


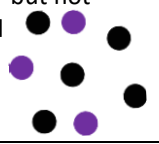


## 7H Atoms, Elements and Molecules

### 1. The Air We Breathe

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

### 2. Earth's Elements

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

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

<b>Mercury</b>	The only metal that is liquid at room temperature.
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### 4. Making Compounds

<b>Silicon Dioxide</b>	The most common compound in the Earth's crust- found in sand, quartz and granite.
<b>Forming Compounds</b>	The first stage often involves heating a mixture of elements. Energy is often given out when elements react to form compounds.
<b>Iron Sulfide</b>	Compound formed by heating a mixture of iron and sulfur.
<b>Bonds</b>	Formed between atoms when compounds are formed.
<b>Iron Sulfide Properties</b>	Iron can be separated from sulfur using a magnet but iron sulfide is not magnetic.
<b>Metal Ores</b>	A rock containing a compound of a metal.
<b>Naming Compounds</b>	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

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

<b>Thermal Decomposition</b>	Using heat to break down a compound- used to extract metals from their compounds.
<b>Thermal Decomposition of Mercury Oxide</b> Mercury oxide → mercury + oxygen	
<b>Carbonates</b>	Compounds containing a metal, carbon and oxygen.
<b>Calcium Carbonate</b>	Found in limestone, chalk and marble.
<b>Thermal Decomposition of Calcium Carbonate</b> Copper carbonate → copper oxide + carbon dioxide	
<b>Test for Carbon Dioxide</b>	Carbon dioxide turns limewater cloudy.
<b>-ate</b>	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	