

## Practical Endorsement - A level Biology

Specified practical work	Specification Reference		Con opp	npete portu	ency nity			Practical technique										
		1	2	3	4	5	<b>A</b> . Use appropriate apparatus	<ul> <li>B. Use appropriate instrumentation</li> </ul>	<ul> <li>C. Use laboratory glassware apparatus</li> </ul>	D. Use of light microscope at high power and low power	E. Produce scientific drawing	F. Use qualitative reagents to identify biological molecules	<b>G</b> . Separate biological compounds	H. Safely and ethically use organisms	I. Use microbiological aseptic techniques	J. Safely use instruments for dissection	K. Use sampling techniques in fieldwork	L. Use ICT
Food tests	Core concepts 1	~		✓	✓	✓						~						
Calibration of light microscope at low and high power, including calibration of actual size of a structure and the magnification of a structure in a drawing	Core concepts 2	~		~	~					~								
Preparation and scientific drawing of a slide of onion cells including calibration of actual size and magnification of drawing	Core concepts 2	~		~	~	~					~							
Determination of water potential measuring changes in mass/length	Core concepts 3	~		~	~	~	~											
Determination of solute potential by measuring the degree of incipient plasmolysis	Core concepts 3	~		~	~	~	~											
Investigation into the permeability of cell membranes using beetroot	Core concepts 3	~		~	~	~	~	~										
Investigation into the effect of temperature or pH on enzyme activity	Core concepts 4	~		~	~	~	~		~									
Investigation into the effect of enzyme or substrate concentration on enzyme activity	Core concepts 4		~	~	~	~	~		~									
Simple extraction of DNA from living material	Core concepts 5	~		~					~									
Scientific drawing of cells from slides of root tip to show stages of mitosis	Continuity of Life 2	~		~	~	~					~							
Scientific drawing of cells from prepared slides of developing anthers to show stages of meiosis	Continuity of Life 2	~		~	~	~					~							
Investigation into biodiversity in a habitat	Continuity of Life 1		~	✓	✓	~								✓			✓	✓
Investigation into stomal numbers in leaves	Requirements for Life 1	~		~	~	~				~								
Dissection of fish head to show the gas exchange system	Requirements for Life 1	~		~	~	~										~		
Scientific drawing of a low power plan of a prepapred TS leaf, including calculation of actual size and magnification of drawing	Requirements for Life 1	~		~	~	~				~								

Specified practical work	Specification Reference	1	2	3	4	5	A.	В.	C.	D.	E.	F.	G.	Н.	I.	J.	к.	L.
Investigation into transpiration using a simple potometer	Requirements for Life 2		✓	~	~	✓	~	~						~				~
Scientific drawing of low power plan of TS artery and vein including calculation of actual size and magnification of drawing	Requirements for Life 2	~		~	~	~				~								
Dissection of mammalian heart	Requirements for Life 2	~		~	~	~										~		
Investigation of dehydrogenase activity in yeast	Energy for Life 1		~	~	~	~	~		~			✓						
Investigation into the separation of chloroplast pigments by chromatography	Energy for Life 2	~		~	~								~					
Investigation into factors affecting the rate of photosynthesis	Energy for Life 2		~	~	~	~	~											~
Investigation into the role of nitrogen and magnesium in plant growth	Energy for Life 2	~		~	~	~								~				~
Investigation into factors affecting the rate of respiration in yeast	Energy for Life 3		~	~	~	~	~							~				
Investigation into the numbers of bacteria in milk	Energy for Life 4	~		~	~	~			~					~	~			
Investigation into the abundance and distribution of plants in a habitat	Energy for Life 5		~	~	~	~											~	
Investigation of the digestion of starch agar using germinating seeds	Continuity of Life 4	~		~	~	~								~				
Dissection of wind and insect pollinated flowers	Continuity of Life 4	~		~	~	~										~		
Scientific drawing of cells from prepared slides of anther including calculation of actual size and magnification of drawing	Continuity of Life 4	~		~	~					~								
Experiment to illustrate gene segregation	Continuity of Life 5	~		~	~	~								~				✓
Investigation of continuous variation	Continuity of Life 6	~		~	~	~											~	~
Dissection of mammalian kidney	Requirements for Life 4	~		~	~	~										✓		

## **Practical Techniques - Complete statements**

A. Use appropriate apparatus to record a range of quantitative measurements (to include mass, time, volume, temperature, length and pH)

B Use appropriate instrumentation to record quantitative measurements, such as a colorimeter or potometer

C Use laboratory glassware apparatus for a variety of experimental techniques to include serial dilutions

D Use of light microscope at high power and low power, including use of a graticule

E Produce scientific drawing from observation with annotations

F Use qualitative reagents to identify biological molecules

G Separate biological compounds using thin layer / paper chromatography or electrophoresis

H Safely and ethically use organisms to measure plant or animal responses physiological functions

I Use microbiological aseptic techniques, including the use of agar plates and broth

J Safely use instruments for dissection of an animal organ, or plant organ

K Use sampling techniques in fieldwork

L Use ICT such as computer modelling, or data logger to collect data, or use software to process data