Prior learning	• Year 7: Cell structure • Year 8: Food and nutrition; Breathing and respiration • Year 9: B1a cell structure; specialised cells; B1b Aerobic respiration; surface area to volume ratio

Lesson Number	AQA Spec	Title	Lesson Outcomes	Homework/ Assessment
1	4.2.2.1	Explaining enzymes	• Describe what enzymes are and how they work. • Compare catalysts to enzymes • Explain the lock-and-key theory. • Use the collision theory to explain enzyme action • Describe how pH and temperature affects enzyme activity (interpret graph)	
2	4.2.2.1	***Required practical 1: Investigate the effect of pH on the rate of reaction of amylase enzyme***	• Write a hypothesis explaining how pH affects enzyme activity • Use appropriate apparatus to record the volumes of liquids, time and pH • Describe the variables in this investigation and how factors will be controlled • Make accurate observations • **Math's skills:** draw and interpret a graph of pH and amylase activity, carry out rate calculations, higher tier – draw tangents to calculate rate.	
3	4.2.2.1 4.4.2.3	The digestive system	• Identify and locate the organs in the digestive system and describe their functions • Describe the importance of digestion • Compare physical and chemical digestion – give examples. • Describe what metabolism means	

4	4.2.2.1	Explaining digestion	• Name the sites of production and action of specific enzymes (carbohydrase/amylase, protease, lipase). • Interpret data about digestive enzymes. • Describe how the products of digestion are absorbed into the body. • Explain why the small intestine is an efficient exchange surface. • Describe the importance of Bile in digestion	**Skills Assessment: 15 marks**
5	4.2.2.1	***Required practical 2: Use qualitative reagents to test for starch, glucose, lipids (fats) and proteins***	• Describe how to carry out the test for starch, glucose, proteins and lipids. • Describe the hazards and risks in the experiments and how to minimize them. • Suggest how to make accurate measurements. • Interpret observations and make conclusions.	
MID WAY TEST				
6	4.2.2.2 4.2.2.3	Studying blood	• Identify the parts of the blood and describe their functions. • Explain the adaptations of red blood cells. • Explain how red blood cells and haemoglobin transport oxygen efficiently.	
7	4.2.2.2	The circulatory system	• Compare single and double circulatory system • Identify the parts of the circulatory system. • Describe the functions of the parts of the circulatory system. • Explain how the structure of each blood vessel relates to its function. • **Math's skills:** carry out rate calculations for blood flow.	

8	4.2.2.2	Exploring the heart	• Describe the structure and functions of the heart. • Identify the functions and adaptations of the parts of the heart. • Explain the movement of blood around the heart (cardiac cycle) • Describe the function of pacemaker cells and their location.	
9	4.2.2.4	Learning about coronary heart disease (CHD)	• Identify the causes and symptoms of coronary heart disease and heart failure. • Describe possible treatments of coronary heart disease and heart failure. • (Artificial pacemakers, stents, statins, biological or mechanical valves, heart donation, artificial hearts) • Evaluate (benefits and risks) the possible treatments of coronary heart disease and heart failure.	**Assessment: 25 mark multiple choice quiz**
10	4.4.2.2 4.1.3.1	The respiratory system	• Identify the parts of the human gas exchange system and know their functions. • Explain how gas exchange occurs in humans. • Explain the adaptations of the gas exchange surfaces.	
11	4.1.3.1	Looking at more exchange surfaces	• Identify the structures responsible for gas exchange in fish, amphibians and insects. • Describe the adaptations of different gas exchange surfaces. • Explain the gas exchange surfaces in amphibians.	
END OF UNIT TEST				
Where will we use these ideas again			• Year 10 – B5 Homeostasis: Controlling blood sugar levels; endocrine system; Kidneys and water levels (triple only); • Year 11 – B8 Ecology: Decay required practical (triple only); Biotechnology (triple only)	