

Exploring Science 8
Pages 54-67

8E Atoms & Elements

Compounds

- Water (H₂O) & Carbon Dioxide (CO₂) are Good Examples
- Contain two or More Different Atoms
- Chemicals combine in Chemical Reactions
- Chemical Formula Says How Many Atoms of Each Element is in a Compound

Chemicals co...

Chemical Equations:
Reactants -> Products

Elements

- Contain Only 1 Kind of Atom
- Around 100 Different Elements
- Cannot be split Further by Chemistry
- Metals (Left)
- Metals, Non-Metals & Metalloids
- Found in the Periodic Table
- Represented by Symbols
- Metalloids (Middle-Right)
- Non-Metal (Far Right)

Metals

- Tend to Have a High Melting Point Usually Solid at Room Temp (Mercury (liquid) is an obvious exception)
- Good Conductors of Heat & Electricity
- Tend to be Shiny
- Tend to be grey or silver (Copper & Gold are Exceptions)
- Malleable (easily hammered into shapes)
- Ductile (Easily stretched)
- Many Tend to be Dense (Heavy for their size)
- Iron (Fe) & Aluminium (Al) are good examples

1	2											13	14	15	16	17	18												
1 H	2 He											13 B	14 C	15 N	16 O	17 F	18 Ne												
3 Li	4 Be											19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
5 Rb	6 Sr	7 Y	8 Zr	9 Nb	10 Mo	11 Tc	12 Ru	13 Rh	14 Pd	15 Ag	16 Cd	17 In	18 Sn	19 Sb	20 Te	21 Xe													
8 Cs	9 Ba	10 La	11 Ce	12 Pr	13 Nd	14 Pm	15 Sm	16 Eu	17 Gd	18 Tb	19 Dy	20 Ho	21 Er	22 Tm	23 Yb														
9 Fr	10 Ra	11 Ac	12 Th	13 Pa	14 U	15 Np	16 Pu	17 Am	18 Cm	19 Bk	20 Cf	21 Es	22 Fm	23 Md	24 No														

Non-Metals

- An Atom is the Smallest part of an Element
- Cannot be Split by Chemical Reaction
- We Now Know that Atoms Consist of Smaller Particals
- Can be Split by Nuclear Fission

Metalloids

- Low Melting/Boiling Point (Half are gases)
- Poor Conductors of Heat & Electricity
- Solids are Often Brittle
- Sulphur (S) is an Example of a Solid Non-Metal
- For Example Oxygen
- Exception: Carbon (Graphite) conducts Electricity
- Semiconductors for Example Silicon