



SSIS Scope and Sequence

Grade 12 IB SL Biology



Overview

→ Averaging 19 weeks per semester (38 weeks per year)

→ End of semester varies dependent upon Chinese New Year – Units may need to be moved accordingly

month week	Aug		September					October				November				December			January		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
SEMESTER 1 SL Biology	Completion of: Human Physiology: unit 6					First option E: Neurobiology and Behaviour				Second option To be determined by the students				Review for mocks							

month week	February			March				April				May				June										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19							
SEMESTER 2 SL Biology	Complete PSOW		Review for external exams Examination questions																External exams							

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Unit of Work	SSIS OILs	IB Framework	Unit Skills, Content or Knowledge	Common Assessments
Human Physiology unit 6 SL Core	1,2,3	TOK: AIDS transmission TOK: Human behavior/genetics & diabetes TOK: Ethical issues of IVF	Defense against infectious diseases Gas exchange Nerves, hormones and homeostasis Reproduction Review Digestion, Transport system	End of unit test End of semester exam IB Diploma HL exam papers 1 & 2
Option E SL Neurobiology & behavior	1,2,3	TOK; Need for evidence from controlled trials TOK: To what degree are we dependent on technology to understand the natural world TOK: Pavlov's conditioning and other forms of learning	Stimulus and response Perception of Stimuli Innate and Learned behavior Neurotransmitters and synapses The human brain Further studies of behavior	Investigate a factor affecting behavior of animals found in the school garden Investigate a factor affecting human reaction time End of unit test End of semester exam IB Diploma HL exam paper 3
Possible option 2		TOK: The distinction between correlation and	Components of the human diet Energy in human diets Special issues in human nutrition	End of unit test End of semester Exam IB Diploma exam papers 3

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<p>Option A Human nutrition and health</p>		<p>cause.</p> <p>TOK: Recommended intakes of nutrients have been published in some countries. The recommendations vary, and this raises questions about how the levels are decided by scientists or doctors.</p> <p>TOK: This raises questions about the status of individuals who are seen as authoritative, and how others without such status can question their views on the basis of the evidence.</p> <p>TOK: The inevitability of risk.</p> <p>TOK: This is an example of the need for research findings to be</p>		<p>Hardy- Weinberg investigation</p>
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		<p>passed on effectively</p> <p>TOK: The nature of risk factors and the difficulties of making decisions about the relative influence of nature and nurture</p> <p>TOK: Some concepts or theories offer a new perspective, which can change our attitudes significantly.</p>		
Option B Physiology of exercise		<p>TOK: What constitutes an acceptable level of risk</p> <p>TOK: The difficulty of conducting controlled trials without a placebo effect</p>	<p>Muscles and movement</p> <p>Training and the pulmonary system</p> <p>Training and the cardiovascular system</p> <p>Exercise and respiration</p> <p>Fitness and training</p> <p>Injuries</p>	
Option C Cells and energy		<p>TOK: Scientific truths are often pragmatic. We accept them as true</p>	<p>Proteins</p> <p>Enzymes</p> <p>Cell respiration</p> <p>Photosynthesis</p>	

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		<p>because they give us predictive power,</p> <p>TOK: To what extent is the creation of an elegant protocol similar to the creation of a work of art?</p> <p>TOK: This is an opportunity to discuss the need for very carefully controlled experiments.</p>		
<p>Option D Evolution</p>	<p>1,2,3</p>	<p>TOK: Scientific evidence and history of the Earth</p> <p>TOK: Miller & Urey's model as evidence</p> <p>TOK: Cultural evolution – nature v nurture</p> <p>TOK: Universality of DNA and implications for our view of ourselves</p>	<p>Origin of life on Earth Species and speciation Human evolution The Hardy-Weinberg principle Phylogeny and systematics</p>	

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		TOK ; Making uncertainties clear.		
Possible option 2 Option F Microbes and Biotechnology		TOK ; relationship between correlation & cause TOK : Misleading advice from science and governments and scientists	Diversity and microbes Microbes and the environment Microbes and biotechnology Microbes and food production Metabolism and microbes Microbes and disease	Investigate a factor affecting microbe growth End of unit test End of semester exam IB Diploma exam paper 3
Possible option 2 Option G Ecology and Conservation		Geography : biomes TOK : Disagreements over interpretation of data TOK : Decision making based on scientific data on an international level.	Community Ecology Ecosystems and biomes Impacts of humans on ecosystems Conservation of biodiversity Population ecology	End of unit test End of semester exam IB Diploma exam papers
PSOW completion			Completion of all paperwork for IB	
Exam Review			Review of all topics Practice past exam papers	Mock exams/External exams