

Science : Sound

Lesson 2: Hearing Sounds

Spring 2: Friday 5th March 2021





Aim

- I can explain how different sounds travel.

Success Criteria

- I can describe how vibrations make sounds.
- I can explain how vibrations change when a sound gets louder.
- I can explain how loud and quiet sounds travel to our ears.

Vibrations

Sounds are made when something vibrates.

What do you think is vibrating in each of these pictures to make a sound?

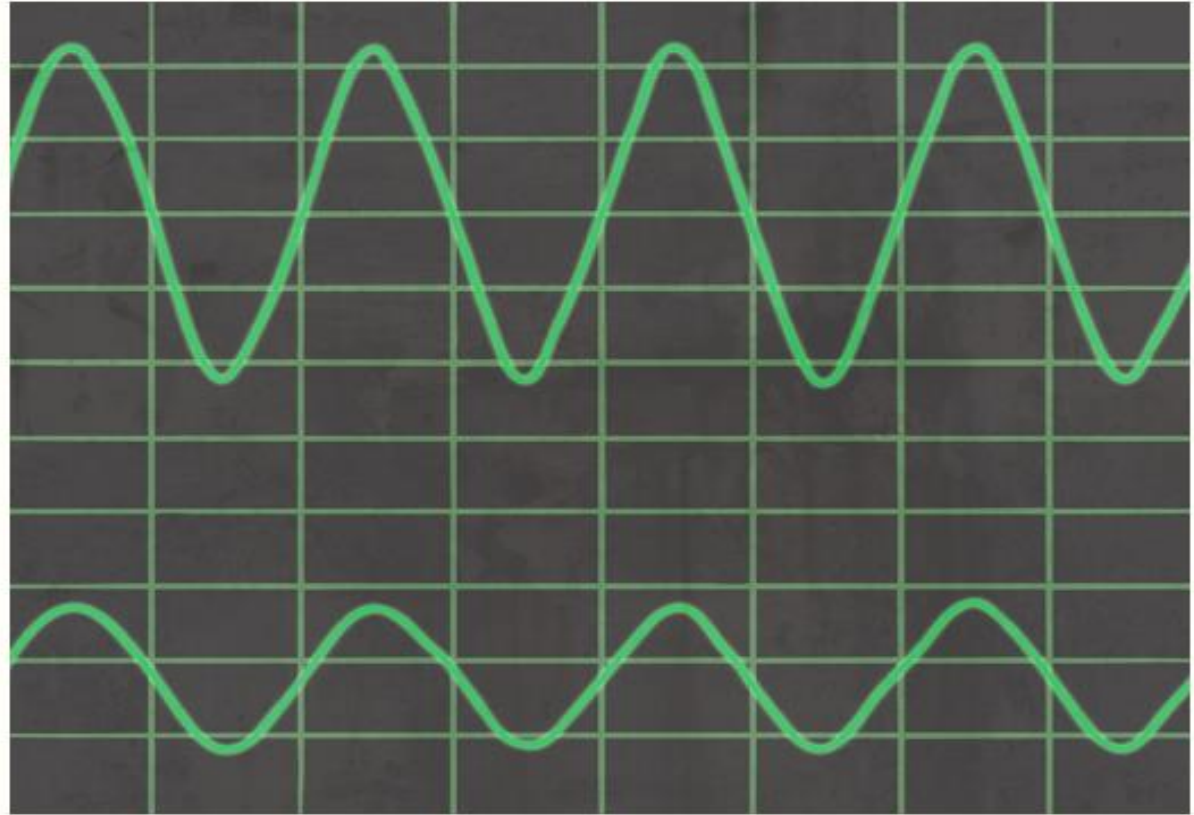


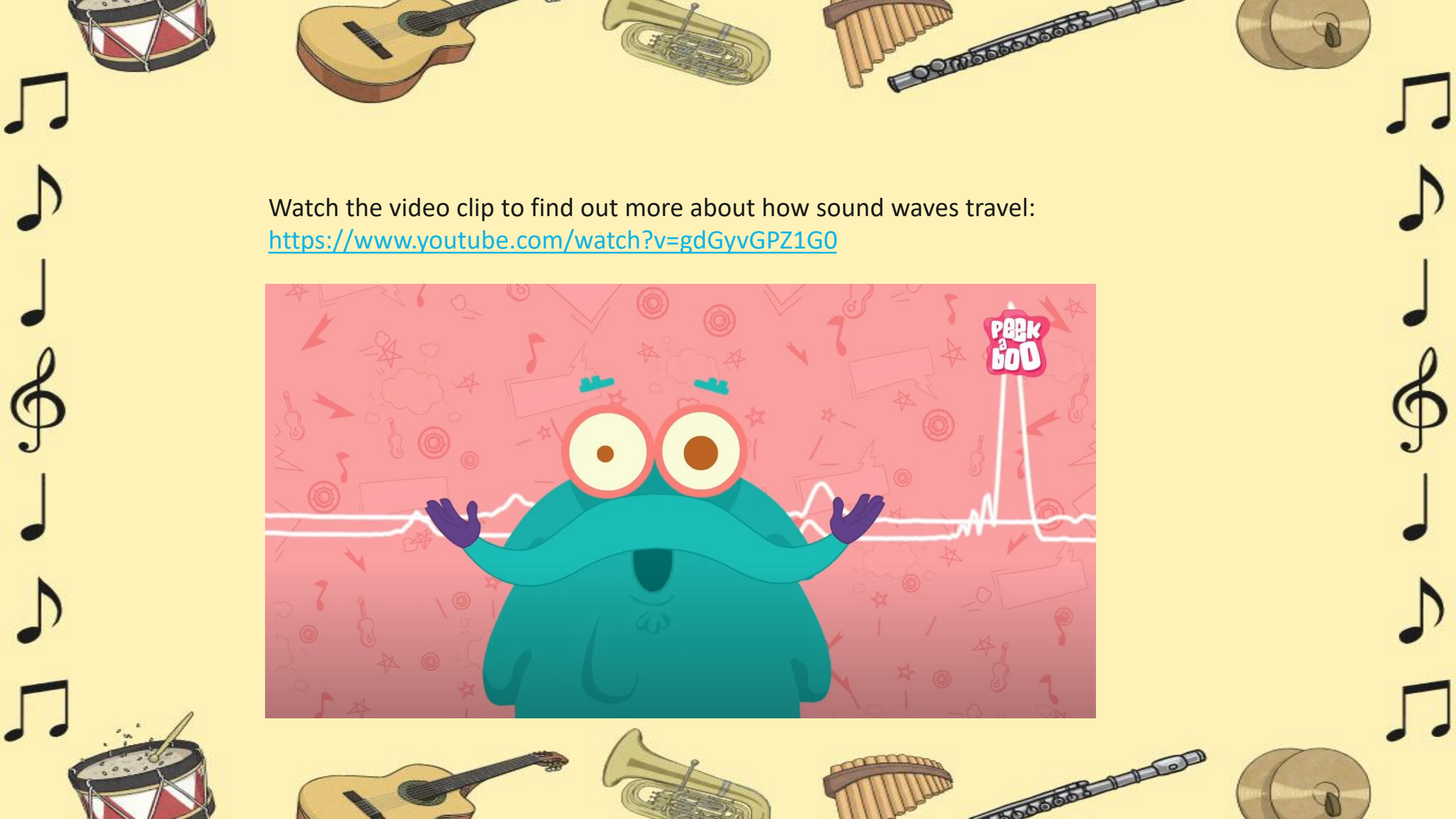
Loud and Quiet

The louder the sound, the bigger the vibration. You should have noticed that the rice grains vibrated more when you hit the drum harder, creating a louder sound.

The size of the vibration is called the amplitude.

Quieter sounds have a smaller amplitude, and louder sounds have a bigger amplitude.





Watch the video clip to find out more about how sound waves travel:

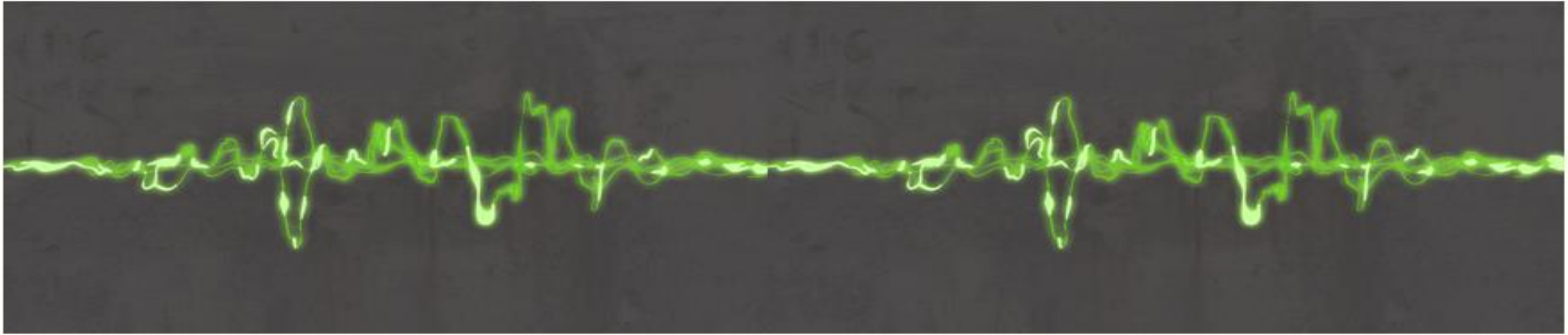
<https://www.youtube.com/watch?v=gdGyvGPZ1G0>



How Does Sound Travel?

Sound can travel through solids, liquids and gases.

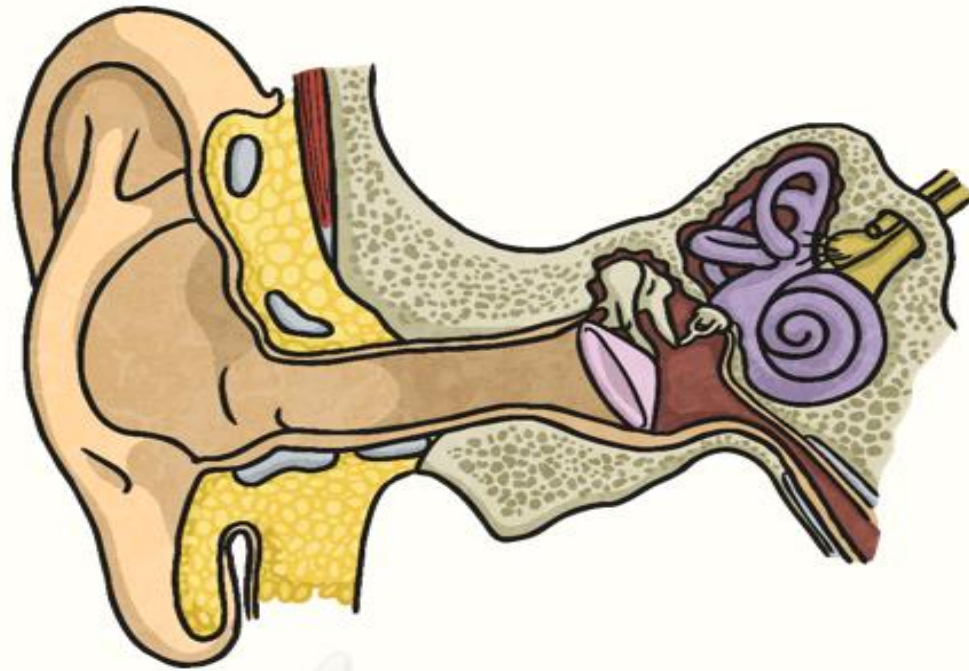
Sound travels as a wave, vibrating the particles in the medium it is travelling in.



So when you hit a drum, the drum skin vibrates. This makes the air particles closest to the drum start to vibrate as well. The vibrations then pass to the next air particle, then the next, then the next. This carries on until the air particles closest to your ear vibrate, passing the vibrations into your ear.

Hearing Sounds

Once in your ear, the vibrations travel into the ear canal until they reach the eardrum. The eardrum passes the vibrations through the middle ear bones (the hammer, the anvil and the stirrup) into the inner ear. The inner ear is shaped like a snail and is called the cochlea. Inside the cochlea, there are thousands of tiny hair cells. Hair cells change the vibrations into electrical signals that are sent to the brain through the hearing nerve. The brain tells you that you are hearing a sound and what that sound is.



How Sound Travels

Your Task: You have been asked to create an educational programme for children to explain how different sounds travel to your ears. The producers of the programme want you to explain the link between the loudness of a sound and the size of the vibrations, and explain how these reach your ears. Make sure your explanations are clear, you can use diagrams to help explain what you are saying.

1. Introduce yourselves and tell the audience what the programme will be about.

Hello and welcome to The Science of Sound! In this episode we will be...

2. Explain the link between loud and quiet sounds and the size of the vibrations.

Sounds are made by vibrations. Loud sounds...

3. Explain how sound travels from a sound source to our ears.

The vibrations that make the sound travel to our ears. The vibrations...

4. Give your audience any more information you think they need to know, then thank them for watching.

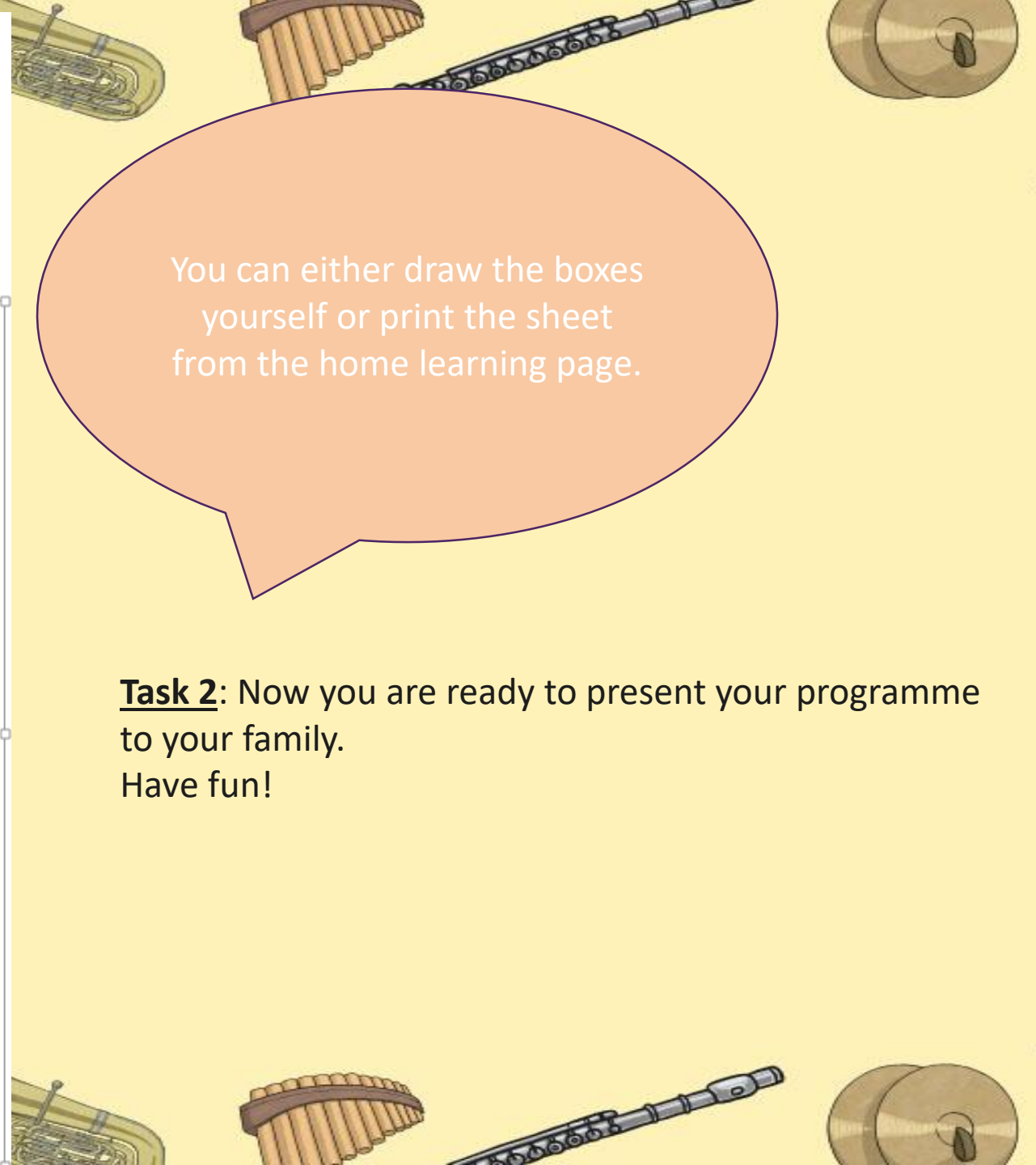
Thank you for watching The Science of Sound! We hope...

You may want to use these words to help you:

sound small air particles ear hear
big source travel loud quiet vibration

You can either draw the boxes yourself or print the sheet from the home learning page.

Task 2: Now you are ready to present your programme to your family.
Have fun!





Well Done Year 4!

