

Examples of what Alaska's students should know or be able to do:

Benchmark 1 (ages 8 - 10)

For example, students would be able to:

SCIENCE

- * Participate in a class discussion of potential solutions for a local technological problem.
- * Repeat experiments for the purpose of validation.
- * Keep accurate records of investigations.
- * Demonstrate cloud formation from the condensation of water vapor and predict potential precipitation from various cloud types.
- * Identify several objects and processes that give off heat—lights, the sun, sawing wood, motors, people—and contrast those objects and processes to those that seem not to give off heat.

MATHEMATICS

- * Use problem-solving strategies such as guess and check, drawing a picture, making a model, working backwards, comparison.
- * Create and solve mathematical problems of their own design.
- * Given a pattern of numbers, predict the next two numbers in the sequence.
- * Make change.
- * Make and use picture, bar, and line graphs.
- * Read and write numerals and number names in words from 1 to 1,000,000.
- * Use geometry in describing number and measurement ideas and in describing the real world.
- * Use calculators for computation.

ENGLISH/LANGUAGE ARTS

- * Summarize ideas orally and in writing.
- * Compose descriptive paragraphs.
- * Write letters, stories, poems, and plays.
- * Use a computer to compose.
- * Find main ideas in varied pieces of writing.
- * Follow written directions.

Benchmark 2 (ages 12 - 14)

For example, students would be able to:

SCIENCE

- * Develop a list of solutions for a local problem and identify a major cost of each solution.
- * Organize and report the results of their investigations for others to investigate.
- * Collect relevant data, use logical reasoning, and apply imagination in devising hypotheses.
- * Use a microscope and cells to show that larger organisms are made of cells and these cells may have specific functions.
- * Develop several models of substances composed from a limited set of building blocks (elements).

MATHEMATICS

- * Analyze local results from a recent election, including turnout and patterns of voting.
- * Demonstrate an understanding of a survey by expressing the results in a variety of numerical and graphical formats.
- * Classify events by level of certainty to predict the probability of the event.
- * Extend their understanding of whole number operations to fractions, decimals, and integers.
- * Use primes, multiples, factors, and patterns in problem contexts.

ENGLISH/LANGUAGE ARTS

- * Give speeches, both formal and informal.
- * Write short stories, poetry, diaries, journals, and learning logs.
- * Complete a simple job application.
- * Explore revision and editing techniques that promote individual style and voice.
- * Differentiate between simple fact and opinion.
- * Make choices and set goals to complete projects.
- * Demonstrate an awareness of audience by adapting language and presentation.

Benchmark 3 (ages 16 - 18)

For example, students would be able to:

SCIENCE

- * Use a computer to model the costs and benefits of implementing alternative technologies.
- * Analyze the effects of a major invention or scientific discovery on society.
- * Participate as a member of a design team to construct a scale model house with several heat saving features and defend the design in terms of thermodynamics and heat transfer.
- * Describe the parts of a cell that provide basic life functions: reproduction, attaining food, air, and waste removal.
- * Explain biological, chemical and physical phenomena by the changes in the arrangement and motion of atoms and molecules.

MATHEMATICS

- * Choose a trigonometric or geometric method to determine the distance between two points, such as in navigation or planetary exploration.
- * Determine probability of compound events.
- * Design a survey, collect and analyze data, calculate the measure of central tendency, and make predications based on the sample.
- * Use trigonometric or other circular functions to model periodic real-world phenomena.
- * Determine measurements using algebraic, geometric, and trigonometric functions.

ENGLISH/LANGUAGE ARTS

- * Read and comprehend any material written in standard English.
- * Find a theme in any fictional material and describe and justify that theme.
- * Write critical and argumentative essays.
- * Produce research papers and technical writing.
- * Argue both sides of an issue.