The Great Energy Exploration  
Grades 6-8

Name: ________________________________________________________________________________  
Room: _________________________________________________________________________________

Exploration 1  
In this exploration, you will learn about the difference between a standard meter and a smart meter as well as the energy efficiency of different appliances.

1. What is the Current Time? __________AM at the top of the screen?  
2. Turn ON all appliances in the room.  
3. Click START  
4. What is the Electricity Cost? $_____________/kWh  
5. Click PAUSE after 1 hour  
6. What is the Current Time? __________AM  
7. What is the Electricity Cost? $_____________/kWh  
8. What is the Total Usage Cost? $_____________  
9. What is the Total Watt Hours Used? ___________/kWh  
10. Find and record the data for any two appliances in the chart below.  
11. Click RESET after the data has been recorded.  

<table>
<thead>
<tr>
<th>Appliance</th>
<th>Part Number</th>
<th>Watts</th>
<th>Watt Hours Used</th>
<th>Usage Cost</th>
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12. Raise your hand for the electricity technician to come over and install a Smart Meter.  
13. What is the Current Time? __________AM at the top of the screen?  
14. Click START  
15. What is the Electricity Cost? $_____________/kWh  
16. Click PAUSE after 1 hour  
17. What is the Current Time? __________AM  
18. What is the Electricity Cost? $_____________/kWh  
19. What is the Total Usage Cost? $_____________  
20. What is the Total Watt Hours Used? ___________/kWh  
21. Record the data for the same two appliances in the chart below:  
22. Turn off all appliances and click RESET

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Discussion 1

Discuss the following questions with your group and write your answer. Raise your hand if you have any questions.

1. Which of the two appliances you chose used more energy and how do you know?

2. Do we use all appliances in real life for the same length of time?

3. List an appliance in your home that runs for a long time:

4. List an appliance in your home that you use for a short amount of time:

5. Describe why knowing how much electricity an appliance uses would affect your use of the appliance:

6. How much would it cost to run both appliances for an entire day (24 hours) with a standard meter? (Usage Cost + Usage Cost) x 24

7. Explain the difference between Electricity Cost and Usage Cost:

8. What does a meter do?

9. What change do you notice on the monitor when you switch the standard meter with a Smart Meter?

10. Explain how knowing the price of electricity throughout the day would affect when you use different appliances.

11. If energy is cheaper to use at night, describe why you don’t run your appliances at night.