

**Project FOCUS  
Best Lessons  
FIRST GRADE**

**Title of Lesson:** Fire and Air

**Theme:** Physical Science

**Unit Number:** 4      **Unit Title:** Light and Shadows

**Performance Standard(s) Covered (enter code):**

S1P1

S1CS1

S1CS2

S1CS4

**Enduring Standards (objectives of activity):**

**Habits of Mind**

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

**Content (key terms and topics covered):**

Light sources, fire, air, bar graphs

**Learning Activity (Description in Steps)**

**Abstract(limit 100 characters):** This experiment looks at fire as a light source and at its requirement of air.

**Details:** 1. Begin the lesson with a discussion on fire safety and a reminder that the kids must remain seated or someone could get burned.

2. Light the candle and talk about fire as a light source. Before the light bulb was invented, people had to use candles to see at night. Also, since fire is a light source we can use it to make shadows. This part of the discussion can be related to the students' unit on shadows. Explain that fire needs oxygen (or air) to remain lit. Knowing this, ask the kids what they think will happen if you put a jar over the candle. After taking predictions, place a jar over the candle until it goes out.

3. Line the 4 jars up in order of size and label them 1-4. Make a chart on the poster with the first column labeled "Estimated Time" and the second column labeled "Actual Time." Then write down the class's estimate of time for the individual jars.

4. Light the candle again. Put jar 1 over it and begin the timer (or let the class count out loud). Stop counting when the candle goes out and record the actual time on the chart.

5. Repeat for jars 2-4 and complete the chart. The children should notice the trend that the candle burns longer under the bigger jar. Be sure to point the trend out if they do not notice. Explain that the candle burns longer under the bigger jar because it holds more air.

6. Use the results of the chart to make a bar graph comparing the different jars. Make sure the jars are on the x-axis and seconds are on the y-axis to get vertical bars. Make sure the students understand the meaning of the bars. The taller bars represent more time that the candle burned under a bigger jar. The bars could also represent the amount of air in the jars since that is the reason the candles burned the amount of time they did. Alternatively, you could give a hand-out to each kid with a graph with only jars and seconds labeled and let them draw the bars.

**Materials Needed (Type and Quantity):**

Tea candle (one required, but back-up is helpful)

4 jars of various sizes

Matches or lighter

Poster

Marker

Timer/stopwatch

**Notes and Tips (suggested changes, alternative methods, cautions):**

The teacher must emphasize the importance of not getting close to the candles and the dangers related to fire.

**Sources/References:**

1) <http://www.education.com/activity/article/candle-snuffing-contest/>

2)

3)