**Windfields Middle School**

 

 

###### 2018 – 2019

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| COURSE NAME | Science and Technology (IB Sciences Year 1) | **GRADE** | 6 |
| **COURSE CODE** | SCI6N | **CREDIT VALUE** | N/A |
| TYPE OF COURSE | Elementary Course |

**TEXTBOOK**

Textbooks will be used in the classroom.

(Publisher: Addison-Wesley)

**REPLACEMENT COST for Broken Equipment**

Students are responsible for the replacement cost of broken lab materials or equipment (e.g., glass beaker, hot plate, etc.)

#### MATERIALS & SUPPLIES

Students bring their own: 3-ring binder with

ruled paper, pens, pencils, and calculator

## **COURSE DESCRIPTION**

This course enables students to develop their understanding of key concepts in the four curriculum strands (– life systems, structures and mechanisms, matter and energy, and earth and space systems), and to relate science to technology, society, and the environment. Throughout the course, students will develop their skills in the processes of scientific investigation.

## **TOPICS OF STUDY/UNITS**

Introduction: Branches of Science

* Students will demonstrate an understanding of the main branches of science.

Unit 1: Biodiversity

* Students will demonstrate an understanding of biodiversity and the classification of living things, assess human impacts on biodiversity, and identify ways of preserving biodiversity.

Unit 2: Flight

* Students will demonstrate an understanding of the properties of air and principles of flight, and assess the societal and environmental impacts of flying devices.

Unit 3: Electricity and Electrical Devices

* Students will demonstrate an understanding of the principles of electrical energy, energy transformations, and characteristics of static and current electricity, and evaluate the impact of the use of electricity on society and the environment.

Unit 4: Space

* Students will demonstrate an understanding of components of the solar system and movement of celestial bodies in space, and assess the impact of space exploration on society and the environment.

**ASSESSMENT OF STUDENT ACHIEVEMENT**

Assessment of student achievement is based on the criteria, objectives, and levels of achievement in IB Sciences Year 1.

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| --- | --- |
| Criteria | Objectives |
| A: Knowing and  understanding | 1. describe scientific knowledge
2. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations
3. analyse information to make scientifically supported judgments
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| B: Inquiring and  designing | 1. describe a problem or question to be tested by a scientific investigation
2. outline a testable hypothesis and explain it using scientific reasoning
3. describe how to manipulate the variables, and explain how data will be collected
4. design scientific investigations
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| C: Processing and  evaluating | 1. present collected and transformed data
2. interpret data and describe results using scientific reasoning
3. discuss the validity of a hypothesis based on the outcome of the scientific investigation
4. discuss the validity of the method
5. describe improvements or extensions to the method
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| D: Reflecting on  the impacts of  science | 1. describe the ways in which science is applied and used to address a specific problem or issue
2. discuss and analyse the various implications of the use of science and its application in solving a specific problem or issue
3. apply scientific language effectively
4. document the work of others and sources of information used
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Levels of Achievement:

|  |  |  |
| --- | --- | --- |
| **Percentage Grade Range** | **IB Achievement****Level** | **Summary Description** |
| 90 – 100 % | 7-8 | An outstanding level of achievement.Achievement is above the provincial standard. |
| 80 – 89% | 5-6 | A high level of achievement.Achievement is above the provincial standard. |
| 70 – 79% | 4 | A good level of achievement. Achievement is at the provincial standard. |
| 60 – 69% | 3 | A moderate level of achievement. Achievement is below, but approaching, the provincial standard. |
| 50 – 59% | 2 | A passable level of achievement. Achievement is below the provincial standard. |
| Below 50% | 0-1 | Insufficient achievement of curriculum expectations.  |

# WEIGHTING of each CRITERION ASSESSMENT STRATEGIES

* A. Knowing and understanding 25% Summative assessments will be varied to determine students’
* B. Inquiring and designing 25% level of conceptual understanding and acquisition of skills.
* C. Processing and evaluating 25% Each criterion will be assessed at least twice during the course.
* D. Reflecting on the impacts of science 25%

**LEARNING SKILLS and ATLs (IB Approaches to Learning)**

Below are the learning skills that will be assessed (E/G/S/N) on the Provincial Report Card:

* Responsibility (thinking, research) • Collaboration (social)
* Organization (communication, research) • Initiative (thinking)
* Independent Work (self-management: • Self-Regulation (self-management: affective skills,

 organization skills) reflection skills)