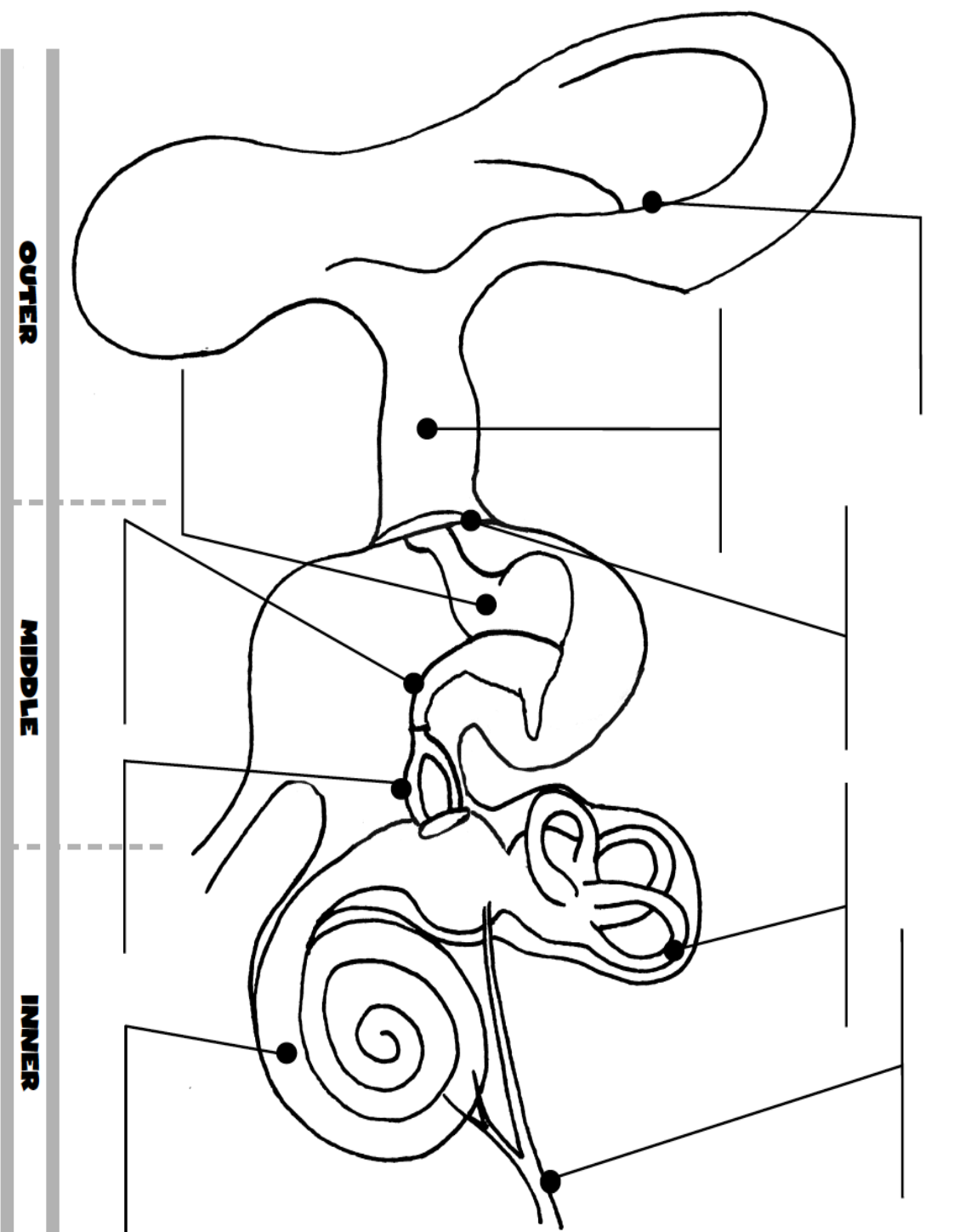


THE PARTS OF THE EAR

Directions: Read through the word list at right, then label the parts of the ear.



Name _____

Parts of the Outer Ear

Pinna: The outside part of the ear on the side of your head. It acts as a funnel to catch sound waves and pass them down the ear canal.

Ear Canal: The tunnel through which sound waves travel to reach the middle parts of the ear.

Parts of the Middle Ear

Eardrum: A membrane, right at the beginning of the middle ear, that is stretched across the ear canal and vibrates when sound hits it.

Hammer: The first of a set of three tiny bones that move when the eardrum vibrates.

Anvil: A tiny bone, which—when touched by the hammer—bumps into the last tiny bone (the stirrup).

Stirrup: When this third tiny bone moves, it presses against the cochlea of the inner ear.

Parts of the Inner Ear

Cochlea: A bony, fluid-filled spiral that receives sound waves when the stirrup presses against it. It translates the waves into something the brain can understand.

Auditory Nerve: This nerve carries the signals of sound waves from the cochlea to the brain.

Bonus: Can you find the **Semicircular Canals**? These are three ducts in the inner ear that control our ears' balance of sound.

Challenge: Make Your Own String Telephone



1. Make a small hole in the bottom of two paper cups or yoghurt pots.
2. Thread one end of a long piece of string through the hole in one cup and tie a knot in the end (with the knot inside the cup).
3. Thread the other end through the hole in the second cup and tie a knot in the end of the string.
4. Give your partner one cup and hold the other cup securely.
5. Walk away from each other until the string is quite taut.
6. Speak (don't shout) into your cup while your partner holds his/her cup to their ear and listens. Finish your message with the word 'Over!'
7. Swap over so that you now hold your cup to your ear, while your partner speaks into their cup, finishing with the word 'Over!'
8. Work through the following questions.

Try repeating your conversation at the same distance apart without the telephone. Is it easier to hear with or without the string telephone?

Can you make your telephone work around a corner?

What happens if you tie a knot in the middle of your piece of string? Why do you think this is?

Jot down the difference in the sound when the string is tight compared to when it is loose.

Undo one knot, cut the string in half, then reattach the second cup. What difference does the shorter string make to the sound?

On the next sheet, draw a labelled diagram of your string telephone and write a short explanation about how it works.

Date:

Focus: I understand that sounds are made when objects vibrate and I can explain that sounds travel through gases, liquids and solids.

String Telephone

Design Technology Challenge

Choice of 3 Challenges

1. Draw and invention for your teacher.

Challenge 10: Draw an invention for your teacher



'Self Organiser' idea by Sarah, age 10, UK
3D model by Matthias Moedl

Little Inventors
Daily Challenge #10

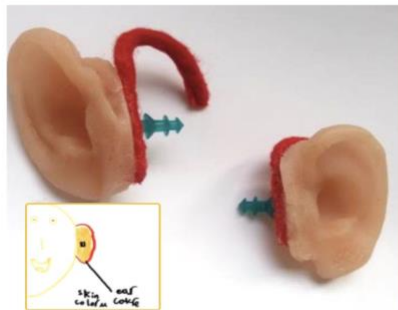
DRAW AN INVENTION
FOR YOUR TEACHER

Share your drawing with a description of what it is.

#timeforcreativity
littleinventors.org

2. Invent something to make the room quiet when you are concentrating. Use your Sound science knowledge.

Little Inventors Challenge 33 : Invent something to make the room quiet when you are concentrating



'Silent ear covers' Emily, Age 7, UK

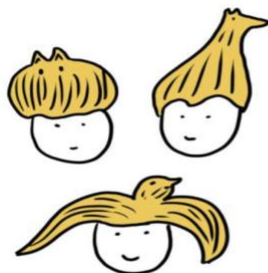
Little Inventors
Daily Challenge #33

INVENT SOMETHING TO MAKE
THE ROOM QUIET WHEN YOU
ARE CONCENTRATING

Share your drawing with a description of what it is.

#timeforcreativity
littleinventors.org

3. Are you in need of a Haircut?



Little Inventors
Daily Challenge #35

DRAW HAIRCUTS IN
THE SHAPE OF ANIMALS

Share your drawing with a description of what it is.

#timeforcreativity
littleinventors.org