

## Pre-Field Trip Activity

Grades 7-8



### 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.

#### Before the Trip: Activate Knowledge

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 useful, but it can also be extremely dangerous. The force of the electric current coming from a power plant is hundreds of times higher than that of the electric current in your home. Even household electric power can seriously injure or kill someone if it is not handled carefully. Ask students about ways to act safely around electricity, like never touch or play around power equipment! And never take apart electrical appliances that are plugged in or play with sockets.

At the training center, students will also learn how electricity is generated and delivered for communities to use. One important lesson touched upon is each of our roles in how we use electricity and how to conserve it. Ask students what it means to *conserve* electricity. Then have them think-pair-share ways they could reduce the use of electricity in their homes or at school. Write some of the student's ideas on the board for the class to discuss how easy or hard they would be to implement.

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Introduce the following vocabulary that students will hear during the field trip. Use the Electricity Vocabulary sheet to have students sketch a picture to help them understand each word.

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

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

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

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

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

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

**Circuit** – a loop or path through which electricity flows

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

**Smart Grid/Smart Technologies** - The smart grid uses technologies that combine computers with the electrical grid. The computer collects information about the grid so it can detect problems and either automatically fix them or alert someone to fix them. The computer also collects information about how much electricity is being used.

Name \_\_\_\_\_

Date \_\_\_\_\_

**SMART  
ENERGY  
HUB**



**ComEd**  
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## Electricity Vocabulary Sketches

Choose four electricity vocabulary words and write them on a card below.

Sketch a picture to help you understand and remember each word.

**meter**

**transformer**

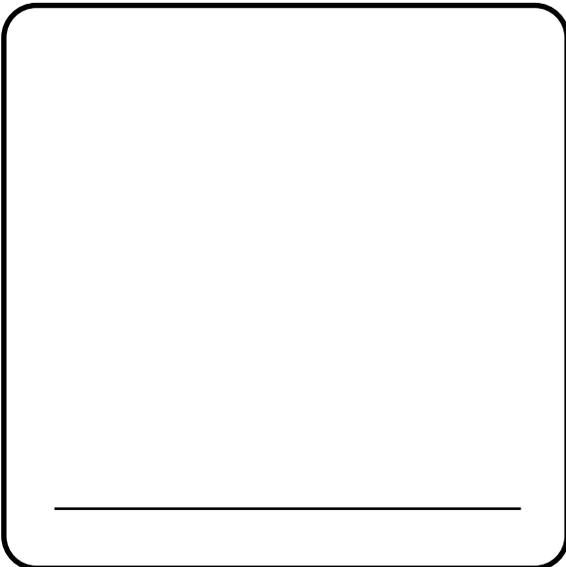
**power lines**

**generator**

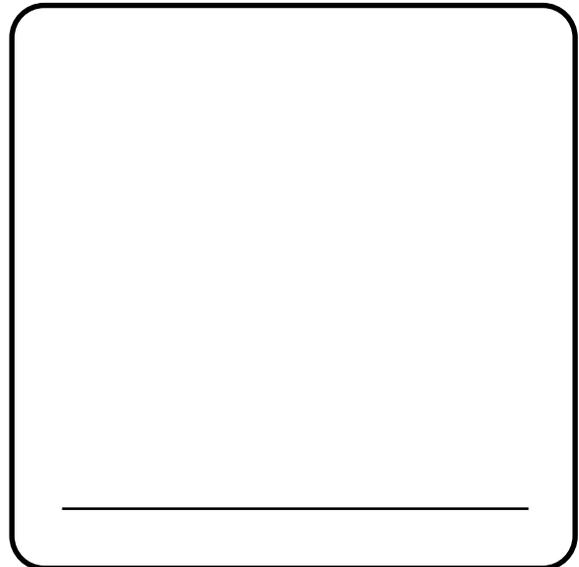
**circuit**

**overhead electrician**

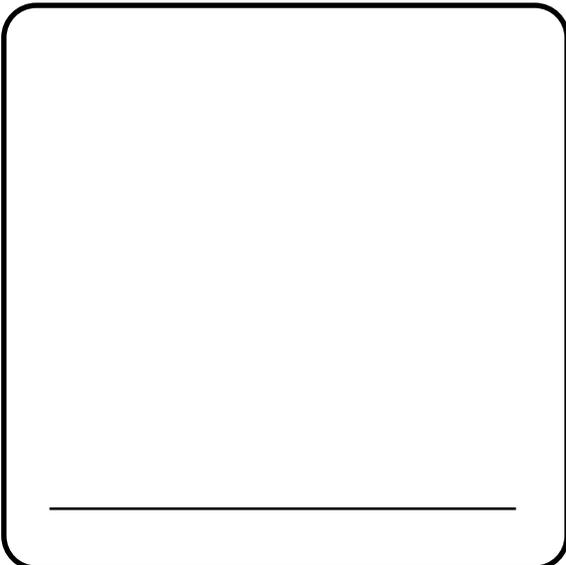
**smart grid/smart technologies**



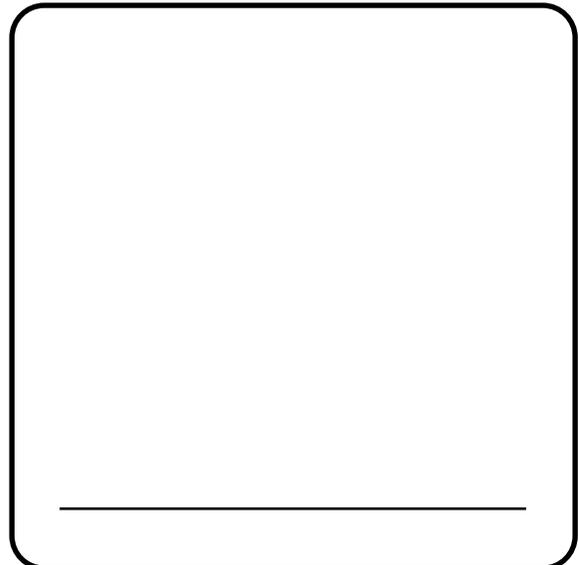
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