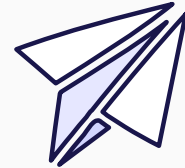


# SPS Kindergarten Numeracy Readiness

Sara Baranauskas  
PK-8 Math & PK-5 Science Coordinator  
Southington Public Schools

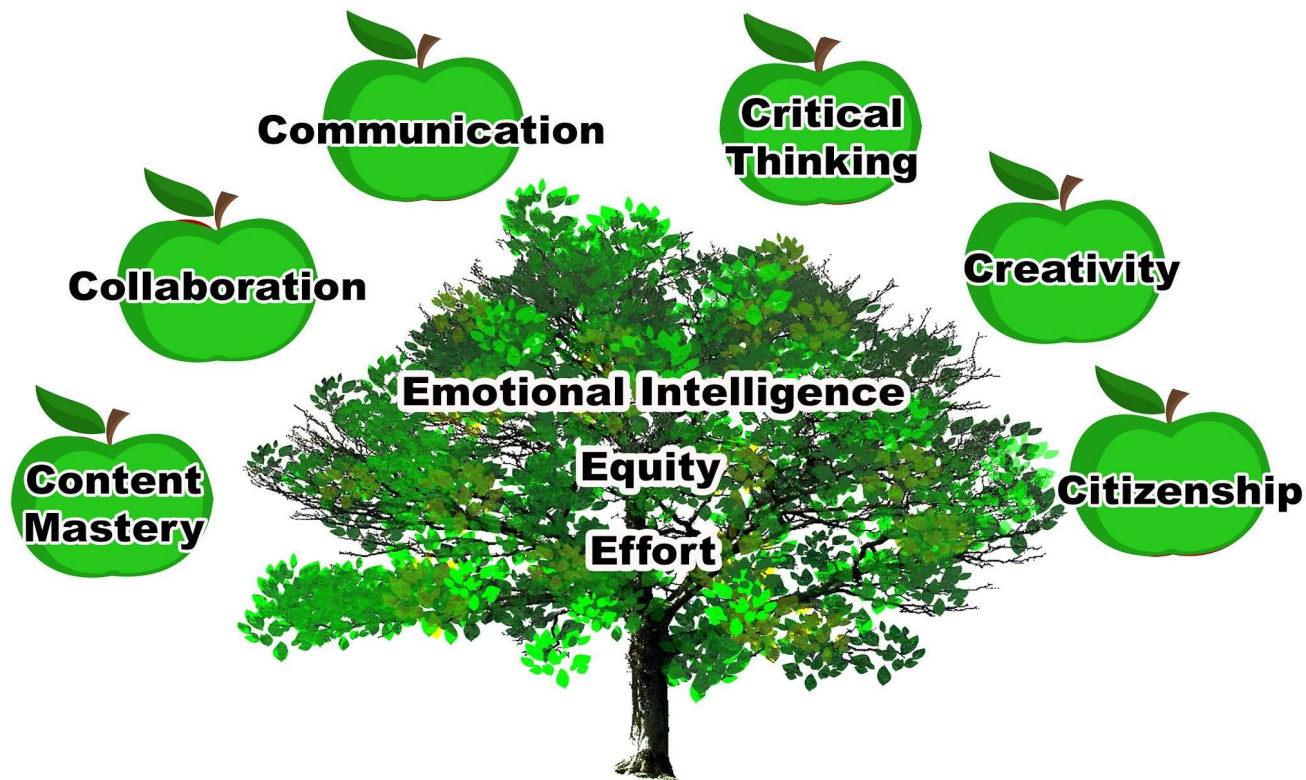
$$2 + 2$$

Kindergarten



# Southington Public Schools

## Vision of a Graduate





# Key Shifts in 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



<https://www.bbc.com/news/technology-60083088>

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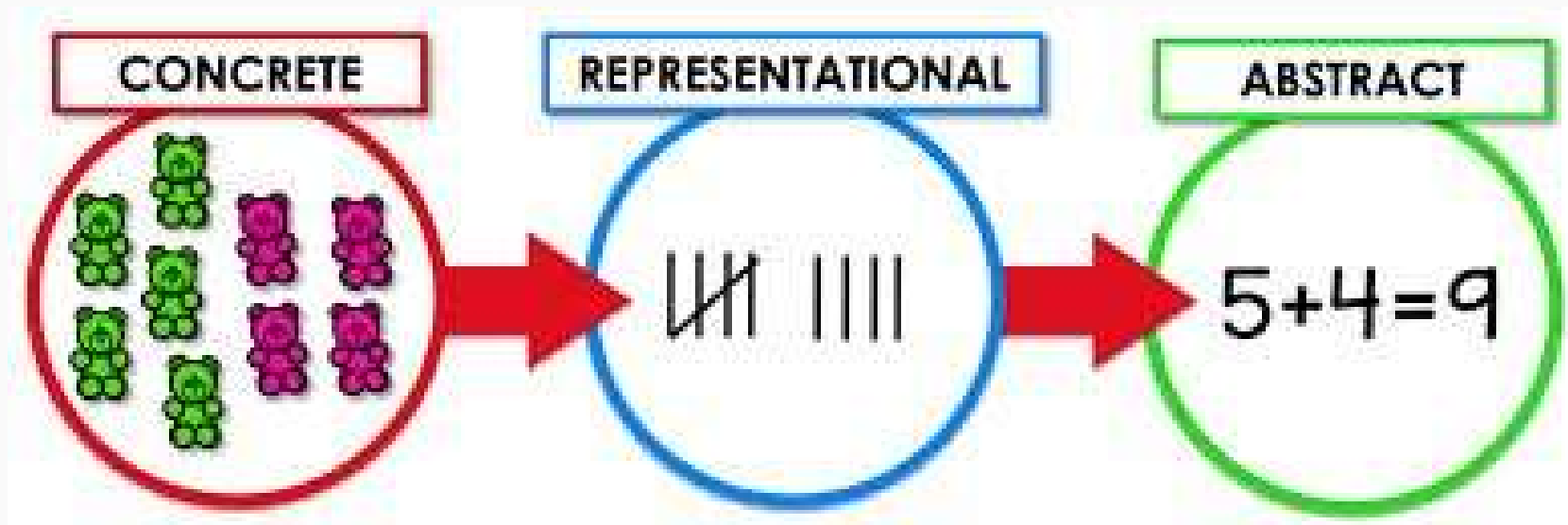


**"It's important to learn math because someday you might accidentally buy a phone without a calculator."**



photomath

<https://photomath.com/fr/mediakit>



### **Concrete**

#### **"Doing" Stage**

Objects and math tools like cubes, counters, beans

### **Representational**

#### **"Seeing" Stage**

Drawing pictures, circles, tallies

### **Abstract**

#### **"Symbolic" Stage**

numerals, math symbols & notation  
(+, -, =)

# 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 or she sets the table. (Forks, spoons, napkins, etc)

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.



Take a handful of your child's favorite cereal and have them count out sets of 2, 3, 4, 5....

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's, 3's etc.

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.

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.



# 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 (or other toy) 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.

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.

Collect objects from home or outdoors and sort them into groups based on size, shape, color, pattern, type. Ask your child how what they would name their sorts.

Items: Leaves, shells, rocks, books, toys, clothes, buttons, etc.



# 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.

Play "I Spy" using 2-dimensional (circle, square, triangle, rectangle) and 3-dimensional shapes (cube, sphere, cone, cylinder) using attributes of the shapes. For example say, "I spy a triangle in the kitchen" or "I spy a round shape with no straight sides"

Complete a **shape puzzle** or a new figure by putting multiple shapes together with purpose.

Go on a shape hunt. See who can find the most triangles, squares, cube, spheres, etc.

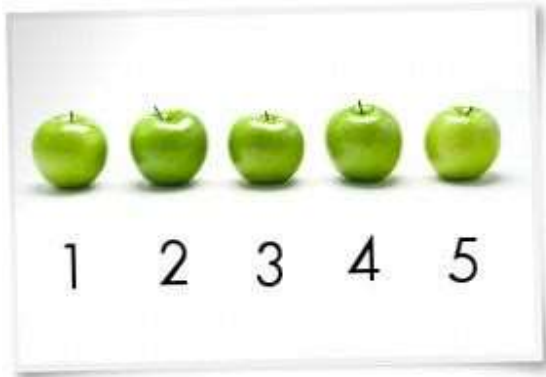
What math concepts and terminology do I need to know to support my child in Kindergarten Math?



"No, I'm not in trouble. My mom's here being tutored so she can help me in Common Core math."

# Key Math Terms to Know and Understand

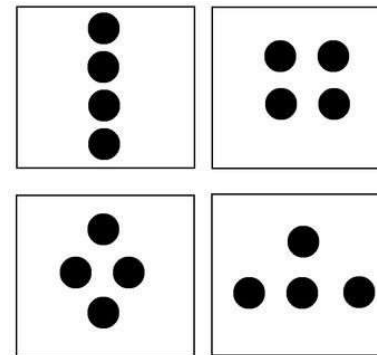
## One-to-one Correspondence:



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

Ask: How many apples are there?

## Subitizing:



Dot cube



Dot Cards

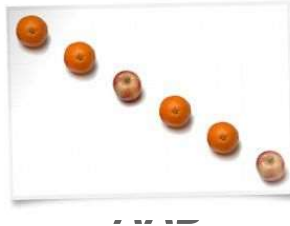
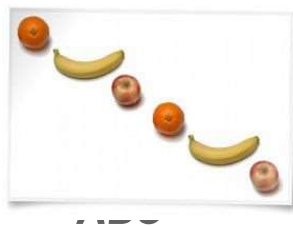
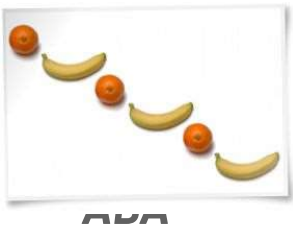
\*Subitizing is the ability to 'see' a small amount of objects and know how many there are without counting

Ask: How many do you see? How do you see them?

# Key Math Terms to Know and Understand

## Patterns:

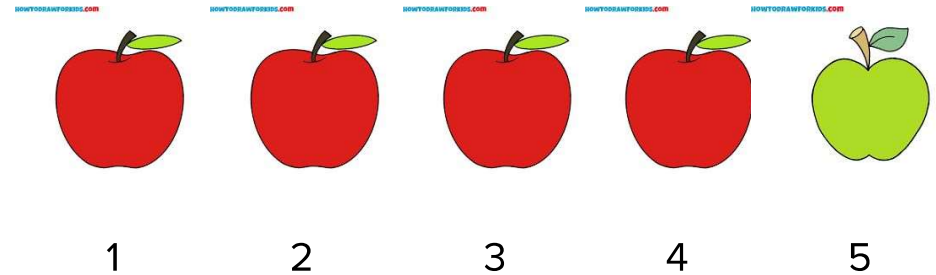
0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29



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

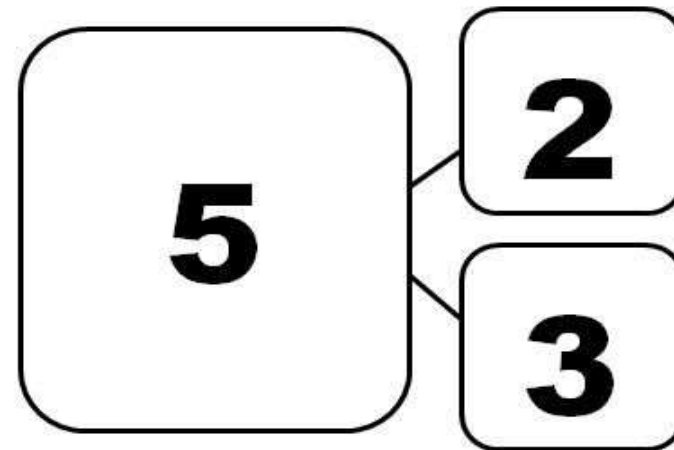
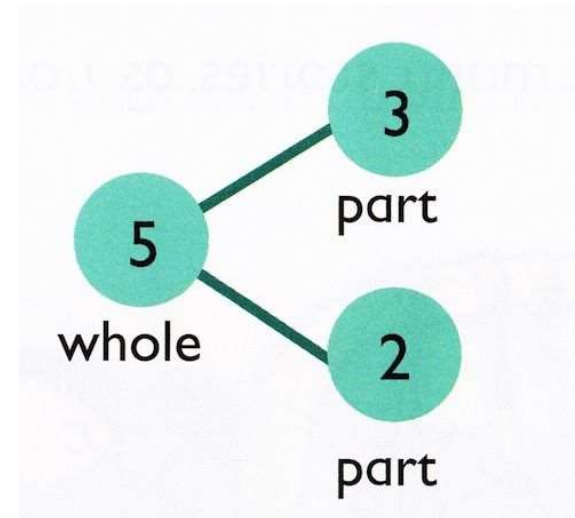
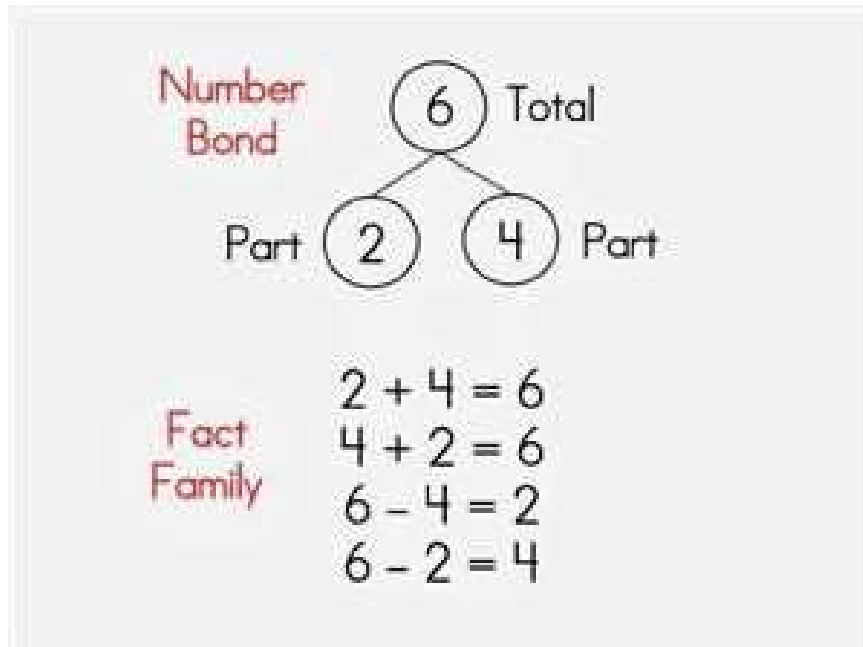
## Counting All:

Mrs. Smith buys 4 red apples and 1 green apple. How many apples does she buy altogether?



\*Counting every object to find the sum

# Number Bonds

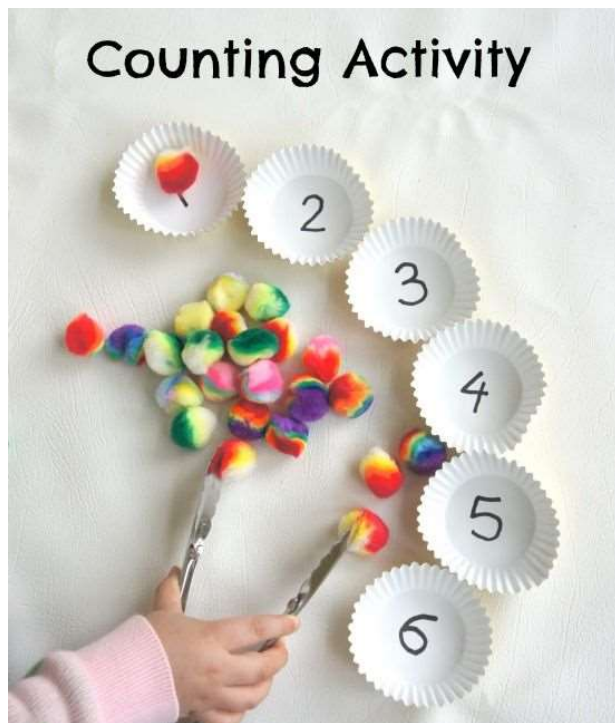


**Focus:** Number Sense, Fluency within 5, Fact Families, Addition/Subtraction Concepts, Number composition & decomposition



# Math Fun For Home

## Simple, quick and inexpensive!





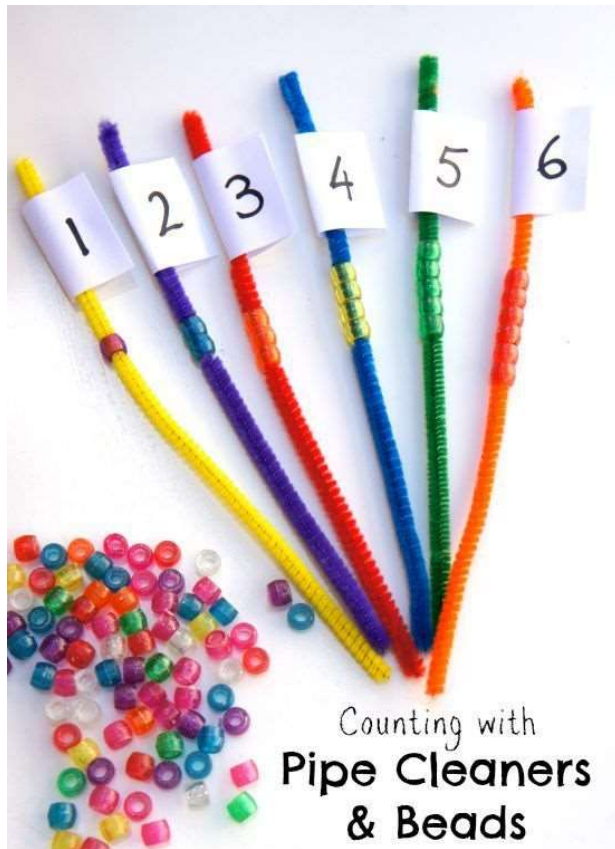
# Math Fun For Home





**Math Fun For Home**  
**Simple, quick and inexpensive!**

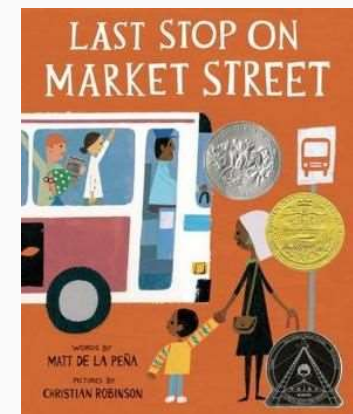
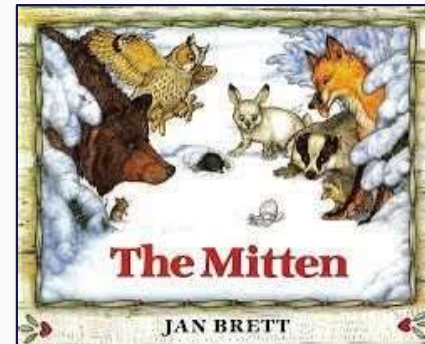
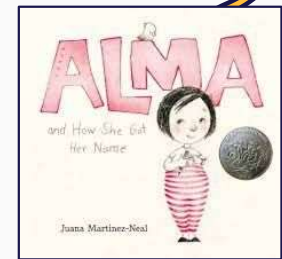
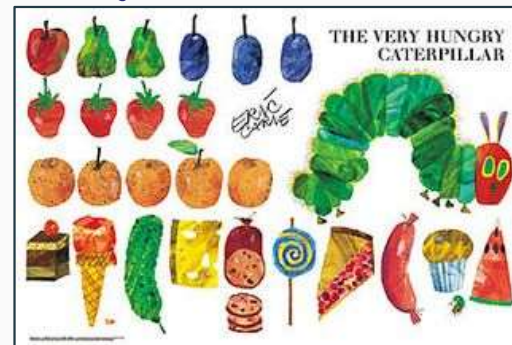




## Math Fun For Home

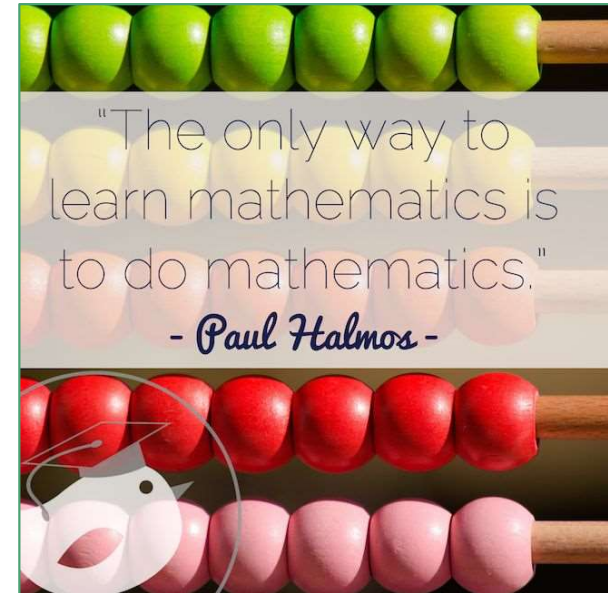
# Integrating Literacy and Numeracy

- \*Look for numbers on pages
- \*Identify numbers in text and in pictures
- \*Look for and talk about patterns and shapes
- \*Classify objects in pictures by size, shape, color, category
- \*Develop mathematical language



# 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 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?

**Please contact Sara Baranauskas:**

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**860-628-3275 ext. 14021**