SPS Kindergarten Readiness Numeracy Workshop

Winter 2022

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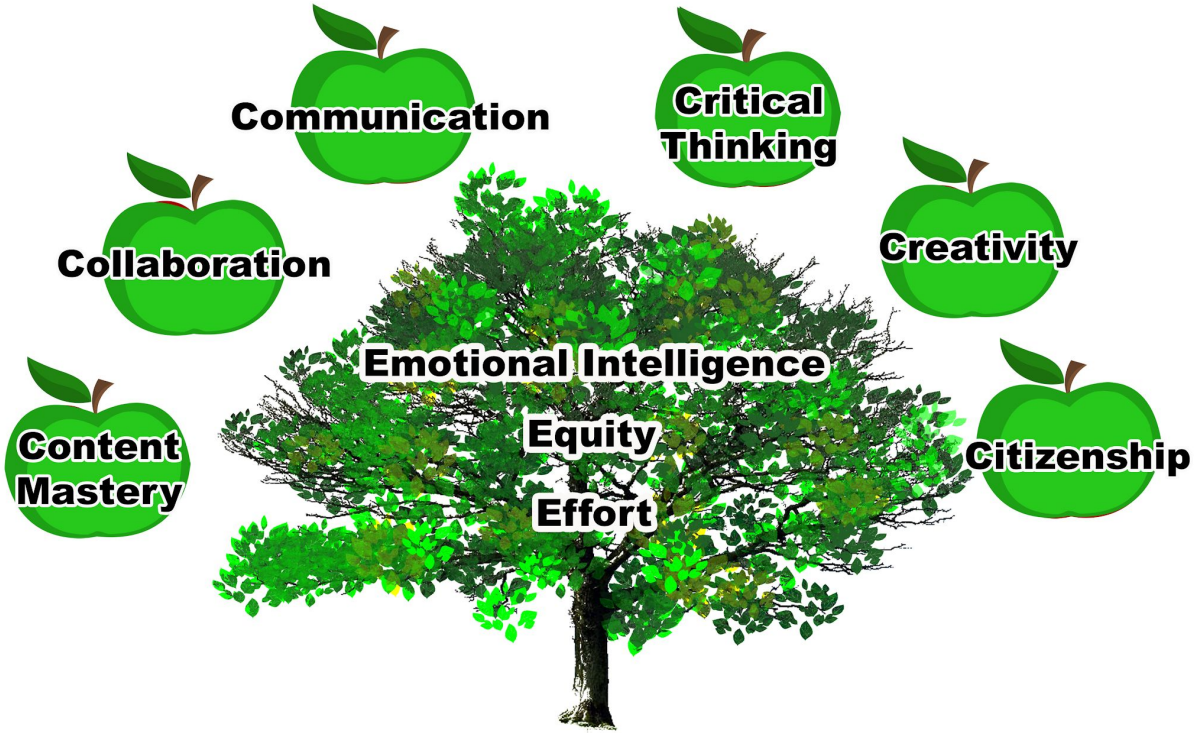
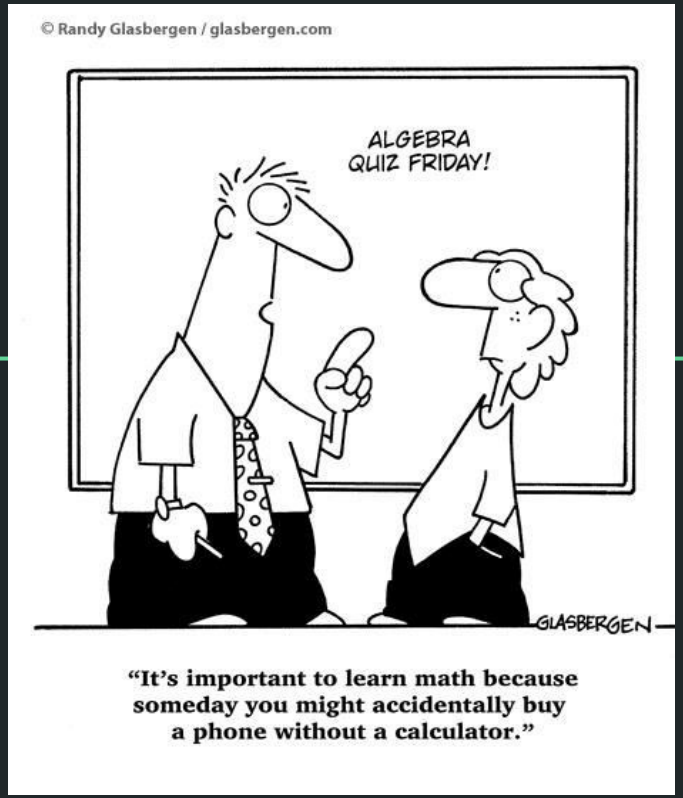
Vision of a Graduate

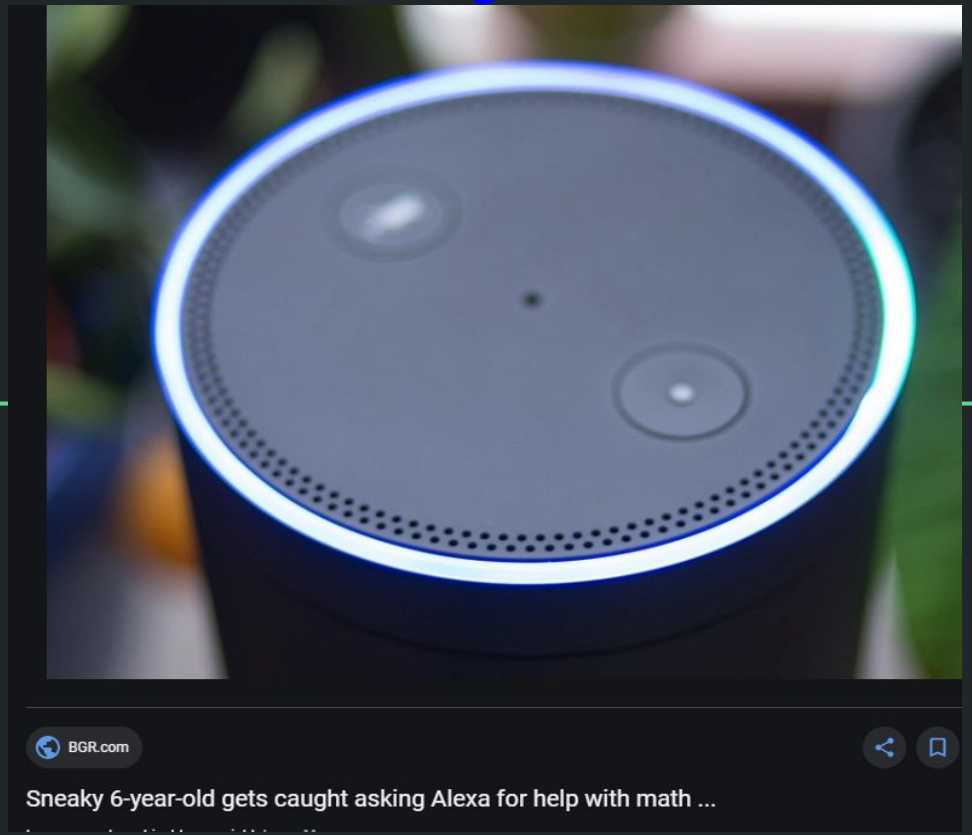


Key Shifts in Common Core Mathematics

- Focuses on Conceptual understanding (knowing the “why” and “how”)
- Requires students to apply skills in real world problems and situations
- Encourages multiple strategies and approaches for procedural fluency

Teaching Math in the 21st Century



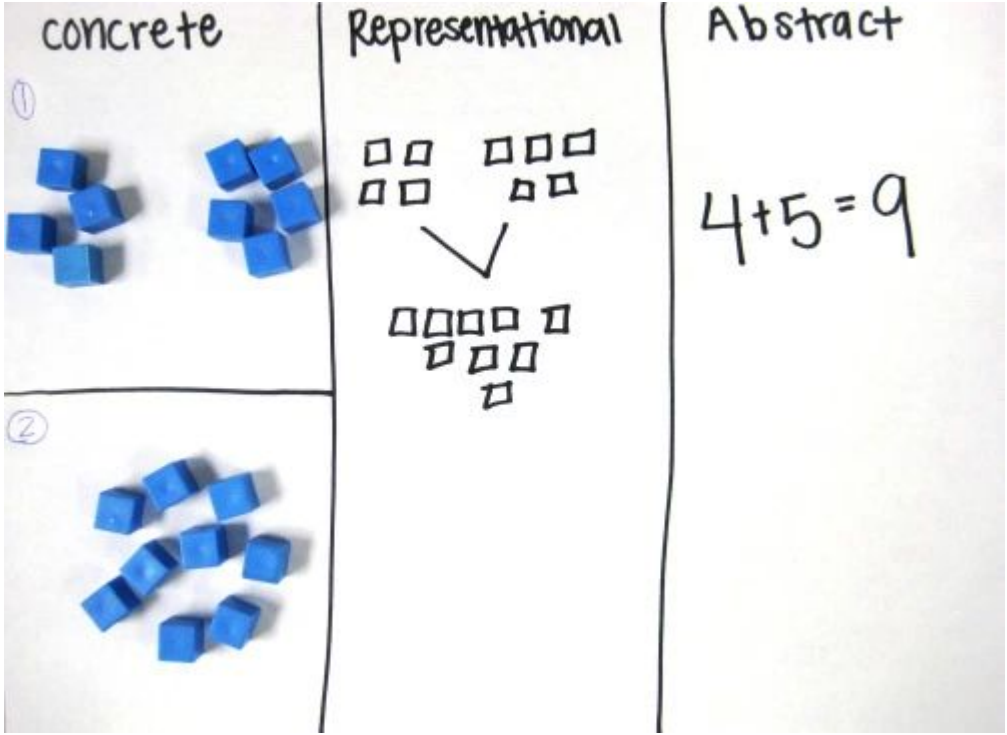


CRA Learning Model

1. **Concrete:** Objects and materials, “Doing Stage” (chips, beans, cubes)

2. **Representational:** Drawing pictures, “Seeing Stage” (dots, circles, tallies, stamps)

3. **Abstract:** Number, math symbols/notation, “Symbolic Stage” (+, -, =)



Counting and Cardinality:

ELDS-Strand A: Early learning experiences will support children to understand counting and cardinality.	
4 to 5 year olds	**Activities/Suggestions**
Say or sign the number sequence up to at least 20	Turn mealtime into counting fun by having your child count objects as he of she sets the table. (Forks, spoons, napkins, etc)  Take a handful of your child's favorite cereal and have them count out sets of 2, 3, 4, and 5....  
Count up to 10 objects using one-to-one correspondence, regardless of configuration, using the number name of the last object counted to represent the total number of objects in a set.	
Count out a set objects up to five.	

Counting and Cardinality Continued

ELDS-Strand A: Early learning experiences will support children to understand counting and cardinality.	
4 to 5 year olds	**Activities/Suggestions**
Recognize written numerals up to at least 10.	Play “I Spy” with a magazine. Have children locate numbers 1-10 in a magazine and cut them out. Have children sort them into piles of 1’s, 2’3, 3’s etc.    Use a deck of card (numbers 1-9, Jack as 10) and lay them out a few at a time. Have your child count out objects (cubes, chips, cheerios,) and lay them on top of the card to match the number. Have them compare using vocabulary.
Quickly recognize and name, without counting, the number of objects in collections of up to at least five items.	
Compare sets of up to 10 objects using a visual matching or counting strategy and describing the comparison as more, less than or the same.	

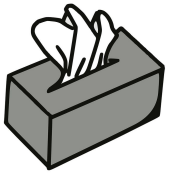
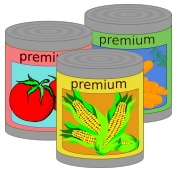
Operations and Algebraic Thinking

ELDS-Strand B: Understand and describe relationships to solve problems.	
4 to 5 year olds	Activities/Suggestions
Use real-world situations and concrete objects to model and solve addition and subtraction problems up to five. Recognize and describe parts contained in larger numbers by composing number combinations up to at least 5.	Use a box of crayons to model adding and subtraction. Create a story problem where your child is handing out crayons to his/her stuffed animals. Practice adding to and taking from.   

Measurement and Data

ELDS-Strand C: Understand the attributes and relative properties of objects.	
4 to 5 year olds	Activities/Suggestions
Compare the measurable attributes of two or more objects (e.g., length, weight and capacity) and describe the comparison using appropriate vocabulary (e.g., longer, shorter, same weight, holds more, holds less, holds the same amount) Begin to use strategies to determine measurable attributes (e.g., length or capacity of objects). May use comparison, standard or non-standard measurement tools.	Collect objects from home or outdoors and sort & classify them into groups based on size, shape, color, pattern, type Items: Leaves, shells, rocks, books, toys, clothes, etc. 
Represent data using a concrete object or picture graph according to one attribute.	
Sort and classify a set of objects on the basis of one attribute independently and describe the sorting rule. Can re-sort and classify the same set of objects based on a different attribute.	

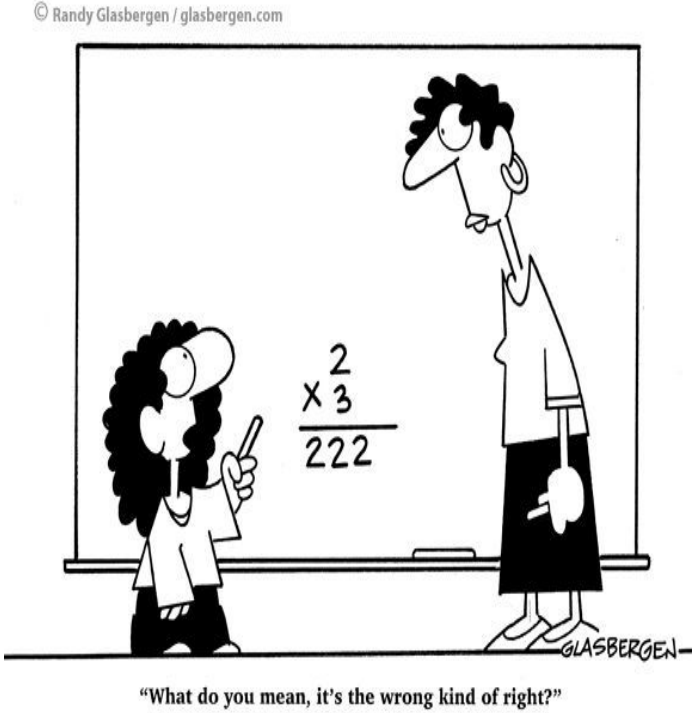
Geometry and Spatial Sense

ELDS-Strand D: Understand shapes and spatial relationships.	
4 to 5 year olds	**Activities/Suggestions**
Use related vocabulary of proximity (e.g., beside, next to, between, above, below, over and under) to identify and describe the location of an object.	Provide opportunities for children to take apart, put together and build with blocks: Legos, Tinker Toys, K'nex, etc. 
Identify and describe a variety of 2-dimensional and 3-dimensional shapes with mathematical names (e.g., ball/sphere, box/rectangular prism, can/cylinder) regardless of orientation and size.	Gather a tissue box, an ice cream cone, a can of vegetables, an orange. Discuss the shapes and dimensions with your children.
Complete a shape puzzle or a new figure by putting multiple shapes together with purpose.	   

Why don't we just teach math “the old way”? (Standard Algorithm)

For 245 + 33 = ☐ they may write:

$$\begin{array}{r} 245 \\ +\ 33 \\ \hline 575 \end{array}$$



“What do you mean, it’s the wrong kind of right?”

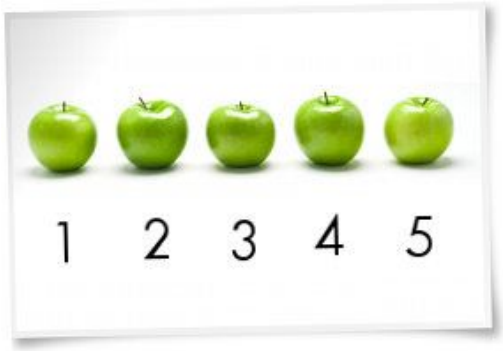
$$\begin{array}{r} 34 \\ +\ 18 \\ \hline 412 \end{array}$$

We VALUE:
Teaching For Understanding

What math concepts and terminology do I need to know to support my child in Kindergarten Math?

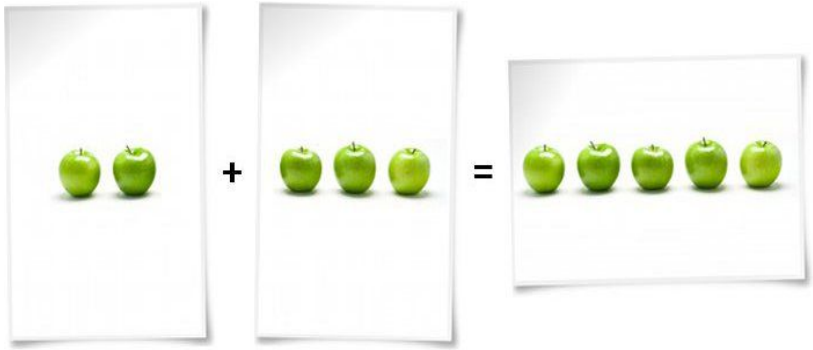
Key Math Terms to Know and Understand

One-to-one Correspondence:



*Matching an object with a numerical (pointing, placing) value and understanding that each object being counted represents “one more.”

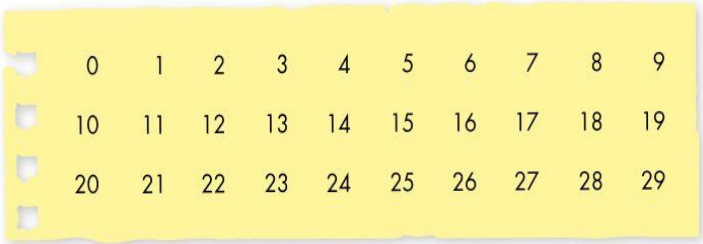
Counting On:

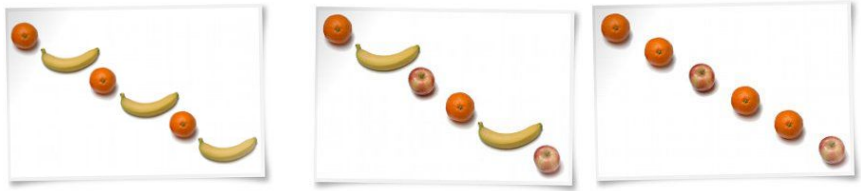


*Continue counting objects added to a previously counted group without recounting the entire group

Key Math Terms to Know and Understand

Patterns:

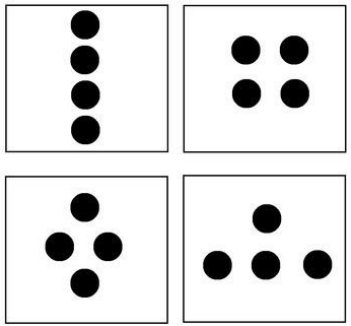




ABA ***ABC*** ***AAB***

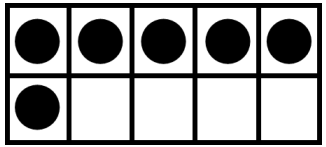
*A pattern is defined as any sequence that repeats at least twice

Subitizing:



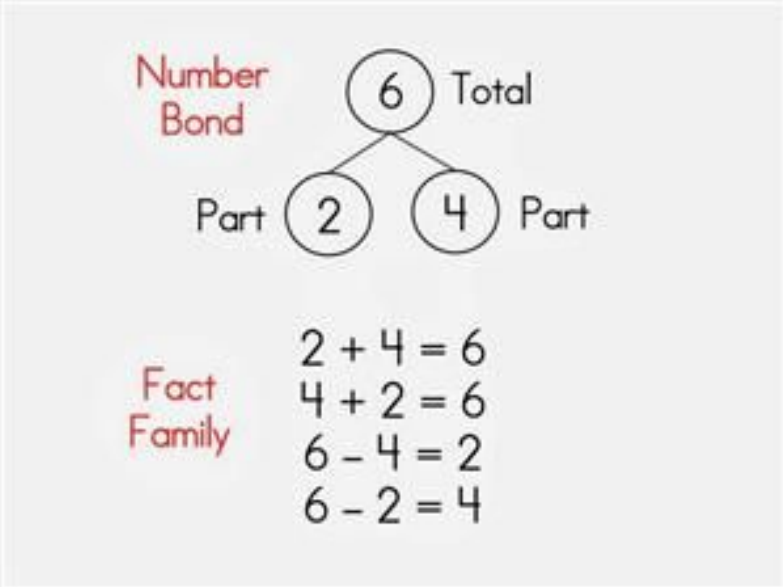
Dot Cards

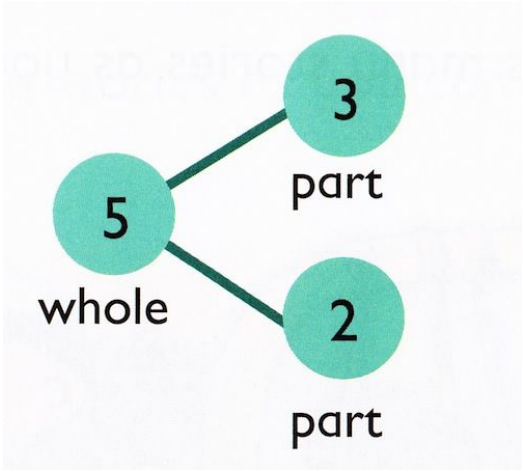
Ten Frame

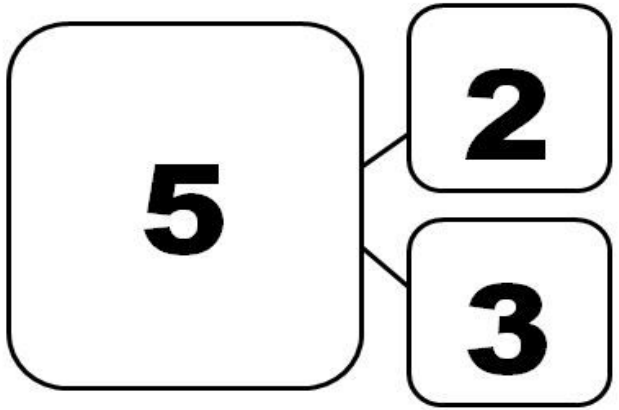


*Subitizing is the ability to 'see' a small amount of objects and know how many there are without counting

Number Bonds



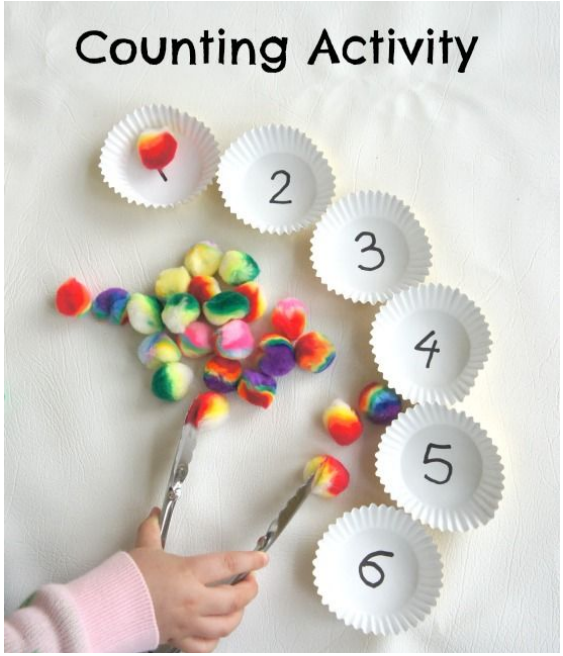




Focus: Number Sense, Fluency within 5, Fact Families, Addition/Subtraction Concepts, Number composition & decomposition

Math Fun For Home

Simple, quick and inexpensive!



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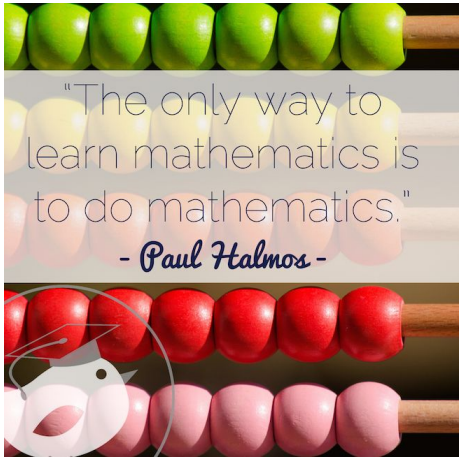
Math Fun For Home

Final Thoughts

- Math is anywhere and everywhere
- Talk about math regularly with children by pointing out the numbers, patterns, shapes and measurements we see in the world around us
- Encourage your children and students to be curious and take risks in their learning
- Let children be "problem solvers" by providing them with authentic opportunities to engage in math
- Let them "Do Math" and learn with them!



Questions?

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