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|  | **Topic/ Objective: Marine Ecology**  I can identify biotic and abiotic factors of marine ecosystems and describe how they interact with one another. |
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| **Essential Question**:  What is marine ecology and how is the ocean divided up into different zones? | |
| **Name the 5 oceans on Earth:**  1.  2.  3.  4.  5.  **Marine Ecology**  Marine ecology is an interactive science that studies the basic structural and functional relationships within and among living populations and their physical-chemical environments in **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**. AKA the study of \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Features of Marine Ecology**   1. The sea is big- it covers \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the Earth's surface. 2. The sea is \_\_\_\_\_\_\_\_\_\_\_\_\_ and life extends to all its depths. 3. The sea is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, not separated as our land and freshwater habitats. 4. The sea is in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- air temperature differences between poles and equator set up strong winds that work with the rotation of the Earth to create different currents.    1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- bringing to the surface cold water rich in nutrients which have been accumulating in the depths    2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- Occurs when nutrient-rich estuarine water moves out to sea. 5. The sea is dominated by \_\_\_\_\_\_\_\_\_\_\_ and tides produced by the pull of moon and sun. 6. The sea is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- the average salinity or salt contents is 35 parts of salts by weight per 1000 parts of water, or 3.5%.    1. Sea water has the pH of \_\_\_\_\_\_\_\_\_\_\_. 7. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of dissolved nutrients is low and constitutes an important \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in determining the size of marine populations. 8. The ocean floor is constantly altered and renewed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and sedimentary processes.   **The Marine Biota**  Biota- The combined \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_ of a region.  Examples of Biota in Pacific Ocean:         **Zonation in the Sea**  Zonation- refers to the way an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be divided up into zones based on a particular factor, like altitude or latitude.   1. Horizontal Zones- Those extending from the sea    1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- region in which tides expose the sea bottom for some part of the day.    2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- region located seaward of the coastal zone's low-tide mark       1. Neretic Zone- Water underlying the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ shelf. Sunlight penetrates the entire water column.       2. Oceanic Zone- Extending to the edge of the continental shelf, over the continental slope and over ocean floor. It is characterized by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. 2. Vertical Zones- Life Zones in the Ocean    * Defined by:      + How much \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ it receives      + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_      + Amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Zone- the thin film or "Skin" formed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at the surface of the water    2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or Sunlight Zone-       1. Light availability: Top of the water column as far down as light is available for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_       2. Depth: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_       3. Biotic Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or Twilight Zone-       1. Light: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_       2. Depth: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_       3. Biotic Ex.: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or Midnight Zone –       1. Light: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_       2. Depth: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_       3. Biotic Ex: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    5. Abyssopelagic Zone (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)       1. Light: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_       2. Depth: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_       3. Biota: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. Benthic Zone    1. This zone contains all the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the sea bottom, whether in coastal, continental shelf, or deep sea environments.   Create a Diagram below of all of the horizontal and vertical zones of the ocean. | |