

# Alaska State Educational Standards

## Montserrat

### Lessons 1 – 15, and e-mission

#### Lesson 01/02:

**Science:** D(2), E(1, 3), G(3)

**English/LA:** A(3, 4), B(1 – 3), C(1 – 5)

**Technology:** A(1 – 3), B(1), E(5, 8)

#### Lesson 03:

**Science:** E(1)

**English/LA:** A(1 – 3, 5, 8), B(1, 3), C(1 – 5)

#### Lesson 04:

**English/LA:** A(1, 2, 4, 5, 8), B(1, 3), C(1 – 4)

#### Lesson 05/06:

**Math:** A(1), C(2, 4), D(2), E(3)

**Science:** A(2), C(3), D(2), G(4)

**English/LA:** A(1 – 5), B(1), C(2 – 5), D(1)

**History:** A(1), B(2, 3)

**Geography:** A(1, 3), B(1, 5, 8), C(1, 2), F (2, 3)

#### Lesson 07:

**Math:** A(1), C(2, 4), D(1, 2), E(3)

**Science:** A(3), B(1, 3, 4), D(1, 2), E(1), G(4)

**English/LA:** B(1), C(2 – 4)

**History:** A(1), B(3)

**Geography:** B(1, 8), C(1, 2), E(6), F(1)

**Lesson 08:**

**Math:** A(1, 4, 6), B(6, 8), C(2, 4), D(1 – 4), E(3)

**Science:** A(2, 3), B(4), C(3), D(1, 2), E(1 – 3), G(4)

**English/LA:** A(1 – 4), B(1), C(2 – 5), D(1)

**History:** A(1, 5), C(4), D(2, 6)

**Geography:** B(1, 7, 8), C(1, 2), E(6), F(1, 2)

**Lesson 09:**

**Math:** A(1 – 4, 6), B(1, 5, 6, 8), C(1, 2, 4), D(1 – 4), E(3)

**Science:** A(2), B(4), D(1, 2), E(1, 3)

**English/LA:** B(1, 3), C(2 – 5)

**Geography:** C(1, 2), E(6), F(2)

**Lesson 10:**

**Math:** A(1), C(2, 4), E(3)

**Science:** B(4), D(2), E(1, 3)

**English/LA:** A(3, 4), B (1)

**Geography:** C(1, 2), E(6), F(2)

**Lesson 11:**

**Math:** A(1), C(2, 4), D(1, 2), E(3)

**Science:** A(3), B(4), C(3), E(1, 3), F(1, 3)

**English/LA:** A(1 – 4, 8), B(1, 3), C(1 – 5)

**Geography:** B(8), C(1, 2), E(6), F(2)

**Lesson 12:**

**Math:** A(1 – 4, 6), B(1, 2, 5, 6, 8), C(2, 4), D(1 – 4), E(3)

**Science:** A(2), B(4), D(2), E(1, 3)

**English/LA:** B(1, 3), C(2 – 5)

**Geography:** A(1, 2), C(1)

**Lesson 13:**

**Math:** C(2, 4), E(3)

**Science:** A(3), D(2), E(2, 3), F(1)

**English/LA:** B(1), C(5)

**Geography:** A(1, 3), B(1, 7), D(2 – 4), E(6)

**Lesson 14:**

**Math:** C(2, 4), E(3)

**Science:** A(3), D(2), E(2, 3), F(1)

**English/LA:** B(1), C(1 – 5)

**Geography:** A(1), D(3), E(6)

**Lesson 15:**

**Math:** A(1 – 4, 6), B(1, 5, 6, 8), C(1, 2, 4), D(1 – 4), E(3)

**Science:** A(2, 3), B(4), D(1, 2), E(1 – 3), F(1, 3)

**English/LA:** B(1, 3), C(1 – 5)

**Technology:** A(2, 3)

**Geography:** A(1, 2), B(1, 7), C(1, 2), D(2 – 4), E(6)

**e-mission:**

**Math:** A(1 – 4, 6), B(1, 2, 5 – 8), C(2, 4), D(1 – 5), E(3)

**Science:** A(2, 3), B(4), C(3), D(1, 2), E(1 – 3), G(4)

**English/LA:** A(1 – 4, 7, 8), B(1, 3), C(1 – 5), D(1, 4)

**Technology:** A(1 – 3), C(1 – 3), D(1 – 3), E(5, 6, 8)

**Geography:** A(1, 2), B(1, 7, 8), C(1, 2), D(2 – 4), E(6), F(2, 6)

# Mathematics Standards

**A A student should understand mathematical facts, concepts, principles, and theories.**

A1 Understand and use numeration, including:

- a. numbers, number systems, counting numbers, whole numbers, integers, fractions, decimals, and percents.
- b. irrationals and complex numbers.

A2 Select and use appropriate systems, units, and tools of measurement, including estimation.

A3 Perform basic arithmetic functions, make reasoned estimates, and select and use appropriate methods or tools for computation or estimation including mental arithmetic, paper and pencil, a calculator, and a computer.

A4 Represent, analyze, and use mathematical patterns, relations, and functions using methods such as tables, equations, and graphs.

A6 Collect, organize, analyze, interpret, represent, and formulate questions about data and make reasonable predictions about the certainty, uncertainty, or impossibility of an event.

**B A student should understand and be able to select and use a variety of problem-solving strategies.**

B1 Use computational methods and appropriate technology as problem-solving tools.

B2 Use problem solving to investigate and understand mathematical content.

B5 Check results against mathematical rules.

B6 Use common sense to help interpret results.

B7 Apply what was learned to new situations.

B8 Use mathematics with confidence.

**C A student should understand and be able to form and use appropriate methods to define and explain mathematical relationships.**

C1 Express and represent mathematical ideas using oral and written presentations, physical materials, pictures, graphs, charts, and algebraic expressions.

C2 Relate mathematical terms to everyday language.

C4 Clarify mathematical ideas through discussions with others.

**D A student should be able to use logic and reason to solve mathematical problems.**

D1 Analyze situations.

D2 Draw logical conclusions.

D3 Use models, know facts, and relationships to explain the students reasoning.

D4 Use deductive reasoning to verify conclusions, judge the validity of arguments, and construct valid arguments.

D5 Use inductive reasoning to recognize patterns and form mathematical propositions.

**E A student should be able to apply mathematical concepts and processes to situations within and out side of school.**

E3 Use mathematics in other curriculum areas.

## Science Standards

A **Science as Inquiry and Process**: A student should understand and be able to apply the processes and applications of scientific inquiry.

A2 Develop an understanding that the processes of science require integrity, logical reasoning, skepticism, openness, communication, and peer review.

A3 Develop an understanding that cultural, local knowledge, history, and interaction with the environment contribute to the development of scientific knowledge, and local applications provide opportunity for understanding scientific concepts and global issues.

B **Concepts of Physical Science**: A student should understand and be able to apply the concepts, models, theories, universal principles, and facts that explain the physical world.

B4 Develop an understanding of motions, forces, their characteristics and relationships, and natural forces and their effects.

- C: **Concepts of Life Science**: A student should understand and be able to apply the concepts, models, theories, facts, evidence, systems, and processes of life science.
- C3 Develop an understanding that all organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy.
- D **Concepts of Earth Science**: A student should understand and be able to apply the concepts, processes, theories, models, evidence, and systems of earth and space science.
- D1 Develop an understanding of earth's geochemical cycles.
- D2 Develop an understanding of the origins, ongoing processes, and forces that shape the structure, composition, and physical history of the earth.
- E **Science and Technology**: A student should understand the relationships among science, technology, and society.
- E1 Develop an understanding of how scientific knowledge and technology are used in making decisions about issues, innovations, and responses to problems and everyday events.
- E2 Develop an understanding that solving problems involves different ways of thinking, perspectives, and curiosity that lead to the exploration of multiple paths that are analyzed using scientific, technological, and social merits.
- E3 Develop an understanding of how scientific discoveries and technological innovations affect and are affected by our lives and cultures.
- F **Cultural, Social, Personal Perspectives and Science**: A student should understand the dynamic relationships among scientific, cultural, social, and personal perspectives.
- F1 Develop an understanding of the interrelationships among individuals, cultures, societies, science, and technology.
- F3 Develop an understanding of the importance of recording and validating cultural knowledge.
- G **History and Nature of Science**: A student should understand the history and nature of science.
- G4 Develop an understanding that advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base.

# English/Language Arts Standards

**A A student should be able to speak and write well for a variety of purposes and audiences.**

A1 Apply elements of effective writing and speaking; these elements include ideas, organization, vocabulary, sentence structure, and personal style.

A2 In writing, demonstrate skills in sentence and paragraph structure, including grammar, spelling, capitalization, and punctuation.

A3 In speaking, demonstrate skills in volume, intonation, and clarity.

A4 Write and speak well to inform, to describe, to entertain, to persuade, and clarify thinking in a variety of formats, including technical communication.

A5 Revise, edit, and publish the student's own writing as appropriate.

A7 Communicate ideas using varied tools of electronic technology.

A8 Evaluate the student's own speaking and writing and that of others using high standards.

**B A Student should be a competent and thoughtful reader, listener, and viewer of literature, technical materials, and a variety of other information.**

B1 Comprehend meaning from written text and oral and visual information by applying a variety of reading, listening, and viewing strategies; these strategies include phonic, context, and vocabulary cues in reading, critical viewing, and active listening.

B3 Relate what the student views, reads, and hears to practical purposes in the student's own life, to the world outside, and to other texts and experiences.

**C A student should be able to identify and select from multiple strategies in order to complete projects independently and cooperatively.**

C1 Make choices about a project after examining a range of possibilities.

C2 Organize a project by

- a. understanding directions.
- b. making and keeping deadlines.
- c. seeking, selecting, and using relevant resources.

C3 Select and use appropriate decision-making processes.

C4 Set high standards for a project quality.

- C5 When working on a collaborative project,
- take responsibility for individual contributions to the project.
  - share ideas and workloads.
  - incorporate individual talents and perspectives.
  - work effectively with others as an active participant and as a responsive audience.
  - evaluate the processes and work on self and others.

**D A student should be able to think logically and reflectively in order to present and explain positions based on relevant and reliable information.**

- D1 Develop a position by
- reflecting on personal experiences, prior knowledge, and new information.
  - formulating and refining questions.
  - identifying a variety of pertinent sources of information.
  - analyzing and synthesizing information.
  - determining an author's purposes.

D4 Explain and defend a position orally, in writing, and with visual aids as appropriate.

## **Technology**

**A A student should be able to operate technology-based tools.**

A1 Use a computer to enter and retrieve information.

A2 Use technological tools for learning, communications, and productivity.

A3 Use local and worldwide networks.

**C A student should be able to use technology to explore ideas, solve problems, and derive meaning.**

C1 Use technology to observe, analyze, interpret, and draw conclusions.

C2 Solve problems both individually and with others.

C3 Create new knowledge by evaluating, combining, or extending information using multiple technologies.

**D A student should be able to use technology to express ideas and exchange information.**

D1 Convey ideas to a variety of audiences using publishing, multi-media, and communications tools.

D2 Use communications technology to exchange ideas and information.

D3 Use technology to explore new and innovative methods for interaction with others.

**E A student should be able to use technology responsibly and understand its impact on individuals and society.**

E5 Examine the role of technology in the workplace and explore careers that require the use of technology.

E6 Evaluate ways that technology impacts culture and the environment.

E8 Recognize the implications of emerging technologies.

## **History**

**A A student should understand that history is a record of human experiences that links the past to the present and the future.**

A1 Understand chronological frameworks for organizing historical thought and place significant ideas, institutions, people, and events within time sequences.

A5 Understand that history is a narrative told in many voices and expresses various perspectives of historical experience.

**B A Student should understand historical themes through factual knowledge of time, places, ideas, institutions, cultures, people, and events.**

B4 Recognize the importance of time, ideas, institutions, people, places, cultures, and events in understanding large historical patterns.

**C A student should develop the skills and processes of historical inquiry.**

C4 Use historical perspective to solve problems, make decisions, and understand other traditions.

**D A student should be able to integrate historical knowledge with historical skill to effectively participate as a citizen and as a lifelong learner.**

D2 Solve problems by using history to identify issues and problems, generate potential solutions, assess the merits of options, act, and evaluate the effectiveness of actions.

D6 Create new approaches to issues by incorporating history with other disciplines, including economics, geography, literature, the arts, science, and technology.

## **Geography**

**A A student should be able to make and use maps, globes, and graphs to gather, analyze, and report spatial (geographic) information.**

A1 Use maps and globes to locate places and regions.

A2 Make maps, globes, and graphs.

A3 Understand how and why maps are changing documents.

**B A student should be able to utilize, analyze, and explain information about the human and physical features of places and regions.**

B1 Know that places have distinctive geographic characteristics.

B5 Describe and demonstrate how places and regions serve as cultural symbols, such as the Statue of Liberty.

B7 Understand that a region is a distinct area defined by one or more cultural or physical features.

B8 Compare, contrast, and predict how places and regions change with time.

**C A student should understand the dynamic and interactive natural forces that shape the Earth's environment.**

C1 Analyze the operation of the Earth's physical systems, including ecosystems, climate systems, erosion systems, the water cycle, and tectonics.

C2 Distinguish the functions, forces, and dynamics of the physical processes that cause variations in natural regions.

**D A student should understand and be able to interpret spatial (geographic) characteristics of human systems, including migration, movement, interactions**

**of cultures, economic activities, settlement patterns, and political units in the state, nation, and world.**

D2 Explain how and why human networks, including networks for communications and for transportation of people and goods, are linked globally.

D3 Interpret population characteristics and distributions.

D4 Analyze how changes in technology, transportation, and communication impact social, cultural, economic, and political activity.

**E A student should understand and be able to evaluate how humans and physical environments interact.**

E6 Evaluate the impact of physical hazards on human systems.

**F A student should be able to use geography to understand the world by interpreting the past, knowing the present, and preparing for the future.**

F1 Analyze and evaluate the impact of physical and human geographical factors on major historical events.

F2 Compare, contrast, and predict how places and regions change with time.

F3 Analyze resource management practices to assess their impact on future environmental quality.

F6 Utilize geographic knowledge and skills to support interdisciplinary learning and build competencies required of citizens.