Virtual Lab - Oceanography

Directions: You will be completing a virtual lab today examine the ocean layers and the organisms found in those regions. Go to the following website: http://www.glencoe.com/sites/common_assets/science/virtual_labs/ES18/ES18.html. If link not working use terms Glencoe, Virutal Lab, Oceanography in search engine. Should be first link that comes up.

Read the information found on the left column of the website and answer the following questions

1. How are features like trenches, plains, ridges, and valleys formed on the ocean floor? _____

   _____

2. Where does 90% of the marine life live in oceans? Explain why.

3. a. Where are nutrients in abundance? _____

   b. Where do these nutrients come from? _____

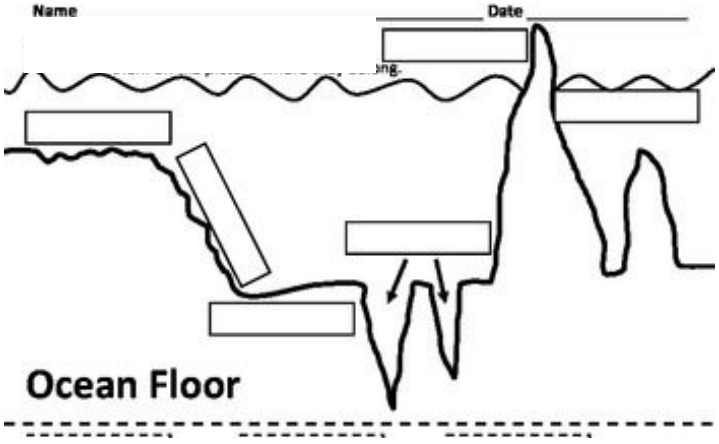
4. How do organisms deep in the ocean get their nutrients? _____

In this virtual lab, you will be an oceanographic research vessel subermsible to explore the characteristics of the ocean and the ocean floor. You will be gathering light-intensity and temperature measurements at various ocean levels along with noting the organisms found at theses depths.

Procedure:

1. Examine the ocean floor in the diagram on the website. Click on the Reference button to access informatin about the ocean floor structures.

2. Identify each ocean floor structure by dragging a Structure Label to the corrresponding number near the structure. Record your results in the picture below. After identified, click on “Check Labels” button. NOTE: Picture **is NOT** the exact same as on the website. Hydrothermal vents will not be in the picture below.



3. When all of the ocean floor structures are labeled correctly, drag the submersible boat and place on the letter A. The submersible camera takes a picture of an organism seen at that depth.

4. You will be visiting each of the letters and dropping the submersible camera and examining the depths indicated on the table below. At each specified depth you will identify the ocean structure, ocean depth, temperature, light intensity, and marine organism found at that depth.

Results

TABLE 1: Characteristics of the ocean and the ocean floor

Ship Location	Ocean Depth (m)	Ocean Structure	Temperature (C)	Light Intensity (%)	Marine Organism
A	20				
A	40				
A	150				
B	180				
B	750				
B	850				
B	900				
C	4500				
D	6000				
E	11000				

Discussion

1. What are some conclusions can you draw from the data compiled in Table 1? Give examples using your data to support your statements.

2. Describe the general structure of the ocean floor.

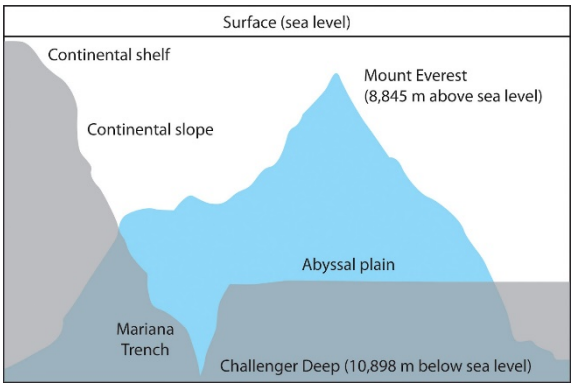
3. Which structures on the ocean floor are equivalent to mountains on land?

4. Based off of your data, how far down into the ocean does sunlight reach?

5. Would you expect to find plantlike organisms below 1000m in the ocean? Why or why not?

6. About 90% of all marine organism live in the upper 180 m of the ocean. Explain this fact in terms of temperature and light intensity.

7. If you could drop Mount Everest (height 8848 m) to the bottom of an ocean trench, would its summit reach the level of the ocean's abyssal plains? What organisms would you find there?



8. The ocean's sunlight environment is generally much richer in marine life closer to the continents than is the open sea farther from the continents. Explain why the open sea is sometimes called the blue dessert.