Year 10 Biology Curriculum Summary

YEAR GROUP:11(FMS) **SUBJECT: Biology**

When?	Knowledge	Understanding	Assessment
More about Diseases	Will be able to: • Describe how to grow bacteria in a lab setting • Carry out a practical to investigate the effect of antiseptics or antibiotics on bacterial growth using agar plates and measuring zones of inhibition. • Describe the effect which disinfectants and antibiotics have on bacteria.	Students will carry out a range of practical experiments during these topics. **More about Diseases key vocabulary:** agar gel aphids binary fission chlorosis communicable (infectious) disease culture medium inoculate microorganisms mutation non-communicable diseases pathogens sexually transmitted disease (STD) vaccine virus	**Assessment:** more about diseases test
More about Diseases	Will be able to: • Describe how mineral deficiencies cause non communicable diseases in plants • Describe the mechanisms which plants have to defend themselves from pathogens and herbivores	Students will carry out a range of practical experiments during these topics. **More about Diseases key vocabulary:** clinical trials hybridomas placebo preclinical testing vaccine	**Assessment:** more about diseases test

When?	Knowledge	Understanding	Assessment
More about Biological Response	Will be able to: • Describe the main parts of the brain and the how scientists find out about their structure and function • Describe the structure and function of the main parts of the eye • Describe what is meant by long-sightedness and short sightedness and how these can be remedied.	Students will carry out a range of practical experiments during these topics. **More about Biological Response key vocabulary:** central nervous system (CNS) cerebral cortex cerebellum ciliary muscles coordination centres effectors homeostasis hyperopia medulla motor neurones myopia nerve neurones receptors reflex arcs reflexes sensory neurone stimuli suspensory ligaments	**Assessment**: More about Biological Response Test

When?	Knowledge	Understanding	Assessment
More about Biological Response	Will be able to: • describe the role which auxin play in plant response to gravity and light • Carry out a practical to demonstrate The effect of light and gravity on the growth of newly germinated seedlings • Describe how plant hormones are used in agriculture	Students will carry out a range of practical experiments during these topics. **More about Biological Response key vocabulary:** ADH adrenaline auxin contraception endocrine system follicle stimulating hormone (FSH) gibberellins glucagon gravitropism hormones insulin oestrogen ovaries ovulation phototropism pituitary gland testosterone tropism type 1 diabetes type 2 diabetes	**Assessment**: More about Biological Response Test
More about	Will be able to: • Explain how the body	**More about Biological Response key vocabulary:**	**Assessment:** More about Biological Response Test

When?	Knowledge	Understanding	Assessment
Biological Response **More about Reproduction**	monitors and maintains its core temperature • Describe and explain how and why the body gets rid of waste products form your cells. • Explain why the importance of your kidneys and how they work • Describe how dialysis can carry out the function of damaged kidneys • Describe what is involved in a kidney transplant Will be able to: • Contrast asexual and sexual reproduction and the advantages and disadvantages of both • Explain how some organisms reproduce both asexually and sexually • Describe how DNA controls protein synthesis • Explain what happens in a mutation • Describe how genes are expressed	ADH dialysis selective reabsorption thermoregulatory centre vasoconstriction vasodilation Students will carry out a range of practical experiments during these topics. **More about Reproduction key vocabulary:** alleles asexual reproduction bases (DNA) carriers cystic fibrosis dominant allele genetic engineering genotype heterozygote homozygote meiosis mutation natural selection nucleotide	**Assessment:** More about Genetics and Reproduction Test

When?	Knowledge	Understanding	Assessment
More about Variation and Evolution	Will be able to: • Describe the different ways of creating clones • Explain the benefits and risks of adult cloning	phenotype polydactyly Punnett square diagram recessive sex chromosomes sexual reproduction **More about Variation and Evolution key vocabulary:** mutation natural selection selective breeding tissue culture	**Assessment:** More about Genetics and Reproduction Test
More about Genetics and Evolution	Will be able to: • Explain how Mendel's work fits in with modern ideas of genetics • Describe what is meant by the theory of evolution • Explain why Darwin's theory of evolution was only gradually accepted • Describe how Alfred Russel Wallace influenced Darwin's work • Explain how new species	**More about Genetics and Evolution key vocabulary:** archaea classification domain evolutionary trees extinction speciation species	

When?	Knowledge	Understanding	Assessment
B17 More about Organising an Ecosystem	arise Will be able to: • Describe and explain what affects the rate of decays • Describe how to make compost and what it is used for • Carry out a practical to Investigate the effect of	Students will carry out a range of practical experiments during these topics. **More about Organising an Ecosystem key vocabulary:** biomass carbon cycle decomposers	

When?	Knowledge	Understanding	Assessment
More about Biodiversity and Ecosystems	temperature on the rate of decay of fresh milk by measuring pH change Will be able to: • Evaluate how environmental changes affect the distribution of organisms • Construct pyramids of biomass from appropriate data • Describ3e and explain how biomass is transferred to the next trophic level and how biomass is lost at each stage • Describe and explain the factors which threaten food security • Describe the methods used to ensure both efficient and sustainable food production	primary consumer producers secondary consumer **More about Biodiversity and Ecosystems key vocabulary:** acid rain biodiversity deforestation incident energy trophic level	**Assessment:** More about Ecology Test