

Making Mathematics and Literacy Accessible for Young Learners

<http://bit.ly/prekmathandreading>

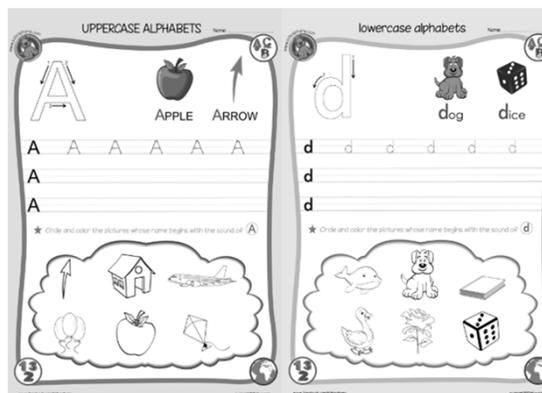


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Which activity would your child rather do?



Which activity will help your child develop math skills?

Name: _____ Score: _____

Count & Match

Count the number of pictures in each group and match with correct number.

	1
	3
	4
	2
	5



Which activity encourages problem solving?




Foundational Skills for Math

- counting
- data analysis
- measurement
- number operations
- number sense
- patterns
- sets
- shapes
- spatial relationships



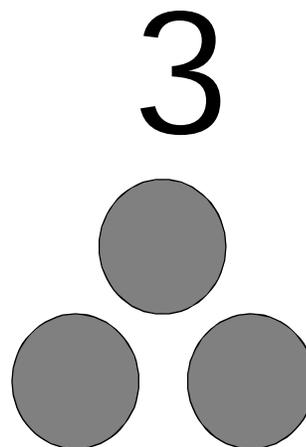
Sets

- Attributes can be used to sort collections into sets
- The same collection can be sorted in different ways
- Sets can be compared and ordered



Number Sense

- Numbers are used in many ways
- Quantity is an attribute of a set of objects, and we use a number to name specific quantities
- The quantity of a small collection can be intuitively perceived without counting



Counting

- Counting can be used to find out how many in a collection
- Counting has rules that apply to any collection
 - **Phase 1: Numbers always go in the same order (Stable Order)**
 - **Phase 2: Everything you count gets a number (One-to-One Correspondence)**
 - **Phase 3: You can count a set of objects in any order (Order Irrelevance)**
 - **Phase 4: The last number you say is the total number of items in a set (Cardinality)**



Number Operations

- Sets can be changed by adding items (joining) or taking some away (separating)
- Sets can be compared by the number of items (numerosity) and ordered by more than, less than and equal to
- A quantity (whole) can be decomposed into equal or unequal parts; the parts can be composed to form the whole



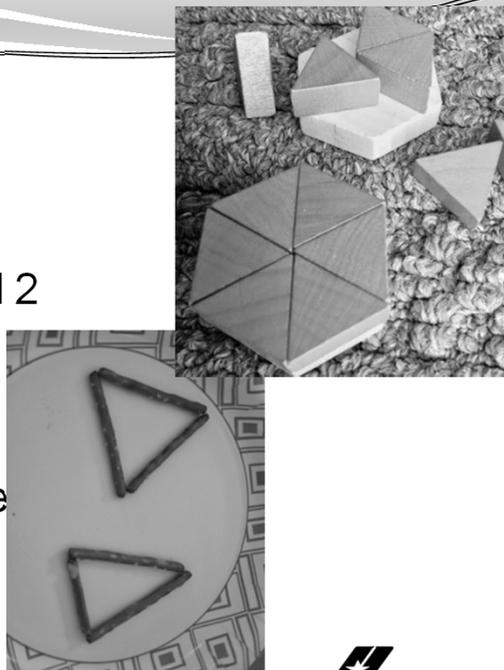
Pattern

- Patterns are sequences (repeating or growing) that follow rules; they exist both in the world and in mathematics.
- Identifying the rule of a pattern brings predictability and allows us to make generalizations.
- The same pattern can be found in many different forms.



Shape

- Shapes can be defined and classified by their attributes
- The flat faces of solid shapes and 2 dimensional shapes
- Shapes can be combined and separated (composed and decomposed) to make new shape



How You Can Encourage Mathematical Thinking

- Recognize and name measurable attributes of objects
- Notice and copy simple patterns
- Use shapes to create an object or picture
- Talk about numbers and sets in your play with collections of everyday objects



- Compare and sort according to attributes
- Group objects by amount
- Differentiate quantity
- Understand that numbers can be combined and decomposed in a variety of ways
- Understand that shapes can be composed (put together) and decomposed (taken apart) in a variety of ways



Wood Blocks



Stages of Block Building

1. **Discovery**--carry, move, pile, knock down
2. **Towers and roads**--stacking and lining up
3. **Bridges**--balance and rotation
4. **Enclosures**--height, width, and length
5. **Patterns and symmetry**--sort and match based on shapes and sizes
6. **Representational Building**--planning ahead

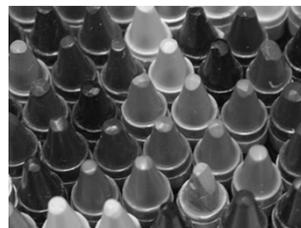


MONTGOMERY COUNTY PUBLIC SCHOOLS Rockville, Maryland



Art/Crayons/Stickers

- stickers
- stamps
- variety of drawing tools and papers
- vocabulary of math with art: long, short, wide, skinny, direction words
- create sets
- explore shapes



Music



Importance of Math Skills

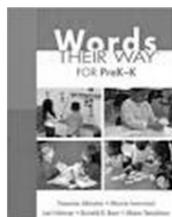
Math skills in kindergarten predict third-grade test scores in both reading and math



Hands on Learning to Read

MCPS teachers use Words Their Way for Pre-K to teach reading

- Students examine, manipulate, and categorize letters and words
- It is fun and engaging
- It is developmentally appropriate



The Literacy Diet

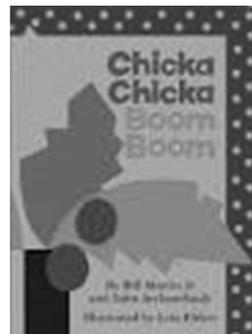
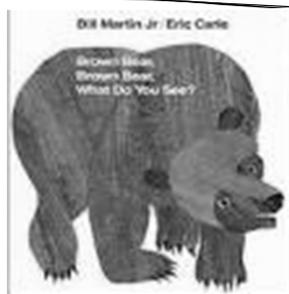
by Jackie Dagnet

Vocabulary
 Concept Development
 Alphabet Knowledge
 Phonological Awareness
 Concepts about Print
 Writing



RRWWT

Read To
Read With
Write With
Word Study
Talk With



A Vocabulary Rich Environment

- Expand on your child's interests
- Help your child rephrase
- Use "big" words
- Questioning

Tower of Talk activity with 3 volunteers



Concept Development

- The brain likes order
- Our minds are wired to use a compare and contrast system for organization
- This system helps to develop concepts and establish relationships between those concepts



Concrete Sorts

Why is sorting important for reading?

- Expands vocabulary
- Rich verbal interactions
- Tactily learn about concepts



Phonological Awareness

Phonological awareness is the ability to recognize that words are made up of a variety of sound units.

Model syllables for your child: Each syllable corresponds to a release of breath and can be segmented in speech

- Clap out the syllables in big words such as caterpillar or grasshopper
- Clap the syllables in your name
- Play Mother May I with syllables



Phonological Awareness

Rhymes are typically learned through nursery rhymes, songs, and poetry.

Also try:

Bingo

Concentration

Sorting



Writing

- Make a grocery list
- Make and sign a birthday card
- Journal about weekend or travels
- Draw and write together
- Ask your child to dictate a sentence about their art

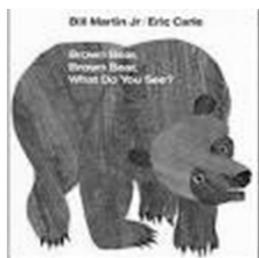


Writing can be made of scribbles with an oral explanation of the intent



Concept about Print

- Read predictable texts- Brown Bear
- Point out the cover of the book and the title
- Point to words as you read
- Talk about the author and illustrator



Making Reading and Math Connections to Everyday Tasks

Questions?

Thank you for attending!

