

Energy and Waves Activity Bag

Ear Puzzle: Student Activity Guide

Have you ever had swimmer's ear? Have you had tubes placed in your ears? Been told to turn down your earbuds? This activity explores how your ears work, how sound travels, and how ear problems happen. First, you will assemble a model of the ear from components using only what you already know. Then, your teacher will give you information about what each ear component does. After that, you get another chance to assemble the model. Last, we will look into common ear problems and try to understand them.

These directions will get you started. Your teacher will be in contact to guide you and provide information.

Materials from the bag

- Ear Puzzle pieces, punch-out
- Ear Puzzle base

Part 1: How Is the Ear Made? *What do you think?*

This part of the lesson is to see what you know without looking anything up. It's ok to be wrong; this is only the first part.

1. Get your Ear Puzzle Base and be sure the Ear Puzzle pieces are punched-out from the pre-cut sheet.
2. This is what you know: sound enters the ear and then somehow gets to the brain.
3. Your challenge: put the pieces together the way YOU think they are arranged inside the ear. Once complete, take a photo to capture your initial ear puzzle.

Part 2: How Does the Ear Work? *Functions of the Ear Parts*

1. Your teacher will provide you with Ear Component Functions, describing what every part of the ear does. Think of these as clues for how your ears might really be made.
2. After you get this information, put your ear puzzle together again. This time, use what you have learned.
3. Record the changes you made and what information led to those changes.
4. When you are pretty sure of your new ear, take a photo to capture it.

Part 3: Final Ear Puzzle

1. Your teacher will show you a complete Ear Puzzle, with all the parts in the correct locations.
2. Assemble your ear according to what you see if you need to. Trace the path of sound through the corrected ear diagram. Consider how the sound travels through each part before getting to the brain and be ready to discuss it.
3. Have you ever had swimmer's ear? Have you had tubes placed in your ears? Why might someone tell you to turn down the volume on your earbuds? Your teacher will provide a document explaining these and other common ear problems. Use your puzzle to identify where and how each problem occurs.