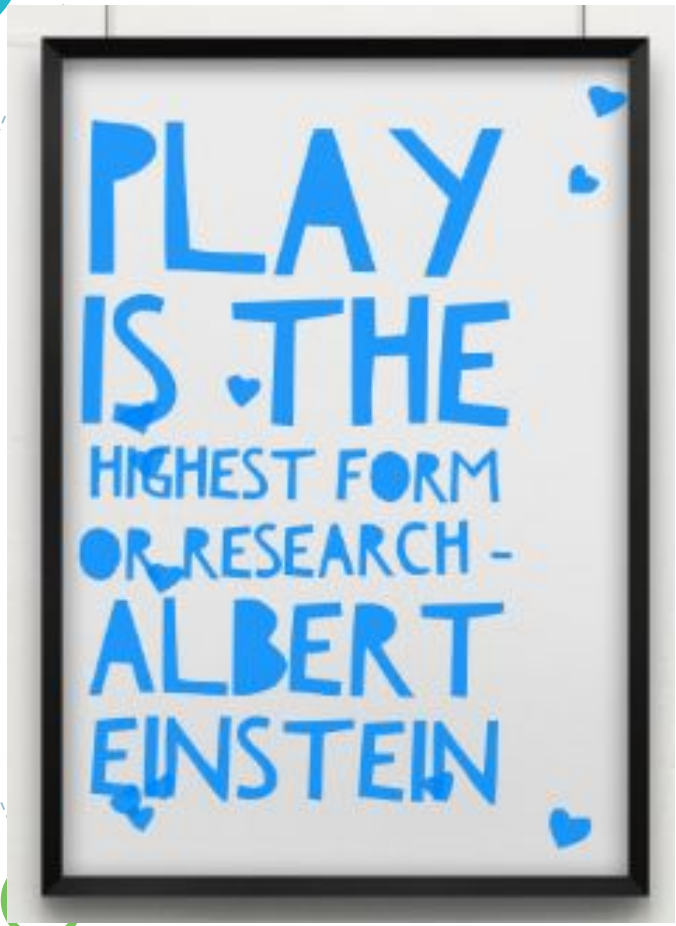
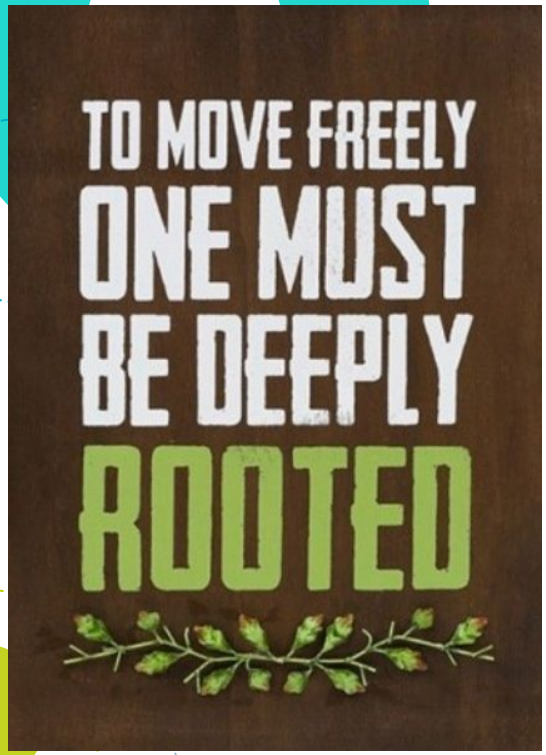


Explore with the tubs at your tables before we get started.

Before we get started, go follow us on Twitter and Instagram to get your name in the mix for door prizes!

Twitter: @learnlaugh_lead & @teachgrowbloom

Instagram: @learnlaughleadteaching & @teachgrowbloom



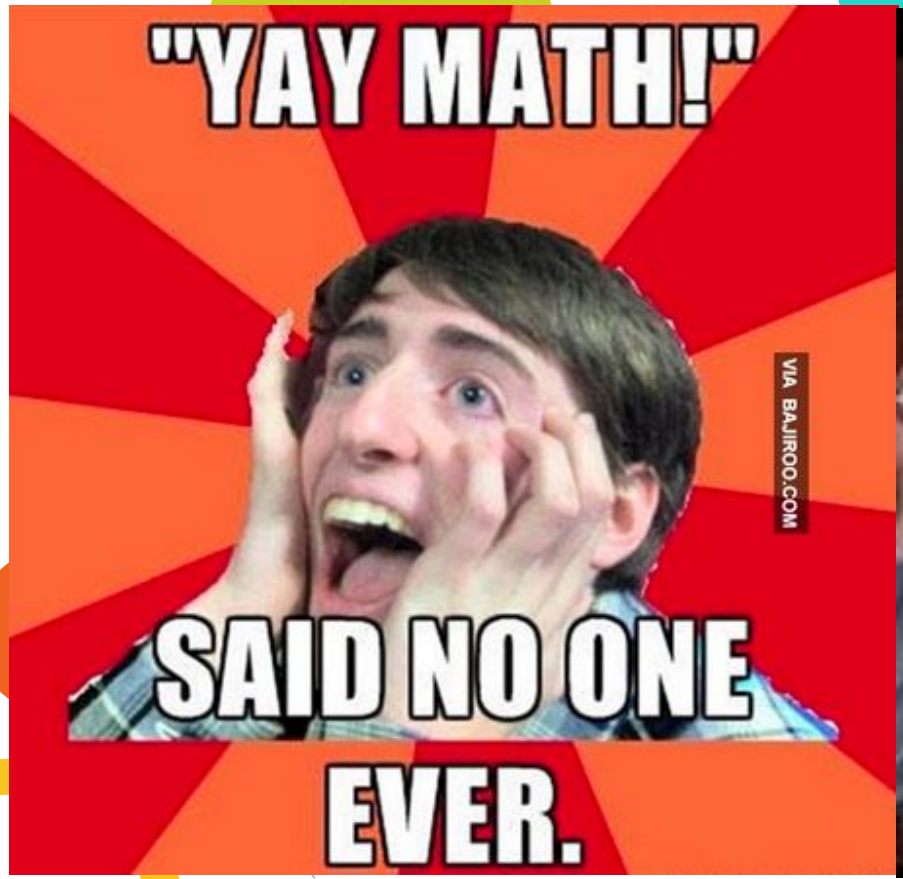
Developing Mathematical Roots: Promoting a Mathematics Culture Across the Curriculum

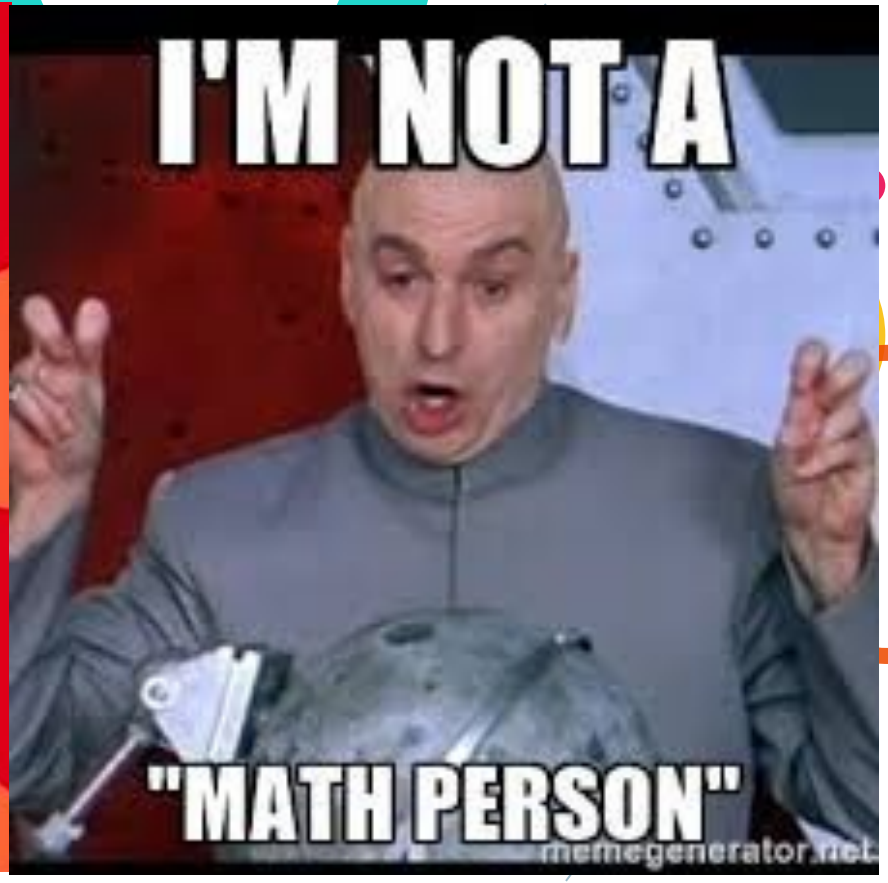
Jennifer Jolly, M.Ed., NBCT
Riverview Elementary
Fort Mill –York 4

Casey Davis, M.Ed.
Meadow Glen Elementary
Lexington 1

Who are you?

#Takeaway


"YAY MATH!"
VIA BAJIROO.COM
SAID NO ONE
EVER.


I'M NOT A
"MATH PERSON"
memegenerator.net

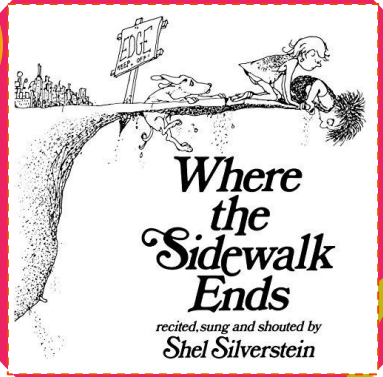
“

A negative attitude toward mathematics is a growing barrier for many children. For many children, negative attitudes toward mathematics begin early in life, sometimes even before they enter kindergarten. The child’s educational context at home and at school can affect this attitude (Geist, 2010, p.24).

#goals

1. Establish strategies to promote a mathematics culture within the math classroom.
2. Establish strategies to promote a mathematics culture outside the math classroom.

Hosted Gallery Walk



#Takeaway

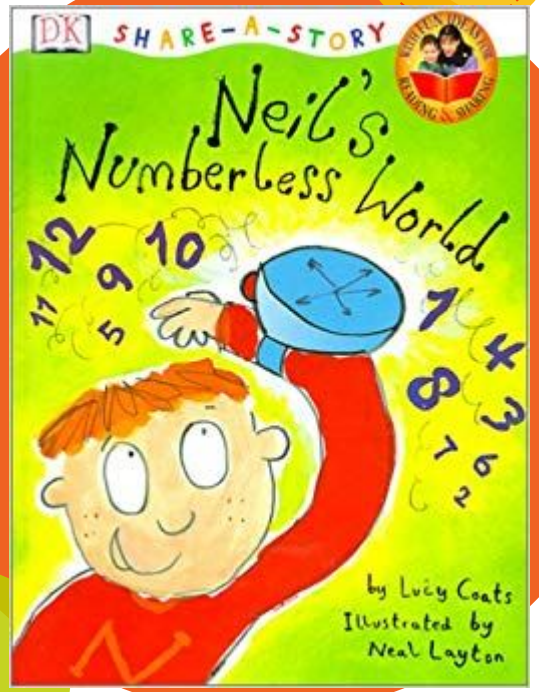
Start at your own table, then rotate around the room.

Don't for to become the "host".

Within the Math Classroom

Incorporating Children's Literature

- Provides authentic contexts to situate math (which is motivational)
- Teaches students that math is everywhere
- Helps students connect math concepts to the world around them
- Can be as simple as a poem or as complex as an activity stemming from a novel



Neil's Numberless World

In this book, Neil discovers what his world would be like without numbers.

Within the Math Classroom

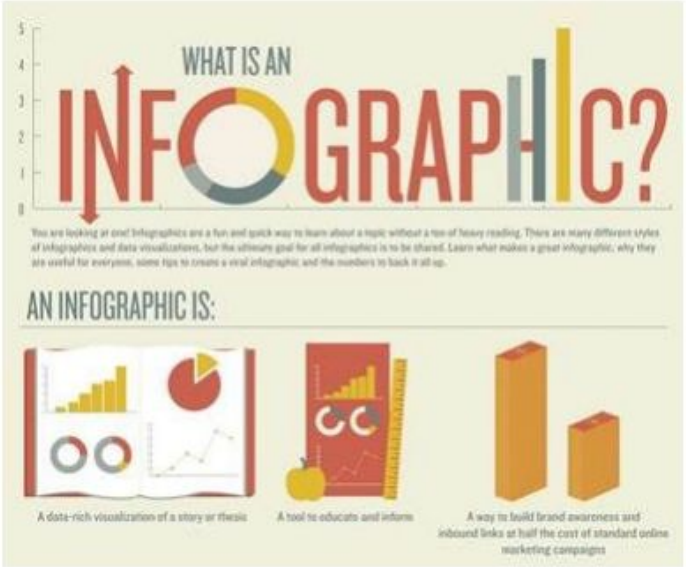
Alternative Assessment: Infographic Project

- Students are able to show what they know without taking a test
- Communication, writing, reading connections
- Integrates multiple math strands
- Creative outlet
- Authentic

#Takeaway

SHOW YOU KNOW: Multiplication Strategies Infographic Project

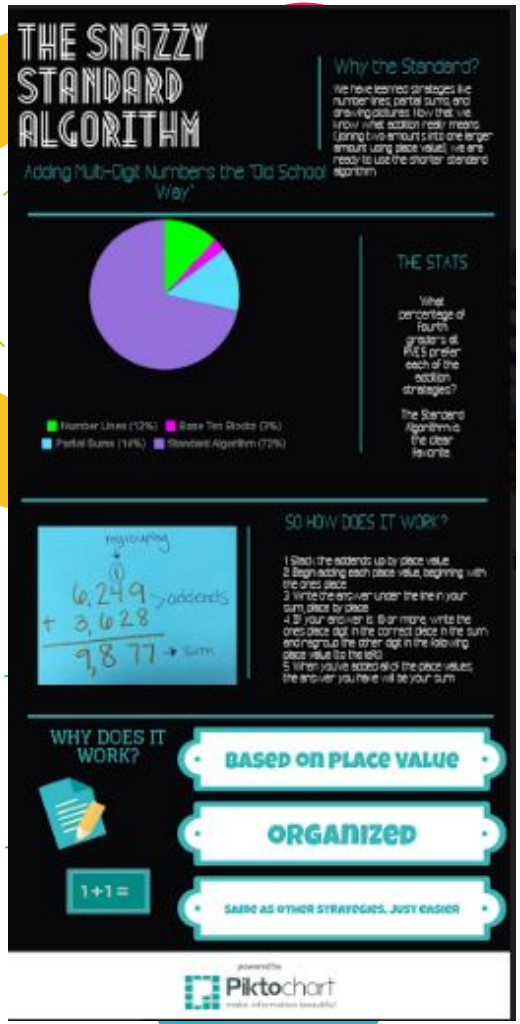
What is an infographic?



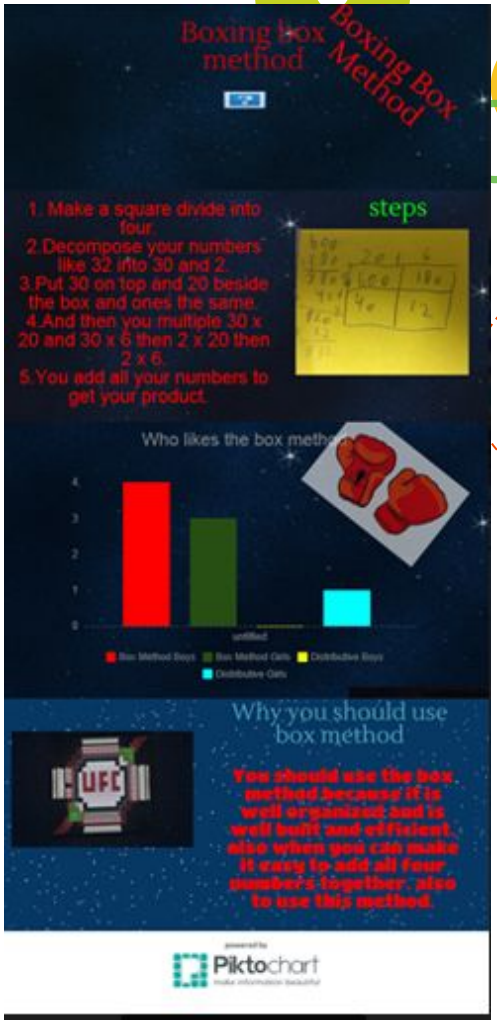
(https://www.customermagnetism.com/what-is-an-infographic)

Information + Graphics = Infographic

Multiplication Strategy Infographic


THE SNAZZY STANDARD ALGORITHM
Why the Standard?
Adding Multi-Digit Numbers the "Old School Way"
THE STATS
SO HOW DOES IT WORK?
WHY DOES IT WORK?
BASED ON PLACE VALUE
ORGANIZED
SAME AS OTHER STRATEGIES, JUST EASIER
Piktochart


THE BOOMING BOX METHOD
Word Problem
78%
Piktochart


Boxing Box Method
Boxing box method
1. Make a square divide into four
2.Decompose your numbers like 32 into 30 and 2
3.Put 30 on top and 20 beside the box and ones the same
4.And then you multiple 30 x 20 and 30 x 6 then 2 x 20 then 2 x 6
5.You add all your numbers to get your product
steps
Who likes the box method
Why you should use box method
You should use the box method because it is well organized and is well built and efficient. also when you can make it easy to add all four number's together. also to use this method.
Piktochart

4.NSBT.5 Multiply up to a four-digit number by a one-digit number and multiply a two-digit number by a two-digit number using strategies based on place value and the properties of operations. Illustrate and explain the calculations using rectangular arrays, area models, and/or equations.

ELA Standards Addressed:

4.L.10 Apply a range of strategies to determine the meaning of known, unknown, and multiple-meaning words, phrases, and jargon; *acquire and use general academic and domain-specific vocabulary***.**

4.C.MC.1 Interact with others to explore ideas and concepts, communicate meaning, and develop logical interpretations through collaborative conversations; build upon the ideas of others to clearly express one's own views while respecting diverse perspectives.

4.C.MC.1.2 Participate in discussions; ask and respond to questions to acquire information concerning a topic, text, or issue.

4.C.MC.1.3 Apply techniques of articulation, adequate volume, eye contact, facial expressions, posture, gestures, and space; take one's own turn in a respectful way.

4.C.MC.1.4 Engage in focused conversations about grade appropriate topics and texts; build on the ideas of others, pose specific questions, respond to clarify thinking, and express new thoughts.

4.C.MC.1.5 Explain personal ideas and build on the ideas of others by responding and relating to comments made in multiple exchanges.

4.C.MC.3 Communicate information through strategic use of multiple modalities and multimedia to enrich understanding when presenting ideas and information**.**

4.C.MC.3.2 Create presentations using videos, photos, and other multimedia elements to support communication and clarify ideas, thoughts, and feelings.

ELA Disciplinary Literacy Practices Addressed:

·Read, write, and communicate using knowledge of a particular discipline.

·Integrate the Reading, Writing, and Communication Standards and the Inquiry-Based Literacy standards to communicate and create understanding within the content areas.

·Extend and deepen understanding of content through purposeful, authentic, real-world tasks to show understanding and integration of content within and across disciplines

Fundamentals of Writing Addressed:

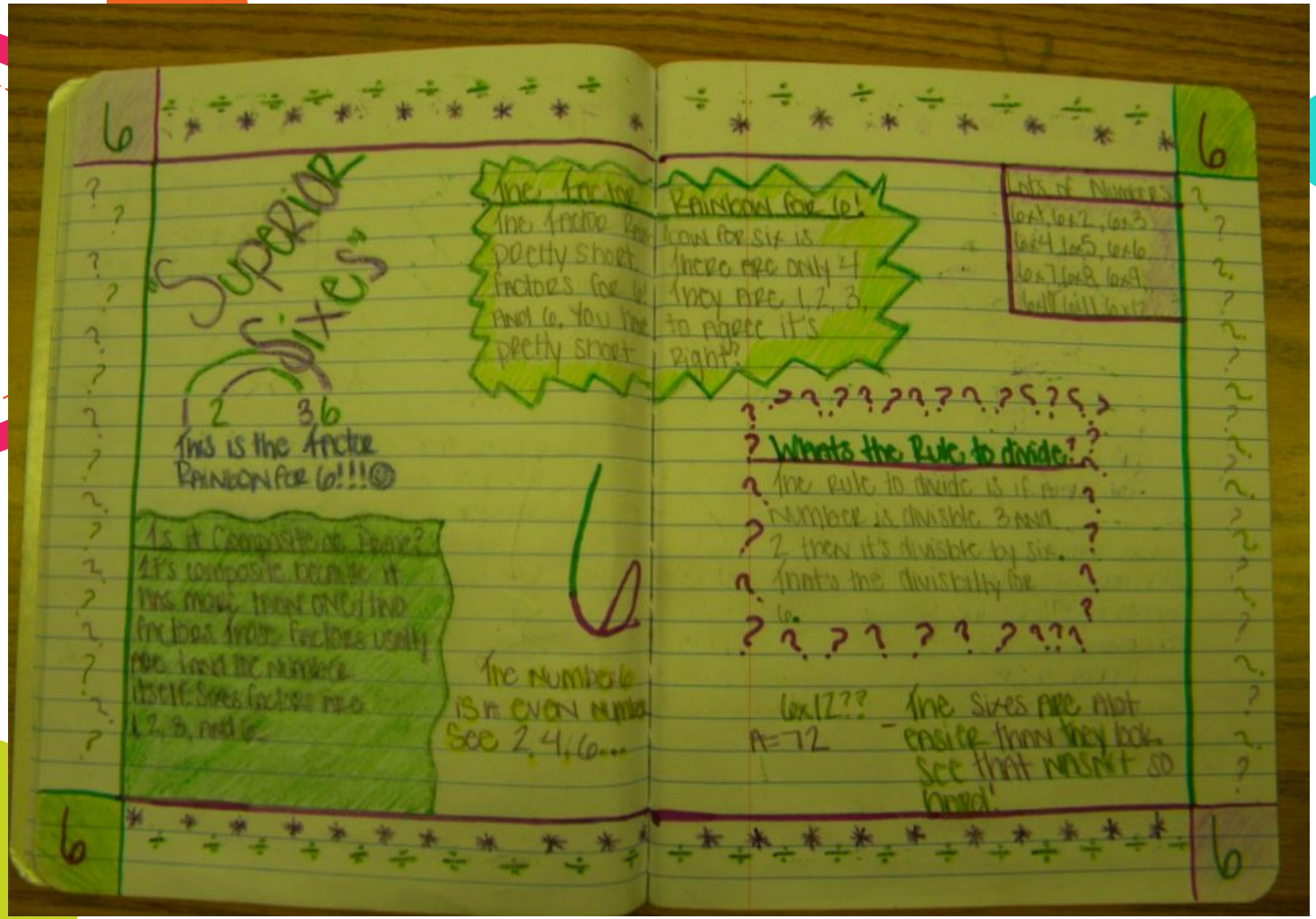
·Produce writing in which the development, organization, and style are appropriate to task, purpose, discipline, and audience.

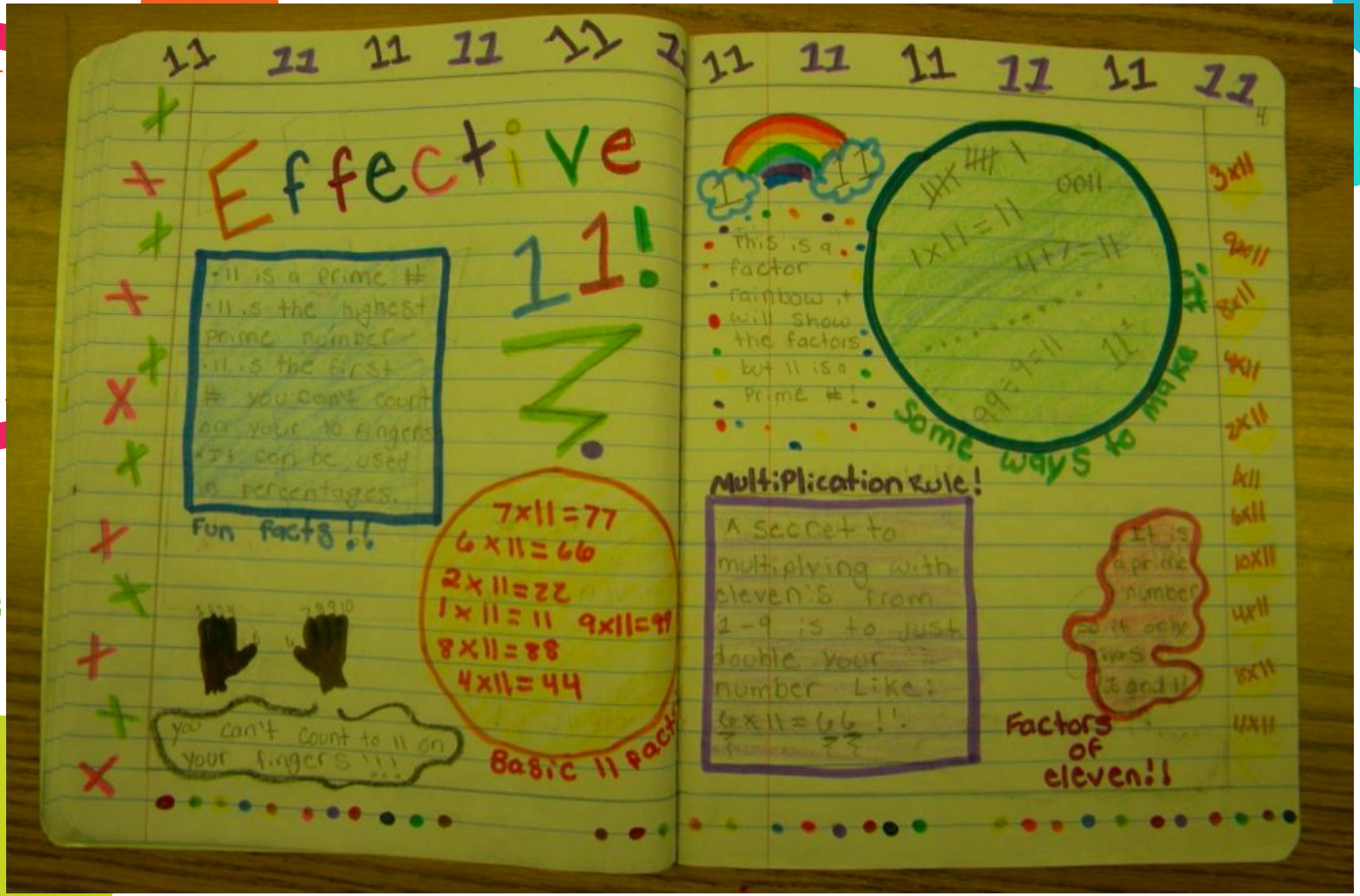
Use clear and coherent written language to accomplish a purpose

Within the Math Classroom

Alternative Assessment: Investigations

- Another way for students to reflect on what they know at a deeper level
- Connects what is learned in math with other content areas


"Superior Sixes"
1 2 3 6
This is the factor RAINBOW for 6!!!☺
Is it Composite or Prime?
It's composite because it has more than ONE/two factors. Factors really are just the numbers itself. Sixes factors are 1, 2, 3, and 6.
The factor
The factor Pro pretty short. factors for 6! And 6. You the pretty short
The Number 6 is an EVEN Numb See 2, 4, 6...
RAINBOW for 6!
Know for six is there are only 4 they are 1, 2, 3, to agree it's Right?
Lots of Numbers
1 ex 1, 6 ex 2, 6 ex 3
6 ex 4, 6 ex 5, 6 ex 6
6 ex 7, 6 ex 8, 6 ex 9,
6 ex 10, 6 ex 11, 6 ex 12
What's the Rule to divide?
The rule to divide is if a number is divisible 3 and 2, then it's divisible by six. That's the divisibility for 6.
6x12??
A=72
The sixes are not easier than they look. See that wasn't so hard!


Effective 11!
11 is a prime #
11 is the highest prime number
11 is the first # you can't count on your 10 fingers
It can be used in percentages.
Fun facts!!
7×11=77
6×11=66
2×11=22
1×11=11
9×11=99
8×11=88
4×11=44
Basic 11 facts
you can't count to 11 on your fingers!!!
This is a factor rainbow it will show the factors but 11 is a prime #!
Some ways to make 11
Multiplication rule!
A secret to multiplying with eleven's from 1-9 is to just double your number Like: 6×11=66!!
Factors of eleven!!
3×11
9×11
8×11
4×11
2×11
1×11
6×11
10×11
12×11
5×11
11×11

#Takeaway

Within the Math Classroom

Number Routines

- A daily opportunity to develop number sense, problem solving, and reasoning
- Kids think they're playing a game so they beg for these routines everyday
- Low floor, high ceiling
- Many of these routines can be adapted to other content areas also

How many?

@PatCiula

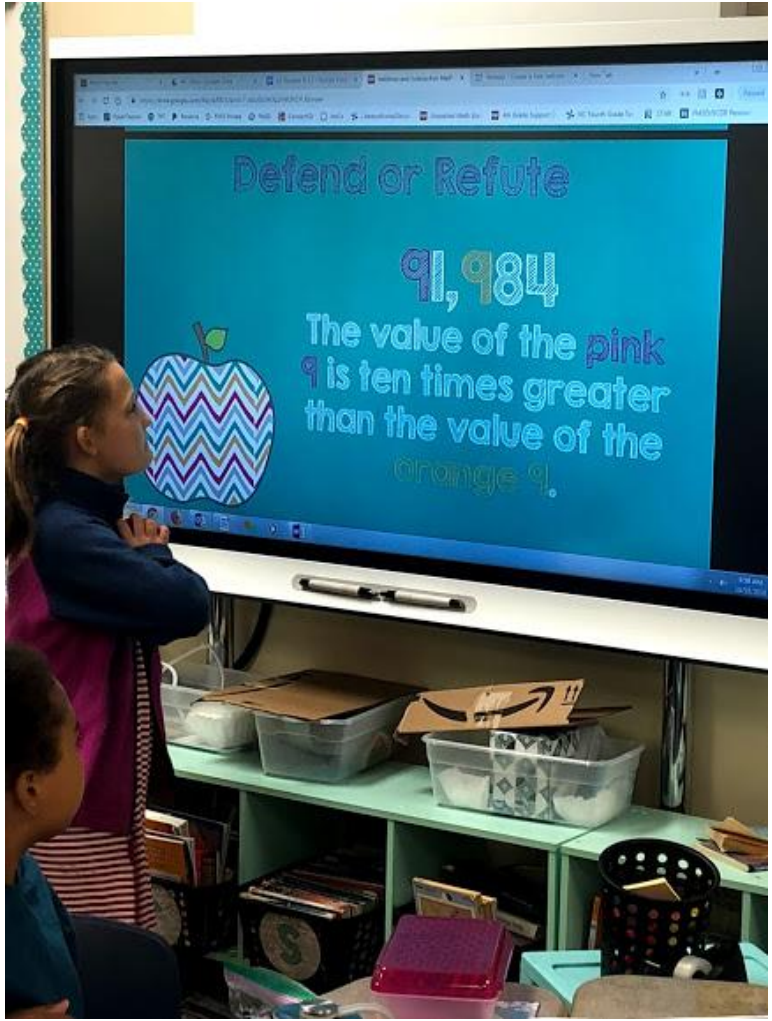
Which One Doesn't Belong?

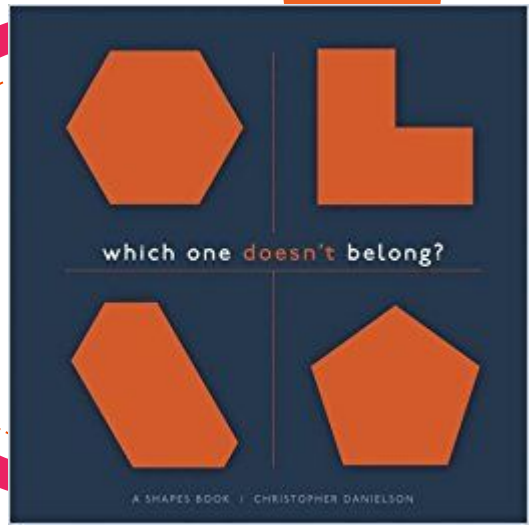
9	16
25	43

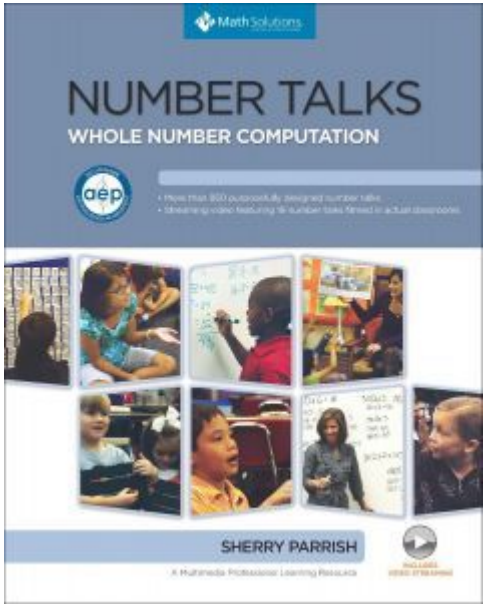
My Favorite No...

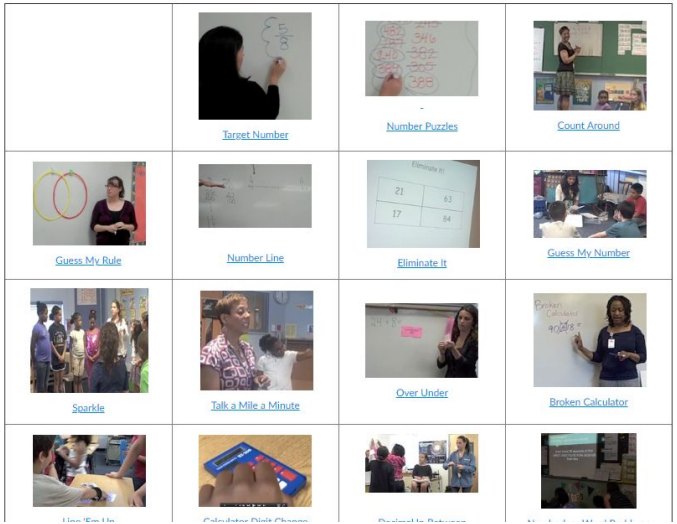
The best learning opportunities come from making mistakes. Let's talk about my favorite mistake from ____.


Factors are one away
2 EVEN factors
6 x 2
Array
additive
7 + 5
no numbers
2 odd addends


Defend or Refute
9,984
The value of the pink 9 is ten times greater than the value of the orange 9.







Howard County Public Schools

Google with your grade level and math for amazing resources

#Takeaway

Within the Math Classroom

"Math" Talk

- Conversation protocols that start in the math classroom and then can be extended beyond

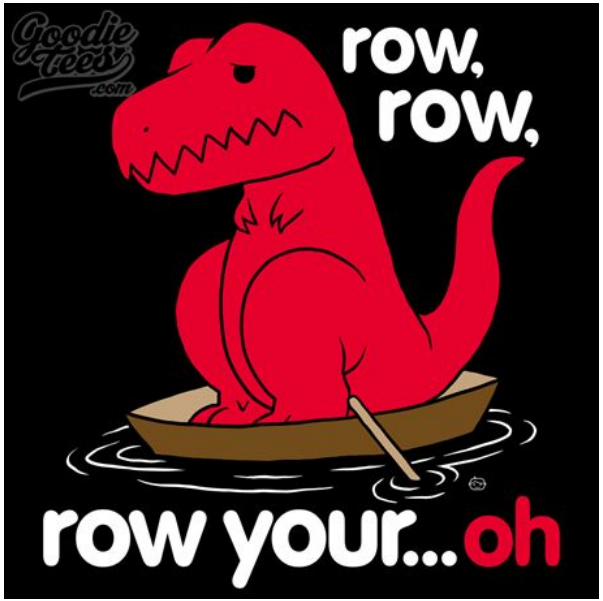
- Encourages participation from everyone while also giving them flexibility to have the think time they need

STOP! Self-Assessment Time

How's your windshield?:
Mud, Bug, Clear?

#Takeaway

Which dino?:
T-Rex, Raptor, Pterodactyl?



Outside the Math Classroom

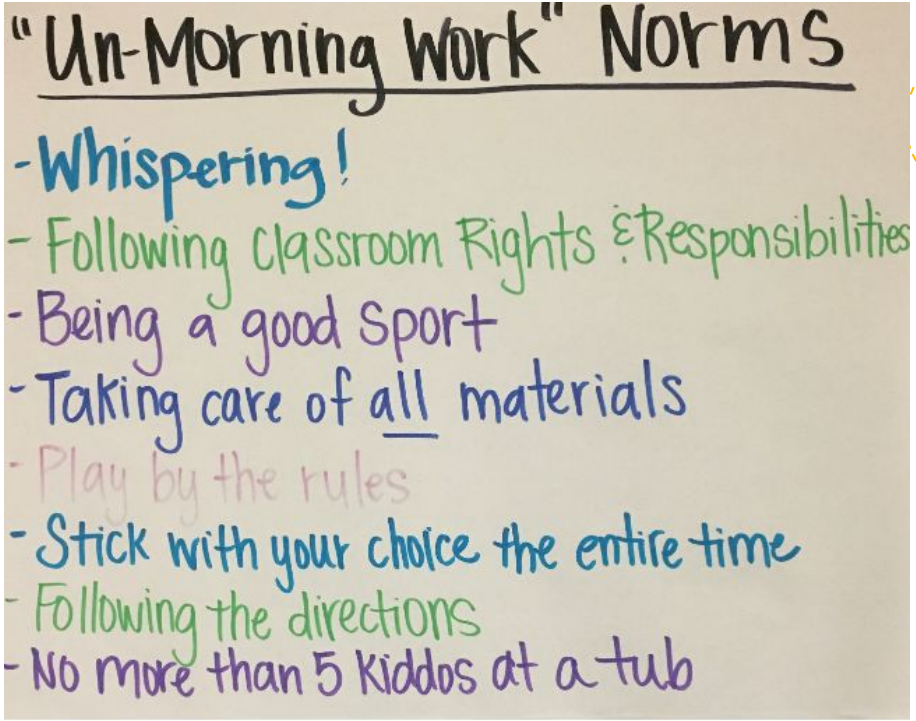
Un-Morning Work

- Meaningful start to the day
- Integrates math in a FUN way
- Provides time for students to collaborate and have some choice

November

"UN-MORNING WORK" CHOICE BOARD

MORNING MISSIONS Select a Morning Mission card. Use the provided materials to help you meet the challenge. Snap a picture with the iPad and share with Ms. J	**ARTISTIC EXPRESSION** Stretch your creativity and create a work of art (a colorful picture, a poem, a song, or a story) for display on our gallery wall or in the classroom library for this month.	**GENIUS HOUR** Extend your Genius Hour time and continue working on the project you are researching and preparing for "going public."
GAME TIME Practice teamwork, problem solving, strategizing, and good sportsmanship by selecting a board or card game to play with a small group. Keep score on the scorecards in the game bin.	**TECHNOLOGY TIME** Using a Chromebook, build your skills using technology by using one of the following approved sites: Freckle Book Flix FASTMath Multiplication Unit Games	**ENGINEER IT** Use the Legos, Magnatiles, and/or other building materials to design and build a real or imagined structure, vehicle, or device of your choosing. Snap a picture of make a quick video to share with Ms. J
EXPLORATION TIME Explore with the math tools in your table's math toolbox to figure out different ways the tools may be used and make connections to what you know about math.	**MATH GAMES** Keep your math skills sharp by playing one of the math games we've played this year. Pull these from the Math Games drawers.	**CATCH UP TIME** Use this time to catch up on an in-class activity that you may be behind on: research, a test or quiz, a project.
BOOK CLUB Set up or meet with your book club to discuss the book you are reading. Check out Ms. J's book sets for great options.	**BOOK TUB** Read a book from the November book tub and then write a book review to let other readers know your thoughts on the book.	**CONVINCE ME!** Have another idea you'd like to propose for UN-Morning work time? Write a convincing proposal and submit it for approval.



Un-Morning Work

Outside the Math Classroom

#Takeaway

Other "Mathy" Un-Morning Work Ideas:

- Create a math game to be played during math workshop
- Write math story problems we can use in mini-lesson or groups. Be sure to tell the problem type and write the solution sentence.
- Create a STEAM challenge for our class
- Plan our holiday party with a budget of $100

Outside the Math Classroom

Un-Homework

- Authentic, motivational learning
- Student-centered
- Homework kids will want to do

“{UN} Homework”

Math Rooted Samples

- Use homemade pizza, pie, pieces of bread to work on fractions.
- Use measuring cups and a fish tank to discuss conversions: gallons to liters to ounces.
- Create items for an "Estimation Table" where kids "estimate" how many items are in different containers with colorful objects.
- Addition and subtraction of food on their plate during dinner. It works really well using vegetables!
- Play War with any Operation.
- Measure the time it takes to count to ten, one hundred.
- Count the steps it takes you to get to different locations in your house from the front door.
- Go bowling. Keep score manually instead of letting the computer do it.
- Play Higher/Lower, Bigger/Smaller: mention either two numbers or two objects and the kids have to tell you which is higher/lower or bigger/smaller.
- Calculating how fast a runner/swimmer/speed skater ran/swam/skated per lap to
- win a race.
- Measure the angle of shadows being cast in your house.
- Plan a party or holiday feast using grocery ads.
- Compute people's ages at a certain date or event in the future.
- Compare amount of food in cereal boxes vs. size of boxes and discuss.

#Takeaway

Outside the Math Classroom

Math Throughout the Day: Management Strategies

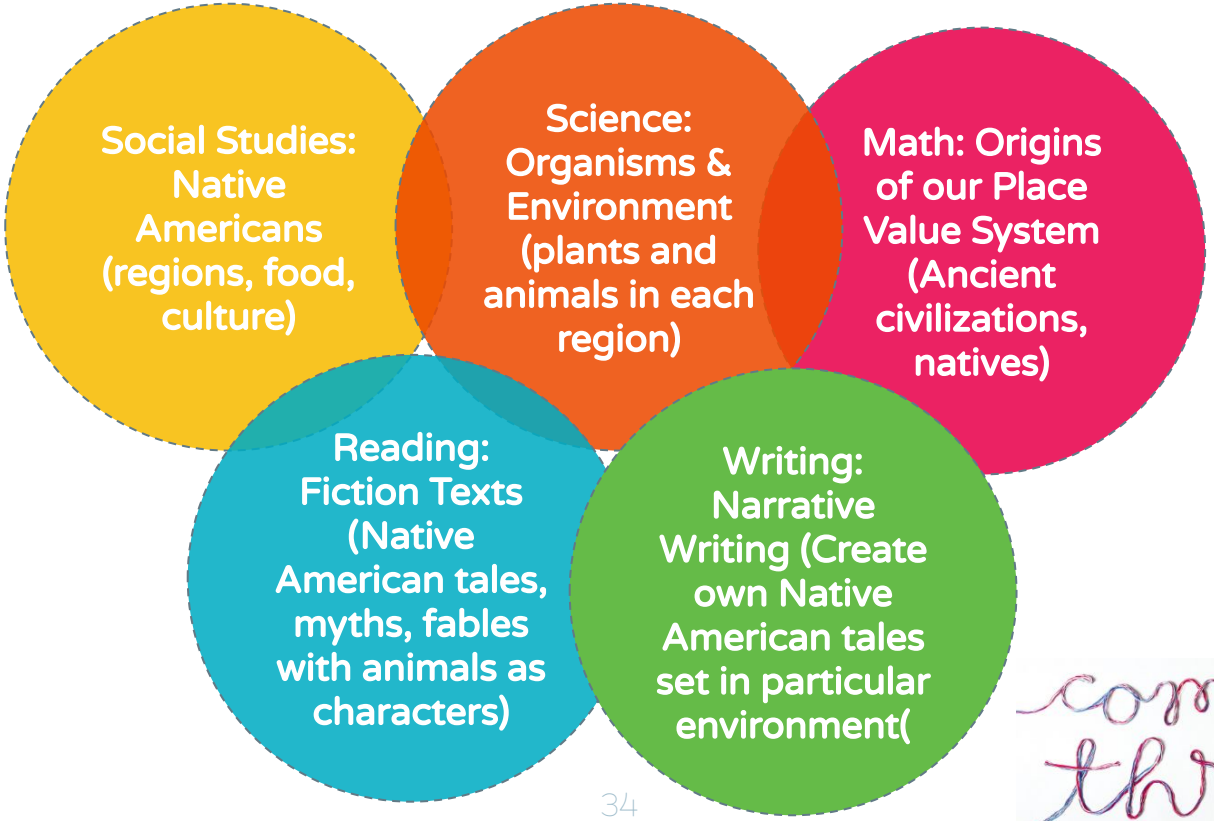
- Grouping by facts
- Lining up (odd #s, classroom number is a multiple of _ _ _)
- Data Binders
- Morning Grapple

#Takeaway

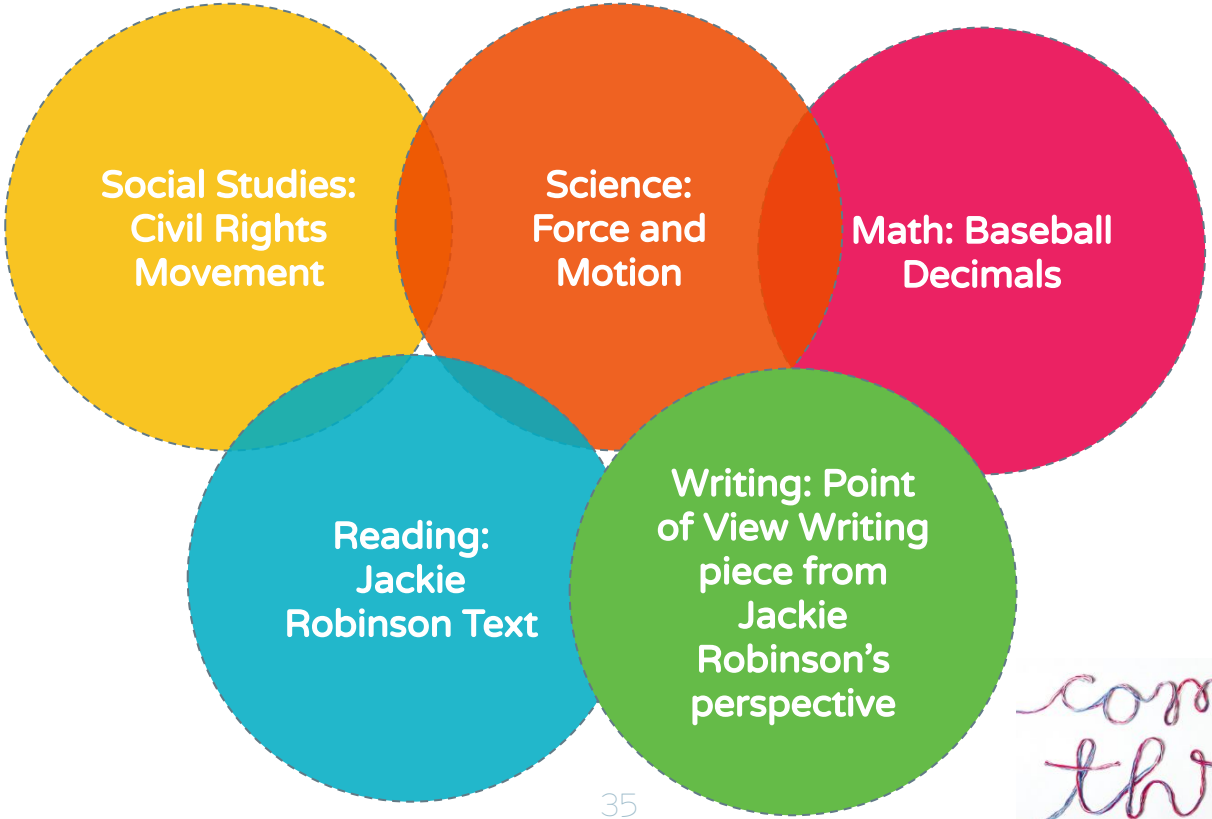
Six Degrees of Separation

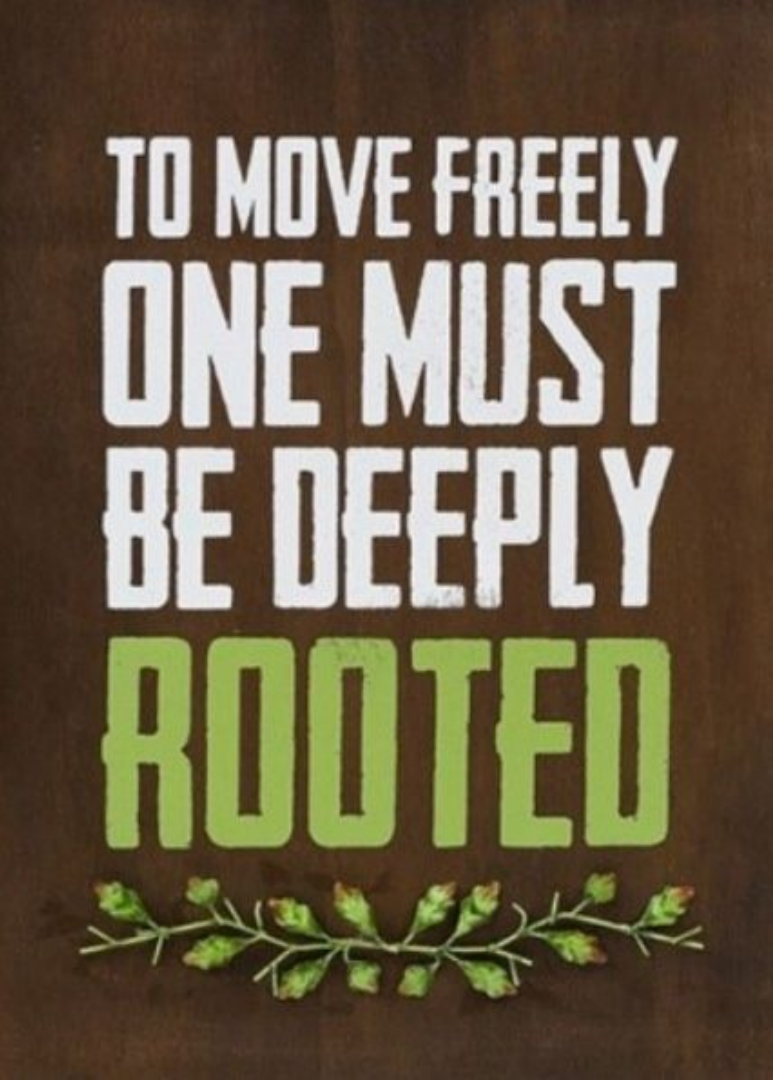
#Takeaway

Integration Across the Curriculum



Integration Across the Curriculum





To help our students become flexible and confident problem solvers. How? Providing opportunities for them to develop “mathematical roots” through a mathematics culture in our classrooms that are positive, engaging, and integrated.

Debrief

One Word Whip

#Takeaway

Questions?
Comments?
Concerns?

Contact us...for real!

Jennifer Jolly

Riverview Elementary School, Fort Mill Schools

jollyj@fortmillschools.org

www.jjollyclass.weebly.com

Twitter: @learnlaugh_lead

Instagram: @learnlaughleadteaching

Casey Davis

Meadow Glen Elementary School, Lexington 1

mdavis1@lexington1.net

www.cdavisclassroom.weebly.com

Twitter: @teachgrowbloom

Instagram: @teachgrowbloom