



## Helping Parents Understand the Alberta *Mathematics Kindergarten to Grade 9 Program of Studies*

Parents are important partners in their children's education. The information in this document may be used to help parents better understand mathematics education in Alberta.

### **Q. Do students need to know basic number facts?**

- A. Yes. Students are expected to understand and commit basic number facts to memory. Number facts are single digit addition, subtraction, multiplication and division operations.

Mastery of number facts occurs when students understand and recall facts. Mastery requires both knowledge and understanding. Students who have memorized facts without understanding have not achieved mastery. Similarly, students who understand concepts but can't recall the facts have not reached mastery.

Mastery is a progression of learning. For example, students work towards mastery of multiplication and related division facts, beginning in Grade 3. All students are expected to achieve mastery by the end of Grade 5 (*Mathematics Kindergarten to Grade 9 Program of Studies*, Grade 5 – Number – Specific Outcome 3, p. 27).

#### *When communicating with parents:*

The program of studies does not prescribe any one way to achieve mastery, nor does it encourage any one way over another. Children are expected to understand, recall and apply their number facts. Sharing with parents the ways in which you work with your students to develop mastery of number facts is important, as it helps give parents the ability to reinforce and support those approaches at home.



**Q. What does it mean to recall a number fact?**

- A. Recall is when students retrieve the number facts they have committed to memory. Students should be able to retrieve the facts in a manner that is timely and efficient, without external aids.

Assessment of recall can occur throughout the year as students apply their knowledge and work towards other outcomes such as those related to measurement, perimeter, area and solving equations. The goal is for students to achieve recall of basic number facts by the end of the year.

*When communicating with parents:*

Parents need to know that recall is an end goal for the year and that there are set goals for recall in each grade. The key is that the child can retrieve the number fact when it is needed. Recall should allow students to answer questions in a timely manner.

**Q. Are students expected to memorize number facts?**

- A. Yes. The expectation is that students have the facts committed to memory and are able to recall them when needed. Rather than thinking of memorization as a process of how students learn, memorization is the end result of this learning. Learning mathematics includes a balance between understanding, recalling and applying mathematical concepts.

*When communicating with parents:*

It is essential to share with parents that understanding mathematical concepts is important so that students can build on these concepts for further learning. There are many different approaches that are used in the classroom; it is important to share your approaches with parents so that they can support their child.



**Q. Can students use “traditional” algorithms or methods when adding, subtracting, multiplying and dividing?**

- A. Yes. Algorithms are step-by-step procedures. When a student understands the concepts behind an algorithm, the algorithm becomes a strategy.

The program of studies allows students to investigate different strategies. Students can use any efficient and effective algorithm that they understand, including “traditional” algorithms. It’s important that the student understands why the algorithm works and that the student is proficient in using that algorithm.

*When communicating with parents:*

Parents may want to know if their child can add, subtract, multiply and divide using the same techniques they learned. These ways are acceptable—the key is that the child understands why the strategy works, so the child will be able to build on the concept for future learning. Over time, children refine their strategies to increase their accuracy and efficiency. It may be helpful to show parents the strategies their child is using. Doing so will give parents the tools to help their child at home.

**Q. Do students need to use more than one strategy to solve a problem?**

- A. No. Teachers present a variety of strategies and students become proficient in at least one appropriate strategy that they understand both conceptually and procedurally. There is a balance between providing opportunities for students to find an efficient and accurate strategy that they understand, and time to refine the strategy. A student’s strategy may evolve over time as the student continues to develop mathematically. At times, teachers may need to support students in finding strategies that are efficient and accurate.

*When communicating with parents:*

When parents look at the math their child is doing and it is unfamiliar to them, they don’t know how to help their child. Parents can best support their child when they understand the strategies their child is using.

Some ways you can help parents are by holding a math evening for parents, sending newsletters home, having the child explain the strategy to his or her parents, and sharing fact sheets from the mathematics website (<http://education.alberta.ca/teachers/program/math/parents/links.aspx>).



**Q. Is there a specific approach that I must use to teach math?**

- A. No. The program of studies defines the learning outcomes to be achieved by students. The student learning experiences used to achieve the outcomes are the responsibility of teachers. A variety of pedagogical approaches are necessary to address the learning styles, cultural backgrounds and developmental stages of each student (*Mathematics Kindergarten to Grade 9 Program of Studies*, p. 1). Teachers introduce concepts and develop learning activities that help students achieve the expected learning outcomes.

*When communicating with parents:*

Some parents may have heard the term “discovery math” used to describe the mathematics program. This term does not accurately describe the program. Communicating with parents about the learning activities you use in your classroom will help parents understand the expectations of the mathematics program.

**Q. Where can I find more information regarding the mathematics program and ways that I can support parents?**

- A. The mathematics web page at <http://www.education.alberta.ca/math> has many resources, including fact sheets, frequently asked questions, videos and other supports, to help communicate with parents.