Year 7 Biology

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit	**BF1 Structure and Function of Organisms**		**BF2 Reproduction**		**BF3 Nutrition and Digestion**	
Knowing what… (Declarative knowledge)	Define the term "microscopic" Label the parts of a microscope Identify sub-cellular structures in a generalised animal cell (nucleus, cytoplasm, cell membrane, mitochondria) Identify sub-cellular structures in a generalised plant cell (nucleus, cytoplasm, cell membrane, cell wall, mitochondria, vacuole, chloroplasts) Describe the functions of sub-cellular structures in generalised animal and plant cells State examples of specialised cells and describe their function (sperm cell, red blood cell, root hair cell, palisade leaf cell) Define the terms "unicellular" and "multicellular" Identify and label some examples of unicellular organisms (bacteria, amoeba, yeast, euglena) Describe the hierarchical organisation of multicellular organisms		Define the terms "reproduction" and "gamete" Identify organs of the human male reproductive system (testes, scrotum, sperm duct, glands, urethra, penis) Recall structure and function of the sperm cell Identify organs of the human female reproductive system (ovaries, oviduct, uterus, cervix, vagina) Describe structure and function of the egg cell Define the term "fertilisation" Describe the development of the foetus Describe the function of the placenta, umbilical cord and amniotic fluid Describe the events occurring during birth Describe the changes that occur during puberty Identify the male reproductive organs in a flower (Stamen: anther and filament) and the female organs in a flower (Carpal: stigma, style, ovary) Define the term "pollination" Describe the sequence of events that occur after pollination		Define the term "balanced diet" Identify the seven nutrients present in a balanced diet Describe the function of carbohydrates, protein, lipids, vitamins, minerals, fibre and water in the human body Describe the consequences of imbalances in the diet, including starvation, obesity and deficiency diseases Identify organs of the human digestive system Define the term "enzyme" State the function of the enzyme amylase Describe what happens to food after it has been digested Describe the importance of bacteria in the human digestive system	
Knowing how… (Procedural knowledge)	Use a microscope correctly to obtain a focussed image of a microscopic organism at magnifications of x40, x100 and x400 Use drawing skills to produce an accurate image of a microscopic organism Derive and use simple equations to calculate total magnification Draw, label and annotate diagrams of a generalised animal cell and a generalised plant cell Safely make slides of cheek cells and onion epidermal cells to view using a microscope Draw and label cheek cells and onion epidermal cells, choosing the most appropriate magnification Compare similarities and differences between animal cells and plant cells Explain the adaptations of specialised cells, linking structure to function Safely make a slide of living yeast cells to view using a microscope Draw and label yeast cells, choosing the most appropriate magnification Explain the function of some human organs and systems		Label a diagram of the human male reproductive system and explain the function of the organs Label a diagram of the human female reproductive system and explain the function of the organs Construct a flow chart to summarise the events leading up to fertilisation Explain how smoking and alcohol can affect foetal development Sequence the stages of foetal development using images Annotate a diagram of the 28-day menstrual cycle Label a diagram of a flower Compare the structures of a wind pollinated flower and an insect pollinated flower Explain why insects are important for food security Safely carry out a flower dissection Safely make slides of pollen and egg cells to view using a microscope, and compare their structures Compare methods of seed dispersal Classify examples of fruits and non-fruits Carry out an investigation into the effect of wing blade length and dispersal distance		Evaluate an example of a meal and suggest improvements Carry out the chemical test for starch on some food samples Carry out the chemical test for glucose on some food samples Calculate the energy content of food Label a diagram of the human digestive system Explain adaptations of organs of the human digestive system, linking structure to function Explain how enzymes work as "biological catalysts" Explain why food needs to be digested Investigate the action of amylase by carrying out the "Model Gut Investigation" Make predictions and draw conclusions from the results of the "Model Gut Investigation"	