

The Facts about Alaska's New Mathematics Standards



Toward preparing students to be college, career, and culturally ready graduates

In 2012, the State Board of Education & Early Development adopted new 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.

State and local control

Alaska did not adopt the Common Core State Standards. Adopting states had to agree to accept the standards in their entirety and not change them in the future. Alaska did not want to be bound by those restrictions.

Alaska's process to adopt our standards

We made our own determination on Alaska's standards in a lengthy and thoughtful process that included input from educators, parents, community leaders, and employers, followed by a public process before the State Board of Education & Early Development. For two years, Alaska worked on a new generation of English language arts and mathematics standards with rural and urban Alaskans, including representatives of universities, career and technical programs, industries, and teachers of diverse student populations and interests. Line by line, we examined our then-current standards, comparing them to standards across the country and in terms of clarity, content and rigor. In the end, we adopted standards that are similar to those adopted in other states, retaining the right to adjust them in the future. Alaska will be able to use assessments, teaching materials, and parent guides designed for many other states. Our standards will allow us to compare Alaska students with students from around the U.S. As Americans, including military families, move in and out of Alaska, they will be able to enter a school that has the same expectations as the school they left.

Why new standards

Alaskan stakeholders found our previous standards to be lower in rigor than other states' standards and to lack clarity in terms of what students should know and be able to do. We wanted to increase our standards' rigor so that Alaska's high school graduates are better prepared for college education, technical training, and careers after high school. Only about a third of our students score proficient on national assessments in reading and math. As in other states, many of our high school graduates must take remedial courses in English and math when they enroll in the state university for four-year or two-year degrees. A lot of those students never make it through college. A fifth of our high school graduates who apply to the military can't pass its written entrance exam. We hear from Alaska employers that they are unable to find qualified local graduates to fill positions.

The Standards Provide a Roadmap for College and Career Readiness

Alaska's adopted standards in English language arts and mathematics:

- establish a base of **consistent** learning goals for all students.
- are a **clear roadmap** of academic expectations that allow students, parents, and teachers to work together toward shared goals.
- are **relevant to the real world** and focus on the knowledge and skills students will need to succeed in life after high school, in postsecondary education and a globally competitive workforce.

Our new standards are designed to promote students' ability to read all types of texts well; to speak, write and research well, supporting their arguments with evidence; to think verbally and mathematically; and 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

Standards for Mathematical Practice

These standards stress procedural skills and conceptual understanding. They seek to define experiences that build understanding of mathematics and ways of thinking in which students develop, apply, and assess their knowledge to: 1) make sense of problems and persevere in solving them; 2) reason abstractly and quantitatively; 3) construct viable arguments and critique the reasoning of others; 4) model with mathematics; 5) use appropriate tools strategically; 6) attend to precision; 7) look for and make use of structure; and 8) look for and express regularity in repeated reasoning.

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.

Connecting the Standards for Mathematical Practice and Mathematical Content

The Standards for Mathematical Practice describe ways in which students can engage with subject matter as they grow in mathematical maturity and expertise throughout elementary, middle and high school. The Standards for Mathematical Content are a balanced combination of procedure and understanding.

Blending practice and content challenges students to understand the topic by connecting the practice with the content. These points of intersection focus on the curriculum's central concepts, where most instruction will occur.

Instructional Shifts in Mathematics

In the Mathematical Standards, there are three shifts, which will encourage changes in instructional practices and curriculum:

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.

For more information, visit our website and click on the "standards star."

