

Alaska's Mathematics Standards



The FACTS:

In 2012, the State Board of Education & Early Development adopted academic standards for English Language Arts and Mathematics. Academic standards help teachers ensure their students have the skills and knowledge they need to be successful by providing clear, consistent expectations and goals for student learning.

The Alaska Mathematics Standards are designed to promote students' ability to apply math to real-life problems. Students who have those skills will be better prepared for college, technical schools, the military, and the workforce.

The standards do not tell teachers how to teach nor do the standards place limits on local curriculum. The standards do not preclude the use of culturally relevant lessons. In fact, teaching the standards in the context of local cultures is one of the best ways to present them.

Keys to the Mathematics Standards

The mathematics standards consist of two components: Standards for Mathematical Content and The Standards for Mathematical Practices. They are designed to be taught together to provide rich math instruction.

Standards for Mathematical Content

The standards for kindergarten to grade 5 provide students with a solid foundation in whole numbers, addition, subtraction, multiplication, division, fractions, and decimals. Hands-on learning occurs in this grade span to reinforce geometry, algebra, probability and statistics.

The middle school standards provide a coherent and rich preparation for high school mathematics. Students who have mastered the mathematics skills through grade 7 will be well-prepared for algebraic concepts presented in grade 8.

The high school standards set a rigorous definition of readiness for postsecondary education and careers. Students develop a depth of understanding and the ability to apply mathematics to new situations, as college students and employees do.

Standards for Mathematical Practices

These standards stress procedural skills and conceptual understanding. They describe practices that work with the content standards to strengthen adaptive reasoning, strategic thinking, comprehension of mathematical concepts, procedural fluency (carrying out procedures flexibly and accurately), and help students see math as sensible, use and worthwhile with diligence.

Instructional Shifts in Mathematics

In the Alaska Mathematics Standards, there are three shifts, or focus areas, that encourage changes in instructional practices:

Focus: Two to four concepts focused on deeply in each grade.

Coherence: Concepts logically connected from one grade to the next and linked to other major topics within the grade.

Rigor: Fluency with arithmetic, application of knowledge to real-world situations, and deep understanding of mathematical concepts.