

# Iodine Clock Reaction Demonstration Worksheet

## Results Table

	1 (Control)	2	3	4	5	6
Contents of Beaker A						
Contents of Beaker B						
[KIO <sub>3</sub> ] after mixing solutions						
[Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub> ] after mixing solutions						
Temperature						
Catalyst present?						
Reaction Time						

## Discussion Questions

- Write the chemical equation for each of the steps in this reaction mechanism.
  - Sodium meta-bisulfite produces hydrogen sulfite ions in water
  - Potassium iodate decomposes
  - Iodate ions react with hydrogen sulfite ions
  - Iodide ions react with iodate ions in the presence of water

In order for a reaction to occur and products to be formed, reactant molecules need to reach a transition state, or activated complex. Only molecules with enough kinetic energy, or activation energy, to reach this state can produce products. The reaction rate depends on the activation energy necessary for molecules to form an activated complex. There are two ways to increase the rate of a reaction: more molecules with sufficient kinetic energy must be present, or the activation energy must be decreased.

2. How does the concentration of reactant molecules affect the reaction rate? Explain.

3. How does temperature affect the reaction rate? Explain.

4. What is a catalyst? What was the catalyst used in this demonstration?