

St Bernard's Catholic Primary School- Science

Topic: Sound and Vibration

Year 4

Strand- Physics

What will I know by the end of the unit?

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| What is a sound? | A thing that can be heard. The object that makes the sound is called the source. |
| How is a sound made? | <ul style="list-style-type: none"> • When objects vibrate, a sound is made. • The vibration makes the air around the object vibrate and the air vibrations enter your ear. These are called sound waves. • If an object is making a sound, a part of it is vibrating, even if you cannot see the vibrations. |
| How do sounds travel? | <ul style="list-style-type: none"> • Sound waves travel through a medium (such as air, water, glass, stone, and brick). • For example, if somebody is playing music in the room next door, the sound can travel through the bricks in the wall. |
| How do we hear sounds? | <ul style="list-style-type: none"> • When an object vibrates, the air around it vibrates too. This vibrating air can also be known as sound waves. • The sound waves travel to the ear and make the eardrums vibrate. • Messages are sent to the brain which recognises the vibrations as sounds. |
| How do sounds change? | <p><u>Pitch:</u></p> <ul style="list-style-type: none"> • The pitch of a sound is how high or low it is. • A squeak of mouse has a high pitch. • A roar of a lion has a low pitch. <p><u>Volume:</u></p> <ul style="list-style-type: none"> • The volume of a sound is how loud or quiet it is. • When a sound is created by a little amount of energy, a weak sound wave is created which doesn't travel far. This makes a quiet sound. • A small tap of a hammer is used with small amounts of energy and so creates a quiet noise. • A vibration with lots of energy makes a powerful sound wave and therefore a loud sound. • A powerful, smashing tap of a hammer is used with lots of energy and so creates a loud noise |
| How do we measure sound? | <ul style="list-style-type: none"> • Amplitude measures how strong a sound wave is. • Decibels measure how loud a sound is. • Frequency measures the number of times per second that the sound wave cycles. |

What should I already know?

- Hearing is one of my five senses.
- Sounds can be combined using musical instruments.

Vocabulary

- **Amplitude**- a measure of the strength of a sound wave
- **Decibel**- a measure of how loud a sound is
- **Frequency**- a measure of how many times per second the sound wave cycles
- **Pitch**- how high or low a sound is
- **Sound Waves**- invisible waves that travel through air, water, and solid objects as vibrations
- **Vibrations**- invisible waves that move quickly
- **Volume**- how loud or quiet a sound is

Investigate

- Make musical instruments using different length strings. How do their pitches differ?
- Fill identical jars with different volumes of water. Which makes the highest pitch?

Working Scientifically

- Ask relevant questions
- Compare fair tests
- Make careful observations
- Report on findings of investigations and draw conclusions
- Use evidence to answer questions

