

# Supporting Students in Mathematics



*Parent Involvement Committee  
Tuesday, April 9, 2024*



# PRIORITIES



Student Success and Achievement

Truth and Reconciliation

Literacy and Numeracy

Mental Health and Well-Being

Environmental Education and Sustainability

Equity and Inclusive Education



 **Rainbow Schools**  
*Reaching minds. Touching hearts.*  
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# Agenda

- Board priorities and focus
- The mathematics curriculum
- Numeracy programs
  - Kindergarten
  - Elementary
  - Secondary
- Tools, resources and measures
- Resources for parents and guardians



# Numeracy K to 12 Initiatives

**Literacy and  
Numeracy**



# Ministry Priority Areas

**PRIORITY ACTION:** Ensuring fidelity of curriculum implementation and use of instructional and assessment practices with a proven track record of enhancing student achievement

**PRIORITY ACTION:** Engaging in ongoing learning to strengthen mathematics content knowledge for teaching

**PRIORITY ACTION:** Knowing the mathematics learner, and ensuring mathematical tasks, interventions and supports are relevant and responsive



# Math Coaches

- Seven math consultants and coaches
  - Five elementary
  - Two secondary
- Work directly with administrators, teachers and students to enhance outcomes in mathematics
- Receive ongoing professional learning throughout the year to share with teachers throughout the system
- Model and support the implementation of resources (MathUP, Knowledgehook, Leaps and Bounds) in all Rainbow Schools

# Math Learning in Kindergarten





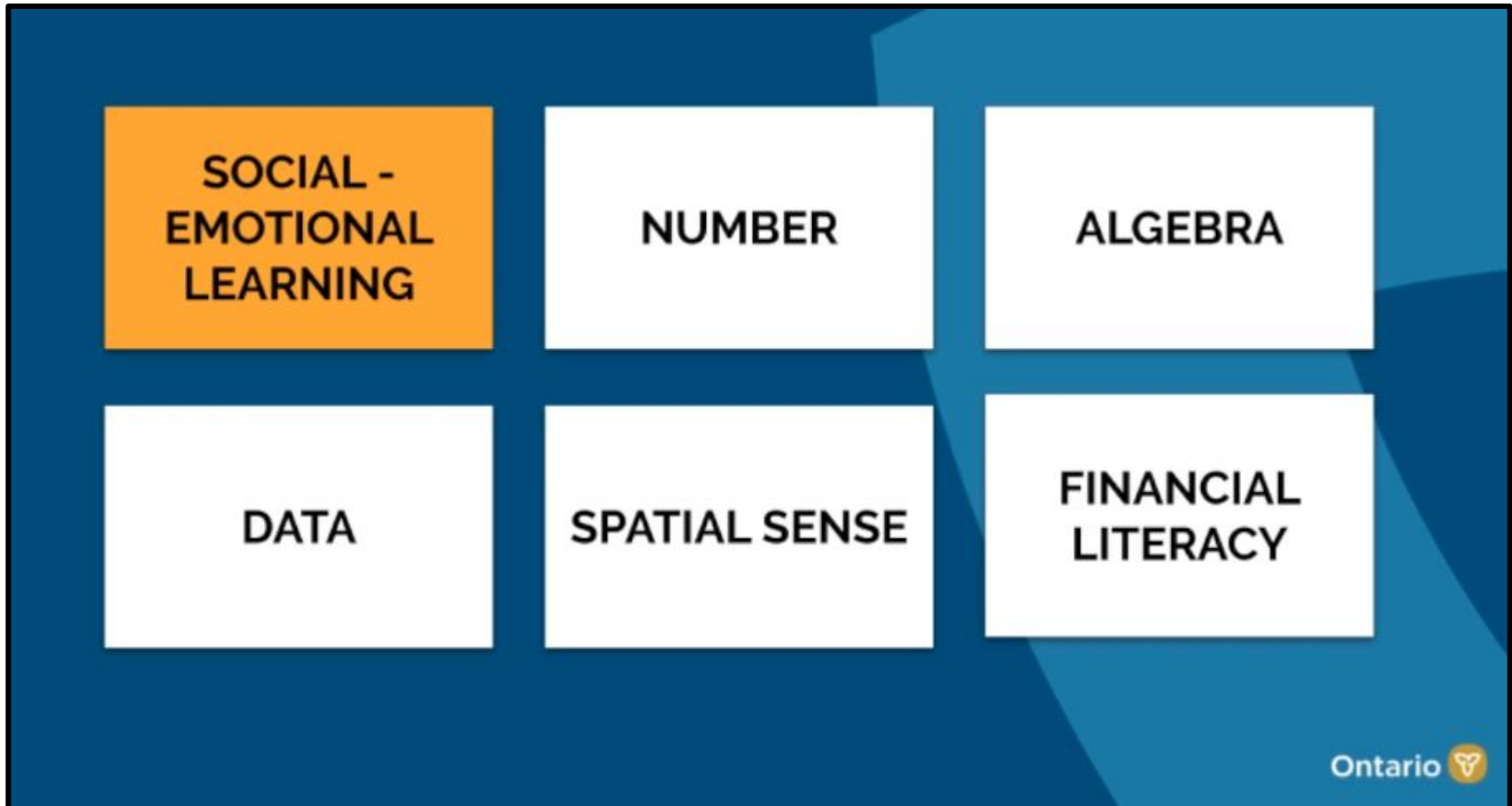
# Math Learning in Kindergarten



Image source: Ontario Ministry of Education



# Math Learning in Elementary Grades



# Math Learning in Elementary Grades





# Math Learning in Secondary Grades





# Destreamed Math in Grade 9

- Year 3 of Destreamed Math
- Diagnostic assessments developed:  
Grades 8 and 9
- Development of Math portfolio resources
- Use of Knowledgehook, Desmos, MathUP
- Thinking Classroom strategies



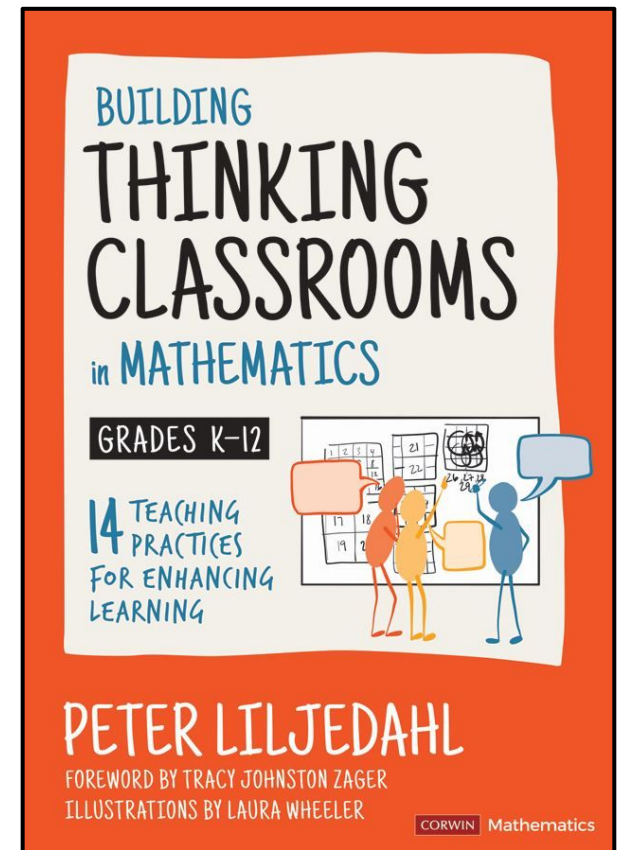
# Thinking Classrooms

## Problem solving is:

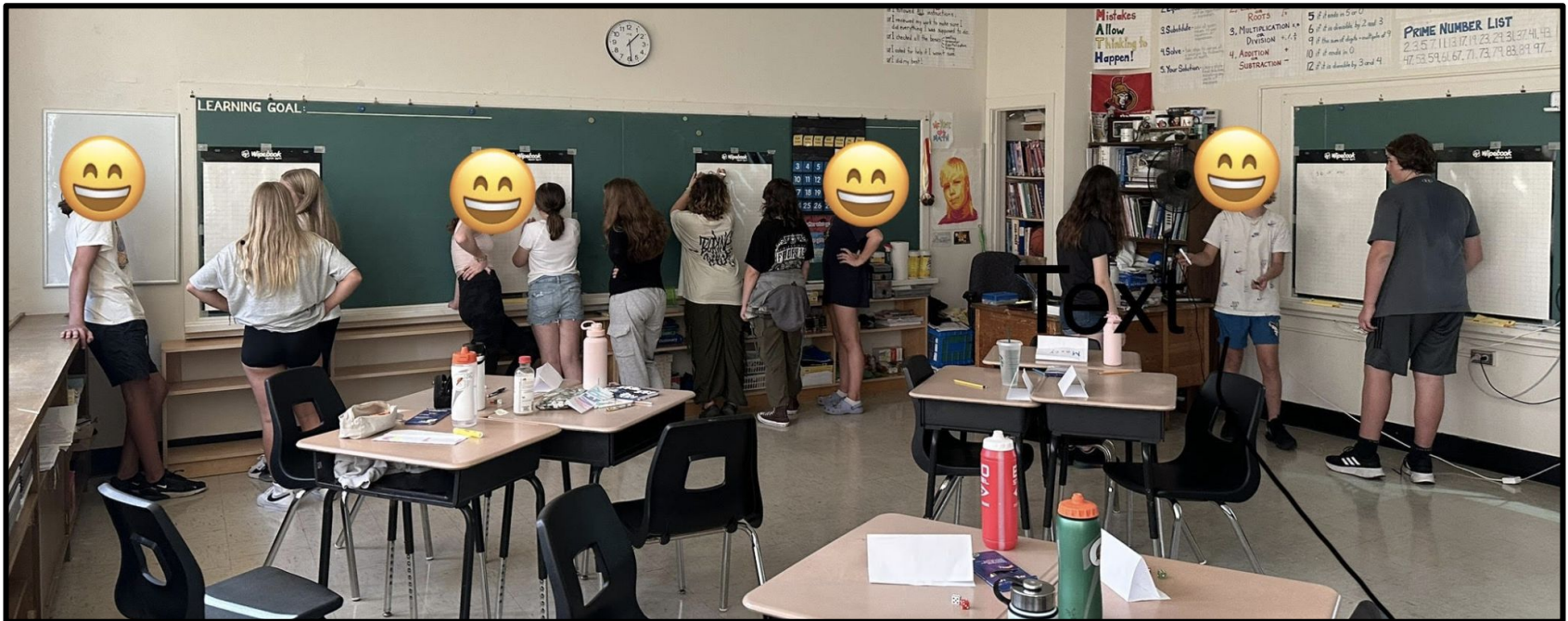
- The use of critical and creative thinking skills and/or processes
- Creating (and following through with) a multi-step plan to arrive at a solution

## According to Dr. Peter Liljedahl:

- Problem solving is what we do when we don't know what to do.



# Visible Learning





# Active Consolidation

- Provides a framework for student sharing which broadens thinking
- Students identify a group's thinking and strategies
- Students discuss the feedback, led by the teacher
- Teacher leads students in sharing their thinking, providing deeper learning



# Bridge Math Course

- Course taken before Grade 9 Destreamed Math
- Focus: mathematical thinking and computational skills
- For students who require additional support with Math in Grades 7 and 8, and need more practice and confidence to be successful in destreamed Math



# Tools, Resources and Measures

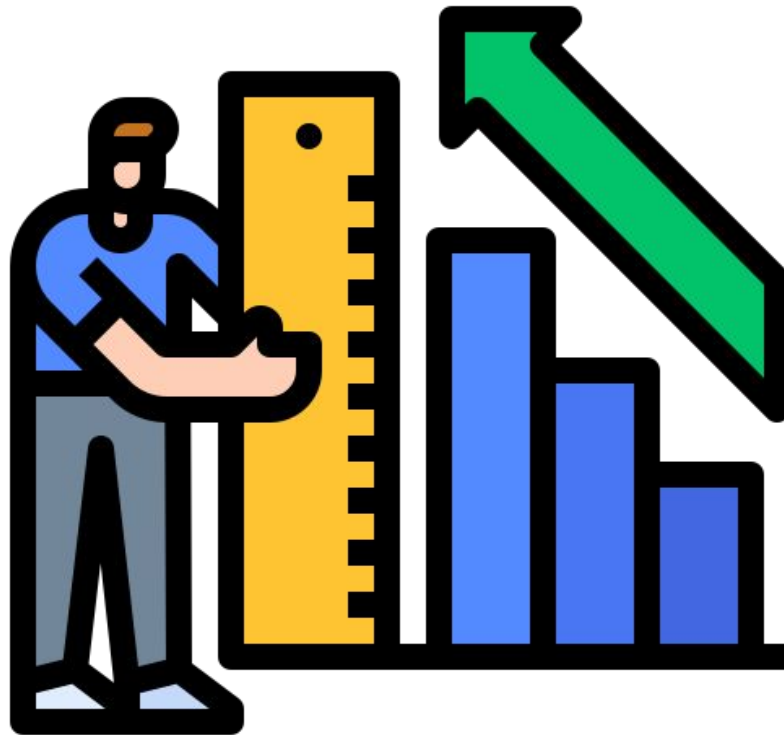


Image source: [ultimatearm on flaticon.com](https://www.flaticon.com/free-vector/ultimatearm)



# Elementary Scope and Sequence

- A writing team of four Rainbow educators, led by Elementary Math Consultant Danielle Gagnon, produced the document during the summer of 2023
- Provides a system-wide resource for educators to support implementation of the new curriculum
- Includes links to a variety of resources that enhance classroom practice for educators

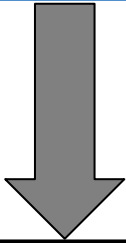
# Diagnosics





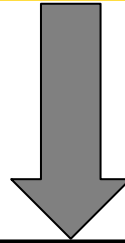
# Purpose

## MEASURE



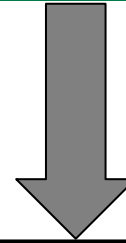
Allow teachers to "take the temperature" with respect to students' overall performance in mathematics.

## INFORM



Provide information about specific strengths and next steps to guide instruction or intervention.

## ACT



Equip teachers with a bank of actionable, aligned resources to support instruction or intervention.



# MEASURE - BROAD DIAGNOSTICS

- Completed using Knowledgehook
- Contain questions from each of the **six critical concept areas**
  - Whole-Number Operations
  - Working with Integers
  - Working with Fractions
  - Proportional Reasoning
  - Solving Equations
  - Patterning to Linear Relations
- Designed to allow teachers to check in on overall performance at certain times of the school year (e.g. pre, mid, post)
- Data is organized to pique teachers' curiosity about student performance in certain concept areas



# INFORM - NARROW DIAGNOSTICS

- Short paper-and-pencil assessments that dig deeper into each of the six concept areas
- Designed to provide information teachers can use to address specific misconceptions and close specific gaps in understanding (whole group, small group, individual)
- Accompanied by **Analysis Charts** that:
  - ◆ identify the specific skills / concepts being assessed
  - ◆ help teachers mark and analyze the diagnostics
  - ◆ provide links to resources teachers can use to learn more about the concept and support instruction / intervention



# ACT - Informing Instruction Grade 6 Example

What is the missing number?

$$37 - 6 = \square - 1$$

44%  
Success

25%  
Success

## Day 1 Minilesson

- Share data with students
- Discuss misconceptions and challenges
- Learn about equations and balance
  - use intervention materials to plan lesson
- Practice together
- Exit ticket (inform next day's learning)

**63%  
Success  
all  
questions**


## Day 2 Minilesson

- Share data from Day 1 and celebrate successes
- Address misconceptions and challenges
- Review strategies learned
- Practice together
- Exit ticket

**83%  
Success  
all  
questions**



# Parent and Student Surveys

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Section 1 of 3

## Math Feedback (February 2024)

The purpose of this survey is to collect data to evaluate the implementation of Rainbow District School Board's 2023-2024 Math Action Plan. Getting feedback throughout the school year is part of the Ministry of Education's Math Achievement Plan for all schools in Ontario.

The survey responses will be used for planning and reporting purposes only and will be shared in aggregate form. No email address and identifying information is being collected. All responses are anonymous.

In accordance with the Municipal Freedom of Information and Protection of Privacy Act, personal information is being collected under the authority of The Education Act and will be used for the purpose of planning mathematics programming and reporting data to the Ministry of Education. For more information, please contact the Principal of your child's school.

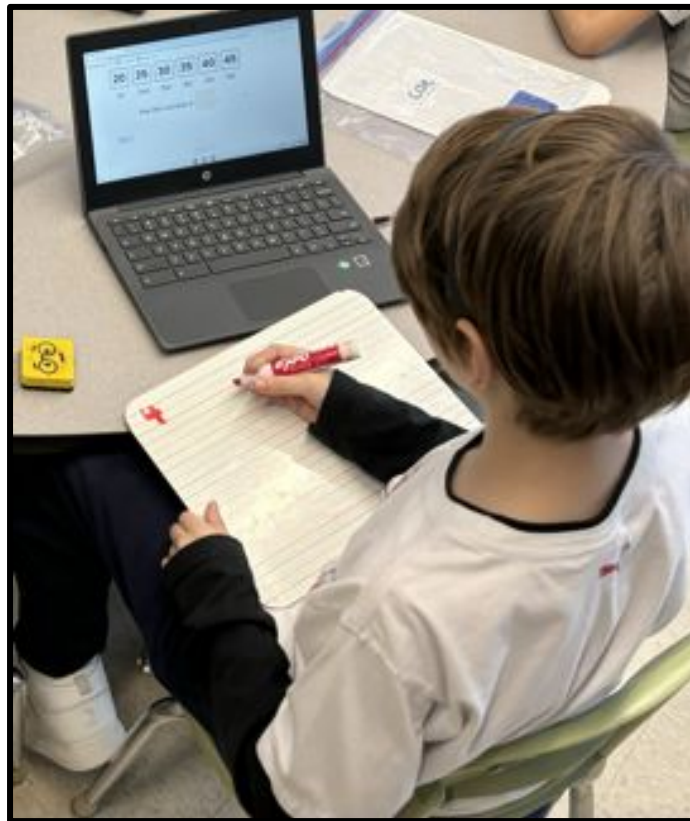
Thank you for completing this survey. We value your feedback.

# Highlights

- **Grades 4 to 12**
  - **More than 65%** of students responded "Yes" when asked to respond to the statement:  
*"I am good at math."*
- **Kindergarten to Grade 3**
  - **Nearly 85%** of parents responded "Yes" when asked to respond to the statement:  
*"My child believes they are good at math."*
- **Parent Survey**
  - **More than 70%** of parents responded positively to the statement: *"I am satisfied with the resources provided to support my child / children's math learning."*



# Math at Home





# Resources for Home



## A parent's guide to Mathematics, Grades 1–8 (2020)

Developed by the Ontario Ministry of Education

## Grade 9 math: a guide for parents

Learn about the new Grade 9 math course and how you can support your child's learning.



# Strategies at Home

**Math games** – math puzzles, or card and board games can show that math is fun. They also require trial and error thinking, enhance numeracy and logical thinking, and promote discussion.

**Math at the grocery store** – talk to your child about how to weigh items on a scale or how to estimate the total bill as you fill your cart.

**Math with money** – create a budget together or save to make a special purchase to help your child manage money. You could go shopping together and ask your child to estimate the amount of a purchase, calculate tax and check their change.

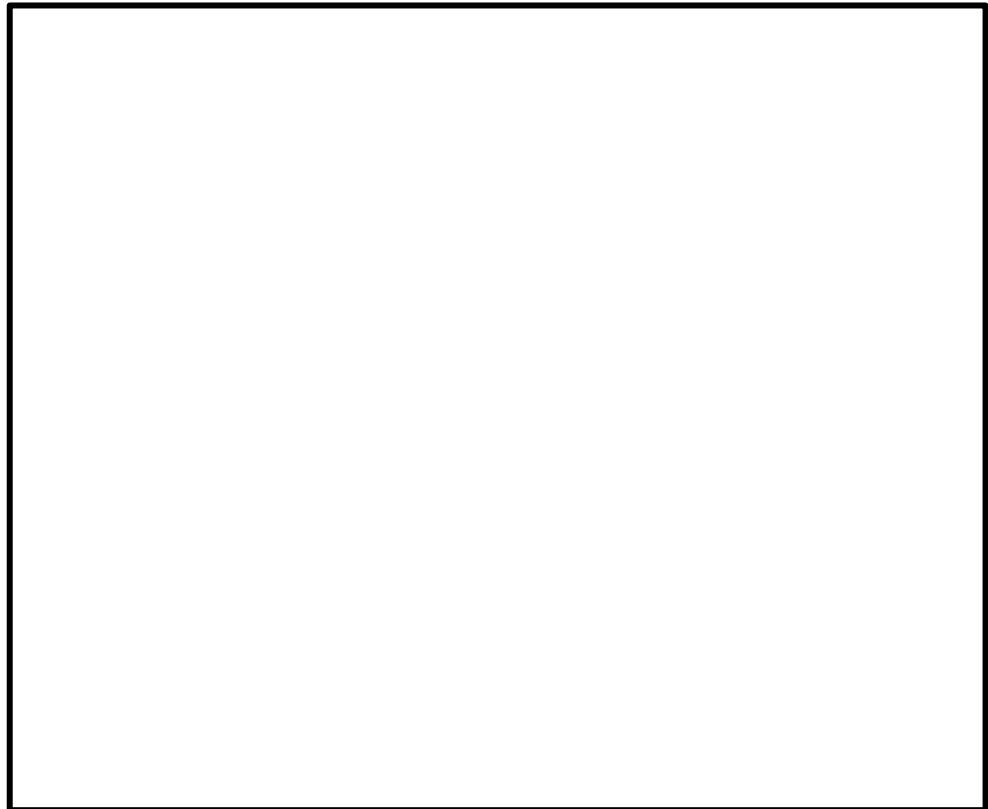
**Math in the kitchen** – bake, cook and prepare food with your child. There are many great math opportunities in the kitchen, such as measuring ingredients.

**Ontario Ministry of Education**

[www.ontario.ca/page/support-your-childs-math-learning](http://www.ontario.ca/page/support-your-childs-math-learning)



# Resources for Home





# Resources for Home



**Welcome to the  
Online Primary  
Sample Test!**

**Language and Mathematics**

**Enter**

# Resources for Home



## Learning Together Resources for Home

Parental involvement improves student achievement.

With this in mind, we are sharing resources that parents/guardians can use to support their children at home.

These resources relate directly to what your child is learning at school.

Together, we prepare students to become lifelong learners, achieving their full potential as confident, caring members of society.



Ministry of Education

**Ministry of Education Parent and Guardian Resources**  
<https://www.dcp.edu.gov.on.ca/en/curriculum#secondary>

**Ministry of Education Important Information in Many Languages**  
<https://www.dcp.edu.gov.on.ca/en/multi-languages>



**EQAO Grade 9 Mathematics Assessment: Sample Test**  
<https://dwod99k06nyqh.cloudfront.net/#/en/test-auth/g9-sample/340/adaptive>  
**EQAO Grade 10 Ontario Secondary School Literacy Test: Practice Test**  
<https://dwod99k06nyqh.cloudfront.net/#/en/test-auth/g9-sample/340/adaptive>



**TVO Learn**  
<https://tvolearn.com/>



**TVO Mathify**  
<https://mathify.tvolearn.com/>



**Ontario Learn at Home**  
<https://www.ontario.ca/page/learn-at-home>

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## Learning Together Resources for Home



**Youcubed**  
<https://www.youcubed.org/resource/parent-resources/>



**French as a Second Language (FSL) Toolbox**  
<https://fsl.rainbowschools.ca/>



**Canadian Parents for French - Parent Resources**  
<https://cpf.ca/en/for-parents/>  
**Canadian Parents for French - Student Resources**  
<https://cpf.ca/en/for-youth/>



**Government of Canada Science Activities and Resources**  
<https://science.gc.ca/site/science/en/educational-resources#1>



**School Mental Health Ontario Resources**  
<https://smho-smso.ca/parents-and-caregivers/>



**People for Education - Parent Involvement and Resources**  
<https://peopleforeducation.ca/topics/parent-involvement/>



**LD@Home**  
<https://www.ldathome.ca/>



**UFLI Parent Resources**  
<https://ufl.education.ufl.edu/resources/parent/>

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# Resources for Home

## CHAPTER 3

### We can all learn math

Having a positive attitude towards mathematics will encourage your child to believe he/she can be successful.

Just as children see themselves as readers and writers, we want them to see themselves as mathematicians.



### We can all learn math with the right time and support.

Parents/guardians are important role models in the learning process.

### Let your child see that you enjoy the challenge math can bring.

Show him/her that you struggle at times, that you are willing to try and to take risks, and that you enjoy the thinking that is involved in solving a mathematical problem.

### Be positive

When your child is working on math homework, maintain a relaxed and positive attitude.

### Encourage your child to persevere. Success will come.

Praise your child for his/her effort. Put the emphasis on the process and for working hard, not on getting the correct answer.

Feeling successful and having fun are the best ways for your child to develop a love of math and a belief



# THANK



Image source: freepik on flaticon.com