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| **Year** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **Blue** | **Reproduction and puberty**  Female reproduction  Male reproduction  Puberty  Fertilisation and contraception  foetus development  smoking and pregnancy  plant reproduction  fertilisation and seed dispersal | **Physics: How do forces make things happen?**  **Lessons in unit**   1. What forces do & The different kinds of forces 2. Measuring forces 3. Balanced and unbalanced forces (using force arrow diagrams) 4. Friction 5. Reducing friction: practical 6. Energy 7. Transferring energy   **Physics: How does the Earth fit into the Universe?**  **Lessons in unit**   1. The spinning Earth & Our solar system 2. Stars, galaxies and the universe 3. Heating by the Sun 4. Earth's tilt & Seasons on Earth 5. Changing ideas about Earth | **Chemistry: What are things made of?**  **Lessons in unit**   1. Solid and liquid states 2. Melting: particle model 3. Bunsen burners 4. Melting: melting points and freezing points 5. Particle model of substances in the gas state 6. Boiling and condensing 7. Changes of state: energy and evaporation   **Chemistry: How can substances be made and changed?**  **Lessons in unit**   1. Characteristics of chemical reactions 2. Conservation of mass and balanced symbol equations 3. Chemical reactions: oxidation 4. Chemical reactions: combustion 5. Chemical reactions: decomposition | **Biology: What are living things and what are they made of?**  **Lessons in unit**   1. The common processes of all living organisms 2. Observing cells with a light microscope 3. Preparing and observing a microscope slide 4. Animal cell structures and their functions 5. Plant cell structures and their functions 6. Multicellular and unicellular organisms 7. Specialised cells are adapted for their functions   **Biology: Digestion**  **Lessons in unit**   1. The parts of the human digestive system 2. Digestion and enzymes 3. Food tests: practical 4. Bacteria in the human digestive system 5. Absorption and transport of nutrients in humans | **Physics: How do forces make things happen?**  **Lessons in unit**   1. Calculating speed 2. Measuring speed: practical 3. Measuring speed accurately 4. Reading distance-time graphs 5. Interpreting distance-time graphs 6. Changing speed 7. Newton's first law 8. Streamlining 9. Comparing the speeds of different parachutes | **Chemistry: How can we explain changes in the air, land and oceans?**  **Lessons in unit**   1. Inside rock 2. Rocks and minerals 3. Types of rocks 4. Structure of Earth 5. Tectonic plates 6. Igneous rock 7. Metamorphic rock   **Inquiry based learning project** |
| **Green** | **Reproduction and puberty**  Female reproduction  Male reproduction  Puberty  Fertilisation and contraception  foetus development  smoking and pregnancy  plant reproduction  fertilisation and seed dispersal | **Healthy Diet, Healthy Body**  Components of a healthy diet and the consequences an unhealthy diet.  Diet related diseases  GM foods  Alcohol and cannabis | **Plants and the Carbon Cycle**  Photosynthesis and the carbon cycle.  Leaf structure  Deforestation.  Practical skills – Follow a procedure to test a leaf for starch, risk assessment. | **Forces and Spaces**  Forces and their effects  Gravity and space travel  Our Solar System and the universe.  Key stages in space exploration – The scientific process | **Physical, Chemical and Energy Changes**  Chemical or physical change  Solids, liquids, and gases and changing state.  Energy changes.  Practical Skills – Investigating the changing state of water, collecting accurate data and plotting graphs. | **Marie Curie and her contribution to science**  Marie Curie and the barriers she had to overcome.  The structure of the atom.  Radiation and its uses  Cancer |
| **Y10 GCSE**  **Biology** | **Cell Biology**   1. Eukaryotes and prokaryotes 2. Animal and plant cells 3. Cell specialisation, Cell differentiation and Stem cells 4. Chromosome 5. Mitosis and the cell cycle 6. Transport in cells – active transport & Osmosis 7. Microscopy 8. Revision 9. End of unit quiz   Require practical - Culturing microorganisms.  Required practice – Light microscope investigation.  **Organisation**   1. Principles of organisation 2. The human digestive system 3. The heart and blood vessels 4. Blood 5. Plant tissues | **Organisation**   1. Plant tissues 2. Plant organ systems 3. Coresciences required practical lesson 4. Revision 5. End of unit quiz   Required practical – Testing for carbohydrates, lipids and proteins.  Required practical – effect of pH on the rate of reaction of amylase enzymes.   1. **Homeostasis and Response** 2. Human defence systems 3. Vaccinations 4. Antibiotics and painkillers 5. Discovery and development of drugs 6. Detection and identification of plants diseases. 7. Plant defence responses   Practical Skills - investigating the effect of antiseptics on bacterial growth.   1. Structure and function 2. The brain &The eye | **Homeostasis and Response continued**   1. Control of body temperature 2. Human endocrine system 3. Control of blood concentration. 4. Maintaining water and nitrogen balance in the body. 5. Catch up lesson 6. Hormones in human reproduction & Contraception 7. Control and coordination (plant hormones)   Practical skills - Planning and carrying out an investigation into the effect of a factor on human reaction time.    **Bioenergetics**   1. Photosynthesis reaction & use of glucose from photosynthesis 2. Anaerobic and aerobic respiration & Metabolism Response to exercise 3. Practical 4. Revision & End of unit test 5. Reproduction & Advantages and disadvantages of sexual and asexual reproduction | **Inheritance, variation and evolution**   1. Meiosis 2. DNA structure and the genome 3. Genetic inheritance 4. Revision 5. Catch up   Required practical - Rate of photosynthesis (Investigating the effect of light intensity on the using an aquatic organism.)   1. Inherited disorders & the understanding of genetics 2. Sex determination 3. Communities 4. Abiotic factors 5. Biotic factors 6. Adaptations 7. Levels of organisations   Required practical -Measure the population size of a common species in a habitat.  Required practical - Investigate the effect of temperature on the rate of decay of fresh milk by measuring pH change.. | **Biodiversity**   1. How materials are cycled 2. Decomposition 3. Practical 4. Revision 5. Biodiversity 6. Waste management 7. Land use 8. Global Warming 9. Maintaining biodiversity & Deforestation | **Selective breeding**   1. Trophic levels & Pyramids of biomass 2. Transfer of biomass 3. Factors affecting food security. 4. Farming techniques & Sustainable fisheries 5. Role of biotechnology 6. Evolution & Theory of evolution & Evidence for evolution 7. Classification of living organisms 8. Genetic engineering 9. Cloning 10. Speciation & Variation 11. Fossil &Extinction |
| **Y11 GCSE**  **Biology** | **Inheritance, variation and evolution**   1. Meiosis 2. DNA structure and the genome 3. Genetic inheritance 4. Revision 5. Catch up   Required practical - Rate of photosynthesis (Investigating the effect of light intensity on the using an aquatic organism.)   1. Inherited disorders & the understanding of genetics 2. Sex determination 3. Communities 4. Abiotic factors 5. Biotic factors 6. Adaptations 7. Levels of organisations   Required practical -Measure the population size of a common species in a habitat.  Required practical - Investigate the effect of temperature on the rate of decay of fresh milk by measuring pH change.. | **Biodiversity**   1. How materials are cycled 2. Decomposition 3. Practical 4. Revision 5. Biodiversity 6. Waste management 7. Land use 8. Global Warming 9. Maintaining biodiversity & Deforestation | **Selective breeding**   1. Trophic levels & Pyramids of biomass 2. Transfer of biomass 3. Factors affecting food security. 4. Farming techniques & Sustainable fisheries 5. Role of biotechnology 6. Evolution & Theory of evolution & Evidence for evolution 7. Classification of living organisms 8. Genetic engineering 9. Cloning 10. Speciation & Variation 11. Fossil &Extinction | **Revision** | **Revision and Exam prep** | **GCSE Exams** |

**Half Termly Career Focus**

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|  | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **Blue** | Ultrasound technician | Laboratory technician  Cell biologist | Wind turbine technician | Petroleum engineer  Epidemiologist | Pharmacologist | Nuclear reactor operator  Radiographer |
| **Green** | Nurse | Bioengineer | Forensic scientist | Prosthetist | Engineer(s) | Researcher |
| **Y10** | Microbiologist | Forensic scientist | Restoration Ecologist | Geneticist | Nurse | Fitness consultant |
| **Y11** | Zoologist | Farmer | Doctor | Animal Breeder |  |  |