8th Grade Science
Redlands Middle School

Name _____
Date_____ Period ____ Score_____/4

Series and Parallel Circuits Activity
Skill Builder

1. A _____ circuit has only one loop for the current of electrons to flow through.

2. A _____ circuit has two or more loops for the current of electrons to flow through.

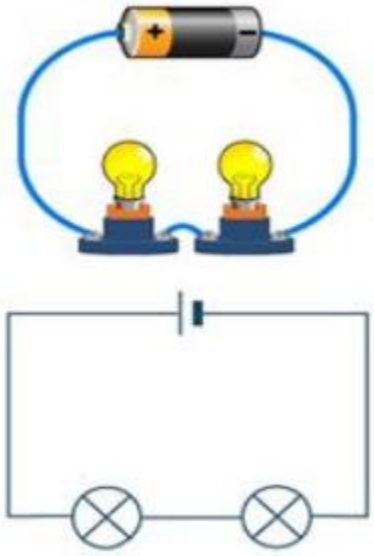
3. When any part of a series circuit is disconnected, no current flows through the circuit. This is known as a _____ circuit.

4. What happens to the brightness of series circuit as more bulbs are added, compared to a parallel circuit with the same number of bulbs?

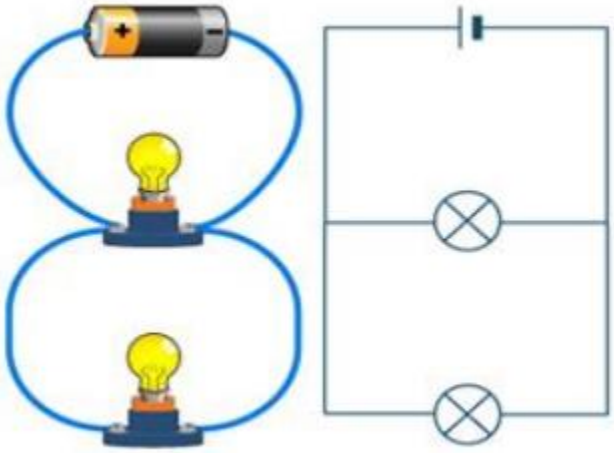
   _____

   _____.

5. Follow the path of each circuit with a colored pencil. Start the current at the power source and travel in a clockwise direction until you get back to the switch. Be sure to identify all possible pathways for the current to flow. Use the pathways you drew to answer the questions which follow.



Series Circuit



Parallel Circuit

How do these drawings help explain why all remaing bulbs go out when a series circuit loses a bulb, but the remaining bulbs in a parallel cicuit keep glowing?

_____

_____.

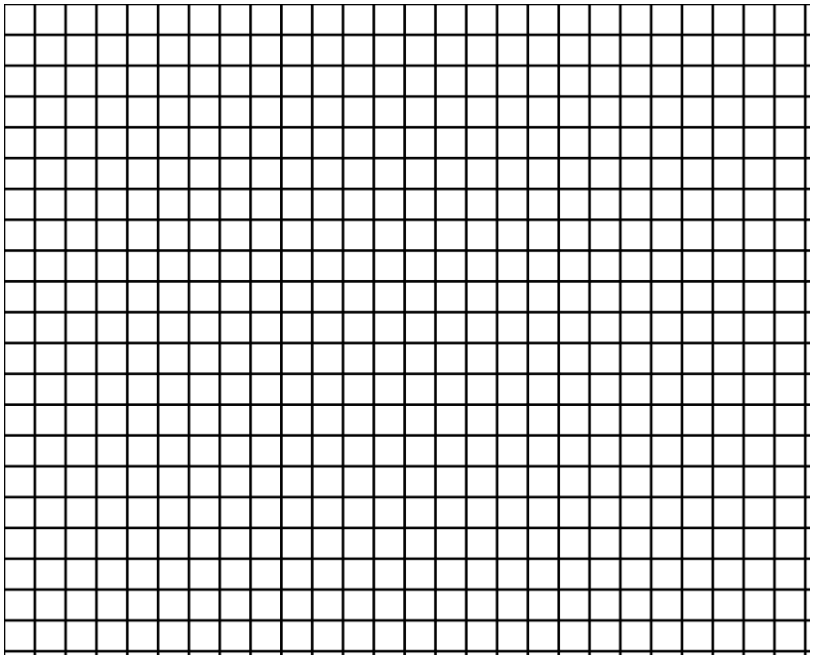
How do these drawings help explain why a 3-bulb parallel circuit is much brighter than a 3-bulb series circuit? Remember, there is resistance in each bulb.

_____

_____.

6. Use the data collected by students who measured the brightness of bulbs of two circuits as the number of bulbs was increased. Make a different colored line for each circuit. Add a title. Label each axis.

	Brightness (Lumens / bulb)	
Number of Bulbs	Circuit 1	Circuit 2
1	40	40
2	33	39.5
3	26	39
4	19	38.5
5	12	38
6	5	37.5



Which circuit is wired as a series circuit? _____

How do you know?

_____

What would happen to each line if you used bulbs which had less resistance?

_____

7.

Draw a circuit which runs from a switch on the wall and controls an outlet and an overhead light.