# Find the Shake You Can Hear

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| **Teacher** | | **Class** | Year 4 |
| **Subject** | Science | **Topic** | How sounds are made |
| **Date** | | **Room** | |
| **Lesson length** | 60 minutes | **Country** | United Kingdom |

Pupils learn that every sound starts with something vibrating. They watch, feel and draw what shook to make drum, bell and clap sounds.

## Curriculum links

- I can identify how sounds are made, associating some of them with something vibrating [1]

## Learning objectives

- Students will identify how sounds are made by something vibrating.
- Students will label the vibrating part that made a sound.

## Success criteria

- I can say what vibrated to make a drum, bell or clap sound.
- I can label the shaking part on my drawing.

## What students already know

Clap once and ask: Where did that sound come from and what moved? Take two quick ideas to hear if pupils link sound to movement.

## Key words

| | |
|---|---|
| **vibrate** | to shake very quickly back and forth [3] |
| **vibration** | the fast shaking that starts a sound [3][5] |
| **sound** | what you hear when something shakes fast [5] |
| **source** | the place or thing where a sound starts [5] |

## Materials

- drum
- bell
- paper
- coloured pencils
- printed outlines of a drum, bell and hands
- Slides 1-4, 6, 10-11
- Video clip 3 (0:00-3:21)
- Worksheet Task A (page 1), one copy per pupil
- Worksheet Task E (page 5), one copy per pupil
- mini whiteboards and pens

## Before the lesson

- Print Worksheet Task A and Task E, one of each per pupil, plus spare outlines of a drum, bell and hands.
- Test Video clip 3 (0:00-3:21) on the slide with sound and subtitles.
- Set out the drum, bell, paper and coloured pencils where all pupils can see.
- Clear table space so pairs can watch, draw and label.

## Lesson outline

**0–5 min** **Starter** 5 min · Whole class

*Hook pupils and recall that sounds must come from somewhere.*

**YOU DO**

1. Show the title and drum photo and explain that a drum skin moves up and down very fast after it is hit [5].
2. Use the hook and ask how we could draw an invisible sound.
3. Clap once loudly, then hold hands still and explain that when you clap your hands, the air around your hands shakes [3].
4. Tell pupils their job today is to find the shake you can hear in every sound.

**STUDENTS DO**

1. Look at the drum photo and listen to the clap.
2. Turn to a partner and suggest what shook when hands clapped.
3. Share one idea with the class.

**Say:** Sounds are invisible, so how could we draw one? Let us draw the wobble. Clap with me once. Something shook to make that sound, and today we will find the shake you can hear every time.

**Ask:** What did you hear when I clapped? (A short clap sound.) · What do you think shook to make that clap? (Hands meeting and the air around the hands shaking.)

**Check understanding:** Ask for thumbs up if they think something moved to make the clap. If many are unsure, clap again slowly and point out hands meeting.

**Support:** Let pupils clap softly together and copy the hand movement so all can see the shake. **Stretch:** Ask pupils to predict what they would see in slow motion around clapping hands.

Use: Slides 1-2

5–15 min **Teaching** 10 min · Whole class

*Explain that every sound starts with something vibrating.*

**YOU DO**

1. Show the key words and read vibrate, vibration, sound and source with the class.
2. Model a slow clap and explain that vibrating means shaking quickly backwards and forwards [3].
3. Tap the drum and point to the skin wobbling, explaining that when a person hits a drum the object vibrates [5].
4. Ring the bell and hold it up shaking, explaining that all sounds are made by vibrations of molecules [5].

**STUDENTS DO**

1. Say the key words and mime shaking quickly back and forth.
2. Watch the drum and bell and point to the part that wobbles.
3. Copy the clap and say what shook.

**Say:** Every sound starts with something vibrating [5]. Vibrating means shaking quickly backwards and forwards [3]. When we clap, our hands make the air around them shake [3], and that shaking is what we hear as sound.

**Worked example:** I clap my hands. Step 1: my hands move fast together and apart. Step 2: the air around my hands shakes [3]. Step 3: we hear the clap, so the vibration made the sound [5]. No shake would mean no sound.

**Ask:** What does vibrating mean? (Shaking very quickly back and forth.) · What vibrated when I hit the drum? (The drum skin wobbled up and down fast.) · What makes all sounds? (Vibrations, something shaking fast.)

**Check understanding:** Pupils show on mini whiteboards the word vibrate or still for clap with hands moving and hands still. Re-model the wobble if many choose still.

**Support:** Say vibrate and shake together while doing a hand wobble so pupils link word and action. **Stretch:** Ask pupils to explain what would happen to the sound if the bell was held still.

Use: Slides 3-4

15–25 min **Guided practice** 10 min · Whole class

*See that shaking and sound start together in different makers.*

**YOU DO**

1. Play the video and pause when each maker sounds to ask what shook.
2. Point out that these vibrations make air molecules move [5].
3. Hand out Task A and read the instructions together.
4. Model the first speech bubble by naming what vibrated and writing a short answer.

**STUDENTS DO**

1. Watch the video and call out the shaking part each time.
2. Read the speech bubbles in Task A with a partner.
3. Write a short answer to show what is vibrating.

**Say:** Watch what shakes each time a sound starts. Listen for how shaking and sound start together. Then we will read the speech bubbles and write what is vibrating for each sound maker.

**Worked example:** On the video a drum is hit. Step 1: I see the skin wobble. Step 2: I hear the boom at the same time. Step 3: I write that the drum skin vibrated to make the sound [5].

**Ask:** What shook at the same time as the sound started? (The sound maker, for example the drum skin or string.) · How does the shake reach our ears? (Vibrations make the air move towards us.)

**Check understanding:** Collect three Task A answers and check pupils named the maker that shook. Model one more if answers name the sound but not the vibrating part.

**Support:** Work in pairs and give the sentence starter I think the ___ vibrated because ___. **Stretch:** Ask pupils to say how they could stop the sound by stopping the vibration, such as holding the maker still.

Use: Video clip 3 (0:00-3:21), Slide 6, Worksheet Task A

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25–45 min **Main activity** 20 min · On their own

*Draw and label the vibrating part for three everyday sounds.*

**YOU DO**

1. Tap the drum, ring the bell and clap in turn, pausing so pupils see each wobble.
2. Explain that when a person hits a drum or a cymbal the object vibrates [5] and vibrating means to shake quickly back and forth [3].
3. Model drawing the drum with wobbly lines round the skin and an arrow labelled drumskin vibrated.
4. Give out paper, coloured pencils and outlines and ask pupils to draw and label all three makers.
5. Walk round, asking each pupil what vibrated and prompting for arrows and labels.

**STUDENTS DO**

1. Watch and listen to the drum, bell and clap in turn.
2. Draw each one with wobbly lines and an arrow to the shaking part.
3. Label what vibrated and tell a partner, pointing to each label.

**Say:** Watch closely and touch gently to feel the shake. Draw each sound with wobbly lines around the part that moved. Label with an arrow what vibrated to make the sound.

**Worked example:** Drum drawing. Step 1: draw the drum shape. Step 2: add wobbly lines on the skin to show it moves fast. Step 3: draw an arrow and write drumskin vibrated. A still drum would have straight sides, no wobble lines and no sound.

**Ask:** What vibrated to make the bell sound? (The side of the bell shaking fast.) · What vibrated when we clapped? (Hands and the air around the hands.)

**Check understanding:** Look for arrows to the drumskin, bell side or hands with wobble lines. If labels are missing, stop the class, model one label again and ask pupils to add it.

**Support:** Provide outlines of a drum, bell and hands so pupils only add the wobble lines to show the object vibrates when it makes a sound [5]. **Stretch:** Pupils add a second picture showing the same object still and silent, with no wobble lines.

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45–60 min **Plenary** 15 min · Whole class

*Check pupils can sort vibrating sounds from still silence.*

**YOU DO**

1. Show the compare and sort examples into vibrating - makes sound and still - no sound.
2. Hand out Task E and read each statement together for pupils to tick true or false.
3. Correct false ones by asking what really vibrated, noting that when a person hits a drum or a cymbal the object vibrates [5].
4. Show the exit ticket and ask pupils to complete the two sentences.

**STUDENTS DO**

1. Sort makers with a partner into vibrating and still.
2. Complete Task E, holding up true or false and fixing false ones.
3. Write the exit sentences about one vibration felt and one wonder.

**Say:** A guitar string moving fast makes a note, but sitting still it makes no sound. Decide if each statement about vibration is true or false. Then write one vibration you felt today and one sound you still wonder about.

**Worked example:** Guitar string moves fast - you hear a note, so true, it is vibrating. String sits still - you hear nothing, so the statement that a still string makes sound is false. I correct it to still means no sound.

**Ask:** A silent book is vibrating to make a sound - true or false? (False, it is still so there is no vibration and no sound.) · When we clap the air shakes - true or false? (True, hands make the air around them shake.) · How do you know something is making a sound? (You can see or feel it shaking fast.)

**Check understanding:** Use Task E ticks and exit sentences to see who names the vibrating part. Keep pupils who are unsure for a quick re-check with the bell and drum.

**Support:** Work in pairs with true and false cards to hold up and repeat that vibrating means to shake quickly back and forth [3]. **Stretch:** Pairs write one extra true statement about vibration for the class to judge.

Use: Slides 10-11, Worksheet Task E

## Common mistakes

| Mistake | How to spot it | How to fix it |
|---|---|---|
| Sound can happen with nothing moving. | Pupil says the clap or bell sound comes from nowhere, or names the sound but not a shaker. | Clap again slowly and hold the bell still, then ring it. Show hands meeting shakes the air [3] and every sound starts with something vibrating [5], so no shake means no sound. |
| Only big or loud makers vibrate. | Pupil labels the drum but says humming or a soft tap has no vibration. | Let pupils feel the throat buzz when humming and watch a soft tap wobble. Explain people can make very complex sounds for speech [5] and even small fast shakes count as vibration [3]. |
| Sound carries on after shaking stops. | Pupil draws wobble lines on a still bell or says holding the bell still still makes sound. | Ring the bell, then touch it still to stop the wobble and hear the sound stop. Explain sound waves move away from where they came from [5], but no new sound is made once vibration stops. |

## Support

- Provide outlines of a drum, bell and hands so pupils only add wobble lines.

## Stretch

- Add a second picture showing the same object still and silent with no wobble lines.

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- Give a word bank with vibrate, shake and buzz and sentence starters for labelling.
- Let pupils feel the throat buzz while humming together slowly.
- Compare a soft tap and a hard tap and describe the change in look and sound.

## For the LSE or teaching assistant

Sit near pupils who need help with drawing or writing. Help them point to the shaking part, add wobble lines on the outline and say the label aloud before they write it.

## Check for understanding

| Question | Answer |
|---|---|
| What must happen for any sound to be made? | Something must shake very quickly back and forth. |
| What vibrated to make the drum sound today? | The drum skin moving up and down fast. |
| You hold a ringing bell still and the sound stops. Why? | Because the vibration stopped, so no new sound is made. |

## Homework

Listen for three sounds at home and draw what shook to make each one.

## Sources


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