

Inspiring Your Child to Learn and Love Math

Resource Guide



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Introduction

“Parent engagement matters. Study after study has shown us that student achievement improves when parents play an active role in their children’s education, and that good schools become even better schools when parents are involved...”

Ministry of Education, “Parent Engagement”

This Parent Tool Kit was created specifically for parents of children in the elementary grades (junior kindergarten to grade 8) in Ontario. The goal of this resource is to provide parents with the most essential, research-based information to help them be the best, most knowledgeable and most confident supporters for their child’s mathematics education.

This Tool Kit is unique because it provides facts and strategies

not found in other parent resources in Ontario. It includes a number of distinct elements: print resources, fact sheets, workshop materials, and videos organized into modules based on grade levels.

How you use this Tool Kit is up to you. You might choose to read the print materials in the five stand-alone modules from front to back. Perhaps you will use them as a reference guide to answer specific questions. Or

Introduction (continued)

maybe you have time to read only the fact sheets, which highlight key information from each module. A visual learner might begin by watching the overview videos that feature highlights from each module. The videos can be found on the Tool Kit's website.

You might also want to share the Tool Kit with other parents in your community who are struggling to find the information they need to help their children navigate the K-8 mathematics program. You can do so by using the workshop planning guide to host a parent information evening at your

local school. However you choose to use it, this Tool Kit will undoubtedly help strengthen your knowledge and understanding. It emphasizes the many ways in which you play an important role in your child's education, and the fact that your child will be able to succeed in mathematics with your help and support.

The contents of this Tool Kit are available online. They can be reviewed and downloaded by going to:

ontariodirectors.ca/parent_engagement.html

We have made every effort to acknowledge original sources and to comply with copyright law. If there are cases where this has not been done, please notify the author. Errors or omissions will be corrected in a future edition.

Module Two



Kindergarten

Count Together

This module covers the following topics:

- What math can I expect my child to learn in full-day kindergarten?
- How does my child learn math in kindergarten?
- What math milestones are children working towards in kindergarten?
- What kind of fun math activities can I do at home with my child?
- Resources

What math can I expect my child to learn in full-day kindergarten?

Children come to kindergarten knowing a lot of math already. They can recognize numbers and shapes and can use important math vocabulary and concepts.

Kindergarten math words and concepts

Taller and shorter
Empty and full
Near and far
First and last
High and low
In and out
Few and many
Light and heavy
All and none
Hot and cold
Same and different
More and less

Children bring many mathematical experiences with them to kindergarten, too:

- * Sorting socks and mittens into pairs.
- * Counting by 1s and 2s.
- * Drawing thick and thin lines with different types of crayons.
- * Identifying the tallest member of the family.
- * Using plastic cups to make puddles with different areas.

The kindergarten program builds on this kind of informal knowledge by providing opportunities for your child to do math and use math words regularly.

In kindergarten math, all learning begins with play and exploration

Typical kindergarten math activities

Experimenting with:

Blocks **Sand**

Puzzles **Water**

Solving problems:

“How many?”

“How much more?”

Your child is learning important concepts when they:

Build a tower—positioning blocks from largest to smallest or comparing the heights of two towers by counting the number of blocks.

Make a bracelet with buttons and pipe cleaners—designing button patterns by size and number of holes.

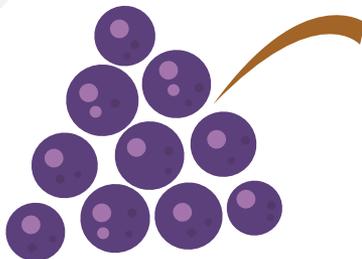


Your child is learning about quantity when they count the number of grapes on the plate and discover that their friend has more grapes than they do.

Your child is learning about number recognition and order when they create simple connect-the-dots pictures.

In kindergarten, children use geometry, measurement, and numbers:

- * To find the answers to questions that are designed for them.
- * In daily experiments.



Your child is learning important, life-long math skills by:

Doing math experiments with numbers and objects.

Using words and records (drawings, photographs, structures) to share the results of a math activity with teachers and classmates.



When your child is problem-solving, they might use different tools and strategies, such as drawing a picture or talking the problem over with a friend, while discovering that there might be more than one way to find a solution.

As your child develops, they will make more and more connections between the math they learn in school and the math they do informally in other places—at home, the grocery store, and the playground.

Remind your child that math is everywhere by asking them to identify numbers, shapes, patterns, and measurements as you walk, drive, shop, and play together!



$$3 + 2 = 5$$



$$2 + 3 = 5$$



How does my child learn math in kindergarten?

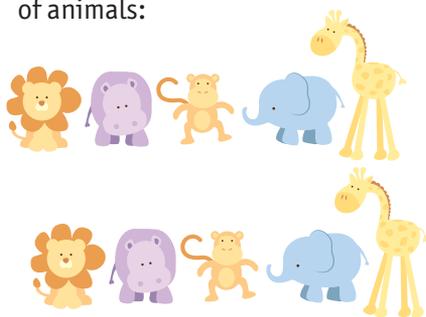
All learning begins with play (and other daily activities):

- * Children learn about fluids and buoyancy by doing the dishes at the kitchen sink.
- * Children learn about geometry through play that involves space and shapes.
- * Children form visual recognition cues about shape categories—for example, they come to recognize a shape as a rectangle because “it looks like a door.”

Kindergarten math activities are designed so that when children play, explore, and interact with familiar materials and objects, they learn math because they are doing math. An engaging activity will spark a child’s curiosity, capture the child’s attention, and promote positive attitudes about math.

This approach to learning math is called “play-based learning.”

Kindergarten math involves exciting, age-appropriate experiences that take into account a child’s unique interests. For example, if your child likes animals, they might create a pattern that uses different types of animals:



Children develop math skills in different ways. For example, they might learn to compare, sort, and classify objects by using familiar materials (balls, books, or other children).



We know that not all children learn the same way or on the same day. Learning is absolutely an individual process. Play-based learning encourages your child to learn in a safe and supportive environment that celebrates the unique learning styles of all students.

On any given day, your child will be presented with a choice of math activities that reflect a wide range of developmental stages. By rating math problems according to level of difficulty (on a scale from 1 to 10), teachers ensure that all students have equal opportunity to be engaged and feel successful in their own math abilities. Self-confidence will have a positive and lasting impact on your child's understanding of and attitude towards math for years to come.

What math milestones are children working towards in kindergarten?

Children develop in unique ways. No one would be surprised to see children of different heights and weights in a kindergarten class photo. Similarly, it is natural, and not a cause for concern, for children to develop math skills in different ways and at different rates. Milestones, or learning expectations, are meant to describe what your child should know by the end of kindergarten in very broad brushstrokes. Always remember to talk to your child's teacher or teaching team (including educational assistants, special resource teachers, and the school principal) if you have any concerns about your child's development.



By the end of kindergarten, your child should be able to do the following:

- * Show that they understand that numbers are used for counting and measuring.
- * Show that numbers and quantities can get bigger or smaller—for example, every time a block is added to the tower, the tower gets taller.
- * Count to 10.
- * Use language to describe positions in a set: first, second, third, etc.
- * Measure and compare length, weight, temperature, and size of different objects—line up blocks from smallest to the biggest or measure how many steps it takes to get across the room.
- * Compare two- and three-dimensional objects and sort them by size, colour, or shape.

- * Create new patterns and continue patterns using objects or words—make a necklace using the pattern of two small red beads/three big blue beads, two big red beads/three small blue beads, etc.
- * Group objects together based on size, shape, colour, or special characteristic—group yellow buttons with two holes together, four holes together, etc.

For more information on the math milestones you can expect your child to reach by the end of kindergarten, see the Ontario Curriculum for Full-Day Early Learning Kindergarten website.

edu.gov.on.ca/eng/curriculum/elementary/kindergarten_english_june3.pdf

What kind of fun math activities can I do at home with my child?

Incorporating math into everyday activities is a fun and easy way for you and your child to spend quality time together. Family math activities allow your child to practice math skills, while making you a contributing member of your child's teaching team.

In the kitchen

The next time you bake cookies, ask your child to help!

Measuring two cups of flour teaches your child about measurement. Use math words, such as "cups" and "double."

Using different cookie-cutter shapes teaches geometric shapes, sizes, symmetry, and angles.

Don't forget the best part: equal sharing among family members and friends!



In the bathroom

Bath time is math time!

Using plastic containers of different sizes, have your child pour small cups of water into a larger cup.

Ask your child to estimate how many small containers of water it will take to fill the largest cup. This teaches volume.

Around the house

- * Cut lengths of wrapping paper (“rectangle”) or ribbon (“three times the length of the box”) to wrap gifts.
- * Make a schedule (“days,” “weeks,” “hours”).

Your backyard is overflowing with math opportunities!

- * Roll, throw, catch, and kick balls of **different sizes**, then talk about:
 - * Which one is bigger and which one is smaller.
 - * Which one is heavier and which one is lighter.
 - * Which one travels the longest or shortest distance.



In your neighbourhood

A simple scavenger hunt is an easy way to teach your child how to **identify** and categorize the many different **geometric shapes around us**—the window is a square; the fence is a rectangle; the tire on the car is a circle.

A **walk** through the neighbourhood together provides more opportunities to see math all around us—the stop sign is an octagon, the yield sign is a triangle, and paving stones are rectangles or irregular shapes, etc.

Visit the park or playground to look for different **shapes** (baseball diamond, running track) and **patterns** (hopscotch grid, license plates, four-square grid, etc.).



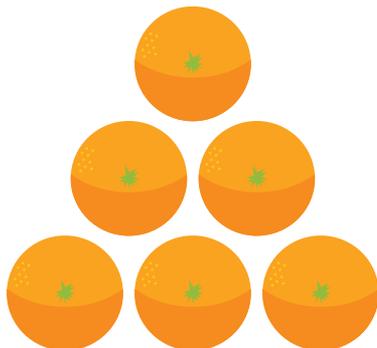
Ask your child to **look for patterns** along the way, too—even house numbers appear on one side of the street while odd house numbers appear on the other side; some streets meet at right angles (“T” or “L” intersections).

At the grocery store

The grocery store is full of yummy math opportunities!

Ask your child to help you weigh a bag of apples. Ask what will happen if you add more apples or take apples out.

Look for patterns in shapes, colours, and sizes in the produce section. Ask your child to continue the pattern (with your help).



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Council of Ontario Directors of Education

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