



THE BIG IDEA

*ALL sound comes from **vibration** — a fast back-and-forth wiggle. No exceptions. Fast wiggles sound **high**, slow wiggles sound **low**; big wiggles sound **loud**, small ones soft.*

Sound travels the way a bump runs down a chain of marbles: each air particle bumps its neighbour and **only the bump moves on** — the air stays where it is. When the bumps reach your ear they play a tiny drum stretched inside it: your **eardrum**. And because sound can make other things move — grains dance, a second string sings — sound is **energy**.

Stop the wiggle and you stop the sound — the same act. No particles, no path: space is perfectly silent.

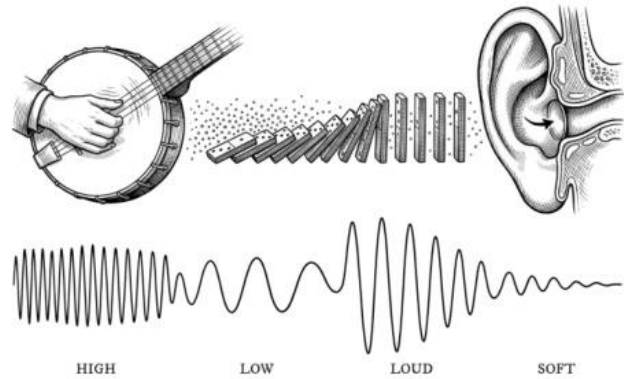


Fig. 1 — sound's whole trip: the pluck, the air passing the bump along like dominoes, the drum that catches it — and the wave's four moods: high, low, loud, soft

WORDS TO KNOW



vibration

a fast back-and-forth wiggle — where every sound begins



pitch

how high or low — how FAST the wiggle is



loudness

how BIG the wiggle is — it fades as the wiggle shrinks



eardrum

the tiny drum inside your ear that the air plays



vocal cords

the strings in your throat that wiggle when you speak



sound wave

the bump travelling on — the marbles stay, the bump moves

WATCH FOR THIS IN EVERYDAY LIFE

- Hum with a finger resting on your throat — “*feel the wiggle that IS your voice.*”
- Press an ear flat to the table while you tap it — “*why is it louder through the wood than through the air?*”
- Watch a guitar string or rubber band blur while it sings — “*when the blur stops, what else stops?*”