

8 When you talk on the phone, the sound of your voice is not really carried through the wires. What happens is this: When you talk, you set the air into motion. This moving air hits a small piece of metal inside the mouthpiece of the phone and makes it vibrate. The motion of this metal controls the amount of current that goes through the wires. The changing flow of current makes another piece of metal in the receiving end of the phone vibrate. It moves back and forth the same way the first metal plate did. The vibrations are heard by your listener.

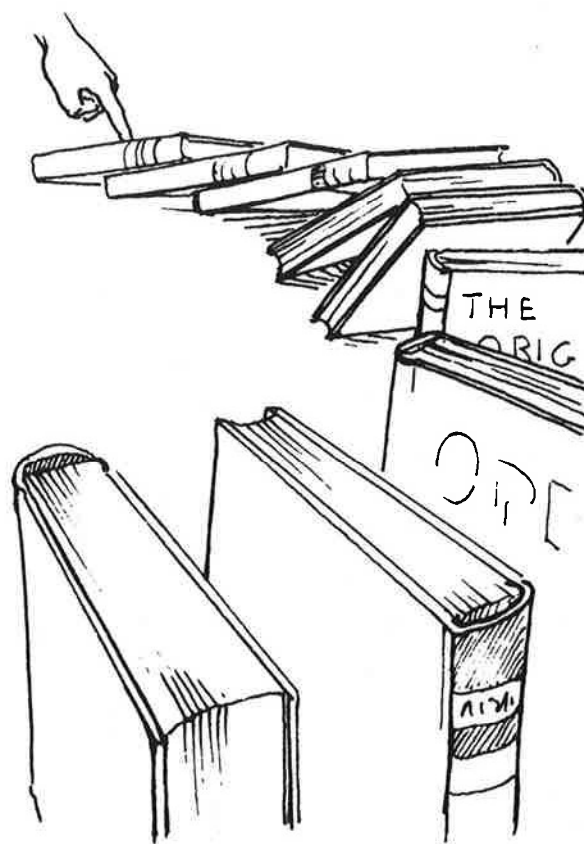
9 How does sound travel? Sound travels in waves of moving air. We cannot see sound waves, but they act much like water waves. After a rain you may have seen puddles on the ground. Perhaps you threw a small rock or pebble into the puddle. You saw ripples or waves form in tiny circles around the spot where the pebble hit the water. They then spread out into ever larger circles until the waves reached the edge of the puddle.

10 Sound waves travel in much the same way through the air. Here is something you can do to show how sound waves travel. Get five or six hard-covered books about the same size. Stand them up in a row so that the front cover of one book is close to the back cover of the book ahead of it.

11 Give a push to the first book. This push will travel from the first book to the next one. It will go down the line until the last book falls. As you will see, you do not push the last book yourself. You push only the first book. But this

push is handed on from the first book down to the last one.

12 It is the same kind of push that makes sound waves travel through the air. The push goes from one speck of air (called a *molecule*) to the next one. It continues until, finally, the air next to your eardrum is pushed into motion. This moving air makes your eardrum vibrate. And you hear something!



13 Vibrations make sound. The vibrations make the air move in waves. The wave finally reaches the eardrum of the listener. Because of these simple facts, you hear many things, such as the voice of a friend, the song of a bird, and the whisper of the wind.

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