

Oceans of Water

Nearly three quarters of Earth's surface is covered with water. Modern technology (tek-NOL-uh-jee) has helped us learn more about oceans than ever before. But there are large areas of ocean that are still a mystery. The world's oceans are so large and so deep that many parts have not even been mapped yet.

Ocean waves can be large and powerful.

Earth's Oceans



Earth has 5 oceans—the Pacific, the Atlantic, the Indian, the Arctic, and the Southern. Together, they cover an area of 138,910,300 square miles (359,776,025 km²). The deepest point is found 36,198 feet (11,033 m) under the surface of the Pacific Ocean. It is called the Mariana Trench.

Ocean Depths

Name	Deepest point (feet)	Deepest point (meters)
Arctic Ocean	15,305	4,665
Southern Ocean*	23,736	7,235
Indian Ocean	23,812	7,258
Atlantic Ocean	28,231	8,605
Pacific Ocean	36,198	11,033

* The Southern Ocean was identified and named in 2000.

Finding the Way

Sailing Earth's oceans has always been a challenge. For centuries, people have used ships to travel and carry goods from place to place. Before maps were made, sailors used **myths** and stories about past journeys to help them **navigate** (nav-uh-GAYT).

Sailors also used the stars in the night sky to find their way. To them, the sky was like a giant map. Sailors knew that in the northern **hemisphere** (HEM-uhs-feer), the Pole Star showed which way was north.

Star Light, Star Bright

The Pole Star sits above the North Pole. The Pole Star is also known as the North Star, the Steering Star, and the Ship Star. It is also called Stella Maris (STELL-uh MAR-uhs), which means "star of the sea" in Latin.

In the 12th century, many sailors started to use a tool called a compass. The compass helped the sailors to find direction. A compass shows 4 main directions: north, south, east, and west. Each direction has a location that is measured in **degrees**. North is 0° (360°), east is 90° , south is 180° , and west is 270° .



LET'S EXPLORE MATH

Using a **coordinate** (koh-ORD-uh-nuht) **plane** is kind of like using a map. **Coordinates** are a good way of finding locations. They refer to the **intersection** (in-ter-SEK-shuhn) of lines on coordinate planes. This coordinate plane shows the location of stars in the night sky. The stars are labelled with letters. Use the coordinate plane below to determine the star located at each coordinate. *Hint:* Coordinates are always read across, then up or down.

- a. (1, 4)
- b. (4, 3)
- c. (2, 1)
- d. (1, 2)
- e. (3, 2)

