

8th grade Lesson 19 – Section 1

What is the Purpose of Maps?

The process of mapmaking has evolved from a lot of guesswork to an accurate science. Today, there are a much greater number of scientific tools available. Two tools are aerial and satellite photography and **Geographic Information Science** (GIS). GIS can apply all types of data to precise locations on a map. In addition, **Global Positioning Systems** (GPS), allow users to discover where they are and relate that to another location. GPS helps us navigate to a store or a friend's address using satellite technology.

How Has Mapmaking Evolved? An important breakthrough in creating maps happened sometime after the first maps of Florida were created. In those days, navigators sailing across an ocean used a global measuring system called **latitude** to help pinpoint their location. Lines of latitude are horizontal lines measured in degrees that span across the globe from east to west. These lines indicate where something is located relative to the **equator**. The equator is the line of latitude that spans across the exact center of the globe. Navigators would keep careful record of the sun's position and how long the day was to track their location.

However, it was not at all easy to figure out **longitude**, the vertical lines that run between the North and South poles. Not even the most skilled sea captains and navigators could be sure where they were when it came to measuring degrees longitude. **The problem was so serious that between 1550 and 1650 one in five ships was lost at sea between Portugal and India.**

Latitude was far easier to determine because it was linked to a physical feature of Earth, the equator.

This entire lesson lacking information and the innovations of our early explorers just as the introduction was.

There were several ways to measure longitude which evolved beginning in the 2nd century by many famous astronomers, mathematicians, philosophers, and inventors. (See supporting documents)

In 1884, the International Meridian Conference took place in Washington, D.C. to establish an internationally recognized single meridian. The meridian chosen was that which passed through the Airy transit circle at Greenwich, and it became the prime meridian of the world.

Navigation wasn't the most serious problem regarding ships lost at sea in 16th century, it was piracy. Large Spanish ships, called galleons, began to sail back to Europe, loaded with precious cargoes that pirates found impossible to resist. So many pirate attacks were made that galleons were forced to sail together in fleets with armed vessels for protection.

Then in 1984, is the IERS Reference Meridian, which is also known as the International Reference Meridian or IRM. The IRM is the only meridian that may now be described as the prime meridian of the world, as it defines 0° longitude by international agreement. The IRM passes 102.5 meters to the east of the historic Prime Meridian of the World at the latitude of the Airy Transit Circle here. The entire Observatory and the historic Prime Meridian now lie to the west of the true prime meridian.