

Energy Efficient Lighting



Worksheet 3: Calculating Energy Savings
Energy Revealed
Grade Level: 4-7

What Did We Save?

1. Collect data. For one week, record only new times when your class turned off the lights.

MONDAY Time on/Time off	min.	TUESDAY Time on/Time off	min.	WEDNESDAY Time on/Time off	min.	THURSDAY Time on/Time off	min.	FRIDAY Time on/Time off	min.
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ADD		+		+		+		+	
TOTAL MINUTES =									
CONVERT TO HOURS =									

- Calculate the time the lights are off. Add the minutes for each day. Then add these together for a weekly total.
- Convert minutes to hours. Convert weekly minutes to hours by dividing by 60 minutes per hour.

4. Research

Look at the different bulbs in the room to determine what kinds are there. Read the label on each bulb to determine the number of watts it uses. Then circle the bulb type on the chart given on the worksheet.

Compact fluorescent	
	38 watts
	23 watts
	20 watts
	13 watts
	10 watts
Incandescent	
	150 watts
	100 watts
	75 watts
	60 watts
	40 watts
Fluorescent	
	40 watts
	28 watts
Halogen	
	40 watts
	32 watts
	24 watts
LED	
	6 watts
	7 watts
	8 watts

5. Collect Data

Count the number of bulbs of each kind and record it on the worksheet.

bulbs

X

watts

watts

6. What does it take to light the room?

Calculate how much energy is needed to power the lights by multiplying the bulbs and watts.

7. How long are the lights on?

Estimate how many hours the classroom or the room lights are on each week and record it on the worksheet.

hours

X

watts

watt-hours

9. Convert watt-hours to kilowatt-hours

/

1000

watt-hours

kilowatt-hours

8. What does it take to light the room for a week?

Calculate how much energy is needed to power the lights for a week by multiplying the hours and watts.

10. How many kilograms of greenhouse gas emissions is that? Demonstrate how to use the Energy Calculator.

kilowatt-hours

X

MULTIPLIER

=

Kg GHG

Was Our Mission Successful?

Review your results using the following questions:

1. How do you feel about the savings your class achieved?
2. How do the saving compare with your goals?
3. What was challenging about taking action?
4. What worked well?
5. What is the most valuable discovery you made on your mission?