

Beach Explorations—A Curriculum for Grades 5-10

addresses the following Alaska State Teaching Standards

Chapter 1: Planning and Organizing Field Trips (none)

Chapter 2: Exploring Seashores with Children

#1 The Ocean

Language Arts:

D-1-A Personal experience and prior knowledge
D-1-D Analyzing information

Science:

A-4 Observable natural events
A-15 Local knowledge
B-1 Scientific processes

Geography:

A-1 Using maps
B-1 Geographic characteristics of place

#2 The Tides

Language Arts:

B-1 Meaning from written, oral and visual text
B-2 Investigations in written materials
D-1-A Personal experience and prior knowledge

Science:

A-4 Observable natural events
A-14 Living things and their environments

Geography:

A-6 Geographical problems and solutions
C-2 Natural regions

Skills for a Healthy Life:

B-2 Effective communication

#3 A Tides Mobile

Language Arts:

A-3 Demonstrate speaking skills
A-6 Using visual communication
B-2 Investigations in written, oral and visual experiences

Science:

A-4 Observable natural events
B-2 Tools of scientific investigation
C-1 Earth's physical systems
D-6 Using reasoned decisions

Geography:

A-4 Using graphic tools
B-6 Making informed decisions about place
B-7 Regions
C-1 Physical systems of the earth
C-2 Natural regions
C-3 Regional environments

Arts:

A-1 Participate in the arts
A-3 Materials, tools, techniques and processes

#4 Observing the Tides

Language Arts:

B-2 Investigations in written, oral and visual experiences

Science:

A-4 Observable natural events
A-5 Forces of nature
A-7 Processes that shape the earth
B-1 Scientific processes

Geography:

A-5 Interpreting geographical patterns

Mathematics:

A-2 Measurement
A-6 Statistics and data analysis

#5 Exposed, Protected, and Transitional Shores

Language Arts:

- A-1 Effective Writing
- B-2 Investigations in written, oral and visual experiences

Science:

- A-4 Observable natural events
- A-5 Forces of Nature
- A-7 Processes that shape the earth
- B-1 Scientific processes

Geography:

- A-1 Using maps
- A-2 Making maps
- A-3 Maps as changing documents
- B-6 Making informed decisions about place

#6 Identifying the Type of Seashore

Language Arts:

- A-1 Effective Writing
- A-6 Using visual communication
- B-2 Investigations in written, oral and visual experiences

Science:

- A-4 Observable natural events
- A-5 Forces of Nature
- A-7 Processes that shape the earth
- A-12 Biological diversity
- A-14 Living things and their environments
- B-1 Scientific processes
- B-3 Scientific inquiry involves multiple paths of exploration

Geography:

- A-1 Using maps
- A-4 Using graphic tools
- B-1 Geographic characteristics of place
- B-2 Analyze how places are formed, identified
- B-7 Regions
- C-2 Natural regions

#7 Miniature Model Seashores

Language Arts:

- A-1 Effective writing
- C-2 Project organization
- C-3 Group decision-making
- C-5 Project collaboration

Science:

- A-4 Observable natural events
- A-5 Forces of Nature
- A-7 Processes that shape the earth

Geography:

- A-1 Using maps
- A-4 Using graphic tools
- B-1 Geographic characteristics of place

Arts:

- A-1 Participate in the arts
- A-3 Materials, tools, techniques, and processes

#8 All Living Things Have Needs

Language Arts:

- A-1 Effective writing
- A-4 Writing and speaking with purpose
- A-6 Using visual communication

Science:

- A-12 Biological diversity
- A-14 Living things and their environments
- B-1 Scientific processes
- B-3 Scientific inquiry involves multiple paths of exploration

#9 Identifying the Type of Habitat

Language Arts:

- A-4 Writing and speaking with purpose
- A-6 Using visual communication

Science:

- A-4 Observable natural events
- A-12 Biological diversity
- A-14 Living things and their environments
- A-15 Local knowledge
- B-2 Tools of scientific investigation
- B-3 Scientific inquiry involves multiple paths

Geography: A-2 Making maps

Mathematics:

- A-2 Measurement
- B-2 Investigations
- B-3 Using math in real-life situations
- B-5 Checking results
- D-4 Deductive reasoning

#10 How Big is a Habitat?Language Arts:

A-3 Demonstrate speaking skills

Science:

A-4 Observable natural events
 A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge
 B-3 Scientific inquiry involves multiple paths

Geography:

A-1 Using maps
 B-1 Geographical characteristics of place
 B-7 Regions

#11 Limiting FactorsLanguage Arts:

A-3 Demonstrate speaking skills
 A-6 Using visual communication

Science:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge

#12 Caretakers of the SeashoreLanguage Arts:

A-1 Effective Writing
 A-3 Demonstrate speaking skills
 A-6 Using visual communication
 B-1 Meaning from written, oral and visual experiences
 C-3 Group decision-making
 D-1 Developing a logical position

Science:

A-4 Observable natural events
 A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge
 B-3 Scientific inquiry involves multiple paths
 C-6 Scientific discovery

Geography:

A-6 Geographical problems and solutions
 B-1 Geographic characteristics of place
 C-2 Natural regions

#13 Marine EcosystemsLanguage Arts:

A-3 Demonstrate speaking skills
 A-6 Using visual communication
 B-1 Meaning from written, oral and visual experiences
 C-3 Group decision-making
 D-1 Developing a logical position

Science:

A-4 Observable natural events
 A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge
 B-3 Scientific inquiry involves multiple paths
 C-6 Scientific discovery

Geography:

A-1 Using maps
 A-2 Making maps
 A-3 Maps as changing documents
 B-1 Geographical characteristics of place
 B-7 Regions

#14 The “Seashore is a Community”**Metaphor**Language Arts:

A-1 Effective writing
 A-4 Writing and speaking with purpose
 A-6 Using visual communication
 B-1 Meaning from written, oral and visual experiences
 C-3 Group decision-making
 D-1 Developing a logical position
 D-1-A Personal experience and prior knowledge
 D-4 Explain and defend a position

Science:

A-4 Observable natural events
 A-7 Processes that shape the earth
 A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge

Geography:

B-1 Geographic characteristics of place
 C-2 Natural regions

Chapter Three: Plankton Soup: Microscopic Life of the Ocean

#1 Plant Plankton

Science:

- A-12 Biological diversity
- A-14 Living things and their environments
- B-2 Tools of scientific investigation
- B-3 Understand that scientific inquiry involves multiple paths
- C-2 Knowledge through experimentation

#2 Animal Plankton

Science:

- A-12 Biological diversity
- A-14 Living things and their environments
- C-6 Scientific discovery

#3 Plankton Through the Seasons

Language Arts:

- A-1 Effective writing
- A-2 Writing conventions

Science:

- A-12 Biological diversity
- A-14 Living things and their environments
- B-3 Understand that scientific inquiry involves multiple paths

Math:

- B-3 Using math in real-life situations
- C-1 Using pictures, graphs, and charts

#4 Microscopic Plankton

Science:

- A-12 Biological diversity
- A-14 Living things and their environments
- B-1 Scientific processes
- B-2 Tools of scientific investigation
- C-6 Scientific discovery

Art:

- A-1 Participate in the arts
- A-4 Demonstrate creativity

#5 The Life Cycle of a Crab

Language Arts:

- A-1 Effective writing
- A-2 Writing conventions

Science:

- A-12 Biological diversity
- A-14 Living things and their environments
- B-3 Understand that scientific inquiry involves multiple paths

#6 Discovering Eggs at the Seashore

Science:

- A-12 Biological diversity
- A-14 Living things and their environments
- A-15 Local knowledge
- B-3 Understand that scientific inquiry involves multiple paths

#7 Baby Marine Animals

Language Arts:

- A-4 Writing and speaking with purpose

Science:

- A-12 Biological diversity
- A-14 Living things and their environments
- A-15 Local knowledge
- B-1 Scientific processes
- B-3 Understand that scientific inquiry involves multiple paths

Chapter Four: Food Relationships

#1 Sources of Nutrients

Science:

- A-12 Biological diversity
- A-14 Living things and their environments
- A-15 Local knowledge
- B-3 Understand that scientific inquiry involves multiple paths
- C-3 Cultural influences
- C-5 Collaboration

#2 The Sunlight Food Factory

Science:

- A-12 Biological diversity
- A-14 Living things and their environments
- A-15 Local knowledge

#3 Getting FoodScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge
 C-6 Scientific discovery

Geography:

C-2 Natural regions

#5 Seashore ObservationsScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge
 B-2 Tools of scientific investigation

#6 Survival TricksLanguage Arts:

D-1-A Personal experience and prior knowledge

Science:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge
 B-2 Tools of scientific investigation

#7 Food ChainsScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge
 B-2 Tools of scientific investigation
 C-6 Scientific discovery

#8 Food WebsScience:

A-12 Biological diversity
 A-14 Living things and their environments

#9 Who Eats Whom? GameScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge
 C-5 Collaboration

#10 Every Organism Has a RoleScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge
 C-3 Cultural influences
 C-5 Collaboration
 C-6 Scientific discovery

Chapter Five: Science Inquiries with Seashore Animals

#1 Observing Animals with MicroscopesScience:

A-12 Biological diversity
 B-2 Tools of scientific investigation
 C-6 Scientific discovery

#2 Becoming an Animal ExpertLanguage Arts:

A-1 Effective writing
 A-4 Writing and speaking with purpose
 C-2 Project organization

Science:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge
 B-1 Scientific processes
 C-5 Collaboration

Math:

A-2 Measurement
 C-1 Using pictures, graphs, and charts

#3 Inquiries with Fish**#4 Inquiries with Shore Birds**Science:

A-12 Biological diversity
 A-14 Living things and their environments
 C-6 Scientific discovery

#5 Animals with a Muscular Foot**#6 Animals with Jointed Legs****#7 Animals with Spiny Skins**Science:

A-12 Biological diversity
 A-14 Living things and their environments
 B-2 Tools of scientific investigation
 C-5 Collaboration

#8 Inquiries with SeaweedsScience:

A-12 Biological diversity
 A-14 Living things and their environments
 B-3 Understand that scientific inquiry involves multiple paths

#9 Animals with Stinging CellsScience:

A-12 Biological diversity
 A-14 Living things and their environments
 C-2 Knowledge through experimentation

#10 Student Projects for Saltwater AquariumsLanguage Arts:

A-1 Effective writing
 A-2 Writing conventions

Science:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge

Math: A-2 Measurement

#11 Library ResearchLanguage Arts:

A-1 Effective writing
 A-2 Writing conventions
 D-1-A Personal experience and prior knowledge

Chapter Six: Rocky Shores**#1 Protected Rocky Shores**Science:

A-14 Living things and their environments

Geography:

C-2 Natural regions
 C-3 Regional environments

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#2 Spray Pool StudyScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Local knowledge

#3 Tidal PoolsScience:

A-12 Biological diversity
 A-14 Living things and their environments

Math:

A-2 Measurement
 C-1 Using pictures, graphs, and charts

#4 Mapping Tidal PoolsScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Using local knowledge
 B-3 Understand that scientific inquiry involves multiple paths

Geography:

A-1 Using maps
 A-2 Making maps
 A-3 Maps as changing documents
 C-3 Regional environments

Math:

A-2 Measurement
 B-3 Using math in real-life situations
 C-1 Using pictures, graphs, and charts

Arts:

A-1 Participate in the arts
 A-4 Demonstrate creativity

#5 Tidal Pool PopulationsScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Using local knowledge
 B-3 Understand that scientific inquiry involves multiple paths

Geography:

A-1 Using maps
 A-2 Making maps
 A-5 Interpreting geographical patterns

<http://www.uaf.edu/seagrant/>

#6 Zonation on a Rocky ShoreScience:

A-7 Processes that shape the earth
 A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Using local knowledge
 B-2 Tools of scientific investigation

Geography:

B-1 Geographic characteristics of place

Arts: A-1 Participate in the arts

#7 Mapping Zonation on a ShoreScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Using local knowledge
 B-3 Understand that scientific inquiry involves multiple paths

Math:

A-2 Measurement
 C-1 Using pictures, graphs, and charts

#8 The Transect: A Mapping Technique for the Study of ZonationScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Using local knowledge
 C-6 Scientific discovery

Geography:

A-1 Using maps
 A-2 Making maps
 A-3 Maps as changing documents
 C-2 Natural regions

Technology:

A-2 Communicating through technology

#9 Vertical Zonation (Grades 6 +)Math:

A-2 Measurement
 B-3 Using math in real-life situations
 C-1 Using pictures, graphs, and charts

#10 A Rocky Shore is a High-Rise Building MetaphorLanguage Arts:

B-1 Meaning from written, oral, and visual information
 D-1-A Personal experience and prior knowledge

Science:

A-12 Biological diversity
 A-14 Living things and their environments
 B-3 Understand that scientific inquiry involves multiple paths

#11 Zonation Concept MapScience:

A-14 Living things and their environments
 B-2 Tools of scientific investigation
 C-5 Collaboration

#12 Limiting Factors for the Rocky ShoresScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Using local knowledge
 B-2 Tools of scientific investigation
 C-5 Collaboration

#13 Adaptations of Rocky Shore AnimalsScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Using local knowledge
 B-2 Tools of scientific investigation
 C-5 Collaboration

#14 The Surf Swept Rocky ShoreScience:

A-4 Observable natural events
 A-7 Processes that shape the earth
 A-12 Biological diversity
 A-15 Using local knowledge

Arts:

A-1 Participate in the arts

#15 Adaptations of Surf Dwelling Rocky Shore Organisms

Science:

A-12 Biological diversity
A-14 Living things and their environments
C-6 Scientific discovery

Geography:

B-1 Geographic characteristics of place

Chapter Seven: The Cobblestone Beach

Language Arts:

C-2 Project organization
D-1-D Analyzing information

Science:

A-12 Biological diversity
A-14 Living things and their environments
B-3 Understand that scientific inquiry involves multiple paths
C-6 Scientific discovery

Geography:

A-1 Using maps
A-2 Making maps
C-3 Regional environments

Chapter Eight: Sandy Shores

#1 The Surf-Swept Sandy Beach

Science:

A-5 Forces of nature
A-7 Processes that shape the earth
A-12 Biological diversity
A-14 Living things and their environments
A-15 Using local knowledge
C-5 Collaboration

Geography:

B-1 Geographic characteristics of place
C-2 Natural regions
C-3 Regional environments

#2 Sand Study

Science:

A-4 Observable natural events
A-5 Forces of nature
A-7 Processes that shape the earth
A-15 Using local knowledge
B-1 Scientific processes
C-6 Scientific discovery

#3 Adaptations of Surf-Dwelling Sandy Beach Organisms

Science:

A-12 Biological diversity
A-14 Living things and their environments
A-15 Using local knowledge
B-2 Tools of scientific investigation
C-5 Collaboration

Arts:

A-1 Participate in the arts

#4 The Protected Sandy Beach Organisms

Science:

A-12 Biological diversity
A-14 Living things and their environments
A-15 Using local knowledge
B-2 Tools of scientific investigation
C-6 Scientific discovery

Chapter Nine: Saltwater Wetlands

#1 Estuaries

Science:

A-12 Biological diversity
A-14 Living things and their environments
A-15 Using local knowledge
B-2 Tools of scientific investigation
C-6 Scientific discovery

Geography:

A-1 Using maps
C-3 Regional environments

#2 Salt MarshesScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Using local knowledge
 B-2 Tools of scientific investigation
 C-6 Scientific discovery

Geography:

A-1 Using maps
 C-3 Regional environments

Arts: A-1 Participate in the arts

#3 Wetland MetaphorsLanguage Arts:

B-1 Meaning from written, oral, and visual information
 C-3 Group decision-making

Science:

A-12 Biological diversity
 A-14 Living things and their environments
 C-5 Collaboration
 C-6 Scientific discovery

Arts:

A-1 Participate in the arts
 A-4 Demonstrate creativity

#4 The Mud FlatScience:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Using local knowledge
 B-2 Tools of scientific investigation
 C-6 Scientific discovery

#5 Imagine a FishScience:

A-12 Biological diversity
 A-14 Living things and their environments
 C-5 Collaboration
 C-6 Scientific discovery

Arts:

A-1 Participate in the arts
 A-4 Demonstrate creativity

#6 Invent a Lifelike Imaginary AnimalLanguage Arts:

A-1 Effective writing
 B-1 Meaning from written, oral, and visual information
 D-1-A Personal experience and prior knowledge

Science:

A-12 Biological diversity
 A-14 Living things and their environments
 A-15 Using local knowledge
 B-3 Understand that scientific inquiry involves multiple paths

#7 The Study of ColonizationScience:

A-12 Biological diversity
 A-14 Living things and their environments
 B-3 Understand that scientific inquiry involves multiple paths
 C-5 Collaboration
 C-6 Scientific discovery

Geography: A-2 Making maps