



Station Five Guide

CHEMICAL ENERGY

Part One: Glow Sticks

🔍 Question

How is chemical energy in the glow stick affected by thermal energy in hot and cold water?

🔬 Hypothesis

I think the chemical energy in the glow stick will make the glow stick _____ when it is snapped.

I think the thermal energy of the hot water will make the glow stick _____.

I think the thermal energy of the cold water will make the glow stick _____.

📄 Materials

- 1 Unbroken glow stick (will remain unbroken)
- 2 Glow sticks of the same color (will be 'cracked')
- 1 Cup of hot water
- 1 Cup of ice water
- Colored pencils (optional)

🗣️ Vocabulary

- chemical energy
- chemical reaction
- convert
- molecule
- radiant energy
- reaction
- thermal energy

✓ Procedure

1. Look at an unused glow stick carefully. Record and illustrate your observations. What do you see inside the glow stick?

ILLUSTRATIONS AND OBSERVATIONS:



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2. Bend the other two glow sticks until the inside container cracks. Record or illustrate what the glow sticks look like now.

ILLUSTRATIONS AND OBSERVATIONS:

3. Place one cracked glow stick in the ice water.
4. Place the other cracked glow stick in the hot water.
5. Wait a minute or two. Record or illustrate your observations.

ILLUSTRATIONS AND OBSERVATIONS:



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** Part One Conclusion

1. Referring to your observations, how did thermal energy affect the chemical energy in the glow sticks?

2. Using your *Forms of Energy Cards*, show the energy transformations (in order) demonstrated in this activity. Write out the transformations below.