

# The Right Angle: Report from Alberta Education

Provincial implementation of the revised K–9 mathematics program of studies started in September 2008 for kindergarten, Grades 1, 4 and 7. Grades 2, 5 and 8 were available for optional implementation in September 2008 and will be in provincial implementation next year. Grades 3, 6, 9 and 10 will be provincially implemented in September 2010. The following table summarizes the K–10 implementation schedule.

	September 2008	September 2009	September 2010
Provincial	K, 1, 4, 7	2, 5, 8	3, 6, 9, 10
Optional	2, 5, 8	3, 6, 9	

As you review the revised Alberta programs of studies for mathematics, remember that individual outcomes are only part of the program; the underlying philosophy provides the context for interpreting the outcomes. This underlying philosophy is described in the first few pages of the programs of studies. For instance, the following two sections are taken from the *Mathematics Kindergarten to Grade 9 Program of Studies* (2007).

## Beliefs About Students And Mathematics Learning

Students are curious, active learners with individual interests, abilities and needs. They come to classrooms with varying knowledge, life experiences and backgrounds. A key component in successfully developing numeracy is making connections to these backgrounds and experiences. Students learn by attaching meaning to what they do, and they need to construct their own meaning of mathematics. This meaning is best developed when learners encounter mathematical experiences that proceed from the simple to the complex and from the concrete to the abstract. Through the use of manipulatives and a variety of pedagogical approaches, teachers can address the diverse learning styles, cultural backgrounds and developmental stages of students, and enhance within them the formation of sound, transferable mathematical understandings. At all levels, students benefit from working with a variety of materials, tools and contexts when constructing meaning about new

mathematical ideas. Meaningful student discussions provide essential links among concrete, pictorial and symbolic representations of mathematical concepts. The learning environment should value and respect the diversity of students' experiences and ways of thinking, so that students are comfortable taking intellectual risks, asking questions and posing conjectures. Students need to explore problem-solving situations in order to develop personal strategies and become mathematically literate. They must realize that it is acceptable to solve problems in a variety of ways and that a variety of solutions may be acceptable.

## Goals for Students

The main goals of mathematics education are to prepare students to

- use mathematics confidently to solve problems,
- communicate and reason mathematically,
- appreciate and value mathematics,
- make connections between mathematics and its applications,
- commit themselves to lifelong learning and
- become mathematically literate adults, using mathematics to contribute to society.

Students who have met these goals will

- gain understanding and appreciation of the contributions of mathematics as a science, philosophy and art,
- exhibit a positive attitude toward mathematics,
- engage and persevere in mathematical tasks and projects,
- contribute to mathematical discussions,
- take risks in performing mathematical tasks and
- exhibit curiosity.

By looking at the front end of the program of studies teachers can see how beliefs about students and mathematics learning provide a foundation for the general and specific outcomes that are detailed in the remainder of the document and support the goals for students.

## Reference

Alberta Learning. 2007. *Mathematics Kindergarten to Grade 9 Program of Studies*. Edmonton, Alta: Alberta Learning.

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