

## Lesson 2

### **Rock Hounds : Exploring Local Geology**

**Subject Area** : Earth History

**Grade/Group** : k-2

**Time Frame**: 3 (45 minute)classes

**Objectives**: By exploring some of the unique features of Aquidneck Island's landscape students will build background information that will help them make connections between their environment and its impact on the cultural development of this area.

- students will explore ways that the earth's physical features have changed over time
- Examining geological specimens from long ago ( fossils, pudding stone, coal etc enclosed in the kit ) students will make real the history of their local landscape and begin to place it in time.
- A Field Trip to the Norman Bird Sanctuary to see evidence of geologic phenomena will further enrich background knowledge of our local environment and landscape.

**Standards**:

- II-b,II-d Time, Continuity and Change
- III-b,III-e,III-i People,Places and Environments
- IV-b Individual Development and Identity

**Materials**

- 1 cloth for Discovery Center table
- map of Pangeia
- map showing continents moving over millions of years
- ziplock bag of rock samples - concretions, coal, felspaar, pudding stone etc.
- Geology Coloring Book- pages to color
- scissors, glue sticks, blue paper,
- crayons, colored pencils, markers
- student portfolios
- ACE map of Aquidneck Island

### **Learner Factors**

- work in partners and small groups(interpersonal)
- hands on activities (kinesthetic)
- individual art projects (spatial)
- earth history/time line ( logical-mathematical)
- new vocabulary introduced ( linguistic)  
musical
- opportunities for independent work ( intrapersonal)

### **Motivational Activity:**

- Begin the lesson sharing natural objects from the kit and introducing the topic of the lesson through group discussion of the objects.
- Explain that these objects will be the beginning of a Discovery Center that will be added to and explored as the study of Aquidneck Island continues. A table or desk in the classroom should be set aside for this and students can participate in labeling specimens, arranging objects and by bringing relevant objects from home to add to the classroom collections.
- Students may take turns handling objects from the Kit - rocks, fossils, pudding stone etc.-and brainstorming as a group
- Where did these rocks come from? the ocean? underground?
- How were they made? fire? volcano? glacier? earthquake
- Students may take turns sharing their guesses about a particular specimen with the group.
- List descriptions and guesses on the board or chart paper to review later and to aid in assessing what students have learned.

### **Lesson Development**

- Read aloud and discuss "Millions of Years in the Making"
  - Provide background information about the earths formation long ago.
  - Introduce terms like glaciers, volcanoes, continental drift.
- Demonstrate how continents have drifted and changed over time using photos and maps from kit. Compare and contrast with todays map of the world in classroom Point out how Africa used to be connected to North America and later South America.

- Art Activity :
  - Xerox p.2 from The Geography Coloring Book
  - Spend a few moments pointing out shapes recognizable as the continents of today's world. Teacher can trace these ahead of time and cut them out of construction paper to illustrate recognizable shapes of continents.
  - Using coloring book page teacher can direct students to choose a different color for each continent shape and color that continent shape wherever they see it. This will help trace each land form's movement over time. This can be done as a group with teacher choosing colors and directing class how to color one shape at a time naming continents as they go and pointing out its movement over time.
  - Students spend time coloring using crayons or colored pencils. An awareness of how each color shape moves across the page is all that is required of this exercise.
  - When completed the drawings will be included in student portfolios

\* Throughout this Kit a lot of coloring book supplements are used but please feel free to design and incorporate your own art activities into each lesson dependent on the skill levels of the class. Coloring book pages as well as stencils can be used as illustrations of concepts introduced and other work that will be included in the portfolio. They can be used to accommodate different learner styles and also as a means to work on art skills appropriate to this age group. Namely, line, shape and names of colors. This can be done talking as a group as children work and allowing students the freedom to explore a variety of other techniques as well.

### Closure, Wrap up

- review concepts introduced about earth history
- Earth's shape has changed over millions of years due to continental drift and other events such as volcanoes, glaciers, etc.
- some of the rocks in the discovery center were created by these events - pudding stones, amber, lava, pumice, coal etc.
- Class can choose one or all to mark on time line
- 450 million years as Avalonia
  - 75,000 years ago as when glaciers came
  - 15,000 years ago as when R.I. became free of glaciers
- This will reinforce vocabulary and concepts of how the earth has changed over time.

### Link up :

- Locate the Norman Bird Sanctuary on map of Aquidneck Island

- Share background information on the Norman Bird Sanctuary:
- “ Within the boundaries of the Norman Bird Sanctuary are 450 acres of some of the most beautiful and diverse geological formations in all of Rhode Island.” (from “Millions of Years in the Making”)

### **Extensions:**

#### Art Activity :A Continental Puzzle

have students trace shapes of continents on different colored construction paper  
cut these out, reassemble them and glue onto one piece of light blue background paper. Two maps could be made comparing and contrasting continents place in today's world and where they were as Pangeia.

- Art Activity: Xerox p. 26 in Rhode Island A-Z for students to color
- Add art work to student portfolios
- Maintain writing response journals

### **Student Assessment**

- oral vocabulary quiz,
- map identification
- understands time line concept and measurements
- writer response journal - what they learned? what they liked?
- completed art activities displayed around the room and included in portfolios

### **Teacher Reflection (journal)**

- include comments and suggestions for the next teacher that uses the kit
- use results of student assessment to determine if learning matched objectives