

Paths for Power

Read how materials affect the flow of electricity.

5.4.a “electricity flows easily through conductors but not insulators;”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each material that lets electricity flow easily. Circle each material that resists the flow of electricity.

Elena's Circuit Test

- ① At the school maker table, Elena builds a simple circuit with a battery, a small bulb, and two wires. She clips one wire to each end of the battery and connects the bulb between them. When the path is complete, electric current moves through the circuit, and the bulb shines. The metal wire gives the moving electricity an easy path.
- ② Next, Elena places different materials in the gap between the wire ends, one at a time. A copper strip and a piece of aluminum foil make the bulb light. These materials are conductors because electricity flows easily through them. A plastic spoon, a rubber band, and a dry wooden craft stick do not light the bulb. They are insulators because they resist the flow of electricity.
- ③ The class notices that the wires have metal inside and plastic coating outside. The metal core carries electricity around the circuit. The plastic coating helps protect a person's hand from the electricity in the metal. Choosing conductors for parts that must carry current and insulators for coverings helps people use electrical devices more safely. A broken coating can leave the metal exposed, so it should be reported to an adult.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Which two materials made Elena's bulb light?

2 Why is metal wire useful in Elena's circuit?

3 Name two insulators from Elena's test.

4 How does the plastic coating on a wire help people use electrical devices more safely?

3 YOUR TURN _____ Your own words

Imagine you are making a battery-powered quiz board. Write two sentences. Name one conductor for a part that must carry electricity and one insulator for a covering, then explain what each material does.

PART 1 • READ AND MARK

Underline each material that lets electricity flow easily. Circle each material that resists the flow of electricity. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Which two materials made Elena's bulb light?	A copper strip and a piece of aluminum foil.
2	Why is metal wire useful in Elena's circuit?	Metal wire is useful because electricity flows easily through it, giving electric current a path through the circuit.
3	Name two insulators from Elena's test.	Any two: plastic spoon, rubber band, dry wooden craft stick.
4	How does the plastic coating on a wire help people use electrical devices more safely?	The plastic coating helps protect a person's hand from the electricity in the metal wire.

PART 3 • YOUR TURN (SAMPLE ANSWER)

I would use a copper wire to carry electricity from the battery to the bulb. I would cover the wire with plastic because plastic helps protect hands from the electricity.

Accept any accurate conductor, such as copper, aluminum, or metal wire, and any accurate insulator, such as plastic, rubber, or dry wood. The response should correctly connect the conductor to carrying electricity and the insulator to resisting electricity or protecting people.