



Science

Updated Draft K–6 Curriculum



Subject Overview



Science Overview

Science aims to answer questions and make sense of the physical, living, and digital world. Science calls on students to use their curiosity, creativity, and perseverance to develop a deeper understanding of the world. It includes the study of physics, chemistry, biology, Earth science, astronomy, and computer science.

Through science, students, both on their own and in teams, develop critical thinking, problem solving, confidence, and communication skills to make sense of complex information. They gain knowledge and skills by applying scientific methods. Exploring the environment through diverse perspectives and traditional knowledge allows students to connect with their surroundings and recognize the responsibility we share for our planet.

Studying science equips students with the skills needed to evaluate information they encounter every day and make evidence-informed decisions. It can lead to careers in research, medicine, computer science, geology, engineering, astronomy, agriculture, and more.



Shifts in K–6 Science

These are the main shifts in knowledge and skill requirements from the current K–6 Science curriculum to the draft:

Specific Units and Topics

- Current – Organized by units and topics that limit connections between scientific ideas, methods, and thinking.
- Draft – Students build foundational knowledge across K–6 to deepen their understanding of scientific ideas, methods, and thinking.

Computational Thinking

- Current – No references to problem solving with coding.
- Draft – Clear expectations for students to learn problem solving that includes coding and algorithms.

Science Components/Scientific Methods

- Current – Students learn to apply science inquiry skills at each grade but do not study scientific methods in a separate unit.
- Draft – Students will learn scientific methods, including investigation, objectivity, evidence, representation, ethics, and explanation in a separate content area and apply them across all content and grades.

Diverse Perspectives

- Current – No references to diverse perspectives.
- Draft – Opportunities for students to explore diverse perspectives and cultures.
- Current – No references to First Nations, Métis, and Inuit perspectives.
- Draft – First Nations, Métis, and Inuit knowledge, practices, and perspectives are clearly and respectfully included.



Updated Draft K–6 Science Snapshot

These are samples of what students learn in K–6 from grade to grade:

Kindergarten

- Properties of natural and constructed objects can be explored through five senses.
- Movement of objects and animals, including reasons why humans and animals move.
- Surrounding environment and its elements, including connection to and respect for the environment.
- Ways to protect the environment, like caring for nature, reducing waste, recycling, reusing, and not littering.
- The purpose of instructions, contexts in which they can be experienced, and how they can be presented.

Grade 1

- Properties of natural and constructed objects and how they can be physically changed.
- Characteristics of movement, including direction, pathway, and speed.
- Changes in the environment, including seasonal changes and sudden weather events.
- Responsibility to care for the natural world, and personal and community actions that illustrate that responsibility from a variety of perspectives.
- Creating and ordering instructions, and how instructions can support safety during science investigations.
- Investigation and its purpose, including to satisfy curiosity, solve a problem, or meet a need.

Grade 2

- Properties of materials and how materials can be used to make various objects.
- The source, pathway, and behaviour of light and sound.
- Earth, its landforms, and its bodies of water, and its relationship to the Sun.
- Growth and development of plants and animals, and various ways in which individuals or groups can relate to nature.

- How creativity can be used to ensure that instructions lead to the desired outcome.
- Methods and processes used in scientific investigation.

Grade 3

- Natural and processed materials and their potential to be changed, including states of matter and the water cycle.
- Contact forces and how they affect the movement of objects, including introduction to simple machines.
- Changes in Earth's surface, including the melting of glaciers due to Earth warming up.
- How layers of the landscape hold information about the past, including fossilized dinosaur bones in Alberta landscapes.
- First Nations, Métis, and Inuit relationships to land and intergenerational knowledge of landscapes.
- Interactions between plants, animals (including humans), and the environment.
- Creativity and its relationship to computational thinking.
- Ways to approach investigation and how investigation develops knowledge of the natural world and can be used to support decision making.

Grade 4

- Methods of waste management, including reducing waste production and applying knowledge of hazardous materials, recycling, reusing, reducing, repurposing, and repairing.
- Non-contact forces, including gravity and magnetism.
- Interconnection between the systems of Earth (land, air, water, and organisms), including conservation.
- Functions of external structures of organisms.
- Astronomical phenomena and the technologies used to observe them.
- Design processes and their creative application in solving problems.
- The nature of evidence and its role in science.

Grade 5

- The particle model of matter and its relationship to the physical properties of solids, liquids, and gases.
- Forces in water and air, including buoyancy and the principles of flight.
- Renewable and non-renewable energy resources.
- The relationship between climate and weather, and agricultural practices, including conservation agriculture.
- Functions of internal systems of organisms.
- Observable processes that happen among the stars, planets, the Sun, and the Moon.
- Creation of physical and computational artifacts, coding, and translating algorithms into code.

- Controlled experiments, ways to gather evidence, and the importance of handling data and evidence responsibly, including scientific ethics.

Grade 6

- Effect of heating and cooling on particles of matter, including changes of state and thermal expansion.
- Interactions between objects and the resulting forces.
- Scientific, environmental, and economic considerations around energy distribution and use.
- Factors affecting climate and climate change, including greenhouse gases, and personal actions that can be taken to address climate change.
- Characteristics and components of ecosystems, including the importance of plants.
- Components of the solar system, their characteristics, and technologies used to understand them.
- Design, abstraction, and coding; and the impact of computers and technology on people and the environment.
- Explanation and hypothesis and their role in science.