

Grade 4

Title: What about Weather?

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Student Learning Objective(s):

Students will learn effects weather has on land change.
Students will learn about the barrier islands and their functions.

LA GLE's

Grade: 4 # 60: Identify various types of weather-related natural hazards and effects (eg: lightning, storms) (ESS-E-A4)
Grade: 4 # 1: Ask questions about objects and events in the environment (e.g., plants, rocks, storms) (SI-E-A1)

Materials needed: Modeling clay, pans, water, journals, paper, computer, overhead.

Detailed Procedure. Describe what the students will do in each stage. Include guiding questions you might ask to help students.

1. Engage:

Students will once again observe the maps and focus on the barrier islands at the bottom. "What purposes do you think these islands serve?" "Do you think weather has a large effect on land change?" After the students have observed the barrier islands and discussed what their purposes may be, students will look at pictures shown on the overhead of the barrier islands before and after the hurricanes. (google- Louisiana barrier islands). Students will then have to write in their journals if they think the barrier islands help Louisiana during severe weather.

Science Process Skills Indicate which science process skills students will develop in this part of the lesson.

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|--|--|---|---|-------------------------------------|-------------------------------------|------------------------------------|
| <input type="checkbox"/> Observation | <input type="checkbox"/> Classification | <input type="checkbox"/> Communication | <input type="checkbox"/> Measurement | <input type="checkbox"/> Estimation | <input type="checkbox"/> Prediction | <input type="checkbox"/> Inference |
| <input type="checkbox"/> Identifying Variables | <input type="checkbox"/> Controlling Variables | <input type="checkbox"/> Defining Operationally | <input type="checkbox"/> Forming Hypotheses | | | |
| <input type="checkbox"/> Experimenting | <input type="checkbox"/> Graphing | <input type="checkbox"/> Modeling | | | | |

2. Explore:

Students will set up an experiment using water, molding clay and an metal or plastic baking pans. Students will have to mold the clay into islands across the pan. Students will then have to write in journals if they think their islands will protect the "mainland" from the water poured in the pan. Water will then be poured. Students have to then in their groups blow the water and see how much goes to the other side of the islands. More water will be added to represent more water in an area from a hurricane. Students can then discuss what purpose they think the islands served.

Science Process Skills Indicate which science process skills students will develop in this part of the lesson.

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3. Explain:

- As time goes and we lose more land what do you think will happen to our barrier islands?
- What do you think would be the effects on us if there were no barrier islands?
- What about man made islands? What effects do you think these may have?
- Since man does not control weather do you think that the problems we face are man made or natural?
- What other purposes besides protecting Louisiana do you think our barrier islands serve as?

Outline the line of questioning you will use to assist students in understanding the concept. List at least 5 good questions

and identify the question category (Gallagher & Aschner) in which your question falls (see text, Figure 7.6).

4. Expand:

The teacher will facilitate a discussion about why the students think we need barrier islands. Students should be encouraged to think about animal habitats, vacation spots, resting places for birds, and to slow down land change. Students will then discuss what reasons the barrier islands are becoming smaller. Reasons such as deforestation and weather (hurricanes) should be brought up. The teacher will ask students to think about which of those do they think we can control. "I think we can control people, because we cannot stop hurricanes." Students will then have to write a letter to a newspaper, to inform people of our land loss, and reduce of barrier islands, and what people are doing to speed this process up, and what we can do to reduce or stop this process.

Science Process Skills Indicate which science *process skills students will develop in this part of the lesson.*

- Observation Classification Communication Measurement Estimation Prediction Inference
- Identifying Variables Controlling Variables Defining Operationally Forming Hypotheses
- Experimenting Graphing Modeling

5. Evaluate:

Students' letters will be collected and this should show what they have learned about barrier islands, why we need them and what is causing them to disappear and what we can do to help stop this.

What exactly will you do, or what evidence/data will you collect, to ascertain whether the students can achieve the objectives you listed at the top of this lesson?

Brain Compatible Learning Strategies Used in This Lesson:

- Brainstorming/Discussion Drawing and Artwork Field Trips Games Graphic Organizers
- Humor Manipulatives, Experiments, Labs, Models Metaphors, Analogies, and Similes
- Mnemonic Devices Movement Music, Rhythm, Rhyme, and Rap Project/Problem-Based Instruction
- Reciprocal Teaching, Cooperative Learning Role Plays, Drama, Pantomimes Storytelling
- Technology (student use) Visualization/Guided Imagery Visuals Writing/Journals

Lesson Source: educators.btnep.org