

Unit 1 Worksheet 1: Mass and Change

1. a) When you pulled the steel wool apart, you found that the mass was unchanged. When you heated the steel wool, you found that the mass changed. **Explain** your response

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

Steel wool-pulled apart
before after

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Steel wool-burned
before after

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2. a) 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? **Explain** your response.

- b) Draw diagrams (at the particle level) of the ice and water. Use small circles to represent the water particles.

before

after

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3. A student performed additional experiments to study additional changes and their effect on mass. The student prepared two containers containing vinegar. In one container the student added a sample of salt. In the second container, the student added a sample of baking soda. The salt and baking soda both dissolved, though the dissolving of baking soda was much more vigorous (you can try this experiment at home with the permission of your parents). The results of the experiment are summarized in the tables below:

Table A: Salt & Vinegar experiment results

Objects	Mass:
Mass of container, vinegar, and salt before	21.25 g
Mass of container, vinegar, and salt after	21.20 g

Table B: Baking Soda & Vinegar experiment results

Objects	Mass:
Mass of container, vinegar, and baking soda before	21.25 g
Mass of container, vinegar, and baking soda after	19.48 g

a) Determine the change in mass for each experiment:

b) Explain why you think the different changes in mass occurred for each experiment:

c) Draw diagrams (at the particle level) of each of the materials before and after it was dissolved.

salt in vinegar

before (separate)

after (dissolved)

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baking soda in vinegar

before (separate)

after (dissolved)

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4. a) In the Mass & Change lab, would you say that mass was *conserved*? Why or why not? Explain.

b) State the Law of Conservation of Mass *in your own words* (in everyday language).