King's Academy Binfield

SECONDARY SCIENCE LEARNING JOURNEY: BIOLOGY

YEAR 11

VARIATION AND EVOLUTION (CLONING)
- Theory of evolution, speciation, change over time
- Physical process and ethical considerations

CLASSIFICATION ADAPTATION & INTERDEPENDENCE
- Linnaean classification and taxonomy
- interdependence of organisms within an ecosystem

ORGANISATION OF AN ECOSYSTEM (TROPHIC LEVELS)
- Levels of Organisation
- Biotic and Abiotic factors
- Waste management and cycles of materials

BIODIVERSITY AND HUMAN EFFECTS (FOOD PRODUCTION)
- Positive and negative interactions between humans and the environment
- Recycling and waste

REVISION AND COMMUNICATION

THE BRAIN
THE EYE
CONTROL OF BODY TEMP
WATER AND NITROGEN BALANCE
PLANT HORMONES
REPRODUCTION

YEAR 10

HORMONAL COORDINATION IN HUMANS
- Endocrine system
- Menstrual Cycle

HOMEOSTASIS THE NERVOUS SYSTEM
- Bodily function to maintain blood sugar etc
- Structure and function

PHOTOSYNTHESIS RESPIRATION
- Chemical processes
- Anaerobic and aerobic
- How plants store food

MONOCLONAL ANTIBODIES PLANT DISEASES

COMMUNICABLE DISEASE
- How disease is spread
- Minimising infection, vaccination

ANIMAL TISSUES → SYSTEMS
ORGANISATION
TRANSPORT IN CELLS
- Diffusion. osmosis and active transport

CELL DIVISION
- Mitosis and Meiosis

CELL STRUCTURE
- Structure and function of Organelles

GCSE CONTENT BEGINS

MATHS IN SCIENCE FOR GCSE
- Calculating averages
- Probability
- Graph Skills

YEAR 9

INHERITANCE
- Genetics and inherited disease

CORE BIO
- Cell structure and function overview
- Bioenergetics

EVOLUTION
- Natural selection, extinction and Charles Darwin

PHOTOSYNTHESIS
- Chemical process and its importance

RESPIRATION
- Chemical process and the role it plays

DIGESTION
- Chemical and physical processes

BREATHING
- Physiological process of breathing and gas exchange

YEAR 8

CELLS
- Organisms are composed of cells which are organised into tissues, organs and systems to carry out life processes

INTERDEPENDENCE
- investigate the impact of changes in a population of one organism on others in the ecosystem

PLANT REPRODUCTION
- Evaluate the features of various types of pollination & seed dispersal

VARIATION
- How variation, adaptation and survival are linked

HUMAN REPRODUCTION
- Reproductive system and development of the fetus

MOVEMENT
- The parts of the human skeleton

YEAR 7

Schemes of learning are designed to ensure students progress based on their security of understanding and readiness for the next stage. STRETCH and CHALLENGE is at the heart of our curriculum

- Topic tests and termly assessments are designed to accurately assess knowledge and maximise progression.
- The scheme is designed with INTERLEAVING as a key element

- Applying the scientific method, seeing the world analytically and using information learned to explain phenomena and make predictions

- Curiosity about the world around us and an ability to communicate scientific concepts and solve problems.

Text in green is GCSE separate science Biology only and will not be covered by the combined science course