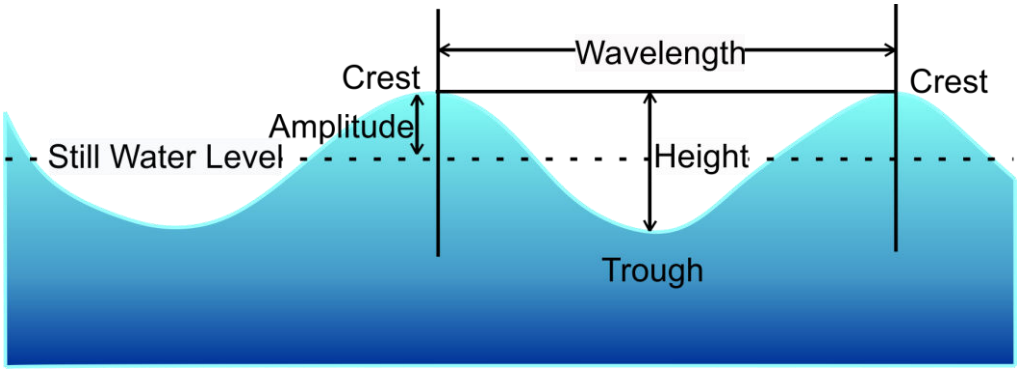
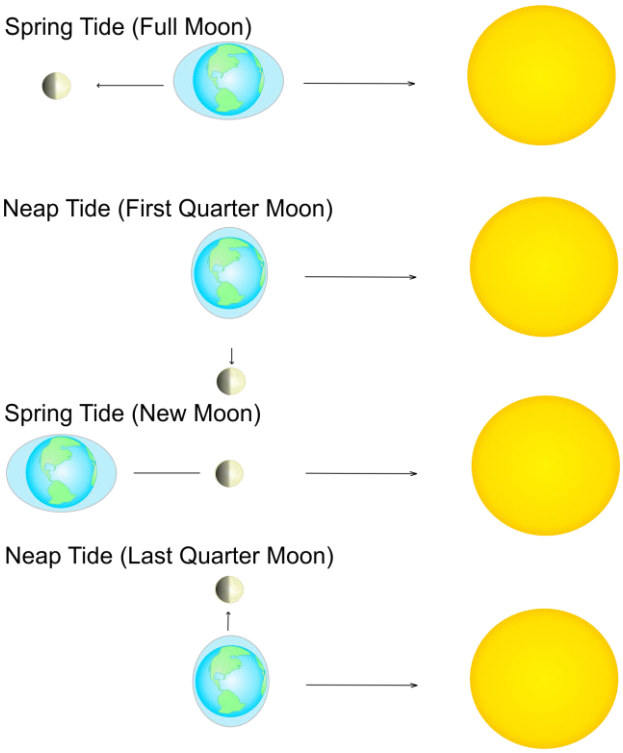
Earth's Water

Section 4: Ocean Waves & Tides



A **wave** starts in the open ocean and is the movement of energy through a body of water. A wave is usually formed when winds blow across the water's surface, which transfers energy. The **crest** is the highest point of a wave, whereas the **trough** is the lowest point. The **wavelength** measures the distance from one crest to another or one trough to another. The **amplitude** is the wave's energy calculated from the resting point to the crest. The **frequency** is the number of waves that pass a point in a certain amount of time.



Tides are the daily rise and fall of Earth's water on its coastlines. The gravitational interaction of the Earth, the moon, and the sun cause tides. These gravitational forces produce two bulges on ocean surfaces. One bulge on the side of the Earth faces the moon, and the other is on the side that faces away from the moon. These bulges represent high tides. The **tidal range** is the difference in water level between a high and low tide. It varies depending on the positions of the sun and the moon with respect to Earth. A **spring tide** is the largest tidal range, and it occurs when Earth, the moon, and the sun form a straight line. A **neap tide** is the lowest tidal range, which occurs when Earth, the moon, and the sun form a right angle.

Review:

1. Identify the main parts of a wave.
2. What are tides?
3. Compare a spring tide to a neap tide.