What is Current?

This work sheet has been developed for use with the instructional video from The Engineering Mindset.com. Click on the provided link to access the video. Teachers, use this answer key to develop the work sheet used by your students.

<https://www.youtube.com/watch?v=8Posj4WMo0o>

1. Current is the \_\_flow\_\_ of \_\_electrons\_\_ in a circuit.
2. \_\_Copper\_\_ cable is usually used in circuits because its \_\_atoms\_\_ have a loosely bound \_\_electron\_\_ in their outer shell.
3. \_\_Voltage\_\_ is the pushing force that causes \_\_electrons\_\_ to move.
4. The flow of \_\_electrons\_\_ is referred to as \_\_current\_\_ and is measured in \_\_amperes\_\_.
5. \_\_Alternating\_\_ current is used to carry current to our homes because it is \_\_efficient\_\_ to transport over long distances.
6. \_\_Direct\_\_ current is used mostly in the circuit boards of small electronic devices.
7. In a \_\_series\_\_ circuit, all of the \_\_electrons\_\_ in the circuit are flowing along the same path.
8. In a \_\_parallel\_\_ circuit, the path of the \_\_electrons\_\_ is split.
9. If the \_\_resistance\_\_ of devices (for example, lamps) in a circuit is \_\_equal\_\_, the \_\_current\_\_ in the circuit is fed equally.
10. Circuits with \_\_higher\_\_ \_\_resistance\_\_ have \_\_fewer\_\_ electrons flowing through them.
11. \_\_Cables\_\_ and devices (lamps, etc.) are only rated to handle a certain amount of \_\_current\_\_. If the circuit exceeds the rating of the device, then they can \_\_burn out\_\_.
12. \_\_Resistors\_\_ are used to control the \_\_flow\_\_ of current in a circuit.
13. A \_\_fuse\_\_ is a safety device that \_\_melts\_\_ and \_\_breaks\_\_ an electric circuit if the current \_\_exceeds\_\_ a safe level.
14. A \_\_Circuit\_\_ \_\_breaker\_\_ is a \_\_switch\_\_ that will automatically open to \_\_break\_\_ the circuit if it detects too many \_\_electrons\_\_ flowing to it.