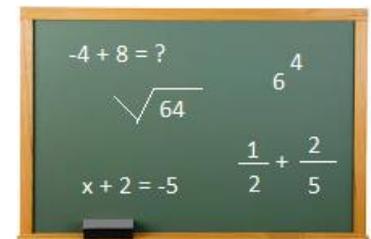


## Focusing on the Fundamentals of Math

Last fall the Ministry of Education released a [teacher guide](#) and a [parent guide](#) to support ongoing efforts in building students' knowledge and skills in Mathematics. The teacher guide focuses attention on the content expectations in *The Ontario Curriculum, Grades 1 – 8: Mathematics, 2005* specifically around the expectations in the Number Sense and Numeration strand and expectations that relate to number properties in the Patterning and Algebra strand. It outlines steps to achieving the knowledge and skills described in these expectations and suggests timely connections that will better support student learning. The parent guide provides examples of some of the fundamental Math concepts and skills that students are expected to learn in elementary school and to continue to master through secondary school. It also lists strategies to help make connections between what students are learning in school and everyday experiences at home and in the community.

## What are the Fundamental Math Concepts and Skills?

- Working with numbers
- Recognizing and applying understanding of number properties
- Mastering Math facts
- Developing mental Math skills
- Developing proficiency with operations



## How do Number Talks and Dot Talks support mastery of these Math fundamentals?

Last month, the [Math Moment](#) described Number Talks and Dot Talks and how educators are using them in the classroom. Evidence demonstrates that when used over time, these talks help students make sense of Math, prioritize strategies, and master basic facts. This learning is much more powerful than just rote memorizing.

While students need to be fluent with number facts in order to perform calculations efficiently and accurately, they must also understand how different types of numbers behave when operations are applied them. Number Talks allow students to think flexibly with numbers giving them opportunities to break numbers apart and make problems easier. They allow students to use and refine specific strategies leading to automaticity. During a Number Talk or a Dot Talk, students will share and hear different thinking, helping every student build his/her own repertoire.

<b>6 x 19</b>	
Ben: $6 \times 10 = 60$ $6 \times 9 = 54$ <hr/> $114$	Kara: $6 \times 20 = 120$ $- 6$ <hr/> $114$
Haley: $5 \times 20 = 100$ $1 \times 20 = 20$ <hr/> $120$ $- 6$ <hr/> $114$	Jon: $5 \times 19$ $\times 6$ <hr/> $114$

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● ●	● ●	● ●

Maria:  $4 + 3 = 7$   
 Ryan:  $2, 4, 6 + 1 = 7$   
 Kyle:  $10 - 3 = 7$   
 Emma:  $2 + 2 + 2 + 1 = 7$

Educators' observations and their conversations with students during a Number Talk or Dot Talk provide them with rich insight into the strategies that students are using and how effectively they are applying them. Conversations reveal whether students understand how they are performing computations and whether their answers make sense to them. Number Talks support the ultimate goal for students to be able to perform mathematical procedures with ease, supporting how they develop their skills in critical thinking and problem solving.

If you have not already done so, talk with your child and/or your child's teacher about Number Talks and Dot Talks. Why not try one at home? Compare and contrast strategies with your child. Use one of the strategies to estimate distance, time and/or costs.