Science (Year 9)

Michaelmas 1	**Cell Biology** • The structure of plant cell and animal cell • The cell organelles • Microscopes • Transport of substances in and out of the cell. • Required Practical – Microscope and Osmosis **Atomic structure and the periodic table** • Structure of atom • Periodic table • The historical development of the structure of the atom and the periodic table. • Group 1, 7 and 0 elements
Michaelmas 2	**Atomic Structure (Physics)** • Structure of atom • Discovery of radioactivity • Radioactivity. • Uses of radioactive materials in medicine, industry, agriculture and energy generation **Bioenergetics** • Photosynthesis • Leaf structure • Required practical - rate of photosynthesis. • Respiration – Aerobic and anerobic • Metabolism **Bonding, structure and properties of matter** • Chemical bonds- ionic, covalent and metallic • Properties of ionic compounds • Polymers • Properties of alloys and metals • Structure and bonding of carbon- diamond, graphite, Fullerenes
Lent 1	**Bonding, structure and properties of matter – continued** **Particle model of matter** • Changes of state and the particle model • Internal energy and energy transfers • Changes of heat and specific latent heat • Particle model and pressure. **Health and disease** • Communicable diseases • Human defense systems • Vaccination • Antibiotics and painkillers • Discovery and development of drugs.
Lent 2	**Health and disease- continued** **Chemical quantities** • Conservation of mass and balanced chemical equations • Relative formula mass • Chemical measurements • Moles • Limiting reactants • Concentration of solutions

Trinity 1	**Chemical quantities- continued** **Energy** • Energy stores and systems • Changes in energy • Power • Conservation and dissipation of energy • Efficiency • National grid and global energy resources
Trinity 2	**PPE3** **Catch up!** • required practicals • Key threshold concepts in science • Exam practice • Investigation skills

	• Pollination and germination. **Space** • Our solar system and the sun. • Moons, eclipses and satellites. • Orbits, seasons and the earths tilt. **Conservation project** • Biodiversity. • Methods of measuring biodiversity. • Conservation. • Conservation poster project.