



S M H P

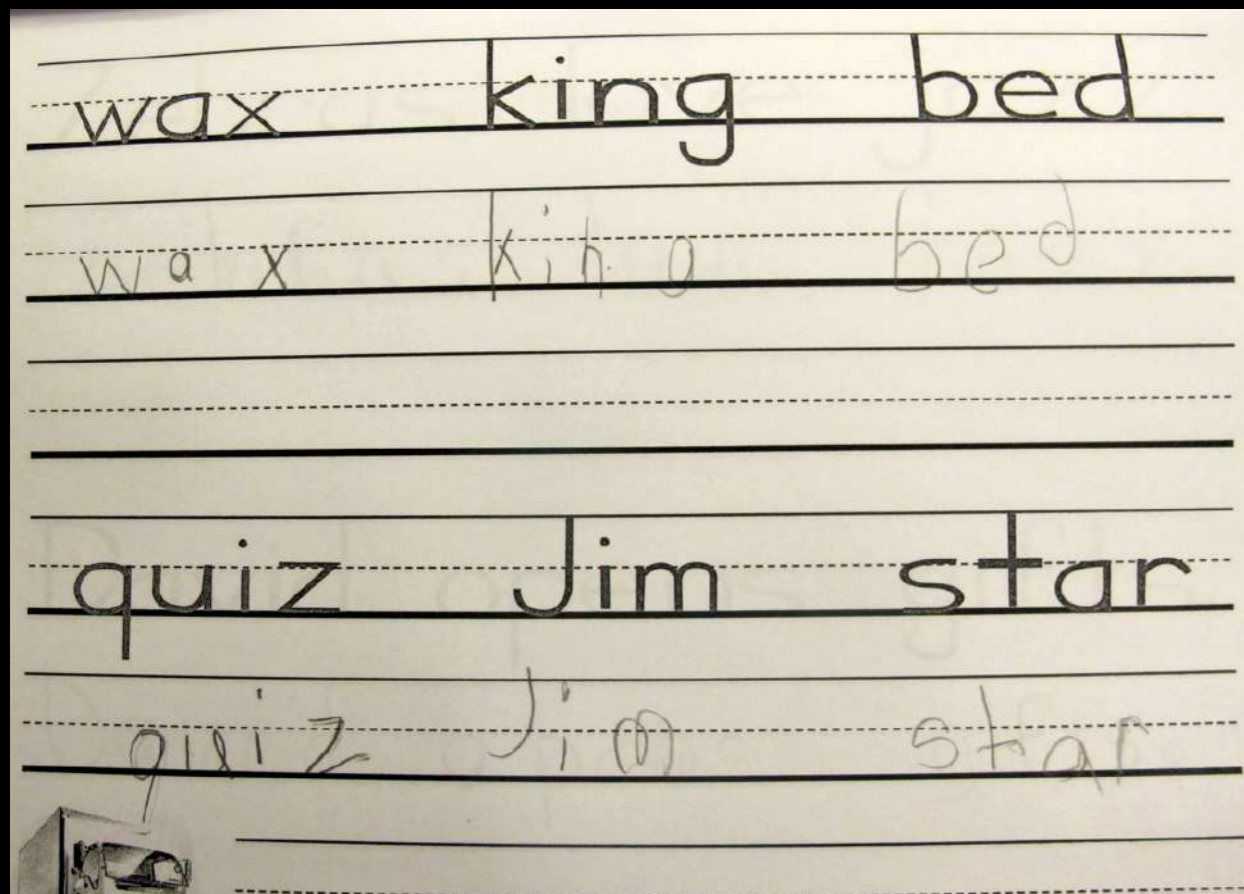
BEFORE & AFTER

1ST

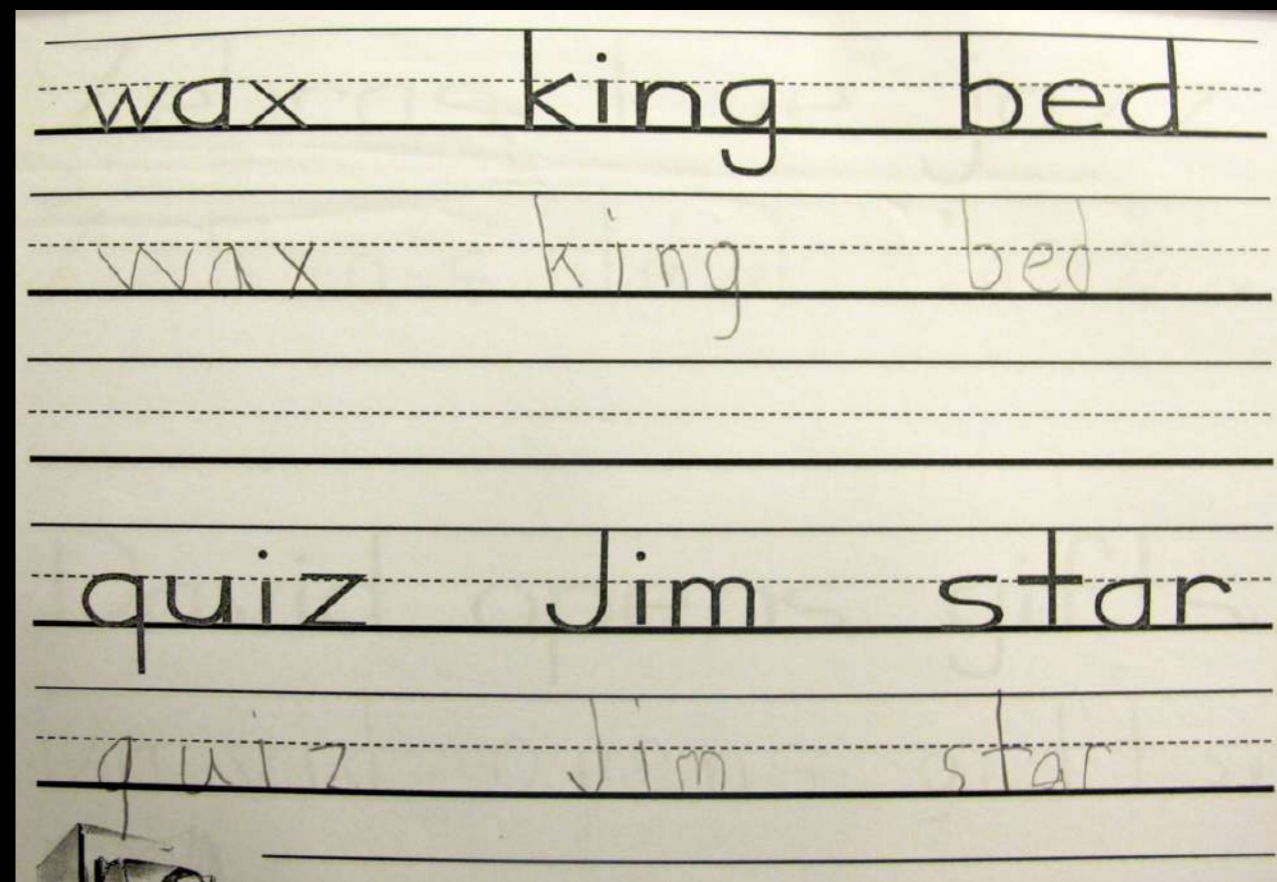
The Research Study

Because a picture is worth ten-thousand words...

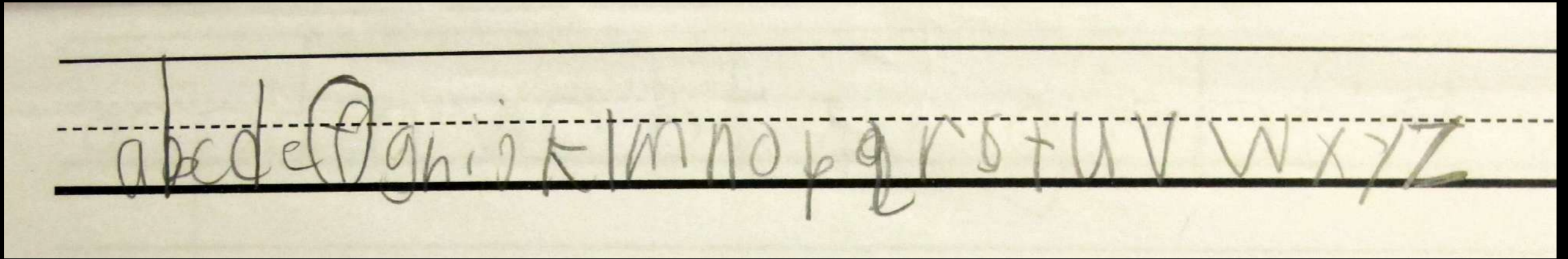
Meaghan



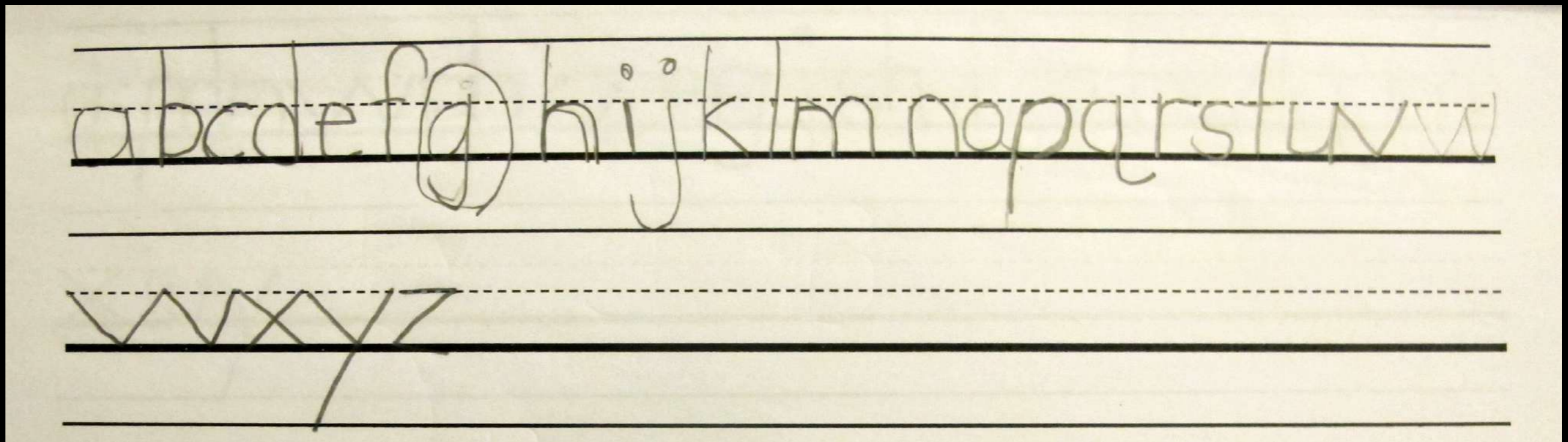
1st grade Pretest - 2/15/12



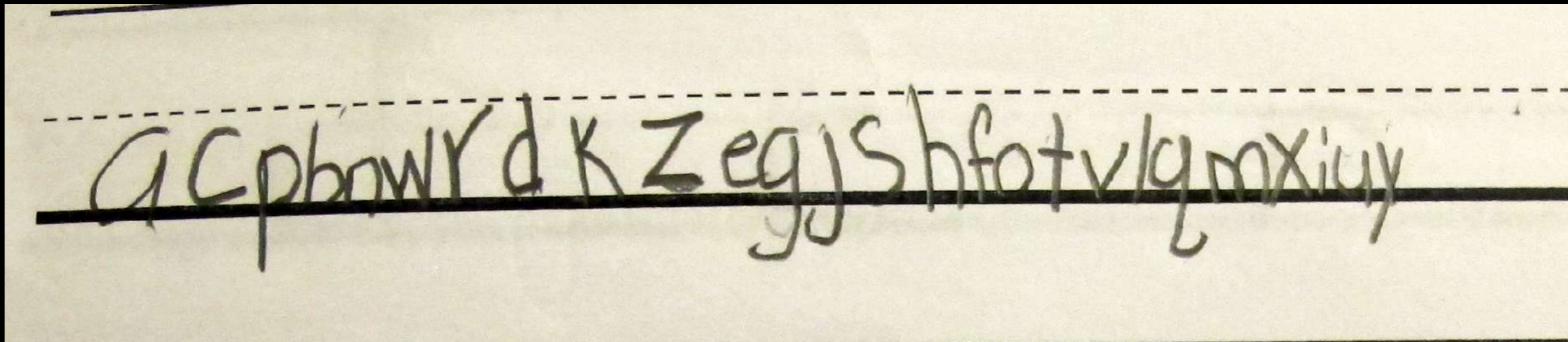
1st grade Post Test - 5/16/12



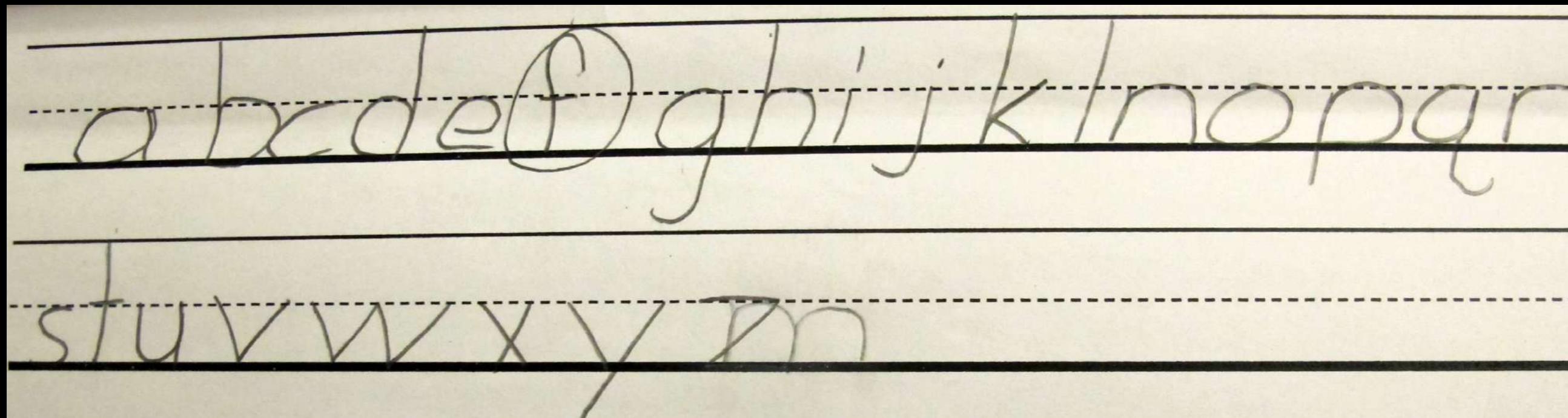
Jaren - 1st grade Pretest - 2/15/12



Jaren - 1st grade Post Test - 5/16/12



Emma - 1st grade PreTest - 2/15/12



Emma - 1st grade Post Test - 5/16/12

Zebras love jazz.
Zebras love jazz.
David opens gifts.
David opens gifts.

Espyn

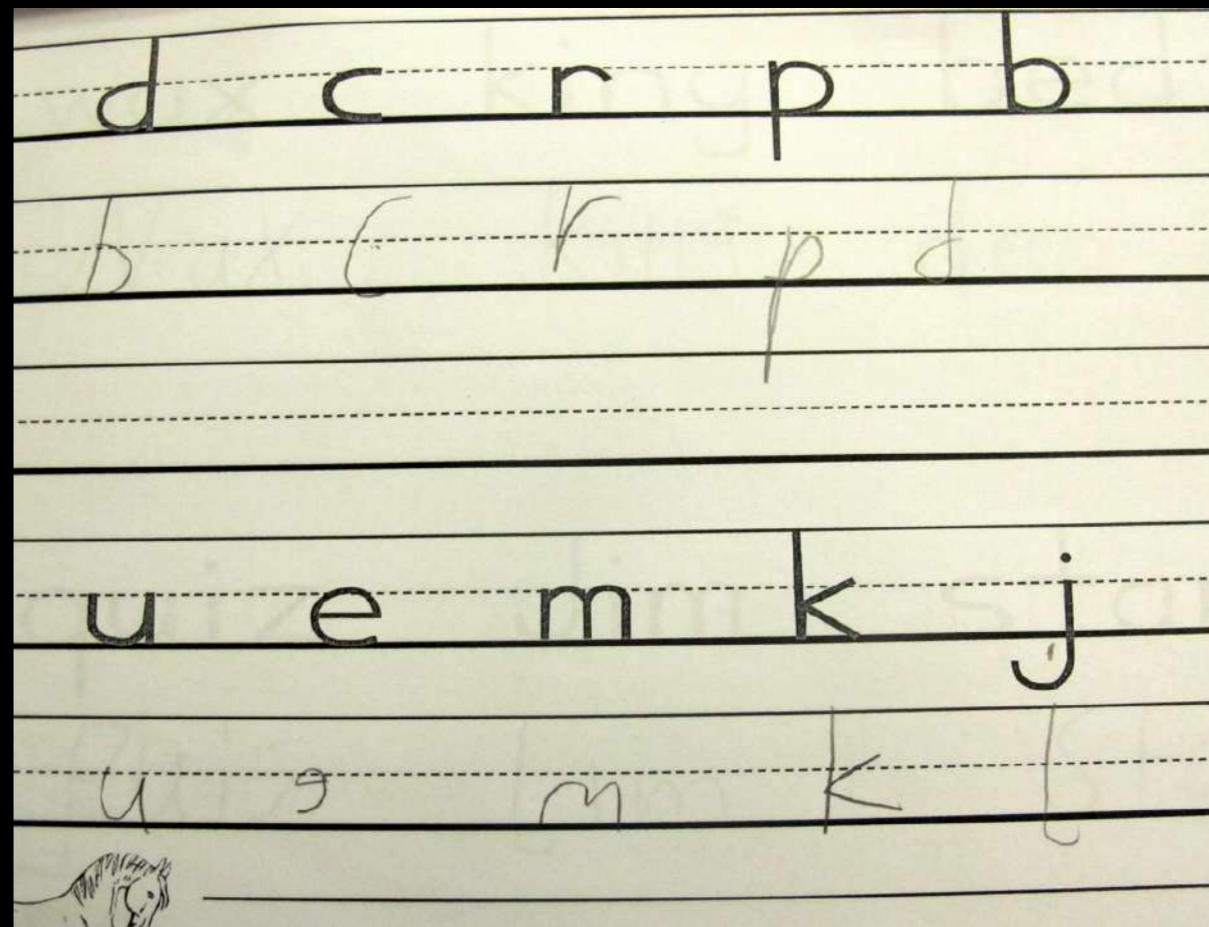
1st grade Pretest - 2/15/12

Zebras love jazz.
Zebras love jazz.
David opens gifts.
David opens gifts.

1st grade Post Test - 5/16/12

Kylie

1st grade Pretest - 2/15/12



1st grade Post Test - 5/16/12



PUBLISHED RESEARCH

Article

Effectiveness of the Size Matters Handwriting Program

Beth Pfeiffer¹, Gillian Rai², Tammy Murray³, and Eugene Brusilovskiy¹

Abstract

The purpose of the research was to study changes in handwriting legibility among kindergarten, first- and second-grade students in response to the Size Matters curricular-based handwriting program. A two-group pre-post-test design was implemented at two public schools with half of the classrooms assigned to receive the Size Matters program and the other continuing to receive standard instruction. All participants completed two standardized handwriting measures at pre-test and after 40 instructional sessions were completed with the classes receiving the handwriting program. Results identified significant changes in legibility in the handwriting intervention group for all three grades when compared with the standard instruction group. The results of this study support the use of a curricular-embedded handwriting program and provide the foundation for future research examining the impact of handwriting legibility on learning outcomes.

Keywords

handwriting, handwriting curriculum, handwriting intervention, Size Matters

Handwriting is an essential life skill. It involves a complex integration of several body systems, requires extensive training to master, and is a necessary functional task for school-aged children. It is the primary means by which students express, communicate, and record ideas (Erhardt & Meade, 2005). Past and current research on handwriting supports the notion that left unaddressed, poor handwriting affects children's academic performance, self-esteem, and success at school and in life (Berninger et al., 2006; Engel-Yeger, Nagauker-Yanuv, & Rosenblum, 2009; Feder, Majnemer, Bourbonnais, Blayney, & Morin, 2007). Therefore, early identification and remediation of handwriting deficiencies before children reach middle and high school, when handwriting demands increase in complexity and intensity, can prevent difficulties associated with handwriting (Ste-Marie, Clark, Findlay, & Latimer, 2004).

Few activities in school are exempt from proficient handwriting. Elementary students spend 30% to 60% of the day writing in math, reading, spelling, social studies, and science (Volman, van Schendel, & Jongmans, 2006). Furthermore, handwriting difficulties do not resolve without intervention (Feder et al., 2007). Yet in spite of large portions of schoolwork requiring writing, handwriting instruction is on the decline.

The mechanics of handwriting is a focus in early grades. However by second grade, attention shifts to the cognitive aspects of writing. Most primary schools no longer have formal handwriting programs. Among surveyed first- to third-grade teachers, 12% reported adequate preparation to teach

handwriting, and only 39% felt that their students' handwriting was adequate. Twenty-five percent reported that students experienced difficulty with handwriting, and 46% indicated that their students' speed was insufficient to keep up with classroom demands (Graham et al., 2008).

Arguments for teaching handwriting include studies on brain activation. James and colleagues mapped the brains of preliterate and school-aged children through magnetic resonance imagery (MRI) during letter writing versus letter recognition tasks (James, 2009; James & Gauthier, 2009). In one study, two groups of pre-schoolers were shown letters, but only one group was taught how to write them. After 4 weeks, the group taught how to write letters showed a dramatic increase in neural activation in the visual association cortex. James (2009) concluded that printing practice affects interactions among sensorimotor systems, leading to functional specialization. In another study (James & Engelhardt, 2012), 5-year-olds printed, typed, or traced letters, then were shown images of these same letters while undergoing functional MRI scanning. The results showed that a previously established "reading circuit" was activated during letter

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1-10
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2nd PUBLISHED RESEARCH

Effectiveness of a Handwriting Intervention With At-Risk Kindergarteners

Sheryl Eckberg Zylstra, Beth Pfeiffer

MeSH TERMS

- handwriting
- education, special
- occupational therapy
- reading
- treatment outcome
- writing

OBJECTIVE. We examined the effectiveness of an occupational therapist–led handwriting intervention for special education and at-risk kindergarteners.

METHOD. We incorporated a two-group, pretest–posttest design. Both groups consisted of kindergarteners receiving individualized education program (IEP) or Response to Intervention (RtI) support. An occupational therapist provided biweekly group handwriting instruction using the Size Matters Handwriting Program to students in the intervention group ($n = 23$). The control group ($n = 12$) received the standard handwriting instruction.

RESULTS. Students in the intervention group demonstrated significantly greater gains in handwriting legibility than students in the control group. Students in the intervention group also demonstrated significantly greater gains in the prereading skills of uppercase letter recognition, lowercase letter recognition, and letter sound recognition.

CONCLUSION. This study provides preliminary support for an occupational therapist–led handwriting intervention to improve writing legibility and letter recognition in kindergarteners receiving RtI and IEP supports.

Zylstra, S. E., & Pfeiffer, B. (2016). Effectiveness of a handwriting intervention with at-risk kindergarteners. *American Journal of Occupational Therapy, 70*, 7003220020. <http://dx.doi.org/10.5014/ajot.2016.010820>

Sheryl Eckberg Zylstra, DOT, MS, OTR/L, is Clinical Assistant Professor, Department of Occupational Therapy, University of Puget Sound, Tacoma, WA. At the time of this study, she was a doctoral student at Temple University, Philadelphia, PA; szylstra@pugetsound.edu

Beth Pfeiffer, PhD, OTR/L, BCP, is Associate Professor, Department of Rehabilitation Sciences, Temple University, Philadelphia, PA.

In spite of the increased use of computers and tablets by children of younger and younger ages, handwriting remains an important skill for school success and continues to be a critical skill for elementary school students to acquire (Feder & Majnemer, 2007; McCarney, Peters, Jackson, Thomas, & Kirby, 2013; Vander Hart, Fitzpatrick, & Cortes, 2010). Research has suggested that kindergarteners spend 36%–66% of their day participating in fine motor activities, with 42% of that time spent completing paper-and-pencil tasks (Marr, Cermak, Cohn, & Henderson, 2003). Beginning writers still do most of their composing by hand (Graham, Harris, & Fink, 2000), and difficulties with handwriting can have far-reaching effects on a child's self-esteem and academic success (Feder & Majnemer, 2007).

It is well documented that handwriting instruction leads to handwriting automaticity (Berninger et al., 2006) and that automaticity leads to improvements in the output and content of written work (Graham et al., 2000). Graham et al. (2000) noted that first-grade students in a handwriting intervention group made notable gains in scores on both handwriting legibility and writing fluency. They concluded that the mastery of handwriting skills appears to facilitate the initial process of learning to write and that explicit handwriting instruction is an important element in preventing writing difficulties in the primary grades (Graham et al., 2000).

In addition, research has suggested that handwriting instruction can improve letter recognition and word reading skills (Berninger et al., 2006). Letter recognition skills have in turn predicted future reading abilities (Oslund et al.,

Sheryl Zylstra
Beth Pfeiffer
AJOT
April 27, 2016



BEFORE & AFTER

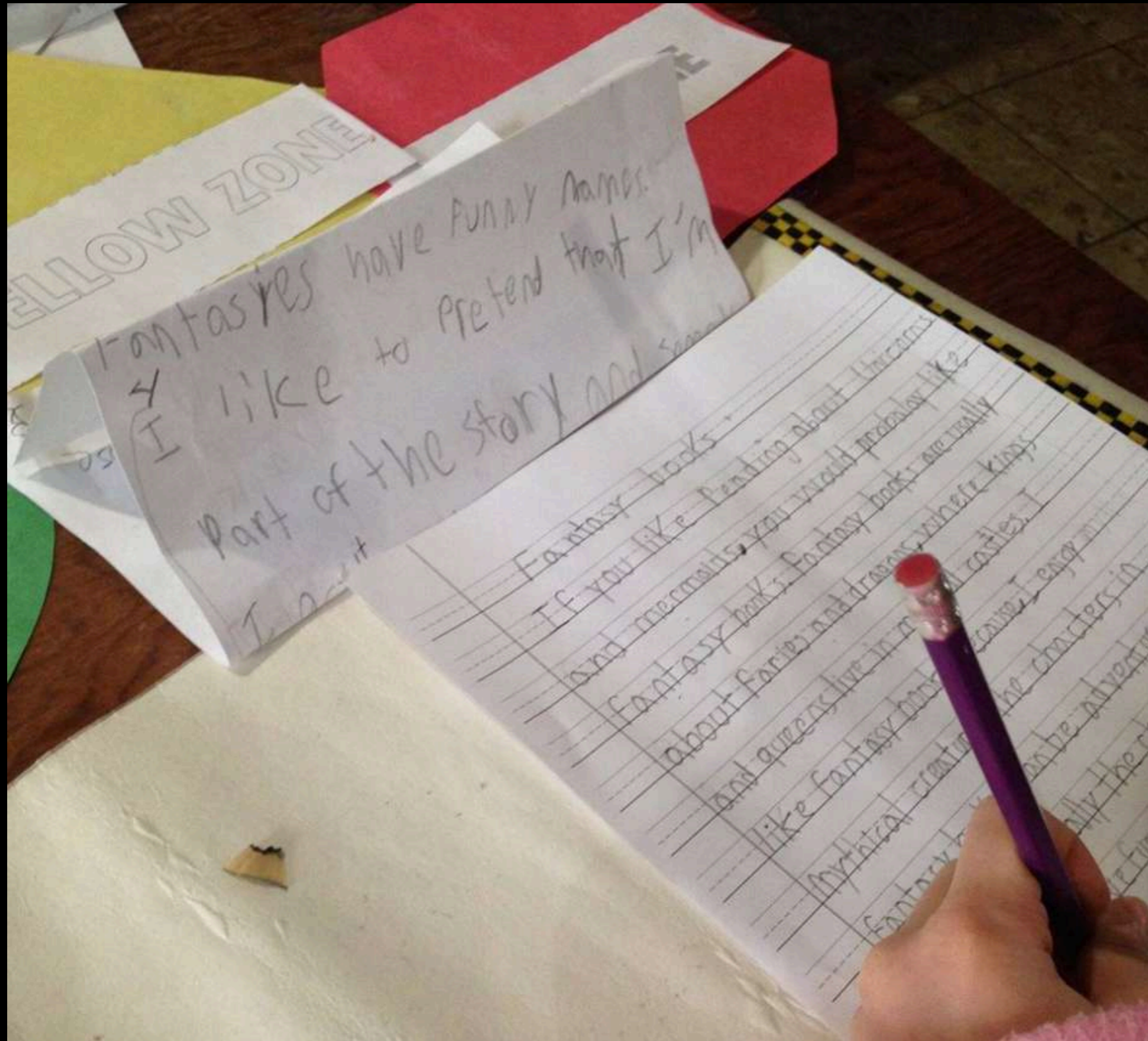
S M H P

INTERVENTION

Children's

Writing Samples

Need a little more convincing...



Need a little more convincing...

size 1 size 2 size 3
why didt Why D: P Why the
th/

What is a teacher's three
favorite words?
June, July & August!!

1st session
SMHP

What is a teacher's
three favorite words?
June, July, and August.

What is a teacher's
three favorite words?
June, July, and August.

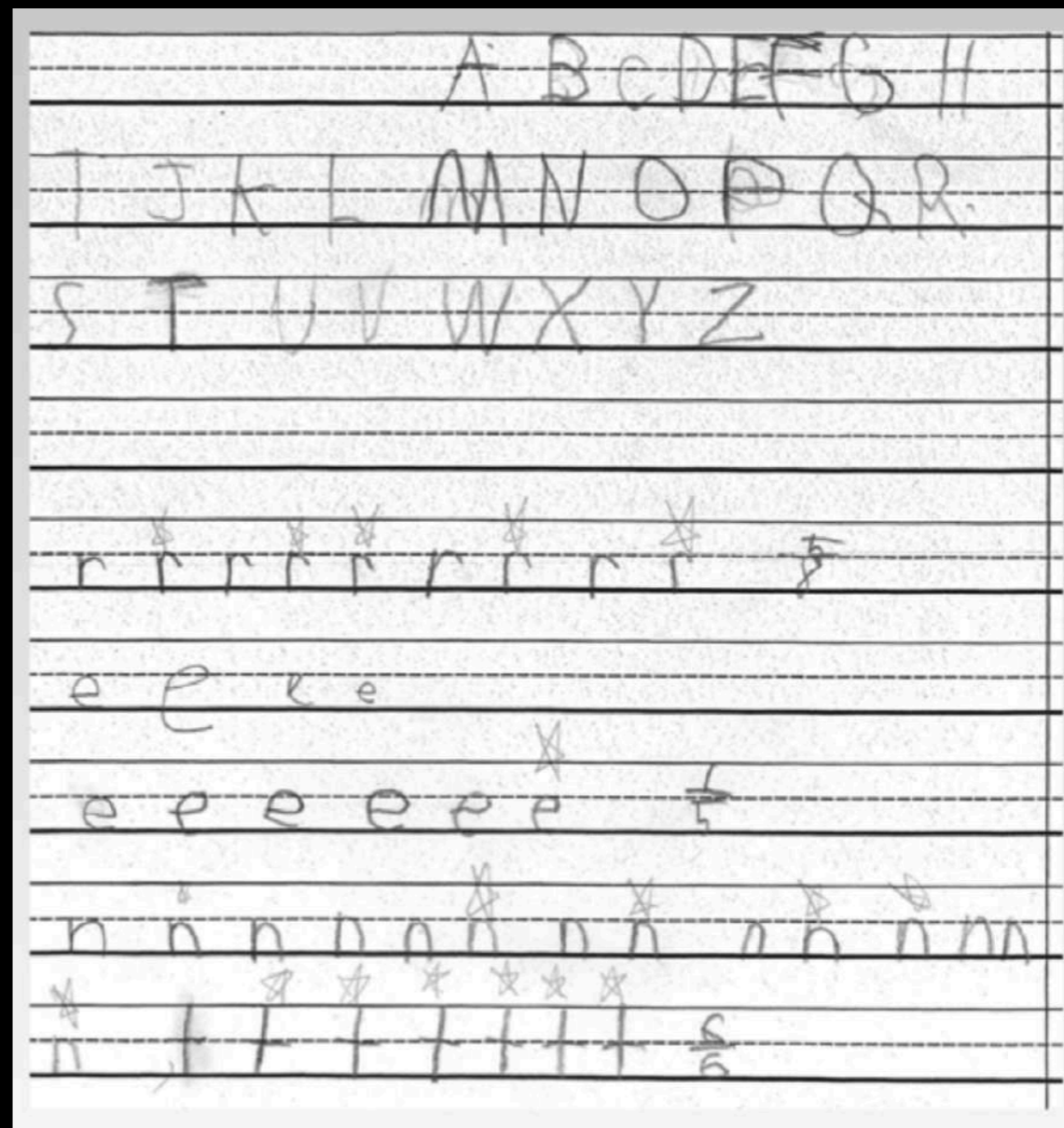
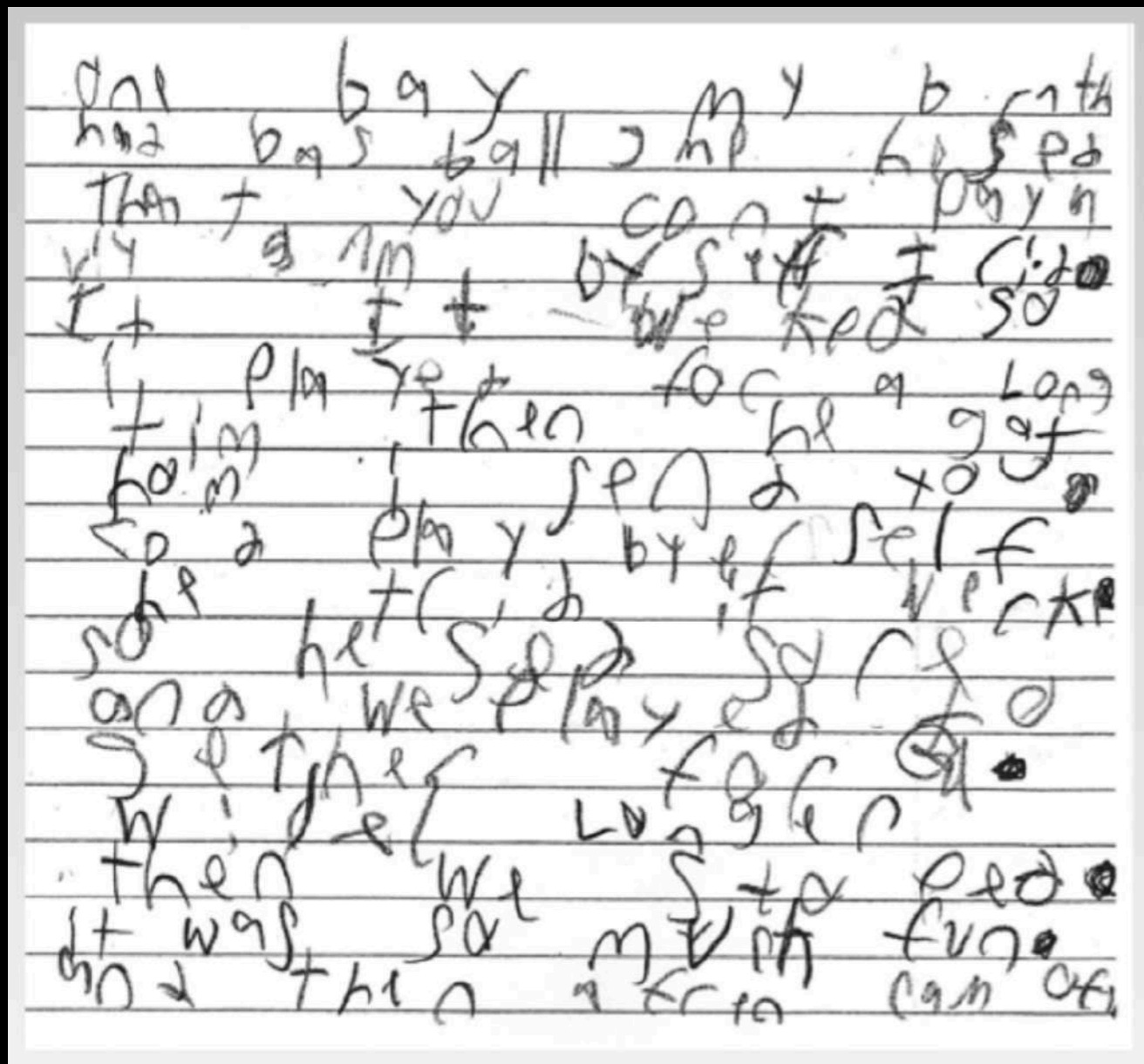
3rd session!!!
SMHP

What
teacher's
three
words?

2nd session
SMHP

Need a little more convincing...

2nd grader



4 years of HWT

4 weeks of SMHP

August 16, 2017

My summer is vacation
do I go fishing every 12 weeks
when I put my fingers in the water
& I regret not catching fish.

September 2017

Today I am going to go fishing
I caught a big fish (heart)

February 8, 2018

The knight in the cast wishes
to fight with the knight that
is trying to kill the dragon. The
girl and the duke are running
for their lives.

transposes

2nd grader
ADHD/LD

5th grader Through telepractice

vote in 1870 because it was not far,
that men could vote and women
could not and that are equal.

Her cat snores loudly on the house.

Need a little more convincing...

1st week of March 2017

March 16, 2017

In classroom by March

"Putting it all Together" 3rd grade ADHD

Name: Frank Date: _____

What To Do:
Readers often have a moment in their minds where all the pieces in a text get put together and the text makes complete sense. Describe different parts of the text in each puzzle piece. Then put all the pieces together and explain in your own words how the text makes sense.

Read this to me please

2 PUTTING IT ALL TOGETHER:
I knew that the Empire State Building gets struck by lightning too many times a year. Grand Central has the most platforms. New York is the biggest city. The Empire State Building is tall buildings. I know New York is the biggest city.

Challenge:
Cut out all the puzzle pieces. Take three pieces away and give the rest to a partner. See if your partner can understand the big picture with three pieces missing.

3rd
grader
ADHD

3-16-17
OT

I knew that the Empire State Building is in New York. I know New York is land. I know New York is big. The Empire State Building gets struck by lightning too many times a year. Grand Central has the most platforms. New York is the biggest city.

Later the same week.

Monday, October 1st
lunes, 1 de octubre

Tuesday, October 2nd
martes, 2 de octubre

Wednesday
miércoles

Language Arts

Science


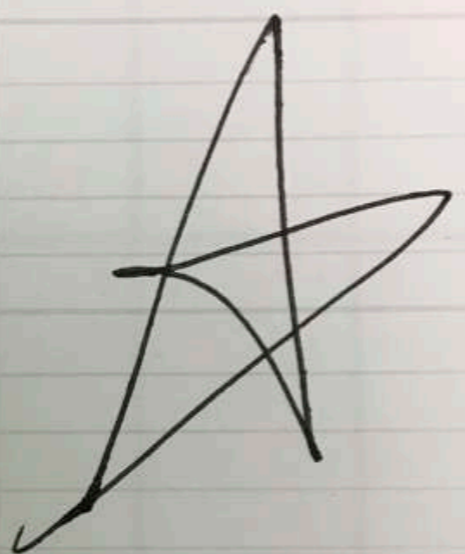
Social Studies

Mathematics

3 LOG

20 min for

20 min for



Math Ref/let
Match
Test Thursday

Add/Subtract
review page
Add/Subtract
Post Test

(Mw) Math

Spelling words

1. crust
2. cube
3. food
4. fruit
5. build
6. trust
7. burn
8. tooth
9. juice
10. from
11. bump
12. dude
13. smooth
14. suit
15. spoon

Sentences

1. Please hand me an paper

7 year old with Autism

The quick red fox jumped over the lazy brown dogs.

5/29/18 Wraylon likes macaroni and
cheese.

Mom says, "He loves to write now!"

Need a little more convincing...

Transfer student.
No prompts.

⊕ 9/8/17
I love chapin because...
I am meeting a lot of nice people
I have also made a lot of friends.
Also there are some nice
people I met miss Amy also
miss hill. And last but
not least miss Burgess.

I love chapin because...
I am meeting a lot of nice people
I have also made a lot of friends.
Also there are some nice people I met
miss Amy also miss hill. And last but
not last miss Burgess.



Amy Naughton

22 hrs

Holy cow you guys!

This is a student who transferred to me from another school in my district. Top is 2 weeks ago with no prompts. Bottom is after teaching the concepts I learned in Beverly Moskowitz's Size Matters webinar. I also had him write with a mechanical pencil this time to help with pressure.

Two weeks later
after teaching
concepts

Name _____ # 9 Date: 9-23-16

8. naps naps

9. sits sits ¹⁴/₁₆ + bonus

10. win win

11. eat eat

12. four

13. 4 five

14. her her

hit hit
sits sits
nap nap
fit fit
sit sit
fits fits
wins wins

← BEFORE

AFTER →

Name _____ # 9 Date: 9-30-16

1. men ¹⁴/₁₄

2. red

3. step

4. ten

5. net

6. leg

7. sled

8. bed

9. wet

10. jet

11. small

12. saw

13. your your

14. tree

Wow! This handwriting is awesome, Ben!
I'm so proud of you!

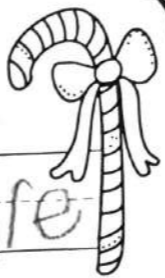
over →

12/7/17

9/21/18

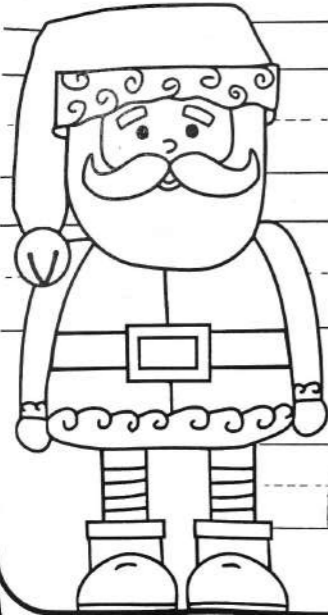
Merry Christmas

Dear Santa,



Hi Santa, how are you? I hope you are good. Merry Christmas.

From,
Brian



©LidiaBarbosa @KinderAlphabet

Today is Friday September 21st 2018

It is a sunny morning. The weather changed to cold and windy. When my mother is out sick I will remember to fly kite. On my walk I saw 2 pigeons and 1 hawk. I heard 2 dogs on the walk. I smell fresh air.

"Size Matters is the best handwriting program I've used. I've shown it to all my teachers, and many of them have taken me up on co-teaching a short lesson to the whole class! It's enabled me to do a lot of really cool collaborative things with students both on and off my caseload. No other technique I've used has shown such quick results. I also like that the program concepts are easily teachable to my students with learning disabilities. And I love that the program is so embeddable into other curriculum and that there aren't a ton of prohibitive start up costs. It has really helped to get my teachers on board."

Devon Breithart, OTR/L
Santa Cruz, CA

**6th grade boy with ADHD
Public School
West Virginia**

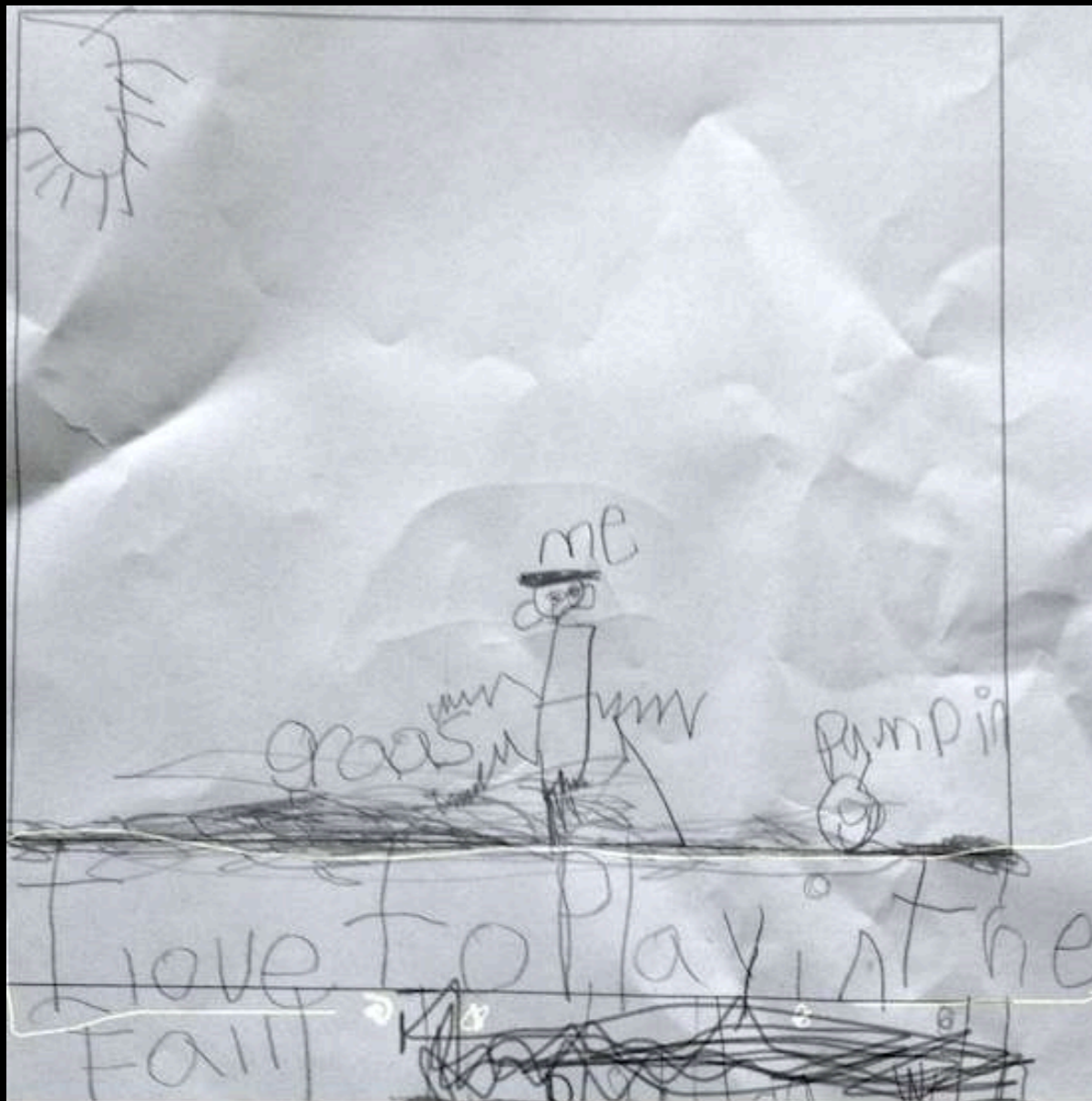
I came from NJE.
I like to play with my brother.
I have ADHD.

**Student participated in
3 half-hour sessions.**

Nine weeks later.

cell membrane
cytoplasm
mitochondria
chloroplast
chromosome
membrane
Punnett square
dominant
recessive
cell wall

September 5, 2018



First Grader
Autism

November 2018

Print the words that are said on the lines.

1. m a d → m a d e

2. p o d → p o d e

3. m o n → m o n e

4. c a p → c a p e

5. s h a m → s h a m e

Directions: Have students write each word that you say.

Unit 2 11
© 2013 Core Knowledge Foundation

Deborah Mortonson
Milwaukee, WI

Name _____
Choose
each cc

sentence for
box to help you.

Fall Fun Sentences



Word Box

apple Autumn windy tree boy girl leaves
pumpkin eating picking wagon scarecrow

1. The boy and the girl
are climbing.

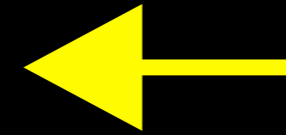
2.

3.

Before: 10/9/18

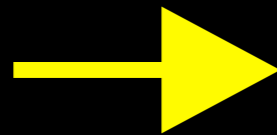
introduced to
Size Matters on
11/20/18

1st Grade - Boy



Before

After



The boy and The girl
are climbing.

1st grade boy

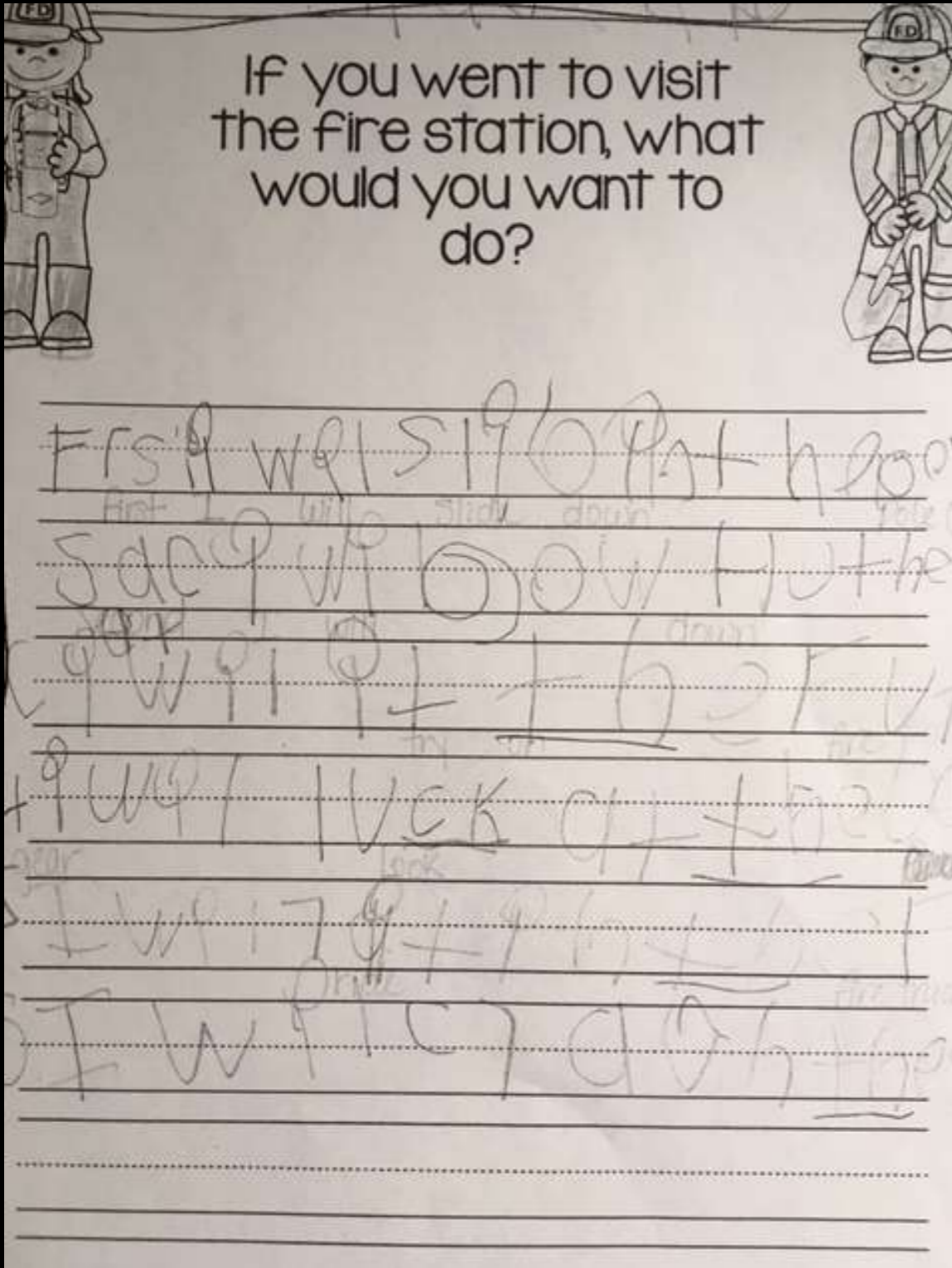
After 1/22/19

DX: specific learning
disability (SLD)

Beavercreek, Ohio

10/10/18

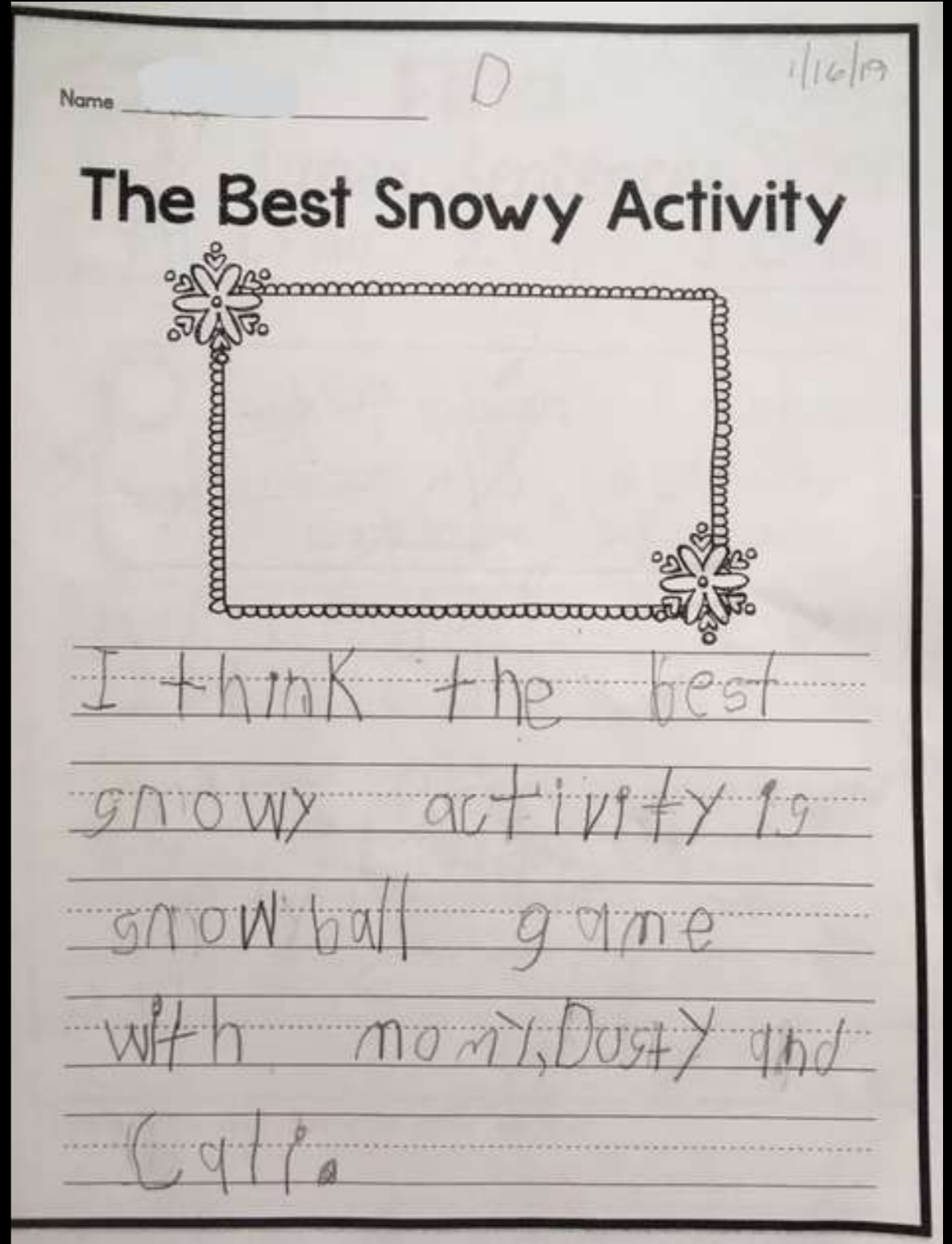
1/16/19



If you went to visit the fire station, what would you want to do?

Handwritten student responses on lined paper:

Frst I will slide down the fire
scooter with the fire truck
I will go to the fire
truck and look at the
fire truck and the
fire truck and the
fire truck and the



Name _____ D 1/16/19

The Best Snowy Activity

I think the best
snowy activity is
snowball game
with mom, Dora and
Celia

My favorite
thing:

DOG

4/30/18

'dogs'

BEFORE

When I grow up I
want to be...

VIDEO

PACK

4/30/18

'video game maker'

4th grade
Learning Disability

Ellensburg, Washington

I love dogs. ★

AFTER
4/30/18

I came from a School in Canada.

I like to play hockey.

I have won a championship game in Canada.

**6th grade boy with ADHD
Child participated via Rtl
OT took the webinar series**

Nine Weeks later.

1 think think

3 quite quite

1 rocky rocky

1 bunch bunch

1 couch couch

2 fifty fifty fifty

1 forty forty

1 mulch mulch

2 drive drive drive

6 poles poles poles poles. poles poles poles

Wheres Queen Elsa?

I don't snowman

Same session... a few minutes apart.

Wheres Queen Elsa?

I don't snowman!

Name: Grade 2-Boy
ADHD/Dyslexia
Kettering Ohio

1/10/2019
Independent
writing in
class

I woke up to a loud
noise and I saw... people
pans it was scared
He had 10 cans
very had a J/O
it was really cool

Teacher Prompt

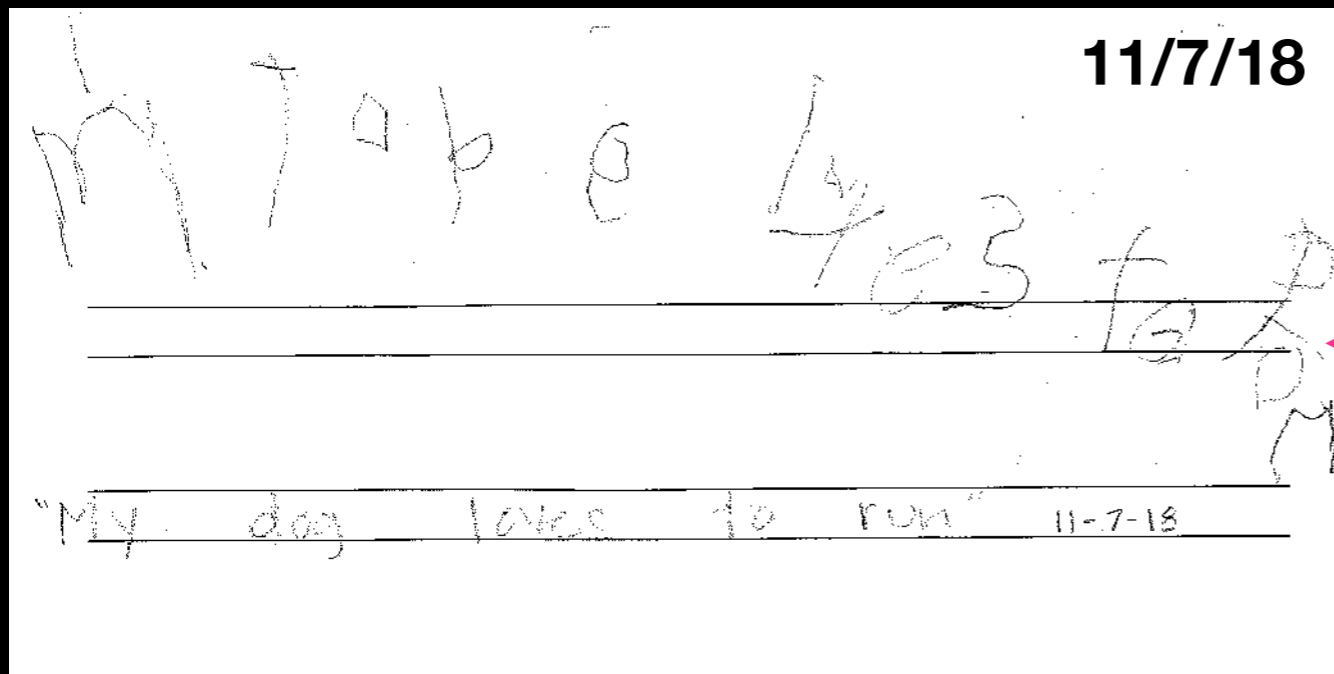
Student Writing 1/19

Grade 2-Boy
ADHD/Dyslexia
Kettering Ohio

2/7/2019
Independent
writing in
class

Me and my cuzin
are going to have a ten
to dance saw we can
have 100 dollars. We need shorts and
hats and shoes and mask and shoes. And a
stay to.

Student Writing 2/19



1st grade student with a seizure disorder. None of his print was legible in the classroom.

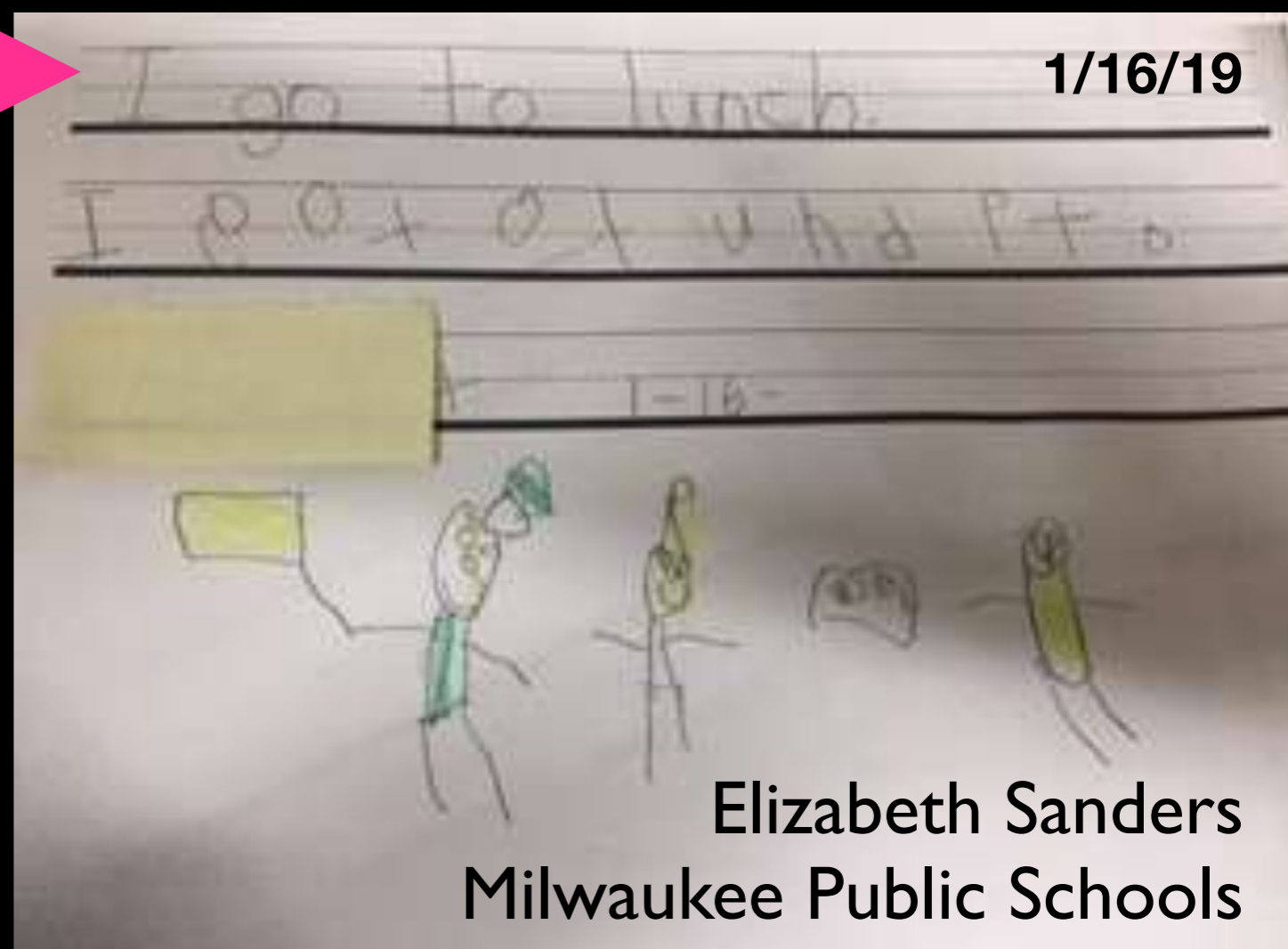
BEFORE was with a near point model and continuous verbal cues for every letter. In class, he did not place any letters on the line nor write left to right unless cued for every letter, as in this sample.

AFTER only 4 SMHP sessions.

R still needs a printed model, but NO additional assistance.

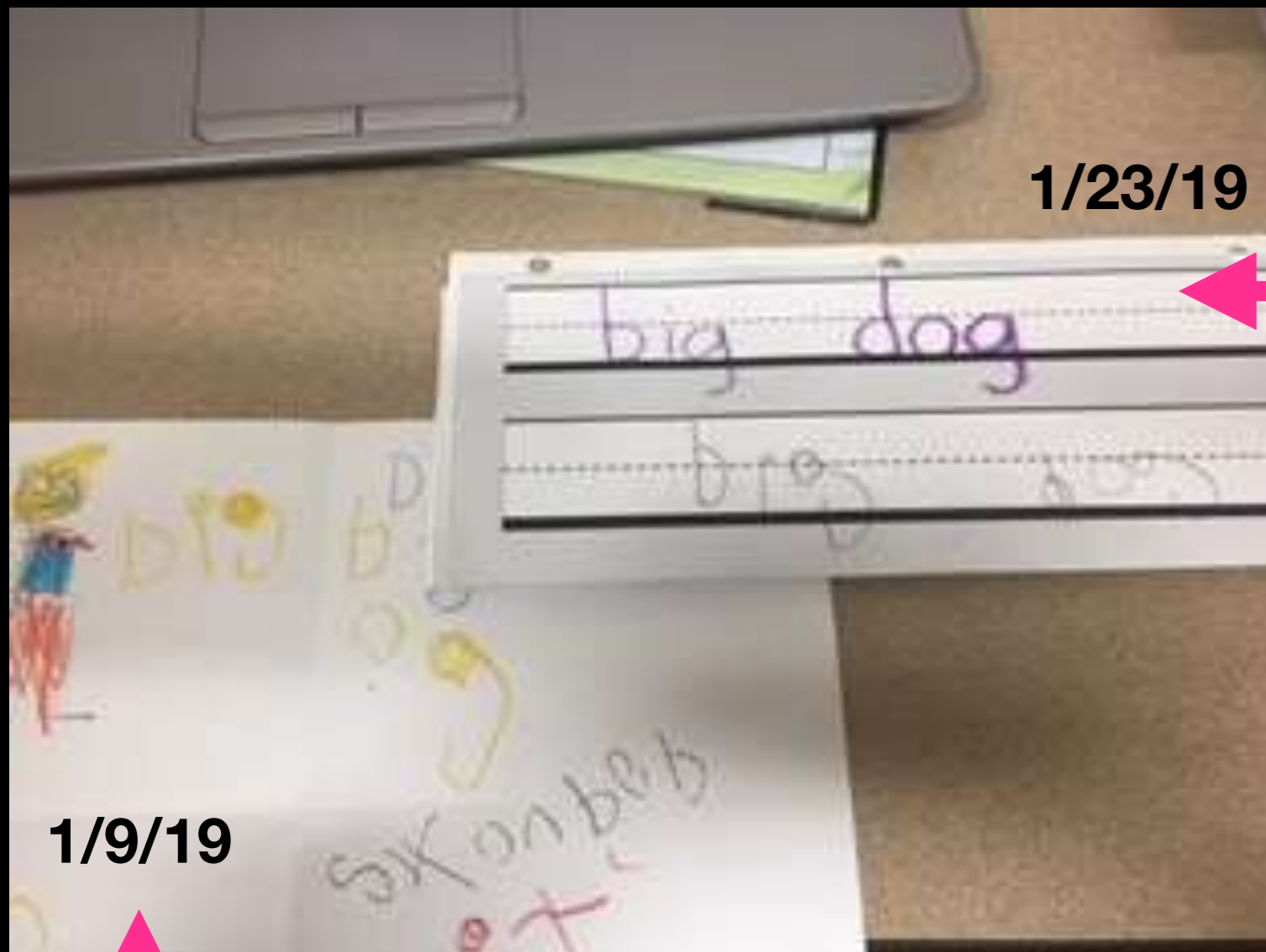
He also prints his name with 100% legibility including correct line placement.

Left to right directionality is pretty consistent now.



Elizabeth Sanders
Milwaukee Public Schools

K-5 student with Autism



AFTER only two sessions of Size Matters.

Near point model.

Student cannot print in a straight line nor write letters the correct size without adapted paper.

Teachers are now using SMHP paper.

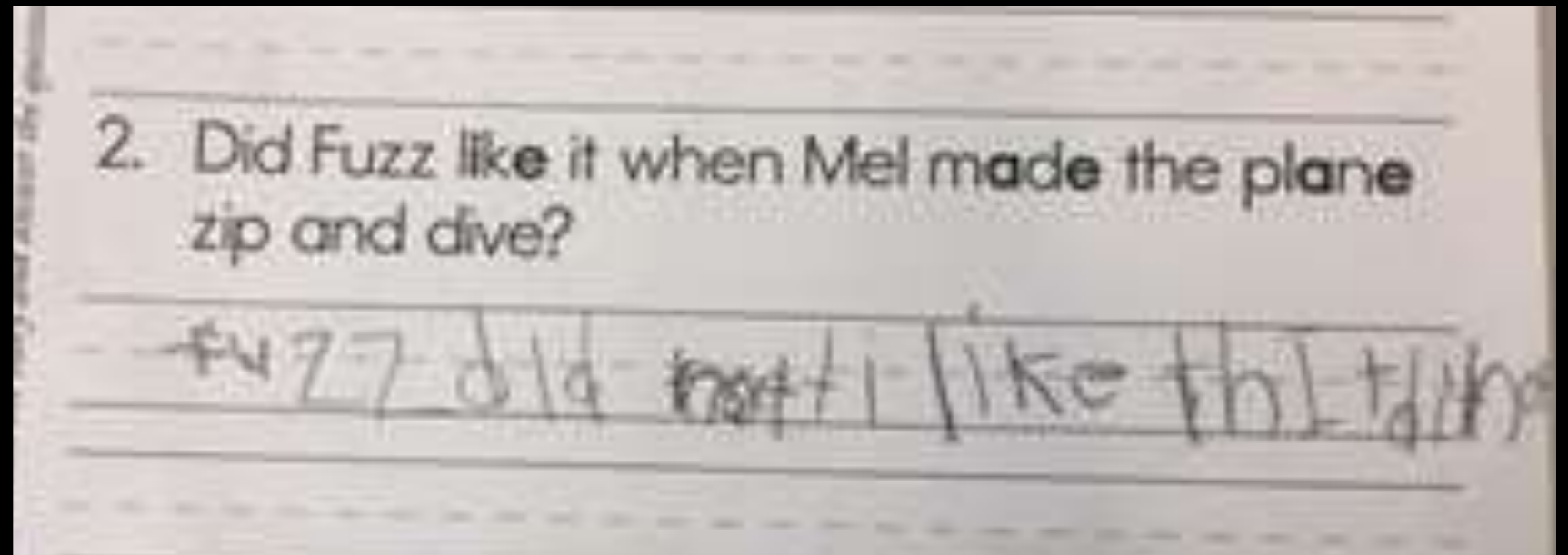
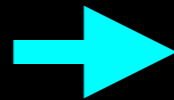
BEFORE

Student used computer paper and a near point model to write 'big' and 'dog.'

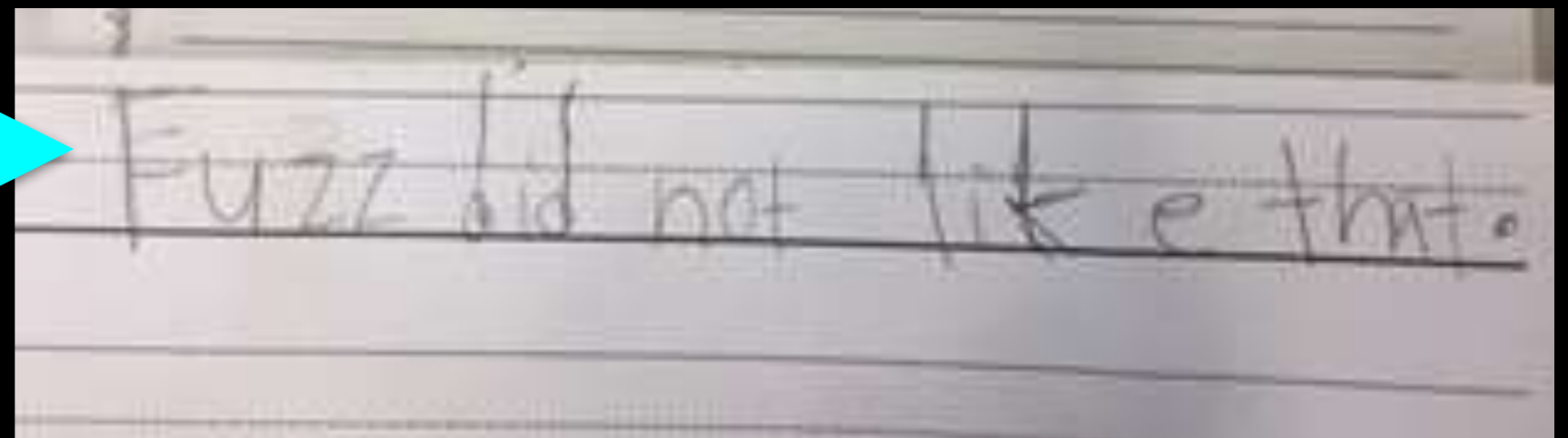
Elizabeth Sanders
Milwaukee Public Schools

1st grade student with Lead Exposure

BEFORE



AFTER



one month working on
'Touching the Lines'
and Spaghetti and
Meatballs, carryover
was noted in the
classroom.

Without SMHP paper, Student gets confused.

With SMHP paper, she remembers to 'touch' the line
and use correct spacing between words

Elizabeth Sanders
Milwaukee Public Schools

FEEDBACK from the TEACHERS

- Kids grasped the concepts, especially Star-Worthiness



- Immediate improvements
- Dice Game very motivating
- Easy reference points
- Fun materials
- Carryover happening throughout the day
- Kids wrote slower and took pride in their work
- Looking forward to using next year!

PARADIGM SHIFT

Concept

It's all about Legibility.



LEADING
EDGE



FORWARD
THINKING

FISCALLY and Environmentally RESPONSIBLE

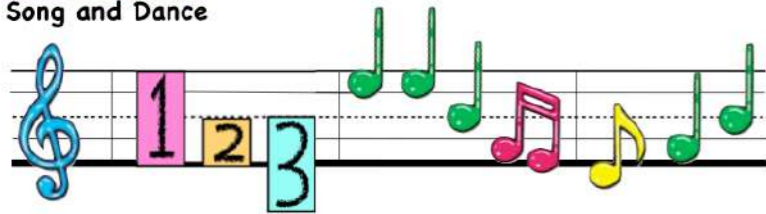
- Only one grade level of consumable workbooks
- Adapted writing paper is approved for copying
- Additional supportive materials can be reused



MULTISENSORY

Multi-sensory

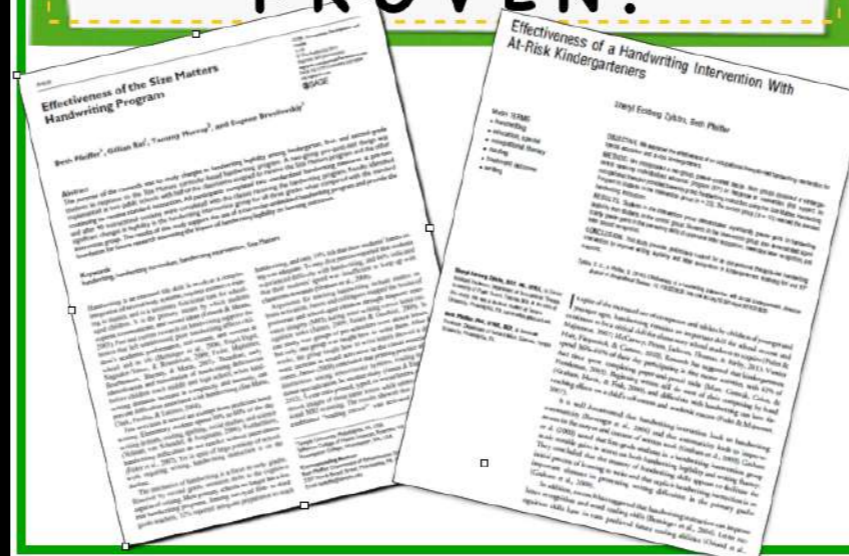
SIZE ONE RULE
Song and Dance



Touch the **Top Line**.
Touch the **Bottom Line**.
Can't go higher. Can't go lower.
And can't float in the middle.



PROVEN!



EMBEDDABLE

Cuts across the curriculum in all subjects

Variety of applications:

- #1 As a Push-in collaborative lesson
- #2 As a Pull-out therapeutic intervention
- #3 As a stand alone curriculum
- #4 As a Handwriting Club
- #5 As a home program
- #6 As a Center
- #7 In Response to Intervention



CHILD-CENTERED

How many letters are you going to write?

4!

And how many **STARS** are you going to earn?

4!

I believe in you!

Child-Centered



Child Empowerment

Using cognitive-based approaches, children improved performance on their three self-identified goals, maintained their skills after intervention and reported satisfaction on all of their goals.

Polatajko



MEASURABLE

- Simple rubrics and formulas
- Easily calculated percentages
- Scoring takes seconds
- Star-worthiness is objective

Are letters touching the lines or not?



- Teachers, kids and parents can score
- Kids can score each other



REALISTIC

- Gives teachers language and tools they can incorporate into their day.



- Uses powerful motivators, kid-friendly concepts and meaningful visuals
- Designed to maximize the limited available time and resource
- Reinforces language used in the curriculum. Nothing artificial.
- Stays focused on readability and functionality.

Want to bring SMHP to your School?



Neat handwriting can be as easy as 1-2-3.

Fun. Teacher-friendly. Affordable. Evidence-based.
Measurable. Embeddable. Easy. Kid-empowering.



... because when it comes to neat printing SIZE MATTERS!



bev@realOTsolutions.com ★ realOTsolutions.com

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