

# School Lights

**Fourth Grade**

**Activity: 3**

**Time: 2 Class Periods**

## General Description

Students will survey classrooms to chart usage of lights at school. Students will determine where, when and what kind of lights are being used.

## Objectives

Students will collect data pertaining to the use of lights in the school.

Students will analyze the use of lights in the school and devise a plan to reduce the use of electricity.

## Arizona State Standards

SC04 S1C2 PO5 Record data in an organized and appropriate format (e.g., t-chart, table, list, written log)

SC04 S1C3 PO1 Analyze data obtained in a scientific investigation to identify trends

SC04 S1C4 PO1 Communicate verbally or in writing the results of an inquiry

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SC04 S1C4 PO3 Communicate with other groups or individuals to compare the results of a common investigation

SC04 S4C3 PO4 Describe ways in which resources can be conserved (e.g., by reducing, reusing, recycling, finding substitutes)

W04 S1C1 PO1 Generate ideas through a variety of activities (e.g., Brainstorming, graphic organizers, drawing, writer's notebook, group discussion, printed material)

W04 S3C2 PO1 Record information (e.g., observation, notes, lists, charts, map labels, and legends) related to the topic

W04 S3C4 PO1 Write persuasive text (e.g., advertisements, paragraph) that attempts to influence the reader

M04 S2C1 PO3 Interpret graphical representations and data displays including single-bar graphs, circle graphs, two-set Venn diagrams, and line graphs that display continuous data

## Teacher Background

Lights consume about 20% of all energy used in the United States. Saving energy helps ensure we all have enough energy to meet our needs. Saving energy can help reduce the effects that producing energy may have on our environment. Saving energy can mean saving money. Work with the students to determine how your school is using lights in the school?

**\*\*Have an energy expert from your school (custodian), a district support services person or someone from your local utility come in and talk to the students about their job\*\***

## **Materials**

Paper to make maps of the school  
School Lights Survey, Activity Card 4-3  
Poster paper  
Chart paper  
Crayons/markers

## **Procedure/Exploration**

1. Distinguish between incandescent and fluorescent lights.
2. Develop rules for the survey.
3. Brainstorm places around the school grounds where there might be light bulbs identify the two types.
4. Models the image of an aerial view of a school, correctly label the map.
5. Have students create an accurate map of their school.
6. Divide the students into teams assigning them an area of the school to survey.
7. Remind students of rules for surveying. Have them complete the survey.
8. Discuss and post results of School Lights Surveys.
9. Have the students share their results of school lights survey and generate further questions based on what they discovered. List these questions on large chart paper.
10. Did students notice other uses of energy on the school grounds? List responses on the chart for future use.
11. Design slogans/artwork for poster to be distributed around the school and at home to remind people to turn off lights when not in use.

## **Possible Extension**

Continue research in order to answer the questions the students generated.

# School Lights Survey

**Fourth Grade**  
**Activity: 3**  
**Activity Card: 4-3**

**Student's Name:** \_\_\_\_\_

**Date:** \_\_\_\_\_

Team names: \_\_\_\_\_

School: \_\_\_\_\_ Date: \_\_\_\_\_

Inside and outside lights: \_\_\_\_\_

Where are the lights located? \_\_\_\_\_

What is their purpose? \_\_\_\_\_

How many hours are they turned on? \_\_\_\_\_

List any areas where there are more lights than necessary. \_\_\_\_\_

\_\_\_\_\_

List any areas where more lights are needed. \_\_\_\_\_

\_\_\_\_\_

List any areas where lights are burning in vacant rooms. \_\_\_\_\_

\_\_\_\_\_

Are there two sets of switches in the room so you could turn on half the lights? \_\_\_\_\_

\_\_\_\_\_

Complete the chart:

Areas	incandescent or fluorescent	time observed	purpose	# lights
1.				
2.				
3.				
4.				
5.				

Questions Generated:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_