**YEAR 8 UNIT ROTATIONS 2020-21**

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| Class | Teacher | ROTATION 1 | | | E  X  Am  U  N  I  T  S  AF  J | ROTATION 2 | | | TEST  UN  I  TS  BGK | ROTATION 3 | | | T  E  S  T  UN I  TS  CH  I | ROTATION 4 | | | Y8 exam during last rotation based on 1st 3 rotations and Y7 knowledge |
| 8G1 | SP | **8J** | 8A  Test | 8F | **8K** | 8B | 8G  Test | **8I**  **Test** | 8C | 8H | **9L** | 8L  Test | 9E |
| 8G2 | SKH | **8F** | 8J | 8A  Test | **8G**  **Test** | 8K | 8B | **8H** | 8I  Test | 8C | **9E** | 9L | 8L  Test |
| 8G3 | VN | **8F** | 8J | 8A  Test | **8G**  **Test** | 8K | 8B | **8H** | 8I  Test | 8C | **9E** | 9L | 8L  Test |
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| 8R1 | SP | 8A  Test | 8F | 8J | 8B | 8G  Test | 8K | 8C | 8H | 8I  Test | 8L  Test | 9E | 9L |
| 8R2 | EM | 8F | 8J | 8A  Test | 8G  Test | 8K | 8B | 8H | 8I  Test | 8C | 9E | 9L | 8L  Test |
| 8R3 | VN | 8J | 8A  Test | 8F | 8K | 8B | 8G  Test | 8I  Test | 8C | 8H | 9L | 8L  Test | 9E |

Please read below for unit content:

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| **UNIT NO** | **UNIT TITLE** | **UNIT NO** | **UNIT TITLE** |
| 8A | Food and Digestion  **Nutrition and digestion**   * the content of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, minerals, dietary fibre and water, and why each is needed * calculations of energy requirements in a healthy daily diet * the consequences of imbalances in the diet, including obesity, starvation and deficiency diseases * the tissues and organs of the human digestive system, including adaptations to function and how the digestive system digests food (enzymes simply as biological catalysts) | 8I | Heat transfer   * List some examples of heat conductors and insulators. * Explain conduction using the particle method. * Recall which substances heat can travel through by convection. * Describe how a convection current forms when part of a fluid is heated (or cooled). * Recall the units for measuring temperature and heat energy. * List the three things that the amount of heat energy stored in an object depends on. * Energy changes on changes of state (qualitative) exothermic and endothermic chemical reactions (qualitative) |
| 8B | Going for gold ! Respiration   * Aerobic and anaerobic respiration in living organisms, including the breakdown of organic molecules to enable all the other chemical processes necessary for life * a word summary for aerobic respiration * the process of anaerobic respiration in humans and micro-organisms, including fermentation, and a word summary for anaerobic respiration * the differences between aerobic and anaerobic respiration in terms of the reactants, the products formed and the implications for the organism | 8J | On the Move  **Describing motion**   * Discuss how transport has changed over time. * speed and the quantitative relationship between average speed, distance and time (speed = distance ÷ time) * the representation of a journey on a distance-time graph * relative motion: trains and cars passing one another * forces being needed to cause objects to stop or start moving, or to change their speed or direction of motion (qualitative only)   change depending on direction of force and its size |
| 8C | Doctors and Diseases  (Microbes and Disease)   * What are microbes? * the relationship between health and disease * bacteria, viruses and fungi as pathogens in animals and plants * body defences against pathogens and the role of the immune system against disease * reducing and preventing the spread of infectious diseases in animals and plants | 8K | Light   * the similarities and differences between light waves and waves in matter * light waves travelling through a vacuum; speed of light * the transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface * use of ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative); the human eye * light transferring energy from source to absorber, leading to chemical and electrical effects; photosensitive material in the retina and in cameras * colours and the different frequencies of light, white light and prisms (qualitative only); differential colour effects in absorption and diffuse reflection |
| 8D | Ecological Relationships  **Interactions and interdependencies**  **Relationships in an ecosystem**   * the interdependence of organisms in an ecosystem, including food webs and insect pollinated crops * the importance of plant reproduction through insect pollination in human food security * how organisms affect, and are affected by, their environment, including the accumulation of toxic materials | 8L | Sound and Hearing  **Sound waves**   * frequencies of sound waves, measured in hertz (Hz); echoes, reflection and absorption of sound * sound needs a medium to travel, the speed of sound in air, in water, in solids * sound produced by vibrations of objects, in loudspeakers, detected by their effects on microphone diaphragm and the ear drum; sound waves are longitudinal * the auditory range of humans and animals |
| 8F | Atoms and Elements  **Atoms, elements (and compounds)**   * a simple (Dalton) atomic model * differences between atoms, elements and compounds * chemical symbols and formulae for elements and compounds * conservation of mass changes of state and chemical reactions | 9E | Reactions of Metals and Metal Compounds   * the order of metals and carbon in the reactivity series * the use of carbon in obtaining metals from metal oxides * properties of ceramics, polymers and composites (qualitative) * he order of metals and carbon in the reactivity series * the use of carbon in obtaining metals from metal oxides * properties of ceramics, polymers and composites (qualitative) |
| 8G | Metals   * how patterns in reactions can be predicted with reference to the periodic table * the properties of metals (non-metals) * the chemical properties of metal | 9L \* | Pressure and moments   * atmospheric pressure, decreases with increase of height as weight of air above decreases with height * pressure in liquids, increasing with depth; upthrust effects, floating and sinking * pressure measured by ratio of force over area – acting normal to any surface * using force arrows in diagrams, adding forces in 1 dimension, balanced and unbalanced forces * moment as the turning effect of a force |
| 8H | Explaining the Earth   * the composition of the Earth * the structure of the Earth * the rock cycle and the formation of igneous, sedimentary and metamorphic rocks * Earth as a source of limited resources and the efficacy of recycling * the composition of the atmosphere * the production of carbon dioxide by human activity and the impact on climate |  |  |