

Vibrations make sound

Lesson at a glance

Open with fingers on throats while humming so pupils feel a buzz before any kit appears. Name that buzz as a vibration, then take partner predictions about rice on a drum. Groups run two stations — drum-and-rice and a buzzing ruler — to see and feel the wobble; an optional salt-on-film demo can follow. A board interactive names source and sound, then pupils draw one station in the Investigation Journal.

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

Day before: one tray per group of 4–5 with a drum or empty tub, a small pot of dry rice, and one 30 cm plastic ruler. Pre-stretch one cling-film tub with a pinch of salt for the optional teacher demo. Print one Investigation Journal page per pupil.

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; one firm finger on the drum after a tap, never while someone else strikes it. Clear rice and salt off the floor — slip hazard.

**Teaching moves**

- **Getting Started:** Model two fingers on your own throat and invite every child to hum softly. Keep kit out of sight. Accept buzzes, tickles and shakes; hold back the word vibration so the feeling comes first.
- **What is a vibration?:** Board only vibration and wobble. Link the throat buzz to a quick back-and-forth wobble, then wonder aloud how we could make that wobble something we can see. Save source and sound for after the stations.
- **What do you think will happen?:** Show only the drum-and-rice setup and the focus question; keep apparatus covered. Capture two or three predictions in the children's words. Briefly float the ruler idea in talk only — no second setup on the board.
- **Make the vibration visible:** Whole-class model Station 1 for about 3 minutes with only that card on the IWB, then release groups for ~4 minutes. Circulate asking what is moving and when they heard the sound. Switch the board to Station 2 only, model hand position once, then groups twang. Optional salt demo is watch-only. Begin pouring rice back as Station 2 ends.
- **See the wobble on the board:** Drive the drum interactive in mode. Point to the skin and name source, pause, then name sound as the wobble reaching our ears. Ask whether sound comes from the air by itself or from the skin moving.
- **Draw what vibrated:** Pupils draw one station on the Investigation Journal page. Rehearse orally first: The ___ vibrated. I saw/felt ___. Look for the vibrating part shown and a simple note. Early finishers draw a second station on the back while trays finish clearing.
- **What you covered:** Children rest fingers on their end of a table; tap gently at the far end away from faces. Leave only the short recap line on the board. Quick check with a ruler: when I twang this, what is the source? Optional home noticing is talk only.

What it should show

Rice jumps higher with a firmer tap and the drum top feels buzzier; the ruler blurs and buzzes, often sounding higher with less sticking out. Salt may only dance slightly when you hum close. If rice sticks, it is damp — swap for dry grains. If the ruler hits legs, shorten the overhang.

Misconceptions & interventions

- **Sound is just noise in the air — nothing is actually moving.** — Point back to the jumping rice or buzzing ruler and ask what was wobbling when they heard the sound. Revoice: the sound starts when something wobbles.
- **The rice or salt is making the sound, not the drum skin or film.** — Ask them to tap the drum with no rice on it, then with rice. Name the skin as the source — the rice only shows the wobble.



Differentiation

Emerging	Developing	Proficient
• Oral sentence frame first: The ____ vibrated. I saw/felt _____. Pair at the teacher table on the drum-and-rice station only. • Accept a labelled drawing of the drum skin with rice jumping if writing is a barrier.	• Prompt a firmer vs gentler tap on the same drum and ask what changed in the rice and the feel. • After Station 2, ask why less ruler sticking out might sound different — notice only, no new kit.	• Draw a second station on the back of the Journal page and name the source in each. • Fair-test critique talk: what would you keep the same if you compared two drum taps for how high the rice jumps?

Cross-curricular hook

English oral language: rehearse and write the short explain frame The ____ vibrated. I saw/felt ____.