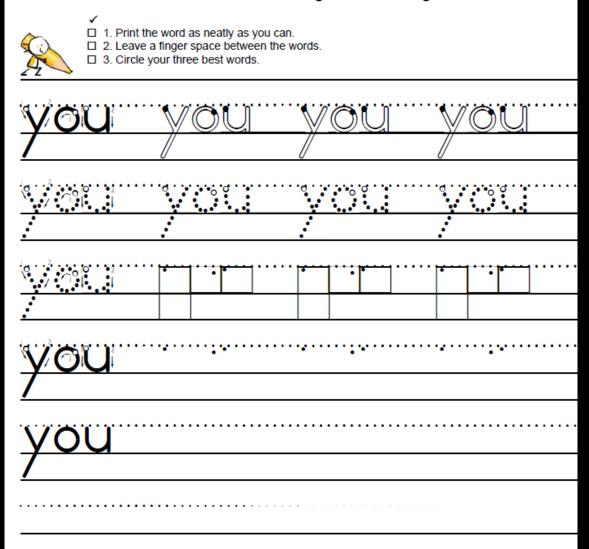
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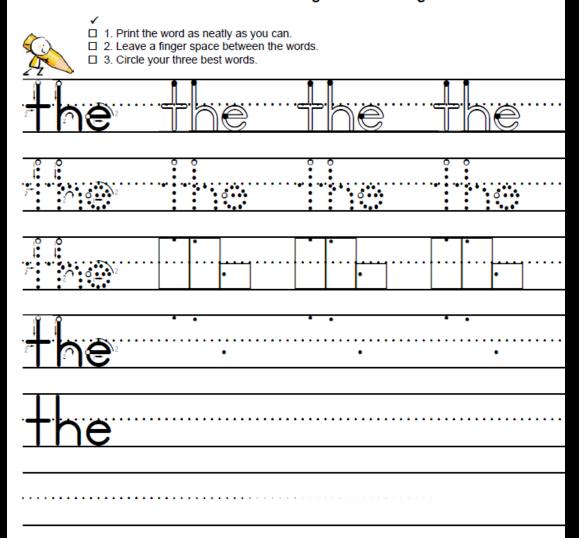


□ 1. Print the word as neatly as you can. □ 2. Leave a finger space between the words. □ 3. Circle your three best words.



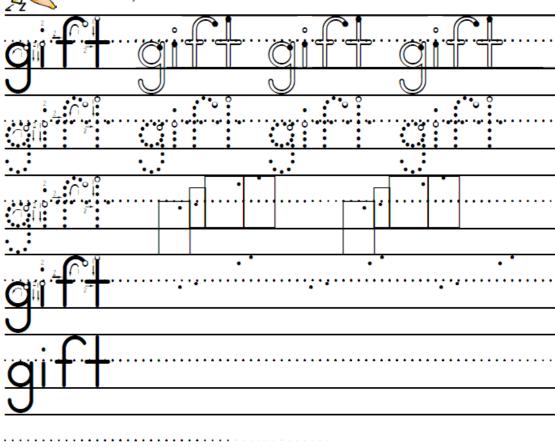








- □ 1. Print the word as neatly as you can.□ 2. Leave a finger space between the words.
- 3. Circle your three best words.





□ 1. Print the word as neatly as you can. □ 2. Leave a finger space between the words. □ 3. Circle your three best words.

### Scenario 5:

- Student in grade 1 with very faint writing. Left handed and flexes (hooks) left wrist when writing. Attentional challenges are noted. Desk and chair are too tall.
  - Concern: Positioning at desk
  - Goal: Functional supportive classroom positioning for best learning

# Scenario 5 - Intervention Plan:

Grade 1 student with very faint writing, poor positioning and desk and chair are too tall.

- Goal: Functional supportive classroom positioning for best learning
- Trial slant board (place paper to the right)
- Remind and cue to rest wrist on slant board
- Use only one sheet of paper at a time
- Provide softer lead pencils
- Adjust desk height
- Trial a bouncy band as a foot rest and
- to provide proprioceptive input





For questions please email:

imontgomery@cw.bc.ca

### References

- Amundson, S. J., & Weil, M. (2001). Prewriting and handwriting skills. In J. Case-Smith, A. S. Allen, & P. Nuse Pratt (Eds.), Occupational therapy for children (pp. 545–566). St Louis, MO: C. V. Mosby.
- Baker, B. (1999). Principles of motor learning for school based occupational therapy practitioners. School System Special Interest Section Quarterly, 6(2), 1-4.
- Baker, S., Gersten, R., & Graham, S. (2003). Teaching expressive writing to children with learning disabilities: Research-based applications and examples. *Journal of Learning Disabilities*, 36, 109-123.
- Barnes, A. C., & Harlacher, J. E. (2008). Clearing the confusion: Response to intervention as a set of principles. Education and Treatment of Children, 31, 417–431.
- Beery, K.E. Z & Beery, N. (2004). The Beery-Buktenica Developmental Test of Visual-Motor integration: Beery VMI Administration, Scoring, and Teaching Manual (5th ed.). Minneapolis: NCS Pearson.
- Berninger, V.W., Mizokawa, D.T., & Bragg, R. (1991). Theory-based diagnosis and remediation of writing disabilities. Journal of Educational Psychology, 29, 57-79.
- Berninger, V.W., Vaughan, K.B., Abbott, R.D., Abbott, S.P., Woodruff Rogan, L., Brooks, A., Reed, E., and Graham, S., (1997). Treatment of handwriting problems in beginning writers: Transfer from handwriting to composition. *Journal of Educational Psychology*, 89, 652-666.
- Berninger, V.W., Abbott, R.D., Augsburger, A., and Garcia, N., (2009). Comparison of pen and keyboard transcription modes in children with and without learning disabilities. Learning Disabilities Quarterly, 32, 123-141.

- 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.
- Briggs, D. (1970). Influence of handwriting on assessment. Educational Research, 13, 50-55.
- Cahill, S.M. (2009). Where does handwriting fit in? *Intervention in School and Clinic, 44,* 223-228. Case Smith, J. (2002). Effectiveness of school based occupational therapy intervention on handwriting. *American Journal of Occupational Therapy, 56,* 17-25.
- Case-Smith, J. & O'Brien, J.C. (2010) Occupational Therapy For Children 6th ed., St. Louis, MO: Mosby
- Cornhill, H & Case-Smith, J. (1996). Factors that relate to good and poor handwriting.
   American Journal of Occupational Therapy, 50 (9), 732-739.
- Connelly, V., Dockrell, J. E., & Barnett, J. (2005). The slow handwriting of undergraduate students constrains overall performance in exam essays. Educational Psychology, 25, 99– 107.
- Connelly, V., Campbell, S., McLean, M. & Barnes, J. (2006). Contribution of lower order skills to the written composition of college students with and without dyslexia. Developmental Neuropshychology, 29, 175-196.
- Daly, C. J., Kelley, G. T., & Krauss, A. (2003). Brief report—Relationship between visual-motor integration and handwriting skills of children in kindergarten: A modified replication study. American Journal of Occupational Therapy, 57, 459–462
- 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.

- Donica, D. (2010). A historical journey through the development of handwriting instruction (Part 2): The occupational therapists' role. Journal of Occupational Therapy, Schools and Early Intervention, 3, 32-53.
- Donovan, J. J., & Radosevich, D. J. (1999). A meta-analytic review of the distribution of practice effect: Now you see it, now you don't. Journal of Applied Psychology, 84, 795-805.
- Duiser, van der Kamp, Ledebt, & Savelsberegh. (2014) Relationship between the quality of children's handwriting and the Beery Buktenica developmental test of visuomotor integration after one year of writing tuition. Australian Occupational Therapy Journal, 61, 76-82.
- 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, 11(4), 454-473.
- Feder, K.P., & Majnemer, A. (2007). Handwriting development, competency, and intervention. Developmental Medicine & Child Neurology, 49, 312-317.
- Graham, S., (2009). Want to improve children's writing? Don't neglect their handwriting. *American Educator*, 20-27/40.
- Graham, S., Berninger V.W., Abbott, R., Abbott, S., & Whitaker, D. (1997). The role of mechanics in composing of elementary school students: A new methodological approach. Journal of Educational Psychology, 89, 170-182.
- Graham, S. Harris, K. and 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., Harris, K.R., Mason, L., Fink-Chorzwmpa, B., Moran, S., & Saddler, B. (2008). How do primary grade teachers teach handwriting? A national survey. Reading and Writing, 21, 49-69.
- Graham, S., and Weintraub, N., 1996. A review of handwriting research: Progress and prospects from 1980 to 1994. Educational Psychology Review, 8, 7-87.
- Howe, T.-H., Roston, K. L., Sheu, C.-F., & Hinojosa, J. (2013). Assessing handwriting intervention effectiveness in elementary school students: A two-group controlled study. American Journal of Occupational Therapy, 67, 19–27.
- 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.
- Jones, D., & Christensen, C. (1999). Relationship between automaticity in handwriting and student's ability to generate written text. Journal of Educational Psychology, 91, 44-49.
- Jongmans, M. J., Linthorst-Bakker, E., Westenberg, Y., & Smits-Engelsman, B. C. M. (2003). Use of a task-oriented self-instruction method to support children in primary school with poor handwriting quality and speed. Human Movement Science, 22, 549-566.

- Karlsdottir, R., and Stefansson, T., (2002)Problems in developing functional handwriting. Perceptual Motor Skills, 94(2):623-62.
- Kleim, J.A., & Jones, T.A. (2008). Principles of experience-dependent neural plasticity: Implications for rehabilitation after brain damage. Journal of Speech, Language, and Hearing Research, 51, s225-s239.
- Longcamp, M., Zerbato-Poudou, M. T., & Velay, J. L. (2005). The influence of writing practice on letter recognition in preschool children: A comparison between handwriting and typing. Acta psychologica, 119(1), 67-79.
- Mackay, N., McCluskey, A., & Mayes, R. (2010). The Log Handwriting Program improved children's writing legibility: A pretest-posttest study. American Journal of Occupational Therapy, 64, 30-36.
- Markham, L. (1976). Influence of handwriting quality on teacher evaluation of written work. *American Educational Research Journal*, 13, 277-283.
- McCarney D., Peters L., Jackson S., Thomas M. & Kirby A. (2013) Does poor handwriting conceal literacy potential in primary school children? International Journal of Disability, Development and Education, 60:2, 105-118.
- McHale, K & Cermack, S. (1992). Fine Motor Activities in Elementary School: Preliminary findings and provisional implications for children with fine motor problems. American Journal of Occupational Therapy, 46, 898-903.
- McMaster, E., & Roberts, T. (2016). Handwriting in 2015: A main occupation for primary school-aged children in the classroom? Journal of Occupational Therapy, Schools, & Early Intervention, 9(1), 38-50.
- Medwell, J., & Wray, D. (2008). Handwriting A forgotten language skill? Language & Education, 22, 34-47.

- Miller, L. T., Polatajko, H. J., Missiuna, C., Mandich, A., & Macnab, J. J. (2001). A pilot trial of a cognitive treatment for children with developmental coordination disorder. Human Movement Science, 20, 183-210.
- 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.
- Poldrack, R.A., Sabb, F.W., Foerde, K., Tom, S.M., Asarnow, R.F., Bookheimer, S.Y., & Knowlton, B.J. (2005). The neural correlates of motor skill automaticity. *Journal of Neuroscience*, 25, 5356-5364.
- Poole, J.L. (1991). Applications of motor learning principles in occupational therapy. American Journal of Occupational Therapy, 45, 531-537. Rubin, N., & Henderson, S. E. (1982). Two sides of the same coin: Variations in teaching methods and failure to learn to write. Special Education: Forward Trends, 9 (4), 17-24.
- Santangelo, T., & Graham, S. (2016). A comprehensive meta-analysis of handwriting instruction. Educational Psychology Review, 28(2), 225-265.
- Schmidt, R. A., & Lee, T. D. (2005). Motor control and learning: A behavioral emphasis (4th ed.). Champaign, IL: Human Kinetics.
- Sheffield, B. (1996). Handwriting: A neglected cornerstone of literacy. Annals of Dyslexia, 46, 21–35.

- Tseng, M.H., & Cermak, S.A. (1993). The influence of ergonomic factors and perceptual-motor abilities on handwriting performance. American Journal of Occupational Therapy, 47, 919-926.
- Toglia, J.P., Rodger, S. A., and Polatajko H.J. (2012). Anatomy of cognitive strategies: A therapist's primer for enabling occupational performance. Canadian Journal of Occupational Therapy, 79(4) 225-236.
- Volman, M., van Schendel, B.M, and Jongmans, M. (2006). Handwriting difficulties in primary school children: A search for underlying mechanisms. American Journal of Occupational Therapy, 60(4), 451-460.
- Weil, M. J. & Amundson, S. J. C. (1994). Relationship between visuomotor and handwriting skills of children in kindergarten. American Journal of Occupational Therapy, 48, 982-988.
- Weintraub, N., Yinon M., Bar-Effrat Hirsch I., & Parush S. (2009). Effectiveness of sensorimotor and task-oriented handwriting intervention in elementary schoolaged students with handwriting difficulties. OTJR: Occupation, Participation, and Health, 29, 125-134.
- Wu, T., Kansaku, K., & Hallett, M. (2004). How self-initiated memorized movements become automatic: A functional fMRI study. Journal of Neurophysiology, 91, 1690-1698.
- 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. (2011). Cognitive versus multisensory approaches for handwriting: Current state of the evidence. Dyspraxia Foundation Professional Journal, 10, 3-11.
- Zwicker, J.G., & Hadwin, A. (2005). Effectiveness of handwriting remediation: Cognitive versus multisensory interventions. Canadian Association of Occupational Therapists Conference Program Supplement. Vancouver, BC: CAOT.
- 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.