

Topic	Student Checklist	R	A	G
4.2.1 Principles of organisation & 4.2.2 Animal tissues, organs and organ systems	Describe the levels of organisation within living organisms			
	Describe the digestive system and how it works as an organ system (from KS3)			
	Describe basic features of enzymes (inc rate calculations for chemical reactions)			
	Describe the lock and key theory as a model of enzyme action and explain how the shape a of the active sites makes the enzyme specific			
	Explain the effect of temperature and pH on enzymes			
	Describe the digestive enzymes, including their names, sites of production and actions			
	Describe how the products of digestion are used			
	Describe the features and functions of bile and state where it is produced and released from			
	<i>Required practical 3: use qualitative reagents to test for a range of carbohydrates, lipids and proteins</i>			
	<i>Required practical 4: investigate the effect of pH on the rate of reaction of amylase enzyme</i>			
	Describe the structure of the human heart and lungs (inc how lungs are adapted for gaseous exchange)			
	Explain how the heart moves blood around the body (inc role and position of the aorta, vena cava, pulmonary artery & vein and coronary arteries)			
	Explain how the natural resting heart rate is controlled and how irregularities can be corrected			
	Describe the structure and function of arteries, veins and capillaries			
	Use simple compound measures such as rate and carry out rate calculations for blood flow			
	Describe blood and identify its different components, inc identifying blood cells from photographs/diagrams			
	Describe the functions of blood components, including adaptations to function			
	Describe what happens in coronary heart disease and what statins are used for			
	Describe and evaluate treatments for coronary heart disease and heart failure (inc drugs, mechanical devices or transplant)			
	Recall that heart valves can become faulty and describe the consequences of this			
	Describe how patients can be treated in the case of heart failure			
	Describe health and the explain causes of ill-health and the relationship between health and disease			
	Describe how different types of diseases may interact and translate disease incidence information between graphical and numerical forms			
	Describe what risk factors are and give examples discussing human and financial costs of non communicable diseases at local, national and global levels			
	Describe what cancer is and explain the difference between benign and malignant tumours			
Describe the known risk factors for cancer, including genetic and lifestyle risk factors				

4.2.3 Plant tissues, organs and system	Describe plant tissues (epidermal, palisade mesophyll, spongy mesophyll, xylem, phloem and meristem) and describe their functions			
	Explain how the structure of plant tissues are related to their function within the leaf (plant organ) inc stomata and guard cells			
	Recall the plant parts that form a plant organ system that transports substances around the plant			
	Explain how root hair cells, xylem and phloem are adapted to their functions			
	Describe the process of transpiration and translocation including the role of the different plant tissues			
	Explain how the rate of transpiration can be affected by different factors (inc naming the factors)			
	Describe the role of stomata and guard cells in the control of gas exchange and water loss			