



Linking ON Science Curriculum to Binogi: GRADE 6

• Understanding Life Systems = A • Understanding Structures and Mechanisms = B • Understanding Matter and Energy = C • Understanding Earth and Space Systems = D

Strand	Overall Expectations Category	Overall Expectation	Specific Expectation Category	Specific Expectation	Binogi Video
STEM Skills and Connections	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	1.1	use a scientific research process and associated skills to conduct investigations	Science and pseudoscience
			1.2	use a scientific experimentation process and associated skills to conduct investigations	Scientific method – Chemistry
			1.3	use an engineering design process and associated skills to design, build, and test devices, models, structures, and/or systems	The scientific method – Physics
					The scientific method - Biology
			1.4	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	Scientific knowledge The chemistry lab Heat sources in the science lab Laboratory apparatus
	1.5	communicate their findings, using science and technology vocabulary and formats that are appropriate for specific audiences and purposes	Scientific knowledge Scientific report Videos on Statistics and Data Handling		
	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 and in STEM-related fields	2.1	write and execute code in investigations and when modelling concepts, with a focus on obtaining input in different ways for a variety of purposes	Videos on Programming
			2.2	identify and describe impacts of coding and of emerging technologies, such as artificial intelligence systems, on everyday life, including skilled trades	N/A





	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	3.1	describe practical applications of science and technology concepts in various occupations, including skilled trades, and how these applications address real-world problems	What is biology? What is technology?
			3.2	investigate how science and technology can be used with other subject areas to address real-world problems	N/A
			3.3	analyse contributions to science and technology from various communities	The history of biology From Aristotle to classical physics From classical to modern physics
Life Systems: Biodiversity	B1	Relating Science and Technology to Our Changing World: assess the importance of biodiversity, and describe ways of protecting biodiversity	1.1	assess the benefits of biodiversity and the consequences of the diminishing of biodiversity	Biodiversity Threats to Biodiversity
			1.2	analyse a local issue related to biodiversity while considering different perspectives; plan a course of action in response to the issue; and act on their plan	Biodiversity Canada's Biodiversity Sixth Mass Extinction Endangered Species
	B2	Exploring and Understanding Concepts: demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans	2.1	describe the distinguishing characteristics of different groups of organisms, and use these characteristics to further classify these organisms using a classification system	Introduction to Taxonomy Carl Linnaeus Taxonomy: Plants Taxonomy: Animals Taxonomy: Fungi and Protists
			2.2	demonstrate an understanding of biodiversity as the diversity of life on Earth, including the diversity of organisms within species, among species in a community, and among communities and the habitats that support them	Biodiversity Biological Communities Population Size and Limiting Factors
			2.3	describe ways in which biodiversity within species is essential for their survival	N/A





			2.4	describe ways in which biodiversity within and among communities is essential for maintaining the resilience of these communities	Natural Selection Biological Communities
			2.5	describe interrelationships within species, between species, and between species and their natural environment, and explain how these interrelationships sustain biodiversity	Role of Different Species in a Community Endangered Species Population Size and Limiting Factors
			2.6	explain how invasive species reduce biodiversity in local environments	Invasive Species
			2.7	explain how climate change contributes to a loss of biodiversity, and describe the impact of this loss	Threats to Biodiversity Endangered Species
			2.8	describe the importance of biodiversity in supporting agriculture, including indigenous agriculture around the world	N/A
Matter and Energy: Electrical Phenomena, Energy, and Devices	C1	Relating Science and Technology to Our Changing World: evaluate the impact of the use and generation of electrical energy on society and the environment, and suggest ways to use electrical energy responsibly	1.1	assess the short- and long-term impacts of electrical energy generation technologies in Canada on society and the environment, including impacts on First Nations, Métis, and Inuit communities, and on climate change	What is Technology?
			1.2	assess choices that reduce personal use of electrical energy from both renewable and non-renewable sources, and advocate for the responsible use of electrical energy by the school community	Electricity Consumption Green Electricity Conservation of Energy in the Household Energy in the Future Renewable Energy Sources Geothermal Power Fossil Energy Sources Biomass Energy Sources Combined Heat and Power Generation What are Biofuels?





					The Environmental Impact of Biofuels
	C2	Exploring and Understanding Concepts: demonstrate an understanding of the principles of electrical energy and its transformation into and from other forms of energy	2.1	explain commonly observed electrostatic phenomena, using the principles of static electricity	Static Electricity
			2.2	describe current electricity, and compare and contrast current electricity with static electricity	Electrical Circuits Static Electricity
			2.3	identify materials that are good conductors of electric current and materials that are good insulators	Conductors and Insulators
			2.4	describe how technologies transform various forms of energy into electrical energy	Green Electricity Hydroelectric Power Geothermal Power Fossil Energy Sources Biomass Energy Sources What are Biofuels? The Power Grid
			2.5	describe ways in which electrical energy is transformed into other forms of energy	Electricity Consumption
			2.6	explain the functions of the components of a simple electrical circuit	Electrical Circuits Voltage and Current
			2.7	distinguish between series and parallel circuits, and identify common uses of each type of circuit	Circuits in Series and in Parallel
Structures and Mechanisms: Flight	D1	Relating Science and Technology to Our Changing World: assess the environmental impacts of flying machines	1.1	assess the impacts on society of aviation technologies, while considering both local and global perspectives	Transport Systems: Air Environmental Impact of Transportation
		Exploring and Understanding Concepts: demonstrate an understanding of the ways in which properties of air can be applied to the principles of flight and flying machines	2.1	identify flight-related applications of the properties of air	Pressure in Gases Air Pressure and Winds
			2.2	describe the relationships between the four forces of flight – lift, weight, thrust, and drag – that make flight possible	How Birds Fly
			2.3	describe ways in which flying machines and various organisms use balanced and unbalanced forces to control their flight	How Birds Fly





	D2		2.4	describe ways in which the four forces of flight can be altered	How Birds Fly
			2.5	describe characteristics and adaptations that enable organisms to fly	How Birds Fly Adaptations of Wind-Pollinated Flowers
Earth & Space Systems: Space	E1	Relating Science and Technology to Our Changing World: assess the impact of space exploration on humans, society, and the environment	1.1	analyse the impact that conditions in space have on humans engaged in space exploration, and explain how humans meet their social, emotional, and physiological needs in space	Space and The Human Body
			1.2	assess the role of space exploration technology in observing and understanding environmental changes on Earth, including climate change	The Earth: Spinning Seasons
			1.3	evaluate the social and environmental impacts of space exploration, while taking various perspectives into consideration	Space Junk
	E2	Exploring and Understanding Concepts: demonstrate an understanding of the solar system, the phenomena that result from the movement of different bodies within it, and the technologies used in space exploration	2.1	identify components of the solar system, including the Sun, Earth and other planets, natural satellites, comets, asteroids, and meteoroids, and describe their main physical characteristics	The Rocky Planets The Gas Giants The Earth: Round Like a Ball Mars: The Red Planet Venus: Earth's Sister The Moon The Sun The Solar System Life on Other Planets
			2.2	distinguish between the concepts of <i>mass</i> and <i>weight</i>	Weight, Mass, and Volume Mass and Gravity
			2.3	describe the relationship between the force of gravity and the weight of a body	Mass and Gravity Center of Gravity
			2.4	identify the types of bodies in space that emit light and those that reflect light	The Universe and the Life of Stars Stars: Colour, Composition and Mass





				Stars: The Hertzsprung-Russell Diagram
		2.5	describe various effects of the relative positions and motions of Earth, the Moon, and the Sun	Solar and Lunar Eclipses Solstices and Equinoxes
		2.6	identify various technologies used in space exploration, and describe how technological innovations have contributed to our understanding of space	Reasons to Explore Space Space Probes Satellites The International Space Station Terraforming Mars

*Curriculum Expectation were adapted from *The Ontario Curriculum: Science and Technology Grade 6*. Toronto: Ministry of Education and Training (2022) https://assets-us-01.kc-usercontent.com/fbd574c4-da36-0066-a0c5-849ffb2de96e/bd6e27e0-79ca-4e85-8311-2b62c51aee7f/SciTech_G6_AODA.pdf

