

Kai Wang
8th Grade Science
Law of Conservation of Mass

AGENDA: Students should be able to understand the law of conservation of mass. This includes understanding the principles behind the law and its application.

STANDARD 1: Recognize, interpret, and be able to apply their knowledge of the law of conservation of mass to real life examples.

STANDARD 2: Examine cases where if the mass of the system is NOT equal before and after a process

STANDARD 3: Present and explain data and findings.

Time Frame: 1 class period (45 min)

Materials: 2 hot plates, two beakers, bags of ice, hot gloves, 1 triple beam balance

1) Activator: Question/Answer session on what students think conservation of mass is - have them think about burning objects such as wood.

(No more than 10 minutes)

2) Instruction/Interaction:

- a) Students grab a handful of ice and measure out their handful using a triple beam balance.
- b) Have the students heat up the ice until it has all changed into water. Measure the mass.
- c) Have the students heat up the water until it reaches boiling point - when the water begins to evaporate. Measure the mass.
- d) Repeat steps a-c but in a closed system (place a lid on top of the beaker and have the students measure out their results.)

(ideally approx 20 min)

3) Discussion/Results: Discuss why were the masses of the two systems different/same (approx 10min)

4) Wrap Up / Assessment: Complete Worksheet (approx 5min)

5) Worksheet Questions:

- a) State the law of conservation of mass.
- b) Write out all three masses you measured for the beaker when it was filled with ice, the mass of the beaker when the ice dissolved into water, and the mass of the beaker when the water started boiling (for both when the lid was on the beaker and when the lid was not on top of the beaker).
- c) What do you notice about your results?
- d) How does it relate to the law of conservation of mass?
- e) If a piece of wood starts to burn, is the mass conserved? Explain why.