

Volume: what makes a sound louder?

Lesson at a glance

Open by naming the quietest sound in the room and the loudest heard today. Pupils predict whether a gentle then strong drum tap will get louder, quieter or stay the same, then in groups tap a drum-with-rice and watch jump height versus loudness. Drive the sound-explorer drum scene on the IWB to show a bigger wobble is louder, not higher. Record prediction, rice sketches and a quietest-to-loudest order in the Investigation Journal, then close on the finding that a bigger vibration makes a louder sound.

Learning objectives

- Predict and observe that a bigger vibration makes a louder sound
- Arrange sounds from quietest to loudest using what you saw and heard

Before the bell – prep

Set out one drum or tub-with-film and a pinch of dry rice per group before the bell. Optional elastic-band guitar per group only if time allows after the rice trial. Agree a class stop signal so volume stays ear-friendly.

Materials

Item	Qty	Per	Source	Low-cost substitute
classroom drum or tub with stretched film or balloon skin	1	group	school kit	empty biscuit tin or ice-cream tub with a balloon stretched over the open end and secured with an elastic band
dry rice	1	group	supermarket	dry salt or uncooked lentils
elastic-band guitar (small box with 2–3 rubber bands stretched across)	1	group	classroom	a ruler held over the edge of a desk and twanged gently
Investigation Journal page	1	pupil	provided printable	plain paper with teacher-led headings said aloud

Safety watch-point

Protect ears from very loud bangs; no drumming near faces; stop instantly on the class signal. Wash hands after handling rice if needed.

**Teaching moves**

- **What do we think?:** Name volume lightly on the board, then run think-pair-share on the question: gentle tap then strong — louder, quieter or the same? Collect a few predictions without judging. Hold the word vibration and do not mention rice yet.
- **Gentle then strong:** Model once in about two minutes: sprinkle rice, tap gently, pause, tap strongly in the same spot. Hand over to groups of 3–4 with roles tap / watch rice / listen, then one swap. Protect the drum-and-rice trial as the main evidence; only add a quick elastic-band pluck if every group has finished and time remains.
- **See the wobble on the board:** Drive the sound-explorer interactive on the drum scene only. Move from quiet to loud strength and ask whether the wobble got bigger and the sound louder. Press the key check: does it get higher like a squeak, or stay the same kind of sound and only get louder? Link the board wobble back to the jumping rice.
- **Record what we found:** Write the fixed trio on the board first: gentle drum, strong drum, talking voice. Pupils record prediction then simple rice-height sketches with quiet/loud labels. Protect the must-finish quietest-to-loudest order even if drawings stay minimal; use oral rehearsal I predicted... I saw... I heard... for writers who need it.
- **What did we discover?:** Keep a tight three-minute talk. Draw out one finding in children's words: a bigger vibration makes a louder sound, pointing to rice and board drum. Invite one or two school-day quiet/loud examples and a light ear-care link. Only revisit pitch if a child still says the strong tap sounded higher.

What it should show

Strong taps send rice higher and sound louder than gentle taps — bigger vibration, louder volume. Typical quietest-to-loudest order is gentle drum, talking voice, strong drum. If rice barely moves, use a thinner film or a firmer centre tap; if a group claims the strong tap sounded higher like a squeak, re-show the board drum: wobble bigger, kind of sound the same.

Misconceptions & interventions

- **Pupils mix up loud with high — they say a strong tap makes the sound go higher like a squeak.** — On the sound-explorer drum, move quiet to loud and ask: bigger wobble and louder, or higher like a squeak? Revoice: volume is how loud or quiet; the kind of sound stays the same.
- **Pupils think any harder hit just makes more noise with nothing to see, so they ignore the rice.** — Freeze after each tap and ask the watcher: did the rice jump higher that time? Name vibration only when they see the jump, then link jump height to loudness.

Differentiation

Emerging	Developing	Proficient
• Oral rehearsal before the journal: I predicted... I saw the rice... I heard... Drawing rice height with a quiet/loud label counts as a full record for the evidence beat. • Pair at the teacher table for one guided gentle-then-strong trial so they see the rice jump before recording.	• Complete the quietest-to-loudest order for gentle drum, strong drum and talking voice, and read the quieter/louder finding aloud to the group.	• Add one short sentence linking bigger wobble to louder sound, and name one school-day example of a quiet sound and a loud sound with the bigger vibration.

Cross-curricular hook

Link to Music — soft and loud dynamics — and to oral language when pupils revoice I predicted... I saw... I heard...