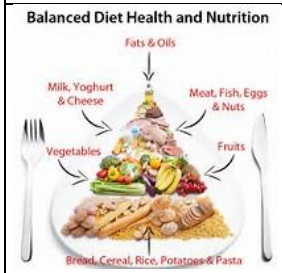
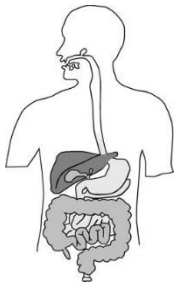
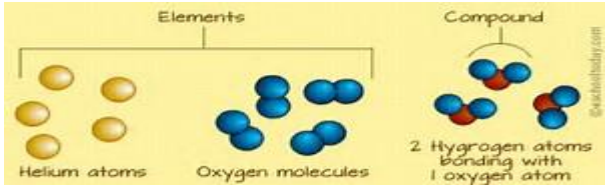
Year 8 Knowledge Companion

Subject/Topic: Balanced diet	Subject/Topic: Human digestion	Subject/Topic: Smoking
Key ideas:	**Key ideas:**	**Key ideas:**
 Food is a mixture of 7 food types. The key macronutrients that foods contain are proteins, carbohydrates, fats, vitamins, minerals, fibre and water. A diet is only balanced if a person consumes the correct proportions of each food group.	The body needs to break down the food that we eat in order to use the nutrients that the food contains. The nutrients need to be soluble and become small enough to pass through the wall of the small intestine and into our bloodstream. The nutrients are then transported around the body and can be used in many different ways. 	Tobacco cigarettes are legal (for over 16s in the UK) and contain over 4000 chemicals. Smoking is addictive and long term use can drastically affect the health of a person's lungs. It can also reduce life expectancy. 
Keywords/Key Language:	**Keywords/Key Language:**	**Keywords/Key Language:**
Energy requirement: the amount of energy a person needs from food per day. It will vary according to body mass, activity levels, gender and age. **kJ:** kilojoules = a unit of energy. 1kJ = 1000J. **Food group:** is a collection of foods that share similar nutritional properties. **Macronutrient**: a type of food (e.g. fat, protein, carbohydrate) required in large amounts in the diet. **Malnourished:** lack of a balanced diet. **Deficiency:** if one key vitamin or mineral is missing from the diet, we say it's deficient in that vitamin or mineral. **Scurvy:** caused by a vitamin C deficiency. It causes bleeding gums, tiredness and joint pain. **Rickets:** caused by a lack of vitamin D and/or calcium in the diet. It causes weak and soft bones. **Obese:** when a person's body mass becomes too high.	**Digestive system:** the organs of the body **(mouth, oesophagus, stomach, liver, pancreas, small intestine, large intestine and rectum)** that work together to digest food. **Digestion:** the breakdown of large insoluble food molecules into small soluble molecules. **Soluble** = will dissolve. **Insoluble** = will not dissolve. **Mechanical digestion:** physically breaking up food into smaller pieces, e.g. chewing with teeth. **Chemical digestion:** where chemicals called enzymes digest food molecules, e.g. amylase in saliva. **Absorption** of small food molecules into the bloodstream occurs in the small intestine. Absorption of water and salt molecules occurs in the large intestine. **Egestion:** when the undigested food (faeces) leaves the body via the anus.	**Nicotine**: the addictive drug found in tobacco cigarettes. **Ciliated epithelial cells:** cells in the lining of our airways (and other tubes in the body) that have tiny hairs (called cilia) projecting out from them. In the lungs, the hairs move mucus containing dust and microbes up to the back of the mouth. **Tar:** found in cigarettes. It coats the lining of the airways and damages the ciliated epithelial cells. **Smoker's cough:** coughing to try to remove built up mucus from the lungs (due to the damaged cilia not being able to remove it properly). **Carbon monoxide:** **Passive smoking:** when a person who is not smoking themselves breathes in air containing smoke fumes produced by another person's cigarette. **Bronchitis:** a condition where the lining of the bronchi (airways in the lungs) is inflamed. **Emphysema:** a disease that destroys the alveoli (air sacs) of the lungs.

Year 8 Knowledge Companion

Subject/Topic: Compounds	Subject/Topic: Reaction	Subject/Topic: Mixtures
Key ideas:	**Key ideas:**	**Key ideas:**
Atoms are rearranged in a chemical reaction. Compounds are formed when two or more different kinds of atoms join together. 	Compounds are made when elements react and get chemically joined together to make a new substance in which the atoms have been rearranged. There are signs we can observe to show that a chemical reaction is taking place. 	It is relatively easy to separate the substances in a mixture because the different substances are not chemically joined to each other. Different types of mixture need to be separated by different methods. 
Keywords/Key Language:	**Keywords/Key Language:**	**Keywords/Key Language:**
Compound: two or more different elements that are chemically bonded together, e.g. $CuSO_4$, FeS, H_2O. **Molecule**: a particle made of atoms chemically bonded (joined) together – they can be the same or different types of atom. If the atoms are all the same, then the substance is an element. If the atoms joined together are different, the substance is a molecule of a compound. **Chemical formula:** these are made up of **chemical symbols** and sometimes numbers. The **chemical formula** of a compound tells you how many atoms of each element the molecule contains. For example, H_2O tells us that the molecule contains two hydrogen atoms and one oxygen atom chemically joined together.	**Reactants:** the substances that react together during a chemical reaction. **Products:** the new substances produced from a chemical reaction. We can write chemical reactions in this format: 1) Copper + Sulphur → Copper sulphide Cu + S → CuS 1) Is a **word equation**. 2) is a **symbol equation** **Thermal decomposition:** when a compound splits into two smaller compounds when heated. **Arrow -->**: the arrow symbol is used between the reactants and the products in chemical equations. **Properties**: the characteristics of a material.	**Mixture:** a material made up of two or more different substances which are mixed but are not combined chemically. **Filtration:** a separation technique that is used to separate a solid that has not dissolved in a liquid. **Evaporation (as a separation technique):** is used to separate a soluble solid from a liquid. For example, when copper sulfate solution is heated, water evaporates from it, leaving the solid copper sulfate crystals behind. **Distillation:** a process that can be used to separate a pure liquid from a mixture of liquids. **Chromatography:** a method of separating a mixture of soluble substances. For example, it can be used to work out what colours make up different inks. **Chromatogram:** the visual result of chromatography – where the soluble substances produce a pattern as they separate.