Table Talk

Would you rather:

Go on a 5 minute shopping spree in the department store of your choice

OR

Receive a $2,000 gift card to the department store of your choice?

Let's Give Them Some MATH to Talk About

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Bristol Public Schools

Goals for this session

- Engage in constructing and critiquing tasks
- Understand the benefits of engaging students in Math Practice 3
- Hear from our students about the difference this work made
- Gain resources for engaging all of your students in Math Practice 3

https://tinyurl.com/Atomic2017

MP 3: Construct viable arguments and critique the reasoning of others.

"Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions."

"Students at all grades can listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments."

Connections to CCSS Literacy

CCSS.ELA-LITERACY.SL.3.1

Engage effectively in a range of **collaborative discussions** (one-on-one, in groups, and teacher-led) with diverse partners on *grade 3 topics and texts*, building on others' ideas and expressing their own clearly.

CCSS.ELA-LITERACY.L.3.6

Acquire and use accurately grade-appropriate conversational, general academic, and **domain-specific words** and phrases, including those that signal spatial and temporal relationships.

Connections to CCSS Literacy

CCSS.ELA-LITERACY.W.3.1

Write opinion pieces on topics or texts, supporting a point of view with reasons.

CCSS.ELA-LITERACY.W.3.10

Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of **discipline-specific tasks, purposes, and audiences**.

Construct viable arguments and critique the reasoning of others. Mathematical Practice 3

I can explain my thinking and respond to the mathematical thinking of others.

I can explain my strategy using...

- objects, drawings, and actions 
- examples and non-examples
- contexts

I can compare strategies with others by...

- listening 
- asking useful questions 
- understanding mathematical connections between strategies

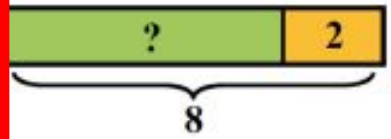
Math Practices

I can...

Solve problems without giving up

Use numbers and words to make sense of problems

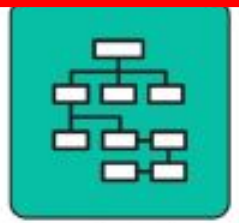
Explain my thinking and try to understand others



Use math symbols and numbers to solve problems

Use math tools, pictures, drawings and objects

Work carefully and check my work



Use what I know about math to solve problems

Find and use patterns to solve problems

We do not “teach” the practices, rather we design our instruction around tasks that give students the opportunity to use and develop the practices in learning and doing mathematics everyday…

-Linda Gojak, President

National Council of Teachers of Mathematics

Multiple Entry Points

Would You Rather…

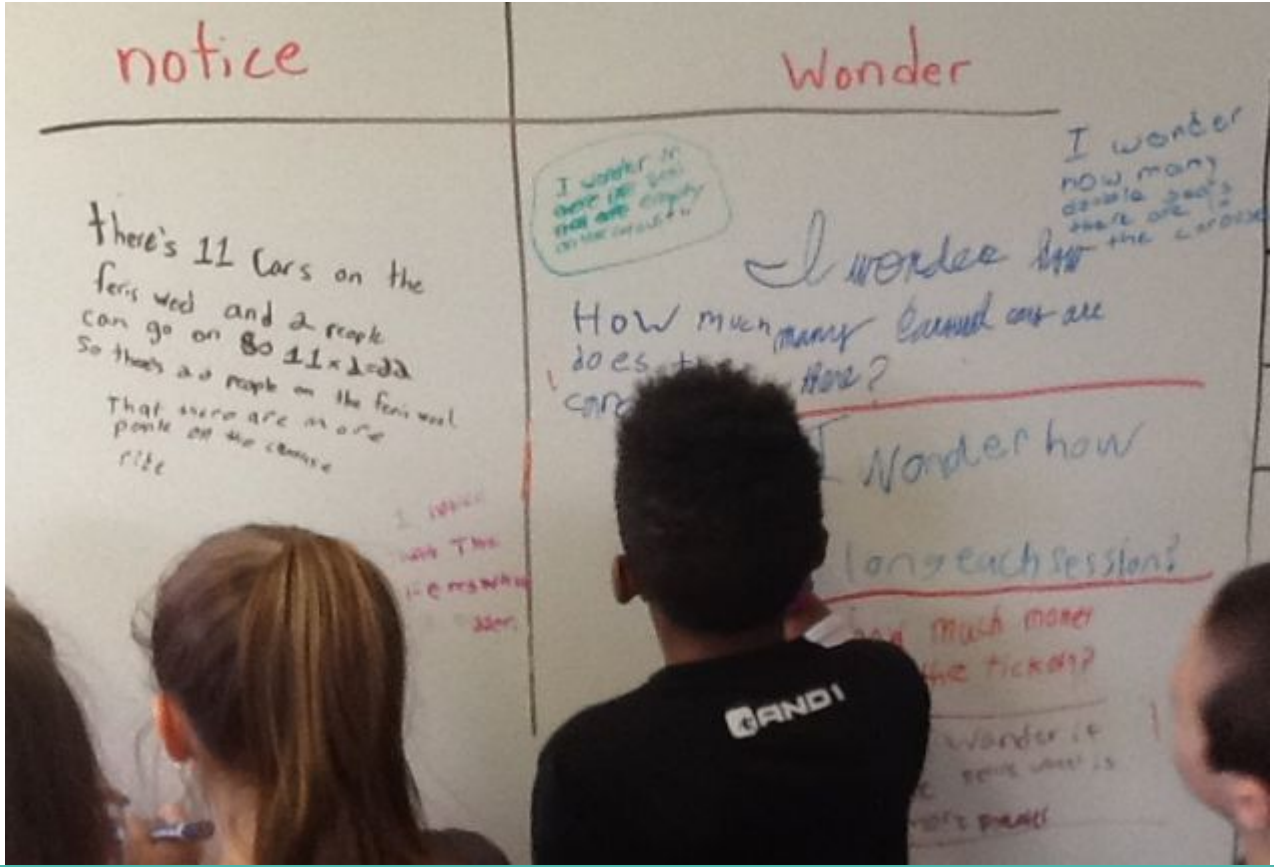
stevens009 July 22, 2015 1

Have the revenue from an amusement park Ferris wheel *or* carousel ride?

4 tickets to ride

3 tickets to ride

4th Graders Notice and Wonder

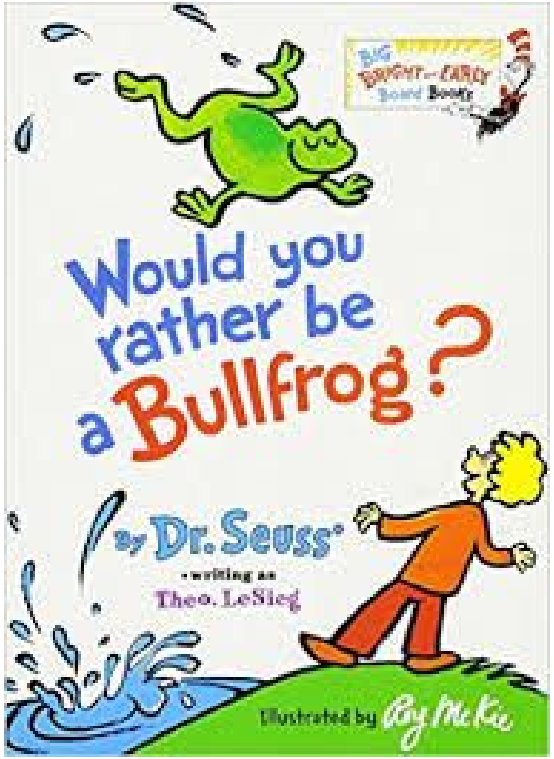


What did 4th graders wonder?

- What do each of them cost?
- How long is each session?
- How long to load/unload the carousel?
- Is the ferris wheel constantly loading or unloading?
- How many cars are on the ferris wheel? How many people fit in each car?
- Is the ferris wheel more popular?
- Which one breaks down more? How much does it cost to fix it?
- Is the Merry Go Round safer? Will it cost less for insurance?

Would You Rather... primary

- Would you rather be a circle or a square?
- Would you rather sort your toys by color or type?
- Would you rather eat a bag of M&Ms or a bag of marshmallows?

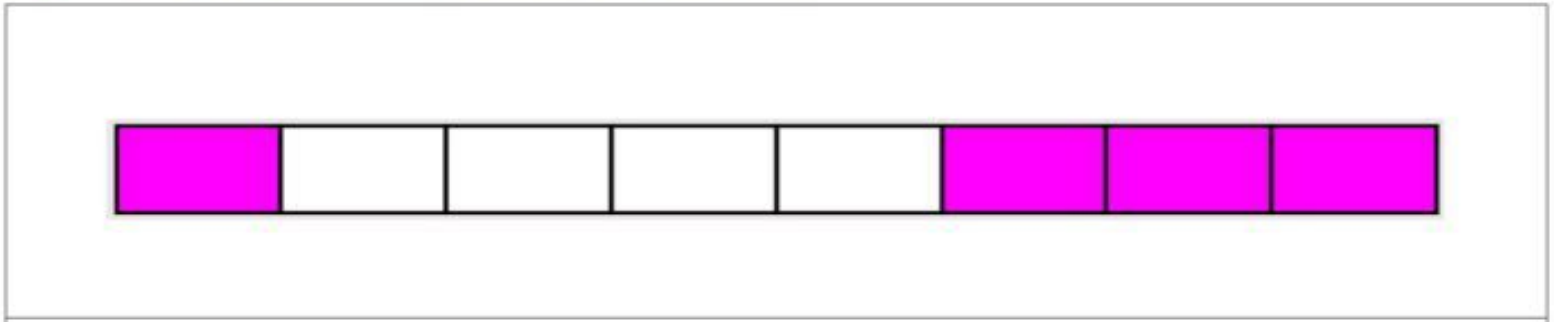


Same Different

What is the same? What is different?

Same Different-Fractions

What is the same? What is different?



Formative Assessment

Chalk Talk

- Solidify thinking
- Self reflection
- Patterns in thinking
- Initial and/or formative assessment
- Generate ideas
- Creates questions
- Presents different ideas and perspectives

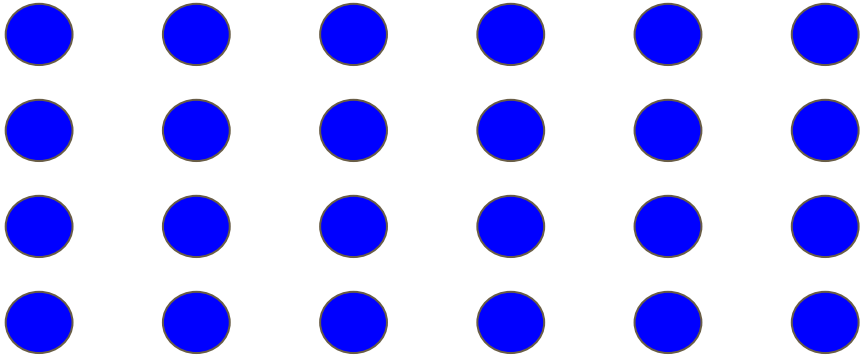
Chalk Talk

Tug Of War

- Independent thinking
- Revision of thoughts
- Discourse
- Strengthening of vocabulary
- Building knowledge base

Tug of War

Does this represent multiplication or division? Prove it.



Tug of War

÷

X

Does this represent multiplication or division? Prove It

Both

Joe: Tug of war I would choose division because in each row there are amount in each row.

Anne: Division you can divide 4 beofe 24 5 each

Alexis: Tug of War Does this represent multiplication or division? Prove it 24 (4×6=24) (4×5=20)

Noah Black: I think it's multiplication because it would be a story problem 24÷2=12 4×5=24 5+4+6+9=24

Tug of War Motoshin: It represents multiplication because when you look at the array row 1 row 2 row 3 row 4 there are four times six. 4×6=24

Tug of War Motoshin: It represents multiplication because it would be 4×6=24

Tug of War Motoshin: It represents multiplication because it would be 4×6=24

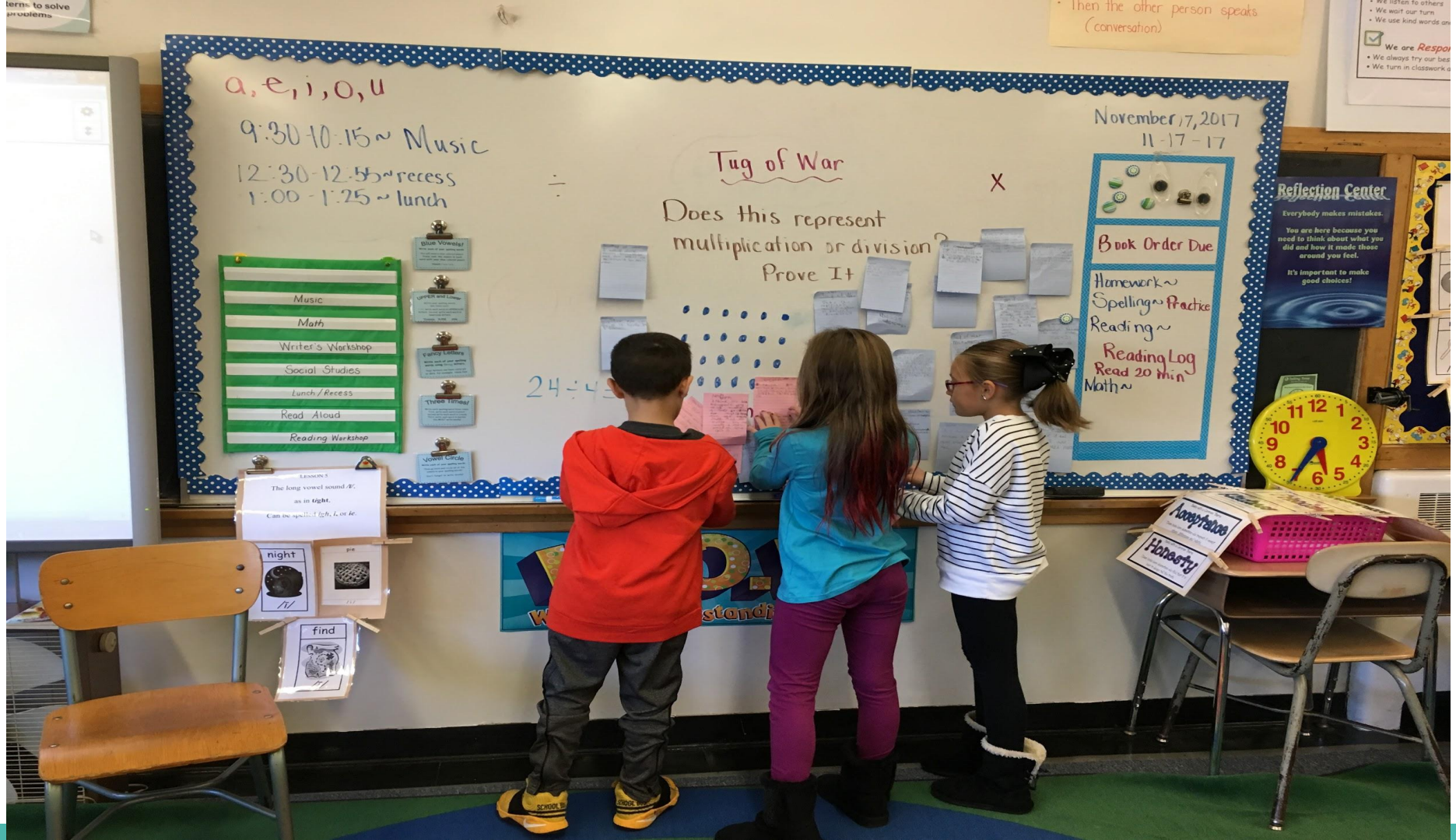
Tug of War: 4×6=24 It represents multiplication because it has equal amounts in each row. Prove it. Multiplication. It has an array showing 4 rows and 6 in each. It's clearly is multiplication.

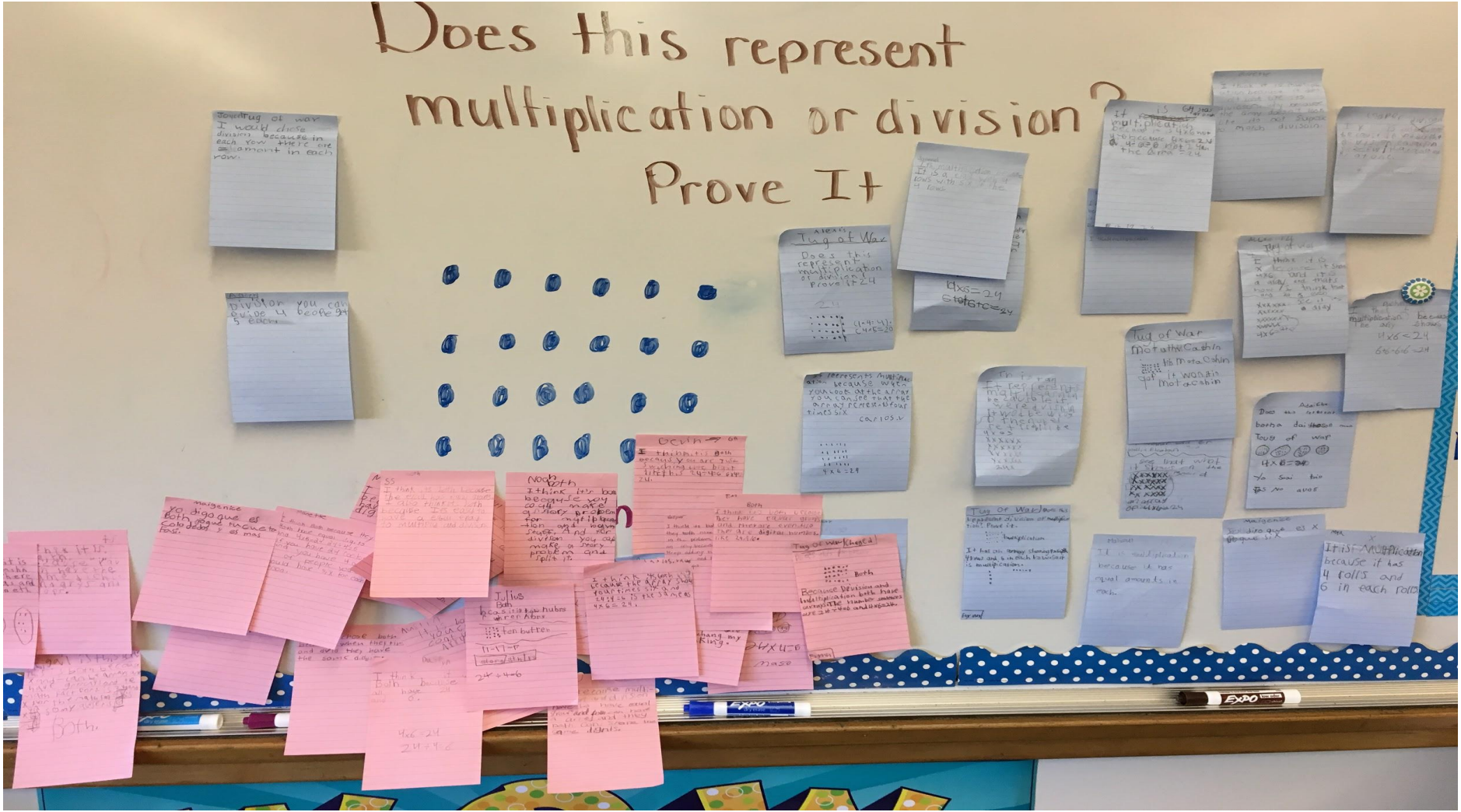
Tug of War: It is multiplication because it has equal amounts in each.

Anne: both I know because if I put 4 twice it would be 8 there are 24 there are 24 there are

Adalice: Does this represent berta dai tugo of war 4×6=24 Yo Soai tuo No aves

Malgenie: Jo dito que es X porque si X


a, e, i, o, u
9:30-10:15 ~ Music
12:30-12:55 ~ recess
1:00 - 1:25 ~ lunch
Tug of War
Does this represent multiplication or division?
Prove It
November 17, 2017
11-17-17
Book Order Due
Homework ~
Spelling ~ Practice
Reading ~
Reading Log
Read 20 min
Math ~
Reflection Center
Everybody makes mistakes.
You are here because you need to think about what you did and how it made those around you feel.
It's important to make good choices!
Music
Math
Writer's Workshop
Social Studies
Lunch / Recess
Read Aloud
Reading Workshop
Blue Vowels!
Upper and Lower
Fancy Letters
Three Friends
Vowel Circle
Lesson 5
The long vowel sound /ī/,
as in tight,
Can be spelled igh, i, or ie.
night
pie
find
Acceptance
Honesty


Does this represent multiplication or division?
Prove It

"Getting students to talk about mathematical content is one of the best ways to engage in formative assessment. An additional benefit is that <u>students may themselves realize what they don't understand and what they do understand</u>. This allows them to adjust their own reasoning, and over time it may improve their metacognitive abilities."

-Chapin, O'Connor, Anderson

How would you structure this task to engage students in Math Practice 3?

There are 24 chairs that need to be arranged for a party. What are the various ways that you can arrange the chairs into equal groups?

Original Task from NC Department of Public Instruction http://3-5cctask.ncdpi.wikispaces.net/

Engaging Students in MP 3

There are 24 chairs that need to be arranged for a party. What are the various ways that you can arrange the chairs into equal groups?

Choose one array and defend why that is the best possible way to arrange the chairs.

Critiquing Explanations

- Start with concrete (tiles, drawings)
- Talk before write
- Whole group discussion
- Revise answers

Critiquing Explanations

This can be used in many ways!

- Students revise written responses based on discussions
- Critique the work of others
- Find the mistake
- Whole group, small group, and individual
- Formative assessment

Seeing Math in Your Everyday Life

Number Talk Images


Ibulb

Estimation 180

How tall is the lamp post?

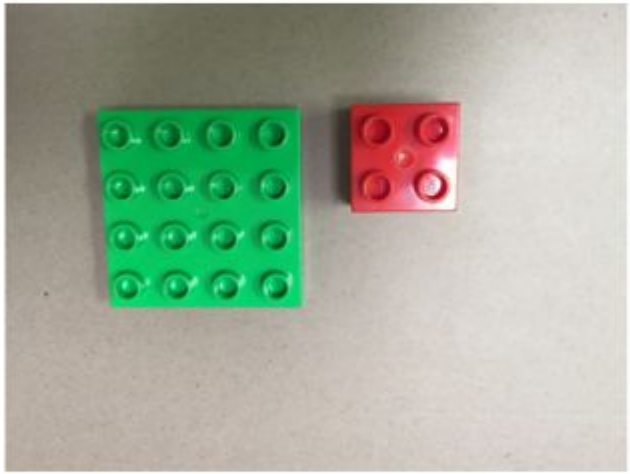
On day 1, of this series, we find out that Mr. Stadel is 6’4”.

What are some strategies you expect students to use to come up with an estimate?

Estimation 180

Primary Tasks like Estimation 180

How many red blocks will it take to cover the green block?



Video Answer

Primary Tasks like Estimation 180

How many marshmallows will balance with 4 red blocks?

Video Answer

Vocabulary & Concept Development

Which One Doesn't Belong?

Which One Doesn't Belong?

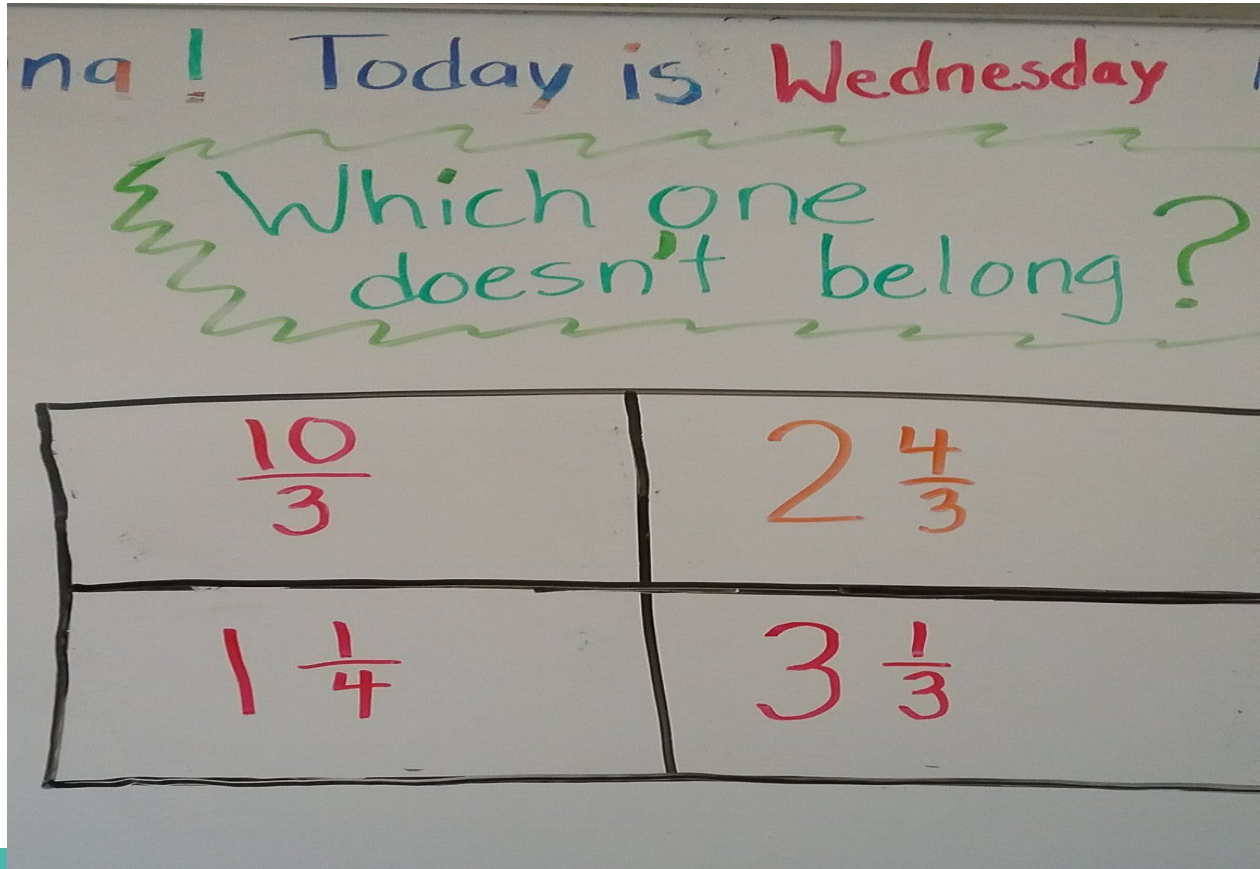
- Multiple Entry Points
- Formative Assessment
- Seeing Math in Everyday Life
- Vocabulary & Concept Development

Student Engagement

Students Become the Creators

Parent Conferences

Family Math Nights



Untitled.notebook

Parent

Which one doesn't belong

$\frac{10}{3}$	$2\frac{4}{3}$
$1\frac{1}{4}$	$3\frac{1}{3}$

because it's NOT a mixed number

because it doesn't have them same denominator

because it doesn't equal $\frac{10}{3}$

Student

Which one doesn't belong

$\frac{10}{3}$ red	$2\frac{4}{3}$ orange
$1\frac{1}{4}$ red	$3\frac{1}{3}$ red

Only one ~~that~~ is not a mixed number.

Different color

Only double digit number in the numerator.

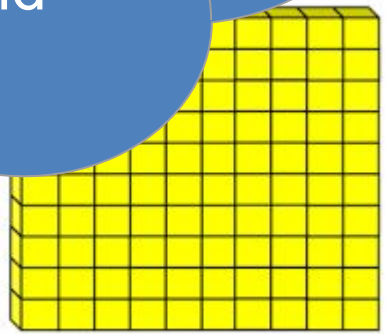
Only one that doesn't equal to $3\frac{1}{3}$

Only one that doesn't have a denominator of 4.

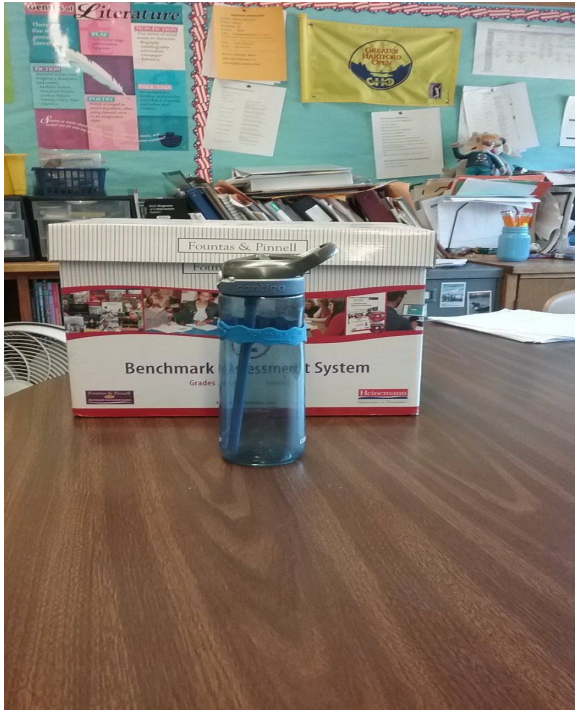
If changed to a decimal it will be the only one that has a one in the tens place

Trading “Which One Doesn’t Belong” Problems

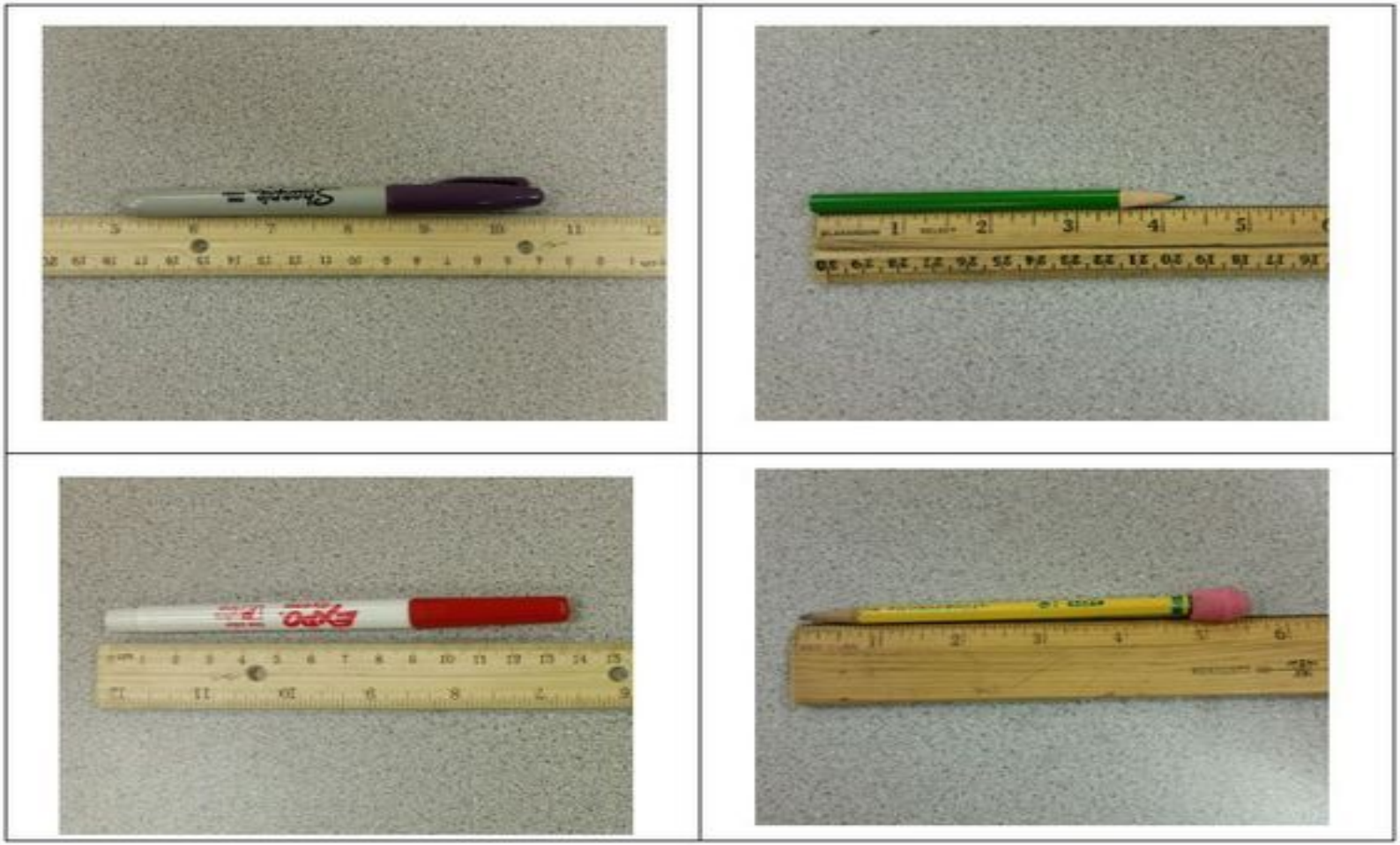
1.I would take away 100 because its the only one not being mutiplied 2. I would take away the 4th one also because its the only one in cubes 3. I would also take away the 2nd one because it equals 30.



Kids become the creators- Estimation 180 theme



Student-Created Which One Doesn't Belong



Student-Created ESTIMATION 180

How many beads are in the container?

Move
for answer

What did we learn about Math Practice 3?

- Connect to Literacy instructional practices
- Easy to engage all students because of the multiple entry points
- Important, formative assessment data
- Activities can be short but powerful
- When students see math in their everyday life… embrace the teachable moment!

Thank you!

https://tinyurl.com/Atomic2017

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