SCIENCE

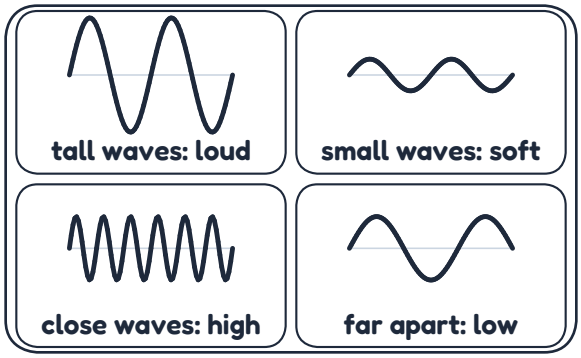
Sound and waves

Name _____ Date _____

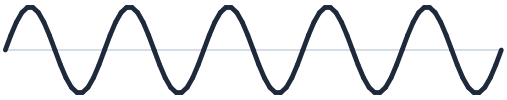
I can explain how waves make sounds loud, soft, high and low.

1 How it works

Sound is made when something vibrates, or moves back and forth very fast. The vibrations travel as waves through air, water and solids to your ears. Taller waves carry more energy and sound louder. Waves that are closer together sound higher; waves that are farther apart sound lower. Sound cannot travel through empty space.



2 Read each wave. Circle loud or soft, then high or low.

1. 
loud soft high low

2. 
loud soft high low

3. 
loud soft high low

4. 
loud soft high low

How did I do? ☆ ☆ ☆

Scan for more free practice

High and low sounds

Name _____ Date _____

I can compare high and low sounds.

1 Which sound is higher? Circle it.

1. a big drum / a small whistle
2. a mouse squeak / a lion roar
3. a short guitar string / a long guitar string
4. a tuba / a flute

2 Fill in the blanks

Use the words in the box.

vibrations | solids | loud | high

1. Sound is made by _____.
2. Tall waves make _____ sounds.
3. Waves close together sound _____.
4. Sound travels through air, water and _____.

How did I do? ☆ ☆ ☆

Scan for more free practice

Think like a scientist

Name _____ Date _____

I can explain how waves make sounds loud, soft, high and low.

1 Think about it

1. Why can you hear through a wall? _____
2. What makes a sound louder? _____
3. Why does a whistle sound high? _____
4. Can sound travel in space? _____

2 True or false? Circle it.

1. A short string makes a higher sound.	true	false
2. A soft sound has tall waves.	true	false
3. Sound travels through empty space.	true	false
4. Sound is made by vibrations.	true	false
5. Sound can travel through water.	true	false

3 Draw the waves for a whisper and for a shout. Label each one.

How did I do? ☆ ☆ ☆

Scan for more free practice

Try it: the rubber band guitar

Name _____ Date _____

I can test how a string changes pitch.

1 You need

- an empty shoebox
- 3 rubber bands, thin to thick
- a pencil
- your fingers to pluck
- a partner to listen

2 What to do

1. Stretch the 3 rubber bands around the open box.
2. Pluck each band. Listen: high or low?
3. Slide a pencil under the bands to make them shorter, and pluck again.
4. Pluck gently, then harder. Listen: loud or soft?

3 I predict

Which rubber band will make the highest sound?

_____

_____

4 What I see

Rubber band	High or low?	Loud or soft?
thin		
medium		
thick		

How did I do? ☆ ☆ ☆

Scan for more free practice

FOR TEACHERS AND PARENTS

Answer key: sound and waves

1 Page 1

Waves: 1) loud, high; 2) soft, low; 3) loud, low; 4) soft, high.

2 Page 2

Higher: 1) a small whistle; 2) a mouse squeak; 3) a short guitar string; 4) a flute.

Blanks: 1) vibrations; 2) loud; 3) high; 4) solids.

3 Page 3

Think: 1) Sound travels through solids; 2) Bigger vibrations; 3) It vibrates very fast; 4) No, there is no air to carry it.

True or false: 1) true; 2) false; 3) false; 4) true; 5) true.

Drawing: the whisper has small waves and the shout has tall waves.

4 Page 4: Try it!

The thin band makes the highest sound and the thick band the lowest, because thin bands vibrate faster. Making a band shorter with the pencil also raises the pitch. Plucking harder makes bigger vibrations, so the sound is louder but not higher.

5 Teaching tip

Have children put a hand on their throat and hum high, then low, then loud. They feel the vibration change, which makes the wave pictures make sense.

Safety: stretch the bands gently and keep them away from faces and eyes.

Scan for more free practice