

GRADE 4

See the Preface for important information on the organization of the following material.

The Arts (2009)

A. DANCE

A1. Creating and Presenting

A1.1 translate into dance a variety of movement sequences observed in nature (*e.g., wind developing into a tornado; water freezing and melting on a landscape; rain transforming into a storm; a caterpillar evolving into a butterfly*)

Teacher prompt: “How could your sequence of movements demonstrate the transformation of rain into a flood or a hurricane?”

C. MUSIC

C1. Creating and Performing

C1.3 create musical compositions for specific purposes and audiences (*e.g., ... compose a soundscape to represent the physical landscape of Canada; ...*)

D. VISUAL ARTS

D1. Creating and Presenting

D1.2 demonstrate an understanding of composition, using selected principles of design to create narrative art works or art works on a theme or topic (*e.g., a collaborative mural depicting a historical or an imaginary landscape in which objects and figures placed in the foreground create areas of emphasis, and objects placed in the background show diminishing size; a relief print of a seascape in which shapes that are similar, but are different in size or colour, give the work both unity and variety*)

D1.3 use elements of design in art works to communicate ideas, messages, and understandings (*e.g., create a poster using colour and cropping of space to propose a solution to climate change; ...*)

D2. Reflecting, Responding, and Analysing

D2.2 analyse the use of elements and principles of design in a variety of art works, and explain how they are used to communicate meaning or understanding (*e.g., the use of texture and negative space in Henry Moore’s abstract forms to suggest natural objects or figures; ...*)

French As a Second Language – Extended French, French Immersion (2001); Core French (1998)

Although no overall or specific expectations explicitly address environmental education, in each of the strands the learning context (e.g., a topic or thematic unit related to the environment) and/or learning materials (e.g., books, websites, media) could be used to foster in students the development of environmental understanding.

Health and Physical Education (1998)

HEALTHY LIVING

The first overall expectation, with its focus on healthy eating practices, may lend itself to environmental education as students determine whether their food choices are healthy and how healthy food choices relate to the environment.

ACTIVE PARTICIPATION

As students apply living skills to physical activities (third overall expectation), they can develop an appreciation of the natural environment, gain an experiential knowledge of the environment, and develop the problem-solving skills necessary for an environmentally literate citizen.

Language (2006)

Although no specific or overall expectations explicitly address environmental education, in each of the strands the learning context (e.g., a topic or thematic unit related to the environment) and/or learning materials (e.g., books, websites, media) could be used to foster in students the development of environmental understanding. Also, in each of the strands, there are some expectations that can provide opportunities for exploring environmental education – for example, expectations on making inferences, making connections, analysing and evaluating texts, developing a point of view, and doing research. Some examples in the following expectations from the language document provide a context for environmental education.

WRITING

2.1 write more complex texts using a variety of forms (*e.g., ... a report, including jot notes, comparing the environments of two or more regions in Canada; ...*)

MEDIA LITERACY

1.3 express opinions about ideas, issues, and/or experiences presented in media texts, and give evidence from the texts to support their opinions (*e.g., “I think this documentary about lions is one-sided because it only shows them as predators”; ...*)

2.1 identify elements and characteristics of some media forms (*e.g., ... a television nature program: outdoor setting, wildlife “actors”, voice-over narration, background music; ...*)

Mathematics (2005)

Although no overall or specific expectations explicitly address environmental education, in each of the strands the learning context could be used to foster in students the development of environmental understanding (e.g., problems relating to climate or waste management could be the focus of student learning). In addition, the mathematical processes (e.g., problem solving, connecting) address skills that can be used to support the development of environmental literacy.

DATA MANAGEMENT AND PROBABILITY

In this strand, the collecting of data could be extended to include environmental issues.

Native Languages (2001)

Although no overall or specific expectations explicitly address environmental education, in each of the strands the learning context (e.g., a topic or thematic unit related to the environment) and/or learning materials (e.g., books, websites, media) could be used to foster in students the development of environmental understanding. Learning about aspects of Native culture and communities may provide for students opportunities to make connections with local places.

Science and Technology (2007)

UNDERSTANDING LIFE SYSTEMS: HABITATS AND COMMUNITIES

- 1 analyse the effects of human activities on habitats and communities
- 1.1 analyse the positive and negative impacts of human interactions with natural habitats and communities (e.g., *human dependence on natural materials*), taking different perspectives into account (e.g., *the perspectives of a housing developer, a family in need of housing, an ecologist*), and evaluate ways of minimizing the negative impacts
- 1.2 identify reasons for the depletion or extinction of a plant or animal species (e.g., *hunting, disease, invasive species, changes in or destruction of its habitat*), evaluate the impacts on the rest of the natural community, and propose possible actions for preventing such depletions or extinctions from happening
- 3 demonstrate an understanding of habitats and communities and the relationships among the plants and animals that live in them
- 3.1 demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life (e.g., *food, water, air, space, and light*)
- 3.8 explain why changes in the environment have a greater impact on specialized species than on generalized species (e.g., *diminishing ice cover hampers the ability of polar bears to hunt seals, their main food source, and so the polar bear population in some areas is becoming less healthy and may begin to decrease; black bear habitat has been heavily disrupted by human encroachment, but because black bears are highly adaptable omnivores that eat everything from insects to garbage generated by humans, their numbers have been increasing*)

- 3.10** describe ways in which humans are dependent on natural habitats and communities (*e.g., for water, medicine, flood control in wetlands, leisure activities*)

UNDERSTANDING STRUCTURES AND MECHANISMS: PULLEYS AND GEARS

- 1.2** assess the environmental impact of using machines with pulleys and gears, taking different perspectives into account (*e.g., the perspectives of a car driver or cyclist, someone who is physically challenged, the owner of a multifloor building*), and suggest ways to minimize negative impacts and maximize positive impacts

UNDERSTANDING MATTER AND ENERGY: LIGHT AND SOUND

- 1** assess the impact on society and the environment of technological innovations related to light and sound
- 1.2** assess the impacts on society and the environment of light and/or sound energy produced by different technologies, taking different perspectives into account (*e.g., the perspectives of someone who has to walk on the street late at night, a cottage owner, a person who is hearing impaired, manufacturers of and merchants who sell MP3 players*)

UNDERSTANDING EARTH AND SPACE SYSTEMS: ROCKS AND MINERALS

- 1** assess the social and environmental impacts of human uses of rocks and minerals
- 1.1** assess the social and environmental costs and benefits of using objects in the built environment that are made from rocks and minerals
- 1.2** analyse the impact on society and the environment of extracting and refining rocks and minerals for human use, taking different perspectives into account (*e.g., the perspectives of mine owners, the families of the miners, Aboriginal communities, the refinery workers, manufacturers of items who need the refined rocks and minerals to make their products, residents who live in communities located near refineries and manufacturing facilities and who are concerned about the environment*)

Social Studies (2004)

HERITAGE AND CITIZENSHIP: MEDIEVAL TIMES

The specific expectations related to the following overall expectation clarify the connection between the expectation and environmental education: students learn about the dependence of human systems on natural systems within a historical context.

- relate significant elements of medieval societies to comparable aspects of contemporary Canadian communities

CANADA AND WORLD CONNECTIONS: CANADA'S PROVINCES, TERRITORIES, AND REGIONS

The specific expectations in this strand clarify the connection between the strand and environmental education: students learn how natural systems influence human systems and activities, including cultural activities.

- name and locate the various physical regions, provinces, and territories of Canada and identify the chief natural resources of each
- use a variety of resources and tools to determine the influence of physical factors on the economies and cultures of Ontario and the other provinces and territories
- identify, analyse, and describe economic and cultural relationships that link communities and regions within Ontario and across Canada