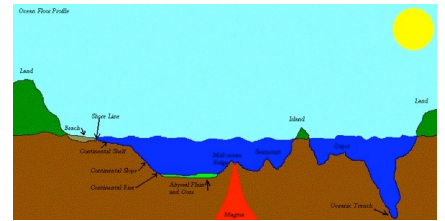





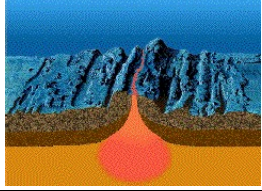

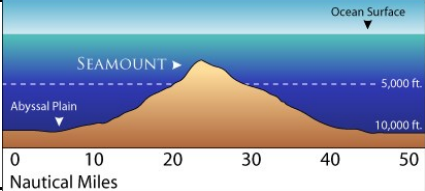
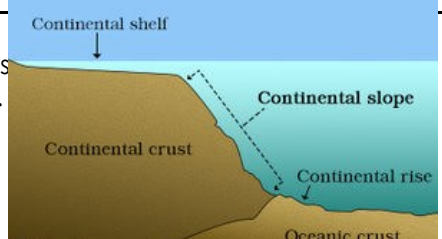
# Subsurface Topography

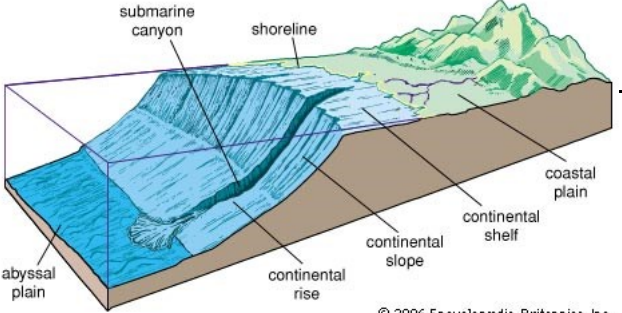
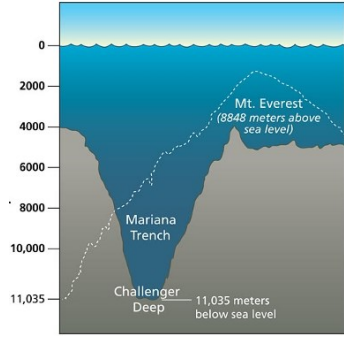
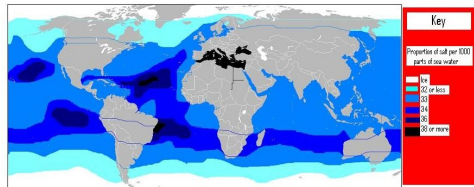
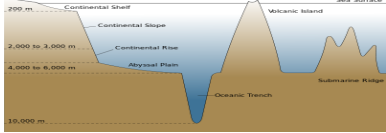
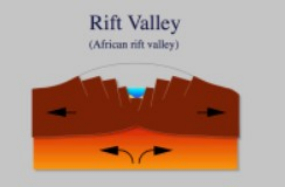
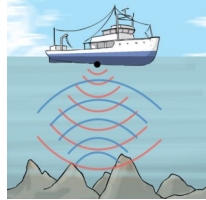

S6E3. Obtain, evaluate, and communicate information to recognize the significant role of water in Earth processes.


A. Ask questions to determine where water is located on Earth's surface (oceans, rivers, lakes, swamps, groundwater, aquifers, and ice) and communicate the relative proportion of water at each location.

C. Ask questions to identify and communicate, using graphs and maps, the composition, location, and subsurface topography of the world's ocean.



Term	Info	Picture
Pacific Ocean	The largest and deepest ocean in the world	
Arctic Ocean	Ocean found at the North Pole	
Atlantic Ocean	The second largest ocean, the ocean found on the coast of Georgia	
Mid-Ocean Ridge	Located at the middle of an ocean floor Location of seafloor spreading. Divergent plate boundary.	
Volcanic Island	Island formed from a volcano. Rises above sea level.	
Seamount	An underwater mountain. A SINGLE underwater mountain.	
Continental Shelf	The first part you walk out onto in the ocean.	
Continental Slope	The area where the continental shelf slopes downward towards the deep ocean floor. Between the continental shelf and continental rise.	

Term	Info	Picture
Continental rise	Area between the continental slope and abyssal plain.	
Abyssal plain	A large plain (flat) area of the ocean floor. Silt and sediment settles on the abyssal plain. Between the continental rise and mid-ocean ridge or the mid-ocean ridge and ocean trenches. 40% of the ocean floor.	
Ocean trench	Convergent boundary between oceanic and continental crust. Subduction occurs, the more dense oceanic crust sinks below the continental crust. Very deep area of ocean.	
Salinity	The amount of salt in water. "Saltiness"	
Subsurface Topography	The study of the surface of the ocean floor; topography studies the shape of the land.	
Rift Valley	Lowland region between two divergent tectonic plates.	
SONAR	"Sound Navigation And Ranging" Maps the ocean floor using sound waves. It measures the time it takes for the sound to travel to and from a feature on the ocean floor.	
Southern Ocean	Ocean by Antarctica. Newest named ocean, in Geography it considered to just be part of the Pacific and Atlantic. but a separate ocean by Oceanographers.	

Term	Info	Picture
Indian ocean	Ocean south of Asia/surrounding India. Third largest ocean.	

## Learning Targets:

1. I can recall the names and identify the locations of the oceans.
2. I can compare the oceans in terms of depth and area.
3. I can describe the composition of ocean water.
4. I can describe the ocean floor.
5. I can compare the subsea topography and land topography.
6. I can compare and contrast ridges and trenches in terms of formation and function.

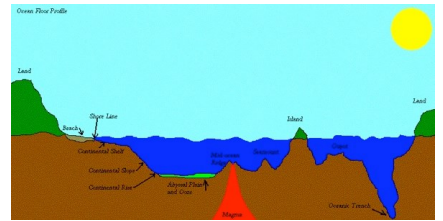


# Subsurface Topography

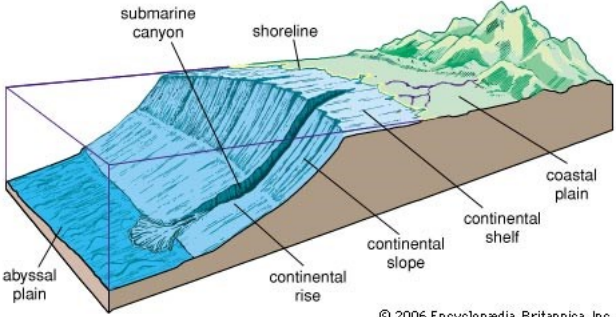
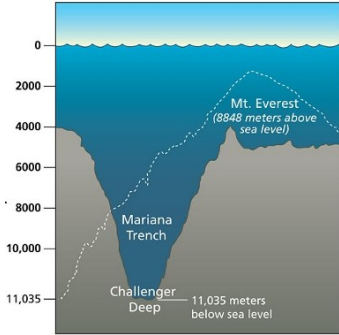
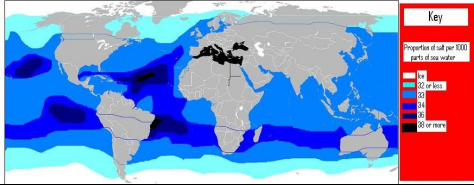
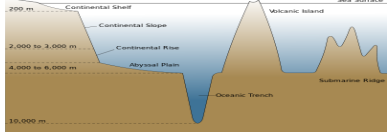
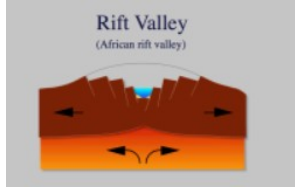
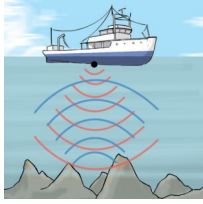

S6E3. Obtain, evaluate, and communicate information to recognize the significant role of water in Earth processes.

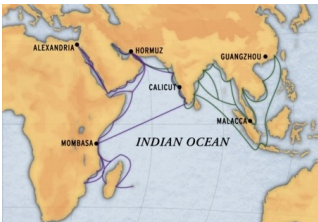
A. Ask questions to determine where water is located on Earth's surface (oceans, rivers, lakes, swamps, groundwater, aquifers, and ice) and communicate the relative proportion of water at each location.

C. Ask questions to identify and communicate, using graphs and maps, the composition, location, and subsurface topography of the world's ocean.



Term	Info	Picture
Pacific Ocean		<p>A globe of the Earth with the Pacific Ocean highlighted in blue.</p>
Arctic Ocean		<p>A globe of the Earth with the Arctic Ocean highlighted in blue.</p>
Atlantic Ocean		<p>A world map with the Atlantic Ocean highlighted in blue.</p>
Mid-Ocean Ridge		<p>A cross-sectional diagram of a mid-ocean ridge, showing a central volcanic ridge with a red magma chamber below it.</p>
Volcanic Island		<p>A photograph of a volcanic island with a conical shape and a dark, rocky surface.</p>
Seamount		<p>A cross-sectional diagram showing a seamount rising from an abyssal plain. The seamount is labeled 'SEAMOUNT' and has a height of 5,000 ft. The abyssal plain is labeled 'Abyssal Plain' and is at a depth of 10,000 ft. The x-axis is labeled 'Nautical Miles' and ranges from 0 to 50.</p>
Continental Shelf		<p>A cross-sectional diagram of the continental shelf, showing the flat area extending from the coast.</p>
Continental Slope		<p>A cross-sectional diagram showing the continental slope and continental rise. The continental slope is the steeply sloping area, and the continental rise is the area of accumulated sediments. The diagram also shows the continental crust and oceanic crust. The source 'Buzzle.com' is noted at the bottom.</p>

Term	Info	Picture
Continental rise		 <p>A 3D cutaway diagram of the ocean floor. Labels include: submarine canyon, shoreline, abyssal plain, continental rise, continental slope, continental shelf, and coastal plain. A copyright notice at the bottom right reads: © 2006 Encyclopædia Britannica, Inc.</p>
Abyssal plain		 <p>A vertical depth scale from 0 to 11,035 meters. Mt. Everest is shown at 8,848 meters above sea level. The Challenger Deep in the Mariana Trench is shown at 11,035 meters below sea level.</p>
Ocean trench		 <p><b>Salinity of the Oceans</b></p> <p>World map showing salinity levels. Key: Properties of salt per 1000 parts of sea water. Legend: 34, 35, 36, 37 or more.</p>
Salinity		 <p>Diagram of ocean floor topography. Labels: Continental Shelf (0-200 m), Continental Slope (200-2,000 m), Continental Rise (2,000-3,000 m), Abyssal Plain (3,000-6,000 m), Oceanic Trench, Submarine Ridge, and Sea Surface. A volcanic island is also shown.</p>
Subsurface Topography		 <p><b>Rift Valley</b> (African rift valley)</p> <p>Diagram showing a rift valley with magma rising from below.</p>
Rift Valley		 <p>Diagram of a ship using SONAR to map the ocean floor. The ship is on the surface, and sound waves are shown reflecting off the seabed.</p>
SONAR		 <p>World map with the Southern Ocean highlighted in blue, located south of Africa, Australia, and Antarctica.</p>
Southern Ocean		

Term	Info	Picture
Indian ocean		 A map of the Indian Ocean region. The ocean is labeled 'INDIAN OCEAN' in the center. Key locations marked include ALEXANDRIA on the Mediterranean coast, HORMUZ at the Persian Gulf, GUANGZHOU on the Chinese coast, MALACCA in Southeast Asia, and MOMBASA on the East African coast. Blue lines represent trade routes connecting these points across the Indian Ocean.

## Learning Targets:

1. I can recall the names and identify the locations of the oceans.
2. I can compare the oceans in terms of depth and area.
3. I can describe the composition of ocean water.
4. I can describe the ocean floor.
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