KS3 Science/Biology Curriculum with GCSE AQA Trilogy Links(2024-2025)

Year	Main Topic	Subtopics	Learning Outcomes	Practical Activities	Assessment Methods	Adaptive Learning Strategies	Real-Life Applications	Continuity Links	GCSE AQA Combined Science Trilogy Links
Year 7	Classification	Animal types, plant classification, micro-organisms, classification keys	Understand how organisms are grouped based on features; identify organisms using keys	Use of classification keys, observation and recording, graphs on variation	Tests with AO1, AO2, AO3; key vocab usage AO: assessment objective	Use of visual aids and differentiated classification activities	Classifying pets or garden plants in local environments	Links to genetics and inheritance in Y8	B3 - Infection and Response; B6 - Inheritance, Variation & Evolution
Year 7	Cells	Cell structure, differences between plant and animal cells, microscopy, cell specialisation	Identify and describe cell components and their functions	Microscopy labs using cheek and onion cells, drawing labelled diagrams	Practical tests, labelled diagrams, structured questions	Scaffolded observation guides and cell models	Medical applications like blood cells, plant cells in agriculture	Foundation for tissue and organ systems in Y8	B1 - Cell Biology
Year 7	Life Processes & Organisation	MRS GREN, levels of organisation,	Understand the 7 life processes;	Paper cube diffusion practicals,	Structured practical	Graphic organisers	Links to real-life plant care and	Builds toward transport and systems in Y8	B1 - Cell Biology; B2 - Organisation

		diffusion, osmosis, transpiration	describe structure from cells to organisms	demos on osmosis and transpiration	evaluations, concept maps	and chunked concepts	human biology		
Year 7	Body Systems 1 - Movement	Skeletal and muscular systems, biomechanics, nervous system, reflexes	Explain how muscles and skeletons work together for movement	Reaction time experiment, model skeletons, force measurements	Lab-based assessments and scenario evaluations	Peer demos and kinesthetic learning	Sports performance, prosthetics, robotics	Sets foundation for circulatory and respiratory in Y8	B2 - Organisation
Year 7	Nutrition & Health	Diet, exercise, hygiene, drugs, malnutrition	Describe balanced diets and effects of poor nutrition	Food tests, discussion on health choices, data analysis	AO1–AO3 format test, dietary analysis	Case studies and lifestyle comparisons	Relevant to everyday eating habits and media messages	Links to digestion in Y8	B2 - Organisation; B3 - Infection and Response
Year 7	Reproduction 1 - Mitosis & Asexual Reproduction	DNA, chromosomes, heredity, mitosis	Understand growth and cell division via mitosis	Slide viewers, mitosis stage diagrams, case studies	Tests using key vocabulary and comparisons	Story-based activities and scaffolded tasks	Links to cloning and growth patterns in farming	Leads into meiosis and sexual reproduction in Y8	B2 - Organisation; B6 - Inheritance, Variation & Evolution
Year 7	Plant Biology 1 – Structure & Function	Photosynthesis, plant parts, transport in plants, stomata	Describe how photosynthesis works and how plants get nutrients	Elodea photosynthesis demo, leaf structure microscopy	Test for oxygen/starch, label diagrams	Concept maps and rate experiments with varied difficulty	Farming, food security, carbon cycle	Basis for more advanced ecosystem topics	B4 - Bioenergetics; B7 - Ecology
Year 7	Plant Biology 2 – Reproduction	Flower parts, pollination, seed dispersal	Identify and explain functions of flower parts	Dissection of flowers, demo of dispersal types	Label diagrams, write-ups of practicals	Hands-on flower labs, diagrams with scaffolds	Food supply chain and biodiversity importance	Feeds into ecosystems and interdependence	B7 - Ecology

			and types of pollination						
Year 8	Digestive System	Structure and function, enzymes, food tests, healthy diet	Understand the digestive system's role and enzyme function	Microscopy of tissue, food test experiments (starch, glucose etc.)	AO1–AO3 practical tests, food diaries, quizzes	Visual aids for enzymes, food logs for differentiation	Nutrition planning, digestion disorders in media	Builds on Y7 nutrition & leads to absorption in bloodstream	B2 - Organisation
Year 8	Circulatory System	Heart, blood vessels, blood, diffusion, transport	Identify circulatory components and their functions	Heart and vessels diagrams, microscope slides, diffusion models	Labelled diagrams, quizzes, short structured answers	Simplified diagrams and peer discussion for complex topics	Heart health, impact of exercise and diet	Connects to gas exchange and respiration	B2 - Organisation
Year 8	Cell Division – Meiosis	Meiosis, variation, Punnett squares, heredity	Differentiate mitosis and meiosis, understand genetic variation	Meiosis models, Punnett square tasks	Worksheets, practical tasks, comparison charts	Scaffolded diagrams, step-by-step Punnett square activities	Genetic disorders, agriculture applications	Reinforces reproduction and genetics topics from Y7	B6 - Inheritance, Variation & Evolution
Year 8	Gas Exchange & Excretion	Breathing mechanism, lungs, gas exchange, smoking effects	Explain the gas exchange system and health effects of pollutants	Lung volume tests, breathing models, microscopy	Lung capacity analysis, health effect debates	Group discussions, simulations with balloon models	Real-world applications: asthma, smoking campaigns	Builds on diffusion and human biology systems	B1 - Cell Biology; B2 - Organisation
Year 8	Respiration	Aerobic and anaerobic respiration, fermentation, energy transfer	Understand differences between respiration types	Germinating pea practicals, CO_2 and H_2O detection	Word equations, compare/contrast tasks	Role-play processes, simplified respiration chains	Fitness, fermentation in industry	Links to energy in physics and metabolism	B4 - Bioenergetics

Year 8	Interdependence	Food chains/webs, toxic materials, ecosystems	Understand ecosystem balance and impact of disruption	Create food webs, analyse ecosystem changes	Diagrams, ecosystem scenario tasks	Literacy-focused activities, diagram support	Sustainability, agriculture, environmental change	Connected to plant reproduction and food security	B7 - Ecology
Year 8	Evolution & Inheritance	Adaptations, natural selection, extinction, biodiversity	Explain evolution through adaptation and selection	Adaptation case studies, selective breeding debates	Research tasks, comparison tables, literacy-based essays	Use of storytelling, graphic organisers	Medicine, climate adaptation, agriculture	Develops from classification and reproduction	B6 - Inheritance, Variation & Evolution
Year 8	Reproduction 3 – Human Reproduction	Systems, menstrual cycle, fertilisation, gestation	Describe male/female systems and reproductive processes	Model making, diagrams, case analysis	Labelling tasks, case scenarios, sequencing cards	Sensitively differentiated instruction, animation tools	Sex education, reproductive health awareness	Builds on Y7 mitosis and heredity	B6 - Inheritance, Variation & Evolution

M – **Movement**: All living things move in some way.

R – **Respiration**: The process of releasing energy from food.

S – **Sensitivity**: Detecting and responding to changes in the environment (stimuli).

G – **Growth**: All living things grow and develop.

R – **Reproduction**: Producing offspring to continue the species.

E – **Excretion**: Removing waste products from the body.

N – **Nutrition**: Taking in and using nutrients or food**.**