

Series and Parallel Circuits Activity

Name _____
Date _____ Period _____ Score ____/4

LT: I can identify structure and characteristics of series and parallel circuits.

Drawing / Captions / Labels / Notes

Place a check by each expectation you completely fulfilled

| | Basic | Advanced |
|---|-------|----------|
| 1. Parallel circuit is accurately drawn | _____ | |
| 2. Series circuit is accurately drawn | _____ | |
| 3. Labels identify all parts of the parallel circuit | _____ | |
| 4. Labels identify all parts of the series circuit | _____ | |
| 5. Brightness, voltage, and removal of bulb results recorded for parallel circuit | _____ | |
| 6. Brightness, voltage, and removal of bulb results recorded for series circuit | _____ | |

Expected observations

| | | |
|---|-------|-------|
| 1. <i>Series circuit.</i> | | |
| a. The electric current has only one path to follow | _____ | |
| b. The bulbs are dimmer than parallel circuits | _____ | |
| c. As more bulbs are added, the bulbs get more dim | _____ | |
| d. Removal of a bulb puts all the lights out | _____ | |
| e. Removal of the bulb creates an <u>open circuit</u> – it acts like a switch in the circuit | | _____ |
| f. Many Christmas light sets must be wired in series | | _____ |
| g. The voltage across the series bulb = total voltage ÷ number of bulbs (see example below) | | _____ |
| 2. <i>Parallel circuit</i> | | |
| a. The electric current has more than one path to follow | _____ | |
| b. The bulbs are brighter than series circuits | _____ | |
| c. Bulbs stay bright as bulbs are added to the circuit | _____ | |
| d. Removal of a bulb does not cause other bulbs to go out | _____ | |
| e. Houses, cars, and most other electrical systems are wired in parallel | | _____ |
| f. The voltage across the parallel bulb is very close to the voltage of the battery (see example below) | | _____ |
| 3. Other topics | | |
| a. Electricity is transformed to heat then light because of the resistance in the filament | _____ | |
| b. There is resistance in all of the wires which affects the total voltages measured across the bulbs | | _____ |

ALL CRITERIA MUST BE MET

TOTAL _____

| | | | |
|--|--|----------------------------------|---------------------------------|
| 4 | 3 | 2 | 1 |
| 15 of the basics covered AND 3 advanced topics are discussed | 12-14 basic expectations are covered. <u>All 6 Drawing/Caption/Labels/Notes expectations must be included</u> | 9-11 basic expectations covered. | 1-8 basic expectations covered. |