



# Long Term Plan Year 11 Biology

Half Term	Unit Title	Key Knowledge/Content to learn and retain	Essential Skills to acquire (subject & generic)	Link to intent and ethos	Anticipated misconceptions	Links to previous KS	Link to future KS	Opportunity for stretch and high prior attainers	SMSC & British Values	Cultural Capital	Career Link
One	Homeostasis	The definition of Homeostasis The nervous system and reflex arcs (Triple Only - The brain and eye) Negative feedback and the control of temperature, glucose and (Triple only) Water and Nitrogen  Control of the menstrual cycle, including fertility treatment and hormonal contraception (Triple Only) Plant Hormones	Drawing and labelling scientific diagrams Collecting recording accurate data Presenting and interpreting data in tabular and graphical form. Extended Writing		Blood sugar - students often don't identify this with glucose  Students often think nerves are controlled by emotions.  Students often confuse the three different hormones that control the menstrual cycle	Builds from the study of nutrition and digestion in year 9, which explores how humans obtain the glucose they use for energy from their diet. Also builds from previous study of the circulatory system as a transport mechanism	Study of homeostasis and negative feedback loops is continued in greater depth in A-Level biology.	Treatment of diabetes and comparison of type one and type two. Students can consider why negative feedback loops are suited to control of homeostasis	Healthy diet and risk factors for diabetes How people with diabetes manage their condition  Appropriate usage of contraception, particularly hormonal options	Healthy diet and risk factors for diabetes How people with diabetes manage their condition  How different communities feel about and use hormonal contraceptives	Dietitian Any number of careers in the medical field  Fertility Adviser Family planning adviser Farmer Botanist
Two	Inheritance variation and evolution	The structure of DNA Genes and alleles; including the concepts of recessive alleles, dominant alleles, homozygous and heterozygous Sexual vs asexual reproduction Inheritance and punnet squares Inheritance of sex and genetic disorders Evolution by natural selection Evidence for evolution, including fossils and genetic evidence Classification	Calculation of simple probability Writing and interpreting tree charts Extended writing		Alleles as different genes rather than different versions of a gene Confusion between genotype and phenotype	This unit builds on the study of heredity and evolution that is completed in year 9	Study of genetics forms the basis of an entire unit of study in A-Level biology	Sex linked traits Advantages and disadvantages of sexual be asexual reproduction and why organisms capable of both would chose a strategy.  Advantages and disadvantages of sexual be asexual reproduction and why organisms capable of both would chose a strategy Why scientists did not initially accept ideas of evolution Comparison of Lamark and Darwin	Inherited disorders and issues around family planning  Darwin as a British Scientist	Charles Darwin and the voyage of the beagle Historical debate around evolution.  Historical debate around evolution	Medical research Family planning adviser Genealogist
Three	Ecology	Biotic and Abiotic factors Competition between organisms Food chains, webs and trophic levels Sampling techniques Human impact on biodiversity (Triple Only) Decay and nutrient cycles (Triple Only) Human food production	Practical sampling techniques Recording accurate data Representing and interpreting data in tabular and graphical form Extended Writing Reading for comprehension		Students often think of humans as organisms beyond or outside of food webs and the larger ecosystem, so it is important that they understand the role humans play The difference between Quadrat and Transect sampling	This unit builds from the study of interdependence in KS3. Students should already have a basic understanding of food chains and how energy flows and is lost along them, students also looked at evolution and how organisms compete with each other for survival	Ecology forms an entire unit of study at Biology A-Level, where students will study all of the concepts looked at here in greater depth.	Consider why and how energy is lost along a food chain Evaluate sampling techniques and suggest why a given technique may be used Suggest ways to improve food security	Humans as a wider part of the ecosystem and our place and role in protecting the environment; including the consequences if we fail to do so.	Study of different ecosystems, climates and habitats both in the UK And world wide	Conservationist Farmer Food Scientist Careers with the environment agency or DEFRA
Four		PPE's in November and February may mean that Ecology can often be taught in the first few weeks of term 4. After this is completed students will be led in detailed and planned revision sessions by staff. These will focus on paper 1 topics for the end of term 4 and paper 2 topics at the beginning of term 5.									
Five											
Six											