**Series Vs Parallel Circuits**

****

**There are two ways to connect components in a circuit:**

|  |  |
| --- | --- |
| **Series:** | **Parallel:** |
| When one bulb goes out, they all go out, because there is only \_\_\_\_\_\_\_\_ pathway for the current to flow! | When one bulb goes out, the other bulbs stay lit, because there is \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_ one pathway for the current to flow! |

**Series Circuits – One Pathway:**

|  |
| --- |
| * All components are connected one after another *(\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_)*
* Electrons must pass through \_\_\_\_\_\_\_\_ load in the circuit on their way back to the source
* Only ONE path for electrons to flow (no branches)
* Brightness of each bulb \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |
| **Voltage:**The \_\_\_\_\_\_\_of the voltages lost on the loads equals the total voltage supplied by the battery**Diagram  Description automatically generated** | **Current:** Current measured anywhere in theseries circuit will be the \_\_\_\_\_\_\_\_**Diagram  Description automatically generated** |
| **Resistance:*** The total resistance of the circuit is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ when resistors are placed in series (add together)
* The total current leaving the battery (and throughout the circuit) therefore \_\_\_\_\_\_\_\_\_\_\_\_\_!
 |

**Parallel Circuits – Multiple Pathways**

|  |
| --- |
| * Components are arranged in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ throughout the circuit = separate paths the electrons can take to get back to source
* At each \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_(aka *junction* *point*) the current \_\_\_\_\_\_\_\_\_\_, then rejoins again at the source
* If there is a break in one branch, the components on other branches still work!
* Brightness of each bulb is overall \_\_\_\_\_\_\_\_\_\_\_\_ than in series
 |
| **Voltage:**Voltage remains the \_\_\_\_\_\_\_\_\_\_\_\_ throughout each pathway of the parallel circuit**Diagram  Description automatically generated** | **Current:** Current splits up between the different current pathways (\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_)**Diagram, schematic  Description automatically generated** |
| **Resistance:*** The total resistance of the circuit is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ when resistors are placed in parallel
* The total current leaving the battery (and throughout the circuit) therefore \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!
 |

**Remember:**

SASS: PVSS:

**Notes and example problems from video:**