

Science and Technology

Grade 2

OVERALL AND SPECIFIC EXPECTATIONS

STRAND A: STEM Skills and Connections

A

Throughout Grade 2, in connection with the learning in the Life Systems, Matter and Energy, Structures and Mechanisms, and Earth and Space Systems strands, students will:

A1. STEM Investigation and Communication Skills: use a scientific research process, a scientific experimentation process, and an engineering design process to conduct investigations, following appropriate health and safety procedures

A1.1 use a scientific research process and associated skills to conduct investigations

A1.2 use a scientific experimentation process and associated skills to conduct investigations

A1.3 use an engineering design process and associated skills to design, build, and test devices, models, structures, and/or systems

A1.4 follow established health and safety procedures during science and technology investigations, including wearing appropriate protective equipment and clothing and safely using tools, instruments, and materials

A1.5 communicate their findings, using science and technology vocabulary and formats that are appropriate for specific audiences and purposes

A2. Coding and Emerging Technologies: use coding in investigations and to model concepts, and assess the impact of coding and of emerging technologies on everyday life

A2.1 write and execute code in investigations and when modelling concepts, with a focus on decomposing problems into smaller steps

A2.2 identify and describe impacts of coding and of emerging technologies on everyday life

A3. Applications, Connections, and Contributions: demonstrate an understanding of the practical applications of science and technology, and of contributions to science and technology from people with diverse lived experiences

A3.1 describe practical applications of science and technology concepts in their home and community, and how these applications address real-world problems

A3.2 investigate how science and technology can be used with other subject areas to address real-world problems

A3.3 analyse contributions to science and technology from various communities

STRAND B: Life Systems **Growth and Changes in Animals**

By the end of Grade 2, students will:

B1. Relating Science and Technology to Our Changing World: assess ways in which animals have an impact on society and the environment, and ways in which human activities have an impact on animals and the places where they live

B1.1 examine impacts that animals can have on society and the environment, and describe some ways in which any negative impacts can be minimized

B1.2 assess impacts of various human activities on animals and the places where they live, and describe practices that can minimize negative impacts

B2. Exploring and Understanding Concepts: demonstrate an understanding that animals grow and change and have distinct characteristics

B2.1 compare physical characteristics of various animals, including characteristics that are constant and those that change

B2.2 describe the locomotion of various animals

B2.3 describe the life cycle of a variety of animals, including insects, amphibians, birds, and mammals

B2.4 compare changes in the appearance and behaviour of various animals as they go through a complete life cycle

B2.5 describe adaptations, including physical and/or behavioural characteristics, that allow various animals to survive in their natural environment

B

STRAND C: Matter and Energy

Properties of Liquids and Solids

C

By the end of Grade 2, students will:

C1. Relating Science and Technology to Our Changing World: assess ways in which liquids and solids and their uses can have an impact on society and the environment

C1.1 assess practices related to the use, storage, and disposal of liquids and solids in the home in terms of the effects on personal health and safety and on the environment, and suggest ways to improve these practices

C1.2 assess the impacts of changes of state of liquids and solids on humans and on environments

C2. Exploring and Understanding Concepts: demonstrate an understanding of the properties and physical changes of liquids and solids

C2.1 identify various types of matter in natural and built environments as liquids or solids

C2.2 describe the properties of liquids and solids

C2.3 describe properties of liquid water and solid water, and identify the conditions that cause changes from one state to the other

C2.4 identify conditions in which the states of liquids and solids remain constant and conditions that can cause their states to change

C2.5 describe some ways in which liquids and solids can be combined to make useful mixtures

C2.6 classify solid objects and materials in terms of their buoyancy and in terms of their ability to absorb or repel water

C2.7 explain the meaning of international symbols that give us information on the safety of substances

STRAND D: Structures and Mechanisms

Simple Machines and Movement

D

By the end of Grade 2, students will:

D1. Relating Science and Technology to Our Changing World: assess the impact of simple machines on society and on the environment

D1.1 assess the impact of simple machines on the daily lives of people in various communities

D1.2 assess the impact on the environment of technologies that use simple machines to facilitate movement

D2. Exploring and Understanding Concepts: demonstrate an understanding of movement and ways in which simple machines help to move objects
D2.1 describe different ways an object can move
D2.2 identify ways in which the position of an object can be changed
D2.3 identify the six basic types of simple machines: lever, inclined plane, wedge, pulley, wheel and axle, and screw
D2.4 describe ways in which each type of simple machine is used in daily life to make tasks easier
D2.5 compare, qualitatively or quantitatively, the force required to move an object using various simple machines to the force required to move the object without using a simple machine
STRAND E: Earth and Space Systems Air and Water in the Environment <i>By the end of Grade 2, students will:</i>
E1. Relating Science and Technology to Our Changing World: assess ways in which the actions of humans have an impact on the quality of air and water, and create plans to protect these resources
E1.1 assess the impact of human activities on air and water, taking various perspectives into consideration, including those of First Nations, Métis, and Inuit, and plan a course of action to protect the quality of the air and/or water in the local community
E1.2 assess their personal and household uses of water, and create a plan to use water responsibly
E1.3 examine the availability of fresh water and drinking water around the world, and describe the impact on communities
E2. Exploring and Understanding Concepts: demonstrate an understanding of the properties of air and water, including water in various states, and of ways in which living things depend on air and water for their survival
E2.1 demonstrate an understanding of the key properties of air and water
E2.2 identify sources of water in the natural and built environments
E2.3 describe the stages of the water cycle, including evaporation, condensation, precipitation, and collection
E2.4 identify the three states of water in the environment, and describe how temperature changes affect the state of water within the water cycle
E2.5 describe ways in which living things, including humans, depend on air and water