



o c e a n o



## Talk About It

The sea is vast and powerful.  
What do you think we can  
learn by studying the sea?



Find out more about  
oceanography at  
[www.macmillanmh.com](http://www.macmillanmh.com)

g r a p h y



## Vocabulary

edgy	formations
clockwise	intact
hovering	severed
interior	wreckage



### Word Parts

A **Suffix** is added to the end of a word to change its meaning.

*edge* + *y* = on edge; nervous

# Waves

by Alicia Reese

Part of Earth's beauty comes from its oceans. Oceanographers study the chemical makeup of the ocean as well as the currents in water, weather patterns, the geography of the ocean floor, and many other areas. Oceanographers' work is exciting, although sometimes it can be dangerous and cause them to become **edgy**. Using technology to do certain tasks helps. For example, robotic arms that rotate **clockwise** are sometimes used for the most dangerous tasks.

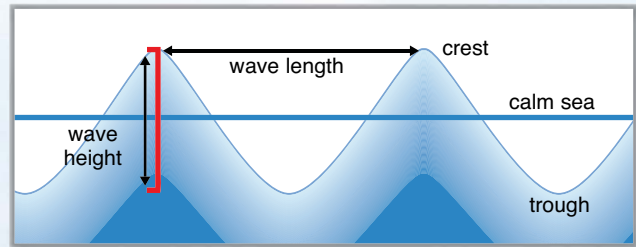
One basic part of oceanography is understanding waves and how they work. Sometimes ocean life can be seen in the wave. Creatures seem to be **hovering** within the **interior** of the wave, floating inside it as if they were weightless. Besides the beauty of waves, scientists are interested in their

technical aspects. The diagram (right) shows how scientists examine waves.

Waves are measured from the top (crest) to the bottom (trough). This allows scientists to find out the height of a wave. They also measure from crest to crest to determine the length of each wave.

Waves are classified by their height, length, and frequency. Some common kinds of waves are chop, swell, shallow, deep, and tsunami. Waves are created by specific conditions. The conditions that affect **formations** of waves include the ocean's temperature and depth, the wind's strength and speed, and the geological conditions of the area. Conditions must be favorable for certain kinds of waves to form, keep their shape, and remain **intact**.

A wave's height and length are directly related to its wind speed and duration, or how long it has been



blowing. When it is really windy during a big storm, the waves grow in height and shrink in length.

During severe storms, huge and frequent waves might cut a sea vessel apart. Ships are at great risk of winding up as **severed** pieces after being hit by the force of a huge wave. By understanding the ocean, scientists can prevent this **wreckage** of ships by predicting when the water will be too dangerous for people and their ships.

The study of waves and the ocean also allows oceanographers to determine how certain beaches were formed. By studying the oceans a great deal can be learned about the surface we live on.

## Reread for Comprehension



### Evaluate

#### Fact and Opinion

In order to evaluate information in a text, it is important to know what is fact and what is opinion. A fact is something that can be proven true. An opinion is what someone thinks, feels, or believes. Nonfiction selections include facts, but may include some opinions, too.

Use your Fact and Opinion Chart as you reread "Waves."

Fact	Opinion