



Name _____

Date _____

Class _____

(Unit 4 Chapter 1, Activities 1–4)

1. Scientists accept an idea after many experiments show that the idea is a good one. However, scientists reject or modify an idea after just one experiment shows that the idea is a poor one. (Activities 2 and 4)
2. A **closed system** is a system in which nothing is input (added) to the system or output (removed) from a system during interactions. (Activity 2)
3. A system that is *not* a closed system is called an **open system**. In an open system, something may be input (added) to the system, or output (removed) from the system. (Activity 2)
4. When an amount of something stays the same, scientists say that the amount is **conserved**.
5. Volume is *not* always conserved. In an interaction, the total volume of a system may change or may stay the same. (Activity 4)

Volume does not necessarily stay the same in a closed system.



What evidence supports this idea?

6. In a closed system (a system with no inputs and no outputs), interactions do not change the mass of the system. In other words, mass is conserved. (Activity 2)

Mass Conservation
 The amount of mass stays the same in a closed system even after interactions have occurred.

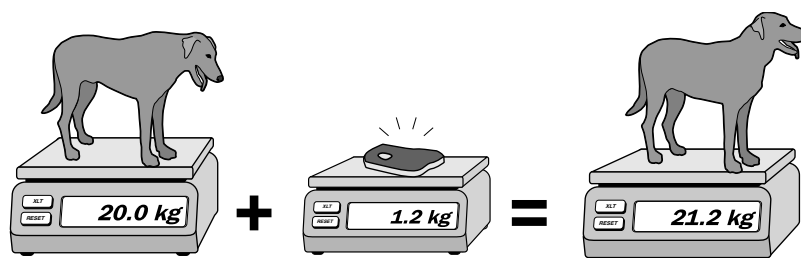


What evidence supports this idea?

7. In an open system (a system with inputs or outputs), the mass of the system can change during interactions. (Activity 3)

What evidence supports this idea?

In open systems with only mass inputs, the start mass plus the input mass is exactly equal to the end mass. In this sketch, the dog is an open mass system and the steak is the input.



In open systems with only mass outputs, the start mass minus the output mass is exactly equal to the end mass. In this sketch, the beaker is an open mass system and part of the collection of cubes is the output.

