

ACTIVITIES (FULL INSTRUCTIONS)

Playact the Wave

Kids stand in a loose line and pump hands and forearms as human vibrations. A caller shouts **high!** / **low!** / **loud!** / **soft!** and the group adjusts: high = fast small pumps, low = slow pumps, loud = big sweeps, soft = small. Run a “song” of ~10 calls, then rotate callers so each child leads once. No materials.

The bump travels, not the stuff

Small scale: marbles lined touching in the grooved molding; each child shoots one marble in — the shooter stops dead, the far marble rolls off. Big scale: two kids stretch the slinky down the hall and send one push-pulse; the WAVE travels while every coil only jiggles in place. Say both times: *only the bump moves; the stuff stays put — exactly how sound crosses the room.*

Play It, Then Silence It — the payoff move

Any household instrument works: piano, guitar, drum, triangle, saucepan lid. SEE the vibration first — pluck or strike and watch through the pocket magnifiers (B-2 kit): the string visibly blurs, the drumhead shivers; on a piano, hold the key down and watch the string inside. Then STOP it: while the note still rings, the child lays a flat palm or finger on the wiggling part — instant silence. Each child makes a sound and kills it and says what they did. Close with: did you stop the SOUND or stop the MOVEMENT? Let them find that it is one act.

Sympathetic strings

Two strings tuned to the same note (guitar strings or two boxed rubber bands, pre-tuned in prep). A child plucks one, damps it — the untouched one keeps singing. Sound energy crossed the air gap and set matter moving: **sound is energy**. Let every child take a pluck-and-damp turn.

CLOSING Q&A (WITH THINK TIME)

- Why do you SEE lightning before you HEAR thunder? (Light travels almost instantly; sound’s bumps take time — count the gap.)
- The sun is a roaring furnace — why can’t we hear it? (No particles between us: no path, no sound. A vacuum carries light, never sound.)
- Is sound its own form of energy, or a special kind of movement energy? (Let them argue; the book’s answer: a travelling vibration — movement energy in wave form.)

SAFETY (FROM THE BOOK, SAY IT BEFORE THE PLUCK LAB)

A tightly stretched rubber band can snap and whip out. **Never hold a stretched band closer than about a foot from anyone’s eyes.** Tuning forks are struck on a KNEE — never on the table edge, never on another child.

REVIEW HOOKS

- Any sound that catches a child’s attention this week: “*what is vibrating?*” (the book’s To-Parents coaching, verbatim in spirit).

- Bath-time: hum with lips in and out of the water — which carries the buzz better?
- Science notebooks: draw one thing that made sound today and circle its wiggler.

PREP-AHEAD CHECKLIST (NIGHT BEFORE)

☐ stretch plastic-wrap drums over two bowls, test with the forks ☐ dye and dry the grains (couscous/rice + food colouring) ☐ tune two strings/bands to the same note and verify the sympathetic effect ☐ set the grooved molding level, marbles staged ☐ cut telephone strings to length, pre-punch the cups ☐ rubber-band assortment (C-1 kit) + open boxes + the recording grids ☐ pocket magnifiers (B-2 kit) in the instrument basket

Opening Oration — The Wiggle You Can Hear

read aloud, 2–3 minutes • the pluck box sits on your lap the whole time

PROP: a large rubber band stretched over an open box. Pluck it at the marked moments — let it ring each time before you speak on.

“Close your eyes for a moment and just listen.” (*pause — let the room's small sounds surface*) “Everything you just heard — the house creaking, a bird, your own breath — every single sound in your whole life has started exactly the same way. Something, somewhere, was **wiggling**.”

(*pluck*) “Look fast! See the blur? That string is swinging back and forth hundreds of times every second — too fast for your eyes, but not too fast for your ears. That wiggle has a name: **vibration**. And here is the rule with no exceptions anywhere in the universe: **no vibration, no sound**.”

“Touch your throat — gently — and say your own name.” (*do it with them*) “Did you feel it? You have strings too. Every word you have ever spoken was your own strings wiggling.”

“But how does a wiggle way over here...” (*pluck*) “...reach your ear way over there? It bumps. The wiggling string bumps the air beside it, that air bumps the next air, and the next, like a line of marbles — the air stays where it is, only the **bump** travels. And when the last bump arrives at your head, it finds a tiny drum stretched inside your ear, thinner than paper — your **eardrum** — and it plays it. Your ear is a drum, and the air is the drummer.”

“Today you are going to see vibrations, feel them, make grains of rice dance with them — and here is the strangest power of all: today you will learn to **kill a sound with one finger**. Because if every sound is a wiggle... what happens if you stop the wiggle?” (*pluck once more — then flatten your palm on the band, hard silence*) “Exactly that. Let’s begin.”

C-2 Supply List — Sound, Vibrations, and Energy

Everything for the full 9:30–2 day; prices rough. Only the slinky and molding ship.

ALREADY HAVE (TYPICAL HOUSEHOLD / PRIOR KITS)

☐	ITEM	USED IN
☐	Rubber-band assortment (C-1 kit — do not re-buy)	Pluck lab, oration prop, sympathetic bands
☐	Tuning fork set (owned)	Grain drum — the anchor
☐	Pocket magnifiers (B-2 kit)	Play It, Then Silence It — SEE the blur
☐	Any household instrument (piano/guitar/drum/lid)	Play It, Then Silence It; sympathetic strings
☐	Plastic wrap + two bowls	The grain drums
☐	Dry couscous or rice + food colouring	The dancing grains (dye in prep)
☐	Open boxes (shoe/tissue)	Pluck lab bodies
☐	A table + open floor + a hallway	Ear-on-table, Playact the Wave, slinky run

TO BUY

☐	ITEM	QTY	~PRICE	WHY	ORDER AHEAD?
☐	Metal slinky	1	\$8	The wave made watchable — the pulse travels, the coils stay	YES — ships
☐	Grooved wood molding, ~6 ft	1	\$6	The marble-chain particle model on the table	YES — ships (or hardware store)
☐	Bag of marbles	1	\$4	The bumps; REUSED in C-3's ramp rolls	with the molding
☐	Paper cups + kite string	—	\$5	The telephones — taut vs slack	No

Total new spend: ~\$23 — the marbles carry forward to C-3.

Tick the box beside each item as it goes in the box. Anything flagged **order ahead** ships — buy it a week before the lesson.