

Year 9 Spring 1 Biology

Chapter and Topic	Lesson	Outcomes
B2 Cell division	Cell division	<ul style="list-style-type: none"> • State the purpose of mitosis • Describe how cells divide • Explain the need for mitosis
	Growth and differentiation and stem cells	<ul style="list-style-type: none"> • Describe how cell differentiation varies in animals and plants • Describe how plant clones are produced through tissue • Describe the functions of stem cells in embryos, adult stem cells and plants • Explain how treatment with stem cells may be used to treat people with different medical conditions
	Stem cell dilemmas	<ul style="list-style-type: none"> • Recall the definition of a stem cell • Understand some of the risks, benefits, social and ethical issues regarding use of stem cells in medicine
	B2 test	
B3 Organisation and the digestive system	Tissues and organs and the digestive system	<ul style="list-style-type: none"> • Define cell, tissue, organ, organ system • Describe the position of the main organs of the human digestive system
	Required practical – food tests	<ul style="list-style-type: none"> • Recall the methods and colour changes for food tests for sugars, proteins, lipids and starch
	The chemistry of food	<ul style="list-style-type: none"> • Describe the expected colour changes for each food test. • Explain how to carry out each food test • Name the basic structure of carbohydrates, proteins and lipids
	Catalysts and enzymes and the effect of temperature	<ul style="list-style-type: none"> • Recall that enzymes are proteins which are biological catalysts. • Apply the 'lock and key model to explain why the shape of the enzyme is vital for it to function. • Explain how temperature affects the action of enzymes
	Effect of pH and exam question	<ul style="list-style-type: none"> • Explain how pH affects the action of enzymes • HSW: Develop graph skills and analysis of results

	practice to include graph drawing	
	How the digestive system works (digestive enzymes)	<ul style="list-style-type: none"> • State that enzymes are used in digestion to break down food. (4) • Explain why enzymes are needed for digestion (6) • Identify each food molecule, name the enzyme it acts on, where it is produced and which products are formed. (8)
	Making digestion efficient	<ul style="list-style-type: none"> • Describe the roles of HCl and bile in making digestion more efficient
	Required practical – effect of pH on amylase	<ul style="list-style-type: none"> • Identify the independent, dependent and control variables • Describe how iodine indicator is used to determine the end point of an enzyme controlled reaction • Analyse your results to determine the optimum pH for amylase to break down starch into glucose • Present a graph of amylase activity against pH
	Analysis lesson	
	Test lesson	
	DIRT lesson	