

Lesson: The Water Planet



In this lesson, you will be introduced to the following topics:

- Latitude
- Longitude
- Prime Meridian
- Equator
- Water Planet

All day and all night-every day and every night-the ocean keeps up a steady rhythm as it advances and then retreats from the shore, propelled by tidal forces. Moving in, the ocean waves break along the sloping shore; and just as quickly, the waves recede.

In some places, shallow tidal pools are left behind as the waves move away from the shore. Scientists think that several billion years ago, life on Earth began in the ocean-perhaps in a tiny pool of water left behind by the unending movement of the waves. Most likely, life probably began in the sea because ocean water contains important substances needed for life processes.

Since so much of the Earth is covered by water, it is sometimes called the “**water planet**.” If you look at a world map in an atlas, you will see that there is more water than land. In fact, more than 70 percent of Earth’s surface is water, with most of that water in the ocean. T

he ocean surrounds landmasses known as continents, which are the remaining 29 percent of Earth’s surface. The continents divide the ocean into four major parts: the Atlantic Ocean, Pacific Ocean, Indian Ocean, and Arctic Ocean. Often, where two continents lie close together, a smaller part of an ocean called a sea is formed. Locate the Caribbean Sea in the map. Notice that it connects to the Atlantic Ocean. In fact, all of Earth’s oceans and seas flow into one another, forming one continuous body of water.

To better understand longitude and latitude; please look at a world map that has the lines (grids) of longitude and latitude on it. To locate geographical areas with precision, people draw a grid, or series of lines, over maps and globes. The **equator** is one of the most important lines on this grid; it divides the world in half.

The northern hemisphere is the part of Earth located north of the equator; and the southern hemisphere is the part of Earth located south of the equator. The southern hemisphere has 20 percent more ocean than the northern hemisphere.

Lines that run parallel to the equator are called lines of **latitude**. Distances north or south of the equator are measured in degrees. The latitude of the equator is 0 degrees. The latitude of the North Pole is 90 degrees north, and the latitude of the South Pole is 90 degrees south. All other latitudes fall between 0 and 90 degrees north or south of the equator.

On your map, find the Galápagos Islands. These islands are represented by a tiny speck right on the equator, at 0 degrees latitude, west of South America. If you follow east along the 0 degree line, you will see that many other land areas also lie on the equator. For example, Ecuador, Brazil, and several countries in Africa lie on the equator. How are geographical areas located at the same latitude distinguished from one another?

Another measurement, called **longitude**, when combined with latitude measurements can pinpoint geographical locations with great precision.

On a globe, you can see that lines of longitude run from the North Pole to the South Pole, intersecting the lines of latitude. Longitude is measured in degrees east or west of the **prime meridian**. The prime meridian runs through Greenwich, England, and it is assigned the starting point of 0 degrees longitude. Earth is divided into 24 meridians; meridians are 15 degrees apart. The meridians cover a distance 180 degrees east and 180 degrees west of the prime meridian.