



SAMPLE SCOPE & SEQUENCE

Life Sciences, LEVEL 2

Learning Design

Below is a suggested sequence of content for Life Sciences LSC215120.

This is an example only; to be used to support teachers to develop their own scope and sequence documents and associated assessment matrices that meet the learning needs of their learners.

NOTE: This course may have been amended since the development of this sample teacher resource in 2018. Please visit the [TASC website](#) for current version of the course.

IMPORTANT:

Students need to be aware that it is a requirement of the course that they undertake an investigative study. This can be an extension of practical or field work within the course or an additional negotiated task.

Students will need to:

- Negotiate an investigation
- Collect data themselves or as a member of a team
- Use scientific inquiry as part of their investigation

For more detail read this information from the course document:

INVESTIGATIVE STUDY (Minimum 10 hours)

Each learner will complete an investigation that will represent at least 10 hours of design time. This study can be either an individual or a small group task.

The topic will be chosen in consultation with the teacher and will be based on any content or inquiry within the Core or the selected theme(s). There is no prescribed topic, method of investigation or format in which the study is presented. However, the investigation must contain some primary information or data and not be based solely on secondary knowledge and must adhere to a scientific inquiry approach as outlined in the Science Inquiry Skills section of the Course Content.

The Investigative Study may be assessed against criteria 1, 2, 3 and 8.

Term 1

Week	Unit and Topic	Subtopic	Criteria Addressed	Criteria Assessed
1	Lab safety and scientific method Part 1	1.1 - Introduction to Life Sciences Laboratory health and safety	C1 C3	C1
2		1.3 - Introduction to biological scientific method 1.4 - Practical: The amount of water in living things	C1 C2 C3 C5	C2 C3
3	Unit 2 Nutrition and human health Part 1	2.1 - Food groups 2.1.1 - Carbohydrates, lipids & proteins Organic vs inorganic molecules sources 2.1.2 - Starch / protein in food prac 2.1.3	C1 C2 C3	C1 C2 C3
4		2.2 - What the human body needs 2.2.1- What does the body use carbohydrates, lipids and proteins for 2.2.2 - Balanced diets and role of vitamins task (assessment of roles of nutrients)	C1 C2 C3 C6	C6
5	Scientific method Part 2	1.5 - More complex biological experimental design	C1 C2 C6	C2
6	Nutrition and human health	2.2.3 - Testing for food groups continued (Tabulating data)	C1 C2 C6	C3 C4 C6
7		2.4 - Fad diets task	C1 C2 C3 C4 C6	C3 C6
8	Cells (Unit 3)	Microscopy 3.1.1 <ul style="list-style-type: none"> • Components and use • Practice focus (printed material) • Drawing conventions and practice with prepared slide • Making wet slides and drawing cell (onion epithelial and cheek cells) 	C1 C2 C3 C5	C3 C5

Week	Unit and Topic	Subtopic	Criteria Addressed	Criteria Assessed
9		Topic 2 Cell structure and function <ul style="list-style-type: none"> • 3.2.1 - plant and animal (similarities and differences): <ul style="list-style-type: none"> – from observation – from the theory including correct organelles and functions • 3.2.2 - Recap of cell structure with PPT • Group activity: Students to make models of a plant and animal cell with correct organelle and functions without use of resources. 	C1 C2 C3 C5	C1 C5
10		<ul style="list-style-type: none"> – Students summarise some common plant and animal cells - name, structure and function completed within a table. – Sheet on cells 	C1 C3 C5	C3 C5
Break				
Break				

Term 2

Week	Unit and Topic	Subtopic	Criteria Addressed	Criteria Assessed
1		3.3 - Input/Output <ul style="list-style-type: none"> – 3.3.1 - Investigate the importance of the cell membrane and its role in transporting things in and out of the cell. – 3.3.2 - Introduction to Diffusion and its definition. 	C1 C2 C3 C6	
2		<ul style="list-style-type: none"> - 3.3.3 - Introduce the concept of Osmosis and its link with diffusion. - investigate diffusion and osmosis and answer questions. - 3.3.4 - Osmosis prac (carrot) 	C1 C2 C3 C6	



Week	Unit and Topic	Subtopic	Criteria Addressed	Criteria Assessed
3		<ul style="list-style-type: none"> - Introduce SA and volume - Check and complete Gummy bear prac - - potato SA/V prac 	C1 C2 C3 C6	C1 C2 C6
4		3.4 - Biochemical processes in cells <ul style="list-style-type: none"> - 3.4.1 - Introduction to enzymes <ul style="list-style-type: none"> ▪ effect of temperature on enzymes 	C1 C2 C3 C6	
5		3.5 - Introduce photosynthesis <ul style="list-style-type: none"> - 3.5.1 - Chemistry of and abiotic factors affecting photosynthesis <ul style="list-style-type: none"> ▪ flow chart summarising differences abiotic factors affecting photosynthesis - 3.5.2 - Photosynthesis, respiration and enzymes <ul style="list-style-type: none"> ▪ introduce the concept of respiration ▪ Assessment task on enzymes and photosynthesis 	C1 C2 C3 C6	C3 C6
6	Unit 4 Systems of the human body and plants	4.1 - Unicellular and multicellular systems <ul style="list-style-type: none"> 4.1.1 - cell, tissues, organs, and organ systems 4.2 - Plant systems <ul style="list-style-type: none"> 4.2.1 - Transport of water and nutrients <ul style="list-style-type: none"> - Apply knowledge to plant system through brainstorm - Set up celery prac 	C1 C2 C3 C5	
7		<ul style="list-style-type: none"> - overview plant transport - finish celery prac 4.2.2 - Leaf structure and function <ul style="list-style-type: none"> - leaf structure and function and gas exchange - - prac structure and function of leaf surfaces 	C1 C2 C3 C5	C2 C5

Week	Unit and Topic	Subtopic	Criteria Addressed	Criteria Assessed
8		4.2.3 - Plant reproduction introduce plant reproduction – flower and fruit dissection – assessment task on plant systems	C1 C2 C3 C5	C3 C5
9		4.3 - Human systems 4.3.1 - circulatory system parts and function	C1 C2 C3 C8	C5
10		4.3.2 - Digestive system – parts and function – nutrient exchange		C5
Break				
Break				

Term 3

Week	Unit and Topic	Subtopic	Criteria Addressed	Criteria Assessed
1		4.3.3- Respiratory system – parts and function – gas exchange 4.4 - Review of systems	C1 C2 C3 C5	C1 C2 C5
2		4.4.1- Sheep pluck dissection and research task	C1 C2 C3 C5	C2 C3 C5
3	DNA and Genetics (Unit 5)	5.1- DNA 5.1.1- DNA structure and function – extracting DNA practical – introduce DNA structure and function 5.1.2- asexual and sexual reproduction – relationship to asexual and sexual reproduction	C1 C2 C3 C8	C1 C8
4		5.2 - Genetics and Heredity 5.2.1- inherited and non-inherited characteristics – students investigate their own trait and compare – designer dogs exercise	C1 C2 C3 C8	C1 C3 C4

Week	Unit and Topic	Subtopic	Criteria Addressed	Criteria Assessed
5		5.2.2 - Mendelian and non-Medellian characteristics – use and application of punnett squares – use and application of pedigree charts – review and assessment of DNA and Genetics	C1 C2 C3 C8	C3 C8
6		5.2.3 - Biotechnology – selective breeding – genetic engineering – CRISPR	C1 C3 C8	
7		– Research task - DNA and Continuity	C1 C3 C4 C8	C3 C4 C8
8	Classification (Unit 6)	6 - Classification and living things 6.1 - History of Classification 6.1.1 - Aristotle and Linnaeus	C1 C3 C4 C7	C1
9		6.2 - Contemporary classification 6.2.1 - Classifying living things	C1 C3 C4 C7	C3
10	Ecology (Unit 7)	6.2.2 - Applying taxonomies to specimens Practical application of taxonomic systems to specimens	C1 C2 C3 C7	C2 C3 C7
Break				
Break				

Term 4

Week	Unit and Topic	Subtopic	Criteria Addressed	Criteria Assessed
1		7.1 - Abiotic factors 7.1.1 - Cycles in abiotic factors	C1 C3 C7	
2		7.1.2 - Effect of change to cycles	C1 C3 C4 C7	C3 C4 C7
3		7.2 - Biotic factors 7.2.1 - Energy flow, food chains and food webs	C1 C2 C3 C7	C1 C2 C3 C7
4		7.3 - Ecosystems and change 7.3.1 - Species interactions and population change		

Week	Unit and Topic	Subtopic	Criteria Addressed	Criteria Assessed
5		Complete ecology Assignment and test	C1 C3 C4 C7	C3 C4 C7
6		External Exams		
7		Results and Awards due to TASC		
8				
9				
10		Last week for teachers		
Break				
Break				

Sample Teacher Resource

