



Year 13 Biology NCEA Level 3 Course Outline 2021



Relationships between Organisms and their Environment

- Plant responses to the abiotic environment
- Plant responses to the biotic environment
- Animal behaviour in response to the abiotic environment
- Animal behaviour in response to the biotic environment
- Relation to Ecological niche



Maintaining a Stable Internal Environment (Homeostasis)

- Control systems for body temperature, osmotic balance, levels of respiratory gases etc.
- Biochemical/physical processes underpinning the control.
- Effect of external and internal processes on the breakdown of this control, e.g. disease, toxins, extreme environmental conditions, genetic conditions.



Evolutionary Processes leading to Speciation

- The 'biological species concept'.
- The formation of new species (Speciation)
- How species remain reproductively isolated.
- Natural Selection, Mutation, Gene Flow and Drift revisited.
- Patterns of evolution – convergent/divergent/co-evolution
- Punctuated equilibrium vs. gradualism as models for the rate of evolutionary change.

Trends in Human Biological and Cultural Evolution

- General primate characteristics
- General characteristics of apes
- Differences between humans and apes.
- The biological evolution of humans
- The cultural evolution of humans



You will have the opportunity to gain 17 Level 3 credits in 2021:

Unit	Achievement Standard	Description	Internal/External	Credits
3.2	AS91602	Integrate biological knowledge to develop an informed response to a socio-scientific issue	Internal	3
3.3	AS91603	Demonstrate understanding of plant and animal responses to their environment	External	5
3.4	AS91604	Demonstrate understanding of how an animal maintains a stable internal environment	Internal	3
3.5	AS91605	Demonstrate understanding of evolutionary processes leading to speciation	External	4
3.6	AS91606	Demonstrate understanding of trends in human evolution	External	4

Proposed Timeline

W	Month	Date	Topic	Assessments
1	February	1-5	Plant, animal responses to their environment (3.3)	
2	February	9-12		
3	February	15-19		
4	February	22-26		
5	March	1-5		
6	March	9-12		
7	March	15-19	Integrate biological knowledge to develop an informed response to a socio-scientific issue	Field trip to Kāpiti (19/3)
8	March	22-26		
9	March/April	29-1	Plant, animal responses to their environment (3.3) (contd.)	3.2 report due (27/3)
10	April	7-9		
11	April	12-16		3.3 unit test (16/4)
	April	19-23		
	April	26-30		
1	May	3-7	Understanding of evolutionary processes leading to speciation (3.5)	
2	May	10-14		
3	May	17-21		
4	May	24-28		
5	May/June	31-4		
6	June	8-11		
7	June	14-18		3.5 unit test (18/6)
8	June	21-25	Understand how an animal maintains a stable internal environment (3.4)	
9	July	28-2		
10	July	5-9		3.4 report due (9/7)
	July	12-16		
	July	19-23		
1	July	26-30	Understanding of trends in Human Evolution (3.6)	
2	August	2-6		
3	August	9-13		
4	August	16-20		
5	August	23-27		
6	Aug/Sept	30-3		
7	September	6-11		
8	September	13-17		3.6 unit test (17/9)
9	September	20-24	Review/revision	
10	Sept/Oct	27-1		
	October	4-8		
	October	11-15		
1	October	18-22	IEE period (dates tbc)	
2	October	26-29		
3	November	1-5	Review/revision	
4	November	8-12		
5	November	15-19		
6	November	22-26	NCEA L3 Biology: Wednesday 17 November (2pm)	

NB: Internal Component of the Course – Achievement Standards 3.2 and 3.4

3.2: Integrate biological knowledge to develop an informed response to a socio-scientific issue (3 credits)

Either: the efforts being made by conservationists to protect and recover NZ's threatened native bird species,
Or: The use of 1080 poison to control possums in NZ



3.4: Demonstrate understanding of how an animal maintains a stable internal environment (3 credits) We will be exploring the concept of Homeostasis, i.e. the maintenance of a constant environment in the cells/body within the context of the gruelling Coast to Coast race.

