

## **HOW DO WE COMMUNICATE?**

**Begin by writing the word “communicate” on the board. Ask students if they can define the word (the process of sharing information). Once you have established the meaning of the word, then distribute copies of the title page. Ask students to identify some ways we communicate. Using both those pictures on the title page and any others the students suggest begin examining the methods used to accomplish this form of communication. Students should be able to come up with methods such as body language and electricity. They may have some problems with waves of energy such as radio waves or infrared. The following demonstrations might help explain that method of communication.**

**If “communicate” means sharing information then students need to understand how this information is sent from one object and received by another. One way to accomplish this would be to show students how a radio controlled vehicle works. After demonstrating the actions of the vehicle ask students to explain how we can control the actions of the vehicle. How do we communicate with it? Point out to students the spot on the control where the signal is sent out and the spot on the vehicle where the signal is received. Ask: What is carrying the message from the control to the vehicle?**

**Another good demonstration to do would be using a television and a remote control. Again demonstrate how it is used and identify the source of the signal and the point on the television that receives the signal. Allow children to use the remote to send a signal to the television to change channels. Next place tape over the receiver on the television and have the children try to use the remote to send a signal to the television. You might use masking tape first and then have students try transparent tape. Did the transparent tape cause a different result? At this point you can explain that the transmitter sends out a signal in the form of a wave. The receiver receives the radio wave and decodes the message.**

**Another possible demonstration for this would be the use of a baby monitor. By placing the monitor in another classroom children can listen to a message being sent to them by a student. Again this works because a transmitter takes a message encodes it onto a sine wave and**

**transmits it with radio waves. The receiver receives the radio waves and decodes the message from the sine wave it receives. Both use antennas to radiate and capture the radio signal. Communication is the sharing of information. Point out to your students how vital that sharing is when an operator on Earth is trying to communicate with an astronaut in space. Discuss how astronauts receive instructions when working on the outside of the International Space Station during a space walk. This would be a good time to view a video showing part of the building of the ISS. A good source would be: [www.nasa.gov](http://www.nasa.gov)**

**Students might also find it helpful to watch the movie Apollo 13 to better understand the importance of radio waves and communication.**