Samples of Math Notebook pages in grades K-8

Read more at www.liketoread.com and www.liketowrite.com

Teach Math with Time-Tested Techniques You Know

"If you have learned ways to help kids think effectively and understand ideas in reading and language, use them in math and you won't be disappointed." (Arthur Hyde)

1. writing… in math journals
2. partner talk
3. all the strategies
4. relating words to what you know
5. seeing story problems as stories
6. vocabulary activities
7. symbolizing

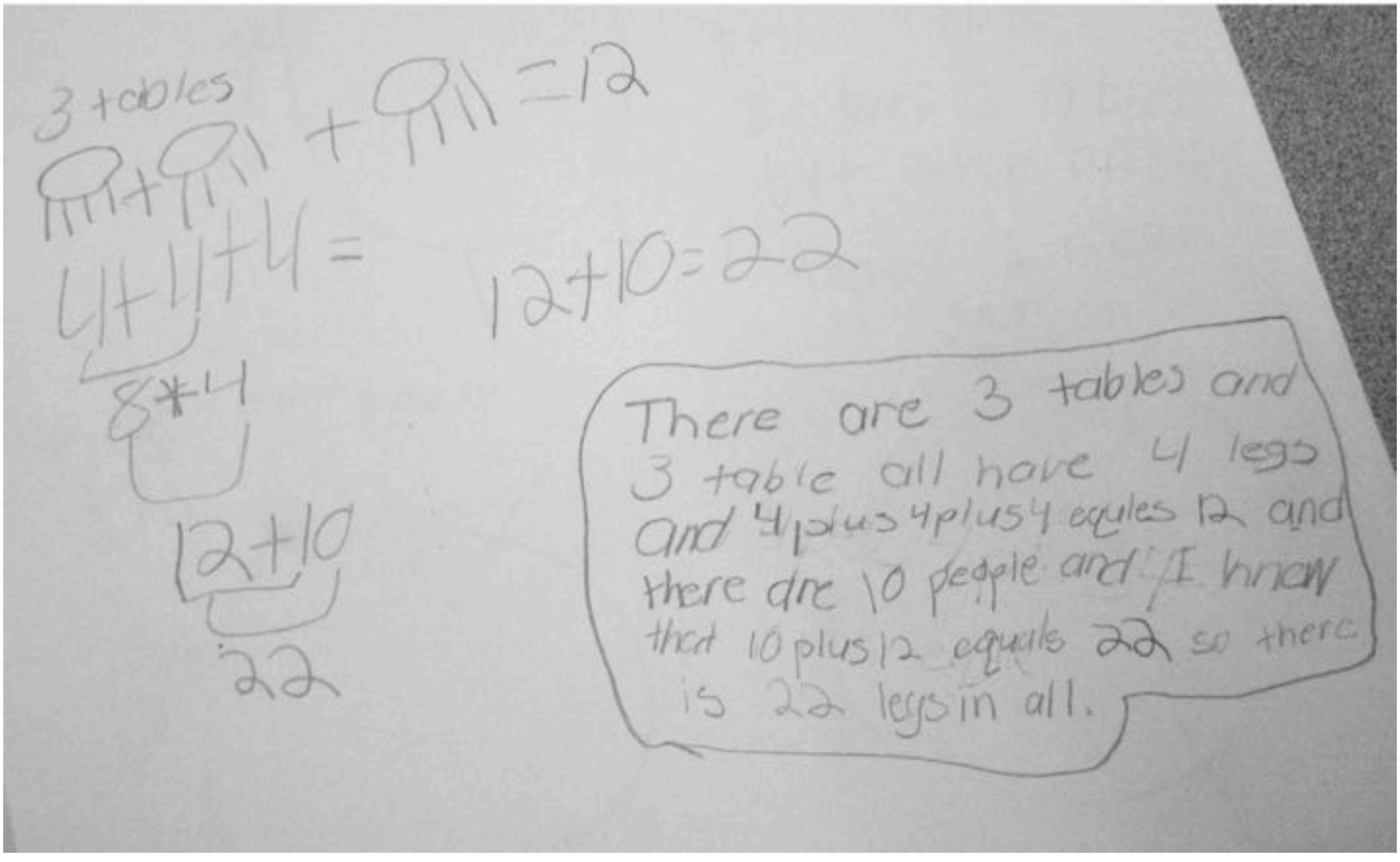
This Power Point has just a sampling of the pages students write.

Math

Every child's Table of Contents should be different. Students keep track of important entries using the Table of Contents. If all of the Tables are the same, then what's the point of having one?


Freewrite – 1st grader practices what she learned in class

Students try first solutions in notebooks so they have examples to refer to when they study in the upper grades.



New model for problem solving

George Polya 1950	Braid Problem Solving 2008
Understand the problem	Situation: Teacher presents problem embedded in real-life situations.
Develop a plan	Representations
Solve the problem	Patterns
Check	Connections (teaching)
	Extensions

KWC

K --- What you know.

W --- What you need to find out.

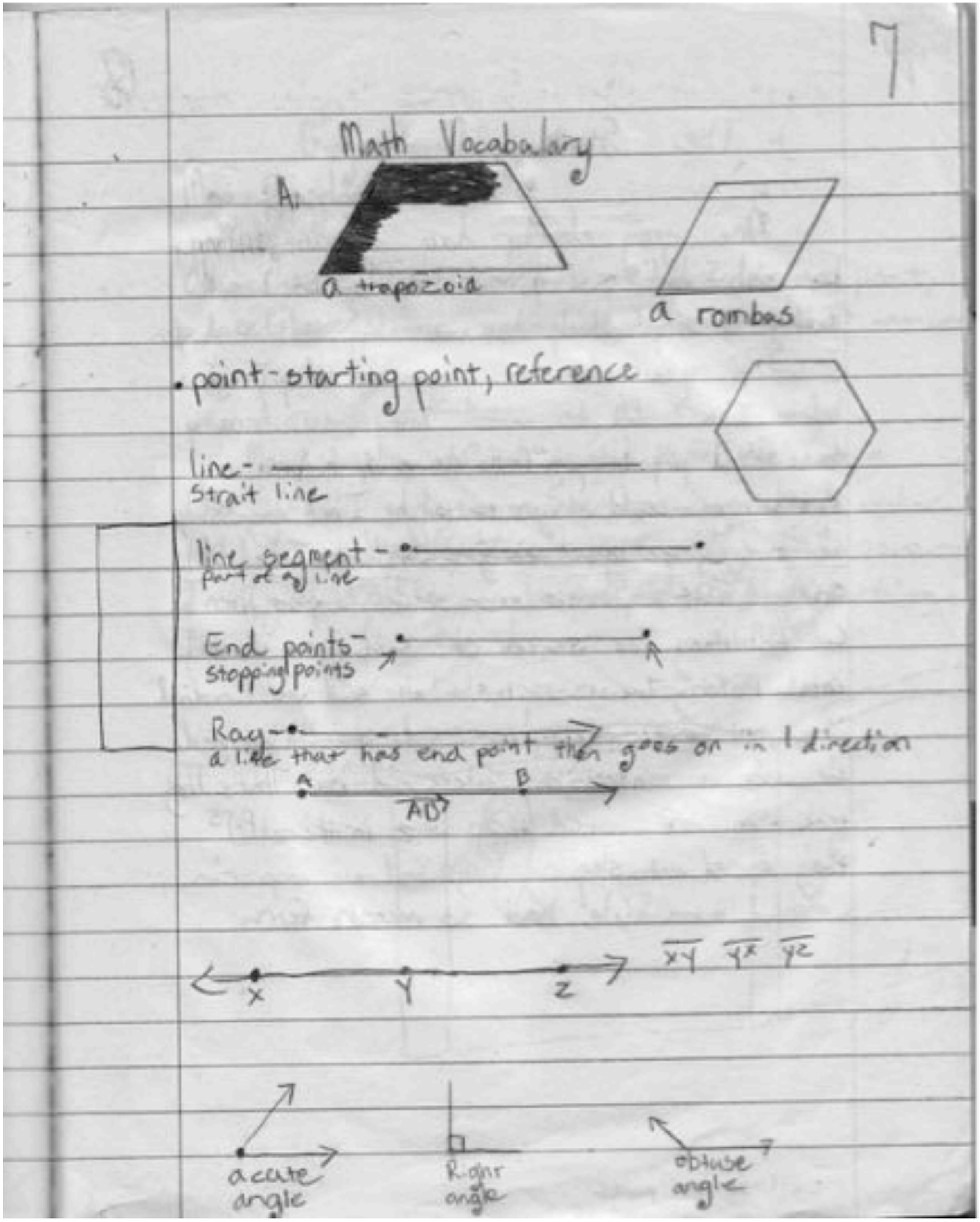
C --- Constraints; conditions

Students draw 3 columns in their notebooks and answer these questions by reading the math problem.

Name _____

(K) What do you know for sure?	**(W) What are you trying to find out?**	**(C) Are there any special conditions?** (Special rules? Tricks to watch out for? Things to remember?)

Tell what you learned about solving this problem using pictures, numbers and words:



Retell and summary
– Taking Notes

Extended multiplication facts

extending basic facts to products of ones and tens and products of tens and tens.

For example
$7 \times 3 = 21$

$\times \begin{matrix} 7 \\ 3 \\ \hline 21 \end{matrix}$

$\times \begin{matrix} 70 \\ 30 \\ \hline 00 \\ 2100 \end{matrix}$

$70 \times 30 = 2100$ add 0's

* Step 1 = multiply the basic fact
* Step 2 = Add 0's to extend it out
  tens to tens = add 2 0's
  ones to tens = add 1 0

$70 \times 35 = 2,450$

$7 \times 3 = 2100$

$70 \times 5 = 350$

$2,450$

Synthesis – explaining process

35 Math Fractions 5/24/07

Mr.
Dear ~~Ms~~. Fraction, May 22, 2007

Help! I'm totally confused. The kids on my baseball team are trying to pick the team colors. $\frac{2}{3}$ of the kids want red and white shirts, while $\frac{5}{6}$ of the kids want blue and white shirts.

We want to go with the saying, the "majority rule", meaning whichever group is greater, gets to decide on the team colors. What color shirts will our team be getting?

Signed,
Emily

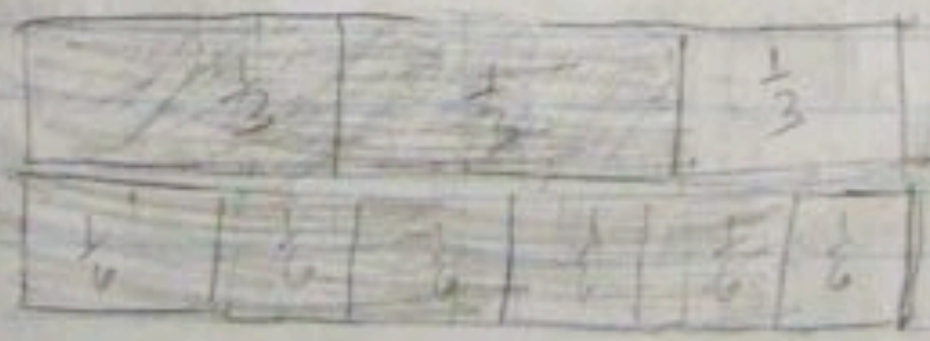
DIRECTIONS: Figure out which fraction is greater. Write back to Emily giving her advice on her problem.

May 24, 2007

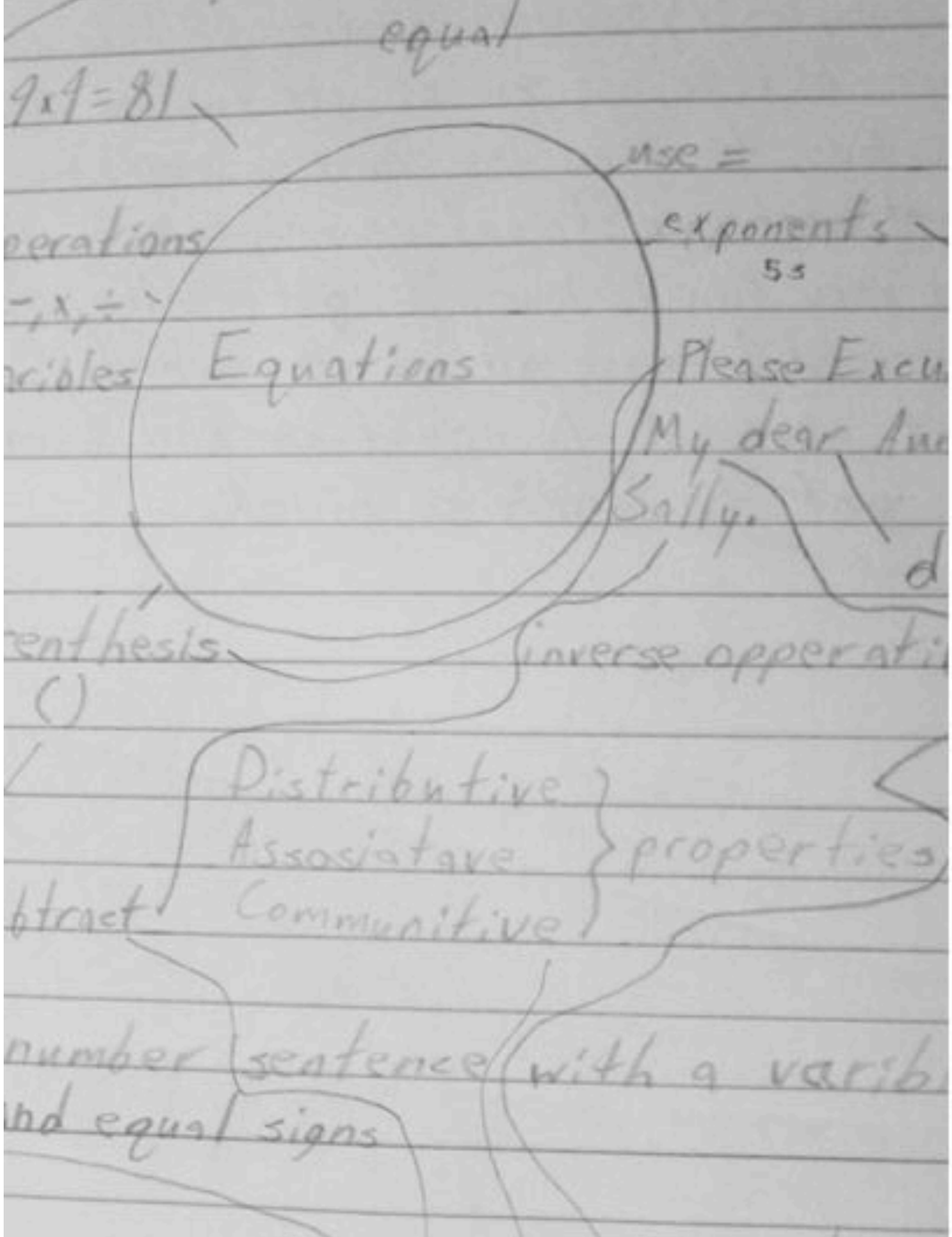
Dear Emily,

First you have to compare with my picture below and see which fraction is bigger. So than your baseball team color is the fraction that is the bigger one. That means your baseball team color is blue and white.

From,
Mr. Fraction



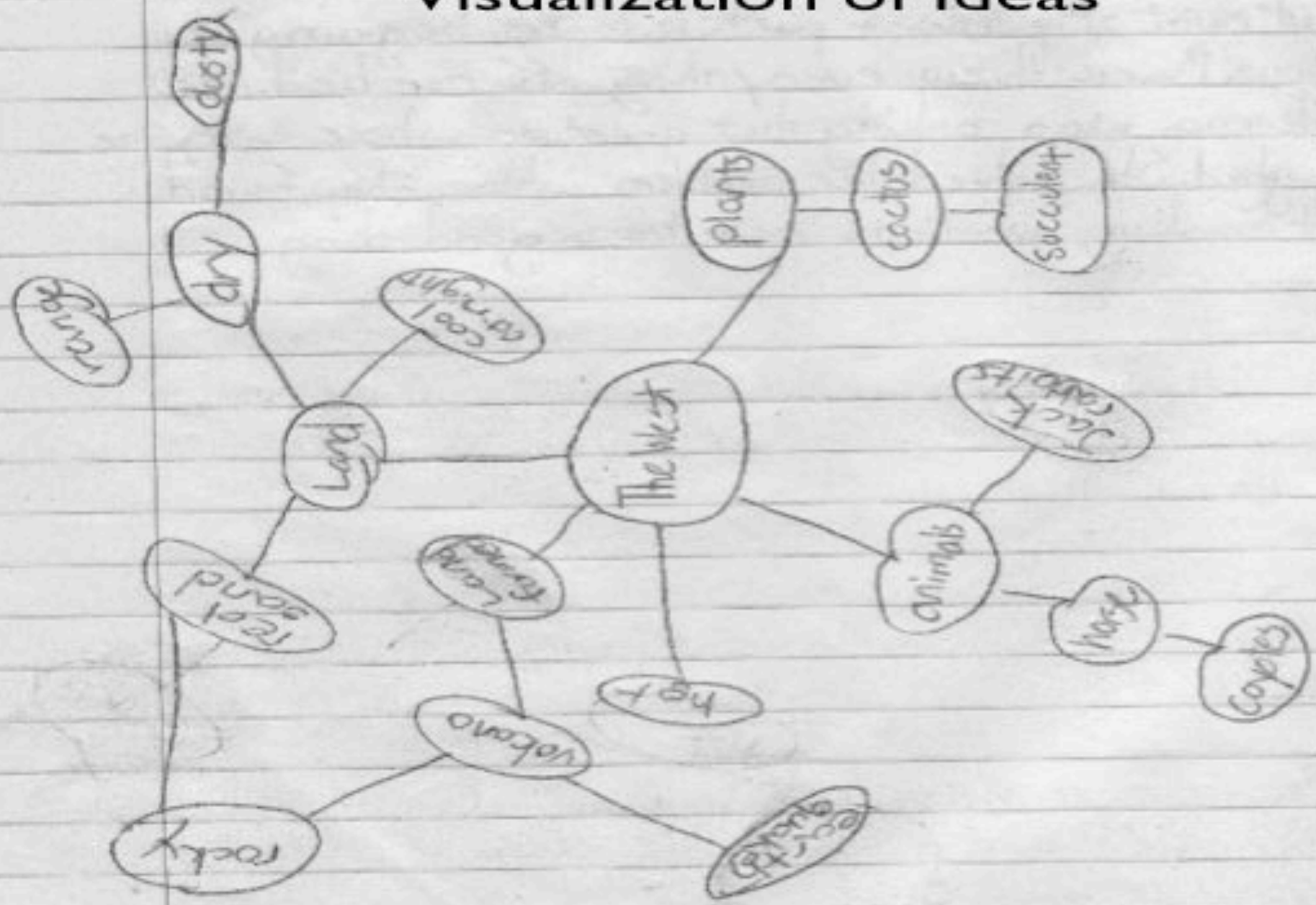
Writing letters give student a sense of audience.

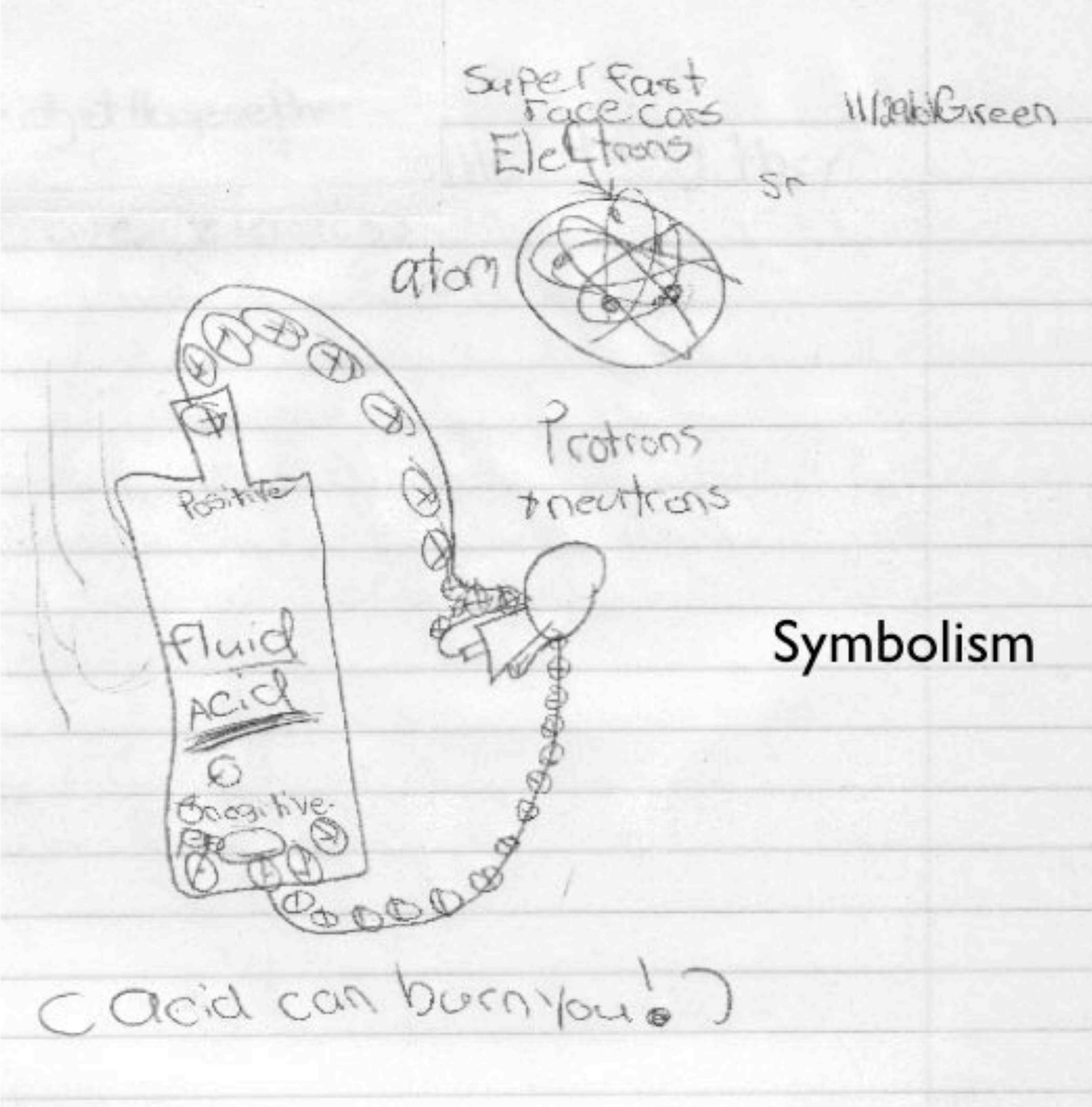


Vocabulary work

Making A Web

Visualization of Ideas





Super fast race cars
Electrons
atom
Protons
+neutrons
Positive
Fluid
Acid
Negative
(acid can burn you!)

Symbolism

104

Synthesis: Defend.

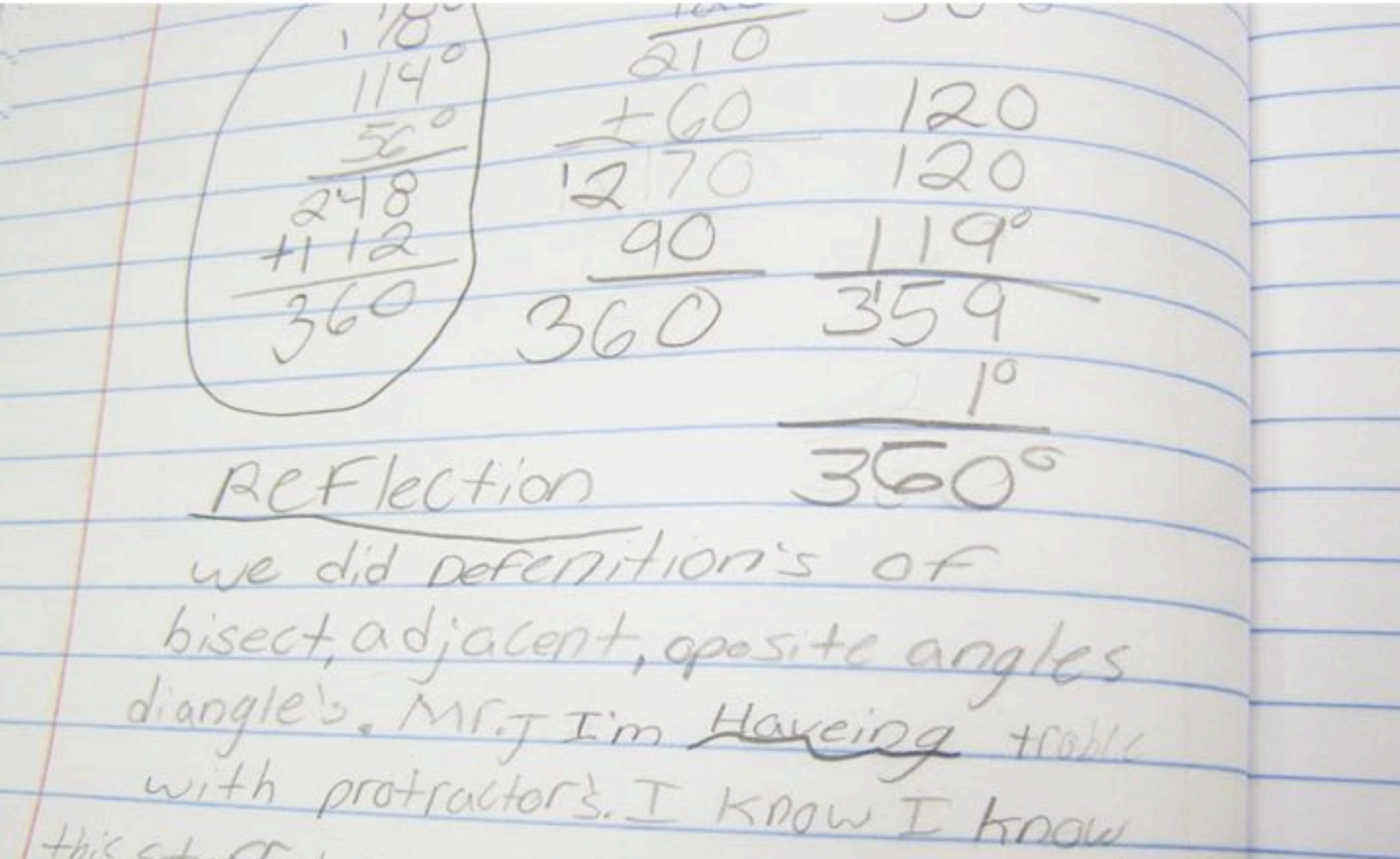
Dear Mrs. Erikzon

I'm very proud of Elaborating on page 85. And comma splice on page 72. On page 85 we learned how to elaborat with details, like sad "head hanging pouting lips slumped in chair" stuff like that. Now on page 72 we learned about comma splice. My goals for 3rd quarter includ reading up to 1 hr., getting my grades up, and doing my best. I plan to achieve these goals by the end of the quarter.

from,
Brianna

Editing goals even in math

Students reflect. Later, they reread their notebooks to see what they've learned.



Students bring their notebooks together for discussion.

Guide to Solving Number Stories

1. What do you understand from the story?

- Read the story. What do you want to find out?
- What do you know?

2. What will you do?

- Draw a picture?
- Draw a diagram?
- Make tallies?
- Add?
- Subtract?
- Multiply?
- Divide?
- Use counters or base-10 blocks?
- Use a number grid or number line?
- Make a table?

DO THE PROBLEM. Record what you did.

3. Answer the question.

Write the units. Write the number model to show what you did.

4. Check: Does your answer make sense? How do you know?

Students record steps for math procedures in their notebooks

3rd Grade Notes

4 Digit Numbers

8/30/16

Base 10 Blocks

□ = 1 (X)

example: XXXXXXXXX = 8 ones

▯ = 10 (I)

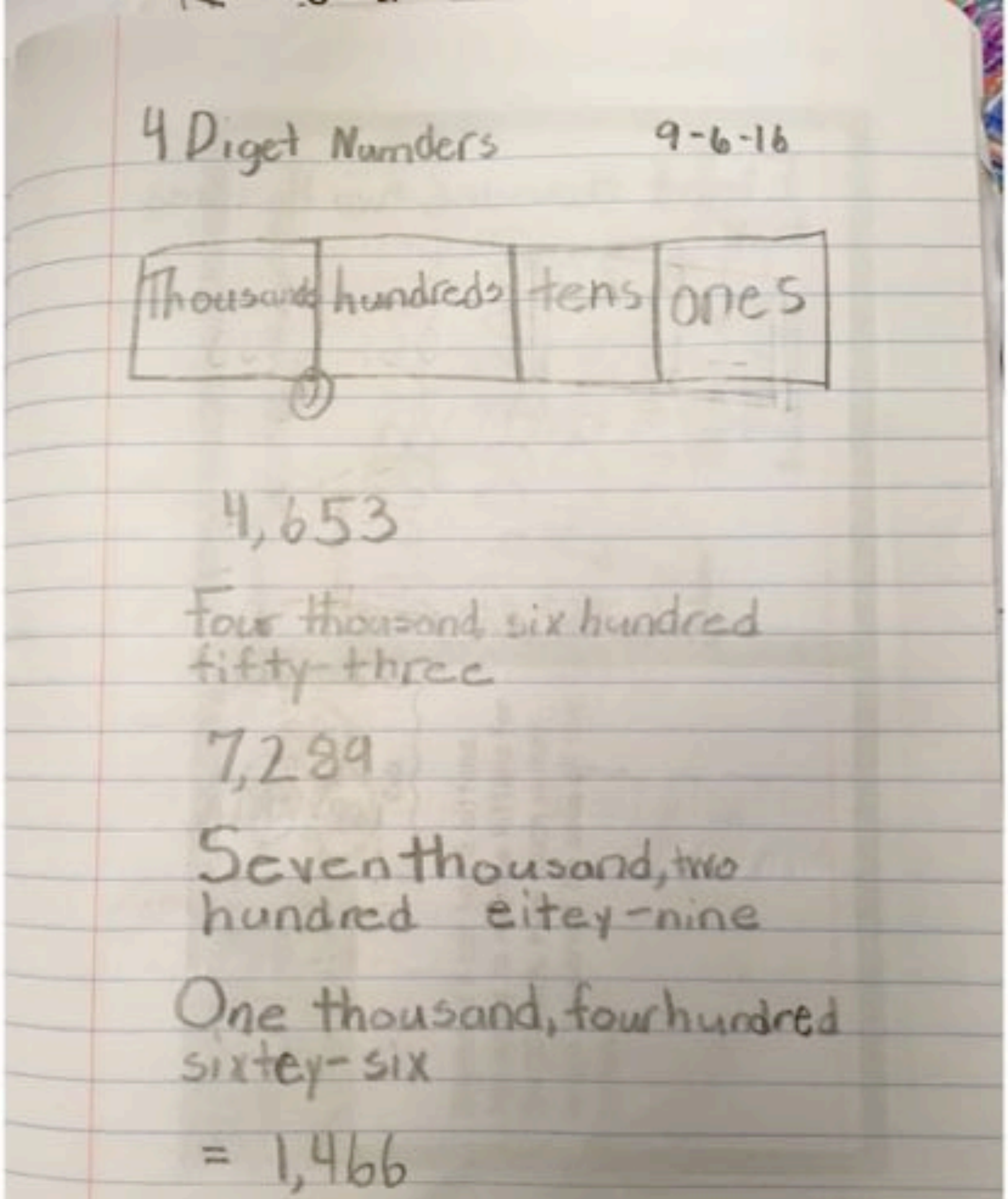
example: IIIIIIII = 90 or 9 tens

▭ = 100 (▯)

example: ▭▭▭▭▭▭ = 600 or 6 hundreds

 = 1,000

3rd Grade Example



3rd Grade Practice

9-7-16

Place Value

10 x's = 1 | (10)

10 |'s = 1 □ (100)

10 □'s = (1,000)

	T	O
10		5

H	T	O
1	0	5

H	T	O
2	4	3

TH	H	T	O
9	9	9	9

9,999

TH	H	T	O
2	4	3	5

Expanded Form

2,000 + 400 + 30 + 5

TH	H	T	O
4	5	6	7

4,000 + 500 + 60 + 7

TH	H	T	O
6	9	4	2

6,000 + 900 + 40 + 2

5	4	3	2
4	3	5	2
5	3	2	4
4	3	2	5

4325, 4352, 5324, 5432

1.476 3.467 5.764

2.647 4.467 6.674

4,7,2,0 Greates?= 7,420

Least?= 0247

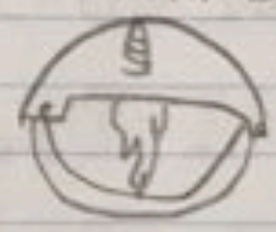
1,9,3,8 Greatest?= 9,831

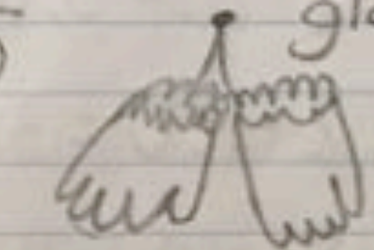
Smallest?= 1,389

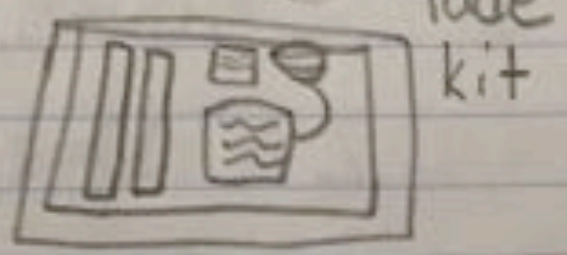
9-13-16

Sam's mom bought her a helmet for $25.00, gloves for $16.00, and a tube kit for $5.00. How much did Sam's mom spend in all?

$$\begin{array}{r} {}^{1}\$25.00 \\ \$16.00 \\ +\ \$5.00 \\ \hline \$46.00 \end{array}$$







$46

★ Sam's mom spent ? dollars.

Mental Addition to 1,000

10-12-16

70 + 50 = 120

7 + 5 = 12

7 ones + 5 ones = 12 ones

7 tens + 5 tens = 12 tens

70 + 50 = 120

73 + 50 = 120

70 3

70 + 50 = 120

3 = + 3

123

73 + 58 = 131

70 + 50 = 120

3 + 8 = + 11

131

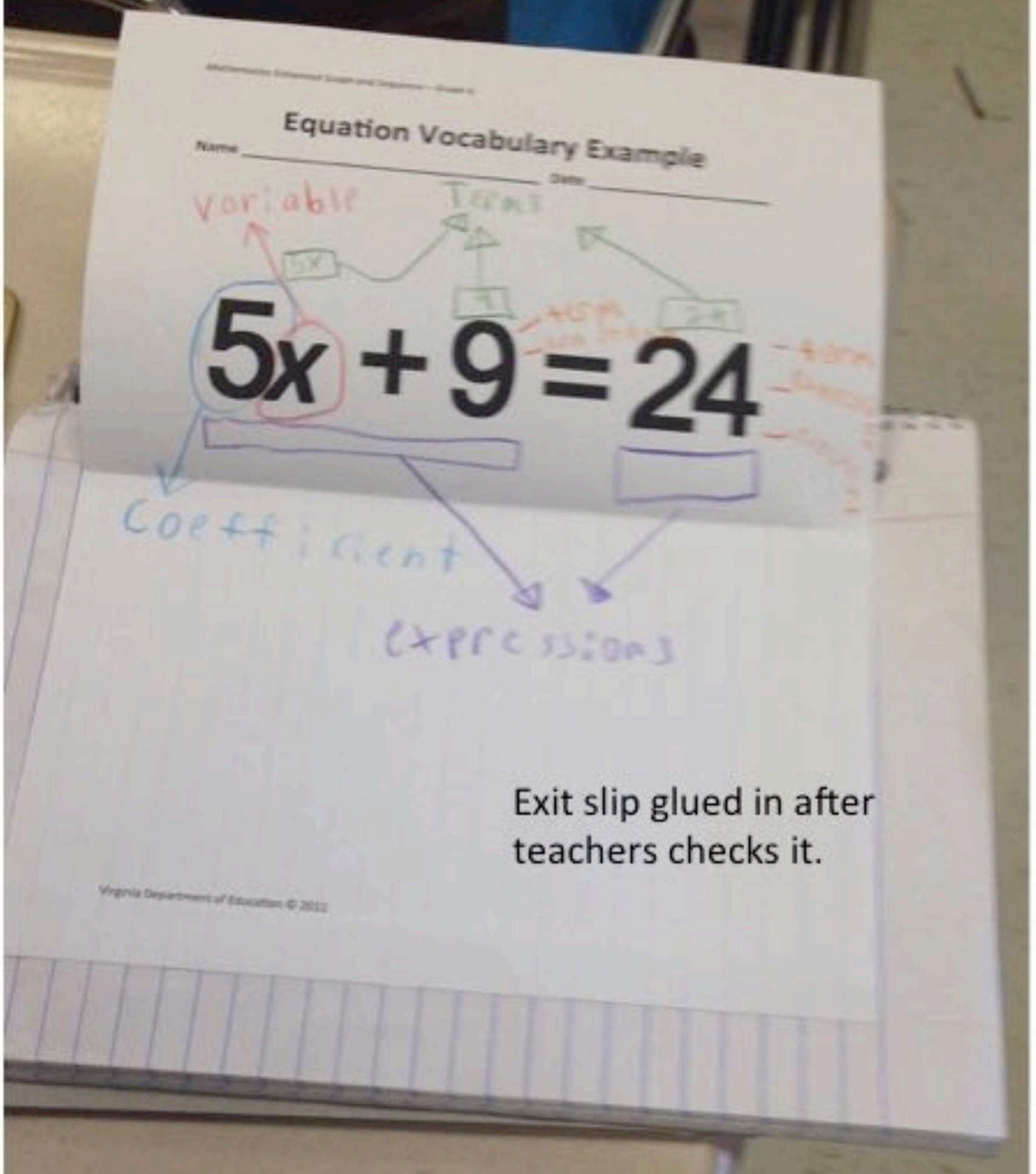
Even though a dime is smaller in size than a nickel the dime has a greater.

How much is something worth.

Foldables are glued into notebooks

amount

Receive


Equation Vocabulary Example
Name
Date
variable
5x + 9 = 24
Coefficient
Exit slip glued in after teachers checks it.

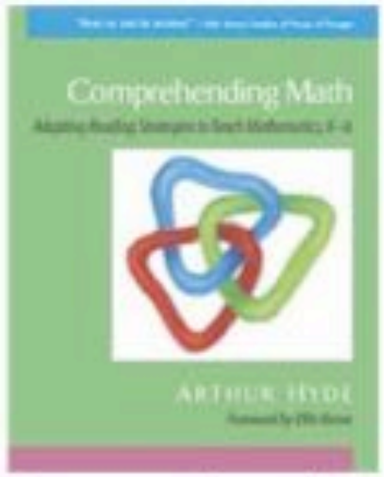
Notebooks bring organization to a learner's life.
No longer do papers get lost.
Everything is gathered in the drawer to reflect on later or to study.

Students set, assess, and reset goals.

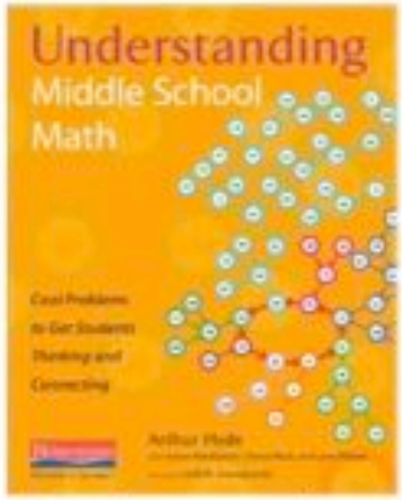
Collecting work and viewing it over time allows for honest reflection of progress.

There is no one way to "do" notebooks.
One word of caution though. Don't get caught up in the Internet's idea of a commercial notebook where students are gluing in worksheets. A notebook is a thinker's book and the thinker should be doing all of the work.

…why is everything so difficult, so different from class to class?



Comprehending Math

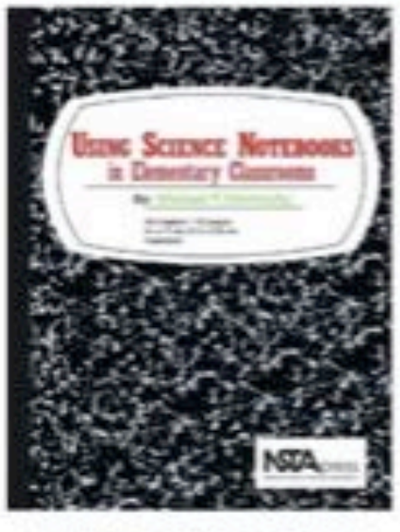


Understanding Middle School Math

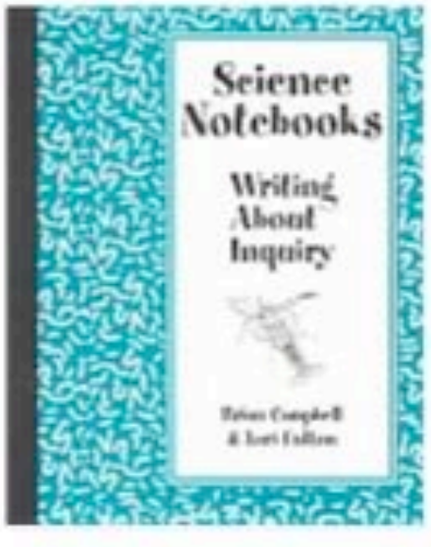
Arthur Hyde

Thinking Out Loud on Paper

Notebook Know How and Notebook Connections Aimee Buckner



Using Science Notebooks Michael Klentschy



Science Notebooks Brian Campbell