

Brownie at Home Making a Better Ear

Supplies

- A loud ticking clock (or [metronome](#) set to 60 bpm).
- Scissors.
- Glue and/or tape.
- Creative materials (whatever you have on hand) such as:
 - Paper plates or bowls.
 - Construction paper.
 - Newspaper.
 - Paper cups.
 - Empty paper towel rolls.
 - String.
 - Pipe cleaners.
 - Empty tin or aluminum cans.
- Measuring tool (tape measure, etc.).

Scientific Concepts

Sound is a kind of energy made by vibrations. When something vibrates, it causes air particles around it to move and bump into each other. This creates sound waves!

When sound waves enter your ear, your ear magnifies the sound waves and turns them into signals your brain can process.

Want to *feel* sound waves? Put your hand on your throat and hum or sing!





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Instructions

1. Have someone else take the ticking clock across the room or down a hallway so that you can't hear it. Then, have them gradually move closer to you. As soon as you hear the clock ticking, tell them to stop and put the clock down at that distance.
2. Measure the distance between you and the clock.
3. Now, with your creative materials, design a pair of ears to wear that will help you hear the ticking of the clock from farther away! Should they be small or large? Long or short? Curved or pointy?
- Experiment!
4. When you are ready to test your ears, have someone take the ticking clock away again. Put your new ears on, close your eyes, and listen.
5. Have the person with the clock move closer to you again. As soon as you hear it ticking, tell them to stop and put the clock down at that distance.
6. Measure the distance! Was it different? Did you hear the ticking sooner? What kinds of animals have ears like the ones you made? Find a photo!

Virtual Troop Meeting Ideas



Photo share. Have your Girl Scouts each share her distance, a photo of her ear design, and a photo of an animal with similar ears. Be mindful that not everyone in your troop may have had access to the same creative supplies.

Text or voice chat. Take this activity a bit further! Discuss why other animals have certain kinds of ears—like why cat ears are pointy, why elephant ears are so big, or why horse ears rotate. How do these unique adaptations help the animal survive? What about ears we can't see as easily, like turtle ears or bird ears?