



Course Description

Subject: Science 1

Code: SC21101

Hours: 60

Credit: 1.5

Class: Secondary 1A-B

Semester: 1 / 2014

Instructor: Ms. Vanessa Kay Melecio

Unit	Standard	Indicators
1. Unit of Life and Plant Life		
1. Understanding Cells	SC 1.1	M1/2 Observe and compare essential components of plant and animal cells. M1/3 Experiment and explain functions of essential components of plant and animal cells.
2. Unicellular and Multicellular Organisms	SC 1.1	M1/1 Observe and explain forms and characteristics of cells of unicellular and multicellular organisms.
3. Diffusion and Osmosis in Cells	SC 1.1	M1/4 Experiment and explain processes of passing substances through cells by diffusion and osmosis.
4. Photosynthesis	SC 1.1	M1/5 Experiment to find some factors essential for photosynthesis of plants, and explain that light, chlorophyll carbon dioxide and water are essential for photosynthesis. M1/6 Experiment and explain results obtained concerning photosynthesis by plants. M1/7 Explain importance of the photosynthesis process of plants on living things and the environment.
5. Transport System in Plants	SC 1.1	M1/8 Experiment and explain groups of cells involved in transportation of water in plants. M1/9 Observe and explain structures of the systems for transportation of water and nutrients in plants.

Unit	Standard	Indicators
6. Sexual Reproductive System of Flowering Plants	SC 1.1	M1/10 Experiment and explain floral structures involved in plant reproduction.
7. Pollination 8. Development of Fruits and Seeds in Plants 9. Germination of Seeds	SC 1.1	M1/11 Explain sexual reproduction processes of angiosperms and plant asexual reproduction processes by referring to various parts for propagation.
10. Application of Vegetative Reproduction in Flowering Plants	SC 1.1	M1/13 Explain principles and effects of biotechnological application for propagation, improved breeding and increased productivity of plants, and apply acquired knowledge for useful purposes.
11. Stimuli and Responses in Plants	SC 1.1	M1/12 Experiment and explain responses of plants to light, water and touch.
12. Biotechnology	SC 1.1	M1/13 Explain principles and effects of biotechnological application for propagation, improved breeding and increased productivity of plants, and apply acquired knowledge for useful purposes.
13. Thai Herbal Plants		To familiarize the students with the names and purposes of some of the herbal plants used in Thailand.

Unit	Standard	Indicators
<p>2. Motion</p> <p>1. Scalar and Vector Quantities</p> <p>2. Distance and Displacement</p> <p>3. Speed and Velocity</p> <p>3. Energy</p> <p>1. Heat as a Form of Energy</p> <p>2. Heat Flow</p> <p>3. Benefits of Heat Flow</p> <p>4. Thermal Equilibrium and Effects of Heat on Matter</p> <p>5. Absorption and Radiation of Heat</p>	<p>SC4.1</p> <p>SC4.1</p> <p>SC5.1</p> <p>SC5.1</p> <p>SC5.1</p> <p>SC5.1</p>	<p>M1/1 Search for data and explain scalar and vector quantities.</p> <p>M1/2 Experiment and explain distance, speed, displacement and velocity of motion of objects.</p> <p>M1/1 Experiment and explain temperature and its measurement</p> <p>M1/2 Observe and explain heat transmission, and apply the knowledge gained for useful purposes.</p> <p>M1/4 Explain thermal equilibrium and effects of heat on expansion of substances, and apply the knowledge gained in daily life.</p> <p>M1/3 Explain heat adsorption and emission through radiation, and apply the knowledge gained for useful purposes.</p>

Measurement and Evaluation

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

Measurement and Evaluation	Evaluation Method	Assessment tool	Marks	Standard / Indicators
1. Pre-midterm	1. Work sheets, short tests and long tests (other tests) 2. Other topic related activities 3. Seatworks / Boardworks 4. Project 5. Laboratory Activities 6. Oral Participation	1. Question and Answer/Teacher Review 2. Tests Papers (Short Quizzes/Chapter Test/Unit Test) 3. Worksheets and Workbook 4. Notebooks	25	SC1.1 M1/1-13
2. Midterm test	Midterm Examination	- Test Paper	20	SC1.1 M1/1-13
3. Pre-final	1. Work sheets, short tests and long tests (other tests) 2. Other topic related activities 3. Seatworks/Boardworks 4. Project 5. Laboratory Activities 6. Oral Participation	1. Question and Answer/Teacher Review 2. Tests Papers (Short Quizzes/Chapter Test/Unit Test) 3. Worksheets and Workbook 4. Notebooks	25	SC4.1 M1/1 - 2 SC5.1 M1/1 - 4
4. Final test	Final Examination	- Test Paper	20	SC4.1 M1/1 - 2 SC5.1 M1/1 - 4

Measurement and Evaluation	Evaluation Method	Assessment tool	Marks	Standard / Indicators
5. Desirable Characteristics	.1Checking assigned tasks 2. Observation	.1Observation - Responsibility 4 marks - Honesty 3 marks - Discipline 3 marks	10	Love of nation, religion and king Honesty and integrity Self-discipline Avidity for learning Observance of principles of sufficiency, economy Philosophy in one's way of life Dedication and commitment to work Cherishing Thai-ness Public-mindedness Awareness of drugs and vice Assertive leadership
6. Competencies	Teacher Observation	Students	-	Communication capacity Thinking capacity Problem-solving capacity Capacity for applying life skills Capacity for technological application
7. Analytical reading and writing	1. Test in each topics/units 2. Examining homework 3. Major Examination	1. Unit tests 2. Workbook 3. Major examination	-	-



Course Description

Subject: Science 2

Code: SC21102

Hours: 60

Credit: 1.5

Class: Secondary 1A-B

Semester: 2 / 2014

Instructor: Ms. Vanessa Kay Melecio

Unit	Standard	Indicators
4. Substances in Everyday Life		
1. Classifying Matter	SC3.1	M1/1 Experiment and classify substances into groups by using their texture or particle size as criteria and explain properties of each group of substances.
2. States of Matter		
3. Changes of States	SC3.1	M1/2 Explain properties and transition of substances by using particle arrangement models.
4. Solutions	SC3.2	M1/1 Experiment and explain methods of preparing solutions with density in percentage, and discuss application of knowledge about solutions for useful purposes.
5. Dissolution	SC3.2	M1/2 Experiment and explain change of properties, mass and energy of substances when they change state and dissolve. M1/3 Experiment and explain factors affecting changes in the state and dissolution of substances.
6. Acids and Alkalis	SC3.1	M1/3 Experiment and explain acid-base properties of solutions.
7. pH Indicator	SC3.1	M1/4 Verify pH value of solutions, and apply the knowledge gained for useful purposes.
8. Projects of His Majesty the King		To be aware of the Royal Projects that King Bumibhol established in Thailand

Unit	Standard	Indicators
<p>5. Atmosphere</p> <p>1. Layers of the Earth's Atmosphere</p> <p>2. What is Weather?</p> <p>3. Factors of Weather</p> <p>4. Monsoons, Tropical Cyclones and Thunderstorms</p> <p>5. How to Avoid Danger During Severe Weather</p> <p>6. Interpreting Weather Forecasts and Their Importance</p> <p>7. Global Warming</p> <p>8. Ozone Depletion</p> <p>9. Acid Rain</p>	<p>SC6.1</p> <p>SC6.1</p> <p>SC6.1</p> <p>SC6.1</p> <p>SC6.1</p> <p>SC6.1</p>	<p>M1/1 Search for relevant information and explain components and division of atmospheric layers covering the Earth's surface.</p> <p>M1/2 Experiment and explain relationship between temperature, humidity and air pressure and climate-affecting phenomena.</p> <p>M1/3 Observe, analyse and discuss formation of climate phenomena affecting human beings.</p> <p>M1/4 Search for relevant information, analyse and interpret meanings of data from weather forecasts.</p> <p>M1/5 Search for, analyse and explain effects of climate on the lives of living things and the environment.</p> <p>M1/6 Search for relevant information, analyse and explain natural factors and man-made actions affecting changes of the Earth's temperature, ozone holes and acid rain.</p> <p>M1/7 Search for relevant information, analyse and explain effects of global warming, ozone holes and acid rain on living things and the environment.</p>

Measurement and Evaluation

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1. Pre-midterm	1. Work sheets, short tests and long tests (other tests) 2. Other topic related activities 3. Seatworks/Boardworks 4. Project 5. Laboratory Activities 6. Oral Participation	1. Question and Answer/Teacher Review 2. Tests Papers (Short Quizzes/Chapter Test/Unit Test) 3. Worksheets and Workbook 4. Notebooks	25	SC3.1 M1/1-4 SC3.2 M1/1-3
2. Midterm test	Midterm Examination	- Test Paper	20	SC3.1 M1/1-4 SC3.2 M1/1-3
3. Pre-final	1. Work sheets, short tests and long tests (other tests) 2. Other topic related activities 3. Seatworks/Boardworks 4. Project 5. Laboratory Activities 6. Oral Participation	1. Question and Answer/Teacher Review 2. Tests Papers (Short Quizzes/Chapter Test/Unit Test) 3. Worksheets and Workbook 4. Notebooks	25	SC6.1 M1/1-7
4. Final test	Final Examination	- Test Paper	20	SC6.1 M1/1-7

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Measurement and Evaluation	Evaluation Method	Assessment tool	Marks	Standard / Indicators
6. Competencies	Teacher Observation	Students	-	Communication capacity Thinking capacity Problem-solving capacity Capacity for applying life skills Capacity for technological application
7. Analytical reading and writing	1. Test in each topics/units 2. Examining homework 3. Major Examination	1. Unit tests 2. Workbook Major examination	-	-