

Curriculum topics covered in various Canadian provinces and territories

This chart combines science curriculum topics from across the country. Use it as inspiration! You may also have ideas based on your own studies. Keep in mind, the range of topics you can write on is much broader than this. For example, this chart does not contain math or technology course topics, but those are encouraged as well! You do not need to cover one of these (fairly broad) topics specifically, but educators are always looking for material that will support what they are teaching in the classroom.

Gr	Life Sciences	Physics	Chemistry	Earth and Environmental sciences	Space, Technology and Applied Science
8	<ul style="list-style-type: none"> •Cells 	<ul style="list-style-type: none"> •Systems in action •Mechanical systems •Optics •Fluids 	<ul style="list-style-type: none"> •Matter 	<ul style="list-style-type: none"> •Water systems 	
9	<ul style="list-style-type: none"> •Biodiversity •Reproduction •Tissues, organs and systems of living things •Sustainability of ecosystems 	<ul style="list-style-type: none"> •Electricity 	<ul style="list-style-type: none"> •Atoms and elements •Environmental chemistry 		<ul style="list-style-type: none"> •Space exploration
10	<ul style="list-style-type: none"> •Introduction to biology •Matter and energy in living systems/environment •Changes in living systems, wellness and homeostasis •Ecology, biodiversity, diversity of living things, ecology of the land •Climate change 	<ul style="list-style-type: none"> •Motion •Optics 	<ul style="list-style-type: none"> • Chemical reactions 	<ul style="list-style-type: none"> • Plate tectonics • Climate and ecosystem dynamics • Weather dynamics 	<ul style="list-style-type: none"> • Energy flow in technological systems/energy transfer technologies
11	<p><u>Life systems</u></p> <ul style="list-style-type: none"> •Systems (body systems) •The cell and cellular biology •Transportation and respiration •Excretion and waste management •Wellness and homeostatic changes •Homeostasis •Nutrition •Maintaining dynamic equilibrium •Matter and energy for life <p><u>Human-related</u></p> <ul style="list-style-type: none"> •Human Body •Human systems •Disease defence and human health 	<p><u>Kinematics</u></p> <ul style="list-style-type: none"> •Motion and change in motion •Motion and structure •Waves •Circular motion •Oscillatory motion •Work and energy •Momentum •Forces <p><u>Systems</u></p> <ul style="list-style-type: none"> •Dynamics •Understanding Common Energy Conversion Systems •Mechanical Systems Dynamics 	<p><u>Matter</u></p> <ul style="list-style-type: none"> •The nature of matter •Atoms and elements •Molecules and compounds •Physical properties of matter •The diversity of matter and chemical bonding •Matter, chemical trends, and chemical bonding •Matter as solutions <p><u>Reactions</u></p> <ul style="list-style-type: none"> •Quantities in chemical reactions •Quantitative relationships in chemical changes 	<p><u>Geology</u></p> <ul style="list-style-type: none"> • Geology and geomorphology • Geological time • Earth materials (rocks and minerals) • Internal processes and plate tectonic theory <p><u>Earth Systems</u></p> <ul style="list-style-type: none"> • Atmospheric systems • Weather dynamics • Energy flow in global systems • Aquatic systems • Weather dynamics • Climatology and meteorology 	<p><u>Technology (Gr 11)</u></p> <ul style="list-style-type: none"> • Computers and Communication • Home and Technology • Personal Technologies • Transportation <p><u>Space (Gr. 11+ 12)</u></p> <ul style="list-style-type: none"> • Astronomy Space and space exploration • Astronomy (science of the universe) • Planetary science (science of the solar system) • Circular and planetary motion <p><u>Industries</u></p> <ul style="list-style-type: none"> • Fisheries and aquaculture

	<ul style="list-style-type: none"> •Diagnosis and treatment •Digestion and nutrition <u>Animals</u> •Animal biology •Taxonomy •Evolution •Animals: structure and function/Anatomy of mammals •Ecological organization •Resource Management and population dynamics <u>Ecosystems</u> •The diversity of life •Ecosystems •Terrestrial ecosystems •Energy transfer in natural systems •Energy and Matter exchange in the biosphere •Ecosystems and population change •Interactions among living things <u>Plants and agriculture</u> •Plant biology •Plants in the natural environment •Sustainable agriculture and forestry •Plant biology •Photosynthesis and cellular repair •Plant: Anatomy growth and function •Soil and water management •Agricultural botany (of Saskatchewan) <u>Genetics and Microbiology</u> •Genetics and reproduction •Genetics and genetic processes •Microbiology •Protection and control <u>Marine specific</u> •Marine biome •Coastal Zones <u>Other</u> •Health care philosophies and ethics •Scientific solutions to contemporary environmental challenges 	<ul style="list-style-type: none"> •Fluids and fluid systems •Electrical Systems •Thermal Systems and Heat <u>Light and Optics</u> •Light •Geometrical Optics •Optics <u>Other</u> •The Physics of Everyday Things •Transportation Safety •Sound •Electricity and Magnetism •Newton's Laws •Special Relativity •Nuclear Fission and Fusion 	<ul style="list-style-type: none"> •Acids and bases •Chemical Changes •Solutions and solubility •Mole Concept and Stoichiometry •From Structures to Properties <u>Gases and atmosphere</u> •Forms of Matter: Gases Mole Concept •Behaviour of Gases •Gases and the Atmosphere/atmospheric chemistry <u>Other</u> •Organic chemistry •Atomic Theory •Applied Chemistry •Consumer Chemistry •Chemicals in consumer products 	<ul style="list-style-type: none"> • Surface processes and hydrosphere • The changing earth <u>Human Impact</u> • Human population • Human impact on the environment • Natural resource science and management • Integrative nature of environmental science • Natural resources and the environment • Reducing and managing waste • Conservation of energy • Energy and society 	<ul style="list-style-type: none"> • Agriculture • Fisheries • Agriscience • Crop production • Forestry • Mining • Energy • Biotechnology <u>Stewardship (Gr 11 +12)</u> • Soil and water management • Green spacing • Hazards in the workplace • The safe and environmentally responsible workplace <u>Animal Science (Gr 11+12)</u> • Overview of animal science • Animal nutrition • Animal care and management <u>Human-related (Gr 11+12)</u> • Health • Forensics • Medical technologies • Pathogens and disease • Disease and its prevention • Electricity at home and work • Nutritional science • Science and public health issues
12	<u>Life Systems</u> <ul style="list-style-type: none"> •Nervous and endocrine systems •Homeostasis •Metabolic processes •Maintaining dynamics and equilibrium •Body systems •Nutrition 	<u>Kinematics</u> <ul style="list-style-type: none"> •Motion and its applications •Circular motion •Projectiles •Impulse and momentum •Energy, work and power •Forces 	<u>Matter</u> <ul style="list-style-type: none"> •Structure and properties of matter •Matter and qualitative analysis •Atomic structure <u>Chemical Change</u> •Thermochemical changes •Reaction kinetics 	<u>Geology</u> <ul style="list-style-type: none"> • The nature of geology • Geological time • Historical geology • Recording earth's geological history • Earth materials (rocks and 	

<ul style="list-style-type: none"> • Living systems respond to the environment <p><u>Ecosystems</u></p> <ul style="list-style-type: none"> • Population dynamics • Biodiversity • Population and community dynamics • Evolution, change and diversity <p><u>Animals</u></p> <ul style="list-style-type: none"> • Animal systems <p><u>Human-related</u></p> <ul style="list-style-type: none"> • Human biology <p><u>Cellular Biology</u></p> <ul style="list-style-type: none"> • Cell biology • Cell structure and function • The chemical basis of life • Biochemistry <p><u>Reproduction and Genetics</u></p> <ul style="list-style-type: none"> • Reproduction and development • Cell division, genetics and molecular biology • Genetics • Molecular genetics • Evolution • Genetic continuity 	<ul style="list-style-type: none"> • Light and waves • Vibrations • Dynamics • Equilibrium <p><u>Mechanical Systems</u></p> <ul style="list-style-type: none"> • Mechanical Energy • Mechanics • Fluid mechanics • Energy Transformations <p><u>Fields</u></p> <ul style="list-style-type: none"> • Gravitational • Electrical • Magnetic <p><u>Electricity and magnetism</u></p> <ul style="list-style-type: none"> • Electricity and Electrostatics • Electric circuits • Electromagnetic energy • Transformers and transducers <p><u>Radioactivity</u></p> <ul style="list-style-type: none"> • Radioactivity • Atomic and nuclear physics • Medical physics • Electromagnetic radiation <p><u>Other</u></p> <ul style="list-style-type: none"> • Revolutions in modern physics: • Quantum Mechanics and special relativity • Hydraulic and pneumatic systems 	<ul style="list-style-type: none"> • Energy changes and rates of reaction • Dynamics equilibrium • Energy changes in chemical reactions • Chemical systems and equilibrium • From solutions to kinetics to equilibrium <p><u>Acids and Bases</u></p> <ul style="list-style-type: none"> • Acid-base equilibria • Nature of acids and bases • Acids and bases: quantitative problem solving <p><u>Electrochemistry</u></p> <ul style="list-style-type: none"> • Electrochemical changes • Oxidation-Reduction • Application of Redox reactions <p><u>Solutions and Solubility</u></p> <ul style="list-style-type: none"> • Reactions in Aqueous solutions • Solubility equilibria <p><u>Organic Chemistry</u></p> <ul style="list-style-type: none"> • Organic chemistry • Chemical changes of organic compounds <p><u>Other</u></p> <ul style="list-style-type: none"> • Thermochemistry 	<p>minerals)</p> <ul style="list-style-type: none"> • Geological processes • Earth materials and resources • The forces within the earth • Internal processes and plate tectonic theory • Surface processes and the hydrosphere <p><u>Environmental Topics</u></p> <ul style="list-style-type: none"> • Ecological principles • Environmental geology • Environmental challenges and successes. • Introduction to Earth science • Earth resources: real life application • Human population and carrying capacity • Sustainable development • Natural resources • Environmental Challenges and Successes • Chemistry and the environment • Investigating environmental issues • Recreation and the environment 	
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