

**Wah Yan College Kowloon**  
**F.6 Biology Scheme of Work (2016-2017)**

<b>Textbook</b>	1. New Senior Secondary Mastering Biology 4 2ed (For Biology) 2. New Senior Secondary Mastering Biology E1 2ed (For Biology)
<b>Other Resources</b>	HKCEE, HKALE, HKDSE Past Papers

**SL: Scheduled number of lessons**

**AL: Actual number of lessons**

<b>School Term</b>	<b>Weeks</b>	<b>Topics/Extended Parts*</b>	<b>Learning Objectives/ Teaching Focus</b>	<b>SL/AL</b>	<b>Teaching and Learning Activities</b>	<b>Consolidation and Assessment</b>	<b>Values#</b>
<b>First Term (1/9/2016- 2/1/2017, Weeks 1 to 18, about 14 teaching weeks)</b>	2	Genes and heredity	To know the structural relationship between a chromosome, DNA and a gene To compare the composition of DNA and that of RNA To identify the constituents of a nucleic acid To know how genes determine an organism's body characteristics To know why DNA is suited to its function as a genetic material	1/1	Video; PowerPoint; Data Response Questions	Classwork; Quiz; Test; Past paper practice	20
	3	Monohybrid inheritance	To know what is monohybrid inheritance	2/2			2

School Term	Weeks	Topics/Extended Parts*	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Values <sup>#</sup>
			To be able to state the Law of Segregation To know the ways to determine the genotype of an organism with a dominant character				
	4	Dihybrid inheritance	To know what is dihybrid inheritance To be able to state the Law of Independent Assortment To know the ways to determine the genotype of an organism with two dominant characters	2/2			12
	5	Inheritance in humans	To know how blood groups and sex are determined in humans To know what are sex-linked genes	2/2			
	6	Variations in characteristics	To contrast continuous and discontinuous variations To know why phenotypic and genotypic variations occur To know what is mutation	2/2	Video; PowerPoint; STSE discussion	Classwork; Quiz; Test; Past paper practice	12
	6	From DNA to proteins	To be able to state the features	2/2			7

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			of the genetic code To identify the two main stages in protein synthesis To know the fate of the proteins synthesized				
	7	Mutations	To distinguish between gene mutation and chromosome mutation To distinguish between spontaneous mutations and induced mutations To be able to give examples of mutagens	2/2	Observation of maize cobs with grains of different colours; PowerPoint; Video; Data Response questions on continuous and discontinuous variation in humans	Classwork; Quiz; Test; Past paper practice	10
	7	Recombinant DNA technology	To know the major steps and applications of recombinant DNA technology	2/2			18
	8	DNA fingerprinting	To know the major steps, basic principle and applications of DNA fingerprinting	2/2			2
	8	Human Genome Project	To know the goals, contribution and limitations of the Human Genome Project	2/2	Animations; PowerPoint;	Classwork; Quiz; Test; Past paper	10

School Term	Weeks	Topics/Extended Parts*	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Values <sup>#</sup>
	9	UT					
	10	UT Review		2/2			7
	10	The origins of life	To know how life originated	2/2			5
	11	Evolution	To know what is evolution To understand how fossil record can provide evidence for evolution To know the limitations of using fossil record as evidence for evolution	2/2	Animations; PowerPoint; Finding the secret of life Assignment Worksheet	Classwork; Quiz; Test; Past paper practice	13
	12	Mechanism of evolution	To know how evolution happens To state the significance of variations within a species To state the two main principles of Lamarck's theory	3/3	Movies; animations; PowerPoint		10
	12	Speciation	To know what is speciation To know the isolation mechanisms that lead to the formation of new species	1/1	STSE readings; PowerPoint	Classwork; Quiz; Test; Past paper practice	20
	13	Human Impact on the Environment	Type of resources Fisheries, agriculture,	4/4	STSE readings; PowerPoint	Past paper practice	5, 18

School Term	Weeks	Topics/Extended Parts*	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Values <sup>#</sup>
			industrialization, urbanization, global warming				
	14	Human Responsibilities for the Environment	Sustainable development, Resource management,	4/4	STSE readings; PowerPoint	Past paper practice	5, 18
	15	Human Responsibilities for the Environment	Type of Pollutions, Conservation	4/4	STSE readings; PowerPoint	Past paper practice	5, 18
	16	SBA		4/4			
	17	Revision & Drilling of Examination Skills		2/2	Past Paper Practices		7, 8
<b>Second Term (3/1/2017-17/7/2017, Weeks 19 to 46, about 1 teaching week)</b>	19	Revision & Drilling of Examination Skills		2/2	Past Paper Practices		7, 8
	20-22	Mock Exam					
	24	Mock Exam Review		4/4			
	25	Revision & Drilling of Examination Skills		2/2	Past Paper Practices		7, 8
	26	Revision & Drilling of Examination Skills		2/2	Past Paper Practices		7, 8
	24/2	Last Day for F6					

\* 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 and skills covered in the conventional topics.

**# Core Values of Wah Yan College, Kowloon**

I. Love and care	1. Accept & feel positive about himself 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. Reflective 8. Commitment 9. Perseverance	10. Curiosity & willingness to learn 11. Value imagination and creativity
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. Explore & practise one's faith	22. Appreciate religious liturgies