

## **Science 7 Course Outline**

### Unit Descriptions

Science 7 is divided into 5 separate units of study. Each unit will involve the learning of underlying theory along with its practical application in the real world. The following is a description of each unit:

#### **Interactions & Ecosystems**

Students will learn how ecosystems develop & are maintained by natural processes and are affected by human actions. To foster an understanding of ecosystems, this unit develops students' awareness of the different components of a typical ecosystem and their symbiotic interactions and adaptations. Students will also investigate how natural resources such as water, carbon, & nutrients are cycled in the environment. Building on this knowledge, students discuss human impacts have consequences in nature, and recognize the need for responsible decision-making and action.

#### **Structures and forces**

Students will investigate the types of structures which can be found in both nature and in human constructed environments. Students will learn how the shape, material, and function of a structure affects its overall design. Students will also investigate construction principles and how they relate to strength, balance and stability. Students will have the opportunity to investigate these principles when performing challenge activities such as building model bridges and towers. Thusly, students will examine the different ways that structural strength and stability is created.

#### **Heat & Temperature**

Students will learn how the production, transfer and transformation of heat energy plays an important role in meeting human needs. In learning about heat, students investigate sources and uses of heat energy and consider the impact of their use on our long-term ability to meet energy needs. In focusing their studies, students explore different applications, investigate the scientific principles involved, and consider questions about the nature of heat. The particle model of matter is introduced to help students explain their observations and understand relationships between heat and the properties of atoms.

#### **Plants For Food & Fiber**

Students will learn how humans have always depended on plants as a source of food and as a source material resources to meet a variety of their basic needs. To better meet these needs, technologies have been developed for select and grow productive varieties of plants. Concepts studied include: plant usage, plant reproduction, life cycles, and natural internal processes such as osmosis, diffusion, & photosynthesis.

#### **Planet Earth**

Students will learn how the scientific study of the Earth is based on direct observation of landforms and the study of the movement of the Earth's surface, and by inference of the sample evidence of the Earth's internal structure. By studying this evidence, we discover patterns in nature that result in such events as earthquakes, volcanoes, and mountain formation. Students will also investigate the internal composition of rocks and how rocks naturally change over time through application of the rock cycle. This knowledge can be used to develop models for geological structures & processes – models that help both scientists & students enlarge their understanding and guide research.

## Grade 7 Science Timeline

The following information shows the order of the units in each of the 3 terms. The timeline indicated for each term is tentative and may need to be adjusted as the school-year progresses.

Units of Study
<b><u>Interactions and Ecosystems</u></b>
<b><u>Plants for Food &amp; Fiber</u></b>
<b><u>Heat &amp; Temperature</u></b>
<b><u>Planet Earth</u></b>
<b><u>Structures and Forces</u></b>

### Assessment

A variety of assessment methods will be used throughout the year, including but not limited to:

- in-class assignments
- exams
- oral presentations
- Final exam in June
- research projects
- lab reports
- homework assignments

### Achievement Indicators

The level of understanding for each concept will be communicated using the following achievement indicators:

**EL** – Excelling – Demonstrates exemplary performance in relation to the learner outcomes

**PR** – Proficient - Demonstrates strong performance in relation to the learner outcomes

**SA** - Satisfactory - Demonstrates adequate performance in relation to the learner outcomes

**BG** – Beginning - Demonstrates basic performance in relation to the learner outcomes

**LT**- Limited- Demonstrates limited performance in relation to the learner outcomes or incomplete understanding

Please note that if your child was absent from school and so was unable to be assessed for a particular concept, an assessment indicator of ‘U’ will be recorded.