Learning Activity #1

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Approximately 4.53 billion years old and 238,900 miles from Earth, the Moon orbits our planet and is the fifth-largest satellite in the Solar System. The Moon's gravitational pull results in our oceanic tides. At full, it lines up directly with the Earth and the sun, causing stronger tides. At half and unaligned with the Earth, it produces weaker tides. Coastal organisms rely on these tides. California's sand harbors grunion fish from March to August. After hatching their eggs, the high tide is responsible for carrying them out to sea. Certain species of sea turtles lay their eggs on shore by riding high tide waves onto the beach.

Researches have discovered that many oceanic beings have biological clocks that are seemingly in sync with Moon's phases. For example, zooplankton swim to the surface to feed on algae. The larger ocean animals prey on them at dawn, therefor the zooplankton rely on the moon to signal them to swim back down toward the bottom. In the artic climates where the sun cannot be seen for months, zooplankton still remain in sync with the Moon.

The gravitational pull of the Moon works to reduce the amount of "wobble" in Earth's axis as our planet rotates. Reducing this "wobble" in the axis is responsible for limiting the seasonal extremes between summer and winter. Due to this, our climate system is more stable and complex life-forms have been able to live and evolve. Without the Moon, it would have been impossible for complex life-forms to exist and evolve on Earth.