Alberta

Grade One
Unit B: Seasonal Changes
1–6 Describe seasonal changes, and interpret the effects of seasonal changes on living things.
1. Describe the regular and predictable cycle of seasonal changes.
2. Identify and describe examples of plant and animal changes that occur on a seasonal basis:
3. Identify human preparations for seasonal change and identify activities that are done on a seasonal basis.
4. Record observable seasonal changes over a period of time.

Grade Four
Unit D: Light and Shadows
4–9 Identify sources of light, describe the interaction of light with different materials, and infer the pathway of a light beam.
1. Recognize that eyes can be damaged by bright lights and that one should not look at the Sun—either directly or with binoculars or telescopes.
2. Identify a wide range of sources of light, including the Sun, various forms of electric lights, flames, and materials that glow (luminescent materials).
3. Distinguish objects that emit their own light from those that require an external source of light in order to be seen.
4. Demonstrate that light travels outward from a source and continues unless blocked by an opaque material.
5. Describe changes in the size and location of Sun shadows during the day—early morning, to midday, to late afternoon.
6. Recognize that opaque materials cast shadows, and predict changes in the size and location of shadows resulting from the movement of a light source or from the movement of a shade-casting object.

Grade Six
Sky Science
6–7 Observe, describe and interpret the movement of objects in the sky; and identify pattern and order in these movements.
1. Recognize that the Sun and stars emit the light by which they are seen and that most other bodies in space, including Earth's Moon, planets and their moons, comets, and asteroids, are seen by reflected light.
2. Describe the location and movement of individual stars and groups of stars (constellations) as they move through the night sky.
3. Recognize that the apparent movement of objects in the night sky is regular and predictable, and explain how this apparent movement is related to Earth's rotation.
5. Construct and use a device for plotting the apparent movement of the Sun over the course of a day; e.g., construct and use a sundial or shadow stick.
6. Describe seasonal changes in the length of the day and night and in the angle of the Sun above the horizon.
7. Recognize that the Moon's phases are regular and predictable, and describe the cycle of its phases.
8. Illustrate the phases of the Moon in drawings and by using improvised models. An improvised model might involve such things as a table lamp and a sponge ball.

9. Recognize that the other seven known major planets, which revolve around the Sun, have characteristics and surface conditions that are different from Earth; and identify examples of those differences.
10. Recognize that not only Earth, but other planets, have moons; and identify examples of similarities and differences in the characteristics of those moons.
11. Identify technologies and procedures by which knowledge, about planets and other objects in the night sky, has been gathered.
12. Understand that Earth, the Sun and the Moon are part of a solar system that occupies only a tiny part of the known 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