How to make a **STETHOSCOPE**

**LIST OF MATERIALS**

- 1 OR 2 SMALL FUNNELS (2 PER STETHOSCOPE, SIZE 3 INCHES / 7.6 CM)
- BALLOONS OR PLASTIC WRAP
- SCISSORS
- ELECTRICAL TAPE
- RUBBER BANDS
- CLEAR, FLEXIBLE PLASTIC TUBING (24 INCHES PER STETHOSCOPE)

1. **Cover the top of a funnel with a balloon.**
   a. Cut off the tail end of a balloon, then pull what’s left over the larger opening of a funnel.
   b. Pull the balloon tightly enough so that it is stretched tautly across the funnel like a drum.
   c. You can use any size funnel you want, but a smaller one will be easier to work with. Something around 3 inches (7.6 cm) wide is ideal.
   d. If you can’t get a balloon, or stretch the balloon across the funnel, use a sheet of plastic wrap instead.

2. **Wrap electrical tape around the balloon to hold it in place, if necessary.**
   a. The balloon needs to be held securely across the top of the funnel. If the balloon keeps popping off, wrap a piece of electrical tape around the edge of the balloon.
   b. If you used plastic wrap, you can help hold it in place with a rubber band.
   c. If you don’t have electrical tape, you can cut a strip of duct tape in half so it’s one inch (2.5 cm) wide and use that instead.

Be aware of safety issues while having fun learning about science. Adults should supervise and handle or help with potentially harmful ingredients. Please consider what the appropriate age should be for each activity before conducting the experiment. Abbott shall not be held responsible for any damages, injury, or accident that result from experiments.
3 Stick the end of the funnel into a piece of clear, flexible plastic tubing.
   a. Find some clear, flexible plastic tubing that’s wide enough to fit over the narrow end of the funnel.
   b. Measure and cut 24 inches (61 cm) of the tubing, then stick the narrow end of the funnel into the tubing.
   c. You can buy flexible plastic tubing from hardware stores, garden supply shops and the aquarium section of a pet store.
   d. If the funnel is still loose, secure it to the tubing with a strip of electrical tape.
   e. If the tubing is too small to fit over the end of the funnel, try it the other way around: poke the tubing through the inside of the funnel.

4 Add a second, matching funnel to the other end, if desired.
   a. The stethoscope will still work if you leave the second funnel off. It just depends on what you find more comfortable: holding a funnel over your ear or sticking a piece of tubing into it.
   b. If you choose to use a second funnel, you do not need to cover it with a balloon.

5 Use the stethoscope in a quiet room.
   a. Place the balloon-covered end over your heart (or someone else’s heart), and the other end against your ear.
   b. If you used a second funnel, make sure it is touching your head; if you left the tube as-is, gently stick the end into your ear like an earbud. If the room is quiet enough, you should be able to hear the heart beating.
   c. If you can’t hear the heart, do some jumping jacks for about a minute, then try again. If you’re listening to someone else’s heart, have them do the jumping jacks.
   d. A quiet room is important. Because this is a handmade stethoscope, it’s not very strong or loud so a noisy room will drown out the heartbeat.