Balloon Speakers

Using a balloon to amplify sound

Subject(s): Science

Approx time: 20 - 30 minutes

Key words / Topics:
- Air
- Amplify
- Balloon
- Pressure
- Sound
- Speakers
- Sellotape
- Vibrations

Suggested Learning Outcomes

- To know that vibrations from sounds travel through a medium (the balloon) to the ear.
- To use a balloon as a simple speaker and explain how it works.
- To understand how pushing air closely together affects the volume of sound travelling through it.

Introduction

Speakers are used to make sure sounds are clear and easy for us to hear. They are used everywhere from music players to phones. In this activity you will find out how they work!

Purpose of this activity

In this activity you will investigate how a balloon can be used as a simple speaker. You can blow up a balloon, tap it and listen to how the sounds travel through it.

Sounds are made when objects vibrate. The vibrations enter your ear and you hear them as sound. This is a great way to start thinking about the concept of sound and how it travels.

Blowing up the balloon

Tying the end of a balloon can be tricky. If you struggle to do this, it is sufficient for the purposes of the experiment to simply hold the end so that the air does not escape. Or ask for help, of course.

Turning the balloon into a speaker and testing it

Next, sellotape the filled and knotted balloon to a flat surface and with your ear to the balloon tap gently, then slightly harder. You should hear the sound of the tapping loudly and clearly through the balloon. You should also feel the vibrations from the sound as it moves through the balloon.

Repeat the experiment with balloons of different sizes. How does this affect how the balloon speaker works? Why does this happen?

Bitesize - Sound and vibration: Comprehensive set of learner guides

https://www.bbc.co.uk/bitesize/topics/zgffr82