



The National Theatre for Children

CLASSROOM AND  
FAMILY ACTIVITIES

# PROJECT ENERGY



**peco**<sup>SM</sup>

AN EXELON COMPANY

## Educational Content

- How to measure energy use
- How energy is wasted
- How we conserve energy
- What renewable resources are





Junior Undersecretary Detective-in-Training Joan Wattson has a mystery on her hands. At the office of her boss, Sure Luck Ohms, lights are flickering, phones won't charge and computers won't turn on. Sure Luck assigns her the case. The case file has a clue that reads, "Project EGNEYR." Could that mean "engineer"? Wattson heads off to the local racetrack to look for an engineer and some more clues.

At the racetrack, Wattson meets Rusty Torx, a mechanic. Rusty explains the traditional way we make electricity and how we measure it. Rusty also explains how hydroelectricity works. Wattson thanks Rusty for her help.

Next, Wattson goes to visit the Right Brothers for the next clue. Philburt and Orbal love the wind so much that they tell Wattson all about wind power and wind turbines. Then the Right Brothers direct Wattson to Sunny Beam's café, famous for having the runniest of eggs. Sunny knows a thing or two about solar energy. Off goes Joan!

At Sunny Beam's solar-powered café, Wattson learns all about solar panels. She also learns how efficient Sunny is with electricity, using only what is needed. Sunny is also in the process of installing battery storage to power the café even when the sun isn't shining.

With the puzzle solved, Wattson is just about to begin the case of the flickering lights when in walks Sure Luck Ohms. Has Wattson learned enough to impress her boss? Will the lights stop flickering? Watch and find out!

## WORDS TO KNOW

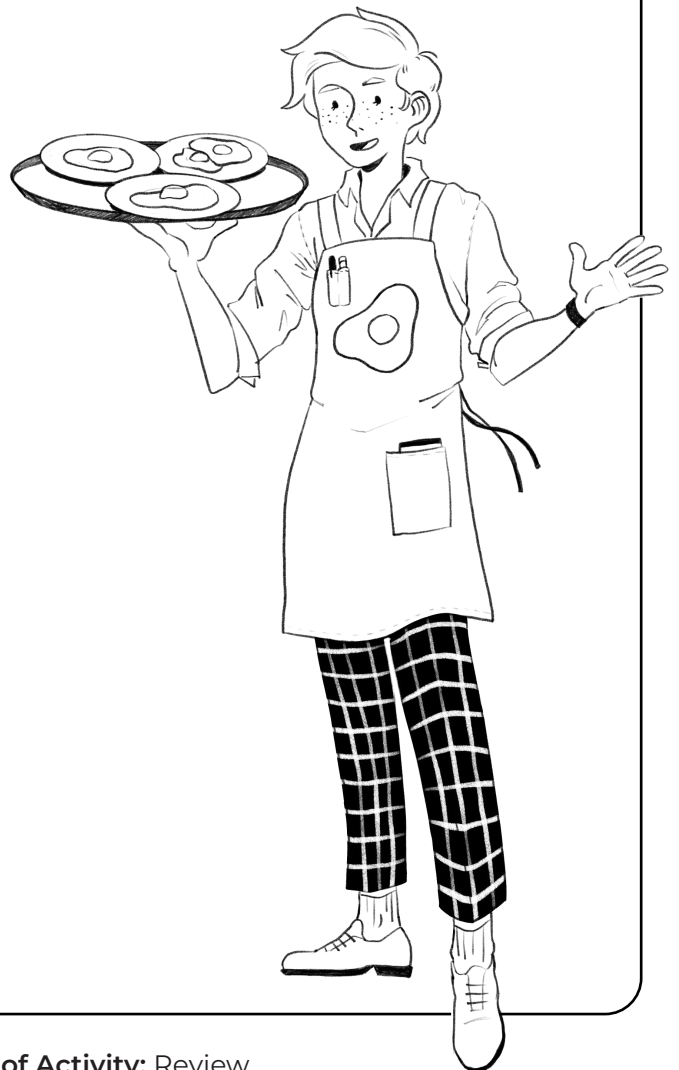
<b>Conserve</b>	<i>to save or use wisely</i>
<b>Energy</b>	<i>the ability to do work; the power that makes things work</i>
<b>Electricity</b>	<i>a useful form of energy used in many ways</i>
<b>Kilowatt</b>	<i>one thousand watts</i>
<b>Kilowatt-hour</b>	<i>Using 1,000 watts of electricity for one hour</i>
<b>Non-renewable resource</b>	<i>A natural resource that is limited – once used, it is gone</i>
<b>Resource</b>	<i>something we use to make electricity, like natural gas, water, solar energy and wind</i>
<b>Renewable resource</b>	<i>A natural resource that keeps coming back again and again</i>
<b>Waste</b>	<i>to use more than necessary</i>
<b>Watt</b>	<i>a unit measurement of electricity</i>



# DRAWING

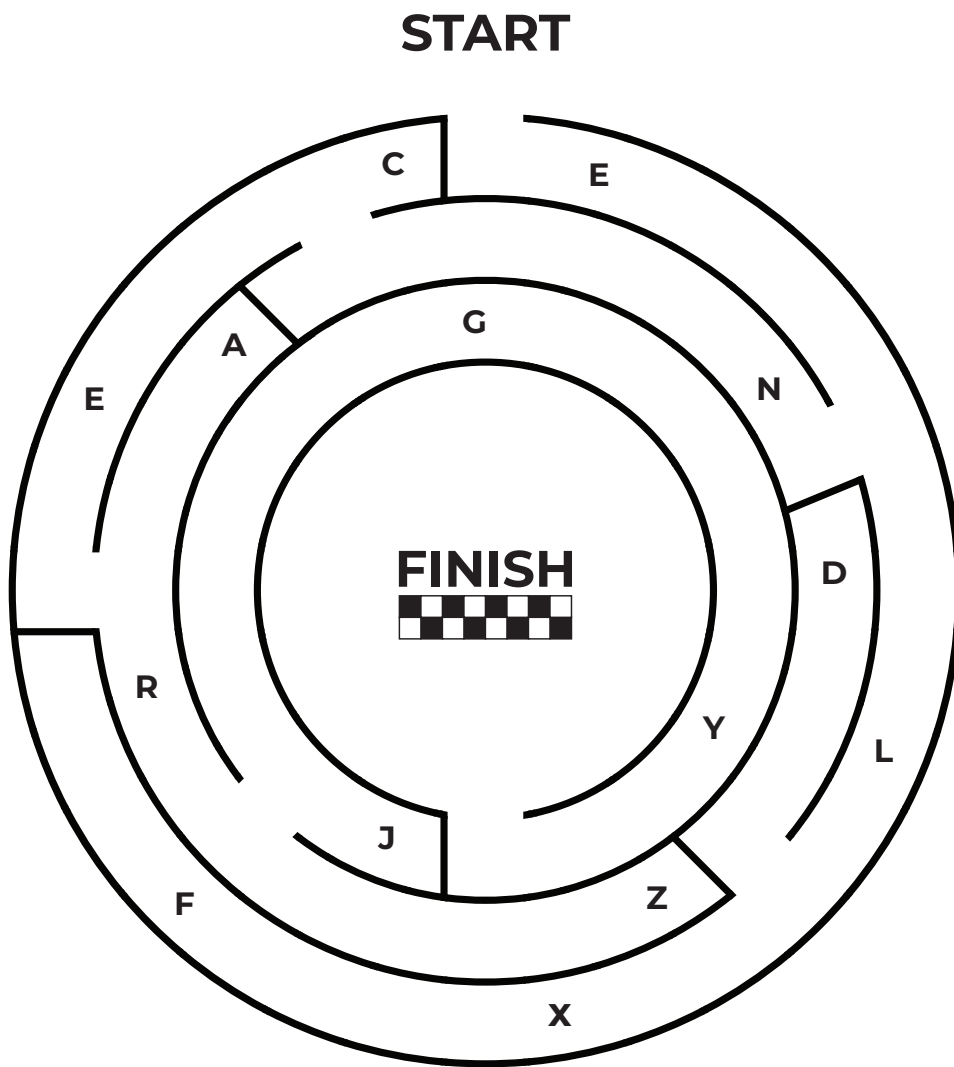
with **Sunny**

Draw a picture of one way you use energy and hang your work where friends and family will see it.



# Rusty's MAZE

Find your way through the maze and write the letters in the order they appear on the lines below. Read the sentence out loud once you've completed it.



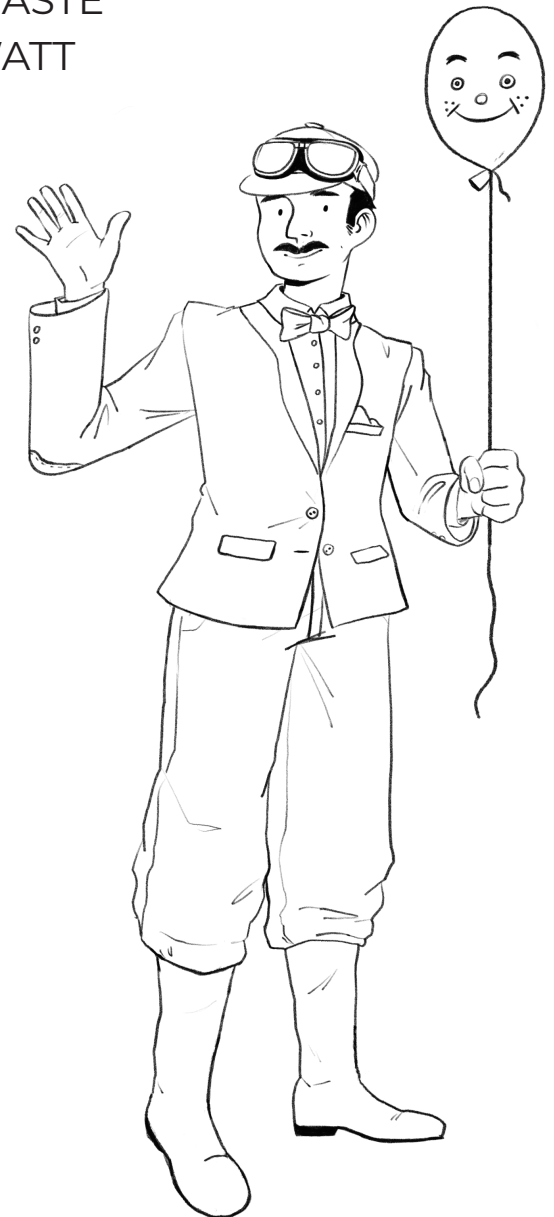
We use \_\_\_\_\_ every day.



# Find the Right WORDS

Help the Right Brothers find and circle all of the words from the list below. Do you remember what the words mean? Review their meanings on the inside front cover.

CONSERVE  
ENERGY  
ELECTRICITY  
WASTE  
WATT



A	W	A	T	T	Z	S	F
O	A	L	V	X	M	R	K
W	S	B	P	R	J	G	Y
N	T	I	T	Y	E	H	N
K	E	O	S	C	L	T	Q
Q	W	M	X	A	E	W	U
C	I	J	E	H	C	D	L
O	A	N	V	P	T	O	B
N	L	S	I	U	R	U	E
S	B	C	V	G	I	M	H
E	H	Y	D	F	C	X	P
R	E	T	R	A	I	D	K
V	C	G	J	B	T	Q	Z
E	N	E	R	G	Y	Z	F

## Energy Saving

# TIPS

Saving energy reduces our dependence on fossil fuels and helps preserve and protect our planet. Check out Joan Wattson's and Sure Luck Ohms' tips and clues on how you can save energy around your home and school today.



**Tip:** Turn off the lights every time you leave the room.

**Clue:** Advanced power strips can turn off many devices at once.

**Clue:** Energy-efficient bulbs use at least 75% less energy than incandescent bulbs.

**Tip:** Use weatherstripping tape to seal off air leaks around windows and doors.





**Clue:** Properly installed insulation can help keep room temperatures even.

**Tip:** Lower the temperature to 68° F on your thermostat in the winter.

**Clue:** LED night lights use less energy than regular night lights.

**Tip:** Unplug cellphone chargers from the wall when they are not in use.

## Sure Luck Ohms'

# MATH MESSAGE

Do the math and fill in the spaces below to discover a way to save energy.  
Read the message out loud once you've completed it.

$4 \times 5 = \boxed{\phantom{00}} \text{ N}$

$16 \div 2 = \boxed{\phantom{00}} \text{ R}$

$7 \times 3 = \boxed{\phantom{00}} \text{ E}$

$25 \div 5 = \boxed{\phantom{00}} \text{ B}$

$8 \times 6 = \boxed{\phantom{00}} \text{ L}$

$12 \div 3 = \boxed{\phantom{00}} \text{ W}$

$9 \times 2 = \boxed{\phantom{00}} \text{ A}$

$36 \div 6 = \boxed{\phantom{00}} \text{ U}$

$3 \times 9 = \boxed{\phantom{00}} \text{ O}$

$45 \div 5 = \boxed{\phantom{00}} \text{ S}$

$49 \div 7 = \boxed{\phantom{00}} \text{ C}$



8 21 20 21 4 18 5 48 21 8 21 9 27 6 8 7 21 9

come back again and again.



# WRITE

## with **Wattson**

Write your own story about Joan Wattson. With the help of a friend, fill in the blanks below to create a new story about saving energy. Ask your teacher or a parent if you need help. Share what you wrote by reading it to your family and friends.

### YOUR STORY

One day Wattson went to the \_\_\_\_\_.  
(noun)

Sure Luck Ohms left all the \_\_\_\_\_ on.  
(plural noun)

Wattson worked fast and turned them off.

Sure Luck Ohms was \_\_\_\_\_.  
(adjective)

Sure Luck Ohms said,

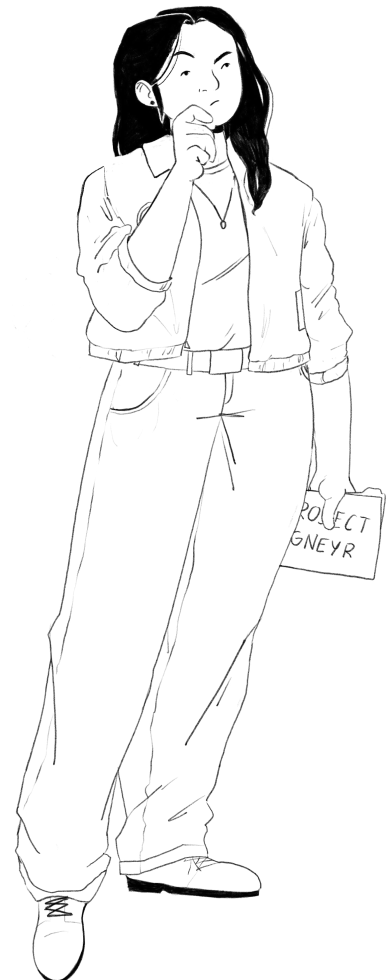
“You always ruin my \_\_\_\_\_!”  
(noun)

Wattson said,

“We all must save energy every day.”

Sure Luck Ohms got in his \_\_\_\_\_.  
(noun)

and drove \_\_\_\_\_ away.  
(adverb)



# READ

## with Rusty

Gather your friends, and then read the paragraphs and answer the True/False questions. **EXTRA CREDIT:** Read the article to someone else. Quiz them by asking the True/False questions.



A resource is something we use. Coal and natural gas are examples of the natural resources we use to make electricity at power plants.

To make electricity, the power plant uses resources like coal or natural gas to heat up water. When it starts boiling, the water creates steam. The steam then spins a turbine, which is like a giant rotating fan. The turbine has a magnet surrounded by copper wires attached to it. When the magnet spins inside the copper wires, electricity is created.

We use electricity to light our homes, charge our cellphones and run our TVs, computers, refrigerators and many other things. If we waste natural resources, we may not have enough electricity to power all of the things we need.

We save natural resources each time we turn off lights when we aren't using them and by switching to LED lightbulbs.

Water is a natural resource, too. It's also very important to conserve water. We all can save water and energy by using energy-efficient showerheads and by installing aerators on our kitchen and bathroom faucets.

- |  |   |
|--|---|
| <b>T/F</b> 1. We make electricity at power plants.                 | <b>T/F</b> 4. Energy-efficient showerheads save energy. |
| <b>T/F</b> 2. We should turn off lights when we aren't using them. | <b>T/F</b> 5. It's very important to conserve water.    |
| <b>T/F</b> 3. Water is a natural resource.                         |   |



## Take-Home Family Activity

# HOME AUDIT



Get together with your family and tell them about the things you learned about saving energy. Then post this page in a room and have each person make a mark each time they turn off a light, computer, TV or electric appliance when they've finished using it. You will be surprised how much electricity your family is using.

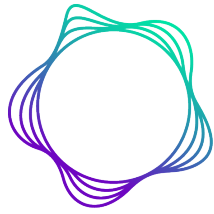
Remember:

**SAVE A WATT, SAVE A LOT!**

Make a mark each time a light, computer, TV or electric appliance is turned off.

MONDAY	
TUESDAY	
WEDNESDAY	
THURSDAY	
FRIDAY	
SATURDAY	
SUNDAY	

TOTAL



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**HEY PARENTS, STUDENTS  
AND TEACHERS!**

GO TO: **NTC** **play** **works**.com

After enjoying the live in-school performance, you and your child can find more fun learning activities on this topic and many more at [www.NTCplayworks.com](http://www.NTCplayworks.com).