

How Sound and Light Travel in Waves

READ ALOUD PASSAGE

Sound travels as a wave. As it moves, the particles of the material it travels through push back and forth in the same direction as the wave. Scientists call this a longitudinal wave. Sound needs a medium, a solid, a liquid, or a gas, to travel through. Without particles to carry it, sound has nothing to push against.

Sound usually travels fastest through solids, slower through liquids, and slowest through gases, because the closer together the particles are, the faster they can pass energy to each other. In a vacuum, like outer space, there are no particles at all, so sound cannot travel. If something exploded in space, it would be completely silent. Light also travels in waves, but light waves work differently. A light wave is a transverse wave, and unlike sound, light does not need a medium.

Light can travel through empty space. Light travels far faster than sound. That is why you see a flash of lightning before you hear the thunder that came from the same bolt. The light reaches your eyes almost instantly, while the sound takes much longer to arrive.

Activity 1: Word Hunt

Look back at the reading. Find four nouns and write them on the lines.

1. _____
2. _____
3. _____
4. _____

Activity 2: Brainstorm Details

Read the topic sentence. Write four key words or phrases that could support it. Do not write full sentences.

TOPIC SENTENCE

Sound and light travel in different ways.

Key words and phrases:

- _____
- _____
- _____
- _____

Activity 3: Write the Topic Sentence

Read the details. Write one topic sentence that tells what all of them are about.

DETAILS

- solids: fastest
- liquids: slower
- gases: slowest
- vacuum: no sound at all

Your topic sentence:

Activity 4: Sentence Scramble

These words are mixed up. Put them in order to make a sentence. Start with a capital letter and end with a period.

1. sound / as / travels / wave / a

2. scientists / a / wave / call / longitudinal / this
