

**TIN KA PING SECONDARY SCHOOL
BIOLOGY
FORM FIVE SYLLABUS**

| Chapter | Content | Language objectives | Experiments | Aids / resources | Activities – STSE or SBA | Generic skills * | | | | | | | | | | | | |
|--|--|-----------------------------|---|--|--|------------------|---|---|---|---|---|---|---|---|--|---|---|--|
| | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | | |
| | | Students should be able to: | | | | | | | | | | | | | | | | |
| Ch.15 – Detecting the environment | 15.4 Detecting sound by the ear | | 15.4 Examination of a human ear model | Model – ear | SBA –Vitamin C content in fruits | | ✓ | ✓ | ✓ | ✓ | | | | | | ✓ | ✓ | |
| Ch.16 – Coordination in humans | 16.1 The human nervous system 16.2 Transmission of nerve impulses between neurons | | 16.1 Examination of a human brain model | Models – spinal cord, neurone and brain Videos – nervous system, messengers | Attitude: appreciate the functions of diff. parts of a human body | | | ✓ | ✓ | ✓ | | | | | | ✓ | ✓ | |
| | 16.3 The brain 16.4 The spinal cord 16.5 Reflex action and voluntary action | | | | SBA – Presence of protease in pineapple and / or kiwifruit | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | ✓ | ✓ | |
| | 16.6 Differences between reflex actions and voluntary actions 16.7 The human endocrine system 16.8 Comparison between hormonal and nervous coordination | | | | | | ✓ | ✓ | ✓ | ✓ | | | | | | ✓ | ✓ | |
| Ch.17 – Movement in humans | 17.1 The human skeleton 17.2 Joints | | 17.1 Observation of the contraction of teased muscle from the leg of a frog | Model – human skeleton | <ul style="list-style-type: none"> ● Health issues related to the skeleton and muscles ● Occupational safety | | ✓ | ✓ | ✓ | ✓ | | | | | | ✓ | ✓ | |
| | 17.3 Muscles 17.4 Movement of the body | | 17.2 Examination of a human arm model | | | | ✓ | ✓ | ✓ | ✓ | | | | | | ✓ | ✓ | |

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| | | Students should be able to: | | | | | | | | | | | | | | | | | |
| Ch.18 - Homeostasis | 18.1 The concept of homeostasis 18.2 Regulation of blood glucose level | | | | | | | | ✓ | ✓ | ✓ | | | ✓ | | | | | |
| Ch.19 – Biodiversity | 19.1 Diversity of life forms 19.2 Classification | | 19.1 Using a key to identify organisms from a local habitat 19.2 Constructing a dichotomous key for leaves | Pictures of various organisms EM pictures of microorganisms | | | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | |
| | 19.3 The six kingdoms and three domains | use the following sentence patterns: ● Both ... ● ... while ... ● ... whereas ... ● ... however ... to compare prokaryotes and eukaryotes. | | Specimens of different organisms | | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | |
| | 19.4 Classification can change 19.5 Biological keys | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | |
| Ch.20 – Ecosystems | 20.1 Basic concepts of ecology 20.2 Components of an ecosystem | | | Video-Hoi Ha Wan HK Wetland Park Education Kit | <ul style="list-style-type: none"> ● Pesticide poisoning & ciguatoxin poisoning in humans ● Biological pest control ● Visit to a local field site | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | |

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| | | Students should be able to: | | | | | | | | | | | | | | | | | |
| | 20.3 Functioning of an ecosystem 20.4 Conservation of ecosystem | | | | <ul style="list-style-type: none"> ● Air and water pollution in Hong Kong ● Impacts of Disneyland project on HK ● Environmental impacts of urban development ● Sustainable development in Hong Kong ● Consequences of not preserving biodiversity ● Our responsibility in protecting the environment <p>Attitudes:</p> <ul style="list-style-type: none"> ● develop ideas of conservation ● respect organisms & their habitats | | | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | |
| | 20.5 Ecological study | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | 20.5 Ecological study | | | | | | | | | | | | | | | | | | |
| <i>Revision</i> | | | | | | | | | | | | | | | | | | | |
| <i>Christmas & New Year</i> | | | | | | | | | | | | | | | | | | | |
| <i>1st Term Exam</i> | | | | | | | | | | | | | | | | | | | |
| <i>Exam Review</i> | | | | | | | | | | | | | | | | | | | |
| Ch.21 – Photosynthesis | 21.1 Basic concepts of photosynthesis 21.2 Requirements for photosynthesis | | 21.1 Detection of starch produced from photosynthesis | Internet resources | | | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | |
| | 21.3 Site of photosynthesis 21.4 The process of photosynthesis | | 21.2 Detection of oxygen produced from photosynthesis 21.3 Investigation of the need for chlorophyll in photosynthesis | | | | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | |

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| | | Students should be able to: | | | | | | | | | | | | | | | | | |
| <i>Chinese New Year Holidays</i> | | | | | | | | | | | | | | | | | | | |
| | 21.5 The fate of photosynthetic products | | 21.4 Investigation of the need for carbon dioxide in photosynthesis 21.5 Design an investigation of the need for light in photosynthesis 21.6 Examination of the structures of leaves 21.7 Examination of the structures of chloroplasts | | | | ✓ | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | |
| | 21.6 Factors affecting the rate of photosynthesis | explain the cause and effects of different factors affecting the rate of photosynthesis using causal connectives, verbs of causes, adverbs of certainty and reference. use the following sentence patterns: ● It causes ... to ... ● First ... Then ... Next ... Finally ... ● As a result, ... | 21.8 Investigation of the effect of light intensity on the rate of photosynthesis 21.9 Design an investigation of the effect of carbon dioxide concentration on the rate of photosynthesis | | | | ✓ | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | |
| Ch.22 – Respiration | 22.1 Basic concepts of respiration 22.2 Site of respiration | | 22.1 Examination of the structure of mitochondria | | | | ✓ | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | |

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| | | Students should be able to: | | | | | | | | | | | | | | | | | |
| | 22.3 Aerobic respiration | | 22.2 Investigation of carbon dioxide production in a living mouse 22.3 Investigation of carbon dioxide production in germinating seeds 22.4 Investigation of heat production in a living mouse 22.5 Design an investigation of heat production in germinating seeds | | | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | |
| <i>Easter Holidays</i> | Ch.23-25 (Self-study) | | | | | | | | | | | | | | | | | | |
| | 22.4 Anaerobic respiration 22.5 Relationship between respiration and photosynthesis | use the following sentence patterns: ● Both ... ● ... while ... ● ... whereas ... ● ... however ... to compare aerobic and anaerobic respirations. | 22.6 Demonstration of anaerobic respiration in germinating seeds | | | | ✓ | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | |
| <i>Easter Holidays</i> | Ch.23-25 (Self-study) | | | | | | | | | | | | | | | | | | |
| <i>Field Camp</i> | | | | | | | | | | | | | | | | | | | |

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| | | Students should be able to: | | | | | | | | | | | | | | | | | |
| Ch.26 – Body defence mechanisms | 26.1 Non-specific defence mechanisms | | 26.1 Identifying features of mammalian skin that are related to body defence | Powerpoint file - SARS | <ul style="list-style-type: none"> ● Enhancement of immunity by the intake of 'health food' ● Stories of the development of vaccination ● Relation of immunization programmes to the control of infectious diseases ● SARS outbreak in 2003 <p>Attitude: appreciate the functions of diff. parts of a human body</p> | | | | ✓ | ✓ | | | | ✓ | ✓ | ✓ | | | |
| | 26.2 Specific defence mechanisms | use the following sentence patterns: <ul style="list-style-type: none"> ● Both ... ● ... while ... ● ... whereas ... ● ... however ... to compare specific and non-specific defence mechanisms | | | | | | ✓ | ✓ | | | | | | | | | | |
| Ch.27 Basic genetics | 27.1 Basic genetics 27.2 Genes and heredity | | | Internet resources | | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | |
| | 27.3 Monohybrid inheritance 27.4 Dihybrid inheritance | use the following sentence patterns: <ul style="list-style-type: none"> ● Both ... ● ... while ... ● ... whereas ... ● ... however ... to compare monohybrid and dihybrid inheritance | | | | | | ✓ | ✓ | | | | | | | | | | |

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| | | Students should be able to: | | | | | | | | | | | | |
| | 27.5 Inheritance in humans 27.6 Variations in characteristics | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ |
| | Revision | | | | | | | | | | | | | |
| <i>Yearly Exam</i> | | | | | | | | | | | | | | |
| <i>Post exam</i> | | | | | SBA – Breakfast cereals | | | | | | | | | |

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|----|-------------------|----|------------------------|----|------------|
| 1. | collaboration | 2. | communication | 3. | creativity |
| 4. | critical thinking | 5. | information technology | 6. | numeracy |
| 7. | problem solving | 8. | self-management | 9. | study |