# **Electricity Comprehension Check**

For questions 1-4, match each vocabulary term to the correct definition:

|  |  |
| --- | --- |
| 1. Atom | a. a kind of particle that circles around the nucleus |
| 2. Electric Charge | b. a build-up of electricity |
| 3. Electron | c. what all things are made of |
| 4. Matter | d. one of the basic units of matter |

1. Atom –
2. Electric Charge –
3. Electron –
4. Matter –
5. Describe the differences between static electricity and current electricity.

1. What is a closed circuit? What is an open circuit?
2. Why are conductors and insulators considered opposites?
3. Explain how electric generators driven by turbines convert mechanical energy to electrical energy.
4. How does electricity travel from a power plant into our homes, schools, businesses, and other places?
5. What are fossil fuels? What is nuclear fuel?

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1. Atom – d
2. Electric Charge – b
3. Electron – a
4. Matter – c
5. Describe the differences between static electricity and current electricity.
   1. Static electricity comes from a build-up of electrons. With static electricity, the electric current is released all at once and can be challenging to control. Current electricity, on the other hand, can be controlled more easily and used by people. Current electricity involves a steady flow of electrons. Circuits in loops are great examples of current electricity.
6. What is a closed circuit? What is an open circuit?
   1. A closed circuit creates a loop that allows for the continuous flow of electricity. An open circuit breaks this loop and stops the flow of electricity.
7. Why are conductors and insulators considered opposites?
   1. Conductors and insulators are considered opposites because they affect electricity differently. Conductors allow electrons to flow more easily, whereas insulators stop the flow of electrons from atom to atom.
8. Explain how electric generators driven by turbines convert mechanical energy to electrical energy.
   1. Electric generators are used to convert mechanical energy into electric energy. Steam or falling water spins the blades of turbines, which causes magnets inside the generator to spin around a magnetic wire. This pushes and pulls on the electrons inside the wire. That movement creates an electric current!
9. How does electricity travel from a power plant into our homes, schools, businesses, and other places?
   1. Power plants use electric generators to convert mechanical energy into electric energy. Once generated, the electricity flows through a series of wires to an electric grid, a giant circuit. The electric grid is made of power lines that contain copper wires (conductors) wrapped in plastic (insulators) that help electricity travel safely to houses, schools, businesses, and other places.
10. What are fossil fuels? What is nuclear fuel?
    1. Fossil fuels were formed from the remains of things that died millions of years ago. They can be burned to generate electric power, although this harms the environment. Nuclear fuel releases energy when atoms are split. Nuclear fuel, however, can leave behind dangerous waste.