How Healthy is the Chesapeake Bay?

Step 1: Pick a group name- must be something related to the Chesapeake Bay!

Step 2: Assign Jobs to each person

1. Materials Recorder: _____

2. Procedure Recorder: _____

3. Results Recorder: _____

Step 3:
No matter what your job is, EVERYONE in your group is responsible for paying attention to every part of the testing.

Step 4:
EVERYONE should be recording their own hypothesis, grades and at least 10 interesting things that don't fit into materials, procedure or results sections on your sheets.
Record them below or on the back of this paper:

Name_____   Date of Trip _____

Team Name_____

Question: How healthy is the Baltimore Harbor? (what grade would it get?)

Hypothesis:

_____
_____

_____
_____

Materials Used to Answer This Question:

Procedures- How is each item tested?

Results: <u>Chesapeake Bay Foundation Data Sheet</u>
Make sure you include units of measurement!!!

Test	Good Range	Results	Grade

Dissolved Oxygen (D.O.)	5.0-8.6 mg/L (ppm)		
Temperature			
Salinity			
pH **H+**	6.5 - 7.5 largest variety 6.7-8.6 supports good fish population		
Nitrates **NO3-**	below 0.3mg/L (ppm)		
Phosphates **PO4-**	below 0.015mg/L (ppm)		
Turbidity			
Bottom Grab			

What did we catch?

What grade would you give the biodiversity of the harbor? Why?

Name_____
Chesapeake Bay Foundation Project
<u>**Background Information:**</u> Why are each of the things we tested important to the health of the bay?

Test	Why is it important to the health of the bay? What changes it?
Dissolved Oxygen (D.O.)	
Temperature	
Salinity	
pH	
Nitrates	
Phosphates	
Turbidity	

Questions: (you will have to answer these without looking at your SLC!)

1. All of the items on the chart are (biotic / abiotic) parts of the environment.

2. Biodiversity refers to the (biotic / abiotic) parts of the environment.

3. Do the abiotic parts of the environment effect the biotic parts of the environment? Explain:

4. Why did the harbor get such low grades on some of the tests?

5. What is biodiversity and why is it important in keeping an ecosystem healthy?

Name_____

<u>**Chesapeake By Project**</u>

CONCLUSION:
In the space below and on the back, write the first draft of your conclusion.
It should include the following information:

Paragraph 1:
1. Do you accept or reject your hypothesis and explain why
2. Summarize your results
3. What do humans do that hurt the health of the harbor?

Paragraph 2:
4. Describe the 3 most interesting things you saw on the trip
5. What is one thing you plan to do to help improve the health of the harbor?

Draft Teacher Approval Signature _____

Once your draft is approved you will write it neatly on a piece of notebook paper or type it. Label the paper: "Chesapeake Bay Project Conclusion"

Test	Why is it important to the health of the bay? What changes it?

Dissolved Oxygen (D.O.)	All animals need it to breathe. Use gills to pull oxygen out of water. When plants cannot grow in the water, the amount of D.O. decreases. Too many nutrients, trash and pollution make the water cloudy and sunlight Cannot reach the bottom to let plants grow.
Temperature	Animals and plants are adapted to live at a certain temperature, if it changes too much, organisms can die. Animals and plants migrate to stay at a comfortable temperature level. Seasons change it Also factories and power plants that dump warm water into rivers can change it.
Salinity	Animals and plants are adapted to live with a certain level of salt in the water, if it changes too much, organisms can die. Dams on rivers can stop the amount of fresh water reaching the bay and make it too salty.
pH	pH measures how acidic or basic something is. Most living things need to live between a pH of 6-8. 7 is neutral. Acids= pH of 0-6 Bases= pH of 8-14 Pollution in the air creates acid rain which can change the pH of the harbor.
Nitrates	Nutrients are important in SMALL AMOUNTS. When there are too many nutrients, too much algae grows and this algae Blocks the sunlight from reaching the bottom, and plants cannot grow. Extra nutrients come from fertilizers used on lawns and farms.
Phosphates	Same as Nitrates
Turbidity	Turbidity is how far the sunlight can reach through the water. If it cannot reach th Bottom, plants cannot grow. Pollution and trash decrease turbidity. Nutrients cause more algae to grow which makes the water cloudy.