

Wah Yan College Kowloon Scheme of Work (2017-2018)

Textbook	<ol style="list-style-type: none"> 1. New Senior Secondary Mastering Biology (Second Edition) 2 (For Biology and Combined Science) 2. New Senior Secondary Mastering Biology (Second Edition) 3 (For Biology and Combined Science) 3. New Senior Secondary Mastering Biology (Second Edition) 4 (For Biology and Combined Science) 4. New Senior Secondary Mastering Biology (Second Edition) E1 (Human Physiology) 5. New Senior Secondary Mastering Biology (Second Edition) E2 (Applied Ecology)
Other Resources	

◆Repertoire of Self-directed Learning Skills:

1. Reading to learn, 2. Notes-taking, 3. Looking up words in the dictionary, 4. Pre-lesson preparation, 5. Group discussion, 6. Group presentation, 7. Initiative to ask questions, 8. Setting learning objectives and doing reflection, 9. eLearning platform with instant feedback, 10. Flipped classroom, 11. Peer assessment, 12. Searching for information on the internet, 13. Project learning, 14. Training of higher-order thinking skills, etc.

SL: Scheduled number of lessons

AL: Actual number of lessons

School Term	Weeks/ Dates	Topics/ Extended Parts*	Learning Objectives/ Teaching Focus	SL/ AL	Teaching and Learning Activities	Self-directed Learning Skills◆	Values#	Basic Law Education *	Consolidation and Assessment
First Term (4/9/2017- 30/12/2017, Weeks 1-17)	1 4/9 – 8/9	E1 Ch 4 Hormonal control of reproductive cycle	<ol style="list-style-type: none"> 1. Revision: To understand the roles and interactions of the hormones involved in menstrual cycle 2. Revision: To know the ways of contraceptive methods 	2	<ol style="list-style-type: none"> 1. Presentation by students 2. Create flow chart to summarize 3. Past Paper Exercise 	1, 4, 6	7, 14		Create flow chart to summarize
	1-2 4/9 – 15/9	Ch 14 Growth and Development	<ol style="list-style-type: none"> 1. To understand the concept of growth and development 2. To learn about the germination of seeds and their development into new plants 	4	<ol style="list-style-type: none"> 1. Pre-lesson exercise to revise on the parts of plants by labelling photomicrographs 2. Power point slides 3. Past Paper practice 	1,4	1, 2		<ol style="list-style-type: none"> 1. Labelling exercise 2. Past Paper Exercise
	3-4		3. To learn about the various	4	1. Campus Tour to	5, 7	18		

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	18/9-29/9		parameters for measuring growth 4. To learn about the stages of growth in annual plants and humans		see how trees grow and annual ring. 2. Power point slides				
	5-6 3/10-13/10	Ch 15 Detecting the Environment	1. To understand the roles of receptors and sense organs in detecting the environment. 2. To learn about how humans and plants detect and respond to stimuli (e.g. light and sound)	8	1. Pre-lesson Exercise: To fill in the names of the parts of the eyes and ears. 2. Lab: Ox eye dissection and discussion 3. Power point slides and past paper exercise	4, 3, 5	3, 12		1. Lab Exercise 2. Past paper exercise
	7-8 16/10-27/10	Ch 16 Coordination in Humans	1.To know the general plan of the nervous system and nervous coordination 2. To understand the structure of the brain and the spinal cord	4	1. LAB: To observe the model of the Human brain and vertebral column and discussion 2. Power point slide	5, 7, 8	12		1. Lab Exercise
			3. To know the nervous transmission across a synapse 4. To know the general plan of the endocrine and hormonal	4	1. Past Paper Exercise 2. Students' Presentation & Discussion: News or	3, 5, 6, 12			1. Past Paper Exercise

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			coordination.		Disease Report about Nervous System				
	9 30/10-3/11	Test 1							
	10-11 7/11-17/11	Ch 17 Movement in Humans	1. To learn the rules of different components of the muscle-skeletal system 2. To learn about how the body moves 3. To understand the initiation of muscle contraction	6	1. LAB: to observe the Human skeleton 2. To draw the movement of neurotransmitter across the synapse 3. Group discussion: types of lever system in the Human Body	1, 5,6, 12	2		1. Lab Exercise 2. Neurotransmitter
	12-13 20/11-1/12	Ch 18 Homeostasis	1. To understand what homeostasis is and why it is important 2. To understand some parameters of the internal environment of the human body 3. To understand the principle of negative feedback mechanism 4. the regulation of blood glucose level	8	1. Students' Presentation: News or Disease Report about Diabetes 2. Past paper exercise	3, 5, 6, 12	3, 9		1. Students' Presentation: News or Disease Report about Diabetes 2. Past paper exercise

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	5/12 – 2/1	Mid- Year Examination & Christmas Holiday							
Second Term (31/12/2017- 18/7/2018, Weeks 18-46)	18-19 3/1- 12/1	E1 Ch1 Regulation of water content	1. To learn the general plan of the urinary system 2. To understand the role of kidneys in osmoregulation and excretion 3. To discover how technological advances help people with kidney failure	8	1. Presentation and discussion: common disease of kidneys 2. Exercise: labelling 3. Past Paper Questions	1, 4, 5, 6, 7, 12	12		1. Presentation 2. Past Paper Questions
	19-20 12/1-19/1	E1 Ch 2 Regulation of body temperature	1. To understand the mechanisms of body temperature regulation 2. To understand the consequence of under extremely hot and cold environment		1. Past Paper Exercise 2. Power Point slides	1, 2	12		1. Past Paper Exercise
	21-23 22/1-9/2	Ch 19 Biodiversity	1. To understand how organisms are classified 2. To know that the classification systems are subject to change 3. To learn how to construct dichotomous keys and use them to identify organisms	8	1. LAB: to appreciate the varieties of organisms 2. Past paper Exercise	1, 3, 8	2, 3, 12, 18		1. Lab exercise 2. Past paper Exercise
		Ch 20 Ecosystem	1. To understand the basic	4	Presentation and	1, 4, 5, 6, 7, 12	2, 3, 12,		Presentation

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			concepts of ecology 2. To know the components and functioning of an ecosystem 3. To understand the need for conservation		discussion: students report on different components and functioning of an ecosystem		18		
	24-25 14/2-24/2	Lunar New Year Holiday							
	26 26/2-2/3	Preparation of the Field Trip	1. To understand the objective of the field trip 2. to learn about the habitat and methods used in ecological studies	2	1. Field Trip 2. Discussion & Presentation of results	1, 2, 4, 5, 6, 7, 8	18		1. Lab exercise 2. Presentation of results
	27-28 5/3-16/3	Ch 21 Photosynthesis	1. To learn the adaptive features of leaves and chloroplasts for photosynthesis 2. To learn the process of photosynthesis and factors affecting the rate	8	1. Past paper Exercise 2. Create flow chart to summarize	1,2	2		1. Past paper Exercise 2. Create flow chart to summarize
	29 20/3-23/3	Uniform Test							
	30-31 26/3-6/4	Easter Holiday							
	32-33 9/4-20/4	Ch 22 Respiration	1. To understand the process of anaerobic and anaerobic	8	1. Past Paper Exercise 2. LAB: respiration in	1,2	2		1. Past Paper Exercise

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			respiration 2. To know the applications of anaerobic respiration 3. To know the difference between respiration and photosynthesis		germinating seeds (CO ₂ and heat production) 3. Presentation and discussion: flow chart and mind map to summarize photosynthesis and respiration				2. LAB exercise 3. Presentation
SBA 1									
	34-35 23/4-4/5	Ch 27 Basic Genetics	1. To learn about what chromosomes, genes and nucleic acids are 2. To understand some patterns of inheritance of some characteristics 3. To understand the types and causes of variation	8	1. Group Presentation and discussion on basic genetics. 2. Overseas Past Paper Exercise 3. Powerpoint learning	1, 2, 4, 5, 6, 7, 8	1, 2		1. Presentation 2. Overseas Past paper Exercise
	36-37 7/5-18/7	Ch 28 Molecular genetics	1. To understand how proteins are synthesized according to DNA 2. To understand the type of mutations and their causes	8	1. Group Presentation and discussion on basic genetics. 2. Overseas Past Paper Exercise 3. Powerpoint learning	1, 2, 4, 5, 6, 7, 8	1, 2		Overseas Past Paper Exercise

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SBA 2									
	38 21/5-25/5	Ch 29 Applied Genetics	1. To understand what recombinant DNA technology is and its application 2. To learn about DNA fingerprinting	4	1. Overseas Past Paper Exercise 2. Powerpoint learning	1, 2	1, 2		Overseas Past Paper Exercise
	39 28/5-1/6	Revision	Revision for Final Exam	4	Exercise, mind map and discussion	1, 2	7		Exercise and Mind Map
	40-42 4/6-22/4	Final Examination							
	44-45 3/7-13/7	Amgen Biotech Experience	To try out some of the Biotechnology offered from Amgen Biotechnology Company	5-6 days	LAB experience Notes taking, reading and critical thinking	1,2,4,5,6,7,8	2, 12		

* The extended parts should be marked with asterisks. These parts should be more challenging and can be covered when the students can master the knowledge, skills and values covered in the conventional topics.

※ Check the appropriate box with a “√” if Basic Law Education can be promoted when covering a particular topic.

Core Values of Wah Yan College, Kowloon

I. Love and care	1. Acceptance and Positivity about self 2. Appreciation & Gratitude 3. Empathy & Compassion	4. Forgiveness & Reconciliation 5. Service 6. Family as a basic unit of society; marriage is the foundation of a family
II. Strive for excellence	7. Reflection 8. Commitment	10. Curiosity & Willingness to learn 11. Imagination and Creativity

	9. Perseverance	
III. Respect and Justice	12. Life is valuable and respectable 13. Openness to good in all things 14. Respect for himself & others	15. Integrity 16. Faithfulness
IV. Responsibility	17. Freedom & Self-discipline 18. Care for the environment	19. Social Identities: citizen identity, national identity and global citizen identity
V. Faith	20. Experience of God 21. Exploration and Practice of one's faith	22. Appreciation for religious liturgies