

Goofy Ears

These "ears" not only look funny, they sound strange too.

WHAT TO DO

Put the head phones over your ears and hold a funnel in each hand. Listen to sounds around you or have two friends talk into the funnels. What happens if you switch the funnels (hold the right funnel in your left hand and vice-versa) or make one tube longer?

WHAT'S HAPPENING?

Did you ever wonder why you have two ears? Each one is in a different location, so they hear sounds a little differently. We call this stereo-scopic, or just stereo, hearing. Sound waves originating directly in front of you will sound the same in each ear, but if the source is on your left side, the sound waves will reach your left ear a tiny bit sooner than they reach your right ear. They'll also sound just a little louder in your left ear. Your brain can detect this tiny difference and determine that the sound came from your left side. The funnels and tubes attached to the headphones let you more precisely control which sound waves reach each of your ears, allowing you to increase or decrease your stereo hearing sensitivity. You can even switch your ears and really confuse your brain- your eyes tell you a sound is clearly coming from your left side, but you hear it as though it's coming from your right. Similarly, if you stretch the tube to one ear to make it longer than the other it will take more time for sound waves to reach that ear (and the volume will be a little lower), tricking your brain into thinking the source must be on the opposite side.