

Really Big Rocks

Recommended for Grades Pre-K - Kindergarten
Program Length: 2 Hours
Location: Octagon Shelter, Virginia Kendall Park

'Really Big Rocks' gives students an opportunity to explore huge rocks, learn how they came to be, and how they change over time.

Learner Outcomes

Students will:

1. Describe how we can use three of our senses to learn about rocks.
2. Recall that the Ledges rocks are made of sand and pebbles.
3. List the three S's about national parks.
4. Describe and sort rocks based on their attributes (size, color, texture, etc.)

Program Description

The program begins with a large group welcome to the national park. Students will be given a tour through five hands-on exploration stations with an explanation of each one. They will then have approximately 20 minutes to move about the area at their own pace, spending time at each station or just a few.

After exploration time the students return as a group for a rock-related story and discussion. This time is used to talk with about rocks, answer questions and prepare them for the walk beneath the ledges.

The highlight of this program is an approximately 45-minute hike along the trail below the Ledges. Groups will stop along the way so all can LOOK, LISTEN, AND FEEL the Sharon Conglomerate. Hand lenses are provided so they can explore the rocks.

After the walk, the students return to the shelter area to learn about the similarities and differences in rocks through interactive activities. The program is concluded with a review of the activities and some of the vocabulary that was learned.



**Cuyahoga Valley
National Park
Association**



**Cuyahoga Valley
National Park**

**The following Ohio Academic Content Standards will be addressed during
Really Big Rocks**

Preschool Benchmarks

English Language Arts

Acquisition of Vocabulary - Contextual Understanding

1. Understand the meaning of new words from context of conversations, use of pictures that accompany text or the use of concrete objects.

Reading Process: Concepts of Print - Comprehension Strategies and Self-Monitoring

8. Respond to oral reading by commenting or questioning (e.g., "That would taste yucky.").

Reading Applications: Informational, Technical and Persuasive Text

1. Use pictures and illustrations to aid comprehension (e.g. talks about picture when sharing a story in a book).

Communication: Oral and Visual - Listening and Viewing

1. Attend to speakers, stories or poems, and songs.
2. Connect information and events to personal experiences by sharing or commenting.
3. Follow simple oral directions.

Mathematics

Measurement Use Measurement Techniques and Tools

4. Begin to use terms to compare the attributes of objects (e.g. bigger, smaller, lighter, heavier, taller, shorter, more and less).

Patterns, Functions, and Algebra - Use Patterns, Relations and Functions

1. Sort, order and classify objects by one attribute (e.g., size, color, shape, use).

Data Analysis and Probability Data Collection

1. Gather, sort and compare objects by similarities and differences in the context of daily activities and play (e.g., leaves, nuts, socks)
2. Place information or objects in a floor or table graph according to one attribute (e.g., size, color, shape, or quantity).

Data Analysis and Probability - Statistical Methods

3. Select the category or categories that have the most or fewest objects in a floor or table graph (e.g., favorite ice cream).

Science

Earth and Space Sciences Processes that Shape the Earth

4. Explore and compare changes in the environment over time (e.g. leaves changing colors, outdoor temperature, plants growing).
6. Demonstrate understanding of fast and slow relative to time, motion, and phenomena (e.g., ice melting, plant growth).

Physical Sciences - Nature of Matter

2. Explore and compare materials that provide many different sensory experiences (e.g., sand, water, wood).
3. Sort familiar objects by one or more property (e.g., size, shape, function).



Really Big Rocks Preschool Benchmarks - continued

Scientific Inquiry - Doing Scientific Inquiry

1. Ask questions about objects, organisms and events in their environment during shared stories, conversations and play (e.g. ask about how worms eat).
2. Show interest in investigating unfamiliar objects, organisms and phenomena during shared stories, conversations and play (e.g., "Where does hail come from?").
3. Predict what will happen next based on previous experiences (e.g., when a glass falls off the table and hits the floor, it most likely will break).
4. Investigate natural laws acting upon objects, events and organisms (e.g., repeatedly dropping objects to observe the laws of gravity, observing the life cycles of insects).
5. Use one or more of the senses to observe and learn about objects, organisms and phenomena for a purpose (e.g. to record, classify, compare, talk about).
6. Explore objects, organisms and events using simple equipment (e.g. magnets and magnifiers, standard and non-standard measuring tools).
7. Begin to make comparisons between objects or organisms based on their characteristics (e.g., animals with four legs, smooth and rough rocks).
8. Record or represent and communicate observations and finding through a variety of methods (e.g., pictures, words, graphs, dramatizations) with assistance.

Scientific Ways of Knowing - Ethical Practices

2. Recognize the difference between helpful and harmful actions toward living thing (e.g. watering or not watering plants).

Scientific Ways of Knowing - Science and Society

3. Participate in simple, spontaneous scientific explorations with others (e.g. digging to the bottom of the sandbox, testing materials that sink or float).

Social Studies

Geography - Human Environmental Interactions

7. Explore the ways we use natural resources found in our environment (e.g. water to drink, dirt to plant).

Government - Role of Government

1. Demonstrate an understanding of the specific roles and responsibilities within a group (e.g. picking up own toys).

Grade Level Indicators:

Kindergarten

Life Sciences – Characteristics and Structure of Life

1. Explore differences between living and non-living things (e.g., plant-rock)

Physical Sciences – Nature of Matter

1. Describe and sort objects by one or more properties (e.g., size, color, and shape).

Scientific Inquiry- Doing Scientific Inquiry

4. Use the five senses to make observations about the natural world.
7. Use appropriate tools and simple equipment/instruments to safely gather scientific data (e.g., magnifiers and other appropriate tools).



Really Big Rocks - continued

English Language Arts Benchmarks K-2

Scientific Ways of Knowing – Ethical Practices

2. Interact with living things and the environment in ways that promote respect.

Communications: Oral and Visual Standard

- B. Connect prior experiences, insights and ideas to those of a speaker.

Kindergarten

Acquisition of Vocabulary – Contextual Understanding

1. Understand new words from the context of conversations or from the use of pictures within a text.

Reading Process – Concepts of Print, Comprehension Strategies and Self Monitoring Strategies

1. Demonstrate an understanding that print has meaning by explaining that text provides information or tells a story.
2. Hold books right side up, know that people read pages from front to back and read words from left to right.
3. Know the differences between illustrations and print.

Reading Applications: Informational, Technical, and Persuasive Text

3. Tell the main idea of a selection that has been read aloud.

Communication: Oral and Visual – Listening and Viewing

1. Listen attentively to speakers, stories, poems, and songs.
2. Connect what is heard with prior knowledge and experience

Mathematics

Kindergarten

Measurement – Use Measurement Techniques and Tools

1. Compare and order objects of different lengths, areas, weights, and capacities; and use relative terms, such as longer, shorter, bigger, smaller, heavier, lighter, more and less

Geometry and Spatial Sense – Characteristics and Properties

- a. Identify and sort two-dimensional shapes and three-dimensional objects. For example: Identify and describe two-dimensional figures and three-dimensional objects from the environment using the child's own vocabulary.
- b. Sort shapes and objects into groups based on student-defined categories.

Patterns, Functions and Algebra – Use Patterns, Relations, and Functions

1. Sort, classify and order objects by size, number and other properties. For example:
 - a. Identify how objects are alike and different.
 - b. Recognize and explain how objects can be classified more than one way.

Data Analysis and Probability – Data Collection

1. Arrange objects in a floor or table graph according to attributes, such as use, size, color, or shape.

Data Analysis and Probability - Statistical Methods

3. Select the category or categories that have the most or fewest objects in a floor or table graph.

