

# Illuminating Glow Sticks

Glow sticks are a fun and safe way to play and experiment with light! They were invented in the 1960s and have changed to glow brighter, include more colors, and last longer. Try this experiment to explore and learn more about glow sticks!



## Materials:

- 2 Clear Cups
- 3 Glow Sticks
- Tap Water (Hot and Cold)
- Ice

Be sure to ask an adult for help with the hot water, if needed.

## Procedure:

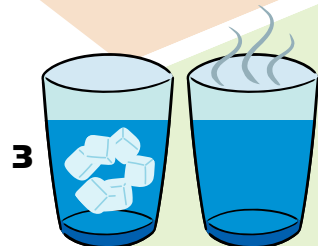
1. Make sure you are in a room where the lights can be turned off for the experiment.



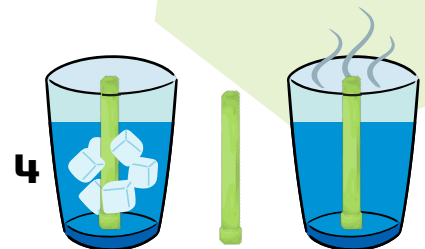
2. Bend 1 glow stick so it starts glowing, but leave the other 2 for later.



3. Get the water ready. You need 1 cup filled with cold water and ice and 1 cup filled with hot tap water. Place these on a counter or table.



4. Bend the other 2 glow sticks then place 1 in the cold water cup and 1 in the hot water cup.



5. Turn off the lights and observe the glow sticks for 5 minutes. Which glow stick is the brightest?



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## WHAT'S HAPPENING?

Glow sticks work because of a chemical reaction happening inside the tube. This reaction is called **chemiluminescence** - a reaction that emits light but not heat.

Inside the glow stick is a glass tube filled with hydrogen peroxide. When you bend the glow stick and hear cracking, that is the glass tube breaking. The hydrogen peroxide mixes with another chemical and fluorescent dye and the glow stick starts to glow.

The chemical reaction is affected by the surrounding temperature.



Surrounding Temperature and Effect on Reaction	
Warm	Cold
Reaction happens faster	Reaction happens slower
Glow is brighter	Glow is duller
Glow lasts for a shorter amount of time	Glow lasts for a longer amount of time



## DID YOU KNOW?

**Chemists** study everything about chemiluminescence and more. If you liked this activity, maybe chemistry is for you!