

Northwest Territories

Earth And Space Systems

Grade 1 - Daily and Seasonal Cycles

Identify the sun as a source of heat and light

Compare the different characteristics of the four seasons (e.g., length of day, type of precipitation)

Use units of time related to the Earth's cycles (e.g., days, months, seasons)

Describe, using their observations, changes in heat and light from the sun over a period of time (e.g., measure and describe outdoor temperature changes at different times of the day, observe and describe how the position of the sun influences the length and shape of shadows).

Use appropriate vocabulary in describing their explorations, investigations, and observations

Record relevant observations, findings, and measurements, using written language, drawings, concrete materials, and charts

Communicate the procedures and results of explorations and investigations for specific purposes, using demonstrations, drawings, and oral and written descriptions

Describe changes in the characteristics and behaviour of living things that occur on a daily basis

Describe changes in the characteristics and behaviour of living things that occur in seasonal cycles

Describe ways in which humans modify their behaviour to adapt to changes in temperature and sunlight during the day

Grade Six - Space

Earth And Space Systems

Describe the physical characteristics of components of the solar system, the sun, planets, natural satellites, comets, asteroids, and meteoroids (e.g., relative size, surface, colour and temperature)

Identify the bodies in space that emit light (stars) and those that reflect light (e.g., planets, moons, comets)

Describe, using models or simulations, the features of the moon's surface (e.g., craters, Maria, rills)

Identify cycles in nature (e.g., cycles of day and night and seasons) and describe the changes within the cycles (e.g., observe the phases of the moon over several months to determine the pattern of change, and record these observations)

Describe, using models or simulations, how the Earth's rotation causes the cycle of day and night and how the Earth's revolution around the sun causes the cycle of the seasons

Recognize major constellations visible at night and describe the origins of their names (e.g., such as Orion, Leo, Polaris)

Describe, using models or simulations, the effects of the relative motion and positions of the Earth, moon and sun (e.g., solar and lunar eclipses, tides, phases of the moon)

Explain how astronauts meet their basic needs in space (e.g., through the use of dehydrated food, backpacks with an oxygen

supply, a hermetically sealed cabin with temperature and air controls

Identify the technological tools and devices needed for space exploration (e.g., telescopes, spectroscopes, spacecraft, life

support systems and sources of energy

Recognize problems arising from space exploration (e.g., space junk, satellites burning in the atmosphere upon reentry,

collisions, micro meteors, radiation)

Identify and describe past and present day contributions to astronomy to the quality of human life (e.g., development of the calendar; prediction of events such as eclipses and seasons; provision of information about space and time, understanding of the universe)

Grade 9

Unit E: Space Exploration

1. Investigate and describe ways that human understanding of Earth and space has depended on technological development
 - Identify different perspectives on the nature of Earth and space, based on culture and science
 - Investigate and illustrate the contributions of technological advances—including optical telescopes, spectral analysis and space travel—to a scientific understanding of space
 - Describe, in general terms, the distribution of matter in space (*e.g., stars, star systems, galaxies, nebulae*)
 - Identify evidence for, and describe characteristics of, bodies that make up the solar system; and compare their characteristics with those of Earth
 - Describe and apply techniques for determining the position and motion of objects in space
 - Investigate predictions about the motion, alignment and collision of bodies in space; and critically examine the evidence on which they are based (*eclipses; meteor showers*)
2. Identify problems in developing technologies for space exploration, describe technologies developed for life in space, and explain the scientific principles involved
3. Describe and interpret the science of optical and radio telescopes, space probes and remote sensing technologies
4. Identify issues and opportunities arising from the application of space technology, identify alternatives involved, and analyze implications