Course Description

Subject: Additional Science 2 | Code: SC21203 | Periods: 2 period/ week | Credit: 1.0

Class: M 1/1-7 | Semester: 2 / 2014 | Instructor: Mr. Jezer Flores

Unit	Indicators
1. The Cell 1.1 The microscope 1.2 Unicellular and Multi-cellular organisms 1.3 Shape, Size and function of cells 1.4 Animal Cells 1.5 Plant Cells	The students should be able to: 1. Identify the types of microscope and explain the function of each part. 2. Give examples of unicellular and multi-cellular organisms. 3. Discuss the shapes sizes and the function of different cells in multi-cellular organisms. 4. Identify the parts of animal cell and describe its function. 5. Identify the parts of plant cell and describe its function.
2. Organization in Living Things 2.1 From Cells to Tissues 2.1a. Animal Tissues 2.1b. Plant Tissues 2.2 FromTissue to Organ 2.3 From Organs to Organ Systems 2.3a. Organ systems in the human body 2.3b. Organsystems in theplant body 2.4 From Organ Systems to Organisms	6. Identify the types of animal tissues and discuss its functions. 7. Identify the types of plant tissues and discuss its functions. 8. Name the different animal and plant organs and describe their functions. 9. Name and describe the functions of the different organ systems in the human body. 10. Name and describe the functions of the different organ systems in the human body. 11. Explain how the different systems in animals and plants work in a coordinated manner.
3. Transport in Living Things 3.1 Diffusion 3.2 Osmosis 3.2a. Osmosis in Plant Cells 3.2b. Osmosis in Animal Cells 3.3 Transport in Unicellular Organisms 3.4 Transport of Water, Minerals and Food in Plants	12. Define diffusion and give examples. 13. Define osmosis and discuss its effect on animal and plant cells. 14. Explain how the unicellular organisms transport their food. 15. Describe how plants transport water, minerals and food.
4. Photosynthesis and Respiration 4.1 Photosynthesis 4.1a. Conditions necessary for photosynthesis 4.2 Healthy Growth of Plants 4.3 Respiration 4.3a. Respiration in humans 4.3b. Mechanism of breathing	16. Differentiate photosynthesis and respiration. 17. Define photosynthesis, list and explain the conditions necessary for photosynthesis. 18. Recall the conditions necessary for the healthy growth of plants. 19. Define and describe respiration. 20. Identify the parts of human respiratory system and explain their functions. 21. Differentiate inhaled air and exhaled air.

Unit	Indicators
4. Photosynthesis and Respiration 4.4 Breathing in other Animals 4.5 Breathing in Plants	22. Describe breathing in other animals. 23. Describe breathing in plants.
5. Heat Energy 5.1 Nature of Heat 5.2 Effects of heat 5.3 Temperature and its Measurement 5.3a. Scales of temperature 5.3b. Types of thermometers 5.4 Expansion 5.4a. Expansion of Solids 5.4b. Expansion of Liquids 5.4c. Expansion of Gases	24. Describe heat as a form of energy. 25. Investigate the effects of heat using simple laboratory tests. 26. Explain temperature, identify the scales of temperatures and the instruments used and discuss the importance of taking accurate temperature measurements. 27. Infer that solids, liquids and gases generally expand when heat is absorbed and contract when heat is given out. 28. Give examples of the effects and applications of expansion and contraction in everyday life.
6. Transfer of Heat Energy 6.1 Conduction of Heat 6.2 Convection of Heat 6.3 Radiation of Heat	29. Explain that heat can be transferred in three different ways. 30. Differentiate the three methods of heat transfer. 31. Define conduction and give examples of good conductors and insulators of heat and describe the uses of conductors and insulators. 32. Define and explain the applications of convection. 33. Define and explain the applications of radiation.

Measurement and Evaluation

Total 100 marks (Assessment 60 marks : Midterm test / Final test 40 marks)

Measurement and Evaluation	Evaluation Method	Assessment tool	Marks	Indicators
1. Pre-midterm	1. Unit Test 1/Worksheets 2. Unit Test 2/Worksheets 3. Unit Test 3/Worksheets	1. Cooperation/individual or group discussion 2. Concept Mapping 3. Laboratories/Activities 4. Project/Notebook	25	No. 1-5 No. 6-11 No. 12-15
2. Midterm test	Teacher-Made Test	Review the lessons	20	No. 1-15
3. Post-midterm	1. Unit Test 4/Worksheets 2. Unit Test 5/Worksheets 3. Unit Test 6/Worksheets	1. Cooperation/individual or group discussion 2. Concept Mapping 3. Laboratories/Activities 4. Project/Notebook	25	No. 16-23 No. 24-28 No. 29-33
4. Final test	Teacher-Made Test	Review the lessons	20	No. 16-33

Measurement and Evaluation	Evaluation Method	Assessment tool	Marks	Indicators
5. Desirable Characteristics	1. Class Participation	1. Involvement in individual and group activities	10	-
6. Competencies	1. Observation	1. Observation	-	-
7. Analytical reading and writing	1.Test in each units 2. Worksheets/Activities 3. Examination	1. Review topics 2. Answering worksheets 3. Examination	-	-

คุณลักษณะอันพึงประสงค์ 10 ข้อ

1. รักชาติ ศาสน์ กษัตริย์
2. ซื่อสัตย์สุจริต
3. มีวินัย
4. ใฝ่เรียนรู้
5. อยู่อย่างพอเพียง
6. มุ่งมั่นในการทำงาน
7. รักความเป็นไทย
8. มีจิตสาธารณะ
9. ปลอดสิ่งเสพติดและอบายมุข
10. มีความเป็นผู้นำและกล้าแสดงออก

สมรรถนะ 5 ข้อ

1. ความสามารถในการสื่อสาร
2. ความสามารถในการคิด
3. ความสามารถในการแก้ปัญหา
4. ความสามารถในการใช้ทักษะชีวิต
5. ความสามารถในการใช้เทคโนโลยี