

Sing Yin Secondary School
Syllabus for Biology
September 2016– July 2017

Form Three

Introduction:

The learning targets of the curriculum are categorized into three domains:

- I. Knowledge and Understanding**
- II. Skills and Processes**
- III. Values and Attitudes**

Objectives:

Students should

- 1. acquire knowledge and develop an understanding of biological principles, concepts, terms and facts.**
- 2. apply biological knowledge in daily life and develop an understanding of current issues and developments in biology.**
- 3. make careful observations, ask relevant questions, identify problems and formulate hypotheses for investigations; plan and conduct scientific investigations individually or collaboratively.**
- 4. appreciate the hard work of frontier scientists and their contributions to developments in science and technology.**
- 5. be aware of the application of biological knowledge in society and its social, ethical, economic and environmental implications.**
- 6. recognize the responsibility for conserving environment and develop positive values and attitudes towards adopting a healthy lifestyle.**

Textbook: Mastering Biology (Special edition)

Oxford

Chapter 1: Studying Biology

Period: 7 cycles

After the lessons, students should

- know what biology is about
- know the seven characteristics of organisms
- learn the basic scientific methods that scientists adopted when studying biology
- appreciate major biological discoveries and inventions
- describe laboratory rules and study skills

Chapter 2: The cell as the basic unit of life

Period: 7 cycles

After the lessons, students should

- identify the inorganic and organic chemical constituents of organisms
- be able to state the cell theory and use microscopes to examine cell details
- describe basic structures in cells and their corresponding functions
- identify different levels of body organization with heart dissection

- observe cell details in high and low power using microscopes
- identify the similarities and differences between prokaryotic and eukaryotic cells

Chapter 3: Movement of substances across cell membrane

Period: 5 cycles

After the lessons, students should

- identify structures of cell membrane and how are they related to their properties and functions
- compare different processes of substance movement across cell membrane
- compare respective states of cells in solutions of different water potentials

Chapter 4: Enzymes and metabolism

Period: 7 cycles

After the lessons, students should

- identify catabolism, anabolism and metabolism respectively
- be able to state the role of enzymes in metabolism and their corresponding properties
- identify factors that would affect the rate of enzymatic reactions
- appreciate the uses of enzymes in industry

Total time allocation: 26 cycles

END

Signature of Teacher in charged : _____

Checked by: _____