

TIME: 1 Hour

Training Activity 3

How Much Electricity Do We Use?

• Overview

This activity has students explore how much electricity Ontarians consume in a day.

• Planning Notes

- Make copies of BLM 3a: How Much Electricity Do We Use? (next page).
- Gather data from <http://www.ieso.ca> (see step 1, below) or arrange for students to have Internet access to do so.

• Teaching/Learning Strategies

1. Students need access to the data (either through a computer or through a display) found at:

http://www.ieso.ca/imoweb/siteShared/demand_price.asp?sid=ic.

You can also access the website by going to www.ieso.ca. Click on the “Ontario Demand” graph and then the tab for “yesterday.”



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2. Explain to students that they are looking at data regarding how much electrical power Ontario used *yesterday*. Explain that the unit of measurement of electrical power used is the watt. Explain the meaning of the common units used, and their relationships, using a chart like the one below.

Unit of Power	Symbol	Meaning
watt	W	Base unit of power
kilowatt	kW	One thousand watts
megawatt	MW	One thousand kilowatts or one million watts
1 kW = 1 000 W		
1 MW = 1 000 kW		
1 MW = 1 000 000 W		

3. Hand out BLM 3a. Explain that students must examine the smooth line to answer questions 1–9 on BLM 3a. (The line is green on the website.)
4. Explain that, to fill out the *Family Electricity Journal*, students must think about the activities that their families do throughout the day. They will then rate the electricity intensity of the activities in various time periods to see if it corresponds to the smooth line. Provide some examples of possible activities for each period.
5. Finally, ensure that students add the following words and their symbols to their glossary sheets in their folders: *watt*, *kilowatt*, and *megawatt*.



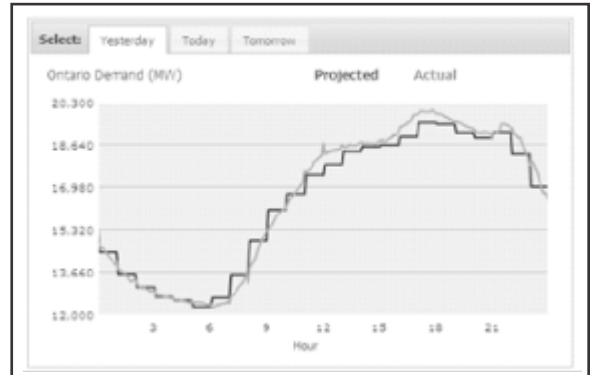
How Much Electricity Do We Use?

Name: _____

Date: _____

In Ontario we use a lot of electricity. In this activity you are going to explore how much.

1. Go to <http://www.ieso.ca>
2. Click on the line graph titled "Ontario Demand (MW)."
3. Then click on the first tab titled "Yesterday."
The smooth line is the amount of electrical power used at different hours of the day.
The graph will look something like the graph on the right:



4. Note that the graph uses a 24-hour clock where the hours count from 0 to 24, instead of the 12-hour clock which repeats twice with "a.m." and "p.m." showing the time of day. So on the graph, 3 means 3 a.m., 12 means 12 noon, and 15 means 3 p.m. (found by subtraction: 15-12=3).

- a. What does 18 mean? _____
- b. What does 21 mean? _____

5. Use the graph to answer the following questions:

- a. At what time of day was the least power used? Why do you think this was so?

- b. At what time of day was the most power used? Why do you think this was so?

- c. Describe the shape of the graph. When is the power used increasing or decreasing?

- d. In your opinion, at what time of day should we think about conserving electricity the most? Why?

BLM 3a-2

6. Create a brief journal to track your family’s electricity use.
- What types of activities are you and your family doing in each time period?
Write these in the spaces provided for each time period.
 - How much electricity do you think you are using in each time period? For each time period, check *high*, *medium*, or *low* to show how much electricity is being used.

Time	Activities	Intensity
6 a.m. – 9 a.m.	----- ----- -----	<input type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
9 a.m. – 4 p.m.	----- ----- -----	<input type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
4 p.m. – 9 p.m.	----- ----- -----	<input type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low
9 p.m. – 6 a.m.	----- ----- -----	<input type="checkbox"/> high <input type="checkbox"/> medium <input type="checkbox"/> low

7. Examine your Family Electricity Journal. In what periods does your family use the most amount of electricity? How does this compare with the graph you have been examining?
