

Pre-Field Trip Activity

Grades 4-6



The Smart Energy Hub

We are pleased you'll be participating in the ComEd Smart Energy Hub program! The following activities are suggestions to provide background knowledge and prepare students for the upcoming field trip.

Static Electricity

Ask students if they have ever gotten a shock when they touched something.

Ask: *What did you touch? Did you notice a spark?*

Have students try to create a spark using their fingers. You can allow students wearing shoes to shuffle their feet on some carpeting and find a metal object to touch. Students should carefully watch for a tiny spark. Or, try a demonstration using a Super Sparker. You will need the following materials: styrofoam tray, pie tin, and tape.

Follow the directions here: http://www.exploratorium.edu/science_explorer/sparker.html

Then have students turn to a partner to talk about where else they have seen an electrostatic spark. Examples might include a lightning bolt or a Van de Graaf generator at a museum.

Current Electricity

Explain that static electricity is different from the electricity we use in our homes. The energy we use in our homes is called *current electricity*. It flows along wires from a power source. ComEd is a utility company that maintains the wires and equipment that deliver electricity to our homes, schools and businesses.

Ask students to think about and share with a partner how their lives would be different if they didn't have electricity in their homes or school.

Inform students that they will be visiting the ComEd Chicago Training Center. This is one of the places where the men and women who help to bring us electricity train to do their job safely. Ask students why safety is important when dealing with electricity. Discuss that electricity is very powerful and can seriously injure or kill someone if it is not handled carefully.

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Introduce vocabulary that students will hear during the field trip. Have students practice the vocabulary by completing *The Delivery of Electricity* activity sheet.

Electricity – a form of energy used to power things like televisions, light bulbs, and computers

Meter – an instrument on a house or other building that measures and tells the amount of energy used, including when it was used

Power lines – cables that carry electricity from the power plant to homes, schools, and businesses

Transformer – a machine that changes the strength of electricity from the power plant to homes, schools, and businesses

Substation – a place where the strength of electricity is changed on its way from the power plant to homes, schools, and businesses

Generator – a machine that makes electricity using spinning or moving parts

Circuit – the entire loop or path through which electricity flows

Overhead electrician – an individual who sets up or fixes power lines

Power plant – where electricity is generated for delivery to homes, schools, and businesses

Transmission line tower – a very tall structure that supports power lines

Utility pole – a wooden pole that routes power lines throughout cities and towns

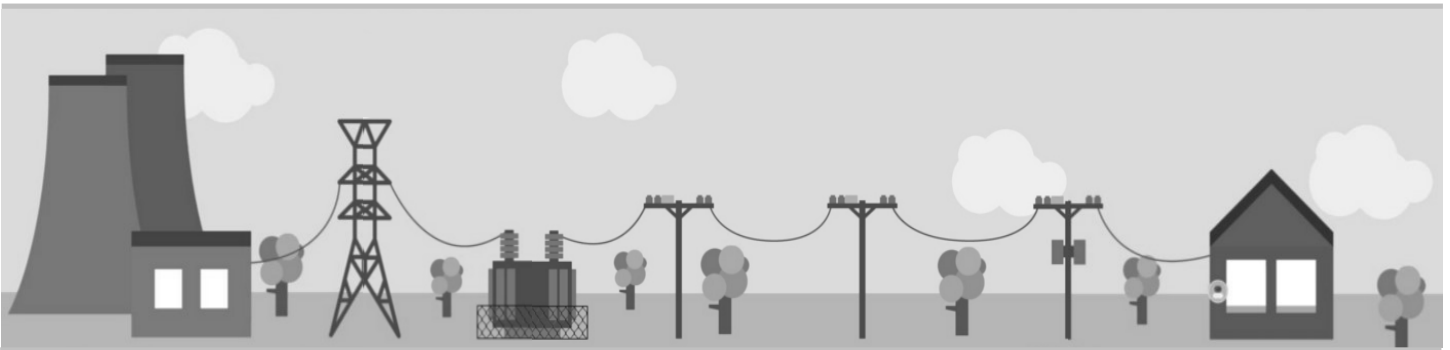
Name _____

Date _____



The Delivery of Electricity

- Use the vocabulary words and definitions to label objects in The Delivery of Electricity diagram. Write the correct letter next to each object.



(A) Meter – an instrument on a house or other building that measures and tells the amount of energy used, including when it was used

(B) Substation (Transformer) – a place where the strength of electricity is changed on its way from the power plant to homes, schools, and businesses

(C) Power lines – cables that carry electricity from the power plant to homes, schools, and businesses

(D) Power plant – where electricity is generated for delivery to homes, schools, and businesses

(E) Circuit – the entire loop or path through which electricity flows

(F) Transmission line tower – a very tall structure that supports power lines

(G) Utility pole – a wooden pole that routes power lines throughout cities and towns