1. What are physical changes of matter?
   1. A **physical change** is a change that affects one or more physical properties of a substance.
   2. The appearance, shape, or size of a substance may be altered during a physical change.
   3. Physical changes, such as changes in state, do not change the chemical identity of a substance.
2. What are chemical changes of matter?
   1. A **chemical change** is the process by which one or more substances change into entirely new substances.
   2. Chemical changes are not the same as chemical properties.
   3. Burning is a chemical change; flammability is a chemical property.
   4. When the particles and chemical bonds that make up a substance are rearranged, a chemical change has taken place.
   5. Chemical changes are often influenced by temperature.
   6. Higher temperatures often mean faster chemical reactions.
3. How do you tell a chemical change has happened?
   1. There are several signs that a chemical reaction has occurred.
   2. Observing two or more of these signs during a change means you are likely observing a chemical change.
   3. Odors can be produced during a chemical change.
   4. Fizzing and foaming may mean gases are being produced.
   5. The production of gas is often evidence of a chemical change.
   6. Boiling also can produce gas bubbles, but boiling is a physical change.
   7. A *precipitate* is a solid that falls out of solution.
   8. The formation of a precipitate can indicate a chemical change.
   9. Energy that changes from one form to another can be evidence of a chemical change.
   10. Changes in temperature and color can be signs of a chemical change.
4. What is the law of conservation of mass?
   1. French chemist Antoine Lavoisier studied chemical changes in which substances appeared to gain or lose mass.
   2. Lavoisier completed experiments in sealed bulbs to show conservation of mass during a reaction.
   3. The **law of conservation of mass** states that in ordinary chemical and physical changes, mass is not created or destroyed. It is only transformed into different substances.
   4. Physical changes are reversible and follow the law of conservation of mass.
   5. Mass is conserved during chemical changes. The mass of the starting materials is the same as the mass of the end products.