NAME THAT PLACE!

The ocean is such a vast kingdom that ocean scientists have had to divide it into smaller areas before they could begin to study the life of the seas. Two major types of divisions have been made: one based on sunlight penetration and the other on depth. The divisions based on light penetration are called the photic (fo tik) zones (from the Greek word for light). Light is necessary for green plant growth. From the surface to a depth of about 80 meters, the light penetration is great enough for photosynthesis. We call this area the euphotic zone (meaning "true light"). Extending from the 80 meter boundary to about 200 meters, the disphotic zone (meaning "away from light") is an area of dim blue-green light. Finally, the area in which light is absent is called the aphotic zone (meaning "without light").

1. Below the 80 meter euphotic zone, almost no plant growth occurs. In spite of this, there are many animals which live below 80 meters. What is one possible way these animals find enough food to eat?

THEY CAN SWIM TO DIFFERENT LAYERS.

Oceanographers have also divided the ocean into two great areas based upon depth: the neritic and the oceanic. The neritic extends from the intertidal zone out to about the edge of the continental shelf or to a depth of about 200 meters.

2. Which two photic zones would you find in the neritic zone?

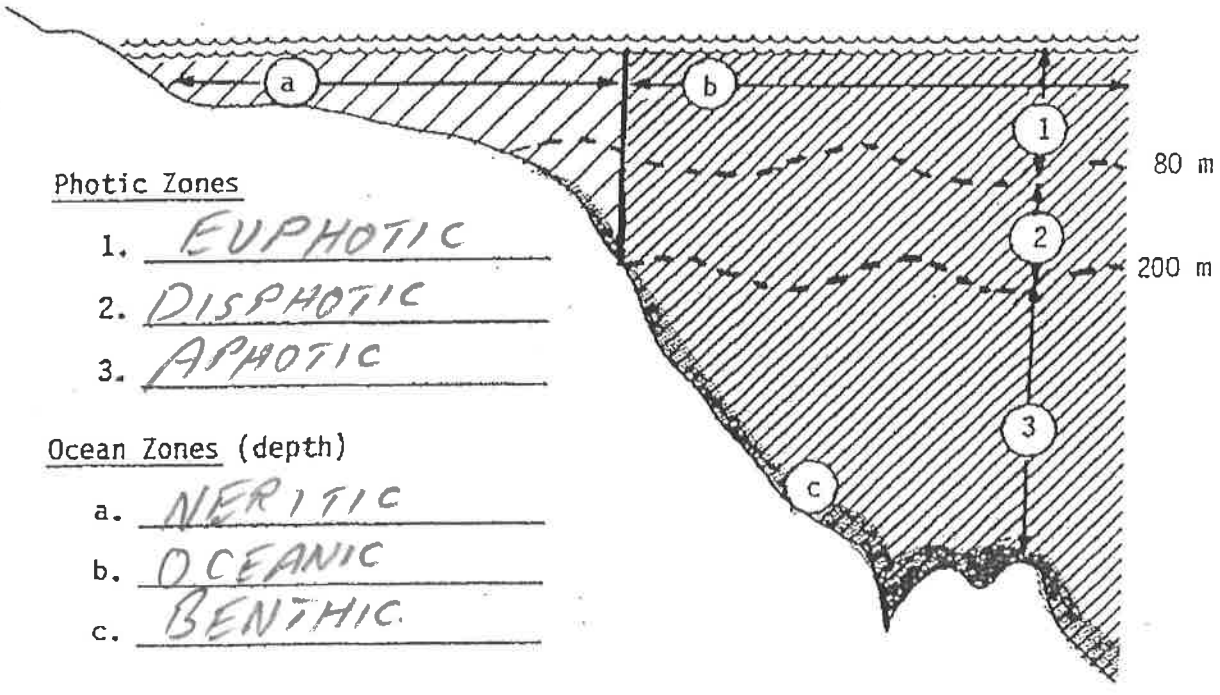
EUPHOTIC & DISPHOTIC

Beyond the neritic zone lies the oceanic. The oceanic province is very large and very deep. The abundance and variety of life in the oceanic zone is less than in the neritic. What lies beneath these ocean zones? life that is on or near the bottom of the sea is found in the benthic division. The very depths of the ocean are the abyss.

3. Where might you expect to find more variety in living things, in a shallow benthic area or in an abyssal area? Explain your reasoning.

SHALLOW BENTHIC - DUE TO PENETRATION OF LIGHT THROUGH WATER

4. Use the diagram below. Fill in the blanks with the name of the zone indicated by the corresponding letter or number



Photic Zones

1. EUPHOTIC
2. DISPHOTIC
3. APHOTIC

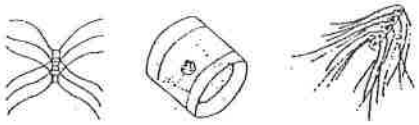
Ocean Zones (depth)

a. NERITIC
b. OCEANIC
c. BENTHIC

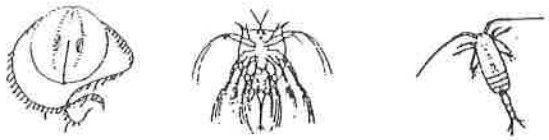
The plants and animals that are found within these divisions are also classified. The three groups of oceanic plants and animals are:

I. Plankton

Plankton are plants and animals that drift at the mercy of the currents for locomotion. The free-floating microscopic plankton are responsible for the colors of the sea. When you see clear blue water, it indicates an ocean desert, or the lack of planktonic life Plankton can be subdivided into two categories, the plant plankton or phytoplankton, and the animal plankton or zooplankton. The phytoplankton can be called the "grass of the sea". These small plants depend upon the sunlight to produce the food which becomes the basis for most of the life in the seas.



Common Phytoplankton



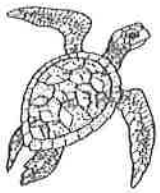
Common Zooplankton

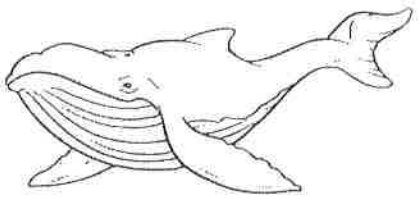
5. In which photic zone would you expect to find phytoplankton? EUPHOTIC

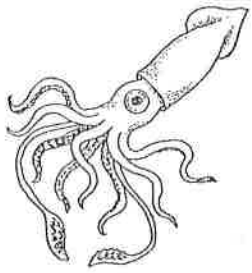
6. What is meant by the seemingly contradictory term "ocean desert"?
SMALL AMOUNT OF PLANKTON

II. Nekton

Nekton are the fish, whales, seals, sea turtles and some invertebrates such as the squid and shrimp. These organisms are capable of directed locomotion and can swim against the currents roaming over vast areas of the ocean.



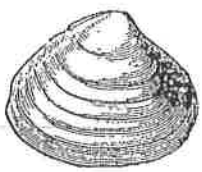


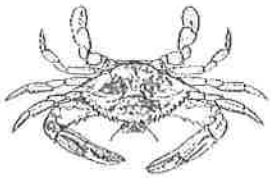


7. In which of the depth zones would you expect to find members of the nekton?
NERITIC, OCEANIC + BENTHIC.

III. Benthos

Benthos, or bottom dwellers, represent the slow moving or sometimes sessile (non-moving) forms. In the coastal zones, the chiton, barnacles or crabs, represent the benthos. In the deeper abyss, specialized sea stars, urchins, snails, and bivalves are examples.





8. What is one possible source of food for benthic organisms in the abyss? OTHER BENTHIC ORGANISMS + DEAD ORGANISMS FROM ABOVE.