Grade 5

Title: Erosion

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Student Learning Objective(s):

- The students will discover the cause of erosion.
- The students will learn the importance of sediment.
- The students will create an informational pamphlet on the wetlands.

LA GLE's

Grade: 5 # 33: Identify the processes that prevent or cause erosion (ESS-M-A7)
Grade: 5 # 1: Measure a variety of objects in metric system units (PS-M-A1)

Materials needed:

- Video clip of a running hose
- Plastic containers (one for each group)
- Small bags of potato chips (possibly two for each group)
- Rulers (one for each group)
- Stop watch
- Observation sheets

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

1. ***Engage:***
   - The teacher will show a video of a hose flopping side to side on a driveway. The teacher will explain that like this hose, rivers can change direction as well.
   - The teacher will ask the students how water travels (from the highland downward towards the marshes and oceans). The teacher will have the students think back to their first lesson dealing with water and marsh grass.
   - What travels through the water that benefits the marsh grass?
   - If the river changes course like the hose does in the video, where does the sediment go?
   - How do you think that would affect the marsh grass?

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

2. ***Explore:***
   - The potato chip activity:

     Step 1: Divide the class into groups of three or four and distribute plastic containers with lids, bags of potato chips, a ruler, and a stop watch to each group.
     Step 2: Each group will also be given an observation sheet.
     Step 3: The students will empty the bag of potato chips into the container. One member of the group will measure the depth with a ruler and record their answer.
     Step 4: The students will then shake the container for 1 minute. They will then measure the depth and record observations.
     Step 5: The students will repeat this step four other times and record their information on their observation sheet as they go.
     Step 6: Each student in the group should have a job: measurer, time keeper, shaker, and recorder.

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

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☐ Identifying Variables ☐ Controlling Variables ☐ Defining Operationally ☐ Forming Hypotheses
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3. ***Explain:***
   - The teacher will use the following questions to guide class discussion:
     1. What did your container look like when you first poured the potato chips in?

2. What differences did you notice when you shook the container for 1 minute?
3. What did your container look like after 5 minutes?
4. We mentioned earlier that the water coming from the highland carries sediment for the marsh grass to grow. If the water changes route like the hose did what would happen to the sediment?
5. How can we relate this to our experiment with our potato chips?
6. If the layer of sediment continues to decrease, what will happen to the marsh grass?
7. What do you think that means for our wetlands?
8. The teacher will now show the students a picture showing the decrease in our wetlands.

4. Expand:

- To wrap up the Wetland unit the students will create an informational pamphlet on what they've learned through out the unit.
- Wetland Informational Pamphlet:

Step 1: Each student will be given a plank piece of printer paper.
Step 2: The students will fold the paper to create a pamphlet.
Step 3: Using the information they have learned through out this unit, the students will create an informational pamphlet on the wetlands.
Step 4: The pamphlet should have the student's name, a picture of the wetlands, five facts they learned about the wetlands this week, and three reasons why we should try to save our wetlands.
Step 5: The students will share their pamphlets with the class if time allows.

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

- The teacher will be assessing the students' responses to questions to determine their level of understanding.
- The students will be evaluated through out the lesson:
- Engage: This section will tell the teacher how much information the students absorbed from the previous lessons.
- Explore: The students will be evaluated on their participation and class discussion. Their observation sheets will also let the teacher know if the students comprehend the objectives of the lesson. The students' ability to link the potato chips with the water sediment will also let the teacher know the students understand the concept of the lesson.
- Expand: The students will be evaluated on their pamphlets. The teacher will be looking at the facts they learned this week.

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: The video clip of the running hose was filmed and provided by myself.

Name_____ **Date**_____

Potato Chip Experiment

Instructions: Pour the bag of potato chips into your group's container. Place the lid on the container and shake the container for the specified minutes given in the chart. After the time is up, use your group's ruler to measure the depth of the layer of potato chips. Record any other observations you may notice.

Time passed in minutes	Observation
0 minutes	
1 minute	
2 minutes	
3 minutes	
5 minutes	