

## Chemistry Vocabulary

1. **Materials Scientist/Engineer:** study materials and <sup>design</sup> ~~make~~ new ones
2. **material:** type of solid matter used to make things
3. **life cycle:** stages a material goes through
4. **property:** a certain characteristic of a material
5. **manufacturing:** how you design and make an object, *package + ship*
6. **useful life:** what you use something for
7. **end of life:** what do you do with a material when you are finished using it, *recycle, reuse, throw away*
8. **raw material:** materials that come from the earth
9. **physical property:** a characteristic of a substance or material such as color, density, flexibility, or hardness.
10. **chemical property:** describes how a material reacts with another material
11. **atom:** basic building blocks of matter that make up everyday objects, *smallest part of an element*
12. **atomic mass:** average mass of the element. The periodic table is organized according to them.
13. **element:** is a material which cannot be broken down or changed into another substance, composed of one kind of atom.
14. **periodic table of elements:** pure substances organized according to their atomic mass and ~~the~~ type of properties they have.  
*the*
15. **chemical formula:** shorthand way to identify the kind and number of atoms that make up a compound.
16. **react/reactive:** when elements combine chemically.
17. **compound:** a substance made up of two or more different elements that have combined in such a way that the elements have lost their own physical and chemical properties.
18. **molecule:** what you get when any atoms join together chemically.
19. **chemical bond:** bond between two or more elements.
20. **bond:** how compounds are held together.
21. **mixture:** combinations of two or more substances (elements/compounds) that are held

together by bonds that can be separated into their original parts.

**22. Chemical Change:** When two or more elements react together chemically and lose their original properties.

**23. Physical Change:** When an object changes phase but is still the same object

## Element, compound, molecules & mixtures

**Element**: the simplest form of a substance

ex: Hydrogen (H), Oxygen (O), Sodium (Na), Calcium (Ca)

**Compound**: a substance made up of two or more different elements that have combined in such a way that the elements have lost their own physical & chemical properties.

ex: water (H<sub>2</sub>O), table salt (NaCl)

**Mixture**: a substance made up of two or more elements or compounds but no new substance has been formed

ex: salt water, iron filings in sand

A **molecule** is what you get when any atoms join together chemically.

A **compound** is what you get when atoms of **two or more different** elements join together.

**All compounds are molecules, but not all molecules are compounds.**

Water is a molecule because it is made from atoms that have been chemically combined. It is also a compound because the atoms that make water are not all the same - some are oxygen and some are hydrogen.