POLLUTION AND THE MARINE ENVIRONMENT

Objective-Students will make seasonal observations with respect to pollution and debris.

Description-Students will monitor a specific section of a beach seasonally observing types of pollution and collecting pollutants and debris

Implementation-Photographing and/or video of the beach seasonally, collect and identify different pollutants and debris creating a statistical analysis of the numbers and types. Pollutants and debris will be divided into categories of plastic, cloth, paper, metal, wood and other. Plastics will be further divided into their respective categories of 1-7. A specific area of a designated beach will be visited periodically and debris collected will be categorized. Debris will further be categorized as to zone: supratidal, intertidal and subtidal. Graphs will be produced after each beach visit monitoring amounts and types of debris.

NYS Standards:

#1 Analysis, Inquiry and Design
#2 Information Systems
#3 Mathematics
#5 Technology
#7 Interdisciplinary Problem Solving

Population served: Activity is suitable for grades 6-12 and special education groups.

Materials:

**protective gloves
**sturdy garbage bags
**Excel program
**video camera

Submitted to the Coastal Steward Marine Education Committee by Janet Werner

Pollutant/Debris Report Sheet

Date:_ _____Time:_____High/Low Tide Times:_____

Weather Conditions: wind speed_____

air temp_____

water temp_____

cloud cover_____

Marine Conditions: wave height_____

period_____

appearance_____

color of water_____

water clarity_____

Latitude/Longitude:_____

Other:_____

_____

Pollutant/Debris Statistics:

Create an excel file categorizing the types of pollutants (plastics-types, wood, paper, metal, etc.); location on the beach (wrack line, water, dunes, etc.) and numbers.

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Questions and Inquiries:

1. What type of pollutant/debris was most commonly found and in what zone?

2. What type of plastic was the most commonly found and in what zone?

3. In what season were most pollutants/debris found and in what zone?

4. What are nurdles?

5. In what zone are most nurdles found?

6. What is the relationship between wave activity and deposition of pollutants/debris?

7. What is the relationship between wind speed and deposition of pollutants/ debris?

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8. What is the relationship between air/water temperature and deposition of pollutants/debris?

9. What are the effects of these pollutants/debris on the marine environment? Be specific.

10. What measures can be taken to cut down or eliminate pollution/debris on our beaches?

Other Activities:

1. Create an "Awareness Collage" at your school showing the types of pollutants/debris on our beaches.

2. Contact your local officials and send copies of your research results to make them aware of the detrimental affects to our beaches.

3. Hold an "Ecology Contest." Invite student to create useful items from plastics, etc. Give prizes for the most creative. Items like volleyball nets and beach tote bags have been created from the six pack plastic soda rings. Be creative.

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