



Year 10 Curriculum Guide

Subject: **Science**

Subject Leader: **Mr Singh**

Method of assessment

Students will have formal assessments throughout the course to cover contents and skills at the end of every topic. There will be regular homework which will have opportunities to read up on topics, to review and consolidate on the concepts covered in topics. There will be termly assessments, and these will comprise of exam-style questions. At the end of the year all students will have a final assessment to ascertain their levels for the subject in terms of their understanding, application of concepts and analytical skills.

Overview

	Autumn Term	Spring Term	Summer Term
1st Half	Biology : Diseases and Bioenergetics B6 – Preventing and treating disease <ul style="list-style-type: none"> - How vaccines and antibiotics work - How new drugs are discovered and developed Chemistry: Chemical reactions and energy changes C5 – Chemical changes <ul style="list-style-type: none"> - What is a reactivity series? - What are displacement reactions? - Extraction of metals - Acids and acid base reactions Physics: Particles at work P5 – Electricity in the home <ul style="list-style-type: none"> - The generation of alternating current - How cables and plugs work 	Biology : Diseases and Bioenergetics B8 – Photosynthesis <ul style="list-style-type: none"> - The process of photosynthesis and the factors that affect the rate of the process - How photosynthesis can be manipulated Chemistry: Chemical reactions and energy changes C7- Energy changes <ul style="list-style-type: none"> - Differences between exo- and endo-thermic reactions - Reaction profiles - Calculations of bond energies Physics: Particles at work P7 – Radioactivity <ul style="list-style-type: none"> - Types and sources of radiation - What happens in the nucleus of 	Biology: Biological responses B10 – Human nervous system <ul style="list-style-type: none"> - Structure and functioning of the nervous system - Reflex actions - Principles of homeostasis Chemistry: Rates, equilibrium and organic chemistry C9 – Crude oil and fuels <ul style="list-style-type: none"> - What hydrocarbons are - Fractional distillation of hydrocarbons - Cracking of hydrocarbons Physics: Forces in action P9 – Motion <ul style="list-style-type: none"> - Interpreting graphs for speed/distance-time/velocity-time - Acceleration and velocity - Analysing motion graphs

	<ul style="list-style-type: none"> - Efficiency in appliances 	<p>radioactive elements</p> <ul style="list-style-type: none"> - Half-lives of atoms 	
2nd Half	<p>Biology: Diseases and Bioenergetics B7 - Non- communicable diseases</p> <ul style="list-style-type: none"> - What is a non-communicable disease? - Examples of non-communicable disease <p>Chemistry: Chemical reactions and energy changes C6 – Electrolysis</p> <ul style="list-style-type: none"> - What is electrolysis? - What happens at electrodes? - Uses of electrolysis <p>Physics: Particles at work P6 – Molecules and matter</p> <ul style="list-style-type: none"> - What is density? - Changes of states in substances - Specific latent heat - Relationship between Pressure and temperature 	<p>Biology : Diseases and Bioenergetics B9 – Respiration</p> <ul style="list-style-type: none"> - Aerobic and anaerobic respiration - Effects of exercise on respiration - Metabolism <p>Chemistry: Rates, equilibrium and organic chemistry C8 – Rates and equilibrium</p> <ul style="list-style-type: none"> - Rates of chemical reactions and the factors that affect them - Effects of catalysts on reactions - Reversible and irreversible reactions <p>Physics: Forces in action P8 – Forces in balance</p> <ul style="list-style-type: none"> - Forces as vectors and scalars - Working out resultant forces using parallelograms 	<p>Biology: Biological responses B11 – Hormonal co-ordination Genetics and reproduction B13 – Reproduction</p> <ul style="list-style-type: none"> - How do hormones work? - Understanding the role of hormones in blood sugar regulation and menstrual cycle - Principles of negative feedback - What affects infertility - Different types of reproduction - Inheritance of features and diseases

Text Book/Reference/Resource guide:

- www.kerboodle.com – access to digital book and other resources
- CGP Revision guides for Science (AQA)
- AQA examination board (<http://www.aqa.org.uk/subjects/science/gcse>) for sample materials and syllabus
- <http://www.bbc.co.uk/education/subjects/zk26n39>
- <http://www.s-cool.co.uk/>
- AQA GCSE Biology/Chemistry/Physics Text books

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