

Developing Positive Math Experiences

In CBE, we are committed to helping all students develop a positive attitude towards mathematics and to see themselves as capable of doing mathematics. We believe that all students belong in the discipline of mathematics and are committed to supporting students to build positive mathematics identities, while emphasizing deep learning of mathematical concepts and skills. Central to our work is the design and implementation of a [CBE K-12 Mathematics Framework](#) that outlines best practices for teaching and learning, supporting each student to engage in their learning to their fullest potential.

Students will be engaged in a variety of tasks, routines and activities to build understanding and appreciation for mathematics. They will count objects, identify patterns, measure lengths, ask questions and collect data, create graphs, complete calculations and more. Like mathematicians, students will engage in mathematical play including puzzles and games, as well as exploration with numbers, shapes and strategy or logic. For example, try playing around with numbers and operations in the following [question](#) from [openmiddle.com](#).

ORDER OF OPERATIONS 5

Directions: Using the digits 0 to 9 at most one time each, place a digit in each box so that each expression is simplified to a different odd number.

$$\square \div (\square - \square)$$

$$\square + \square \times \square$$


$$\square - \square \div \square \times \square$$

Developing a positive attitude towards learning mathematics is critical for helping students to see themselves as capable of learning and doing mathematics. As part of ensuring a supportive and inclusive learning environment, mistakes are welcomed and viewed as a natural part of learning. Students will identify and celebrate examples of mathematical creativity as they learn to see and appreciate the beauty of mathematics and diverse approaches to solve problems.

An important part of learning mathematics is using and making connections between multiple forms of representations, which begins in Kindergarten. These include objects (manipulatives), pictures, symbols, words and real-life examples. As students make more connections between various representations, their understanding deepens and their ability to work flexibly and solve problems strengthens.

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For example, which fraction is bigger $\frac{5}{8}$ or $\frac{7}{12}$?

 <p>After drawing the two fractions, I can see that $\frac{5}{8}$ is bigger than $\frac{7}{12}$.</p>	$\frac{5}{8} \times \frac{12}{12} = \frac{60}{96}$ $\frac{7}{12} \times \frac{8}{8} = \frac{56}{96}$ <p>$\frac{60}{96}$ is bigger than $\frac{56}{96}$, so $\frac{5}{8}$ is bigger.</p>	<p>“I know that $\frac{5}{8}$ and $\frac{7}{12}$ are both one piece more than $\frac{1}{2}$ and that $\frac{1}{8}$ is larger than $\frac{1}{12}$. So, $\frac{5}{8}$ is bigger.”</p>
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As students are learning mathematics, they will communicate their learning in writing, visually and orally. Students collaborate with others to solve problems and communicate ideas. Talking with their peers provides opportunities for students to explain and analyze their own and others' ideas.

For more information, please see the Alberta Education documents:

- [How does today's mathematics classroom differ from what I experienced?](#)
- [How can I help my child look forward to math?](#)
- [What are manipulatives?](#)
- [What does it mean for my child to communicate in math?](#)