

# Chapter 6 Lesson Plan

## Electronic Communication

Chapter Resources		
Textbook Activity	Teacher CD	Online Learning Center
<b>Inform the Public</b> Plan and produce a public service announcement.	Lesson Plan Flash® Presentation ExamView® Chapter Test	Chapter Activities Chapter Quizzes

### FOCUS

Chapter 6 covers the actual modes used for electronic communication (copper wire, etc.) as well as the devices that permit this transfer.

### Objectives

- Identify and describe four types of transmission channels.
- Explain how signals are transmitted and received.
- Describe how telephones, radios, and televisions operate.
- Explain and give examples of radio frequency identification systems.

### Tying to Previous Knowledge

Remind students that electrical signals in the computer are generally sent along conductors of some type. Illustrate that conductors can come in many forms.

### TEACH

1. **History of technology.** At the top of a bulletin board, put up the title “Electronic Communication.” At the bottom, make a time line (divided into decades) from 1830 until the present. As your class progresses through the chapter, tack pictures of telecommunication devices above the date of their invention. Offer credit to any students willing to research how many homes had telephones, radios, or televisions at the beginning of each decade after their invention.
2. **Display.** Display diagrams that show and explain the workings of popular telecommunication devices, such as MP3 and CD players or DVRs. The book *The Way Things Work*, by David Macaulay, is one source for entertaining diagrams. The Internet is also an invaluable resource for diagrams.
3. **Demonstrate.** If an ohmmeter is available, have a group of students stand in a circle holding hands. Separate any two individuals and have them grasp the two meter probes, one each. The meter will indicate that there is electrical connectivity through the bodies that were touching. Point out that this electrical path is present in many other conductors as well, such as various types of wiring.

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### Electronic Communication (continued)

4. **Visualize.** Demonstrate the form of electromagnetic waves by using a length of rope (simply cycle one end up and down). Explain the difference between frequency and amplitude.

### ASSESS

Have students complete Chapter Test 6. Chapter tests are found in the *ExamView*® Assessment Suite on this Teacher Resource CD-ROM.

### Reteach

1. Using a flashlight, blink the light in a recognizable pattern, such as dot-dot-dot-dash-dash-dash (dot is brief and dash is a twice-as-long flash). Ask students whether this might constitute electronic transmission.
2. Demonstrate someone listening to an MP3 player using a headphone or earphone with a 6-foot wire. Ask if this means that music is being transmitted via an electromagnetic signal. Inquire if anyone can explain how that is happening.

### Enrich

1. Using telecommunication devices is one of your students' favorite pastimes. It is unlikely, however, that more than a tiny percentage of them know how any of those devices function. Telecommunication devices are increasingly becoming "black boxes" whose operating principles, even when taken apart and examined, remain mysterious. Twenty years ago, a curious person could dismantle an electronic gadget and see mostly separate, distinct components—resistors, capacitors, diodes, transistors, etc. The functions of those individual parts could be readily learned. Modern systems, on the other hand, have more and more components integrated into increasingly complex (and tiny) microchips. Students need help in understanding the basics of electricity and electronic theory so that they do not assume that electronics is beyond their comprehension.
2. Discuss the huge variety of careers available in telecommunication and electronics.
3. Ask a volunteer to research the use of telegraph keys in early communication, and then report back to the class.

### REFLECT

Ask the students to consider how their lives might have been different without the electronic communication we take for granted today. How would they go about their day without a cell phone, for example?