	Year 9 Biology					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
BIG Q Content *(max 5)* Please log into Seneca to support your child to understand this learning	***How do organisms survive?*** Describe how variation and competition for resources drive Natural Selection. Describe what is meant by the term biodiversity. Explain the importance of biodiversity. Identify changes that can cause a species to become extinct. Explain the use of gene banks to preserve hereditary material before a species becomes extinct.	***What controls the way we look?*** Identify that the nucleus contains chromosomes which carry inherited genetic information. Describe the link between chromosomes, genes and DNA. Describe the structure of DNA. Assess the work of Watson, Crick, Wilson and Franklin on DNA structure. Identify that a fertilised egg contains a full set of chromosomes, half from each parent.	***Why do we look the way we do?*** Explain the number of chromosomes in gametes. Explain how some genetic disorders arise. Identify inherited characteristics in plants and animals that vary between offspring. Use a model to represent inheritance of a trait. Predict the likelihood of offspring inheriting specific traits.	***Where does all our energy come from***? State the equation for respiration and describe what it shows. Explain the importance of respiration. Describe an application of respiration in building molecules. Describe what is meant by anaerobic respiration. Explain what is meant by oxygen debt.	***How do plants get the energy they need?*** State that plants (and microbes) carry out fermentation. Recall the word equation for fermentation. Investigate fermentation in yeast. Describe some applications of fermentation. Describe a method to show that chlorophyll is essential for photosynthesis.	***How do plants make their own food?*** Relate the internal structure of a leaf to its function and how gas exchange is enabled by stomata. Identify and explain how water and minerals move through a plant. Identify the mineral essential to healthy plant growth. Identify the factors that can affect photosynthesis. Investigate some factors affecting photosynthesis.
Vocabulary *(max 10)* Please log into MAPPER to support your child to learn these words	Biodiversity Ecosystem Endangered Extinction Competition Evolution Gene bank Natural Selection Population Variation	Base Chromosomes Double helix DNA Gametes Gene Karyotype Mutation Trisomy	Allele Dominant Identical twins Inherited characteristics Recessive Genetic diagrams Probability	Aerobic respiration Anaerobic respiration Energy Glucose Glycogen Lactic Acid Oxygen debt Respiration	Brewing Chlorophyll Dependent variable Fermentation Independent variable Microbe Repeatable Photosynthesis Starch Yeast	Concentration Deficiency Fertiliser Light intensity Manure Palisade cell Stomata Root hair cells Transpiration Xylem cells
Catholic Link	Creation & the environment: biodiversity	Dignity & creation: variation & inheritance	Creation: respiration, fermentation	Creation & the environment: photosynthesis	Creation & the environment: plant / leaf structure	Creation & the environment: mineral importance for plants
Careers Link	Conservation scientist, ecologist	Geneticist, genetic counsellor	Bioethicist, IVF clinic coordinator	Physiotherapist, biomechanist	Botanist, plant biotechnologist	Environmental scientist, agronomist

Ways to enrich the Y9 Biology curriculum at home:

- Make a hollow 50cm x 50cm square – go to a local park- place the square down and count the number of different species in the square – repeat this at different locations.
- As a family make a fermented product such as bread.
- With a small plant, place it in an area which gets sun, cover one of the leaves with tin foil. Observe what you see and compare with the other leaves.