### Guiding Question: How does mass change during reactions, if at all?

### Procedure: For each part of the lab, record the initial and final masses of the substances. Calculate the change in mass over time. Record observations of each change.

| **Part** | **Initial Mass(es)** | **Final Mass(es)** | **Change in Mass** |
| --- | --- | --- | --- |
| **A:** Steel wool before and after “fluffing” |  |  |  |
| **Observations:** | | | |
| **B:** Steel wool before and after burning |  |  |  |
| **Observations:** | | | |
| **C:** Ice before and after melting |  |  |  |
| **Observations:** | | | |
| **D:** Liquids before and after mixing: |  |  |  |
| **Observations:** | | | |
| **E:** Sugar and water before and after mixing |  |  |  |
| **Observations:** | | | |
| **F:** Alka Seltzer and water before and after mixing |  |  |  |
| **Observations:** | | | |

### Modeling: For each part of the experiment, draw diagrams at the simple particle level that may help explain the observations you witnessed. Use small circles to represent the particles of each substance. Use different colored circles to represent different substances.

| **Part** | **Before change** | **After change** |
| --- | --- | --- |
| **A:** Steel wool before and after “fluffing” |  |  |
| **B:** Steel wool before and after burning |  |  |
| **C:** Ice before and after melting |  |  |
| **D:** Liquids before and after mixing |  |  |
| **E:** Sugar and water before and after mixing |  |  |
| **F:** Alka Seltzer and water before and after mixing |  |  |

**Analysis Questions:**

1. Claim: Answer the guiding question: How does mass change during reactions, if at all?
2. Evidence and Reasoning #1: Describe the observation of mass changes when sugar and Alka Seltzer both dissolved in water. Explain, **at the particle level**, what happened to their mass and why.
3. Evidence and Reasoning #2:When Alka Seltzer dissolved in water it had a very different change in mass outcome than when the steel wool burned. Explain, **at the particle level**, what happened to the steel wool mass and why.

1. Justification: Explain the concept of conservation of mass **using examples from this lab**.