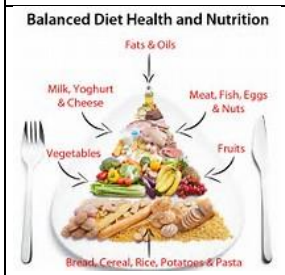
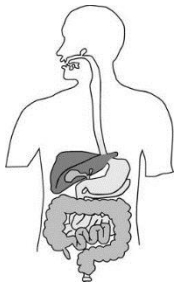
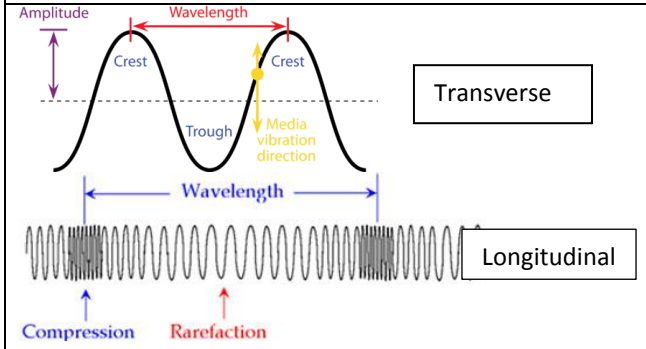
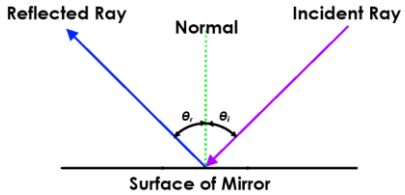
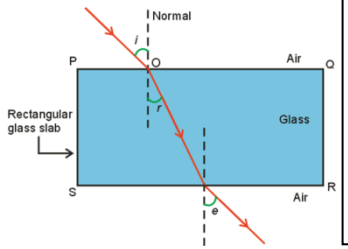
Year 8 Knowledge Companion

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 fro the diet, we say it's deficient in that vitamin or mineral. **Scurvy:** caused from a vitamin C deficiency. It causes bleeding gums, tiredness and joint pain. **Rickets:** caused from 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 break down 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 food small food molecules into the bloodstream occurs in the small intestine. Absorption of water and salt molecules occurs in the large intestines. **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) are inflamed. **Emphysema:** a disease that destroys the alveoli (air sacs) of the lungs.

Year 8 Knowledge Companion

Subject/Topic: Waves	Subject/Topic: Reflection	Subject/Topic: Refraction
Key ideas:	**Key ideas:**	**Key ideas:**
 Transverse Longitudinal	Law of reflection  For a plane mirror, angle of incidence = angle of reflection Use this law to draw ray diagrams showing where a ray of light will travel.	When light passes from one medium into a different one (eg air into glass or water), it changes direction.  Light bends towards normal when moving to a more dense medium, and away from the normal when moving to a less dense medium.
Keywords /Key Language:	**Keywords /Key Language:**	**Keywords /Key Language:**
Energy all waves transmit energy **Transverse** a wave made by a vibration at right angles to the direction of the wave eg. Light, water, microwave **Longitudinal** a wave made by a vibration parallel to the direction of the wave eg sound **Superposition** when 2 waves meet they can combine (in phase) or cancel each other out (out of phase) **Wavelength** the length of one cycle of a wave **Amplitude** the distance from the baseline to the peak of the wave	**Ray** a straight line showing where light is travelling **Incident** when a ray of light hits a surface **Normal** the dotted line you draw at a right angle to the place where a light ray hits an object or surface **Angle of incidence** the angle between the incident ray and the normal line **Reflection** when a wave changes direction as it is incident on (hitting) a **plane** (flat)surface. **Absorb** taken in by a material-this can happen with light rays or other types of wave. **Transmit** pass through a material (eg light passing through glass)	**Medium** this just means type of material, eg air, plastic **Media** plural of **medium** two or more types of material **Incident ray** the ray which is incident on (hitting) a material or surface **Refracted ray** the ray after it has refracted/changed direction **Angle of incidence** the angle between the incident ray and the normal line **Angle of refraction** the angle between the normal line and the refracted ray