Harmful Algal Bloom (HAB) Modeling Lab

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class:\_\_\_\_\_

Materials:

* Clear 10oz plastic cup
* Small 2oz cups
* Brown sugar
* Corn syrup
* Vegetable oil
* Water
* Sweedish fish
* Green sugar crystals

Directions:

1. Add about 2 tablespoons of brown sugar to clear plastic cup
2. Top with 2 tbsp. of corn syrup (this is your benthic zone-the sand is covered with the “ooze” of decaying organisms
3. Add 2 sweedish fish
4. Add about 6oz of water to cup – this is your pelagic zone
5. Add about 2 tbsp of vegetable oil – this is your photic zone
6. Sprinkle about a ½ tsp of green sugar crystals onto photic zone- these crystals are your phytoplankton
7. Now: Add a heaping tsp of green crystals
8. They adhere to each other and sink –this is a harmful algae bloom- the goo now covers the benthic organisms, harming them, and bacteria are now consuming the phytoplankton depleting the oxygen supply of the water leading to a hypoxic event



Questions:

1. What are algae blooms?
2. What is eutraphication?
3. What causes an increase in the phytoplankton population?
4. What is a hypoxic event?
5. What is the amount of dissolved oxygen that defines a hypoxic event?
6. How does eutriphication relate to primary productivity?
7. Examine the diagram on the first page. Describe what happens in each of the ocean zones.