

Golden Concepts

Asking scientific questions and making observations

Planning an investigation

Collecting, presenting and interpreting data

Errors and uncertainty

Science in our world

Atoms, elements and the periodic table 7- Knowledge Organiser

Key Vocabulary	
Atom	The smallest invisible particle that makes up everything
Element	A substance made from one type of atom
Compound	A substance made from two or more types of atom chemically joined together
Mixture	More than one type of atom mixed together.
Particle	The smallest invisible particle that makes up everything
Molecule	More than one atom chemically joined together
Pure	A substance made from only one type of atom
Physical change	A reversible change where the arrangement of the atoms changes.
Chemical change	An irreversible change where atoms are rearranged to form new substances
Reversible change	A change that can be reverse e.g. Ice melting
Irreversible change	A change can cannot be reversed e.g. coal burning

Introduction to Atoms and Elements:

- Basic understanding of atoms and elements.
- Introduction to the periodic table.

Chemical Changes:

- Basic concepts of chemical reactions.
- Identification of chemical changes.

Matter

Atoms-Elements-Molecules-Compounds

Atoms

The smallest unit of matter and has three main parts (protons, neutrons, and electrons). The basic building blocks of matter. Smallest part of an element.

Example
Oxygen, Hydrogen, Nitrogen

Elements

A pure substance consisting of one type of atom and can be identified by its atomic number (number of protons). All elements are found on the Periodic Table of Elements and have a chemical symbol.

Example
Oxygen's atomic number is 8

Molecules

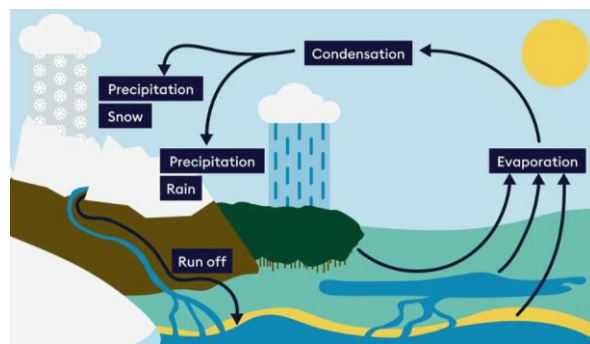
Formed when two or more atoms join together chemically. Can be the same atoms.

Example
Oxygen, Water, Nitrogen, Carbon Dioxide

Compounds

Formed when two different elements join together. All compounds are molecules, but all molecules are not compounds.

Example
Water, Carbon Dioxide



PHYSICAL CHANGES

In a physical change, matter changes form but not chemical identity.

MELTING ICE: A block of ice melting into water.

SHREDDING PAPER: A piece of paper being shredded into small pieces.

CHOPPING WOOD: A log being cut into smaller pieces.

MIXING GRAY AND GREEN MARBLES: Gray and green marbles being mixed together.

ThoughtCo.

CHEMICAL CHANGES

In a chemical change, a chemical reaction occurs and new products are formed.

BURNING WOOD: A fire burning on a log.

ROTTING BANANA: A banana that has become soft and brown.

FIREWORKS: Fireworks exploding in the night sky.

MIXING VINEGAR AND BAKING SODA: A glass containing a bubbling reaction between vinegar and baking soda.

