



## S3 Block 2 Chemical Changes and Structure

	Learning Outcomes	✓😊	?😊	✗😞
1	I can state that elements are the building blocks of substances and are made up of atoms.			
2	I can describe the structure of an atom.			
3	I can state the charge and mass of protons, neutrons, and electrons.			
4	I can explain why atoms are neutral.			
5	I can identify elements using the atomic number.			
6	I can use the mass number to identify the number of neutrons the atom has.			
7	I can write the electron arrangement of the first 20 elements.			
8	I can use electron arrangements to draw electron dot diagrams for the first 20 elements.			
9	I can classify elements as metals/non-metals, or by their state at room temperature.			
10	I can state that elements are arranged in the periodic table in order of increasing atomic number.			
11	I can state that horizontal rows of the periodic table are called periods.			
12	I can state that vertical columns of the periodic table are called groups, and that these are numbered 1-7, 0 and the transition metals.			
13	I can state that elements in the same group have similar chemical properties, and the same number of electrons in their outer energy level.			
14	I can name groups 1, 7, 0, and the transition metals, and can list the chemical and physical properties of elements in these groups.			
15	I can state that atoms with a full outer energy level are unreactive.			
16	I can state that atoms gain or lose electrons to achieve a full outer energy level, and form ions by doing this.			
17	I can describe how positive and negative ions are formed, and can draw electron dot diagrams to represent ions.			

18	I can state that ionic compounds are made when metal and non-metal atoms combine by transferring electrons to form positive and negative ions.			
19	I can state that in ionic compounds, oppositely charged ions attract each other and are held together by ionic bonds.			
20	I can name compounds containing two elements.			
21	I can name compounds containing two elements and oxygen.			
22	I can work out the chemical formula for compounds containing two elements.			
23	I can state that covalent bonds are formed when atoms of non-metal elements share their outer electrons to gain a full outer shell.			
24	I can state that covalent compounds are composed of molecules.			
25	I can write the chemical formula for compounds using names with prefixes.			
26	I can draw dot and cross diagrams to represent covalent molecules.			
27	I can state that diatomic molecules are molecules made up from two atoms.			
28	I can state that diatomic elements are elements that exist as two atoms covalently bonded, and can name the 7 diatomic elements.			
29	I can compare the properties of ionic and covalent substances, including: melting and boiling points, state at room temperature, electrical conductivity, and solubility.			
30	I can state that in chemical reactions, a new substance is always formed.			
31	I can identify the differences between chemical and physical changes.			
32	I can identify whether or not a chemical reaction has occurred by the presence of colour changes, gas production, precipitate formation, or energy changes.			
33	I can state that in an endothermic reaction heat energy is absorbed, and I can identify examples of endothermic reactions.			
34	I can state that in an exothermic reaction heat energy is released, and I can identify examples of exothermic reactions.			
35	I can identify the reactants and products of a chemical reaction.			
36	I can write word equations to represent chemical reactions.			
37	I can write formula equations to represent chemical reactions.			
38	I can state that in a chemical reaction, there is no overall gain or loss of mass.			