

## **Nova Scotia**

### **Grade One**

#### **Earth and Space Science: Daily and Seasonal Changes**

Describe ways of qualitatively measuring and recording environmental changes that occur in daily and seasonal cycles.

Observe and describe daily and seasonal changes in heat and light from the sun.

Investigate and describe daily changes in the characteristics, behaviours, and locations of living things.

### **Grade Two**

#### **Motion**

Investigate and describe different patterns of movement.

Describe the motion of an object in terms of a change in position and orientation relative to other objects.

### **Grade Four**

#### **Life Science: Light**

Distinguish between objects that emit their own light and those that require an external source to be seen.

Provide changes in the location, shape and relative size of a shadow when an object is placed in different positions and orientations relative to the light source.

### **Grade Five**

#### **Earth and Space Science: Weather**

Relate the transfer of energy from the sun to weather conditions.

### **Grade 6**

#### **Space Exploration**

Describe how astronauts are able to meet their basic needs in space

Describe examples of improvements to the tools and techniques of exploring the solar system that have led to discoveries and scientific information

Describe scientific/technological achievements in space science that are the results of contributions by people from around the world.

Identify examples of scientific questions and technological problems about space and space exploration that are currently being studied.

#### **Earth, Moon and Sun**

Describe how peoples' conceptions of the Earth and its position in the solar system have been continually questioned and changed over time

Demonstrate how Earth's rotation causes the day and night cycle and how Earth's revolution causes the yearly cycle of seasons

Observe and explain how the relative positions of Earth, the Moon and the Sun are responsible for the Moon phases, eclipses and tides

#### **Solar System**

Select and use tools in building models of the solar system that show approximate relative sizes of the planets and sun, and the approximate relative orbits of the planets around the sun.

Describe the physical characteristics of components of the solar system

Identify and use a variety of sources and technologies to gather and display pertinent information about planets, moons, comets, asteroids, and meteors

Evaluate the usefulness of different information sources when getting information about the components of the solar system.

### **Stars and Constellations**

Identify constellations

Use a variety of resources to gather information on the visual characteristics and mythology of constellations

Compare how different cultures have used the stars for agriculture, navigation and other significant events.

## **Grade 9**

### **The Beginnings of the Solar System**

Describe and explain the apparent motion of celestial bodies

Describe theories on the formation of the solar system

### **Composition and Characteristics of the Solar System**

Describe the composition and characteristics of the following components of the solar system:

- Terrestrial and gas planets and Pluto

- Periodicity of comets

- Asteroids and meteors

Explain the need for new evidence in order to continually test existing theories about the composition and origin of our solar system and galaxies

Describe the effects of solar phenomena on Earth

### **Composition and Characteristics of the Universe**

Describe theories on the origin and evolution of the universe

- Big bang theory

- Oscillating theory

Describe and classify the major components of the universe

- Nebulae

- Galaxies

- Giant and dwarf stars

- Quasars and black holes

Define and explain a light year

Explain how data from technology contributes to our knowledge of the universe

Compare various stars relative to our solar system

Identify new questions and problems that arise from the study of space exploration.

Describe the science underlying three technologies designed to explore space