

Lesson: Weathering (风化) (rockin' rocks part 2)

Reference to English
Interconnections Lesson
Weathering Pg. 71

Science Standard(s): Students will gain an understanding of Earth and space science through the study of earth materials, celestial movement and weather.

Objective(s): Describe the characteristics of different rocks.

Indicator(s): Explain how smaller rocks come from the breakage and weathering of larger rocks.

Content Objective(s):

kid friendly objective. Will be posted on the board.

Language Objective(s):

Kid friendly. Posted on the board. May include listening, speaking, reading, writing. See list of possible verbs.

Essential Questions: How does the natural world change?

Academic Vocabulary:

风, 水, 冰, 植物, 化学物质, 风化

Materials:

- rocks
- sandstone rocks
- weathering
- fan
- water
- chemical

Language References and Word Wall:

Required: 风, 水, 冰, 植物, 化学物质, 风化

Additional: 沉积岩, 砂岩, 页岩

Sentence Frames:

_____ 造成风化。

Lesson: Weathering (rockin' rocks part 2)

Instructional time:
40 minutes

Opening: (3 minutes)

Display the rocks.

Review through Questioning: What are the attributes of this rock?

Why/how is this rock this size?

Introduction to New Material (Direct Instruction): (7 minutes)

Explain WEATHERING:

- One way rocks get smaller is through process called WEATHERING.
- WEATHERING is not the same as WEATHER (only use if the language uses the same word for both).
- Sedimentary rocks (sandstone or shale)
 - Show students that rocks can be broken (place in a zipper bag and tap with a hammer).
- When different items in our world come into contact with the rock, it can cause the rock to break into smaller pieces.
- Rocks can be broken by **wind, water, ice, plants, and chemicals**. – use pictures, objects, actions to help students understand this concept.
- Sand comes from rocks that have been weathered.

Guided Practice: (8 minutes)

Give each student a sandstone rock and a white piece of paper. Have the students rub their fingers against the rock.

What happened?

Any sand on the white piece of paper?

Use the modeling cycle:

Teacher Does:

Take a rock and a white piece of paper. Rub our hands against it.

Ask students what they think happened. (keep it a surprise until the students are done with the experiment).

Teacher Does with Student

Have a student come up and do a demonstration.

- Pick up a rock.
- Pick up a white piece of paper.
- Rub hand against rock.
- Look at results and tell a neighbor.

All Students Do

- Have all students do the experiment.
- Talk to a partner about the results.
- Was there any residual sand left on the hands or white paper?

Language Suggestions:

- What happened?
- What is on your paper?
- This is my rock.

Continuation of Introduction of New Material: (10 minutes)

Weathering: Your hands can cause weathering, what else? Demonstrate weathering with water, wind, chemical (make powerpoint or do the demonstration).

- Water and a rock
- Wind and a rock
- Chemical and a rock

Independent Practice: (10 minutes)

In groups of 4 make a weathering book. Each student will draw and label one type of weathering assigned by the teacher.

Use the modeling cycle:

Teacher Does:

Show the students the weathering book (completed and incomplete products). Then take one page and choose one type of weathering. Draw a picture of what happens and label **water** causes weathering.

Teacher Does with Students

- Have 3 students come up. Each person in the group (including the teacher) picks up one piece of paper and is assigned one type of weathering. Students go back to their table and draw and label their type of weather. The students pretend to finish and start sharing their papers with the other students in the group. They take turns saying _____ causes weathering. Then have the students make it into a book.
- Send students back to their seats and ask other students if they did the activity correctly.

All Students Practice:

Separate the students into groups of 4. Assign each member of the group a different type of weathering. Then ask them to get started.

- Language suggestions:

This is a rock. Wind causes weathering on my rock.

Closing: (7 minutes)

Have students present their books to the rest of the class using the sentence frame _____ causes weathering.

- Language suggestions:

Assessment:

Observation of student conversations
Weathering Books