UNIT: Electrical Circuits

Tiger-Repelling Motor Trap

Objective:

Build a working motor-powered scare trap to protect your jungle base from sneaky monkeys using a spinning fan!

Materials:

* 1 small motor
* 1 battery + battery holder
* Wire leads (or foil strips)
* Paper fan or pinwheel
* Straw (for fan support or motor mount)
* Tape
* Paper cup or cardboard base

STUDENT DIRECTIONS:

**Step 1:  Test Your Motor**

* Connect one wire from the positive battery terminal to one motor terminal.
* Connect another wire from the negative terminal to the other side of the motor.
* Does the motor spin? If not, double-check your connections or try switching wires.

**Step 2: Build the Spinner**

* Tape a paper pinwheel or cut paper blades to the motor shaft (the part that spins).
* Make sure the fan is balanced and can spin freely. You may need to adjust where you place it.

**Step 3: Create Your Trap Setup**

* Tape the motor securely to your cardboard base or inside a paper cup.
* Angle it so the fan is visible and facing outward like a real scare device.
* Test it again by connecting the circuit — does the fan spin rapidly?

**Observe & Record:**

* What kind of energy is being created (from → to)?

*(Hint: Is it going from battery power to motion?)*

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* What happens when the wires are connected and disconnected?  
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**Jungle Survival Connection:**

* How could this “spinning scare trap” help the rescue mission?

*(Hint: Think about motion, noise, or flashing movement.)*  
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* How could you improve your monkey-repelling fan trap?  
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Standards Alignment

NGSS: 4-PS3-4 STEL: STEL 1A, STEL 2A, STEL 4A, STEL 5A, STEL 6A, STEL 7A, STEL 8A CCSS: CCSS.MATH.CONTENT.3.MD.A.2, CCSS.MATH.CONTENT.4.MD.A.1, CCSS.MATH.CONTENT.4.MD.B.4, CCSS.MATH.PRACTICE.MP2, CCSS.MATH.PRACTICE.MP4, CCSS.MATH.PRACTICE.MP5