

# Help the Planet, Save Energy!

## A Lesson About Light Bulbs



### Objectives:

- Students will learn about the different types of light bulbs
- Students will learn about the different energy uses in light bulbs
- Students will look at how much energy was spent on light bulbs in their home

Saving energy will not only help the environment, it can also save money! Over the last few decades, new light bulbs have been designed to help make our homes more energy efficient. In this lesson students will learn about these light bulbs and how they can save money and energy in their homes.

### Materials:

- Student worksheets
- Writing materials
- LED light bulb
- Energy Survey (also available online)

### Lesson:

1. What are the three main types of household light bulbs?
  - Traditional Incandescent
  - CFL (Compact Fluorescent Lamps) - Fluorescent light bulbs designed to replace incandescent bulbs, often looking like a spiral bulb.
  - LED (Light Emitting Diodes) - More expensive light bulb that will last much longer
2. Discuss with the students the “Light Bulb Cost and Energy Usage” Chart.
  - This chart will help answer the questions on the worksheet.
  - Introduce kilowatt hour, a unit used to measure energy. Your house is billed by the electric company based on the number of kilowatt hours used in a month.
3. Discuss with students how to estimate the cost per hour to use each bulb.
4. Discuss the difference between the average number of hours each type of light bulb will burn.
5. Have students complete the worksheet.

### Homework Assignment:

1. Have students count the number of each type of light bulbs in their house.
2. Calculate the total cost of light bulbs in their house.
3. List some ways you save money on light bulbs and electricity your home.
4. Have the students complete the home energy survey.

### Follow up questions:

1. Which light bulbs are the most energy efficient? (LED bulbs)
2. Over time, which light bulbs would be most cost effective? (LED bulbs - Even though they are the most expensive, they last the longest and use the least amount of energy.)

Name: \_\_\_\_\_ Date: \_\_\_\_\_



## Light Bulb Cost and Energy Usage

	Average Cost per Bulb	Estimated Yearly Energy Cost*	Energy Used kWh (kilowatt hour)	Life in Hours
Traditional Incandescent	\$0.41	\$7.23	60	1000
CFL (Compact Fluorescent Lamps)	\$2.24	\$1.69	14	10,000
LED (Light Emitting Diodes)	\$9.97	\$1.14	9.5	25,000

\* If light bulb is on for 3 hrs/day and energy cost is \$0.11 per kWh (kilowatt hour)

Using the chart above, answer the following questions and complete the charts.

- Which light bulb uses the most energy (largest kilowatt per hour)? \_\_\_\_\_
- Which light bulb costs the most? \_\_\_\_\_
- Which light bulb has the longest life? \_\_\_\_\_

4. Complete the chart below and calculate the estimated energy cost per hour.

	Traditional Incandescent	CFL (Compact Fluorescent Lamps)	LED (Light Emitting Diodes)
Average Hours per Light Bulb			
Average Cost per Light Bulb			
Estimated Energy Cost used per hour			

5. If a traditional incandescent light bulb in your house was on for 2500 hours in a year (almost 7 hours per day), how many light bulbs would you use?

6. If a LED light bulb in your house was on for 2500 hours in a year (almost 7 hours per day), how many light bulbs would you use?

7. Complete the chart below and calculate the cost of the light bulbs in your home.

	Traditional Incandescent	CFL (Compact Fluorescent Lamps)	LED (Light Emitting Diodes)
How many light bulbs do you have in your house?			
Average Cost per Light Bulb			
Total Cost of Light Bulbs			

8. On the back of this paper, list some ways you can save money on light bulbs and electricity your home.