

## Topic 4 - The Oceans

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1. Name a substance in seawater that comes from

(a) the land

Salt is one substance that is found in seawater and comes from the land.

(b) the atmosphere

Volcanic gas is one substance that is found in seawater and comes from the atmosphere. It is erupted into the atmosphere and deposited on surface waters.

2. Describe how

(a) ocean ridges

Seamounts are large, submarine mountain peaks. They are usually older, inactive volcanoes at the edges of ocean ridges. They are often found in clusters and are most common in the Pacific Ocean.

(b) trenches are formed.

Trenches are narrow, steep-sided canyons that are formed where the edge of an ocean plate pushes against the edge of a continental plate.

3. Name three factors that determine the height of a wave.

Three factors that determine the height of waves are how fast, how long, and how far the wind blows over the water.

4. Explain the difference between spring tides and neap tides.

Spring tides are the largest tidal movements, both high and low, and occur when the Sun, Earth, and Moon are in a line. Neap tides have smaller tidal movements and occur when the Sun and Moon are at right angles to each other.

5. Explain how surface currents are produced.

Density currents are produced by sinking masses of cold water that flow beneath the surface of waters. They are also caused by differences in the salinity of seawater. The greater the salinity, the greater the density. A surface current is produced by the movement of wind over the surface of the water. Most currents flow in the top 100-200 m of water.

6. Why are some currents warm and others cold?

Some currents are warm and others are cold because waters of differing temperatures have different densities. This prevents the waters from mixing and becoming a single temperature. Depending on where the current originates, it can begin as either warm or cold, and can remain at similar temperatures for great distances.

7. How does a tidal wave differ from a tsunami?

A tidal wave is the large ocean "wave" of water moving in response to the gravitational attraction between the Earth, Moon and Sun. A tsunami is a large wave generated by seismic activity such as an earthquake.

8. Copy the following diagram into your notebook and supply the missing labels.

