Grade 3 SCIENCE Curriculum

Organizing Idea

Earth Systems: Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions.

Guiding Question

What visible changes can be identified by examining Earth's surface?

Learning Outcome

Students analyze changes in Earth's surface and explain how its layers hold stories of the past.

Knowledge 1.	**Understanding**	**Skills & Procedures**
Soil includes ● living plants and animals ● decaying plants and animals ● rock particles ● air ● Water Soil provides a habitat for many animals. Habitats are environments where plants or animals establish a home. Soil can change due to the influence of plants and animals, such as ● plants and crops growing ● worms tunneling and eating matter	Soil is a continuously changing upper layer of Earth's surface.	Examine soil and its components in the local community. Identify local habitats provided by soil. Describe how soil is changed by plants and animals.

Organizing Idea

Living Systems: Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions.

Guiding Question

How do plants and animals interact?

Learning Outcome

Students analyze and describe how plants and animals interact with each other and within environments.

Knowledge 1.	**Understanding**	**Skills & Procedures**
Plants and animals use their senses to respond to sensory stimuli, including ● water ● food ● temperature ● light Animals can use senses to detect the presence of food, predators, or other plants and animals.	Plants and animals sense and respond to stimuli in order to survive.	Investigate and discuss how plants and animals respond to stimuli in their environments in order to survive.
Knowledge 2.	**Understanding**	**Skills & Procedures**
Plants and animals in local environments can be protected by actions such as ● respectfully interacting with nature ● minimizing disturbance to plants and animals ● being aware of animal crossings ● following fishing and hunting regulations ● counting and tracking populations Plants and animals may	Awareness and consideration of the interactions of plants and animals in local environments helps humans protect them.	Reflect on and share actions that can be taken to protect plants and animals in local environments. Demonstrate respectful and safe practices during observations of plants and animals in local environments. Explain interconnections in environments, including how plants depend on animals and how animals depend on plants to survive.

depend on each other and their environments for survival, such as for food and habitat.		

Grade 3 SOCIAL STUDIES Curriculum

Organizing Idea

Time and Place: Exploring the dynamic relationships between people, place, and time supports understanding of perspectives and events to make meaning of the world.

Guiding Question

What are features of the land in Alberta?

Learning Outcome

Students investigate natural and created features of Alberta.

Guiding Question

Who are Albertans?

Learning Outcome

Students relate diversity to Alberta's western identity.

Grade 4 SCIENCE Curriculum

Organizing Idea

Earth Systems: Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions.

Guiding Question

How does Earth sustain life?

Learning Outcome

Students investigate the systems of Earth and reflect on how their interconnections sustain life.

Knowledge 1.	**Understanding**	**Skills & Procedures**
Organisms require warmth and energy from the Sun to live. Sunlight is more direct at the equator than at the poles. The long-term temperature at the equator is warmer than it is at the poles. In Alberta, sunlight is more direct and the length of daylight is longer in summer than in winter.	Earth's surface is warmed by the Sun, allowing for life.	Describe the importance of the amount of sunlight and warmth on a variety of organisms.
Knowledge 2. Water is a basic need for plants and animals. Water provides habitat for many organisms.	**Understanding** Caring for water and water sources is a shared responsibility.	**Skills & Procedures** Discuss ways that plants and animals use water to meet their basic needs. Identify plants and animals that exist in various bodies of water. Demonstrate respect for water in the local environment.
Knowledge 3. Natural resources are materials from nature that are used to meet human needs and include • air	**Understanding** Earth's systems include natural resources that are central to human well-being.	**Skills & Procedures** Investigate natural resources found in Alberta and how they are used to meet human needs.

• water • soil • minerals • metals • forests • organisms		
Knowledge 4. Conservation is the preservation and protection of Earth's systems from pollution, depletion, or extinction. Conservation practices can be implemented in natural and human-made areas. Conservation can involve creating local, provincial, and national parks.	**Understanding** Conservation can impact land, natural resources, and organisms.	**Skills & Procedures** Investigate conservation practices in natural and human-made areas. Discuss the interconnectedness between human use of parks and conservation practices.
Knowledge 5. Conservation can be practised through personal actions, including • use of electricity; e.g., turning off lights when leaving a room • use of water; e.g., taking shorter showers • reducing waste; e.g., using reusable packaging	**Understanding** Conservation of Earth's systems involves personal, community, and global action.	**Skills & Procedures** Describe examples of personal actions that contribute to conservation in daily life. Create a plan to implement a conservation practice in a local community.

Conservation can be practised through community or global actions, such as ● use of energy-efficient alternatives; e.g., solar panels ● supplying water to support crops (irrigation) ● community recycling or composting programs		

Organizing Idea

Living Systems: Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions.

Guiding Question

In what ways do the structures of organisms support survival?

Learning Outcome

Students analyze organisms and relate external structures to functions.

Knowledge 1.	**Understanding**	**Skills & Procedures**
Organisms are living things that respond to stimuli and include plants, humans, and other animals. Organisms can be classified in various ways, including by ● appearance ● habitat ● structures	A variety of organisms live on Earth and have external structures that support various functions.	Find and classify examples of local plants and animals based on appearance, habitat, and structures. Demonstrate respect when interacting with plants and animals in local environments. Relate the external structures of plants to their functions.

Structures, including body parts, are features of organisms that serve a purpose or function. Organisms have external structures that can vary; e.g., ● plants may have roots, stems, leaves, flowers, fruit, or other structures ● animals may have claws, teeth, legs, shells, skins, or other structures Functions of external structures in an organism include ● eating ● moving ● protecting ● sensing ● reproducing		Relate the external structures of animals to their functions, excluding reproduction. Compare external structures of various plants and animals in relation to function.
Knowledge 2. Plants can detect sensory stimuli, such as light, gravity, temperature, and touch, which help them grow and survive. Sensory organs of animals include ● ears ● eyes ● nose ● tongue	**Understanding** Organisms sense and respond to their environments to support growth and survival.	**Skills & Procedures** Discuss how plants respond to sensory stimuli. Relate sensory organs of animals to their survival. Conduct an investigation to determine if an organism senses and responds to changes in an environment.

● skin Sensory organs in animals help them meet their needs in various ways, such as by detecting ● food ● other animals ● danger ● temperature		

Grade 5 SCIENCE Curriculum

Organizing Idea

Earth Systems: Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions.

Guiding Question

How can climate and its effects be understood?

Learning Outcome

Students analyze climate and connect it to weather conditions and agricultural practices.

Knowledge 1.	**Understanding**	**Skills & Procedures**
Weather is the short-term conditions experienced in a region, including ● temperature ● wind speed and direction ● amount of sunlight ● precipitation ● humidity	The study of climates across regions helps identify historical patterns and make predictions.	Distinguish climate from weather. Discuss the characteristics of local, national, and global weather conditions to determine climate. Compare key characteristics of climate zones.

● cloud cover Climate is the long-term weather patterns of a region over a period of at least 30 years. Data in maps, tables, or graphs can be used to represent key characteristics of climate, including ● temperature ● precipitation ● humidity ● wind Climates are dependent on factors that include ● geographical location ● landforms ● altitude ● proximity to bodies of water Climate zones are defined areas with distinct climates and include ● tropical ● dry ● temperate ● polar ● continental		Interpret data about climate. Relate factors that contribute to Alberta's climate. Compare Alberta's climate to the climates of other Canadian provinces or territories.
Knowledge 2.	**Understanding**	**Skills & Procedures**

Tools to measure and track weather conditions include ● thermometers ● wind vanes ● windsocks ● anemometers ● barometers ● rain or snow gauges ● hygrometers Websites, weather maps, and weather apps provide access to weather information.	Weather conditions can be measured accurately using a variety of tools and methods.	Examine tools used to measure and track weather conditions. Construct simple tools to measure weather. Observe and record local weather for a given time interval. Represent local weather data. Construct a sample weather map of a local region for a given time. Explain the importance of weather forecasts. Investigate methods used to predict the weather.
Knowledge 3. Climate and weather events may influence agricultural practices by affecting components such as ● crop type ● crop production ● animal population ● soil quality ● water access Conservation agriculture is a sustainable practice that	**Understanding** Climate and weather events influence agricultural practices.	**Skills & Procedures** Describe how climate may affect plants and animals farmed in Alberta. Discuss conservation agriculture practices and potential uses. Describe local climate and weather events that affect agricultural practices.

responds to local climate and weather events. Conservation agriculture practices are adapted to the requirements of plants and animals farmed. Agricultural practices involve monitoring and responding to climate or weather events such as ● drought ● flooding ● fires ● windstorms Conservation agriculture practices include ● minimizing soil disturbance ● maintaining soil cover ● using water efficiently ● using sustainable harvesting practices Sustainable harvesting practices support the maintenance of stable plant or animal populations over time and include ● crop rotation ● companion planting ● limiting hunting and trapping ● considering future harvests		Explain practices related to sustainable harvesting.

Organizing Idea

Living Systems: Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions.

Guiding Question

How are organisms supported by vital biological processes and systems?

Learning Outcome

Students investigate the internal systems of organisms and explain how they support vital biological processes.

Knowledge 1.	**Understanding**	**Skills & Procedures**
Plant transport systems include xylem and phloem. Xylem and phloem in plants perform similar functions to the circulatory system in animals. Xylem transports water and nutrients from the roots to the rest of the plant. Phloem transports sugars from the leaves to the rest of the plant.	Plants are complex organisms with transport systems that carry out specific functions for survival.	Examine the transport systems of plants and describe their functions.