

# Developing Early Mathematics Skills:



## *A Parent's Guide To Mathematics at Home*

Mathematics in the Kindergarten program builds on children's desire to make sense of their world, and helps them develop and demonstrate their understanding of mathematics. Young children use mathematics intuitively and develop their understanding through their individual approaches to learning, as well as through their prior experience.

Valuable mathematics experiences can come out of real-life situations, and can be approached in a variety of ways so that all children can be involved in exploring solutions. Through active participation in mathematics investigations, children develop their ability to use mathematics as a way of making sense out of their daily experiences.

Opportunities can be found at home to encourage children to reflect on and extend their understanding of mathematics as it occurs in their everyday activities, play, and conversations. This guide will provide parents and caregivers with ideas on how to support and foster these early math skills, through the mathematics categories outlined in the Ministry of Education's Full Day Kindergarten Program.

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# Attending & Exploring



## What it is

Attending and exploring is the very beginning of mathematics instruction. Children get to know math tools and manipulatives and begin to learn to tolerate and touch them. They begin to take on a more active role by exploring and choosing math tools and imitating math tasks.



## Ideas at home

- Start with the goal of having your child attend. This can include looking at books with numbers or listening to music with numbers. Emphasize the words “look” and “listen”.
- Use cause and effect toys, to build problem solving skills and understand cause and effect relationships
- Allow for opportunities for your child to explore and manipulate/handle household objects or toys related to math. You could use blocks, heavy vs. light items, timers, measuring cups etc.

# Number Sense & Numeration



## What it is

Number sense and numeration begins with counting and number recognition. Children learn to count by repetition. They will then learn to match the number words to the correct number of objects (e.g., one penny). As these skills build they will lead to identifying quantity (e.g., more, less).



## Ideas at home

- Go for a walk or a drive. Look for numbers on signs or buildings. Count familiar objects in the environment such as dogs, trees, bicycles etc.
- Count as you build with Lego or blocks.
- Engage in pretend play such as house, store or restaurant and practice counting items and identifying who has more, less and the same.
- Count with your child as you go up and down the steps in your house.
- Count how many cups of water it takes to fill a pitcher .
- Help your child set the table, counting the items as they are placed, “1,2,3,4,5—5 plates”.

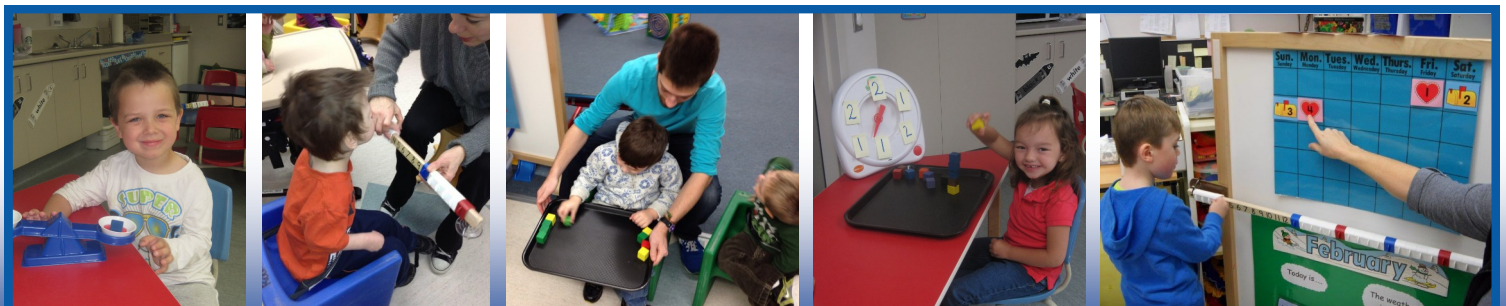


## Book Suggestions

National Geographic Little Kids Look and Learn: Count! (Board book)

Pete the Cat and his 4 Groovy Buttons - By: Eric Litwin

My Signing Book of Numbers - By Patricia Gillen



# Geometry & Spatial Sense



## What it is

Geometry and spatial sense involves introducing the ideas of shapes, size, position, directions and movement. Children need to develop images in their mind about shapes and the ways they can be put together and pulled apart.



## Ideas at home

- Model spatial and directional vocabulary as you play on the swings, slide or other playground equipment (e.g., “up”, “down”, “over” etc.).
- Build 3 dimensional shapes with straws and play dough.
- Use cookie cutters of 2D shapes to make cookies or pancakes.
- Play I Spy, and look for shapes in the environment.
- Hide shapes in a sock or bag and have your child feel the shape and identify it by its properties.

## Book Suggestions



National Geographic Little Kids Look and Learn: Shapes!

Mouse Shapes by Ellen Stoll Walsh

When a Line Bends...A Shape Begins – By: Rhonda Gowler Greene

# Patterning



## What it is

Patterns help children learn to make predictions about what comes next. Children learn that a pattern repeats. In the primary grades they will learn to recognize, describe and make patterns.



## Ideas at home

- Make bracelets with different patterns of colours using cereal or candies.
- Go for a nature walk and look for patterns on leaves, flowers and fences.
- Clap patterns with your child such as, slow, fast, slow, fast or quiet, loud, quiet, loud.
- Engage in action patterns (e.g., hop, hop, clap, hop, hop, clap).
- Use a muffin tin to sort objects by colour, size, or function.

## Book Suggestions



National Geographic Little Kids Look and Learn: Patterns!

Patterns Everywhere! - By: Julie Dalton

Pattern Bugs - By: Trudy Harris





# Data Management & Probability



## What it is

Data management and probability involves the ability to sort and classify items (data), into various categories. In the primary grades students will be expected to collect and organize data that will enable them to answer questions. In the early years children can practice sorting groups of objects by different features (e.g., sorting buttons by colours)



## Ideas at home

- Play matching games to figure out which items go together (e.g., a cooking pot goes with a lid, a fork goes with a spoon).
- Go shopping and ask your child to sort the food in the grocery cart by different attributes, such as colour, food in boxes vs. cans, food and drinks, big and little packages, preferred vs. non-preferred foods.
- Match pairs of socks while sorting laundry.

## Book Suggestions

National Geographic Little Kids Look and Learn: Match!

Tally Cat Keeps Track – By: Trudy Harris and Andrew Harris

The Great Graph Contest – By: Loreen Leedy



# Measurement

## What it is

Measurement involves finding the length, mass, temperature, height and weight of objects.



Children need to play and experiment with a variety of objects to measure before they can move to using formal units of measure. For example, they could measure the length of a table using popsicle sticks or spoons before using a ruler.



## Ideas at home

- Bake with your child and emphasize measurement vocabulary.
- Use an hour glass or a stop watch with activities.
- Sort laundry and determine which pile is the tallest or shortest, biggest or smallest.
- Let your child play with containers during bath time. Talk about the containers being full vs. empty.
- Use play dough to role out snakes of different lengths. Talk about which snake is 'longer' and 'shorter'.

## Book Suggestions

Measuring Penny – By: Loreen Leedy

Me and the Measure of Things – By: Joan Sweeney

A Pig is Big – By: Douglas Florin

