

Inspiring Your Child to Learn and Love Math

Implementation Guide



Inspiring Your Child to Learn and Love Math

Workshop Introduction

These guided workshops have been designed to provide the tools and materials to plan and host parent education sessions. Each workshop is self-contained and includes a template for sharing practical, age-specific strategies and resources to encourage mathematics learning at home. The materials for each module include an invitation letter and flyer, an annotated agenda, and Blackline (photocopy) masters for all activities (including solutions).

These workshops have been created to complement each of the five modules in the *Inspiring Your Child to Learn and Love Math Tool Kit*. The workshops require no prior knowledge of mathematics or specialized content—they can be implemented by anyone who has an interest in learning and sharing.

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

5:45–6:00 p.m.

Welcome

Warmly welcome parents, guardians, and caregivers as they arrive at the door.

Some parents may be nervous about attending a math workshop. Greeting them will help put them at ease!

Introduce yourself and briefly explain your role in the workshop.

Invite parents to help themselves to coffee and to explore the math resources, books, and games on the resource table.

Be prepared! Have materials organized and ready on the tables before parents arrive.

6:00–6:15 p.m.

Introduction

Welcome parents and thank them for taking the time to come.

Congratulate them for taking the first step towards enriching and improving their child's math education by attending this workshop.

Thank organizers and other key members of the implementation team.

Introduce parents to the C.O.D.E. *"Inspiring Your Child to Learn and Love Math"* and tell them how to get a copy.

Purpose

Explain that the purpose of this workshop is to:

- * Reinforce what parents are already doing at home to support their children in math.
- * Demonstrate strategies to support their child's math development.

Reassure parents that everyone is here to learn something new and to learn together!

- * Emphasize the importance of establishing a positive attitude towards math.

You can ask school librarians and math resource teachers to help you find school materials to display at these workshops (math books, games, manipulative materials, etc.).

Activity 1: Geometric snowflake activity

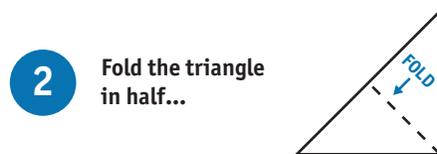
- * Tell parents that they will be making snowflakes to demonstrate how math can be found in nature.
- * Ask each parent to take a sheet of $8\frac{1}{2} \times 11$ " paper and a pair of scissors.

For this activity, you will need a pair of scissors and a sheet of $8\frac{1}{2} \times 11$ " paper for each participant.

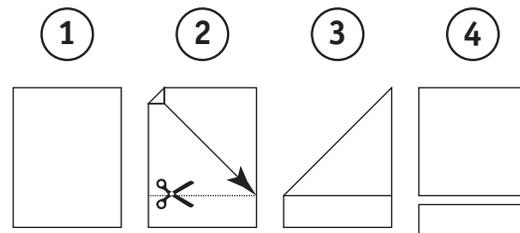
Step 1. Using the square piece of paper, demonstrate how to make a triangle by folding the paper and matching opposite corners (see image 1).



Step 2. Demonstrate how to fold the square to create a triangle.



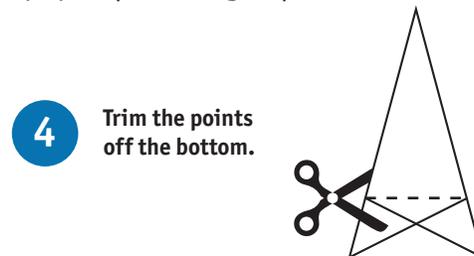
- * Demonstrate how to create a square by folding the rectangular sheet of paper (see image 1 and image 2) and by cutting off the bottom rectangular portion (see image 3 and image 4).



Step 3. Demonstrate how to fold the paper into thirds (see image 3).



Step 4. Cut bottom portion of the paper (see image 4).



Step 5. Ask parents to create a snowflake by cutting out different shapes (triangle, rectangle, oval, diamond, etc.) from the triangle.

5

Cut into the folds.



Experiment by making different shapes, sizes, and numbers of cuts. Be sure not to cut all the way across the triangle.

practice math skills at home. For example, see the Snowflake app, found on *The Prime Radicals* TVOntario website:

tvokids.com/apps/primeradicalssnowflakes

This is a good opportunity to show how technology (tablets, computers) and social media can be used to teach math at home.

Post-activity discussion

- * When everyone has made a snowflake, ask parents to share the math they learned from this activity (shapes, patterns, and lines of symmetry).
- * Remind parents that this is a fun and easy math activity that they can do at home with their children. It also helps children to practice fine motor skills.
- * Introduce parents to free math apps that encourage children to

6:30–6:45 p.m.

Activity 1: Number song

- * Kindergarten children love to sing! Tell parents that singing can be a fun way to teach their child how to count. Parents can find counting songs on CDs at the local library. They can also use a computer or tablet to find songs on YouTube that are appropriate for kindergarten-aged children.

- * Using a projector or screen, demonstrate how to search for songs on YouTube.com (search term: “number songs for kindergarten children”).
- * Using the link provided, teach parents a number song with a familiar tune, such as the “Roll Over” song (“Ten in the bed”).
- * Encourage parents to sing along and do the actions using their hands and fingers:



Lyrics

Ten in the bed and the little one said
 ‘Roll over! Roll over!’
 So they all rolled over and one fell out!
 Nine in the bed and the little one said
 ‘Roll over! Roll over!’
 So they all rolled over and one fell out!
 Eight in the bed...
 One in the bed and the little one said
 ‘I’m lonely! Where did everybody go?’



Activity 2. Patterning with beads

“Patterning” is an important concept taught in kindergarten. Making bead necklaces and bracelets is a fun, easy, and inexpensive way to practice making patterns at home:



- * Using plastic beads and elastic string (which can be purchased at dollar stores and craft stores), ask parents to create a bead necklace or bracelet using beads of different shapes, thicknesses, and sizes. The object is to create different patterns—simple and more complex

—using the different colours or shapes of beads.

For example, you can demonstrate an AABCC pattern by making a bead necklace with the following shapes: star, star, heart, heart, flower, flower, etc.

- * Another pattern could be based on shape and size, for example AbCbAbCb: BIG star, small heart, BIG flower, small heart, etc.
- * Allow time for discussion after the activity. Ask parents to share their pattern choices.

7:00–7:10 p.m.

Video “Inspiring Your Child to Learn and Love Math!”

Introduce the video.

Explain that the purpose of the video is to emphasize that math is:

- * A way of learning about our world,
- * Part of our daily lives, and

- * Both measurable and found in nature.

As parents watch the video, invite them to record their thoughts and reflections on the “Reflection Sheet” provided. Allow time for discussion after the video.

7:10–7:30 p.m.

Activity 3: “Shapes in our neighbourhood” bingo

- * Explain to parents that math doesn’t have to be an isolated subject that must be done at a specific place or time. Instead, “teachable math moments” can happen anytime and anywhere.

For “Shape Bingo,” you need multiple copies of bingo sheets; a copy of the shape cards, bingo chips, or buttons; and a paper lunch bag to hold the shapes.

- * To make parents more aware that math is all around us, give each parent a “Shapes in Our Neighbourhood” bingo sheet. Play bingo!

Post-activity discussion

- * Ask parents to name other common shapes that they might see in their backyard or while walking around their neighbourhood. Parents can create their own bingo sheet for their specific neighbourhood.

7:30 p.m.

Recommended Resources

- * Direct parents to the list of additional resources (including math books, songs, websites, apps, television shows, and games).

Wrap Up

- * Ask parents if they have any further questions about the workshop, information, or suggestions for future workshops.
- * Tell parents you will be available after the workshop if they have additional questions.
- * Thank parents for coming and ask them to complete an evaluation form.
- * Distribute fact sheets to parents before they go home.



Recommended Resources

There is a wealth of information on the internet in addition to the links and other resources listed below. For an up-to-date list, please check our website.

These resources remind us that:

- Math takes practice.
- Mistakes are part of learning.
- Asking, not telling, is most helpful to children’s learning.
- Math is everywhere!

They also remind us to have fun doing math together!

Online games for kindergarten children

Learning activities and stories for young children.

meddybemps.com/

Caterpillar Count. Kids learn to recognize numbers and count.

tvokids.com/games/caterpillarcount

Connect the Dots with Artt. Kids learn about counting.

tvokids.com/games/connectdotsartt

Shapeville. Kids learn about shapes.

tvokids.com/games/shapeville

A Lotta Dessert. Kids learn about patterns.

tvokids.com/games/lottadessert

Sort It. Kids learn about sorting.

tvokids.com/games/sortit

Other math games

TVOKids shows for children aged 6 to 11 about math.

tvoparents.tvo.org/article/tvokids-shows-ages-6-11-teaching-math

The Prime Radicals snowflake app.
[tvokids.com/apps/
primeradicalssnowflakes](http://tvokids.com/apps/primeradicalssnowflakes)

Calculation Nation (NCTM).
calculationnation.nctm.org/

Fun and educational math activities

The Family Math Project provides videos and workshops about math topics related to daily life. Sample titles: “Patterns from a shopping bag”; “How long is the stick?”; “Geometry at the bicycle shop.”
familymathcanada.org/

Ontario curriculum

“The Full-Day Early Learning—Kindergarten Program”
Ontario Curriculum
[edu.gov.on.ca/eng/
curriculum/elementary/kindergarten_english_june3.pdf](http://edu.gov.on.ca/eng/curriculum/elementary/kindergarten_english_june3.pdf)

Math information, advice, and suggestions for parents

Tips for parents about school and learning
[tvoparents.tv.org/topic/
school-learning#/1185/math](http://tvoparents.tv.org/topic/school-learning#/1185/math)

Doing Mathematics with Your Child, Kindergarten to Grade 6, A Parent Guide (Ontario Ministry of Education, 2014)
[edu.gov.on.ca/eng/literacynumeracy/
parentGuideNumEn.pdf](http://edu.gov.on.ca/eng/literacynumeracy/parentGuideNumEn.pdf)

Parent Resources (Education, Quality and Accountability Office)
[eqao.com/Parents/
parents.aspx?Lang=E](http://eqao.com/Parents/parents.aspx?Lang=E)

Math activity placemats, games, and songs

educ.queensu.ca/coc

Books

Counting and computations

Two Ways to Count to Ten, Ruby Dee

12 Ways to Get to 11, Eve Merriam

More, Fewer, Less, Tana Hoban

The Doorbell Rang, Pat Hutchins

Emily's First 100 Days of School,
Rosemary Wells

Give me Half!, Stuart J. Murphy

Patterning

The Quilt, Ann Jonas

Beep, Beep, Vroom, Vroom, Stuart J.
Murphy

Selina and the Bear Paw Quilt,
Barbara Smucker

Sorting

The Button Box, Margarete S. Reid

I Spy, Jean Marzollo and Walter Wick

Measurement

Where's My Teddy?, Jez Alborough

My Grandmother's Clock, Geraldine
McCaughrean

The Best Bug Parade, Stuart J.
Murphy

Data and Chance

The Best Vacation Ever, Stuart J.
Murphy

Geometry

Grandfather Tang's Story, Ann
Tompert

***Captain Invincible and The Space
Shapes***, Stuart J. Murphy

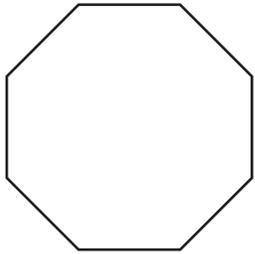
At the end of the day, the
most overwhelming key to a
child's success is the positive
involvement of parents.

- Jane D. Hull

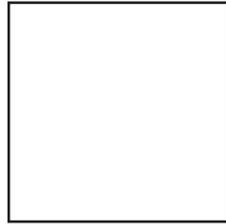
Activity 3: “Shapes in Our Neighbourhood” Bingo

		
	<p>BINGO</p>	
		

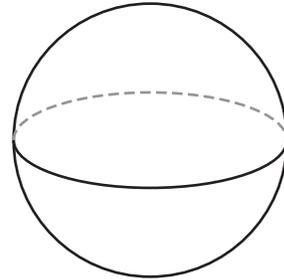
Shape Cards



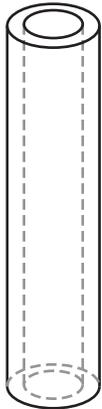
Octagon



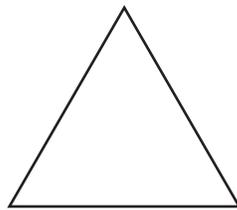
Square



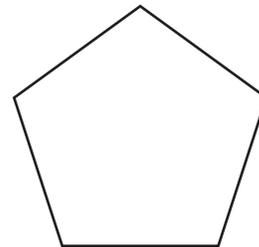
Sphere



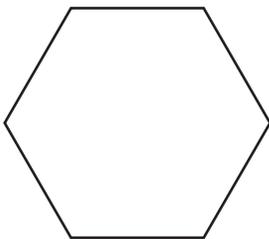
Cylinder



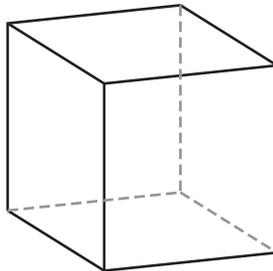
Triangle



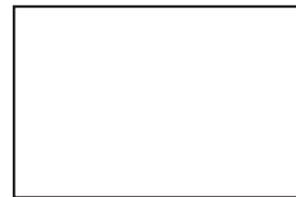
Pentagon



Hexagon



Cube



Rectangle

Supporting your kindergarten learner at home

- Have a **positive attitude** about math.
- Use **math words** and concepts at home as you measure ingredients for cooking and baking (“cups,” “double”), cut lengths of wrapping paper (“rectangle”) or ribbon (“three times the length of the box”), to wrap gifts, or make a family schedule (“days,” “weeks,” “hours”).
- Go for a walk and look for different **shapes around the neighbourhood**—a soccer ball is a sphere; a stop sign is an octagon; paving stones are rectangles or irregular shape, etc.
- Roll, throw, catch, and kick balls of different sizes and talk about which one is bigger and which is smaller, which ones are heavier and lighter, and which one travels the longest or shortest distance.
- Visit the park or playground to look for different shapes—what shape is a baseball diamond? What **shape** is the running track?—and **patterns** (numbers on a hopscotch grid, numbers on license plates and the number of squares on a four-square grid).
- Ask your children questions about play—for example, what, where, why, when, who, and how? This will help them learn to self-reflect, and it will encourage problem-solving skills.
- Encourage play with measuring cups and rulers to stimulate interest in mathematical and scientific concepts.
- Talk about the things you have seen together.
- Take your child to the **grocery store** and point out the scales in the produce section.
- Show your child **how to use money** or gift cards to pay for things.
- Bake, cook, and prepare food with your child.

Recommended Resources

There is a wealth of information on the internet in addition to the links and other resources listed below. For an up-to-date list, please check our website.

Ontario curriculum

- Full-Day Early Learning Kindergarten Program. edu.gov.on.ca/eng/curriculum/elementary/kingergarten_english_june3.pdf

Fun math games for kindergarten children

- Chateau Meddybemps. Activities and stories for young children. meddybemps.com
- Caterpillar Count. Kids learn to recognize numbers and count. twokids.com/games/caterpillarcount
- Shapewile. Kids learn about shapes. twokids.com/games/shapewile
- A Lotta Dessert. Kids learn about patterns. twokids.com/games/lottdessert
- EduGAINS (additional material for parents). edugains.ca/newsite/earlyPrimary/schoolleader/parent_info_sheets.html

Doing math activities with your child

- Fun and educational videos and resources. familymathcanada.org
- Information and advice for doing math at home. twoparents.two.org
- Math activity placemats, games, and songs. educ.queensu.ca/coc/resources
- The Prime Radicals Snowflake app. twokids.com/apps/primeradicalssnowflakes

Books

- *Counting and Computations Two Ways to Count to Ten*, Ruby Dee
- *Patterning Beep, Beep, Vroom, Vroom*, Stuart Murphy
- *Sorting The Button Box*, Marguerite Reid
- *Measurement The Best Bug Parade*, Stuart Murphy
- *Data and Chance The Best Vacation Ever*, Stuart Murphy
- *Geometry Captain Invincible and the Space Shapes*, Stuart Murphy

Module Two

Fact Sheet

Kindergarten

Count Together

CODE

Council of Ontario Directors of Education

Funded By: Ontario

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Fax: 905.845.2044

Handy math facts for kindergarten

Characteristics of children in kindergarten

- Kindergarten children learn best by doing—playing, experimenting, and discovering.
- Kindergarten children are curious and energetic. They enjoy using physical materials to solve problems—“how many grapes will I have left after sharing with a friend?”
- Kindergarten children love to talk and they love the challenge of learning new (and big) words.
- Kindergarten children learn through experiences, concrete situations, and explorations—at home, school, the zoo, the library, and the playground.
- Kindergarten children need opportunities every day to practice everything from drawing and printing, to buttoning and zipping, to cutting with scissors, and holding a pencil.
- Kindergarten children develop new knowledge by building on past experiences and using knowledge that they have already.
- Kindergarten children’s different cultural and linguistic backgrounds and daily realities contribute to the different ways that they develop and show their learning.
- Kindergarten children each develop differently—not in the same way or on the same day!

Math milestones for children in kindergarten

By the end of kindergarten, children should be able to:

- Show that there are many ways to count.
- Use numbers for counting and measuring.
- Show that numbers represent quantities that can become bigger or smaller.
- Use language to describe position—first, second, third, etc.
- Measure and compare length, weight, and temperature. For example, children can line up toys from shortest to tallest or heaviest to lightest. They can compare an outdoor to an indoor thermometer to describe warmer and colder.
- Compare and identify two-dimensional and three-dimensional objects found at home, school, and in other environments. For example, a globe is a sphere, a stop sign is an octagon, a can of soup is a cylinder, dice are cubes, a floor tile may have a square, or a rectangular or irregular shape, etc.
- Sort and compare two- and three-dimensional objects by size.
- Identify, create, describe, and complete growing and shrinking patterns using a variety of attributes, such as size, shape, texture, etc. They can make patterns with symbols, shapes, numbers, or actions to represent their thinking—hop/clap/jump/clap; hop/clap/jump/clap.
- Use measurement terms such as tall/short, big/small and empty/full to describe length, size, and quantity.
- Use language to describe spatial relationships—for example, inside/outside and above/below.
- Sort objects (find differences) or group them (find similarities) using rules such as the same number of right angles, sides, etc.

Kindergarten math skills and processes

Problem-solving

Children learn that there is more than one way to solve a problem.

Reasoning and proving

Children develop their own mathematical strategies for solving problems by collaborating with others and explaining their thinking to the teaching team (which can include educational assistants, special resource teachers and the school principal).

Reflecting

Children reflect on and monitor their own thinking to help clarify a problem.

Selecting tools and strategies

Children select an appropriate learning strategy and learning tool, such as blocks, to help solve a problem.

Connecting

Children make connections between math and everyday life—how many plates do you need so that each of your classmates will have one at lunchtime?



Yes, you can really help your child succeed in math!

ontariodirectors.ca/parent_engagement.html

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Funded by:  Ontario

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