BRIDGING HOME & SCHOOL

Ottawa-Carleton District School Board

Supporting Your Child in Math

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OTTAWA-CARLETON DISTRICT SCHOOL BOARD

Today's Goals

- Explore ways that parents can support their child in learning mathematics
- Provide an overview of provincial and district focus in mathematics
- Share resources and practical strategies to support children in developing confidence and capability in mathematics

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Supporting Your Child in Math

… students perform better in school if their parents or guardians are involved in their education. The mathematics curriculum has the potential to stimulate interest in lifelong learning not only for students but also for their parents and all those with an interest in education.

The Ontario Math Curriculum

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Math is Everywhere

Finding Math Everywhere

How math can be part of your regular day-to-day routine:

- Play board games and cards
- Listen to what you hear on TV or see on the playground
- Compare prices grocery store
- Count money or make a budget
- Play computer games together
- In the kitchen: baking, cooking,
- Using GPS and reading maps
- Do artwork or crafts together

A Message from Dr. Small

Parents: Be intentional & casual

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Ontario Math Curriculum K-12

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As students progress through elementary school, they will develop their ability to think mathematically, learn about different concepts and relationships, and to apply their knowledge. Key concepts include addition, subtraction, division, and multiplication, which will help to set the stage for more advanced skills, including algebra, and working with integers and decimals, among others.

A Parent's Guide to the Fundamentals of Math
Grades 1 to 8

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Balanced Mathematics Instruction, K-12

"[The Ontario Mathematics Curriculum] is based on the belief that students learn mathematics most effectively when they are given opportunities to investigate ideas and concepts through problem solving and are then guided carefully into an understanding of the mathematical principles involved. At the same time, it promotes a balanced program in mathematics. The acquisition of operational skills remains an important focus of the curriculum."
(*The Ontario Curriculum, Grades 1-8, Mathematics*, p.4)

"Today's mathematics curriculum must prepare students for their future roles in society. It must equip them with an understanding of important mathematical ideas; essential mathematical knowledge and skills; skills of reasoning, problem solving, and communication; and, most importantly, the ability and the incentive to continue learning on their own."
(*The Ontario Curriculum, Grades 11 and 12, Mathematics*, p.4)

Determining Instructional Approaches

Educators design mathematics instruction to support learners in achieving the expectations of *The Ontario Curriculum*.

An effective mathematics program includes a variety of instructional approaches in rich learning contexts, and focuses on the development of conceptual and procedural understanding, skill development and problem-solving. A balanced program includes guided/direct instruction, as well as opportunities for student inquiry in which students generate their own solutions. A variety of groupings for collaborative learning with peers, as well as time for independent learning, are essential.

"Students in a mathematics class typically demonstrate diversity in the ways they learn best. It is important, therefore, that students have opportunities to learn in a variety of ways." (*The Ontario Curriculum*, Grades 9 and 10, Mathematics, p.23)

Constructing Understanding Through Problem Solving

Teaching through problem solving is not the same as solving word problems. When students engage in problematic situations, they have opportunities to make and investigate conjectures, connect mathematical concepts and relate mathematical ideas to situations drawn from every day contexts. All of these processes help in both constructing and deepening understanding.

An understanding of the same big idea can be constructed through tasks with multiple entry points. Problems are carefully selected and differentiated to be accessible yet challenging for all students.

Students learn to problem solve when they problem solve to learn. "[Problem solving] can be used as the means of introducing concepts rather than simply engaging students in applying or practicing mathematical procedures." (*The Report of the Expert Panel on Mathematics in Grades 4-6*, p.11)

Strengthening Learning Through Purposeful Practice

A balanced program provides opportunities for students to practise the Mathematics they are learning.

Purposeful practice strengthens the connection between skills, concepts, strategies and thinking. It deepens understanding, improves speed and accuracy, and helps students retain concepts, facts and procedures.

Once conceptual understanding has been framed, purposeful practice helps students develop computational and procedural fluency.

"Children need time to practise and consolidate skills, balanced with time to put those skills to use in a problem-solving context." (*The Report of the Expert Panel on Early Math in Ontario*, p.31)

It is important that practice is purposeful and responsive to each individual student's needs.

Building Skills and Competencies: *Basic Facts and Operational Skills*

Operational skills and basic facts are important because they support efficiency and the ability of students to judge the 'reasonableness' of a solution in mathematics.

Operational skill is more than fast recall on math drills. It involves understanding why a fact or procedure makes sense and how it relates to other concepts and skills.

When students develop both fluency and understanding, skills become tools to help them solve problems.

"Skills and understanding are especially critical when tackling challenging problems." (C. Seeley, Balance is Basic in *Faster Isn't Smarter*, 2009, p.2)

Students with strong basic facts and operational skills look for number relationships when solving problems. This allows them to choose flexibly from a variety of strategies.

Using Resources Thoughtfully

A variety of resources and tools are used to support student learning. Resources and tools are selected thoughtfully, informed by curricular expectations and responsive to student learning needs.

Textbooks, manipulatives, technology, media and professional materials (e.g., *Guides to Effective Instruction, TIPS, Edugains.ca*) are all valuable resources.

Using a resource thoughtfully is different than following the resource lesson by lesson. Beginning with the curriculum, educators identify intended learning outcomes and select specific resources and tasks that will support students in achieving these goals.

"Manipulatives...are central to effective instruction and have the capacity to greatly improve and deepen student understanding." (*The Report of the Expert Panel on Mathematics in Grades 4-6*, p. 25)

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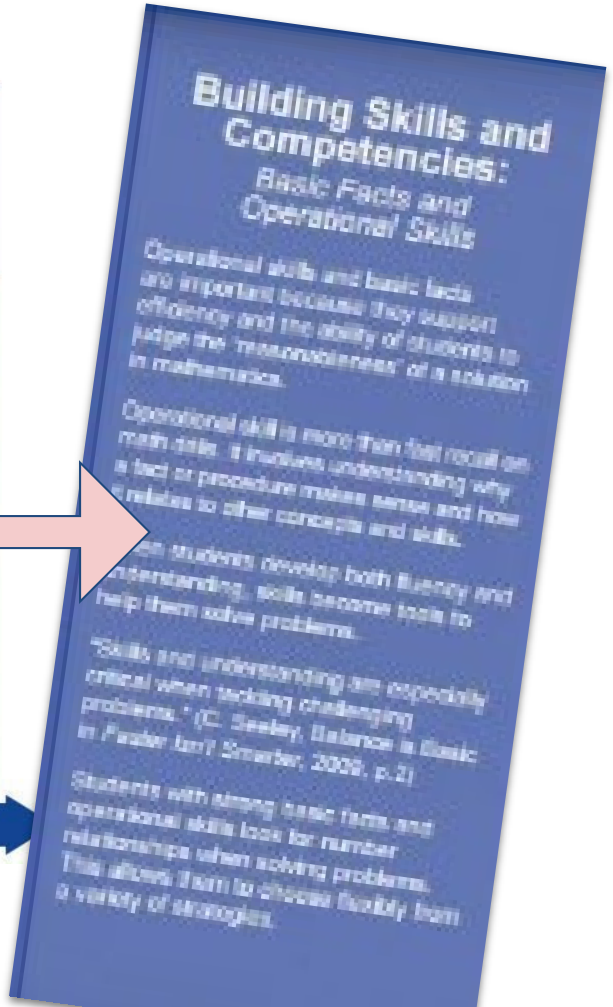

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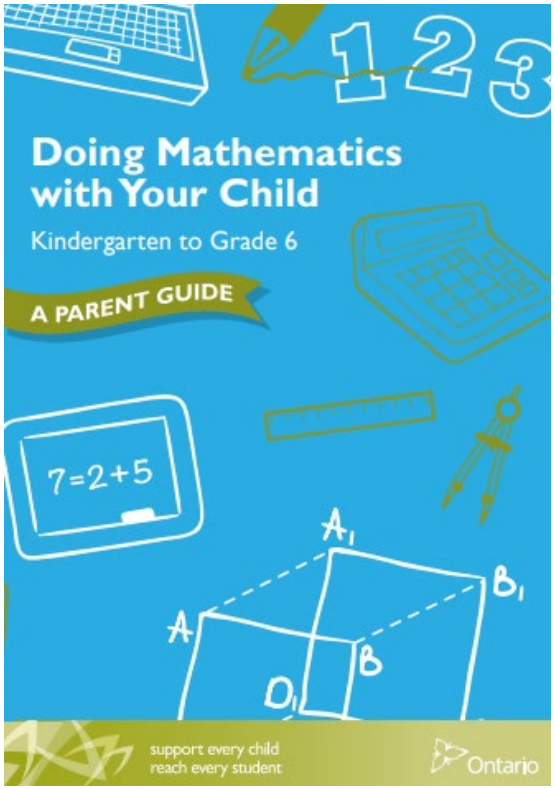
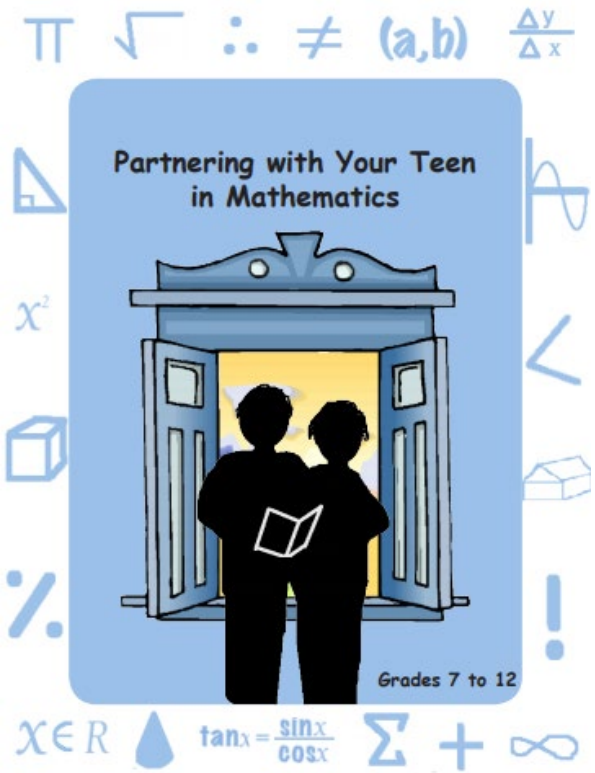
Provincial Resources



[English](#)
[Other Languages](#)



[English](#)

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Online Support

www.ocdsb.ca

↪Parent Portal

↪Homework Help

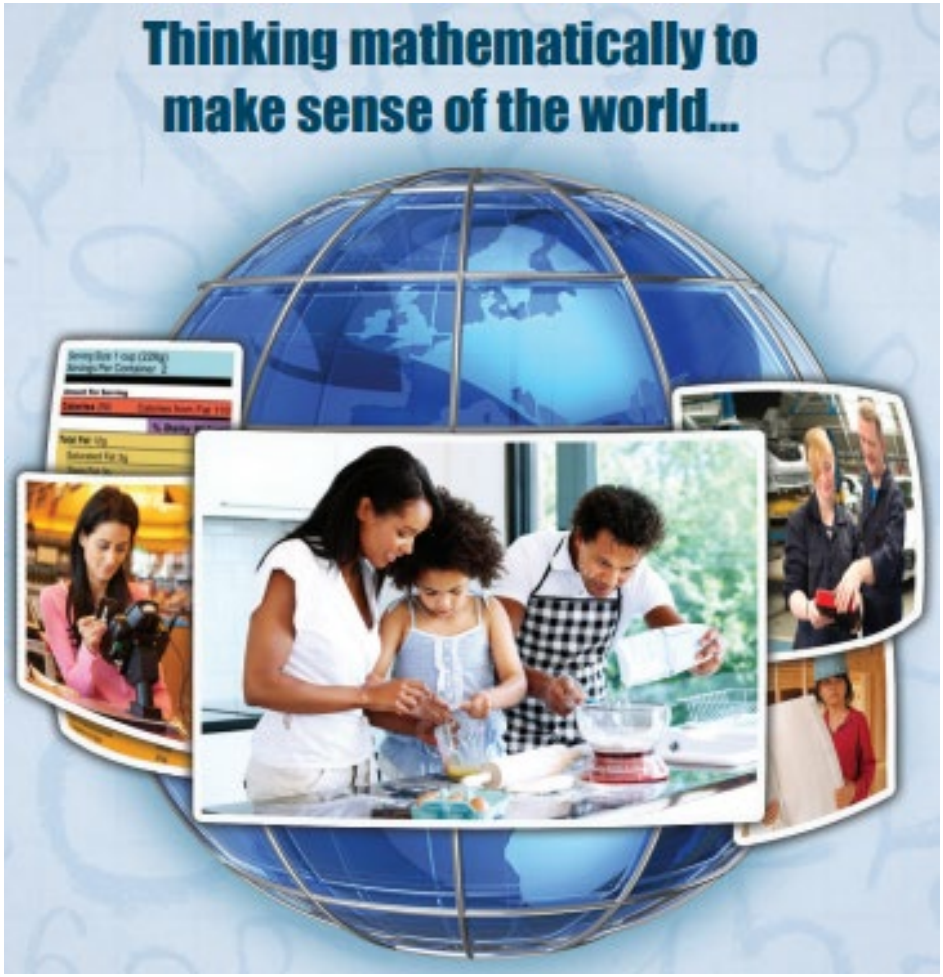
Math Support Resources

- K-3
- 4-6
- 7-12

Homework Help (TVO)

- Gr 7-10
- Free online tutoring by trained Ontario teachers (Sun-Thu from 5-9 pm)

OCDSB Numeracy Guide for Parents



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Resources (stations)

Games & Puzzles

Chromebooks

Ministry/Board Docs/pamphlet

Pathways in High School