

THE REVISED KINDERGARTEN – GRADE 9 MATHEMATICS PROGRAM OF STUDIES

What does it mean for my child to communicate in math?

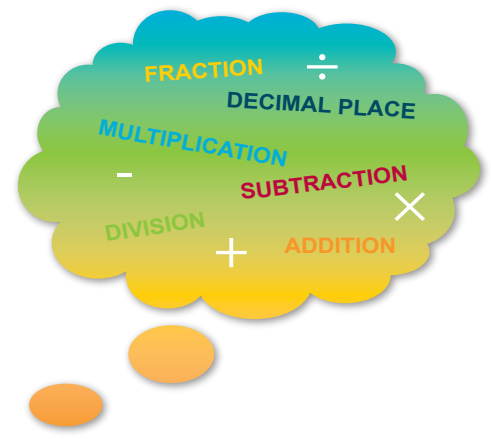
In the revised Mathematics Kindergarten to Grade 9 Program of Studies, there is a strong emphasis on students communicating mathematically. Students will be involved in reading and writing about, listening to, representing, viewing and discussing mathematical ideas. These activities allow students to connect their own ideas and language to the symbols and language of mathematics.

Students need opportunities to talk to each other about mathematics. They need to feel free to ask questions of the teacher and of their peers. As students are busy working on math tasks they need to talk about what they are doing, why they are doing it and what they are learning. When children verbalize what they are thinking it helps them to successfully internalize concepts.

Talking about math is not just giving the answer to simple questions like $8 + 6 = ?$ Talking about math uses language to make sense of relationships, clarify ideas and connect new concepts to what is already known.

To communicate mathematically means to:

- use words or mathematical symbols to explain real life
- talk about how you arrived at an answer
- listen to other ways of thinking and perhaps alter your own thinking
- use pictures to explain understanding
- write about the math you used, not just give an answer.



When students are showing their thinking, they are communicating mathematically!



You might remember from math class when you were a child that you were asked to “show your work.” Today, students are expected to “show their thinking,” which is different! Showing steps and explaining one’s thinking both have a place in a mathematics class. Showing one’s steps is a well-established practice, but explaining one’s thinking is an important part of doing mathematics that should be included when learning any math concept.

Explaining one’s thinking has the following benefits:

- *Students use a strategy that makes sense to them.*
- *Students clarify their thinking when explaining their strategy to others.*
- *Students learn from hearing and/or watching other students’ strategies.*
- *Students are in the role of mathematicians rather than just being observers.*
- *Explaining one’s thinking and listening to other’s thinking exposes students to different learning styles and different backgrounds.*
- *Students are not imitating the teacher, but discovering their way to solve the problem. This higher-level thinking process involves truly “doing mathematics.”*

*Adapted from J. Bay-Williams, “Families Ask: Showing Your Work: Beyond Following Steps,” *Mathematics Teaching in the Middle School* 12, 6 (2007), p. 339.

How might I support my child with communicating mathematically?

- *Be a good listener.*
- *Encourage your child to explain his or her thinking or to “think out loud” when they work on a math problem.*
- *Listen to your child explain math in his or her own words and then paraphrase what they have said using mathematical words that they may be learning.*
- *Ask your child’s teacher for a list of math words that might be challenging for students in your child’s grade.*
- *Use a dictionary or glossary when helping your child with homework when you don’t know the vocabulary your child is using.*

Adapted with permission from the Alberta Regional Professional Development Consortia.