

Name \_\_\_\_\_

## Light Stick Chemistry

**Purpose:** 1) To organize, analyze, evaluate, make inferences, and predict trends from direct and indirect evidence

- 2) To identify and demonstrate everyday examples of chemical phenomena
- 3) Observe the effect of heat on matter

**Question:** How does the addition and removal of heat affect the brightness of a light stick?

**Background Information:** A lightstick is a plastic tube with another glass tube inside of it. To make the lightstick glow, you bend the plastic stick, which breaks the glass tube. This allows the chemicals that were inside the glass to combine with the chemicals in the plastic tube. A chemical reaction takes place when this happens. The reaction releases light energy, causing the stick to glow. Chemical energy is transformed into light energy. The light produced by this chemical reaction is called chemiluminescence.

**Prediction:**

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**Materials:**

3 Lightsticks	Beaker of hot water	Beaker of cold water
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**Procedure:**

1. Bend the lightstick just enough to break the thin glass tube inside the lightstick.
2. Shake the lightstick to mix its contents.
3. Observe the lightstick. Record your observations.
4. Put the light stick in a beaker of cold water for 5 minutes.
5. Observe the lightstick. Record your observations.
6. Put the lightstick in a beaker of hot water for 5 minutes.
7. Observe the lightstick. Record your observations.

**Data:**

Lightstick Observations		
After breaking	In cold water	In warm water

**Conclusions:**

1. What type of data did you collect in the investigation, qualitative/descriptive, or quantitative? \_\_\_\_\_  
Why? \_\_\_\_\_
2. What difference did the temperature make in the brightness of the lightstick?  
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3. What caused this difference?  
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