

Carbon Snake

A Carolina Essentials™ Demonstration



Essential Question

What is the energy or heat flow through an exothermic reaction?

Demonstration Objectives

1. Predict what will happen during the demonstration.
2. Observe an exothermic reaction.
3. Trace the flow of energy through the reaction.

Procedure

Summarize the demonstration.

Data and Observations

1. Describe and/or illustrate what you expect will happen when concentrated sulfuric acid is mixed with the carbohydrate sucrose.

2. Describe the results of the dehydration reaction.

Analysis and Discussion

1. What evidence did you observe indicating that a chemical reaction took place during the demonstration?

2. Was heat released or absorbed by the overall reaction during the demonstration? Explain the flow of heat during the reaction.

3. The dehydration of sucrose ($C_{12}H_{22}O_{11}$) separates water from the carbohydrate, producing elemental carbon and water. Write a balanced chemical reaction for the dehydration of sucrose.