

(Edited version for public review)

1.4 Act 3

Mass of Objects

1. Suppose that one lab group reported the following results for the mass of the same object they measured several times.

trial	mass (g)
1	13.54
2	13.56
3	13.55
4	13.54

Is there a problem with the balance? Explain. What is the best way to report the mass of the object?

2. A lab group found the mass of a ball of clay to be 15.20 g. They carefully flattened the ball of clay into a pancake, then put the clay on the pan of the balance. What mass should they expect for the piece of clay? Explain.

3. Another class of students performed a lab in which they dissolved salt into water and compared the mass of the solution to the mass of water and salt before mixing. Their results are listed below.

Group	Change in mass (g)		Group	Change in mass (g)
1	+0.01		6	-0.02
2	0		7	-0.01
3	-0.01		8	+0.01
4	-0.03		9	0
5	-0.01		10	-0.02

This class reached the conclusion that there is a small loss in mass when the salt dissolves because ...

(Additional materials available in members' resources)

4. A student took a jar, added some water to it, then placed the jar and an Alka-Seltzer tablet on the balance pan. The total mass was 20.40g. He placed the Alka-Seltzer in the water and noted ...
(Additional materials available in members' resources)

5. Another student performed a similar experiment, but this time the water was placed in a jar with a cap that made a tight seal when closed. The Alka-Seltzer tablet was added and the jar was quickly sealed. How would you...

(Additional materials available in members' resources)

6. After the above experiment was completed, the student carefully opened the lid of the jar. Describe what ...

(Additional materials available in members' resources)