

# Electromagnetic Waves



## How can you describe and use electromagnetic waves?

### Before You Read

Before you read the chapter, think about what you know about electromagnetic waves. Record three things that you already know about electromagnetic waves in the first column. Then write three things that you would like to learn about in the second column. Complete the final column of the chart when you have finished the chapter.

<b>K</b> <b>What I Know</b>	<b>W</b> <b>What I Want to Learn</b>	<b>L</b> <b>What I Learned</b>

### Chapter Vocabulary

<b>Lesson 1</b>	<b>Lesson 2</b>	<b>Lesson 3</b>
<p><b>NEW</b> electromagnetic wave radiant energy</p> <p><b>REVIEW</b> temperature</p>	<p><b>NEW</b> electromagnetic spectrum radio wave microwave infrared wave ultraviolet wave X-ray gamma ray</p>	<p><b>NEW</b> broadcasting carrier wave amplitude modulation frequency modulation Global Positioning System</p> <p><b>ACADEMIC</b> analyze</p>

# Lesson 1 Electromagnetic Radiation

**Scan** Lesson 1. Read the lesson titles and bold words. Look at the pictures. Identify three facts you discovered about electromagnetic radiation. Record your facts in your Science Journal.

## Main Idea

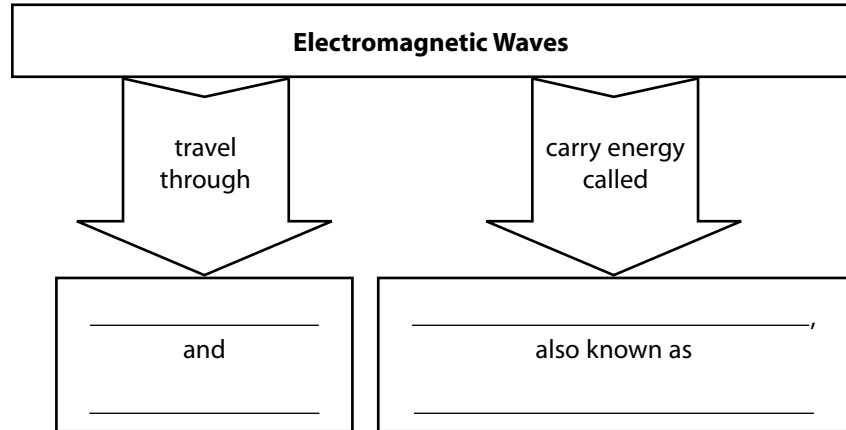
**What are electromagnetic waves?**

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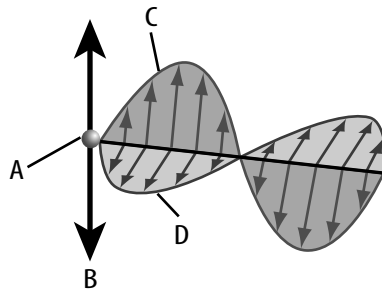
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## Details

**Organize** information about electromagnetic waves.



**Interpret** the diagram of how an electromagnetic wave forms. Identify each labeled component, and then explain the relationship between C and D.



**A.** \_\_\_\_\_

**B.** \_\_\_\_\_

**C.** \_\_\_\_\_

**D.** \_\_\_\_\_

The relationship between **C** and **D**: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# Lesson 1 | Electromagnetic Radiation (continued)

## Main Idea

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I found this on page \_\_\_\_\_.

### Sources of Electromagnetic Waves

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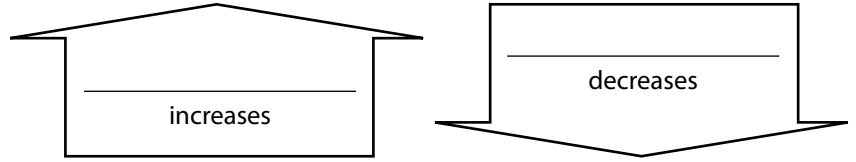
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### Waves or Particles?

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## Details

**Relate** wavelength and frequency.



**Express** the speed of electromagnetic waves in space.

wave speed = \_\_\_\_\_ × \_\_\_\_\_

**Categorize** sources of electromagnetic waves.

The Sun	Other Sources
Types in proportion: • • •	On Earth:  In space:
Three ways electromagnetic waves are detected: • • •	

**Define** photon, and differentiate the photons in light from a flashlight from photons of Sun rays.

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**Analyze It** Describe sources of electromagnetic waves in the room you are in.

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