

SCIENCE CURRICULUM ONTARIO

GRADE 1 - 8



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Module Name	Grade	Standard	Description
Seasonal Patterns	1	1D.1	Assess the impact of daily and seasonal changes on living things, including humans;
		1D.2	Investigate daily and seasonal changes;
		1D.3	Demonstrate an understanding of what daily and seasonal changes are and of how these changes affect living things.
Properties and States of Matter	1	1B.2	Investigate structures that are built for a specific purpose to see how their design and materials suit the purpose;
		1B.3	Demonstrate an understanding that objects and structures have observable characteristics and are made from materials with specific properties that determine how they are used.
Electric and Magnetic Forces	1	1C.1	Assess uses of energy at home, at school, and in the community, and suggest ways to use less energy;
		1C.2	Investigate how different types of energy are used in daily life;
		1C.3	Demonstrate an understanding that energy is something that is needed to make things happen, and that the sun is the principal source of energy for the earth.
Patterns in Space	1	1D.1	Assess the impact of daily and seasonal changes on living things, including humans;
		1D.2	Investigate daily and seasonal changes;
		1D.3	Demonstrate an understanding of what daily and seasonal changes are and of how these changes affect living things.
Properties of Objects	1	1B.1	Assess the impact on people and the environment of objects and structures and the materials used in them;
		1B.2	Investigate structures that are built for a specific purpose to see how their design and materials suit the purpose;
		1B.3	Demonstrate an understanding that objects and structures have observable characteristics and are made from materials with specific properties that determine how they are used.
Living and Nonliving Things	1	1A.2	Investigate needs and characteristics of plants and animals, including humans;
		1A.3	Demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans.

Energy from the Sun	1	1C.3	Demonstrate an understanding that energy is something that is needed to make things happen, and that the sun is the principal source of energy for the earth.
Animal Needs	1	1A.3	Demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans.
		1A.1	Assess the role of humans in maintaining a healthy environment;
		1A.2	Investigate needs and characteristics of plants and animals, including humans;
Behavior of Light	1	1C.3	Demonstrate an understanding that energy is something that is needed to make things happen, and that the sun is the principal source of energy for the earth.
Communication	1	1C.2	Investigate how different types of energy are used in daily life;
		1C.1	Assess uses of energy at home, at school, and in the community, and suggest ways to use less energy;
		1C.3	Demonstrate an understanding that energy is something that is needed to make things happen, and that the sun is the principal source of energy for the earth.
Animal Survival	1	1A.2	Investigate needs and characteristics of plants and animals, including humans;
		1A.3	Demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans.
Plant Survival	1	1A.2	Investigate needs and characteristics of plants and animals, including humans;
		1A.3	Demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans.
Protecting the Young	1	1A.2	Investigate needs and characteristics of plants and animals, including humans;
		2A.3	Demonstrate an understanding that animals grow and change and have distinct characteristics.
What Plants Need	1	1A.1	Assess the role of humans in maintaining a healthy environment;
		1A.2	Investigate needs and characteristics of plants and animals, including humans;
		1A.3	Demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans.

Module Name	Grade	Standard	Description
Classifying Animals	2	2A.2	Investigate similarities and differences in the characteristics of various animals;
Reducing Human Impact	2	2D.1	Assess ways in which the actions of humans have an impact on the quality of air and water, and ways in which the quality of air and water has an impact on living things;
		2D.3	Demonstrate an understanding of the ways in which air and water are used by living things to help them meet their basic needs.
		2D.2	Investigate the characteristics of air and water and the visible/invisible effects of and changes to air and/or water in the environment;
		2C.1	Assess ways in which the uses of liquids and solids can have an impact on society and the environment;
		2A.1	Assess ways in which animals have an impact on society and the environment, and ways in which humans have an impact upon animals and the places where they live;
Uses of Natural Resources	2	2D.1	Assess ways in which the actions of humans have an impact on the quality of air and water, and ways in which the quality of air and water has an impact on living things;
		2D.2	Investigate the characteristics of air and water and the visible/invisible effects of and changes to air and/or water in the environment;
		2D.3	Demonstrate an understanding of the ways in which air and water are used by living things to help them meet their basic needs.
Parts of Animals	2	2A.2	Investigate similarities and differences in the characteristics of various animals;
		2A.3	Demonstrate an understanding that animals grow and change and have distinct characteristics.
Changes from Heat	2	2C.2	Investigate the properties of and interactions among liquids and solids;
		2C.3	Demonstrate an understanding of the properties of liquids and solids.
Objects and Motion	2	2B.2	Investigate mechanisms that include simple machines and enable movement;
		2B.3	Demonstrate an understanding of movement and ways in which simple machines help to move objects.

Forms of Water on Earth	2	2D.1	Assess ways in which the actions of humans have an impact on the quality of air and water, and ways in which the quality of air and water has an impact on living things;
		2D.2	Investigate the characteristics of air and water and the visible/invisible effects of and changes to air and/or water in the environment;
		2D.3	Demonstrate an understanding of the ways in which air and water are used by living things to help them meet their basic needs.
Simple Machines	2	2B.1	Assess the impact on society and the environment of simple machines and mechanisms;
		2B.2	Investigate mechanisms that include simple machines and enable movement;
		2B.3	Demonstrate an understanding of movement and ways in which simple machines help to move objects.

Module Name	Grade	Standard	Description
Energy and Speed	3	3C.1	Assess the impact of various forces on society and the environment;
		3C.2	Investigate devices that use forces to create controlled movement;
		3C.3	Demonstrate an understanding of how forces cause movement and changes in movement.
Parts of Plants	3	3A.2	Investigate similarities and differences in the characteristics of various plants, and ways in which the characteristics of plants relate to the environment in which they grow;
		3A.3	Demonstrate an understanding that plants grow and change and have distinct characteristics.
Properties of Soil	3	3D.1	Assess the impact of soils on society and the environment, and of society and the environment on soils;
		3D.2	Investigate the composition and characteristics of different soils;
		3D.3	Demonstrate an understanding of the composition of soils, the types of soils, and the relationship between soils and other living things.
Structural Integrity	3	3B.1	Assess the importance of form, function, strength, and stability in structures through time;
		3B.2	Investigate strong and stable structures to determine how their design and materials enable them to perform their load-bearing function;
		3B.3	Demonstrate an understanding of the concepts of structure, strength, and stability and the factors that affect them.
Plant Trait Inheritance and Variation	3	3A.2	Investigate similarities and differences in the characteristics of various plants, and ways in which the characteristics of plants relate to the environment in which they grow;
		3A.3	Demonstrate an understanding that plants grow and change and have distinct characteristics.
Quick Changes to Land	3	3C.1	Assess the impact of various forces on society and the environment;
		3C.3	Demonstrate an understanding of how forces cause movement and changes in movement.
Slow Changes to Land	3	3C.1	Assess the impact of various forces on society and the environment;
		3C.3	Demonstrate an understanding of how forces cause movement and changes in movement.

Effects of Wind and Water	3	3C.1	Assess the impact of various forces on society and the environment;
		3C.3	Demonstrate an understanding of how forces cause movement and changes in movement.
Plants' Effect on Regions	3	3A.1	Assess ways in which plants have an impact on society and the environment, and ways in which human activity has an impact on plants and plant habitats;
Matter and Energy in Plants	3	3A.2	Investigate similarities and differences in the characteristics of various plants, and ways in which the characteristics of plants relate to the environment in which they grow;

Module Name	Grade	Standard	Description
Sound	4	4C.2	Investigate the characteristics and properties of light and sound;
		4C.3	Demonstrate an understanding of light and sound as forms of energy that have specific characteristics and properties.
		4C.1	Assess the impact on society and the environment of technological innovations related to light and sound;
Animal and Plant Dependence	4	4A.1	Analyse the effects of human activities on habitats and communities;
		4A.2	Investigate the interdependence of plants and animals within specific habitats and communities;
		4A.3	Demonstrate an understanding of habitats and communities and the relationships among the plants and animals that live in them.
Environmental Changes and Effects	4	4A.2	Investigate the interdependence of plants and animals within specific habitats and communities;
		4A.3	Demonstrate an understanding of habitats and communities and the relationships among the plants and animals that live in them.
Inclined Planes and Pulleys	4	4B.1	Evaluate the impact of pulleys and gears on society and the environment;
		4B.2	Investigate ways in which pulleys and gears modify the speed and direction of, and the force exerted on, moving objects;
		4B.3	Demonstrate an understanding of the basic principles and functions of pulley systems and gear systems.
Gears, Wheels, and Axles	4	4B.1	Evaluate the impact of pulleys and gears on society and the environment;
		4B.2	Investigate ways in which pulleys and gears modify the speed and direction of, and the force exerted on, moving objects;
		4B.3	Demonstrate an understanding of the basic principles and functions of pulley systems and gear systems.
Wavelength and Amplitude	4	4C.2	Investigate the characteristics and properties of light and sound;
		4C.3	Demonstrate an understanding of light and sound as forms of energy that have specific characteristics and properties.

Light Reflection	4	4C.3	Demonstrate an understanding of light and sound as forms of energy that have specific characteristics and properties.
Information Technologies	4	4C.3	Demonstrate an understanding of light and sound as forms of energy that have specific characteristics and properties.
		4C.1	Assess the impact on society and the environment of technological innovations related to light and sound;
Rock Patterns	4	4D.1	Assess the social and environmental impacts of human uses of rocks and minerals;
		4D.2	Investigate, test, and compare the physical properties of rocks and minerals;
		4D.3	Demonstrate an understanding of the physical properties of rocks and minerals.
Earth Materials	4	4D.1	Assess the social and environmental impacts of human uses of rocks and minerals;
		4D.2	Investigate, test, and compare the physical properties of rocks and minerals;
		4D.3	Demonstrate an understanding of the physical properties of rocks and minerals.

Module Name	Grade	Standard	Description
Chemical Processes	5	5C.2	Conduct investigations that explore the properties of matter and changes in matter;
		5C.3	Demonstrate an understanding of the properties of matter, changes of state, and physical and chemical change.
Chemical Properties and Interactions	5	5C.2	Conduct investigations that explore the properties of matter and changes in matter;
		5C.3	Demonstrate an understanding of the properties of matter, changes of state, and physical and chemical change.
		5C.1	Evaluate the social and environmental impacts of processes used to make everyday products;
Energy and Collision	5	5B.1	Analyse social and environmental impacts of forces acting on structures and mechanisms;
		5B.2	Investigate forces that act on structures and mechanisms;
		5B.3	Identify forces that act on and within structures and mechanisms, and describe the effects of these forces on structures and mechanisms.
Renewable and Non-Renewable Resources	5	5D.3	Demonstrate an understanding of the various forms and sources of energy and the ways in which energy can be transformed and conserved.
Matter is Everywhere	5	5C.2	Conduct investigations that explore the properties of matter and changes in matter;
		5C.3	Demonstrate an understanding of the properties of matter, changes of state, and physical and chemical change.
Matter Changing States	5	5C.2	Conduct investigations that explore the properties of matter and changes in matter;
		5C.3	Demonstrate an understanding of the properties of matter, changes of state, and physical and chemical change.
Sensory Receptors	5	5A.3	Demonstrate an understanding of the structure and function of human body systems and interactions within and between systems.
		5A.2	Investigate the structure and function of the major organs of various human body systems;
Human Dependence on Natural Resources	5	5D.1	Analyse the immediate and long-term effects of energy and resource use on society and the environment, and evaluate options for conserving energy and resources;

Consumption of Natural Resources	5	5D.1	Analyse the immediate and long-term effects of energy and resource use on society and the environment, and evaluate options for conserving energy and resources;
Bodies and Systems	5	5A.1	Analyse the impact of human activities and technological innovations on human health;
		5A.2	Investigate the structure and function of the major organs of various human body systems;
		5A.3	Demonstrate an understanding of the structure and function of human body systems and interactions within and between systems.
Transfer of Energy in Collision	5	5B.1	Analyse social and environmental impacts of forces acting on structures and mechanisms;
		5B.2	Investigate forces that act on structures and mechanisms;
		5B.3	Identify forces that act on and within structures and mechanisms, and describe the effects of these forces on structures and mechanisms.

Module Name	Grade	Standard	Description
Earth's Biomes	6	6A.3	Demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans.
		6A.2	Investigate the characteristics of living things, and classify diverse organisms according to specific characteristics;
The Solar System	6	6D.1	Assess the impact of space exploration on society and the environment;
		6D.2	Investigate characteristics of the systems of which the earth is a part and the relationship between the earth, the sun, and the moon;
		6D.3	Demonstrate an understanding of components of the systems of which the earth is a part, and explain the phenomena that result from the movement of different bodies in space.
Electromagnetic Forces	6	6C.1	Evaluate the impact of the use of electricity on both the way we live and the environment;
Energy Transfer	6	6C.3	Demonstrate an understanding of the principles of electrical energy and its transformation into and from other forms of energy.
		6C.2	Investigate the characteristics of static and current electricity, and construct simple circuits;
Air and Flight	6	6B.1	Assess the societal and environmental impacts of flying devices that make use of properties of air;
		6B.2	Investigate ways in which flying devices make use of properties of air;
		6B.3	Explain ways in which properties of air can be applied to the principles of flight and flying devices.
Energy and Electric Currents	6	6C.1	Evaluate the impact of the use of electricity on both the way we live and the environment;
Earth's Rotation	6	6D.2	Investigate characteristics of the systems of which the earth is a part and the relationship between the earth, the sun, and the moon;
		6D.3	Demonstrate an understanding of components of the systems of which the earth is a part, and explain the phenomena that result from the movement of different bodies in space.
		6D.1	Assess the impact of space exploration on society and the environment;
Earth's Systems Interactions	6	6A.2	Investigate the characteristics of living things, and classify diverse organisms according to specific characteristics;

		6A.3	Demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans.
Energy Transfer in Motion	6	6C.3	Demonstrate an understanding of the principles of electrical energy and its transformation into and from other forms of energy.
		6C.2	Investigate the characteristics of static and current electricity, and construct simple circuits;
Matter and Energy in Food Webs	6	6A.3	Demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans.
		6A.1	Assess human impacts on biodiversity, and identify ways of preserving biodiversity;
Ecosystem Biodiversity	6	6A.2	Investigate the characteristics of living things, and classify diverse organisms according to specific characteristics;
		6A.3	Demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans.
Changes in Biodiversity	6	6A.1	Assess human impacts on biodiversity, and identify ways of preserving biodiversity;
Natural Selection and Populations	6	6A.2	Investigate the characteristics of living things, and classify diverse organisms according to specific characteristics;
		6A.3	Demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans.
Patterns of Motion	6	6D.2	Investigate characteristics of the systems of which the earth is a part and the relationship between the earth, the sun, and the moon;
		6D.3	Demonstrate an understanding of components of the systems of which the earth is a part, and explain the phenomena that result from the movement of different bodies in space.
		6D.1	Assess the impact of space exploration on society and the environment;
The Universe	6	6D.1	Assess the impact of space exploration on society and the environment;
		6D.2	Investigate characteristics of the systems of which the earth is a part and the relationship between the earth, the sun, and the moon;
		6D.3	Demonstrate an understanding of components of the systems of which the earth is a part, and explain the phenomena that result from the movement of different bodies in space.

Earth, Sun, and Moon System	6	6D.2	Investigate characteristics of the systems of which the earth is a part and the relationship between the earth, the sun, and the moon;
		6D.3	Demonstrate an understanding of components of the systems of which the earth is a part, and explain the phenomena that result from the movement of different bodies in space.
		6D.1	Assess the impact of space exploration on society and the environment;
Formation of the Solar System	6	5D.2	Investigate energy transformation and conservation;
		6D.3	Demonstrate an understanding of components of the systems of which the earth is a part, and explain the phenomena that result from the movement of different bodies in space.
		6D.1	Assess the impact of space exploration on society and the environment;

Module Name	Grade	Standard	Description
Form and Purpose of Structures	7	7B.1	Analyse personal, social, economic, and environmental factors that need to be considered in designing and building structures and devices;
		8B.2	Investigate a working system and the ways in which components of the system contribute to its desired function;
		7B.3	Demonstrate an understanding of the relationship between structural forms and the forces that act on and within them.
Human Footprint	7	7A.1	Assess the impacts of human activities and technologies on the environment, and evaluate ways of controlling these impacts;
Reducing Human Footprint	7	7A.1	Assess the impacts of human activities and technologies on the environment, and evaluate ways of controlling these impacts;
Structure of Matter and Heat	7	7D.2	Investigate ways in which heat changes substances, and describe how heat is transferred;
		7D.3	Demonstrate an understanding of heat as a form of energy that is associated with the movement of particles and is essential to many processes within the earth's systems.
		7D.1	Assess the costs and benefits of technologies that reduce heat loss or heat-related impacts on the environment;
Changes in Energy on the Molecular Level	7	6C.2	Investigate the characteristics of static and current electricity, and construct simple circuits;
Modeling Conservation of Matter	7	7C.3	Demonstrate an understanding of the properties of pure substances and mixtures, and describe these characteristics using the particle theory.
Kinetic Energy	7	7B.2	Design and construct a variety of structures, and investigate the relationship between the design and function of these structures and the forces that act on them;
		7B.3	Demonstrate an understanding of the relationship between structural forms and the forces that act on and within them.
Potential Energy	7	7B.2	Design and construct a variety of structures, and investigate the relationship between the design and function of these structures and the forces that act on them;
		7B.3	Demonstrate an understanding of the relationship between structural forms and the forces that act on and within them.

Newton's Third Law of Motion	7	7B.2	Design and construct a variety of structures, and investigate the relationship between the design and function of these structures and the forces that act on them;
		7B.3	Demonstrate an understanding of the relationship between structural forms and the forces that act on and within them.
Changes in Motion, Force, and Direction	7	7B.2	Design and construct a variety of structures, and investigate the relationship between the design and function of these structures and the forces that act on them;
		7B.3	Demonstrate an understanding of the relationship between structural forms and the forces that act on and within them.
Introduction to Photosynthesis	7	6A.2	Investigate the characteristics of living things, and classify diverse organisms according to specific characteristics;
		7A.3	Demonstrate an understanding of interactions between and among biotic and abiotic elements in the environment.
Organism Interactions in Ecosystems	7	6A.2	Investigate the characteristics of living things, and classify diverse organisms according to specific characteristics;
		7A.3	Demonstrate an understanding of interactions between and among biotic and abiotic elements in the environment.
The Dynamic Nature of Ecosystems	7	7A.1	Assess the impacts of human activities and technologies on the environment, and evaluate ways of controlling these impacts;
		7A.2	Investigate interactions within the environment, and identify factors that affect the balance between different components of an ecosystem;
Human Activities and Global Climate Change	7	7D.3	Demonstrate an understanding of heat as a form of energy that is associated with the movement of particles and is essential to many processes within the earth's systems.
Natural Hazard Predictions	7	7A.1	Assess the impacts of human activities and technologies on the environment, and evaluate ways of controlling these impacts;
		3A.2	Investigate similarities and differences in the characteristics of various plants, and ways in which the characteristics of plants relate to the environment in which they grow;
Changes to Earth's Environment	7	7A.1	Assess the impacts of human activities and technologies on the environment, and evaluate ways of controlling these impacts;

		7A.2	Investigate interactions within the environment, and identify factors that affect the balance between different components of an ecosystem;
Ecosystems	7	7A.1	Assess the impacts of human activities and technologies on the environment, and evaluate ways of controlling these impacts;
		7A.2	Investigate interactions within the environment, and identify factors that affect the balance between different components of an ecosystem;
Pure Substances and Mixtures	7	7C.1	Evaluate the social and environmental impacts of the use and disposal of pure substances and mixtures;
		7C.2	Investigate the properties and applications of pure substances and mixtures;

Module Name	Grade	Standard	Description
What Are Cells?	8	8A.2	Investigate functions and processes of plant and animal cells;
		8A.3	Demonstrate an understanding of the basic structure and function of plant and animal cells and cell processes.
The Water Cycle	8	5D.3	Demonstrate an understanding of the various forms and sources of energy and the ways in which energy can be transformed and conserved.
		8D.1	Assess the impact of human activities and technologies on the sustainability of water resources;
		8D.2	Investigate factors that affect local water quality;
Systems of the Human Body	8	8A.1	Assess the impact of cell biology on individuals, society, and the environment;
		8A.3	Demonstrate an understanding of the basic structure and function of plant and animal cells and cell processes.
Fluids	8	8C.1	Analyse how the properties of fluids are used in various technologies, and assess the impact of these technologies on society and the environment;
		8C.2	Investigate the properties of fluids;
		8C.3	Demonstrate an understanding of the properties and uses of fluids.
System Design	8	8B.1	Assess the personal, social, and/or environmental impacts of a system, and evaluate improvements to a system and/or alternative ways of meeting the same needs;
		8B.2	Investigate a working system and the ways in which components of the system contribute to its desired function;
		8B.3	Demonstrate an understanding of different types of systems and the factors that contribute to their safe and efficient operation.
Organization of Organisms	8	8A.2	Investigate functions and processes of plant and animal cells;
		8A.3	Demonstrate an understanding of the basic structure and function of plant and animal cells and cell processes.
Reproduction and Variation	8	4A.2	Investigate the interdependence of plants and animals within specific habitats and communities;

		8A.3	Demonstrate an understanding of the basic structure and function of plant and animal cells and cell processes.
Water in the Atmosphere	8	8D.1	Assess the impact of human activities and technologies on the sustainability of water resources;
		8D.2	Investigate factors that affect local water quality;
		8D.3	Demonstrate an understanding of the characteristics of the earth's water systems and the influence of water systems on a specific region.
Influences on Weather and Climate	8	8D.3	Demonstrate an understanding of the characteristics of the earth's water systems and the influence of water systems on a specific region.
		8D.1	Assess the impact of human activities and technologies on the sustainability of water resources;
		8D.2	Investigate factors that affect local water quality;
Predicting Weather	8	8D.1	Assess the impact of human activities and technologies on the sustainability of water resources;
		8D.2	Investigate factors that affect local water quality;
		5D.3	Demonstrate an understanding of the various forms and sources of energy and the ways in which energy can be transformed and conserved.
Oceans' Influence on Weather and Climate	8	8D.3	Demonstrate an understanding of the characteristics of the earth's water systems and the influence of water systems on a specific region.
		8D.1	Assess the impact of human activities and technologies on the sustainability of water resources;
		8D.2	Investigate factors that affect local water quality;

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