

Name _____

Date _____

1. Students are experimenting to find out if different types of batteries will affect the brightness of a light bulb. The materials for the investigation are shown below. (5.2.A)



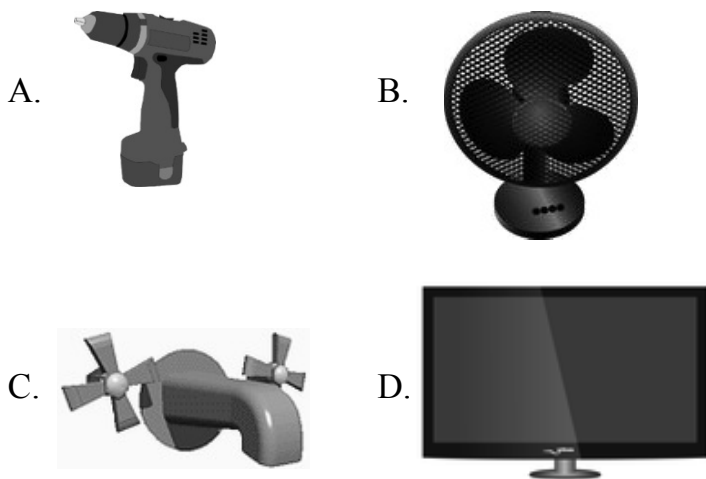
What is the variable in the investigation?

- A. the light bulb
- B. the wires
- C. the different types of batteries
- D. the metal on the light bulb

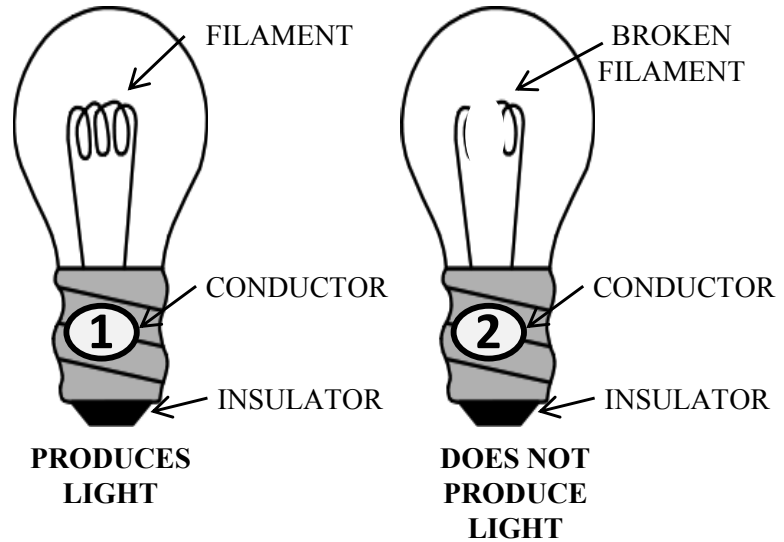
2. The flow of electricity in circuits requires a complete path through which an electric current can pass. Which of the following can an electric current produce?

- F. light
- G. heat
- H. sound
- J. all of the above

3. Which of the following does NOT need an electrical circuit to operate correctly?



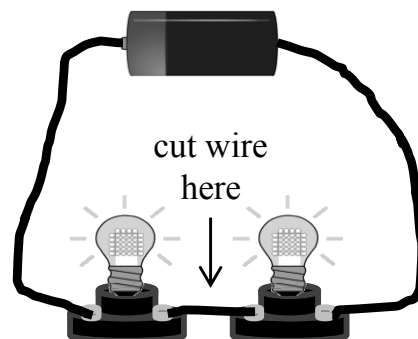
4. The parts of a light bulb work together as a system to produce light. The picture below shows a light bulb that produces light and a light bulb that does not produce light. (5.2.D)



Why does light bulb number two **NOT** produce light?

- F. The filament is broken and the circuit is open.
- G. The filament is not a conductor of electricity.
- H. The filament is an insulator.
- J. The filament is broken and the circuit is closed.

5. The picture below shows a complete circuit.



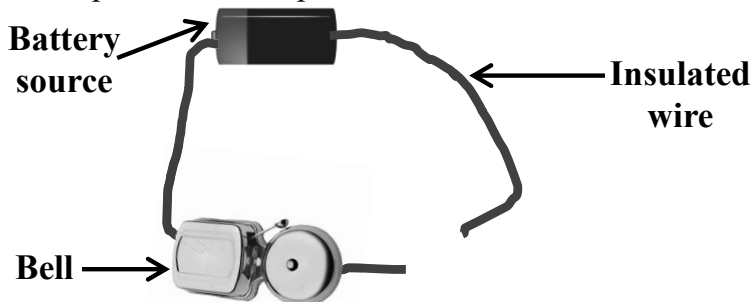
What would happen if the wire was cut between the two light bulbs?

- A. Both bulbs would remain lit.
- B. Both bulbs would not remain lit.
- C. Only one bulb would remain lit.
- D. The battery would light up.

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6. Students are building complete circuits to test conductors and insulators of electricity. Below is a picture of an open circuit.



Which object could be placed between the open wires to complete the circuit and make the bell ring?

- F. cotton swab
- G. plastic button
- H. glass marble
- J. copper penny

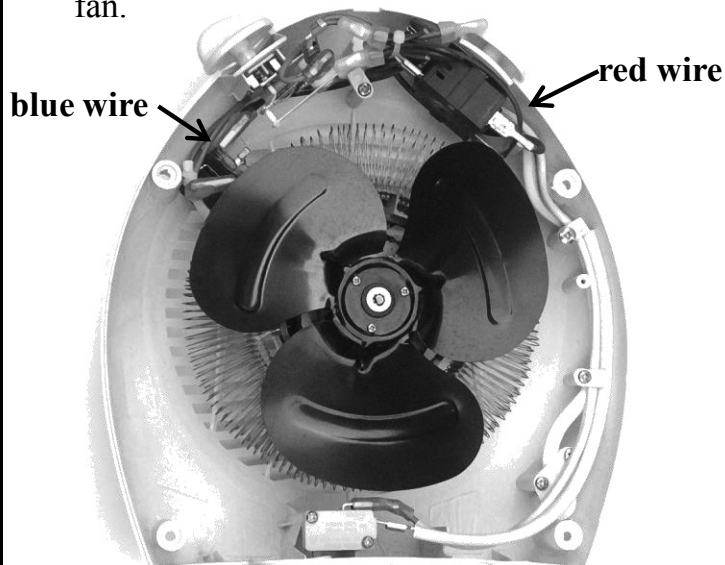
7. Students are given a small electric buzzer, a strip of aluminum foil, a D cell battery, and two insulated wires. If the students build a working circuit that makes the buzzer go off, what is the source of energy for the buzzer?

- A. insulated wires
- B. D cell battery
- C. aluminum foil
- D. electric buzzer

8. A teacher wears protective gloves when creating a circuit that has exposed metal wires. Why are the protective gloves necessary? ((5.4.B)

- F. The wires can become hot when electricity flows through.
- G. The wires can become cold when electricity flows through.
- H. The gloves help keep the teacher's hands warm.
- J. None of the above.

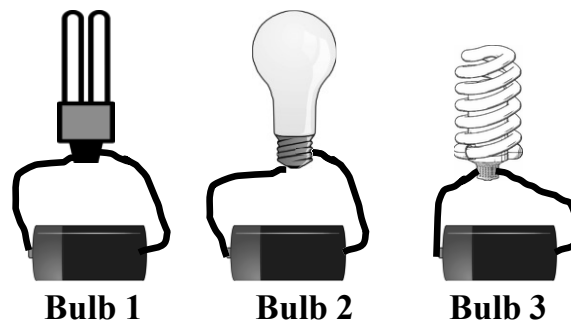
9. Pictured below is a complete circuit in a working fan.



What would happen to the fan if the red wire were cut? (5.2.D)

- A. The fan would spin faster.
- B. The fan would spin slower.
- C. The fan would stop working.
- D. The fan would produce light.

10. A student uses three different types of bulbs and builds a complete circuit for each one. (5.2.B)



Which question is this investigation most likely designed to answer?

- F. How do different bulbs react to a simple circuit?
- G. How do different batteries affect the brightness of a bulb?
- H. How do insulated wires affect a circuit?
- J. How do batteries work in a circuit?