

Physical and Chemical Properties

Elements, substances, and compounds have both physical and chemical properties. **Physical properties** are those that can be described using the senses and can be determined without destroying the object. Color, mass, density, and odor are examples of physical properties. **Chemical properties** describe how a substance reacts with another substance and the original is changed into something else. Classify each term in the word box as a physical or chemical property.

ability to rust
combustable
boiling point
reacts to form an acid
reacts with water to form a gas

density
taste
reacts with vinegar
color
reacts with baking powder

flammable
melting point
shine
reacts with oxygen

corrodes
dissolves in water
odor
hardness

| Physical Property | Chemical Property |
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Using the picture to the left, list 3 physical properties and 3 chemical properties of any of the items. (Items in the picture include: baking soda, flour, milk, butter, sugar, eggs, rolling pin).

Physical Properties:

- 1.
- 2.
- 3.

Chemical Properties:

- 1.
- 2.
- 3.

You will use the 8th grade science online text book to complete the guided reading below:

What is Matter?

An apple, steel cable, the air you breath the water you drink--all of it is considered matter. So is the ground beneath your feet. In fact, everything you can see and touch is made of _____. The only things that aren't matter are forms of _____, such as _____ and _____. Although forms of energy are not matter, the air and other substances they travel through are. So what is matter? Matter is defined as anything that has _____ and _____. Mass is the amount of _____ in a substance or object. The amount of _____ matter takes up is its volume.

Properties of Matter



Look at the picture of the Statue of Liberty. Describe it in as many ways as possible.

The things you described are called _____; they are the _____ of matter. If you were to describe an object to someone who cannot see the object you would describe the object's properties. Below is a list of some properties you could use to describe _____.

- Hardness: Whether or not an object can be _____ by something else. For example, a diamond is the hardest mineral found on Earth and can scratch most everything else. Talc is the softest mineral; it can be scratched by a fingernail.
- State of matter: Whether it is a _____, _____, or _____.
- Melting and boiling point: This is the _____ at which a substance goes from a solid to a liquid or a liquid to a gas. For example, antifreeze has a higher boiling point and lower freezing point than water, which is useful in a car's engine to keep it from freezing in cold weather or overheating in hot weather.
- Ability to conduct heat or electricity: Some materials _____ electricity and others do not. _____ and _____ are **good** conductors, _____ and _____ are not.
- Ability to dissolve in other substances: Some substances _____ and others do not. Sand does not dissolve in water, sugar does.
- Density: How _____ packed the atoms of matter are. A solid rock is more dense than water and will sink while wood is less dense than water and will float.
- Flammability: The ability of matter to _____. Wood is flammable; iron is not. When wood burns, it changes to ashes, carbon dioxide, water vapor, and other gases. After burning, it is no longer wood.
- Reactivity: The ability of matter to _____ with other substances. Iron is highly reactive with oxygen. When it combines with oxygen, a reddish powder called rust forms. Rust is not iron but an entirely different substance that consists of both iron and oxygen.
- Malleability: The ability of a solid to _____ or be _____ into other shapes without breaking.
- Other properties include _____, _____, _____, _____ etc..