THE BULWELL ACADEMY

Key Stage 3 Curriculum Information

SCIENCE LEAD:
jim.brownlow@bulwellacademy.org.uk

Year 7 Science Curriculum

	Autumn Term	Spring Term	Summer Term
Topic	**Biology: Ecosystems** **Chemistry: Foundations of Chemistry** **Physics: Introduction to Physics**	**Biology: Cells and Movement** **Chemistry: Earth Structure and rock cycle** **Physics: Sound and light**	**Biology: Digestion and Gas exchange systems** **Chemistry: Periodic table and elements** **Physics: Quantifying energy**
Knowledge Covered	Students will be learning: • Food webs • Populations & Interdependence • Competition & Biodiversity • Rachel Carson • Atoms, elements, compounds & mixtures • States of matter & Changes of state • Energy stores & Pathways • Contact & Non-contact forces • Mass and Weight	Students will be learning: • Human skeletal system • Human muscular system • Levels of organisation in multicellular organisms • The structure of the earth • Igneous, metamorphic and sedimentary rocks • The rock cycle • Sound waves • Sound waves vs light waves • reflection and refraction	Students will be learning: • Gas exchange in humans • Respiratory system • The digestive system • Balanced diets • Metals and non-metals • Forming compounds • Symbol and word equations • Energy stores in context • Energy transfers • Dissipated energy
Online Resources	**Oak Academy online resources:** https://classroom.thenational.academy/subjects-by-key-stage/key-stage-3/subjects/science **BBC bitesize:** https://www.bbc.co.uk/bitesize/subjects/zng4d2p	**Oak Academy online resources:** https://classroom.thenational.academy/subjects-by-key-stage/key-stage-3/subjects/science **BBC bitesize:** https://www.bbc.co.uk/bitesize/subjects/zng4d2p	**Oak Academy online resources:** https://classroom.thenational.academy/subjects-by-key-stage/key-stage-3/subjects/science **BBC bitesize:** https://www.bbc.co.uk/bitesize/subjects/zng4d2p

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Year 8 Science Curriculum

	Autumn Term	Spring Term	Summer Term
Topic	**Biology: Genetics and evolution** **Chemistry: Earth structure and rock cycle** **Physics: Sound and light**	**Biology: Reproduction** **Chemistry: Climate and resources** **Physics: Space**	**Biology: Photosynthesis and respiration** **Chemistry: Metals and non-metals; acids and alkalis** **Physics: Electricity and electromagentism**
Knowledge Covered	Students will be learning: • Variation • Genes and mutations • Evolution • Rosalind Franklin • Mary Anning • Formation and classification of igneous, metamorphic and sedimentary rocks • The rock cycle • Igne Lehmann • Sound waves vs light waves • The transmission of light through materials. • How colours can be seen	Students will be learning: • Male and female reproductive systems • Gestation and fertillisations • Basics of IVF • Jean Purdy • Global warming • Extracting metals • Climate change • Space x • Satellites • Maggie Adrein-Pocock • Katherine Johnson • Rebecca Oppenheimer	Students will be learning: • Photosynthesis • Aerobic vs anaerobic respiration • Basics of pH: the pH scale • List differences between metals and non-metals • Conservation of mass • Changes of state • Chemical reactions • Oxidation and displacement reactions • Neutralisation reactions • Series and parallel circuits • Magnetism and electromagnets
Online Resources	**Oak Academy online resources:** https://classroom.thenational.academy/subjects-by-key-stage/key-stage-3/subjects/science **BBC bitesize:** https://www.bbc.co.uk/bitesize/subjects/zng4d2p	**Oak Academy online resources:** https://classroom.thenational.academy/subjects-by-key-stage/key-stage-3/subjects/science **BBC bitesize:** https://www.bbc.co.uk/bitesize/subjects/zng4d2p	**Oak Academy online resources:** https://classroom.thenational.academy/subjects-by-key-stage/key-stage-3/subjects/science **BBC bitesize:** https://www.bbc.co.uk/bitesize/subjects/zng4d2p

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Year 9 Science Curriculum

	Autumn Term	Spring Term	Summer Term
Topic	**Biology: Health** **Chemistry: Types of Reaction** **Physics: Heating & Cooling**	**Biology: CREST Project** **Chemistry: Chemical energy** **Physics: Wave interactions**	**Biology: Cell Biology CORE Concepts & Ecosystems** **Chemistry: Fundamental Chemistry** **Physics: Forces and their effects**
Knowledge Covered	Students will be learning: • Physical and mental health & wellbeing • Effects of life choices on health • Pathogens and microorganisms • Elizabeth Garett Anderson • Gonzalo Moratorio • Zhang Yongzhen • Types of Chemical reactions • The Reactivity series and Displacement reactions • Neutralisation reactions • Temperature as a scale of thermal energy • Intermolecular forces in changes of state	Students will also be given the opportunity to investigate 'Science in Action' through the CREST award scheme Cell organisation. Students will be learning: • Exothermic & Endothermic reactions • Energy profiles • Industrial application of catalysts • Types of waves • Light waves • Reflection, Refraction and Dispersion	Students will be learning: • Plant & Animal cells • Specialised cells • Microscopy • Cellular transport • Biotic & Abiotic factors • The development of the periodic table • Atomic models • Balanced and Unbalanced forces • Work done • Elastic deformation and Hooke's law • Pressure in fluids
Online Resources	**Oak Academy online resources:** https://classroom.thenational.academy/subjects-by-key-stage/key-stage-3/subjects/science **BBC bitesize:** https://www.bbc.co.uk/bitesize/subjects/zng4d2p	**Oak Academy online resources:** https://classroom.thenational.academy/subjects-by-key-stage/key-stage-3/subjects/science **BBC bitesize:** https://www.bbc.co.uk/bitesize/subjects/zng4d2p	**Oak Academy online resources:** https://classroom.thenational.academy/subjects-by-key-stage/key-stage-3/subjects/science **BBC bitesize:** https://www.bbc.co.uk/bitesize/subjects/zng4d2p

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