WEATHERING AND EROSION

SCENERIO

Coastal erosion is a problem for those who live near coasts and for marine organisms living along the coast in bays, estuaries, and shallow waters. We have seen that beaches change with the seasons, and that tsunamis and storm surges can erode coasts. How important is coastal erosion? Are we making it better or worse? What causes erosion? Can it be prevented? Or do we want to allow erosion as a natural process?

Many coastal areas are facing chronic long-term shoreline erosion problems. This is especially a problem along the low-lying barrier island systems of the Gulf and Atlantic coasts. Average erosion rates are 6 feet per year along the Gulf and 2 to 3 feet per year along the Atlantic. Some coastal areas may be accreting in the short term, but the general trend is in the direction of shoreline retreat.

LEARNER OUTCOMES

Students should be able to:

- Explain the causes of erosion.
- Describe the effects of erosion.
- Devise a method of preventing erosion.
- Model the before-and-after-effects of erosion.

PURPOSE

Students will observe water erosion, investigate several Internet web sites to find answers to questions about erosion, and build a two-part model showing the before and after effects of erosion and/or erosion prevention.

BACKGROUND

Evidence of the effects of weathering and erosion are dramatically evident in places such as the Grand Canyon. The processes that formed these canyons took millions of years. Students need to understand that the Earth is dynamic—in a constantly changing state. All natural features on the Earth were formed over time and are still being formed today.

http://www.youtube.com/watch?feature=player_detailpage&v=zUh3WeilFN4

SOIL EROSION MODEL PROJECT

Think about situations where erosion may occur. Erosion can be destructive by land being blown or washed away like a beach eroding, taking houses with it. Sometimes erosion creates beautiful landscapes as in the Grand Canyon, Canyonlands National Parks and Arches National Park. Fertile river valleys often result from the deposition of eroded materials.

Assignment:

Build a two-part model. In the first part of the model show a situation in which erosion is an issue. This may be before/after erosion or before/after human involvement. The second part of the model will show a change in the situation. Both sections may include the effectiveness (or lack of effectiveness) of erosion prevention methods

RESOURCES

1. http://oceanworld.tamu.edu/resources/oceanography-book/coastalerosion.htm

2. http://www.planetizen.com/node/35548

3. http://soilerosion.net/

RUBRICS

1. Power Point (http://rubistar.4teachers.org/index.php?screen=ShowRubric&rubric_id=1126764&

2. Glogster http://www.rcampus.com/rubricshowc.cfm?

EROSION PREVENTION

ASSIGNMENT
1. Create a list of different methods of preventing erosion.
2. How does erosion affect our spheres:
   a. Atmosphere
   b. Hydrosphere
   c. Lithosphere
   d. Biosphere

EVALUATION
Create a power point showing us why we need to prevent soil erosion and how we can prevent erosion.

RESOURCES:
1. http://www.chesapeakebay.net/erosionrestoration.aspx?menuitem=14750
2. http://www.extension.umn.edu/distribution/naturalresources/components/DD6946g.html

ASSIGNMENT

View the pictures using the website below on soil erosion. Select 5 pictures and explain how erosion was created in each picture and how it can be prevented.

Use Glogster to present your assignment.

http://www.google.com/search?q=soil+erosion+pictures&hl=en&rlz=1R2ADFA_enUS460&prmd=imvns&tbm=isch&tbo=u&source=univ&sa=X&ei=Oq3eTvHwKomMgwfq7dnbBQ&sqi=2&ved=0CEMQsAQ&biw=1252&bih=653