

# Y9 The Periodic Table

## Elements

An element is a substance that cannot be broken down into other substances. The smallest part of an element that can exist is an atom.

Each element is represented by a symbol. The first letter of the symbol is always capitalised, any following letters are lower case.

The symbols for the elements are arranged on the periodic table.

atomic mass	→	23
element symbol	→	<b>Na</b>
element name	→	Sodium
atomic number	→	11

## The Periodic Table

Elements are arranged into groups based on their properties. Those with similar properties are found in the same group.

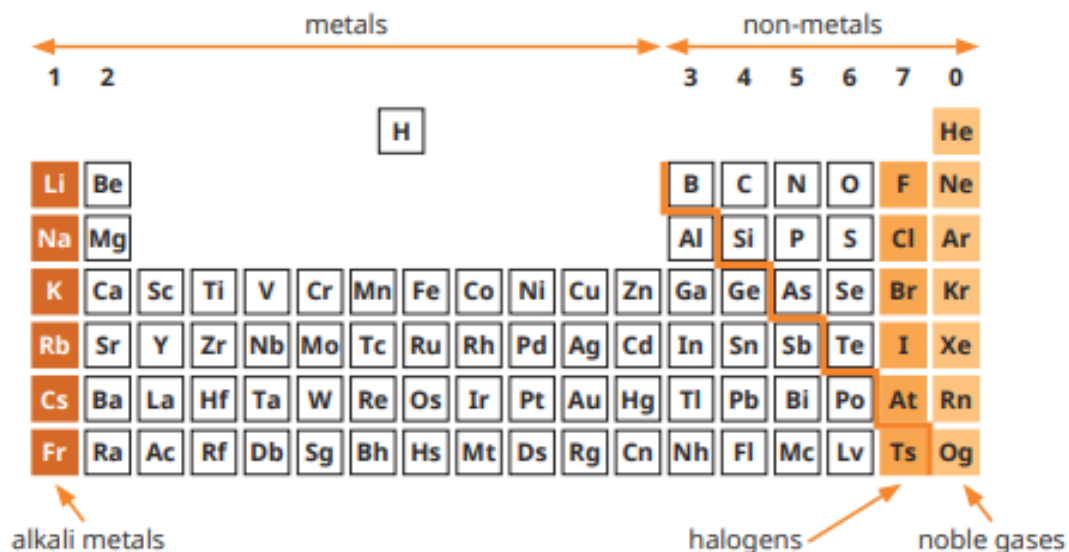
Metals are found on the left of the stepped line, and non-metals on the right. However, some elements, particularly those close to the line have properties of both.

## Properties of Metals

- shiny
- good conductor of heat
- good conductor of electricity
- sonorous
- oxides form alkaline solutions
- high density
- malleable
- ductile

## Properties of Non-Metals

- dull
- poor conductor of heat
- poor conductor of electricity
- not sonorous
- oxides form acidic solutions
- low density
- brittle



## Properties of Alkali Metals

- solids at room temperature (melting and boiling points decrease moving down the group)
- very reactive (reactivity increases moving down the group)
- good conductors of heat and electricity
- soft
- shiny when cut
- low density

## Properties of Halogens

- some solids, a liquid and some gases at room temperature (melting and boiling points increase moving down the group)
- very reactive (reactivity decreases moving down the group)
- poor conductors of heat and electricity
- solids are brittle
- low density

## Properties of Noble Gases

- gases at room temperature (the melting and boiling points increase as you move down the group)
- unreactive (however reactivity increases slightly as you move down the group)
- poor conductors of heat and electricity
- low density