

Electrical Circuits

Discussion Questions:

- 1) What is electricity?
- 2) How does an electrical circuit work?
- 3) What types of materials conduct electrical energy?

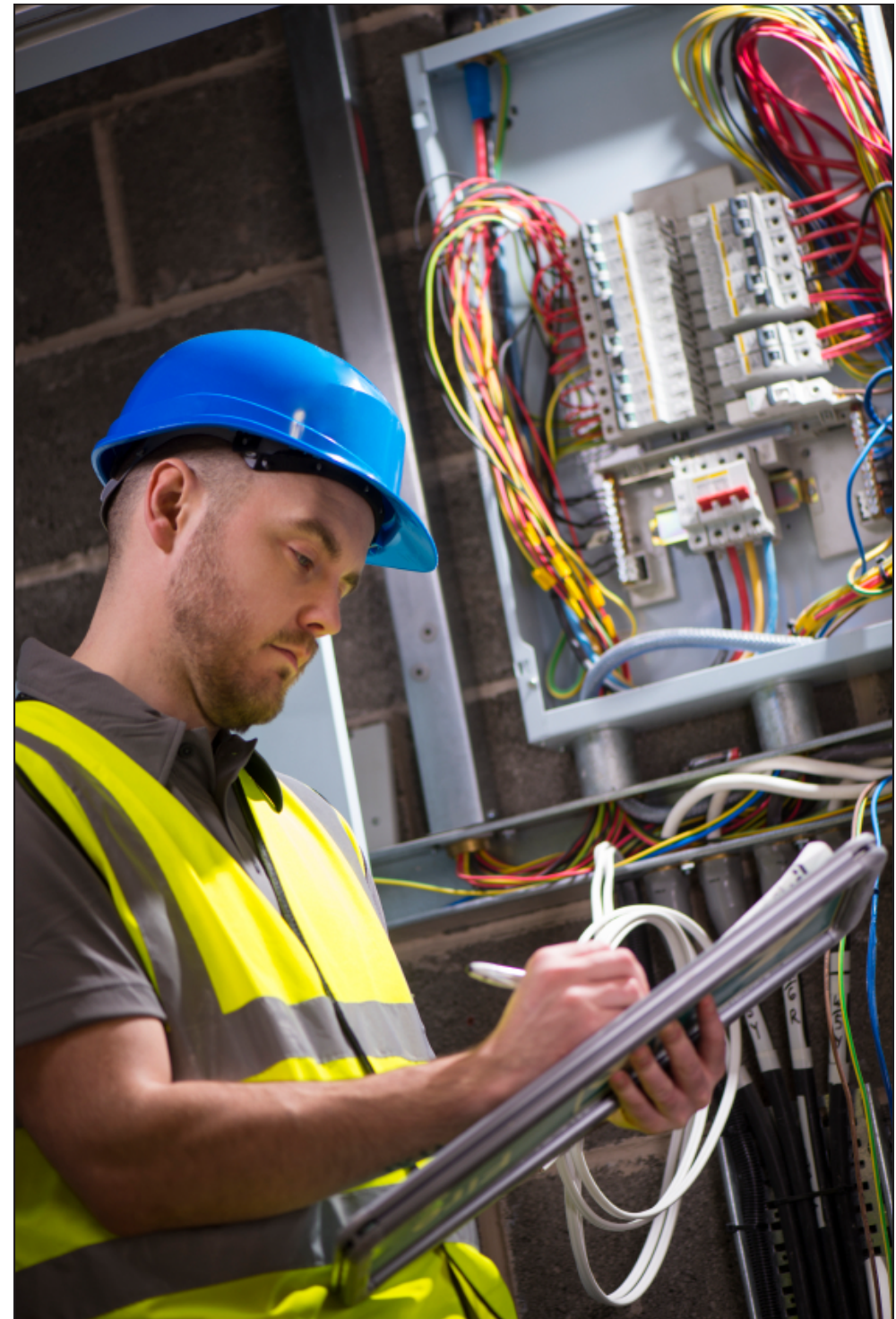
Electricity

Electricity is energy that can build up in one place and be released as static electricity OR it can be energy that can move from one place to another in a current.

For an electrical current to work, electrons need to travel in a circuit. Materials that allow electrons to move freely through them are called **conductors**. The best conductor of electrical energy in a circuit is metal wire. Copper wires are commonly used.

Materials that do not allow electricity through them are called **insulators**. Examples of insulators include rubber and plastic.

The outside of electrical cords for appliances are insulated. The electrical wires that run through the middle of the cord are also individually insulated. This makes the cord safe to touch. However, these cords are unsafe if their insulated coatings are damaged and the wires within them are exposed.



Electrical Circuit

A circuit is a closed path around which electricity can flow. If the path is broken the electricity stops.

A simple circuit needs a power source, like a battery, and some electrical wire for the electrons to flow through.

A useful power-saving device in a circuit is a switch. When the switch is turned off, the circuit is broken and no electrical current is able to flow. When the switch is turned on, the circuit is closed and current is able to flow again.

A torch is an example of a simple circuit. The power from the battery (or cell) flows around the circuit to the light bulb when the switch is turned on.

