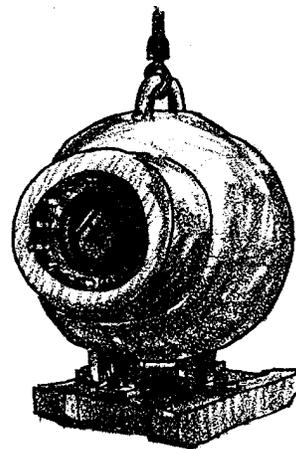


MARINE SCIENCE: The World of Water

FOR SEA: Grades 9 to12 - Oceanography and Marine Biology

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Unit V: The Deep Sea

- 1. The Ocean Floor 1099**
 This reading describes some of the technology oceanographers use to map the ocean bottom and outlines major ocean floor features.
- 2. If I Can't See It, How Do I Know It's There? 1107**
 Students craft ocean bottom features in the bottom of shoeboxes and then trade covered boxes. Students probe the shoebox topography through holes in the shoebox lids and map the hidden ocean floors their classmates created.
- 3. Name That Place 1133**
 This reading introduces the photic zones and depth zones into which scientists have divided regions of the ocean. The ocean is divided euphotic, disphotic and aphotic light zones and neritic, oceanic and benthic depth zones.
- 4. Creatures of the Abyss 1143**
 Students review sunlight-based food webs and how marine snow, or detritus, moves energy and nutrients from shallow waters to the deep sea. Students are introduced to the bizarre animals of the abyss who depend on this marine snow.
- 5. The Pressure's On 1159**
 This reading describes the tremendous pressures animals experience in the deep sea and explores selected deep sea fish adaptations.

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- 6. Diver Underboard!..... 1171**
Students read about hazards human divers face when exposed to pressures underwater SCUBA diving, like nitrogen narcosis and air embolisms.
- 7. Glowing in the Dark:
Bioluminescence and Marine Bacteriology..... 1179**
Students culture bioluminescent bacteria.
- 8. Marine Bacteriology..... 1191**
Students culture a variety of marine organisms as they learn sterile technique.
- 9. Symbiosis in the Deep Sea- Three-Level Guide 1207**
This journal article introduces students to the chemosynthesis-based food webs of the deep sea hydrothermal vents.
- 10. Hydrothermal Vent Food Webs..... 1213**
Students assemble a hydrothermal vent food web, connecting chemosynthetic bacteria and other vent organisms.