**One Million Students- Lesson 1**

SOLAR ENERGY: AN INTRODUCTION

GOALS

1. Discuss the different sources of energy: renewable and non-renewable
2. Highlight the importance of light and need for renewable energy like solar
3. Excite students about the possibilities of solar power
4. Inspire students to take action

MATERIALS

a. Poster paper/ Markers

b. Solar Kit: Projector, Solar Panel, LED, Electrical Wires

BENEFITS

a. Help teachers by introducing a curriculum that supports CA education standards.

b. Allow students to engage in teamwork and public speaking activity

c. Enable students to have empathy for the environment and for the people living without electricity.

ADVANCE PREPARATION

Review the presentation and lesson materials ahead of time.

HANDOUT LIST

* 1. Presentation: Solar Energy- Introduction
  2. Presentation: One Million Lights (OML) and OMS (One Million Students) Overview

PROCEDURE

Duration: 45 minutes

Targeted Students: K-8 Grade (adaptable depending on age group)

**Lesson Agenda:**

1. Introduction (15 minutes)
2. Discussion: Classroom discussion on energy sources (15 minutes)
3. Demonstration & Explanation: Solar panels in action (5 minutes)
4. Review Questions (5 minutes)
5. Student Questions (5 minutes)

**1. Introduction:** *(use Power Point Presentations)*

Share with students an overview of One Million Lights (OML) and OMS (One Million Students)

**2. Discussion:** *(use Power Point Presentations)*

* Questions for the class
  + What are the things that we use electricity/energy for in our daily life?
  + What sources of energy do we use now?
    - Hints: Cars, Locomotives, Dams, etc.
  + How much of the energy in the US comes from each category?
  + Do you think there are differences between California and the United States? Why?
    - Draw a rough pie chart on the whiteboard from answers
    - Show real pie chart
* Presenting the Problem
  + Scarcity of resources
    - Demand for oil and gasoline will eventually be insatiable
    - Variety is important so will not become reliant on select sources
  + Global Warming
* Solar Energy as Solution
  + Energy from the Sun is not scarce
  + Natural and Eco-friendly energy source
  + Readily available
  + Sustainable

**3. Classroom Demonstration:**

* Show that the solar panel can light up an LED light
* How does this happen:
  + Materials in panel “absorb” energy from the sunlight and convert it into electricity
* Solar at a larger scale
  + Hundreds of panels, much larger, can power cities

**4. Review Questions:**

1. How many people lack access to electricity around the world?

Answer: 1.3 billion people

1. What are some of the benefits of solar lighting?

Answers:

* 1. Higher Productivity
  2. Increase income
  3. Savings
  4. Decrease in respiratory diseases
  5. Additional study hours for students

1. Why should we use solar?

Answers:

* 1. The Sun will not “run out”. It is renewable and will last for a long time
  2. The Sun is eco-friendly and does not harm the Earth.
  3. There are no carbon emissions that are leading to global warming.
  4. The Sun is easily available and accessible.
  5. The Sun is clean and healthy. It does not harm human beings with toxic fumes.

**5. Student Questions:**

Time allocated for students to ask questions regarding the lesson.