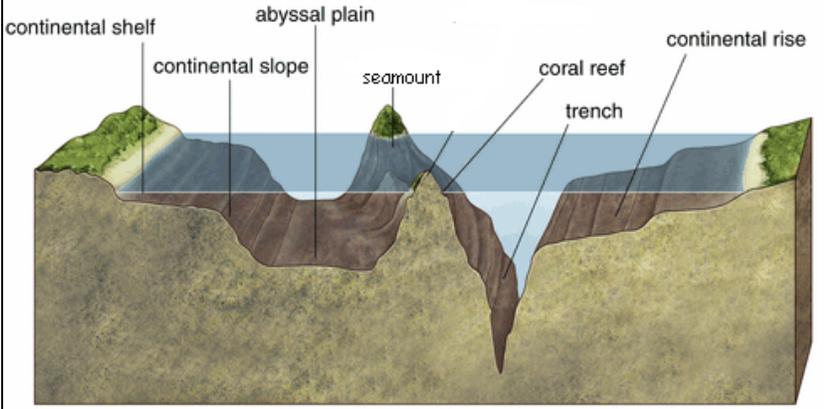
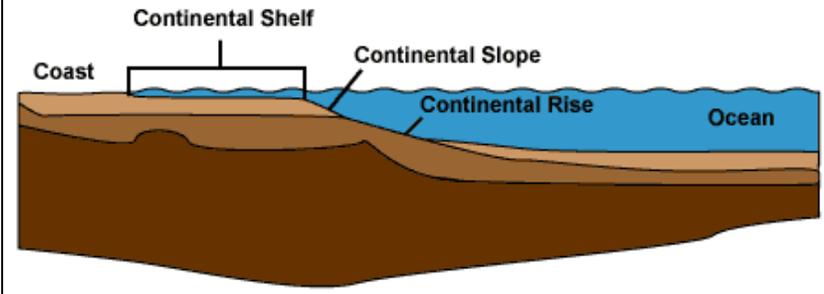
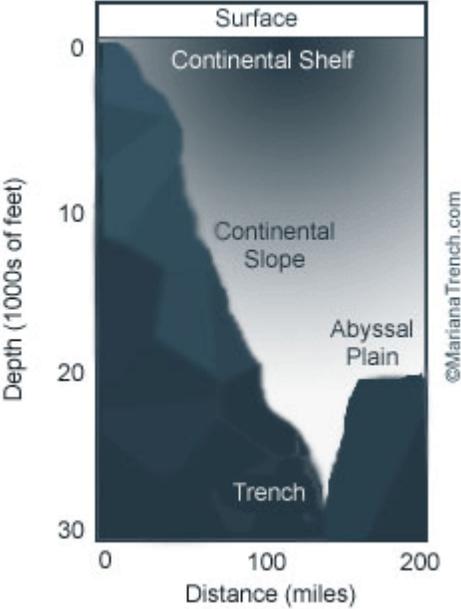
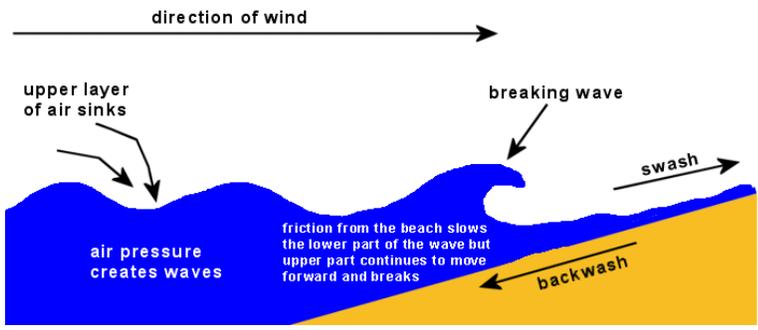
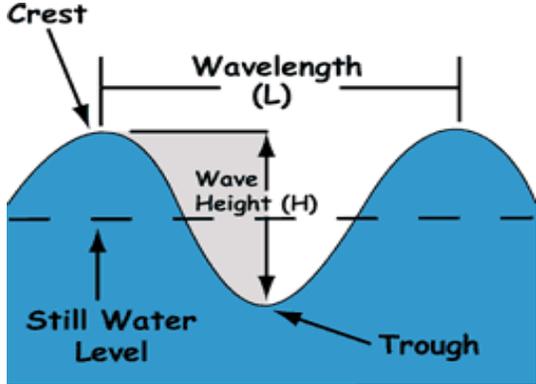
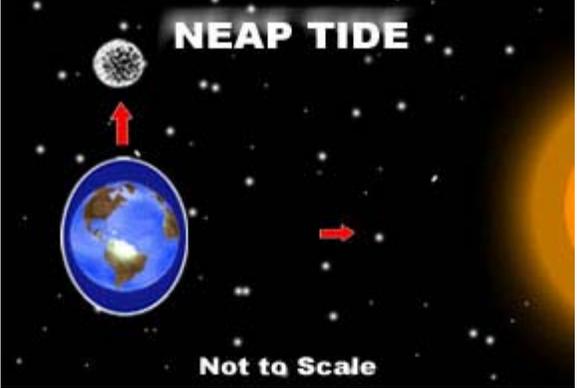


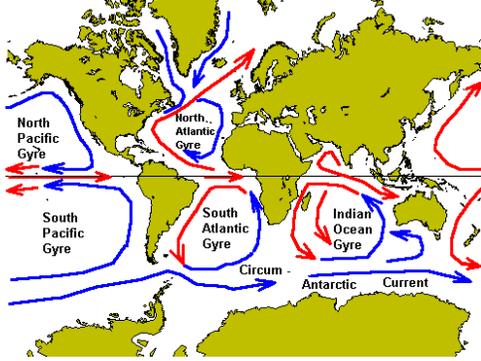
SOL 5.6 Interrelationships in Earth/Space Systems (Oceans)
 Science Study Guide

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| <p>What does the ocean floor look like?</p> |  |
| <p>What is the continental crust?</p> | <p>The Earth's crust that includes both the continents and continental shelves. It is the thickest part of the Earth, not located under the ocean.</p> |
| <p>What is the continental shelf?</p> | <p>The ocean floor that extends off the continents. It is very shallow, covered with sediments, and contains the highest amount of plants and animals.</p> |
| <p>Continental shelf, slope, and rise</p> |  |
| <p>What is the continental slope?</p> | <p>The ocean floor that extends from the shelf to the rise. Deeper than the shelf and has a steep incline.</p> |

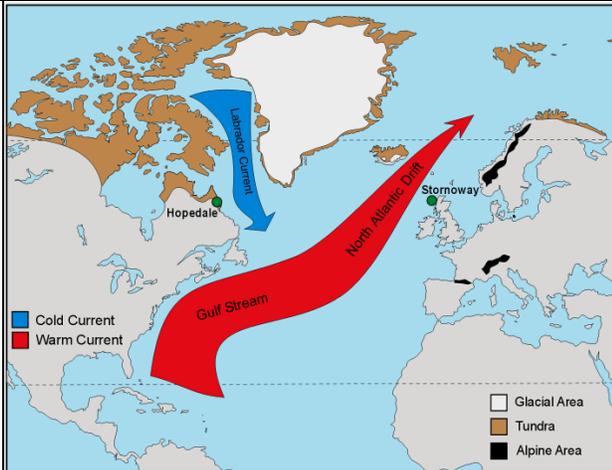
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| <p>What is the continental rise?</p> | <p>The ocean floor was created from currents that pick up sediments and deposit them along the continental slope. These sediments gather to form a gentle slope.</p> |
| <p>What is the abyssal plain?</p> | <p>A flat ocean floor covered with sediment.</p> |
| <p>What are trenches?</p> | <p>The deepest part of the ocean floor. Created from the movement of the ocean floor caused by subduction (when two plates meet and move towards each other)</p> <p>The deepest one is the Marianas Trench in the South Pacific</p> |
| <p>trench</p> |  <p>©MarianaTrench.com</p> |
| <p>What is ocean water made of?</p> | <p>Ocean water is a mixture of gases and solids. The solids are mostly dissolved salt.</p> |
| <p>What is salinity?</p> | <p>The amount of salt in the water. The salt comes from rocks on land. Over time rivers wash over rocks and carry the salt to the ocean. When the water evaporates the salt stays behind.</p> |
| <p>What are waves?</p> | <p>A wave is a disturbance in the ocean. It is caused by underwater earthquakes, landslides, and WIND. WIND creates most ocean waves.</p> |

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| <p>What usually creates a wave?</p> |  <p>direction of wind</p> <p>upper layer of air sinks</p> <p>air pressure creates waves</p> <p>friction from the beach slows the lower part of the wave but upper part continues to move forward and breaks</p> <p>breaking wave</p> <p>swash</p> <p>backwash</p> |
| <p>Diagram of an ocean wave</p> |  <p>Crest</p> <p>Wavelength (L)</p> <p>Wave Height (H)</p> <p>Still Water Level</p> <p>Trough</p> <p>Crest: highest point in a wave Trough: lowest point in a wave</p> |
| <p>What are tides?</p> | <p>Tides are rises and falls of large bodies of water. Tides are caused by the gravitational pull between the Earth and the moon. We have high tide and low tide everyday.</p> |
| <p>Low tide</p> |  |

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| <p>High tide</p> |  |
| <p>What are spring tides?</p> | <p>Spring tides occur when the Earth, Sun, and Moon are in line. This is during the full moon or new moon. During this time the tides are strong causing extremely high tides and extremely low tides.</p> |
| <p>Spring tide</p> |  |
| <p>What are neap tides?</p> | <p>Neap tides occur when the sun and the moon are perpendicular to each other causing a smaller difference between high tide and low tide.</p> |
| <p>Neap tide</p> |  |

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| <p>What are currents?</p> | <p>A current is a strong river-like flow within the ocean. A current can be hot or cold water. Currents are generated from the wind, earth's rotation, temperature, and salinity of the water.</p> |
| <p>Flow of currents</p> |  |
| <p>What is a surface current?</p> | <p>A surface current is a current that occurs on top of the water caused by the wind.</p> |
| <p>What is a deep-ocean current?</p> | <p>A deep ocean current is a current that occurs near the ocean floor and is caused by changes of water density (due to temperature and salinity differences).</p> |
| <p>What is the Gulf Stream?</p> | <p>A powerful, warm, and swift Atlantic ocean current that originates in the Gulf of Mexico and follows the eastern coastline of the United States then crosses over the Atlantic. This current influences the temperatures on the coast of the US and the coast of western Europe.</p> |

Gulf Stream

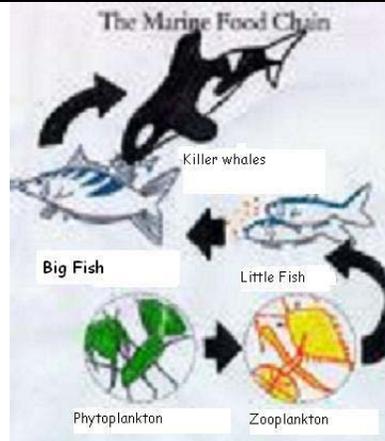


Explain what happens as you travel through the depth of the ocean.

Sunlight passes through the water to light up part of the ocean. As you go deeper into the ocean, the light gets dimmer and dimmer. This makes the deep ocean darker and darker. Sunlight also helps warm the upper layers of the ocean. As you go deeper into the dark parts of the ocean, it also becomes colder and colder. Water has weight. The deeper you go in the ocean, the more water is pressing down on you. The force of the water pressing down is called water pressure.

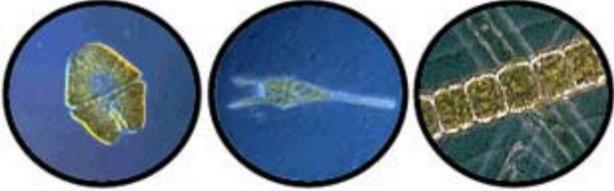
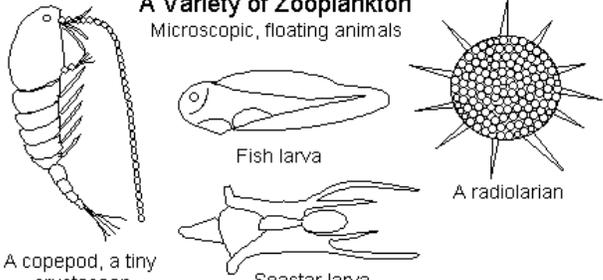
Therefore, as the depth of the ocean water increases, the temperature decreases, the pressure increases, and the amount of light decreases.

Ocean food chain



Just like on land in the ocean there is a natural interconnection of creatures that form the food chain.

Plankton - zooplankton - small fish - large fish - killer whales

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| <p>What are phytoplankton?</p> | <p>Phytoplankton are microscopic plants that live near the surface of the ocean. They require sunlight, nutrients, and water to grow. They also contain chlorophyll. Phytoplankton are the foundation of the marine food chain.</p> |
| <p>Phytoplankton</p> |  |
| <p>What are Zooplankton?</p> | <p>Zooplankton are microscopic animals that drift with the currents in the ocean. They can be single celled organisms or larval or immature stages of larger animals. Zooplankton eat other plankton.</p> |
| <p>Zooplankton</p> | <div style="text-align: center;"> <p>A Variety of Zooplankton Microscopic, floating animals</p>  <p>A copepod, a tiny crustacean</p> <p>Fish larva</p> <p>A radiolarian</p> <p>Seastar larva</p> <p><small>©ZoomSchool.com</small></p> </div> |