Playtronica · Education

Lesson 1 — What is sound? Touch as conductor

Grade Band: K-2 · Duration: 30 min · Device: TouchMe · NCAS MU:Cn10.1.Ka

Hunter-NCAS-5E hybrid format · Standards-aligned · Classroom-tested

Enduring understanding

Sound can come from anywhere — even a banana — when we close an electrical circuit with our bodies.

Essential question

What everyday things around me could become a musical instrument?

Learning objectives

Students will be able to:

- Identify at least three objects that conduct electricity and can trigger sound via TouchMe.
- Describe, in their own words, how their body completes a circuit to make sound.

'I Can' statements:

- I can make a sound by touching something with my finger.
- I can tell my friend why my body is part of the instrument.

Vocabulary

- **Sound** — what we hear when something vibrates.
- **Conductor** — a material that lets electricity pass through (your finger is one).
- **Circuit** — a loop that electricity travels in.
- **Trigger** — to make a sound start.

Materials & setup

- TouchMe plugged into laptop, browser piano open and tested.
- 6-8 conductive objects pre-arranged: fruit, foil ball, coin, spoon, wet sponge, classmate's hand.
- One non-conductive control object: a dry plastic toy.

Teacher prep (5 min): Test each object before class. Volume up but not loud. Have one alligator clip on each test object.

Lesson procedure

1. Engage — the singing banana (5 min)

Teacher holds a banana, asks: 'Could this banana sing?' Touches the banana — a piano note plays. Class reacts. Teacher asks: 'Why did the banana make a sound? Was it the banana, or was it me?' Collect 3-4 guesses on the board. No right answer yet.

2. Explore — the circuit revealed (10 min)

Teacher shows the circuit: TouchMe → alligator clip → banana → my finger → back to TouchMe. 'We made a loop. That's a **circuit**.' Demonstrate touching the plastic toy — no sound. 'Why not?' Introduce **conductor**.

Two volunteers come up, hold hands, one touches the banana — sound plays through both of them. Cue the 'ooooh'.

3. Create — predict and test (10 min)

Students rotate in pairs through the object table. Each pair picks two objects and predicts (thumbs up/down) whether each will make sound. They test. They report one surprise to the class. Teacher circulates with a clipboard checklist.

4. Share & reflect (5 min)

Whole-class: 'Name one thing in this room — not on the table — that you think would work. Why?' Three students answer. Exit ticket (drawing): 'Draw yourself playing music with one thing from your kitchen at home.'

Assessment

- **Formative:** Checklist — did each student trigger at least one sound, correctly predict conductor vs non-conductor at least once, use one vocabulary word in their share-out?
- **Summative:** Exit-ticket drawings reviewed for the 'Connect' standard — does the chosen object reflect a personal interest or experience? Evidence of MU:Cn10.1.Ka.

Differentiation & UDL

- **Support:** Pair non-readers with peer; provide pictorial vocabulary cards; pre-teach 'circuit' with a flashlight demo.
- **Stretch:** Give an advanced pair a multimeter or extra clips; challenge them to make a three-object chord by getting three classmates to touch simultaneously.
- **Access:** Students who cannot touch objects can complete the circuit via a foil-wrapped stylus or by being the 'ground' in a hand-chain with a peer. Lower volume + headphone splitter available for sensory-sensitive students.

Extension & cross-curricular links

- **Science (NGSS K-PS2):** Push and pull, materials and their properties.
- **ELA:** Class book — *Things That Sing in My House* — one page per student.
- **Home connection:** Half-sheet — find one kitchen object families predict would be a conductor.

- **Next lesson hook:** 'Tomorrow we'll find out what makes a sound high or low.'

Teacher notes

- Dry hands = no sound. Have a damp paper towel ready.
- If a student is nervous about being part of a hand-chain, never force it — they can be the one who touches the fruit while another student is the chain.
- TouchMe needs a USB *data* cable, not a charge-only cable. Test the cable, not just the device.
- Latency on Chromebooks can be 100-200 ms; tell students 'the sound is a little shy, it comes a moment after you touch.'