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| **Year** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **Blue** | **Reproduction and puberty**Female reproductionMale reproductionPubertyFertilisation and contraceptionfoetus developmentsmoking and pregnancyplant reproductionfertilisation and seed dispersal |  **Waves**Longitudinal and transverse waves.Light and sound wavesPractical skills – Investigating the angle of incidence and the angle of reflection - Drawing conclusions from experimental results. | **Living things and their interactions**MRS GREN – Criteria of living things.Food chains and food websSkills – Constructing biological pyramids from given dataCompetition and adaptation of plants and animals. | **The building blocks of life**Cells, organs and organ systemsBones, the skeleton and its functionJointsSTEM – Engineering design considerations of making a quality prosthetic limb. | **Conduction, Convection and Radiation**Conduction, convection, and radiation.Practical Skills – Investigating conduction and insulation, absorption, and emission of thermal radiation.Skills – Plotting graphs | **Organs and Organ Systems**The respiratory, digestive, and circulatory systems.Anaerobic and aerobic respirationThe immune systemPractical Skills –experimental variables and evaluating methods |
| **Green** | **Reproduction and puberty**Female reproductionMale reproductionPubertyFertilisation and contraceptionfoetus developmentsmoking and pregnancyplant reproductionfertilisation and seed dispersal | **Healthy Diet, Healthy Body**Components of a healthy diet and the consequences an unhealthy diet.Diet related diseasesGM foodsAlcohol and cannabis  | **Plants and the Carbon Cycle**Photosynthesis and the carbon cycle.Leaf structureDeforestation.Practical skills – Follow a procedure to test a leaf for starch, risk assessment. | **Forces and Spaces**Forces and their effectsGravity and space travelOur Solar System and the universe.Key stages in space exploration – The scientific process | **Physical, Chemical and Energy Changes**Chemical or physical changeSolids, 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 usesCancer |
| **Y10 GCSE****Biology** | **Cell Biology**Eukaryotes and prokaryotesAnimal and plant cellsCell specialisationCell differentiationMicroscopyChromosomesMitosis and the cell cycleStem cellsTransport in cellsOsmosisActive transport Require practical - Culturing microorganisms.Required practice – Light microscope investigation. | **Organisation**Principles of organisationThe human digestive systemThe heart and blood vesselsBloodPlant tissuesPlant organ systemsRequired practical – Testing for carbohydrates, lipids and proteins.Required practical – effect of pH on the rate of reaction of amylase enzymes. | **Homeostasis and Response**Structure and functionThe brainThe eyeControl of body temperatureHuman endocrine systemControl of blood concentration.Maintaining water and nitrogen balance in the body. Hormones in human reproductionContraceptionControl and coordination (plant hormones)Practical skills - Planning and carrying out an investigation into the effect of a factor on human reaction time. | **Reproduction**Asexual and sexual reproductionMeiosisAdvantages and disadvantages of sexual and asexual reproductionDNA and the genomeDNA structureGenetic inheritanceInherited disordersSex determination | **Communicable and non-communicable diseases.**Coronary heart disease Health issues The effect of lifestyles on some non-communicable diseasesCancerCommunicable diseasesViral diseasesBacterial diseasesFungal diseasesProtist diseasesDiscovery and development of drugs | **Bioenergetics**Photosynthesis reactionUse of glucose from photosynthesisAnaerobic and aerobic respirationResponse to exerciseMetabolism Required practical - Rate of photosynthesis (Investigating the effect of light intensity on the using an aquatic organism.)Required practical - Investigate the effect of light or gravity on the growth of newly germinated seedlings. |
| **Y11 GCSE****Biology** | **Ecosystems**CommunitiesAbiotic factorsBiotic factorsAdaptationsLevels of organisationsHow materials are cycledDecompositionRequired 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**BiodiversityWaste managementLand use DeforestationGlobal WarmingMaintaining biodiversityTrophic levelsPyramids of biomassTransfer of biomassFactors affecting food security.Farming techniques Sustainable fisheriesRole of biotechnology | **Defending Against Pathogens**Human defence systemsVaccinationsAntibiotics and painkillersDiscovery and development of drugsDetection and identification of plants diseases.Plant defence responsesPractical Skills - investigating the effect of antiseptics on bacterial growth. | **Variation and Evolution**VariationEvolutionSelective breedingGenetic engineeringCloningTheory of evolutionSpeciationThe understanding of geneticsEvidence for evolutionFossilExtinctionResistant bacteriaClassification of living organisms | **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 technicianCell biologist | Wind turbine technician | Petroleum engineerEpidemiologist | Pharmacologist | Nuclear reactor operatorRadiographer |
| **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 |  |  |