

Where CCR Math and ELA Skills Overlap January 18, 2-3 pm

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*New England Literacy
Resource Center*



WORLD EDUCATION

Webinar Tools

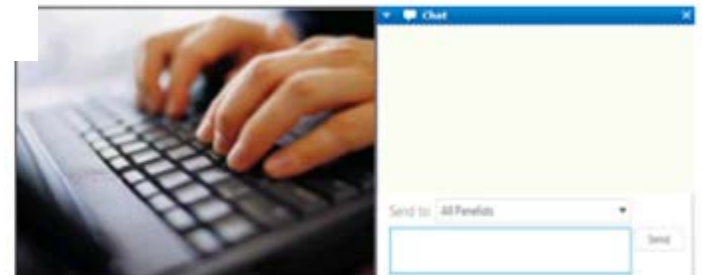
Cell-Ed: Upskilling Frontline Workers with Mobile Learning



Jen Vanek
Kathleen O'Connell
Jessica Rothenberg-Aalami



Use chat box for discussion



Acknowledgments

It was my work on the Math issue of *The Change Agent* that tuned me in to the rich interdisciplinary nature of math and ELA work. Thanks to the editorial board of the Math Issue for support, wisdom, and new insights!



Editorial board (from left): Connie Rivera (SABES), Betsy Alvelo (student at Hartford's HOME program), Delvin Beasley (community activist), Sarah Lonberg-Lew (SABES), Andy Nash (NELRC), Ebony Vandross (World Education), Cynthia Peters (Change Agent Editor), inset (from top): Cynthia Bell (Literacy Assistance Center, NYC), Donna Curry (SABES), Sadeka Harris (teacher at the Bronx Adult Learning Center, NYC), Heidi Schuler-Jones (SABES).



Many Ways to Say It!

*Sylvia has 3 siblings. Dana has 6 siblings.
Mario has 1 sibling.*

Write two statements comparing the number of siblings that Sylvia, Dana, and Mario have. Use phrases like: more than, less than, twice as many, half as many, etc. Check with your classmates. How many different ways can you express the relationship between the number of siblings that they each have? Draw a picture to help you see the relationships.

Sylvia - 
Dana - 
Mario - 

One Way to do this in the Classroom:

- Post the problem on large pieces of newsprint around the room.
 - Sylvia and Dana
 - Sylvia and Mario
 - Mario and Dana
 - All three
- Students divide into groups and add statements to sheets.
- After everyone has added to all sheets, gallery walk.

Help me, Mom!

Abir Yousef

BEFORE YOU READ: What English words are helpful when you are doing math “in English”?

When I was a small girl, I said, “Mom, please help me with my math homework.” I didn’t have any-

Now I learn English to help me in math.

one to help me. She cried because she didn’t go to school when she was a girl. This was so hard for

me. I practiced by myself for a long time. I feel I am strong in life. Math is important. I did well in math. I remember my teacher in school told me, “In the future, you must study to be an engineer.”

My children like math and they do well too. Sometimes they tell me, “Mom, please help us.” But I feel sad because it is hard to help them. I need more English. When my children were small, I could teach them math. As they’ve gotten older,

some of the problems are too hard. Some-

times, it takes me one hour to find the right answer. Now I learn

English to help me in math also. I use math all

the time in my life. I like math. I want to find a job very fast and math will help.



Abir Yousef is a student at the IRIS Mother & Child ESOL Program in New Haven, CT. She is from Syria, where she studied psychology at Damascus University. When she went to Jordan, she worked for the International Rescue Committee helping refugees. Now she wants to study to be an ultrasound technician in the USA and work part-time because she has seven children.

AFTER YOU READ: Think of more ways of expressing the math problems in the box below (left). Try using phrases like “more than” and “less than.”

In this workshop, you will:

1. Consider some of the merits of interdisciplinary learning.
2. Learn the interdisciplinary nature of some math and ELA practices (derived from the CCR standards).
3. See modeled and experiment with lesson activities that simultaneously build math and language skills.

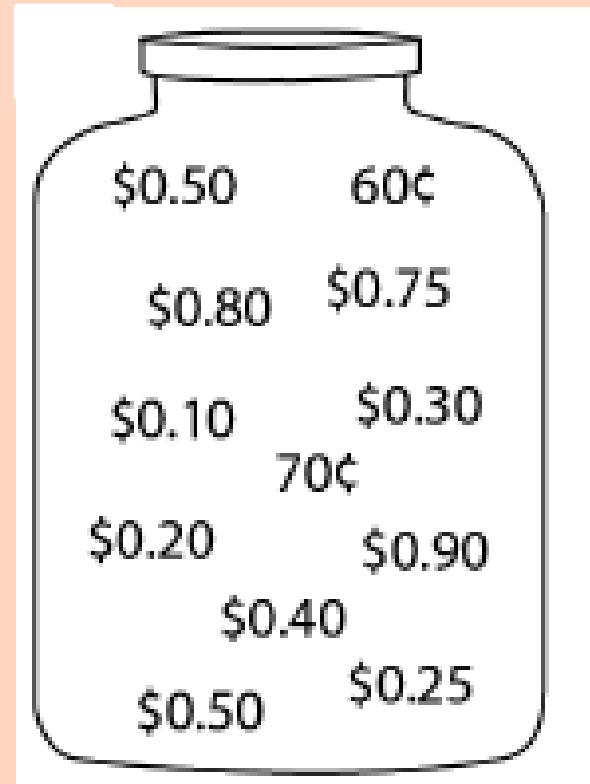
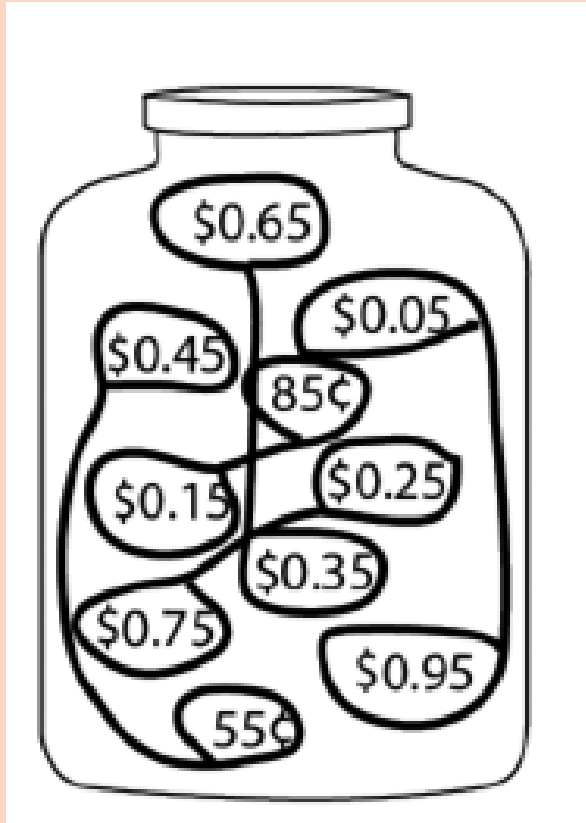
Why an Interdisciplinary Approach?



It helps students develop the ability to transfer skills and knowledge:

- **How can I solve this?**
- **Practice recognizing patterns.**
- **Experience success using strategies.**

It's Not Magic



**“I Wish I Knew It Is Not Magic”
by Connie Rivera
p. 54 of the “Math”
issue of *The Change Agent***



Interdisciplinary Nature of Standards

Math Practice

1. Make sense of problems and persevere in solving them.

ELA Practice

1. Be able to grapple with increasingly complex texts.

Interdisciplinary Nature of Standards

Math Practice

2. Construct viable arguments and critique the reasoning of others.

ELA Practice

2. Point to evidence in texts to support arguments and use evidence in your own writing to make arguments.

Interdisciplinary Nature of Standards

Math Practice

3. Attend to precision.

ELA Practice

3. Punctuation, capitalization, spelling, paragraph indents, margins, etc.

Interdisciplinary Nature of Standards

Math Practice

4. Use appropriate tools strategically (paper, pencil, calculator, ruler, protractor, spreadsheet, etc.)

ELA Practice

4. Use appropriate tools strategically (dictionary, grammar check, spell check, Internet search, feedback from others)

Many Ways to Say It!

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Sylvia - 
Dana - 
Mario - 

Math Practice

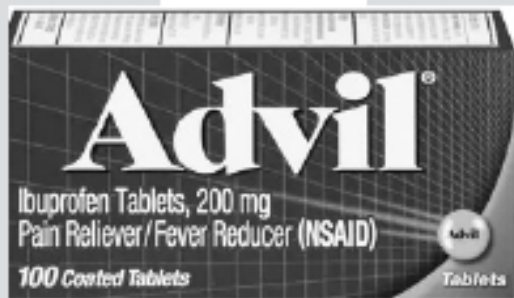
1. Make sense of problem & persevere in solving it.
2. Construct viable arguments and critique the reasoning of others.
3. Attend to precision.
4. Use appropriate tools strategically

ELA Practice

1. Grapple with increasingly complex text.
2. Point to evidence in texts to support arguments and use evidence in writing.
3. Be precise. Write clearly with proper mechanics, etc.
4. Use appropriate tools strategically

Comparison Shopping Requires Math!

\$8.99



Brand name tablets,
200 mg each,
100 tablets per box.

\$7.99



Brand name "liqui-gels,"
200 mg each,
40 "liqui-gels" per box.

\$10.99



CVS brand tablets,
200 mg each,
200 tablets per box

What math do you have to do to figure out the product that is best for you?

If you shop for the cheapest price per box, which one would you choose? If you shop for cheapest unit cost (price per pill), which would you choose?

What else do you have to take into account? For example, maybe "liqui-gels" are easier to swallow, so it may be worth paying more for them. Also, is it *a/ways* economical to get more tablets for a cheaper unit cost? Explain.

Using Math to Start a Poultry Farm

Mustafa

BEFORE YOU READ:

1. What is poultry? Read the definition below and use it in several sentences. Learn the words cost, revenue, and profit.
2. What math do you think a person might need to be able to start a poultry farm?

When I first came to the United States, I spent a lot of time with my uncle, who has a good mind for business. We discussed different ideas, and I kept a small notepad with me where I gathered information.

I bought 100 bags of chicken feed at \$35 per bag.

He was glad that I was thinking about opening my own business. He started asking me questions about my plans. I told him that I wanted to start a small organic poultry farm of 500 chickens.

The chickens would need space to roam freely and receive sunshine, so it was important for me to think about how many square yards I would need



to help me replace a fence. It took 59 hours to finish the work. When we were done, I paid him \$1,062 for his hard work, which is \$18 per-hour.

It was a great feeling to make the property ready. My next job was to buy the chickens and everything they would need. I bought 100 bags of chicken feed at \$35 per bag. I bought PVC pipes to use as chicken feeders which cost \$400. I installed a \$900 solar panel and many other things. And finally, I bought the 500 chickens, which cost about

After you read...

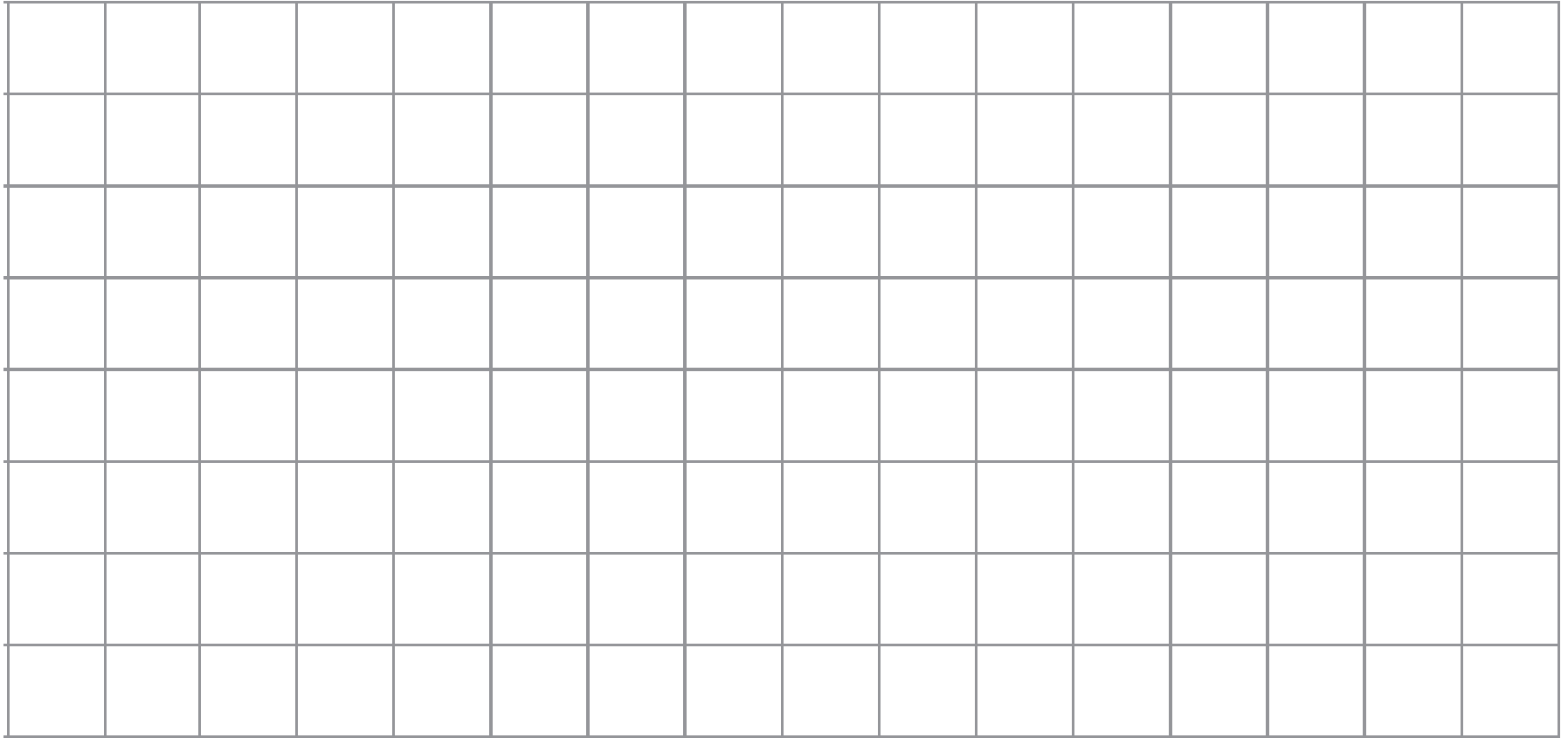
- 1 . How did Mustafa arrive at the total of \$14,000 to start the poultry farm? Which of the expenses were one-time expenses and which are repeating?
2. How much money does he earn from the farm in five months? How much does it cost him to run the farm for five months? ... Make a spreadsheet to show your work.
3. What reasonable changes could he make to bring in more revenue in less time? Show the changes in your spreadsheet.

	A	B	C	D	E	F	G	H	I	J	K
1	Mustafa's Poultry Farm Income and Expenses Over 19-Month Period										
2											
3		Month 1*	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10
4	Income										
5	Loan	14000									
6	sell eggs (33 dozen @ \$6 per dozen)	5940	5940	5940	5940	5940	5940	5940	5940	5940	5940
7	sell chickens to slaughterhouse						5500				
8											
9	One-Time Expenses										
10	Replace fence	-1062									
11	PVC pipe	-400									
12	Solar panel	-900									
13	500 chickens	-8135					-8135				
14											
15	Repeating Expenses										
16	Rent	-1000	-1000	-1000	-1000	-1000	-1000	-1000	-1000	-1000	-1000
17	Re-pay loan			-1000	-1000	-1000	-1000	-1000	-1000	-1000	-1000
18	Chicken Feed**	-2625	-2625	-2625	-2625	-2625	-2625	-2625	-2625	-2625	-2625
19	Labor (4 hrs/day @ \$10.20/hr)***	-1224	-1224	-1224	-1224	-1224	-1224	-1224	-1224	-1224	-1224
20											
21	Total (per month)	4594	1091	91	91	91	-2544	91	91	91	91

Excel spreadsheet + other worksheets (in Word) are available to download and adapt at

changeagent.nelrc.org/in-the-classroom/lesson-packets/

Plot Out the Poultry Farm

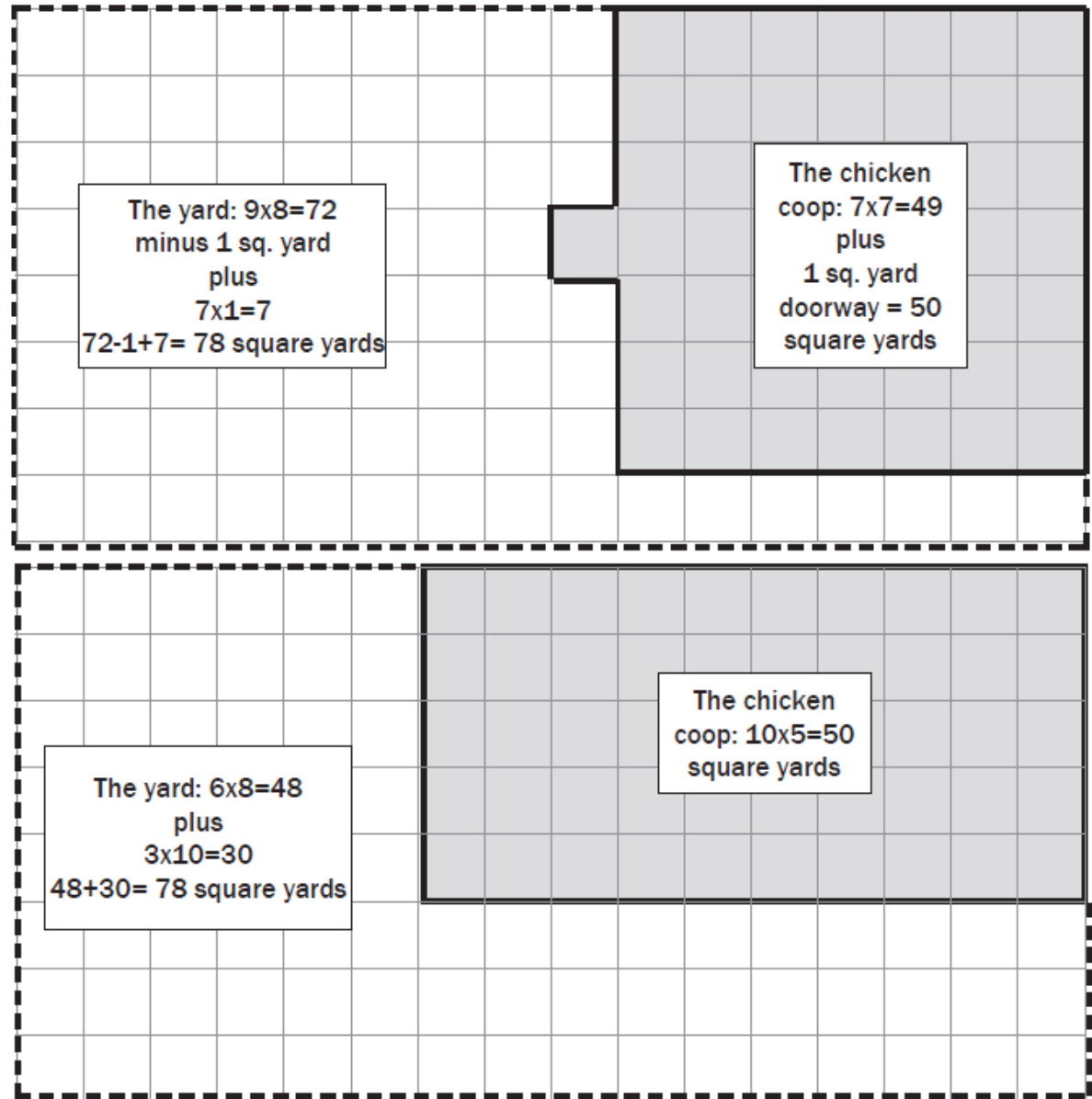


In the grid above, each square is equal to one square yard. What is the total square yardage? How did you figure it out? How could you design the space given the dimensions of Mustafa's indoor chicken coop and outdoor yard?

A full-page copy of this grid available to download at:
changeagent.nelrc.org/in-the-classroom/lesson-packets/

**This and
other
solutions
available
on our
website.**

Plot Out the Poultry Farm: Two Possible Answers



Write a letter to Mustafa

Template:

Today's Date

Name

Address

City, State, Zip

Salutation,

Indented body paragraph #1 – should include a few sentences. In the first paragraph you should introduce yourself and say why you are writing.

Indented body paragraph #2 – should include a few sentences. The second paragraph should include more substance and details about why you are writing.

Indented body paragraph #3 – should include a few sentences. The third paragraph should conclude the letter and perhaps say something about next steps if appropriate.

Sincerely,

[your signature here]

Your name

Address

City, State, Zip

August 31, 2018

Mustafa
c/o The Change Agent
44 Farnsworth St.
Boston, MA 02210

Dear Mustafa,

I am the editor of *The Change Agent*, and it was a pleasure to include your very interesting article in our Math issue. I am writing now to give you some advice. Granted, I know almost nothing about poultry farming, but I have some advice for you anyway: look for another career!

Being a poultry farmer seems like very hard work, and after reading your article, I can't tell if you even get paid for your labor. I did some research, and I found out that predators are a real problem. I know you and your friend built a fence, but I bet you still have to worry about hawks and foxes and snakes getting into your chicken coop. Also, you might get attached to some of the chickens, but then you have to send them to a slaughterhouse! Yuck!

I know there is probably a good side to it, too. For example, you get to be your own boss. You seem like a smart and thoughtful person. But after reading your article and doing some research, I would advise you to sell the farm and find another kind of work!

Sincerely,

Cynthia

Cynthia Peters
44 Farnsworth St.
Boston, MA 02210

Letter Writing Rubric

This rubric will be used to grade your letter. Study the rubric to see what the teacher will be looking for when he or she grades your letter. After you get your grade, re-write your letter and see where you can increase your points.

	4 points	3 points	2 points	1 point	TOTAL
Letter parts	Includes: 1) date, 2) recipient's address, 3) salutation, 4) three body paragraphs, 5) your signature, 6) your address	Has four out of the six letter parts	Has three of the seven letter parts.	Has two or fewer letter parts.	
Presentation	Margins are present. Neatly written or typed.	Margins are not consistent. Neatly written or typed.	Margins are not consistent. Unevenly written or typed.	Margins are not present. Handwriting or typing interferes with readability.	
Conventions	Excellent punctuation, spelling, and grammar with fewer than three errors.	Very good punctuation, spelling, and grammar with fewer than five errors.	Punctuation, spelling, and grammar slightly distract the reader and interfere with meaning. There are ten errors or less.	Punctuation, spelling, and grammar significantly distract the reader. There are more than ten errors.	

Math Practice

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Thank you!

Questions?

Contact Cynthia Peters cpeters@worlded.org or
Andy Nash, andy_nash@worlded.org

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<https://nelrc.org/PD/>

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that pops up at the end.