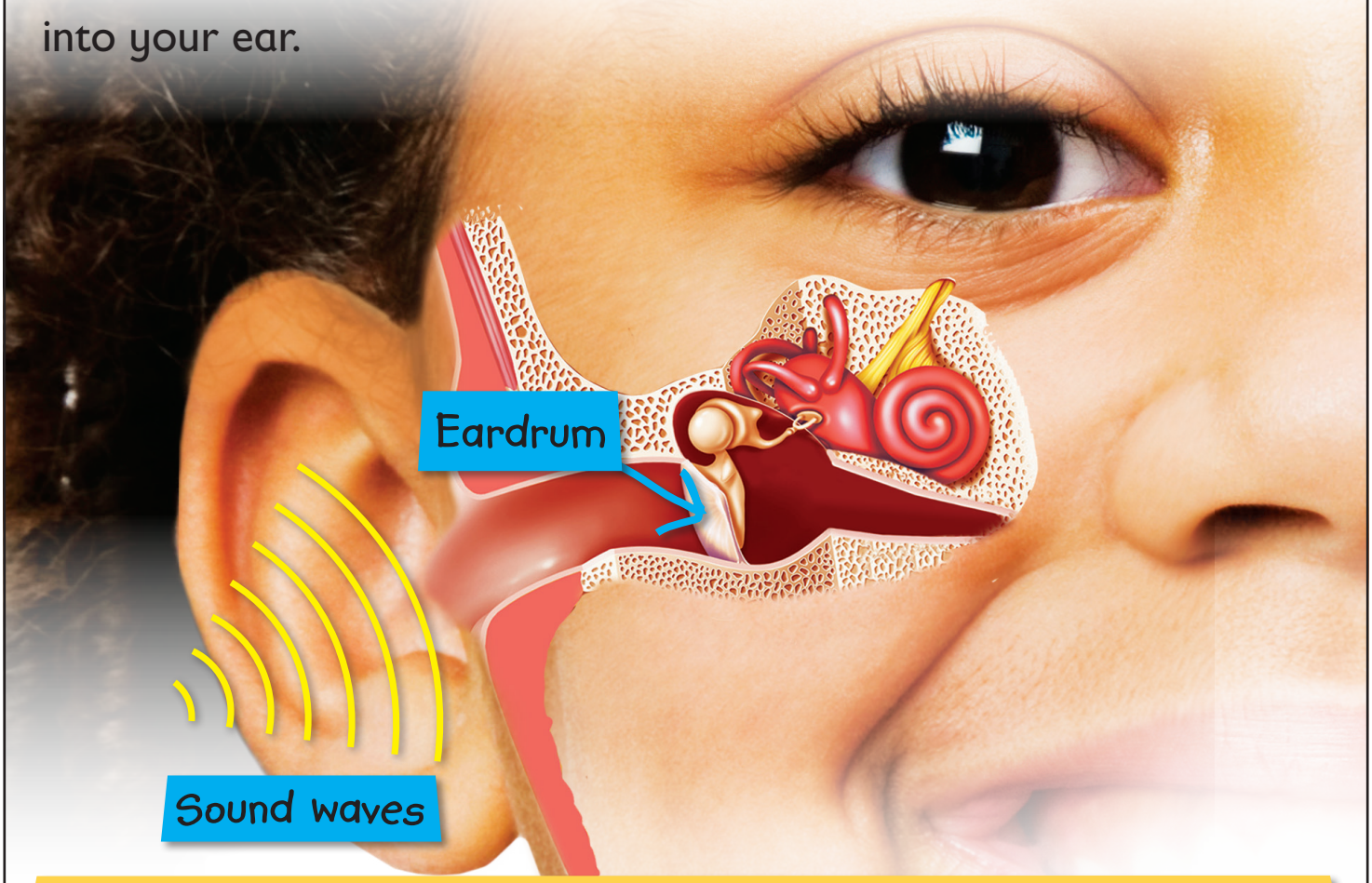
Your Ears and Sound Waves

Sound waves enter your ears and vibrate your eardrums.

Then your eardrums pass the sound waves, or vibrations, deeper into your ear.



Let's investigate sound waves by making a model of an eardrum.

Gather your equipment:


Clingfilm


A small ceramic bowl


A metal saucepan lid


A metal spoon


Some sugar

FUNdamental Science Key Stage 1

Name ..... Date .....

1. Tightly stretch some cling film over the ceramic bowl. This is your model eardrum.
2. Hold the saucepan lid about 15 cm from the model eardrum. Bang the lid with the metal spoon. As you bang the lid, watch the model eardrum.

Banging the lid made sound waves, or vibrations.
Did you see the model eardrum vibrating? Yes ☐ No ☐

3. Now place some sugar on top of the model eardrum.

What do you think will happen to the sugar when you bang the saucepan lid? Write down your ideas.

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Name ..... Date .....

4. Bang the saucepan lid again.

What do you observe happening now? .....

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What do you think made the sugar act as it did?

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When you banged the saucepan lid, you created sound waves, or vibrations. How do you know the sound waves were vibrating the model eardrum? .....

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Answers: Banging the saucepan lid made it vibrate. The vibrations caused the air to vibrate, creating sound waves. The sound waves hit the model eardrum. It wasn't possible to see the eardrum vibrating, though. Once you placed sugar on the cling film, however, you could see the sugar jumping around which proved the cling film (or eardrum) was vibrating. Banging the saucepan lid made your eardrums vibrate, too, which is why you were able to hear the banging noise.