Student directions ***Reactions and Rates*** **activity 1**: Introduction to reactions

**Learning Goals:** Students will be able to:

- **Describe reactions in terms of a simple molecular model.**
- **Describe reactions in terms of molecular models with illustrations.**
- **Differentiate between dissolving and reacting**
- **Use the molecular model to explain why reactions are not instantaneous**
- **Use the molecular model to explain why reactions have less than 100% yields.**

1. Use the **Many Collisions** tab to test ideas you might have about reactions on a molecular level. After your tests, type a summary. Add illustrations by drawing on a separate sheet with labels; include references to these drawings in your summary.

2. Explore the ***Salts and Solubility*** simulation again**. (***It is about dissolving not chemical reactions.)* Check that your summary differentiates between dissolving and reacting. Make changes to your summary or drawings and then print.

3. Form a review committee by getting with a group that you do not sit near. Compare your summary and drawings and hand-write additions or changes as necessary. Have your "reviewers" sign your paper.

4. Talk about how you could the simulation to figure out **"why reactions are not instantaneous"**. Run tests and summarize your findings.

5. Talk about what **"reactions have less than 100% yields"** means. When we did the Carbohydrate Chewies lab, some ingredients were lost during the process, now we want to ignore loss of materials to surroundings. Use the simulation to help you understand on a molecular level, then write a description with illustrations.