

Vibrations make sound

Lesson at a glance

Open with every child humming softly with two fingers on their throat so they feel the buzz before any kit appears. Name that buzz a vibration, then take partner predictions on what dry rice will do when a drum is tapped. Groups run Station 1 (drum and rice) then Station 2 (buzzing ruler), seeing and feeling the wobble; an optional salt-on-film demo can follow. The board interactive names source and sound, then pupils draw one station in the Investigation Journal before a table-tap feel-check close.

Learning objectives

- Show that sound is made by vibrations we can see and feel
- Describe what vibrated and what they saw or felt

Before the bell – prep

Night before: trays for groups of 4–5 with one drum or empty tub, a small pot of dry rice, and one 30 cm plastic ruler each. Print one Investigation Journal page per pupil. Pre-stretch one cling-film tub with a pinch of salt for the optional teacher demo. Keep all apparatus out of sight until the investigation.

Materials

Item	Qty	Per	Source	Low-cost substitute
hand drum or empty tub used as a drum	1	group	school kit	a sturdy empty biscuit tin or ice-cream tub with the lid on
dry uncooked rice	1	class	supermarket	dry couscous or tiny paper confetti dots
30 cm plastic ruler	1	group	classroom	a flexible strip of thick card
clear tub or bowl with cling film stretched tightly over the top	1	class	classroom	an empty yoghurt pot with a balloon skin stretched over the rim and held with an elastic band
table salt	1	class	supermarket	dry rice grains used again on the film
Investigation Journal page	1	pupil	provided printable	a blank page with space for one large drawing and two short labels

**Safety watch-point**

Twang and tap away from faces and eyes; no shouting into ears; finger on the drum only after tapping, never while someone else strikes. Clear rice and salt off the floor — slip hazard.

**Teaching moves**

- **Getting Started:** Model two fingers gently on your own throat and hum softly; invite every child to copy. Keep drums, rice and rulers hidden. Accept buzzes, tickles and shakes without naming vibration yet. Key question: what is happening in your throat when you make a sound?
- **What is a vibration?:** Board only the word vibration and the everyday word wobble. Walk the worked cycle aloud on throats only — wonder, predict, test, observed, think — humming on then off so they feel the buzz stop. Do not tap a drum with rice at the front; save that for Station 1.
- **What do you think will happen?:** Show only the covered drum-and-rice setup and the one focus question. Whole-class question, quick partner talk, then capture two or three predictions in the children's words. Optionally float the ruler twang as spoken follow-up only; leave the salt demo unmentioned.
- **Make the vibration visible:** Model Station 1 for about three minutes with only that card on the board; groups then run it about four minutes. Circulate asking what is moving and when they heard the sound. Switch the board to Station 2 only when you release it; model the hand position once. Tidy rice into pots as Station 2 ends. Optional: one- to two-minute salt-on-film demo, children watch only.
- **See the wobble on the board:** Drive the interactive in display mode only — nothing is dragged. Narrate a bigger hit, bigger wobble, louder sound. Pause between the two names: first point to the skin as the source, then say sound is what we hear when that wobble reaches our ears. Ask whether sound comes from the air by itself or from the skin moving.
- **Draw what vibrated:** Pupils choose one station (drum and rice if time is short). Oral rehearsal first: The ____ vibrated. I saw/felt _____. Look for the vibrating part shown and a short note. Early finishers draw a second station on the back. Finish tray tidy while they draw so the close stays on the science.
- **What you covered:** Children rest fingers on their end of a table; tap gently at the far end, well away from faces. Leave only the short recap line on the board. Quick check: hold up a ruler and ask what the source is when you twang it. Optional home noticing: find one sound and tell an adult what might be vibrating.

What it should show

Rice jumps higher on a firmer tap and the drum top feels buzzier; the ruler blurs and buzzes, and less sticking out often sounds higher. Salt may only dance slightly when you hum close — a gentle side tap still shows grains move. Stuck rice usually means it was damp; a ruler hitting legs means too much overhang — shorten it.



Misconceptions & interventions

- **Sound is just noise in the air — nothing is actually moving.** — Point back to the jumping rice or the buzzing ruler and ask what they saw move at the same moment they heard the sound. Revoice: every sound starts with something wobbling.
- **The rice jumps because the teacher blew or shook the drum, not because the skin wobbled.** — Have them rest one finger on the drum top after a tap (not while it is struck) and ask what they feel. Link the feel to the jump they saw.

Differentiation

Emerging	Developing	Proficient
• Oral sentence frame before drawing: The ____ vibrated. I saw/felt ____. - Stay with the drum-and-rice station if the ruler grip is tricky.	• After one clear station, try the second and say whether the firmer tap or the longer overhang changed what they saw or felt.	• Draw a second station on the back and name the source in each. In talk, suggest one place at school where they might feel a vibration behind a sound.

Cross-curricular hook

Link to Music — feel the vibration on a drum skin or ruler the same way a beat is felt on an instrument.