Math in Early Childhood Classrooms

Resources and Strategies

Florida Early Learning and Developmental Standards:

Number Sense
- One-to-one correspondence
- Subitizing
- Counting/Sequencing numbers
- Comparing equal, more, less
- Ordinal positions

Number Operations
- Combine and remove from sets
- Solves problems with objects
- Separates sets into groups

Patterns & Seriation
- Recognizes, duplicates patterns
- Produces patterns with two elements
- Sorts, orders, compares objects

Geometry
- Sorts shapes
- Constructs shapes
- Identifies number of sides
- Names two and three dimensional shapes

Spatial Relations
- Uses position words
- Describes positions of objects
- Uses orientation – diagonal, vertical, horizontal

Measurement
- Compares length, weight, height with terms shorter, longer, etc.
- Measures object attributes
- Collects and sorts materials for graphing
- Interprets graphs during group work

What Does Research Say about Child Development and Math Instruction?

- Most 3-yr olds have difficulty comparing “which set has more”. They think that a set that has objects spread out has “more” than if objects are close together.
- 4-yr olds are able to understand subtraction (making a set have fewer) before they understand addition. It’s easier to visually understand that items are “taken away” and that there are now “fewer.”
- Children cannot develop ideas about shapes from only looking, they must manipulate shapes in a variety of ways.
- Math is best learned through manipulation of objects instead of by rote.
- Children can think of what “how many” objects look like up to 5 without having the objects in view.
- Natural conversations about math concepts are vital for helping children remember and extend their thinking about math. Language and vocabulary are important factors in math.
- Children learn and understand math concepts better when they learn through the use of familiar everyday objects.
- Comparison studies show that children who are taught math using a “playful approach” are more successful.

Helpful Resources for Math-related Books

Children's Books

http://www.the-best-childrens-books.org

- •Lists of books organized by category of concepts
- •Two sample pages from each selected book
- •Lesson and activity ideas

Pre-K Pages

https://www.pre-kpages.com/math-picture-books-for-preschool/

- •Books arranged by concepts with brief descriptions
- •Books that are related to center play activities

Reading A-Z

https://www.readinga-z.com/worldlanguages/spanish/math-books/

- •Translations of popular classroom children's math books into Spanish (sometimes French and Vietnamese by request)
- •The site includes translations of popular songs and rhymes

Math in Songs and Rhymes

Bus Songs

http://bussongs.com/counting-songs.php

Each song title links to a colorful cartoon video.

Spanish Playground

Counting songs in Spanish

http://www.spanishplayground.net/5-spanish-counting-songs-preschoolers

Super Simple Songs

https://www.youtube.com/playlist?list=PL028565C616627F50

Each song is about 3 minutes long and most have videos.

The Educators' Spin On It

https://theeducatorsspinonit.com/category/math

STEM activities for various grades and subjects. Select Preschool from the menu and then search for the topic. Subscription is required for downloading but there is no cost.

Math Talk

http://earlymath.erikson.edu/tag/subitizing/

https://thepreschooltoolboxblog.com/4-crucial-early-math-concepts-young-children-know-numbers-operations/

https://www.naeyc.org/our-work/families/support-math-readiness-through-math-talk

Number of the Day Songs

https://www.youtube.com/watch?v=8WdiTtioi64

https://www.youtube.com/watch?v=pIlIxin6F2M

Creating a Mathematical Environment:

Library:

- Include shape books, counting books, and books for classifying and comparing, and books for solving problems
- Integrate math and storytime
- Children create books of their own
- See handout for more books to use

Sand and Water Play

- Children learn about shape, size, weight, and volume endlessly.
- Always include materials such as a variety of containers, measuring cups, sieves, funnels spoons and buckets to name a few

Dramatic Play

- Select a variety of items in different shapes and sizes
- Every plate should be partnered with a spoon, knife, and fork. Each pot should have a lid. Each shoe should have a mate
- Provide play money, a cash register, a simple scale, tickets for pricing items and an adding machine

Art Area

- Match brushes with paint cups
- A peg for each smock
- Art supplies are arranged on a shelf with "shadow' to indicate where each item belongs
- Include rulers, tracing shapes, etc.

Blocks

- Offer blocks made of different materials such as wood, cardboard, and foam
- When you label the block shelves with the actual block shape, cleanup becomes a matching activity.
- Also create rules about how high blocks should be stacked at cleanup.
- Add maps, paper and pencils for drafts, books about construction, etc.

Other Areas

- Look for math opportunities beyond your learning centers. Wall space can be used for graphing of various attributes of objects, events or the children themselves.
- Children can explore measurement all over the room with tools such as links, cardboard tubes, and blocks.
- Post symbols of various kinds (not just numbers) to represent the number of children that can use a center at one time.
- In your classroom environment you can capitalize on the physical attributes of your space, such as patterns in your rugs, floor, series of windows and height of furniture, to reinforce math concepts.
- Always try to keep an eye out for other creative ways to incorporate math around your classroom