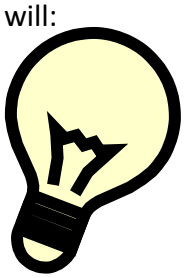
Name _____ Date _____ Period _____

Un-Cooking the Lab: Energy Transformations (6.2e)

Inquiry-based labs help you learn how to think like a scientist. In today's inquiry lab, you will:



- ✓ Explain natural phenomena
- ✓ Answer questions using observations and evidence
- ✓ Take part in the thrill of discovery and the uncertainty of science
- ✓ Collaborate and communicate findings with others

As you move through the four stations, consider the following examples of common energy transformations.

- Hydroelectric Dams (Gravitational-Potential Energy → Electric Energy)
- Battery (Chemical Energy → Electric Energy)
- Fire (Chemical Energy → Heat and Light Energy)
- Windmills (Wind Energy → Electric Energy)
- Friction (Kinetic Energy → Heat Energy)

" → "

Means "transforms into".

Part I. Energy Transformation Stations

Directions: You will spend about 5 minutes at each station. With your group members, examine the object at each station carefully and experiment with it. Can you turn it on? Off? What does it do that is useful or entertaining? Complete the table below.

	Object Name	**Observations (What does the object do?)**	**Starting Form of Energy**	**Ending Form of Energy**
Station 1				
Station 2				
Station 3				
Station 4				

Part II. Station Analysis Questions

1. At station 1, you experimented with a glow stick.
    a. What happened when you snapped the tube? Did you feel heat?

    b. HOW do you think glow sticks work?

    c. Using your observations, explain the energy transformation you think occurred.

2. At station 2, you used with a calculator. The calculator does NOT have batteries inside.
    a. HOW do you think it works?

    b. Using your observations, explain the energy transformation you think occurred.

3. At station 3, you operated a music box. Again, no batteries were used to produce the sound.
    a. HOW do you think music boxes work?

    b. Using your observations, explain the energy transformation you think occurred.

4. At station 4, you operated a lamp.
    a. What do lamps require to turn on?

    b. Using your observations, explain the energy transformation you think occurred.

5. What does “useable energy” mean to you? What are some examples of useable energy?

6. What is an energy transformation?

7. Study the energy transformations below. Label the form of energy below the object. Use the arrow “ → ” to show the energy transformation.

Electric Socket Stove Boiling Water Rising Steam

_____ _____ _____ _____

Battery iPod

_____ _____

Sun Vegetables Your Body You Running

_____ _____ _____ _____