

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)

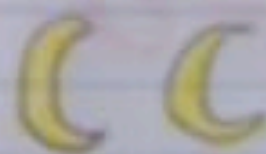
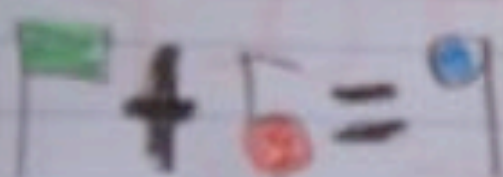
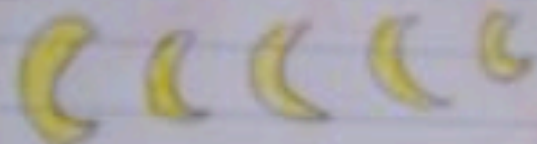
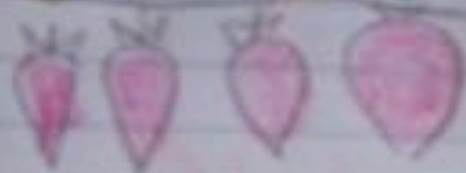
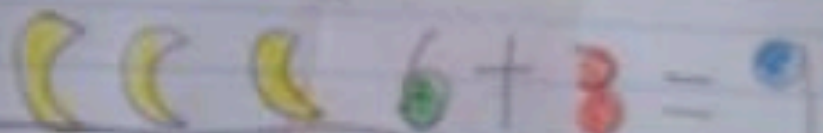
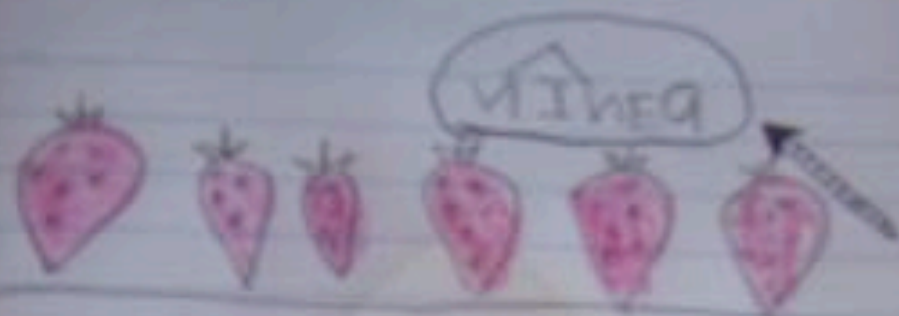
1. writing... in math journals
2. partner talk
3. all the strategies
4. relating words to what you know
5. seeing story problems as stories
6. vocabulary activities
7. symbolizing

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

Math

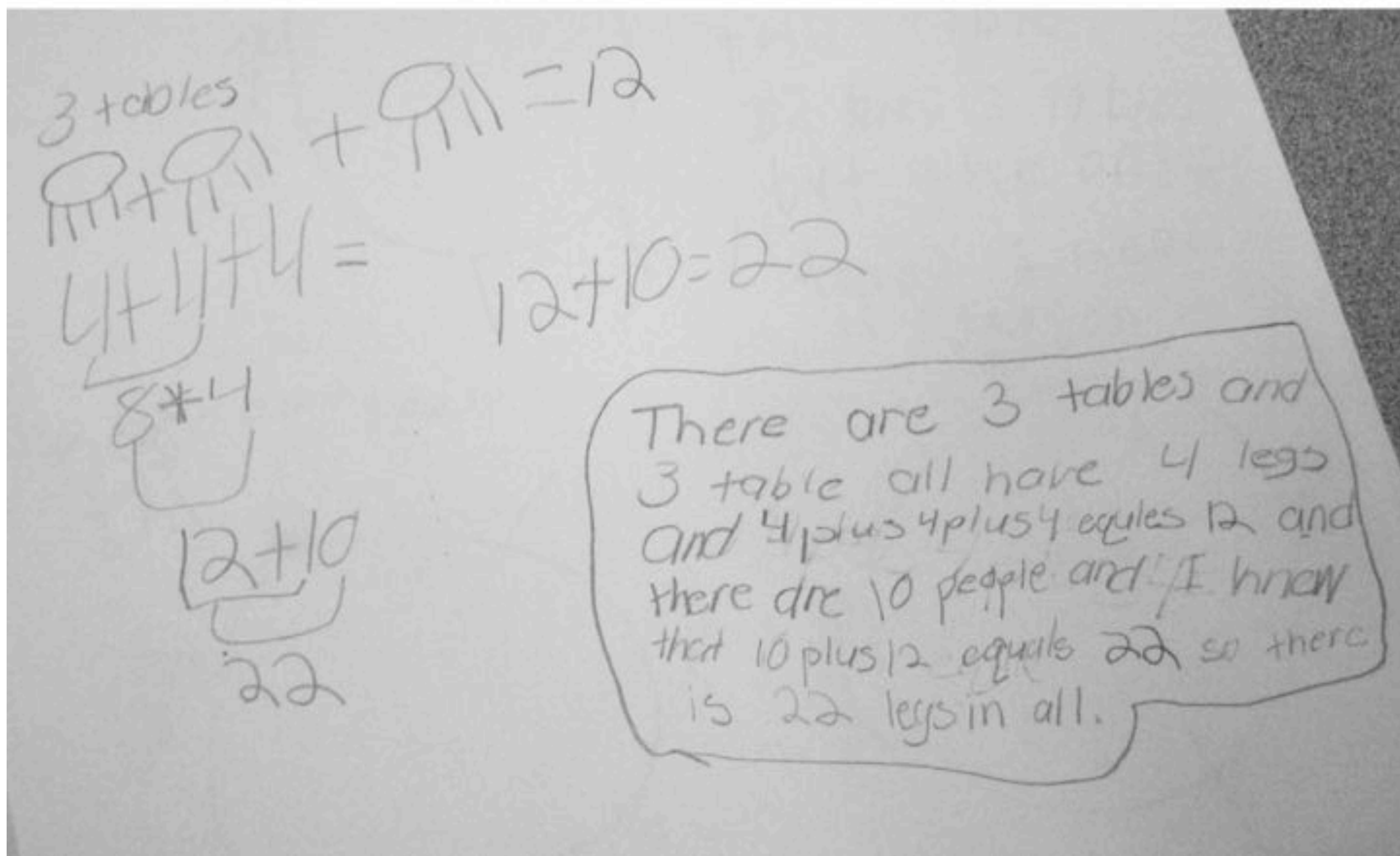
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Every child's Table of Contents should be different. Students keep track of important entries using the Table of Contents. If all of the Tables are the same, then what's the point of having one?



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

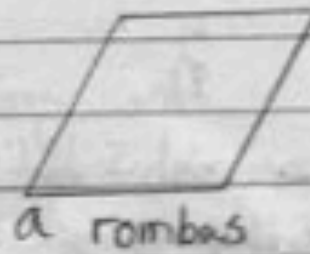
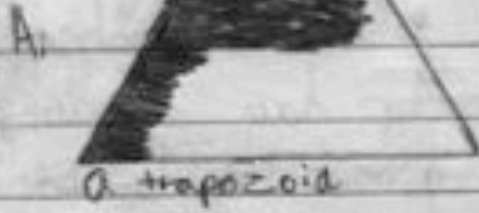
Students draw 3 columns in their notebooks and answer these questions by reading the math problem.

Name _____

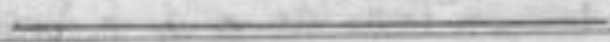
(K) What do you know for sure?	(W) What are you trying to find out?	(C) Are there any special conditions? (Special rules? Tricks to watch out for? Things to remember?)

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

Math Vocabulary

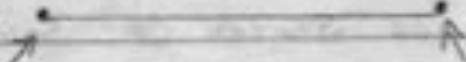


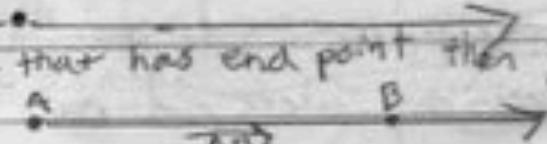
• point - starting point, reference

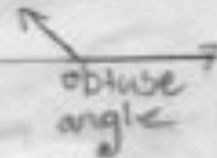
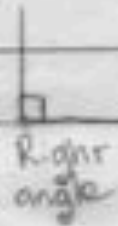
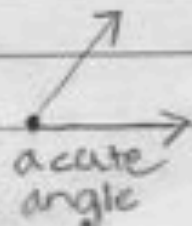
line - 
straight line



line segment - 
part of a line

End points - 
stopping points

Ray - 
a line that has end point then goes on in 1 direction



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 $70 \times 30 = 2100$

$$\begin{array}{r} 7 \times 3 = 21 \\ \times 70 \\ \hline 2100 \end{array}$$

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

$$\begin{array}{r} 70 \times 35 = 2,450 \\ 7 \times 3 = 2100 \\ 70 \times 5 = 350 \\ \hline 2,450 \end{array}$$

Synthesis –
explaining
process

5/24/07

 M_2

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

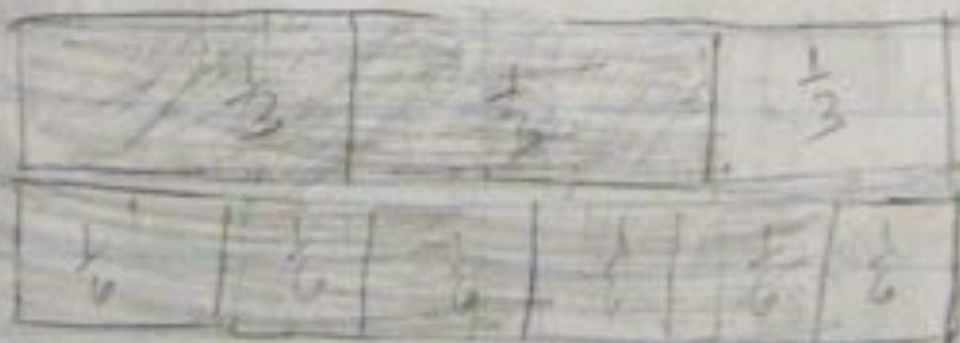
DIRECTIONS: Figure out which fraction is greater. Write back to Emily giving her advice on her problem.

Dear Family,

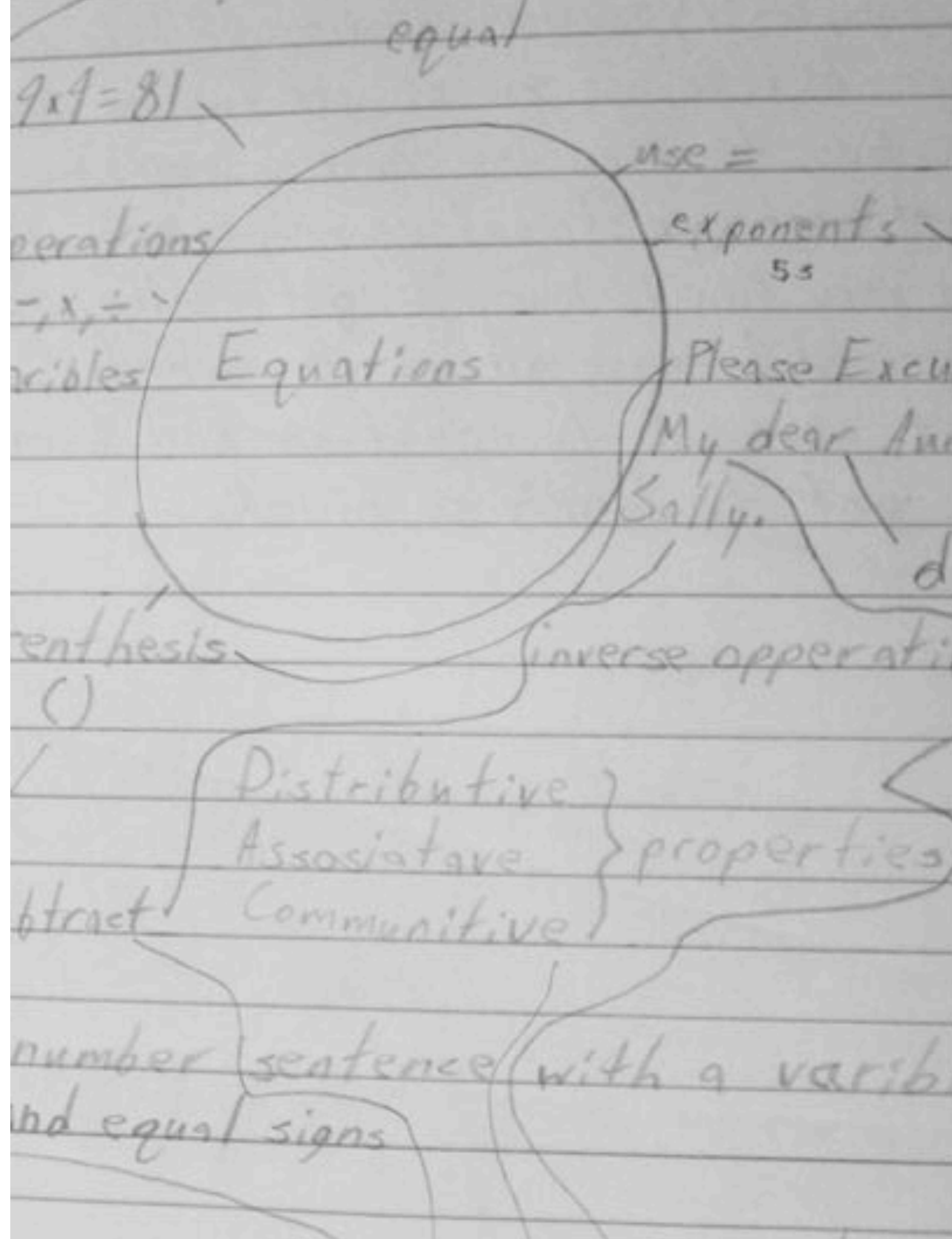
First you have to compare with my picture below and see which fraction is bigger. So than your baseball team color is the fraction that is the bigger one. That means your baseball team color is blue and white.

From

Mr. Fraction

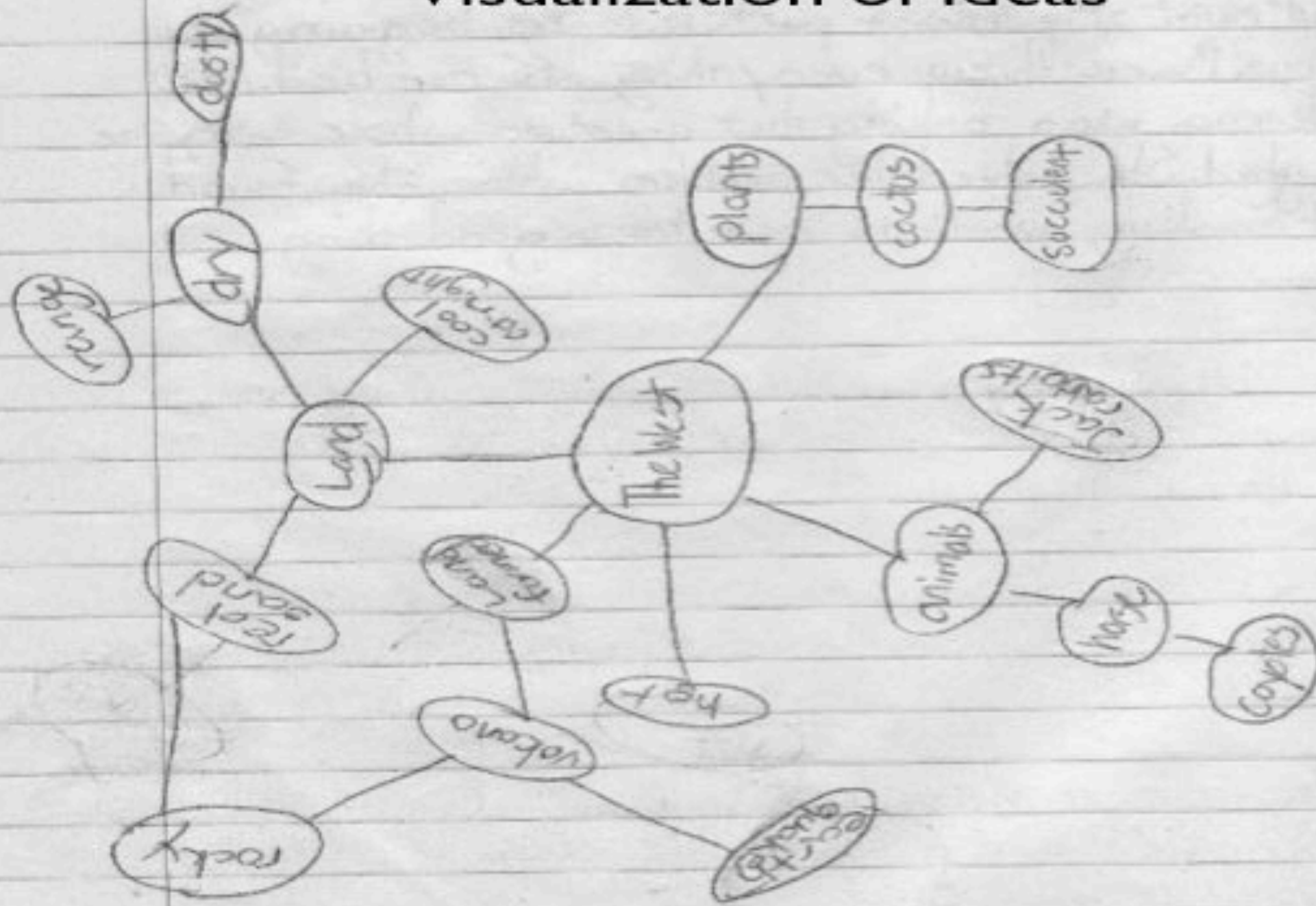


Vocabulary work



Making A Web

Visualization of Ideas



Idias → range
rocks
earthquake
cool (night)

contin on p.25

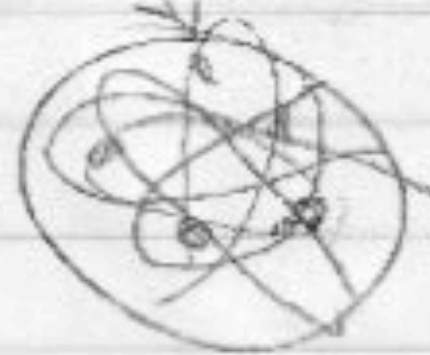
#5★

Super Fast
Race Cars
Electrons

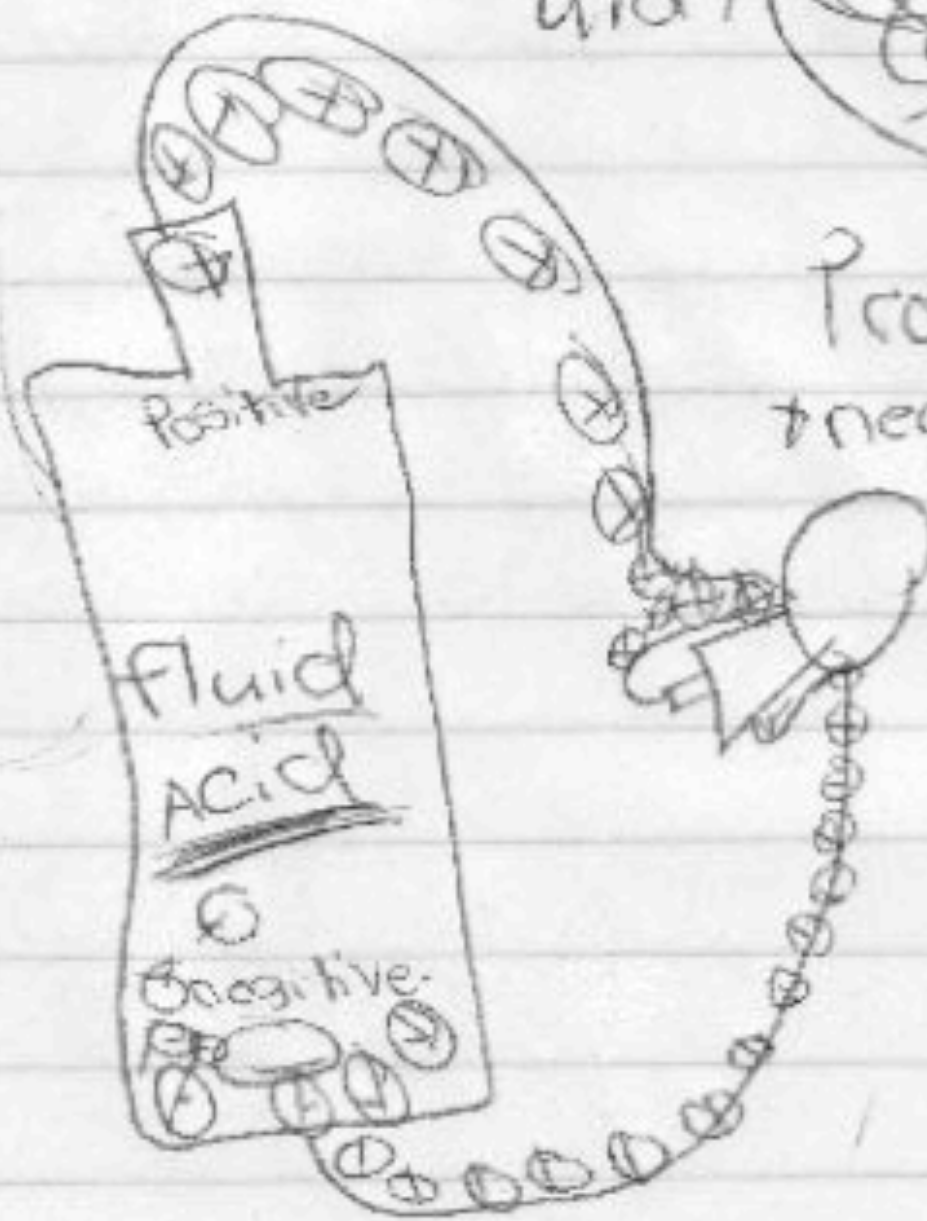
Wally Green

Sn

atom



Protons
& neutrons



Symbolism

(Acid can burn you!)

Synthesis: Defend.

Dear Mrs. Erikson

I'm very proud of
Elaborating on page 85. And
comma splice on page 72. On
page 85 we learned how to
elaborate 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 include 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.

$$\begin{array}{r}
 118^\circ \\
 114^\circ \\
 \underline{56^\circ} \\
 248 \\
 +112 \\
 \hline
 360
 \end{array}$$

$$\begin{array}{r}
 210 \\
 +60 \\
 \hline
 270 \\
 +90 \\
 \hline
 360
 \end{array}$$

$$\begin{array}{r}
 120 \\
 120 \\
 \hline
 240 \\
 +119^\circ \\
 \hline
 359
 \end{array}$$

$$\begin{array}{r}
 21^\circ \\
 \hline
 360^\circ
 \end{array}$$

REFlection

we did definitions of
 bisect, adjacent, opposite angles
 diangle's. Mr. J I'm Haveing trouble
 with protractor's. I know I know
 this stuff



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

$$\square = 1 \text{ (X)}$$

example: $\text{XXXXXXXX} = 8 \text{ ones}$

$$\square = 10 \text{ (I)}$$

example: $\text{IIIIIIII} = 90 \text{ or } 9 \text{ tens}$

$$\square = 100 \text{ (H)}$$

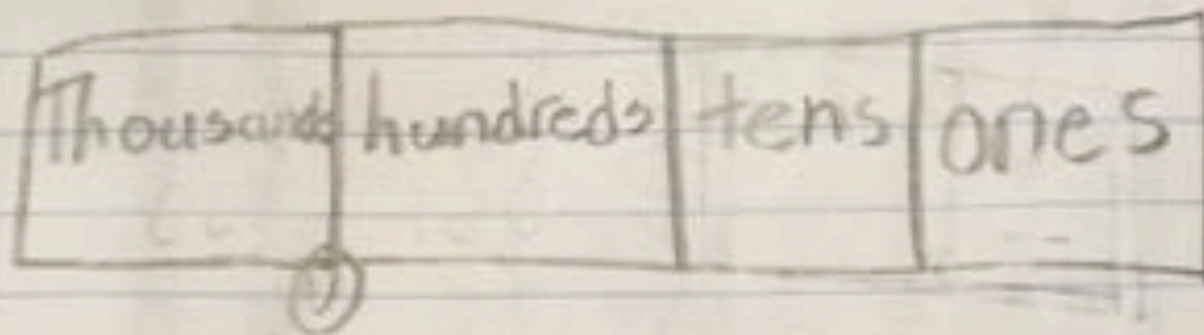
example: $\square\square\square\square\square\square = 600$
or 6 hundreds

$$\text{Cube} = 1,000$$

3rd Grade Example

4 Diget Numbers

9-6-16



4,653

Four thousand, six hundred
fifty-three

7,289

Seven thousand, two
hundred eitey-nine

One thousand, four hundred
sixtey-six

= 1,466

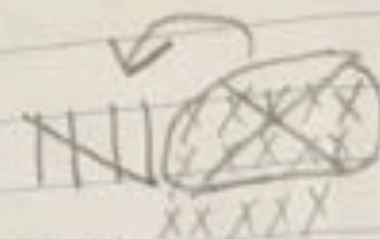
Place Value

9-7-16

$$10 \times \text{'s} = 1 \text{ } (10)$$

$$10 \text{ 's} = 1 \text{ } (100)$$

$$10 \text{ 's} = 1,000$$



10

T	O
10	5

H	T	O
1	0	5

H	T	O
0	0	0
0	0	0

2 4 3

H	H	T	O
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

9, 9 9 9

T	H	T	O
2	4	3	5

3rd Grade Practice

Expanded Form

$$2,000 + 400 + 30 + 5$$

T	H	T	O
4	5	6	7

$$4,000 + 500 + 60 + 7$$

T	H	T	O
6	9	4	2

$$6,000 + 900 + 40 + 2$$

$\begin{array}{|c|c|c|c|} \hline 5 & 4 & 3 & 2 \\ \hline 4 & 3 & 5 & 2 \\ \hline 5 & 3 & 2 & 4 \\ \hline 4 & 3 & 2 & 5 \\ \hline \end{array}$
 $\underline{4,325}, \underline{4,352}, \underline{5,324}, \underline{5,432}$

1.476 3.467 5.764

2.647 4.467 6.674

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

Least? = 0247

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

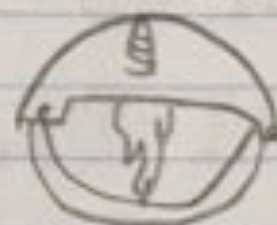
Smallest? = 1,389

9-13-16

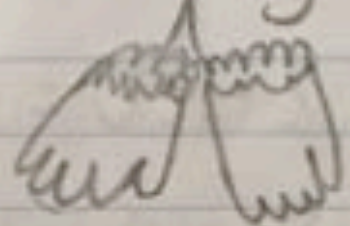
Sam's mom bought her a helmet for \$25.00, gloves for \$16.00, and a tube kit for \$5.00. How much did Sam's mom spend in all?

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

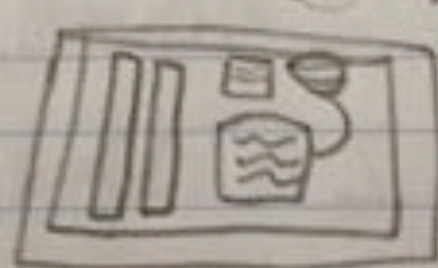
helmet



gloves



tube kit



\$46

★ Sam's mom spent 46 dollars.

Mental Addition to
1,000

10-12-16

$$70 + 50 = 120$$

$$7 + 5 = 12$$

$$7 \text{ ones} + 5 \text{ ones} = 12 \text{ ones}$$

$$7 \text{ tens} + 5 \text{ tens} = 12 \text{ tens}$$

$$70 + 50 = 120$$

$$73 + 50 = 120$$

$$\begin{array}{r} \wedge \\ 70 \end{array} 3$$

$$70 + 50 = 120$$

$$\begin{array}{r} 3 = + 3 \\ \hline 123 \end{array}$$

$$73 + 58 = 131$$

$$70 + 50 = 120$$

$$\begin{array}{r} 3 + 8 = + 11 \\ \hline 131 \end{array}$$

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

A month

Receive

canyon
cel-e-bration (sel-a-bei'shun) n.
cel-e-brations An event to honor
something special. Holidays often bring
parties and other kinds of celebrations.
the festival

cherish (cher'ish) v. cherished To care
about or hold dear. Helga cherished the
doll her grandmother had given her.

choice (chois) n. choices What you decide
to have or to do. When you decide what
you want to eat and to wear, you are
making choices. the selection

choos-y (choi'ee) adj. Very careful about
deciding; paying close attention to. Joan is
choos-y about what she wears, so it takes
her a long time to dress. the funny

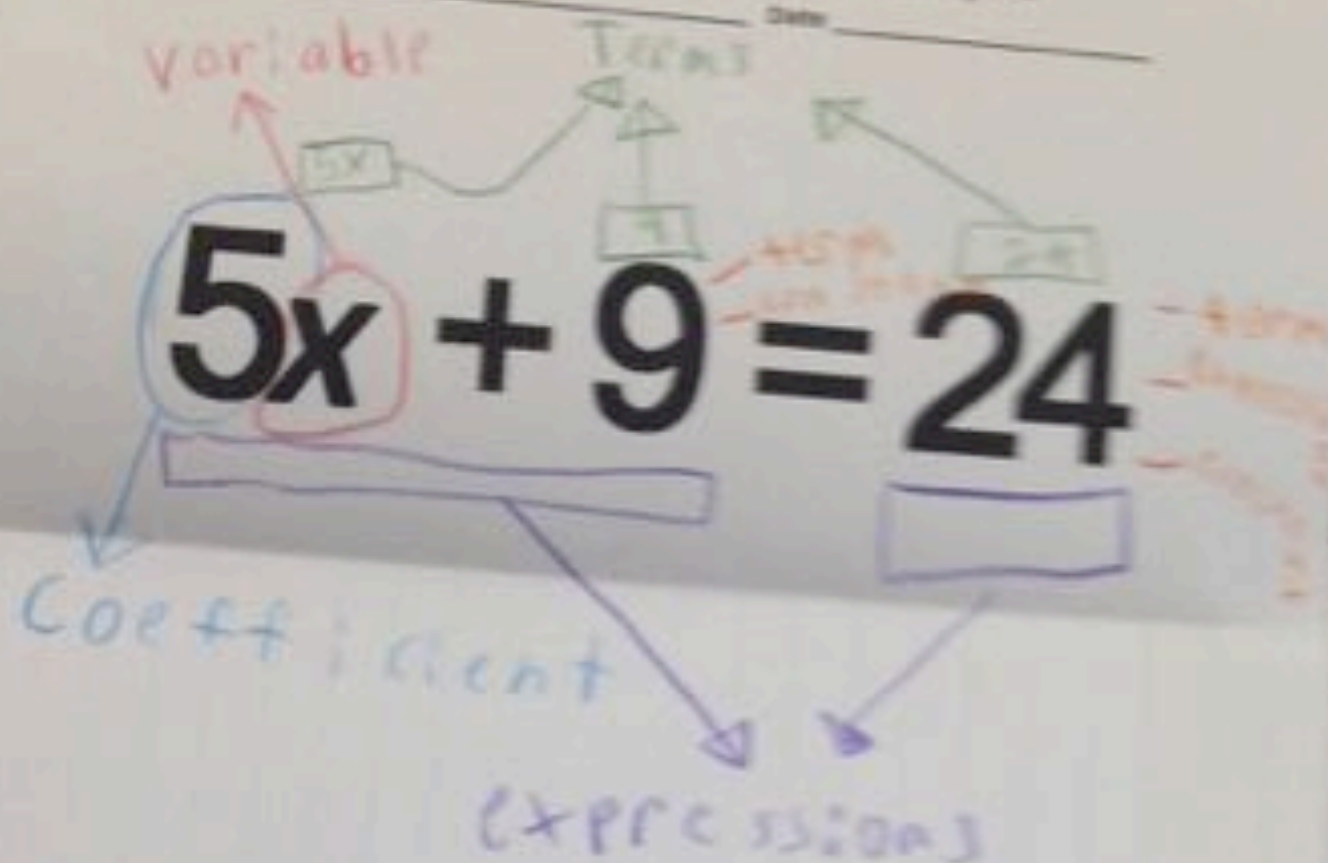
clutch (klach) v. clutched To hold onto
something tightly. Larissa clutched her
purse in both hands on the crowded bus.
the grasp

con-grat-u-late
con-grat-u-lations Putting
usually as
kinds of ve
a. Good wishes
well. When our
coach gave us his
con-tinent
(kon'ti-nent) n.
One of the main
areas of land that
make up the earth.
The United States
is part of the
continent of North
America.

Equation Vocabulary Example

Name _____

Date _____



Exit slip glued in after teachers checks it.

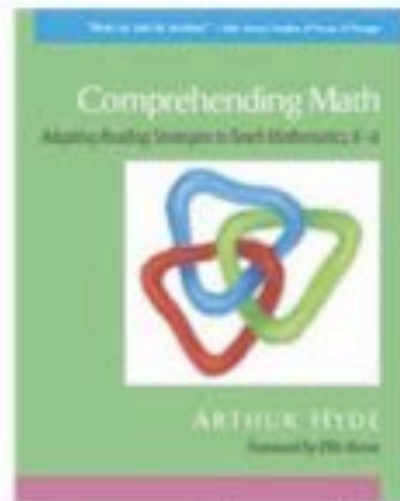
Notebooks bring organization to a learner's life.
No longer do papers get lost.
Everything is gathered in the drawer to reflect on
later or to study.

Students set, assess, and reset goals.

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

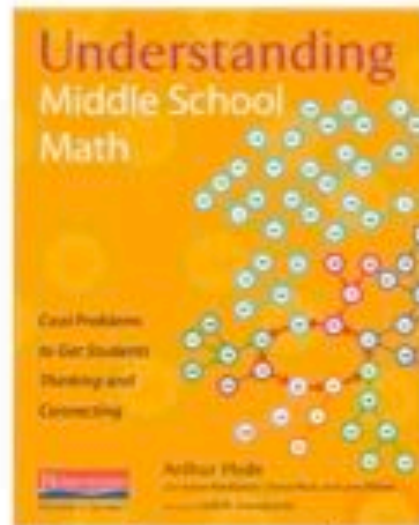
There is no one way to “do” notebooks.
One word of caution though. Don't get caught up
in the Internet's idea of a commercial notebook
where students are gluing in worksheets. A
notebook is a thinker's book and the thinker
should be doing all of the work.

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

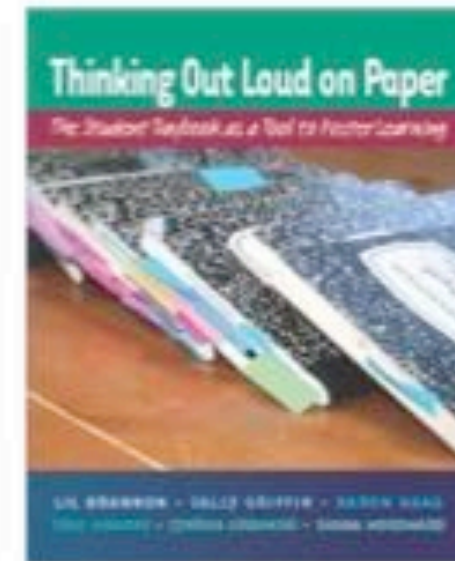


Comprehending
Math

Arthur Hyde



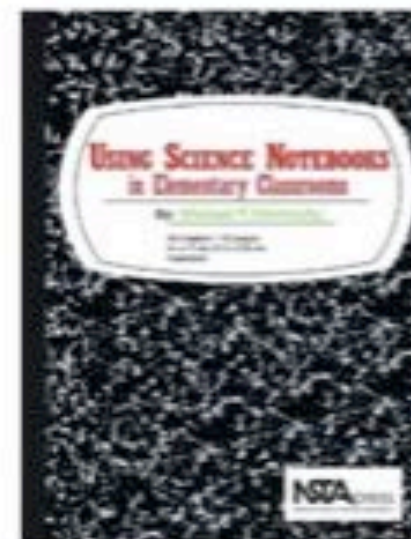
Understanding
Middle School
Math



Thinking Out Loud on Paper



Notebook Know How and
Notebook Connections
Aimee Buckner



Using Science
Notebooks Michael
Klentschy



Science Notebooks
Brian Campbell