Noisy Paper

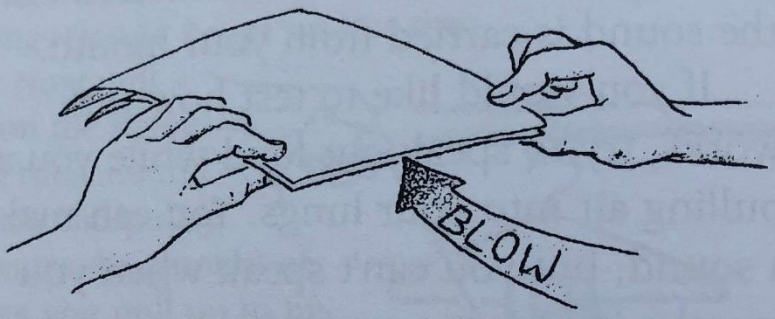
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YOU WILL NEED:
2 sheets of notebook or computer paper

Two sheets of notebook or computer paper make a great noisemaker.

What to do: Hold the two sheets of paper up in front of you. The bottom sheet should stick out toward you about ½ inch (12.5 mm) past the top paper.

They should look like this:



Now blow directly toward the two sheets at the point shown by the arrow.

What happens: The two papers will make a strange, noisy sound.

If you don't get some kind of sound from the papers, move your mouth closer and blow again. When you blow between the two sheets of paper they vibrate rapidly back and forth.

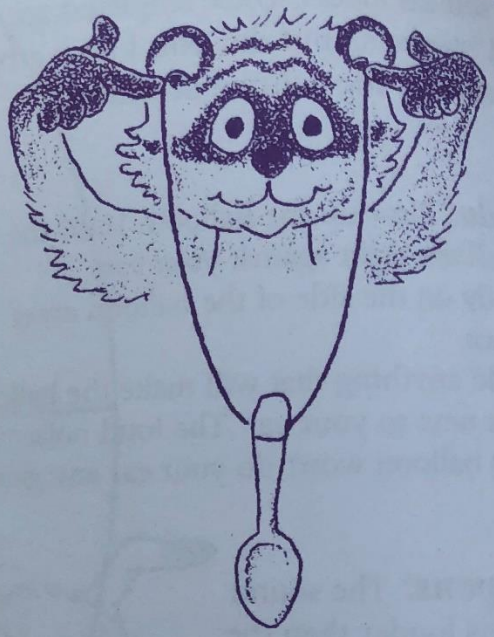
If you still haven't created some sound, adjust the way you hold the papers. Move your fingers closer to your mouth or farther back. Blow harder or less hard. Eventually you'll find the right combination.

Don't blow until you get dizzy. Blow, then rest a few seconds.

Why: When the papers flutter back and forth their vibration creates the sound you hear. Their vibration creates sound waves that your ear picks up.

127 The Spoon That Thinks It's a Bell

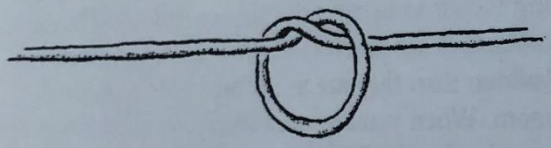
YOU WILL NEED:
scissors
4 foot (1 2 m) length of string
teaspoon
4 feet (12 m) of string



How can a spoon act like a bell? Read on and find out.

What to do: Tie a simple sliding loop in the middle of the string. Do this by simply wrapping one end of the string over the other and pulling the open loop down so that it is halfway between the ends of the string.

Don't tighten the loop into a knot. Leave it open about ½ inch (13 mm) like this:



Slip the handle of the teaspoon through the loop and tighten the loop so the spoon won't slip out. Adjust the spoon so it hangs with the scoop end just a little lower than the handle.

Now press one end of the string against the outside of your right ear and the other string end against the outside of your left ear. Don't put the string into your ear.

Swing the string gently so the scoop of the spoon hits the edge of a table. Listen to the sound you hear.

What happens: By swinging the spoon gently you will hear a sound that is nothing like a spoon striking a table. It's more like a bell, a church bell.

Why: The string conducts the vibration of the spoon. Not only does string carry sound waves better than air, it directs them right into your ear. This accounts for the deep bell-like tone you hear.

128 Big Bells

Repeat the last experiment using a soup spoon and listen to the deeper tone it creates

Then, give your ears a treat, and do the experiment with a serving spoon. Because its greater size its sound is much, much deeper.

129 The Tapping Finger

Do you know how to make even the lightest taps of your finger sound loud?

YOU WILL NEED:
wooden table or desk top
chair

What to do: Sit at the table or desk. Place your ear flat on top like this:



Tap with your finger on the surface of the table about 1 foot (30 cm) away from your ear. Tap hard. Then tap softly.

What happens: The sound of your tapping finger is much louder than when you listen to the same tapping with your head not touching the table. Check right now to be sure this is true.

Why: Sound waves don't only travel through air. They also travel through solids, such as a table or desk. Many solids—like wood—carry sound waves much better than air because the molecules in wood are closer together than the molecules in air. This is the reason your tapping finger sounds louder when you hear it through wood than through air.