



7H Atoms, Elements and Molecules

1. The Air We Breathe

Particles	Tiny pieces of matter that make up everything.
Atoms	The simplest particles of matter that make up everything.
Elements	A substance made up of one type of atom. 
Molecules	Two or more atoms joined together in a group. 
Compound	Two or more different atoms joined together. 
Mixture	Two or more substances jumbled together but not chemically joined together. 
Periodic Table	A table that lists all of the known elements.
Air	A mixture of different gases- nitrogen, oxygen, argon, carbon dioxide
Pure	A substance made up of a single element/compound and nothing else.

2. Earth's Elements

Chemical Symbols	The 1 or 2 letters given to each element
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Earth's Crust	Made up of oxygen, iron, silicon, aluminium, calcium and other elements.
Naturally Occurring Elements	Usually found as compounds, some found pure. Can be extracted from compounds by simple chemical reactions.
Properties	What an element is like, its appearance and how it behaves.
Recycling	Using a material again to save resources and make sure we don't run out.
Carbon	Can be found as diamond and graphite. The different properties of each form are due to the ways the atoms are joined together.

3. Metals and Non-Metals

Common Metal Properties	Solid, high melting point, strong, flexible, malleable, shiny and good conductors of heat and electricity.
Metals	Three-quarters of all elements are metals- found on the left side of the periodic table.
Common Non-Metal Properties	Low melting points, brittle, not shiny and poor conductors of heat and electricity.
Malleable	Able to be beaten and bent into shape.
Flexible	Able to bend without breaking.
Conductor	A substance that allows something to pass through it (e.g. heat, electricity).
Brittle	Not easily bent- breaks under pressure.
Magnetic	Iron, nickel and cobalt are the only magnetic elements.

Mercury	The only metal that is liquid at room temperature.
4. Making Compounds	
Silicon Dioxide	The most common compound in the Earth's crust- found in sand, quartz and granite.
Forming Compounds	The first stage often involves heating a mixture of elements. Energy is often given out when elements react to form compounds.
Iron Sulfide	Compound formed by heating a mixture of iron and sulfur.
Bonds	Formed between atoms when compounds are formed.
Iron Sulfide Properties	Iron can be separated from sulfur using a magnet but iron sulfide is not magnetic.
Metal Ores	A rock containing a compound of a metal.
Naming Compounds	If one of the elements in the compound is a metal its name goes first. the non-metal at the end of the compound's name has its name changed so it ends in -ide.

5. Chemical Reactions

Chemical Reaction	A change in which one or more new substance is formed.
Word Equation	Used to model chemical reactions.
Reactants	The starting substances- written on left of word equation.
Products	The new substances made- written on right of word equation.

Thermal Decomposition	Using heat to break down a compound- used to extract metals from their compounds.
Thermal Decomposition of Mercury Oxide	
Carbonates	Compounds containing a metal, carbon and oxygen.
Calcium Carbonate	Found in limestone, chalk and marble.
Thermal Decomposition of Calcium Carbonate	
Test for Carbon Dioxide	Carbon dioxide turns limewater cloudy.
-ate	A compound that contains two elements plus oxygen will end in -ate. (e.g. zinc sulfate contains zinc, sulfur and oxygen)

Lesson	Memorised?
1. The Air We Breathe	
2. Earth's Elements	
3. Metals and Non-Metals	
4. Making Compounds	
5. Chemical Reactions	