

Unit 1 Worksheet 1: Mass and Change

1. When you pulled the steel wool apart, you found that the mass was unchanged. But, when you heated the steel wool, you found that the mass changed. Explain why.

*****Draw a key/ legend for all particle diagrams identifying the type of particle.*****

Show the number of particles in each box by writing “ $n =$ ”. Example: to show 10 particles, write $n = 10$

Draw diagrams (at the simple particle level) of the steel wool before and after the change.

Steel wool-pulled apart before	after	Steel wool-heated before	after

2. When ice melts, the volume of water is smaller than that of the ice. How does the mass of the water compare to the mass of the ice?

Draw diagrams (at the simple particle level) of the ice and water. Use small circles to represent the H_2O particles. Remember, liquid water and frozen water (ice) are both made of water (H_2O).

Ice	Water

3. When the sugar dissolved in the water, you found that the mass remained unchanged. When the Alka-Seltzer dissolved in the water, the mass of the system changed. Explain why.
- The mass of the sugar and water system was unchanged because
 - The mass of the Alka Seltzer and water system changed because

Draw diagrams (at the simple particle level) of each of the materials before and after it was dissolved. Show the number of particles in each box by writing “ $n = \underline{\hspace{1cm}}$ ”
Example: to show 10 particles, write $n = 10$

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Sugar

Water

Sugar Water

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Alka Seltzer & Water:

Before dissolving
 (water & Alka setzer only)

After dissolving
 (water and gas, no Alka Seltzer remains)

4. Mixing the chemical A water solution with the chemical B water solution caused the precipitate, chemical C, to form. **When the precipitate formed in the solution, you found that the mass remained unchanged. Explain why.**

Draw diagrams (at the simple particle level) of each of chemical A and chemical B before they are mixed together, and then chemical C in water after A & B are mixed. Ignore the water.

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Chemical A

Chemical B

Chemical C

- 5. State the Law of Conservation of Mass in your own words.**