

For each question, fill in the blank or **CIRCLE** the correct answer.

In a **Series Circuit**, electrical components are connected one after another. There is only one path for the flow of electrons.

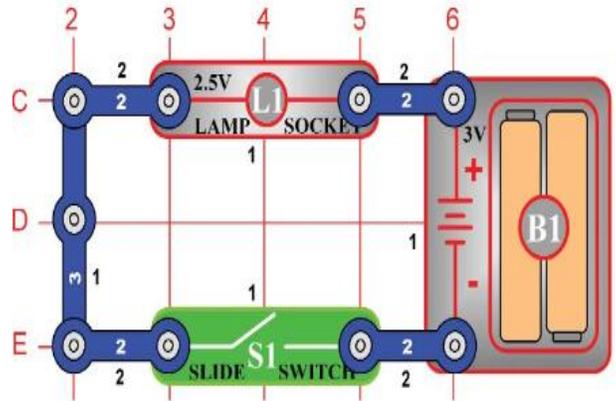
Build Project 1: Electric Light and Switch

1. This is an example of a _____ circuit.

SERIES OR PARELLEL

2. When the circuit is open, the light is _____.

ON OR OFF



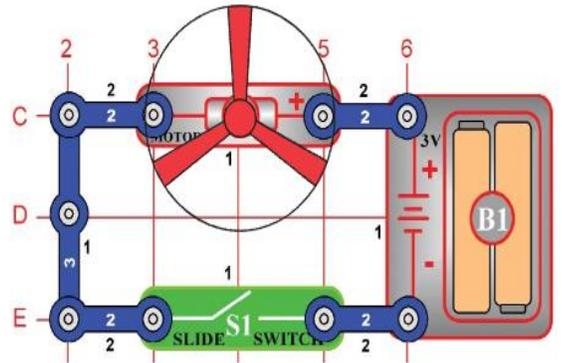
Build Project 2: DC Motor and Switch

Never touch the fan while it is moving

3. Describe the energy transformation that is occurring when the circuit is closed.

Electrical to _____ and _____.

On each side of the base of the motor, there is a + or a - symbol. This indicates the polarity of the motor. If the polarity is changed, the motor will spin in the opposite direction.



4. What direction is the fan spinning? **CLOCKWISE OR COUNTERCLOCKWISE**

5. Hold a post-it note near the fan. Is the paper pulled toward or pushed away from the fan?

PULLED TOWARD OR PUSHED AWAY

Build Project 11: Flying Saucer

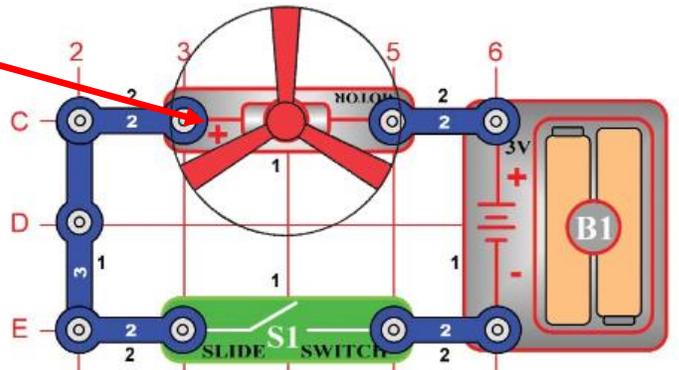
Note the change in the position of the motor for this project.

6. What direction is the fan spinning?

CLOCKWISE OR COUNTERCLOCKWISE

7. Hold a post-it note near the fan. Is the paper pulled toward or pushed away from the fan?

PULLED TOWARD OR PUSHED AWAY



8. When you turn the switch (S1) off, what happens to the fan? _____

Build Project 5: Lamp and Fan in Series

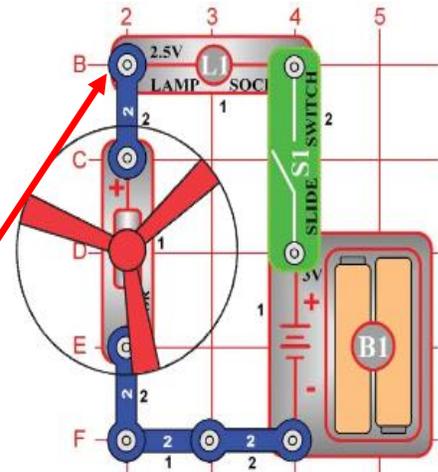
9. Explain why this is a series circuit. _____

10. The light is _____ than when it was lit in Project 1.

BRIGHTER OR DIMMER

11. What would happen if you removed the snap that connects the lamp with the motor?

12. Why does this happen? _____



In a **Parallel Circuit**, there is more than one continuous path for the electrons to flow. It is a closed circuit in which the current divides into two or more paths before recombining to complete the circuit.

Build Project 6 – Fan and Lamp in Parallel

13. Why is this an example of a parallel circuit?

14. Using your finger, trace the possible paths for the electrons. Compare the brightness of the bulb in this circuit with its brightness in Project 5. In this project, the light is _____.

BRIGHTER OR DIMMER

15. Remove the snap connecting the lamp. Describe what happens to the motor and the lamp when the piece is disconnected and explain why.

