UNIT: CIRCUITRY GAME

THE BUZZER BEATS

Your Mission:

You’re a sound explorer on a mission to discover how buzzers make noise! Build a simple circuit, listen closely, and feel the vibrations that create sound. Then, test how a plastic cup can make the sound louder—just like real amplifiers!

GOAL: Explore how vibrating materials make sound and test how sound changes when amplified by a cup.

Materials:

* 1 small **buzzer**
* 1 **battery pack** (2 AA batteries or 9V)
* 2 **alligator clip wires**
* 1 **plastic cup** (to act as a sound amplifier)

STUDENT DIRECTIONS:

**Step 1: Build the Circuit:**

* Use alligator clip wires to connect the buzzer to the battery pack.
  + Clip one wire to the positive (+) side of the battery and to one buzzer wire.
  + Clip the second wire to the negative (–) side of the battery and to the other buzzer wire.

**Step 2: Listen Up!**

* What do you hear when the buzzer is connected?
  + If you hear nothing, double-check your connections and make sure the buzzer is facing the correct direction.

**Step 3: Amplify the Sound:**

* Place the buzzer inside the plastic cup.
* Listen again — is the sound louder now?

**Step 4: Feel the Vibration:**

* Gently touch the buzzer while it’s buzzing.
  + Can you feel it vibrating? That’s what creates the sound you hear!

**Record Your Observations:**

| **Question** | **Your Answer** |
| --- | --- |
| Sound: | ☐ Loud ☐ Soft ☐ No Sound |
| Vibration (felt when touched): | ☐ Yes ☐ No |
| Did the cup make the sound louder? | ☐ Yes ☐ No |

**What made the buzzer work?**

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Standards Alignment

NGSS: 1-PS4-1 STEL**:** STEL 1A, STEL 2A, STEL 7A, STEL 8A, STEL 9A CCSS: CCSS.MATH.CONTENT.1.MD.C.4, CCSS.MATH.PRACTICE.MP2 , CCSS.MATH.PRACTICE.MP5, CCSS.MATH.PRACTICE.MP6