

# Waves & Currents

Name: \_\_\_\_\_

When you hear the words waves and currents, your brain might immediately make you think about the ocean, or at least some form of water. That's natural, since that is probably what you have experienced the most in connection to those two words. But waves and currents can be talking about energy as well. Energy travels in waves, and electric current is the constant flow of electric energy.

A wave, whether it is in the ocean, on land, or in the air, is simply the movement that takes energy from one place to another. Many kinds of energy travel in waves. Light, sound, and mechanical energy all travel in waves. Sound waves, for example, are produced by the vibration of particles. Plucking a string on a guitar or violin makes the air around the string move back and forth.

A wave can be measured based on a comparison of its highest point (crest) and lowest point (trough). The distances between troughs and the distance between crests are called wavelengths. You can use a timer to see how many crests happen in a certain amount of time, and that will tell you the frequency of a wave.

The constant flow of charged particles is an electric current. Negatively charged particles move toward positively charged particles. Electric current needs an unbroken path, or circuit. A circuit is made of wires, an energy source and something that requires energy. Then the current can flow!



An ocean wave is an example of how energy moves through water.

## Understanding the Terms

1. What is a wave? How are ocean waves and sound waves similar?

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2. What is a trough? How is it different than a crest?

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3. What is the name for the flow of charged particles?

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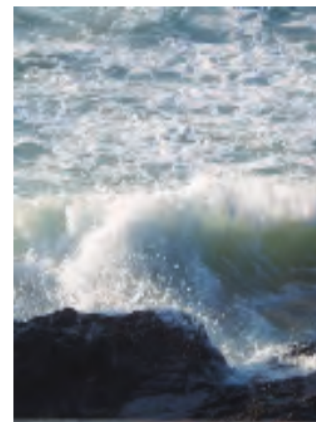
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An ocean wave is an example of how energy moves through water.

How are waves and sound waves similar?

A wave is the movement of energy from one place to another. Both ocean waves and sound waves show the movement of energy. Energy travels through water to make ocean waves. Sound waves are energy moving through air.

How is a trough different than a crest?

A trough is the lowest point of a wavelength. A crest is the opposite of a trough, because a crest is the highest point of a wavelength.

**An electric current**

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