

Lesson 1: Pass It On

Objects have been invented that help us send a message a long distance.

Students define the problem of how to send a message a long distance. They organize objects that send messages into objects that send a message a short distance and objects that can send a message a long distance.

Lesson 2: Zoo Game

A pattern of sounds can be used to send a message without speaking.

Students design a solution to the problem of sending a message a short distance without speaking. They use a pattern of drum beats to help a zookeeper to feed the animals in a simple board game.

Lesson 3: Science of Sound

Sound is caused by vibration.

Students ask questions about what causes sound. They plan and carry out an investigation to answer this question.

Lesson 4: Good Vibrations

Sound is caused by a vibration.

Students complete their investigation into what causes sound. They use patterns of movement in objects that make sound to argue from evidence that sound is caused by vibration.

Lesson 5: Sound of Music

Music is caused by vibration.

Students read texts on drums and banjos. They collect evidence from the texts to build a claim that music is caused by part of an instrument vibrating.

Lesson 6: Kazoo Kraziness

Different solutions need to be tested to see which one best solves the problem.

Students carry out research into parts of a kazoo. They plan and carry out an investigation to test different kazoo parts and argue from evidence which materials make the best kazoo sound.

Lesson 7: Make it Jump

Sound causes vibration.

Students use their kazoo to observe that sound causes vibration. They plan and carry out an investigation to answer the questions: Does sound cause vibration?

Lesson 8: Hear, Hear

We hear by sound causing our eardrum to vibrate.

Students discuss how they can hear a struck tuning fork with their hand covering their ear. They obtain evidence from a text to construct an explanation for what causes us to hear sound.

Design Challenge

Lesson 9: Help Hopper Cross the River Part 1

Different solutions need to be tested to see which one best solves the problem.

Students carry out research into parts of a banjo. They build a banjo by testing different banjo parts and argue with evidence which materials make the best banjo sound.

Lesson 10: Help Hopper Cross the River Part 2

A pattern of sounds can be used to send a message without speaking.

Students design a code that can be used to solve a problem. They use their banjo to send a message a short distance using a pattern of sound.