

Sound Energy Scavenger Hunt Activity

Materials:

- Sound energy questions worksheet (pages 2-3)
- 18 sound energy fact cards (pages 4-8)
- scissors and scotch tape

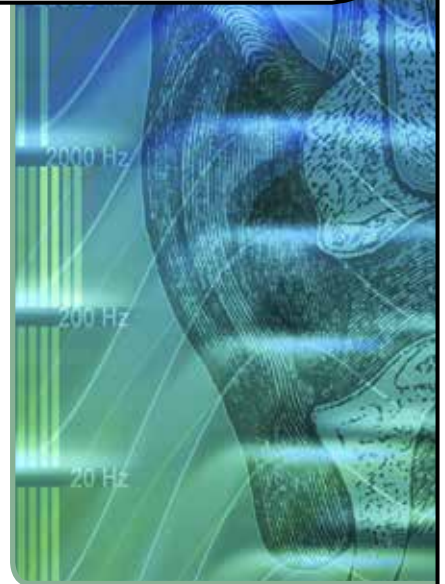
Preparation

Print the fact cards and cut them apart.

Make copies of the sound energy questions worksheet (2-sided). Each student will need his or her own copy.

Hide the 18 sound energy fact cards around your classroom where students will be able to find them.

You can put them on the back of your classroom door, on chairs, on the computer keyboard, on the sides of student desks, or wherever you like.



Activity



Preview

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Don't be afraid to hide the facts in tough places. Kids think it's more fun when they have to search around a little.

Examples of good hiding spots might include:

- sticking out of a book, like a bookmark
- the back of the classroom door
- laying flat on the bookshelf
- on the back of the teacher's chair
- on the side of your computer monitor

Have a plan for students who finish early. You may want to have an assignment for them to complete when they're done, or you may have them help other students find fact cards.

Sound Energy Scavenger Hunt

Fact Card 1: What are vibrations?

Fact Card 2: Sound energy cannot travel through...

Fact Card 3: Does sound travel faster through air or water?

Fact Card 4: Can most passenger planes fly faster than the speed of sound?



Preview
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Fact Card 7: What is the approximate speed of sound in dry air?

Fact Card 8: What units are used to measure the volume of sound?

Fact Card 9: Humans can detect sound vibrations with their ears and their...

Sound Energy Scavenger Hunt

Fact Card 10: Your ear has nerves that sends sound signals to...

Fact Card 11: A human being can hear sounds with frequencies between...

Fact Card 12: Most children can hear sounds up to 20,000 Hz. A 50-year-old can typically hear sounds up to...

Fact Card 13: Underwater, dolphins can hear sounds that are over ____ away?



Preview

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the printable version of this worksheet.

Fact Card 16: If you put your fingers on your throat and sing a song, you can feel vibrations created by your...

Fact Card 17: An echo is created when...

Fact Card 18: Name two objects that absorb sound.



Scavenger Hunt

Sound Energy

Fact Card

1

Sound comes from vibrations. Vibrations are back-and-forth movements in molecules of air or other matter. A sound wave is created when molecules bump into each other and form a wave.

Scavenger Hunt

Sound Energy

Fact Card

2



Sound energy can travel through any type of matter (solids, liquids, and gases). It cannot travel through areas that don't have matter, such as outer space.



Preview

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When sound travels through water it moves four times faster than when it travels through air.



Some airplanes can travel faster than the speed of sound. When this happens, you can see an airplane flying silently overhead, and you'll hear a booming sound afterwards.

Most passenger planes cannot travel this fast, but some fighter jets can.



Scavenger Hunt

Sound Energy

Fact Card

5



Sound travels more slowly than light energy. If you watch the sky during a thunderstorm, you may see a bolt of lightning in the distance. You'll hear the sound thunder a few seconds afterwards.

Scavenger Hunt

Sound Energy

Fact Card

6



Frequency is the number of vibrations per second a sound wave gives off. Frequency is measured in units called hertz (Hz).



Preview

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In dry air, sound can travel at a speed of about 767 miles per hour (1,235 kilometers per hour).

The speed of sound can change depending on the temperature and moisture of the air.



Sound volume is measured in units called decibels.

A whisper is about 15 decibels.

A jet airplane is about 150 decibels.

Sounds over 85 decibels can harm your ears.



Scavenger Hunt

Sound Energy

Fact Card

9

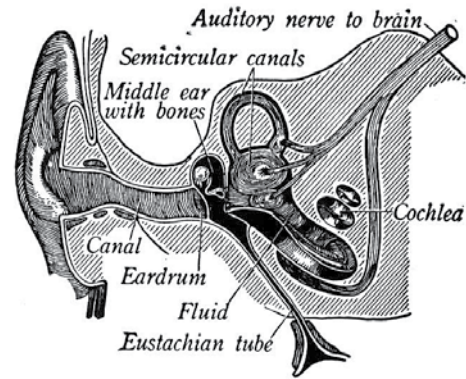
Humans can detect sounds with their ears, of course. But many times we can feel the vibrations of loud sounds with our skin too.

Scavenger Hunt

Sound Energy

Fact Card

10



The inside of your ear vibrates when it detects sounds. The ear has nerves that send the sound signals to the brain.



Preview

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Humans can hear sounds that have frequencies between 20 and 20,000 vibrations per second (Hz).

Dogs can hear up to 50,000 Hz.

Cats can hear sounds up to 77,000 Hz



Young people can hear higher frequency sounds than older people.

Children under 10 years old can usually hear sounds up to 20,000 Hz (vibrations per second).

Teenagers can hear sounds up to 17,500 Hz.

A 50-year-old can hear sounds up to about 12,000 Hz.



Scavenger Hunt

Sound Energy

Fact Card

13



Underwater, dolphins can hear sounds from over 15 miles (24 kilometers) away.

Scavenger Hunt

Sound Energy

Fact Card

14



Wind itself does not have a sound. You can only hear wind when it blows against other objects.



Preview

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The loudest natural sound ever observed on earth came from a volcano eruption in 1883. The sound could be heard by people 4,000 miles (6,437 kilometers) away.

If you put your fingers on your throat and sing a song, you can feel the vibrations created by your vocal chords.



Scavenger Hunt

Sound Energy

Fact Card

17

An echo is created when sound waves travel a long distance and then bounce off an object and back to your ear.

Scavenger Hunt

Sound Energy

Fact Card

18



Sound bounces off of some solid objects, such as stone or hardwood.

Other solid objects, like cloth or foam, absorb sound.



Preview

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Sound Energy Scavenger Hunt

Fact Card 1: What are vibrations?
back-and-forth movements in molecules or air or other matter

Fact Card 2: Sound energy cannot travel through...
areas that don't have matter, such as outer space

Fact Card 3: Does sound travel faster through air or water?
water

Fact Card 4: Can most passenger planes fly faster than the speed of sound?
No. (But some fighter jets can.)



Preview
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Fact Card 7: What is the approximate speed of sound in dry air?
767 miles per hour (1,235 kilometers per hour)

Fact Card 8: What units are used to measure the volume of sound?
decibels

Fact Card 9: Humans can detect sound vibrations with their ears and their...
skin

Sound Energy Scavenger Hunt

Fact Card 10: Your ear has nerves that sends sound signals to...
your brain

Fact Card 11: A human being can hear sounds with frequencies between...
20 and 20,000 vibrations per second (Hz)

Fact Card 12: Most children can hear sounds up to 20,000 Hz. A 50-year-old can typically hear sounds up to...
12,000 Hz

Fact Card 13: Underwater, dolphins can hear sounds that are over ____ away?
15 miles (24 kilometers)



Preview
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Fact Card 16: If you put your fingers on your throat and sing a song, you can feel vibrations created by your...
vocal chords

Fact Card 17: An echo is created when...
sound waves travel a long distance and then bounce off an object and back to your ear

Fact Card 18: Name two objects that absorb sound.
cloth and foam