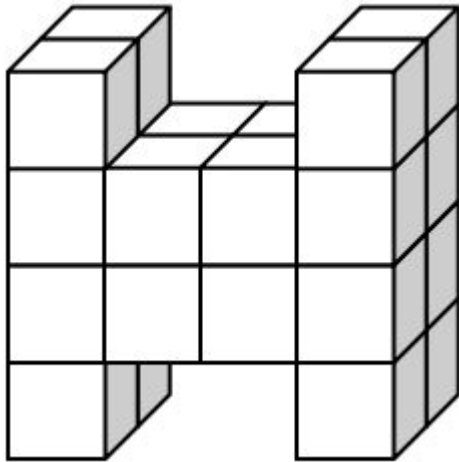


What to expect in Math-Fifth Grade



$$3 \div \frac{1}{3}$$

Math Mornings
December 12, 2018
8:45-9:30

Josh Rosen
Donna Misrok

Richard Skemp's Theory of Mathematical Learning

Instrumental Understanding-

Learning how to do math like a recipe, having a procedural understanding

Relational Understanding-

Learning the whys behind the mathematics and developing a true understanding

Which of these approaches will develop relational understanding?

How To Divide Fractions

STEP 1:
Find the Reciprocal.

$$\frac{1}{3} \div \frac{1}{6} \quad \frac{1}{3} \rightarrow \frac{6}{1}$$

STEP 2:
Change the sign.

$$\frac{1}{3} \times \frac{6}{1} \quad \frac{1}{3} \rightarrow \frac{6}{1}$$

STEP 3:
Multiply then reduce.


$$\frac{1}{3} \times \frac{6}{1} = \frac{6}{3} = 2$$

Dividing Fractions

What does it mean?

It means to tell how many fractional parts are in another number.

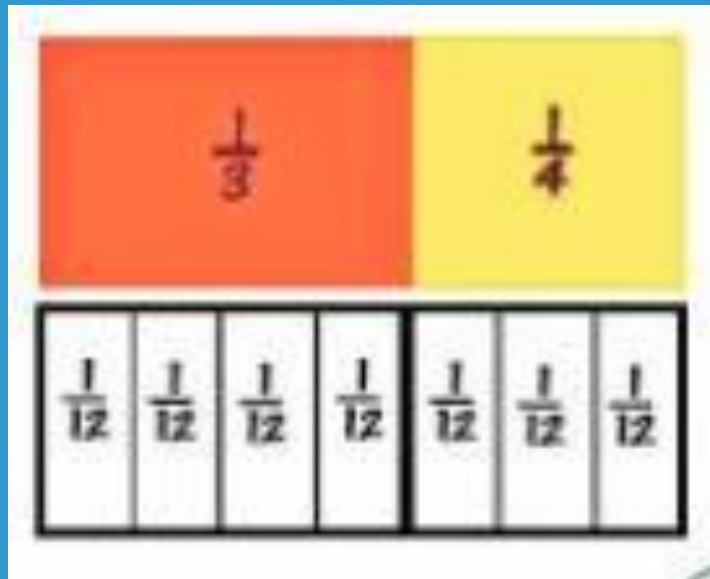
EXAMPLE


$$\frac{1}{2} \div \frac{1}{8}$$

This means how many $\frac{1}{8}$ are in this $\frac{1}{2}$ (half)?

Fifth graders will...

develop fluency with the addition and subtraction of fractions, and develop understanding of the multiplication of fractions and of the division of fractions (in limited cases)



and...

extend division to two-digit divisors, and develop understanding of operations with decimals to hundredths..

Is the solution to this problem going to be more than 1 or less than 1?

No calculating-Just use your reasoning

$$.49 \times 1.23$$

What happens to a number when we multiply it by 100?

add two zeroes, you say?

$$43 \times 100 = 4300$$

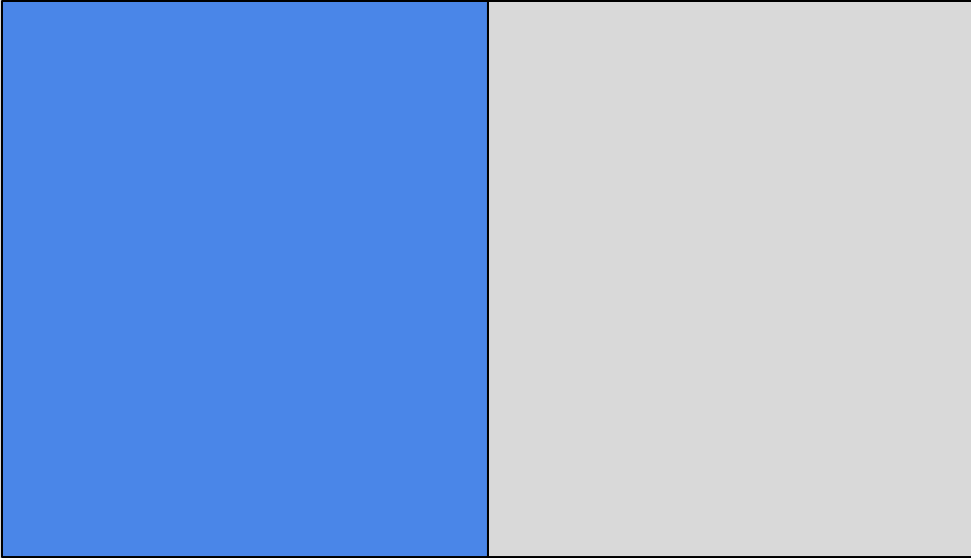
$$7 \times 100 = 700$$

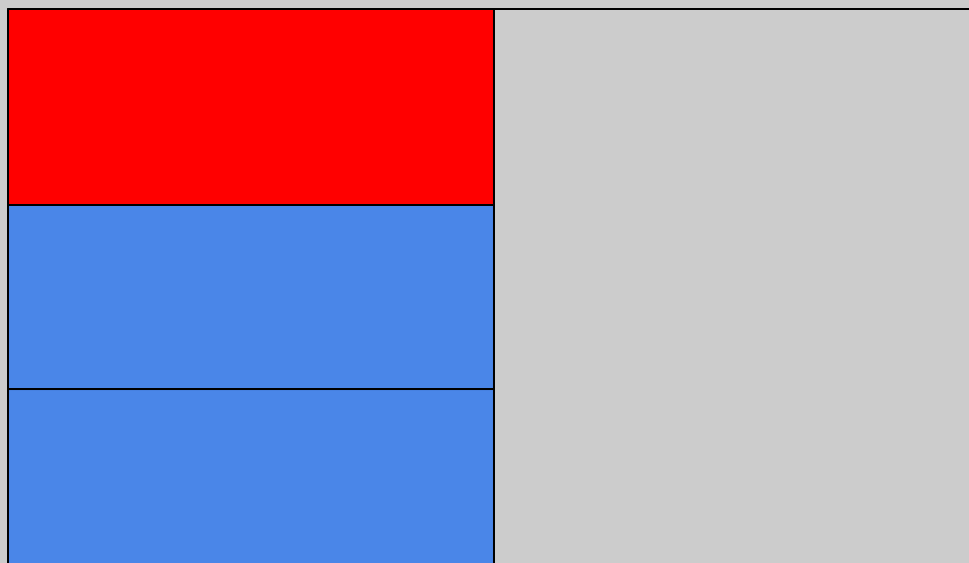
$$21 \times 100 = 2100$$

$$.43 \times 100 =$$

Let's do an activity!!

$$\frac{1}{2} \times \frac{1}{3}$$



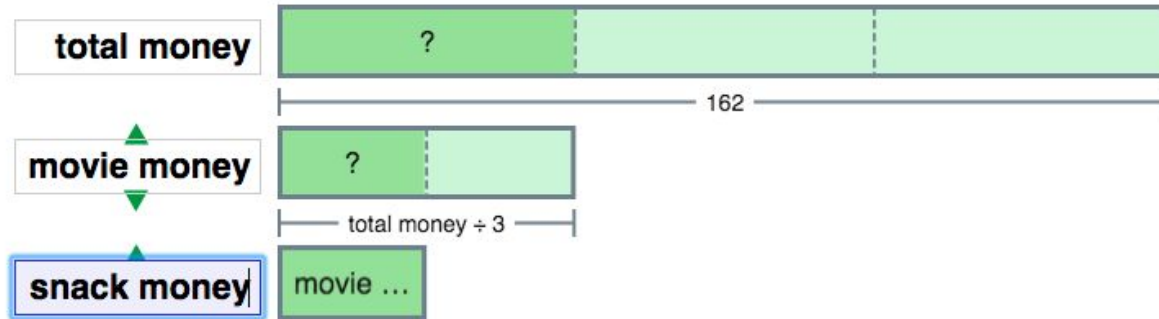


one third of one half

$$\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$$



Melissa has \$162. She spends $\frac{1}{3}$ of her money on the movies. $\frac{1}{2}$ of her money spent at the movies is for snacks. How much money does she spend on snacks?

Melissa has \$162. She spends $\frac{1}{3}$ of her money on the movies. $\frac{1}{2}$ of her money spent at the movies is for snacks. How much money does she spend on snacks?



$$162/3 = \$54 \text{ (money on movies)}$$
$$\$54/2 = \$27 \text{ (money on snacks)}$$

Some more theory to guide us--

Concrete 


Pictorial 

Abstract

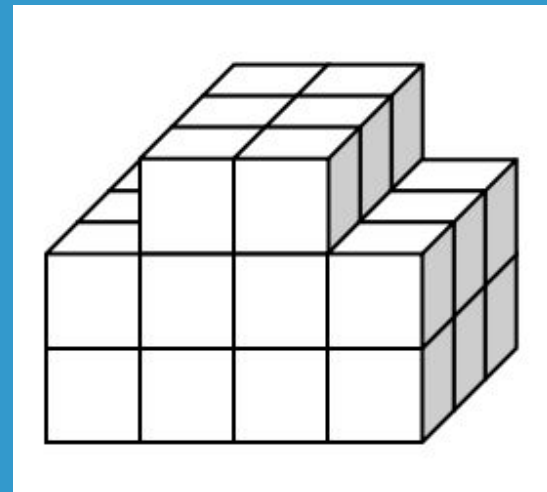
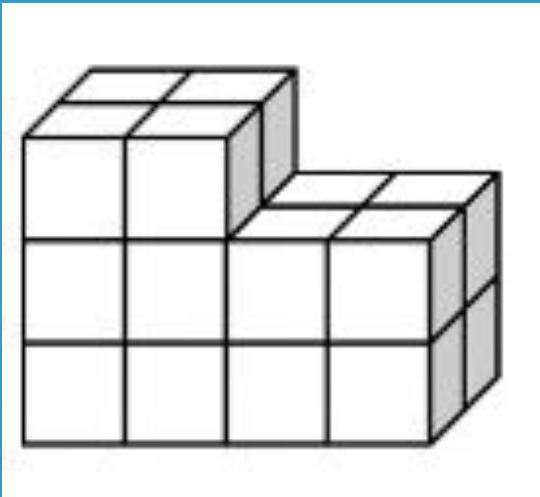
$$7+3=10$$



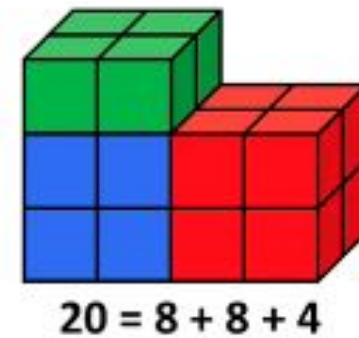
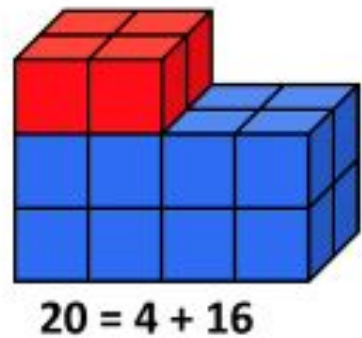
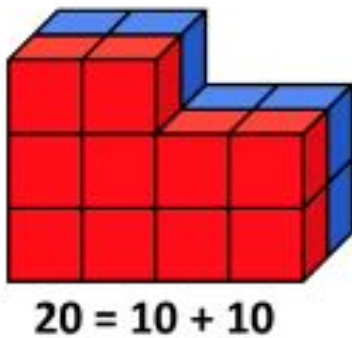
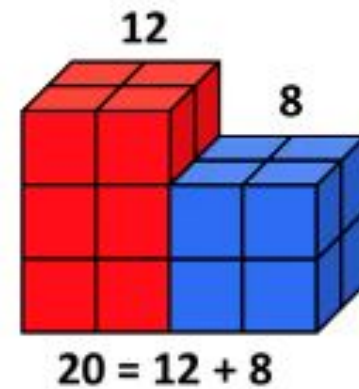
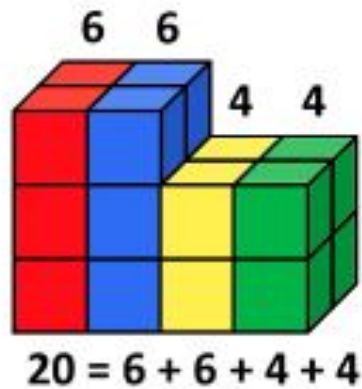
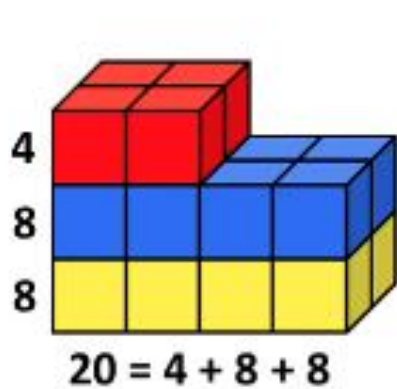
Jerome Bruner's
learning theory

and...

develop understanding of volume as an attribute of three dimensional space as well as decompose three dimensional shapes into right rectangular prisms in order to find their volume (in cubic units)...

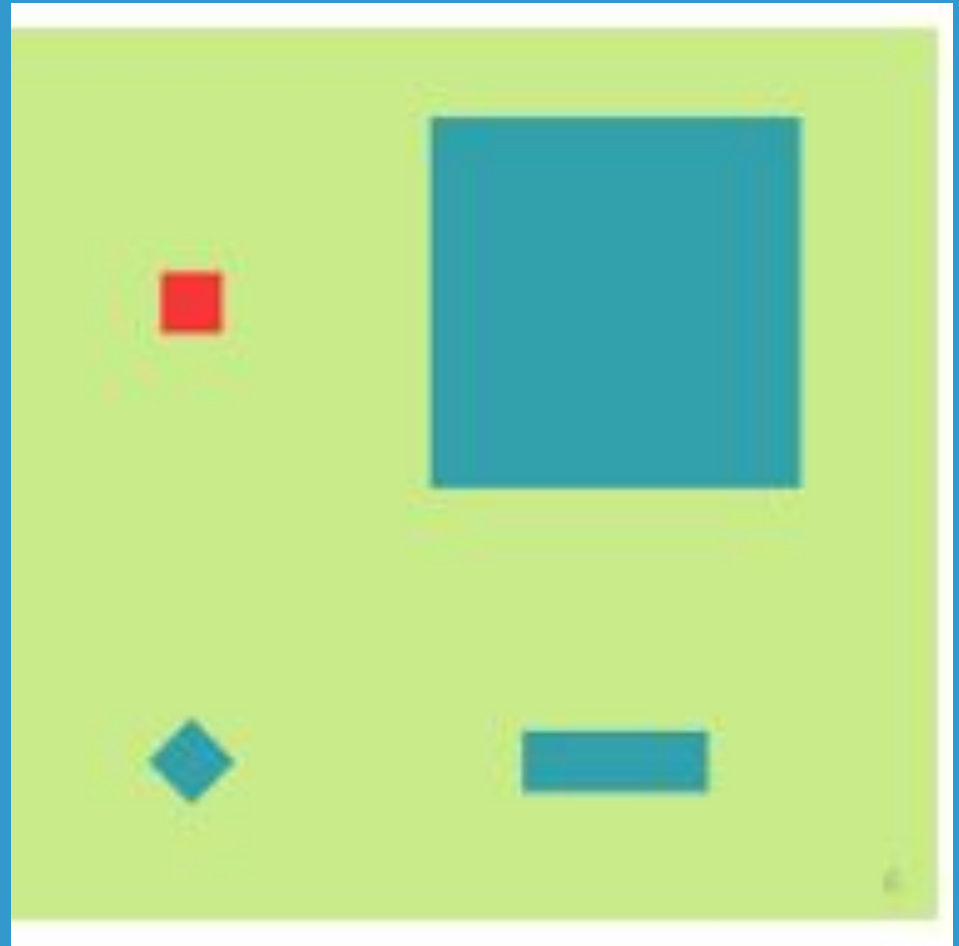


So many ways to see the same shape



Which one doesn't
belong?

by Christopher
Danielson



What do vibrant mathematics classrooms look like?

Students feeling comfortable taking risks

Students collaborating

Teachers encouraging perseverance

Students justifying their ideas and listening to the ideas of others

Teachers encouraging a wide range of possible methods for solving problems

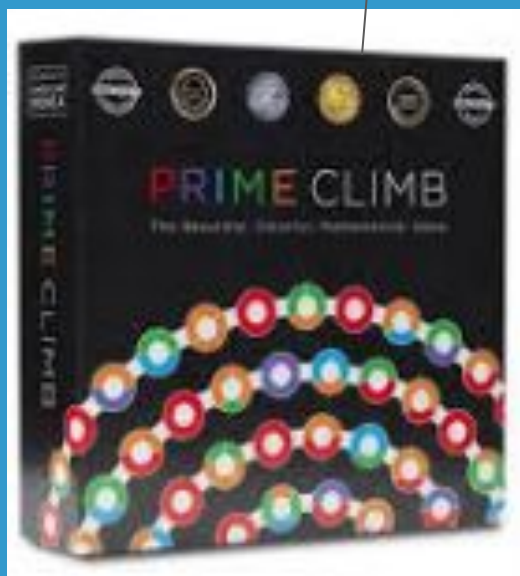
Ways to support Math Learning at Home

Mathematize your World!!--Notice math in everyday life

Play Math Games like Prime Climb and Mobi, solve puzzles like KenKen

Be positive about math! Your attitudes have a big impact!

Dreambox



Math Resources:

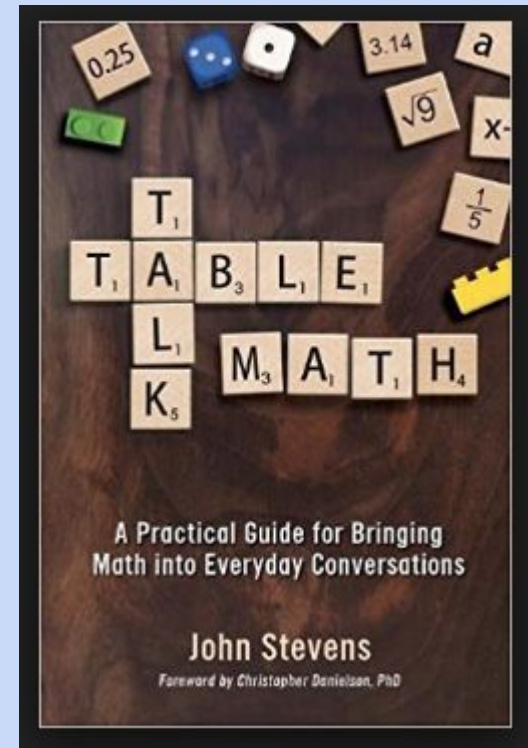
- *Go to Springhurst Website

- *Click on Academics Tab

- *Click on Math Resources

You will find a wealth of resources to better understand the math we are doing in school!!

Other Resources



bedtimemath.org

Thank you for coming!!

rosenj@dfsd.org

For Math Resources, go to

<https://www.dfsd.org/domain/275>