

# Alberta Science Programs – Topic Summary

**Introductory Notes:** The following chart summarizes topics within Alberta’s science program. Please refer to the program of studies for detailed information on what students learn at each grade level. Topics have been classified as Life Science, Earth Science and Physical Science solely for the convenience of the reader. Some units are highly integrative and draw on the subject matter from more than one discipline.

Grade	Life Science	Earth Science	Physical Science
<b>K</b>	• Environment and Community Awareness★		
<b>1</b>	<ul style="list-style-type: none"> <li>• Needs of Animals and Plants</li> <li>• Senses</li> </ul>	<ul style="list-style-type: none"> <li>• Seasonal Changes</li> </ul>	<ul style="list-style-type: none"> <li>• Creating Colour</li> <li>• Building Things</li> </ul>
<b>2</b>	<ul style="list-style-type: none"> <li>• Small Crawling and Flying Animals</li> </ul>	<ul style="list-style-type: none"> <li>• Hot and Cold Temperature</li> </ul>	<ul style="list-style-type: none"> <li>• Exploring Liquids</li> <li>• Buoyancy and Boats</li> <li>• Magnetism</li> </ul>
<b>3</b>	<ul style="list-style-type: none"> <li>• Animal Life Cycles</li> </ul>	<ul style="list-style-type: none"> <li>• Rocks and Minerals</li> </ul>	<ul style="list-style-type: none"> <li>• Building with a Variety of Materials</li> <li>• Testing Materials and Designs</li> <li>• Hearing and Sound</li> </ul>
<b>4</b>	<ul style="list-style-type: none"> <li>• Plant Growth and Changes</li> </ul>	<ul style="list-style-type: none"> <li>• Waste and Our World</li> </ul>	<ul style="list-style-type: none"> <li>• Wheels and Levers</li> <li>• Building Devices and Vehicles that Move</li> <li>• Light and Shadows</li> </ul>
<b>5</b>	<ul style="list-style-type: none"> <li>• Wetland Ecosystems</li> </ul>	<ul style="list-style-type: none"> <li>• Weather Watch</li> </ul>	<ul style="list-style-type: none"> <li>• Electricity and Magnetism</li> <li>• Mechanisms Using Electricity</li> <li>• Classroom Chemistry</li> </ul>
<b>6</b>	<ul style="list-style-type: none"> <li>• Trees and Forests</li> </ul>	<ul style="list-style-type: none"> <li>• Sky Science</li> </ul>	<ul style="list-style-type: none"> <li>• Air and Aerodynamics</li> <li>• Flight</li> <li>• Evidence and Investigation</li> </ul>
<b>7</b>	<ul style="list-style-type: none"> <li>• Interactions and Ecosystems</li> <li>• Plants for Food and Fibre</li> </ul>	<ul style="list-style-type: none"> <li>• Planet Earth</li> </ul>	<ul style="list-style-type: none"> <li>• Heat and Temperature</li> <li>• Structures and Forces</li> </ul>
<b>8</b>	<ul style="list-style-type: none"> <li>• Cells and Systems</li> </ul>	<ul style="list-style-type: none"> <li>• Freshwater and Saltwater Systems</li> </ul>	<ul style="list-style-type: none"> <li>• Mix and Flow of Matter</li> <li>• Light and Optical Systems</li> <li>• Mechanical Systems</li> </ul>
<b>9</b>	<ul style="list-style-type: none"> <li>• Biological Diversity</li> </ul>	<ul style="list-style-type: none"> <li>• Space Exploration</li> <li>• Environmental Chemistry</li> </ul>	<ul style="list-style-type: none"> <li>• Matter and Chemical Change</li> <li>• Electrical Principles and Technologies</li> </ul>

★Note: The Alberta Kindergarten Program Statement does not formally identify topics of study. The heading “Environment and Community Awareness” refers to a broad area for children’s learning that includes science-related themes.

## Alberta Science Programs – Topic Summary (continued)

<b>Program</b>	<b>Life Science</b>	<b>Earth Science</b>	<b>Physical Science</b>	<b>Chemistry</b>
<b>Science 14</b>	<ul style="list-style-type: none"> <li>Investigating Matter and Energy in Living Systems</li> </ul>	<ul style="list-style-type: none"> <li>Investigating Matter and Energy in the Environment</li> </ul>	<ul style="list-style-type: none"> <li>Understanding Energy Transfer Technologies</li> </ul>	<ul style="list-style-type: none"> <li>Investigating Properties of Matter</li> </ul>
<b>Science 24</b>	<ul style="list-style-type: none"> <li>Disease Defence and Human Health</li> </ul>		<ul style="list-style-type: none"> <li>Understanding Common Energy Conversion Systems</li> <li>Motion Change and Transportation Safety</li> </ul>	<ul style="list-style-type: none"> <li>Applications of Matter and Chemical Change</li> </ul>
<b>Science 10</b>	<ul style="list-style-type: none"> <li>Cycling of Matter in Living Systems</li> </ul>	<ul style="list-style-type: none"> <li>Energy Flow in Global Systems</li> </ul>	<ul style="list-style-type: none"> <li>Energy Flow in Technological Systems</li> </ul>	<ul style="list-style-type: none"> <li>Energy and Matter in Chemical Change</li> </ul>
<b>Science 20</b>	<ul style="list-style-type: none"> <li>Changes in Living Systems</li> </ul>	<ul style="list-style-type: none"> <li>The Changing Earth</li> </ul>	<ul style="list-style-type: none"> <li>Changes in Motion</li> </ul>	<ul style="list-style-type: none"> <li>Chemical Changes</li> </ul>
<b>Science 30</b>	<ul style="list-style-type: none"> <li>Living Systems Respond to Their Environment</li> </ul>	<ul style="list-style-type: none"> <li>Energy and the Environment</li> </ul>	<ul style="list-style-type: none"> <li>Electromagnetic Energy</li> </ul>	<ul style="list-style-type: none"> <li>Chemistry and the Environment</li> </ul>
<b>Biology, Chemistry, Physics 20</b>	<ul style="list-style-type: none"> <li>Energy and Matter Exchange in the Biosphere</li> <li>Ecosystems and Population Change</li> <li>Photosynthesis and Cellular Respiration</li> <li>Human Systems</li> </ul>		<ul style="list-style-type: none"> <li>Kinematics</li> <li>Dynamics</li> <li>Circular Motion, Work and Energy</li> <li>Oscillatory Motion and Mechanical Waves</li> </ul>	<ul style="list-style-type: none"> <li>The Diversity of Matter and Chemical Bonding</li> <li>Forms of Matter: Gases</li> <li>Matter as Solutions, Acids and Bases</li> <li>Quantitative Relationships in Chemical Changes</li> </ul>
<b>Biology, Chemistry, Physics 30</b>	<ul style="list-style-type: none"> <li>Nervous and Endocrine Systems</li> <li>Reproduction and Development</li> <li>Cell Division, Genetics and Molecular Biology</li> <li>Population and Community Dynamics</li> </ul>		<ul style="list-style-type: none"> <li>Momentum and Impulse</li> <li>Forces and Fields</li> <li>Electromagnetic Radiation</li> <li>Atomic Physics</li> </ul>	<ul style="list-style-type: none"> <li>Thermochemical Changes</li> <li>Electrochemical Changes</li> <li>Chemical Changes of Organic Compounds</li> <li>Chemical Equilibrium Focusing on Acid–Base Systems</li> </ul>

## Alberta Science Programs – Topic Summary (continued)

<b>Program</b>	<b>Life Science</b>	<b>Earth Science</b>	<b>Physical Science</b>
<b>Knowledge and Employability 8</b>	<ul style="list-style-type: none"> <li>• Cells and Systems</li> </ul>	<ul style="list-style-type: none"> <li>• Freshwater and Saltwater Systems</li> </ul>	<ul style="list-style-type: none"> <li>• Mix and Flow of Matter</li> <li>• Light and Optical Systems</li> <li>• Mechanical Systems</li> </ul>
<b>Knowledge and Employability 9</b>	<ul style="list-style-type: none"> <li>• Biological Diversity</li> </ul>	<ul style="list-style-type: none"> <li>• Space Exploration</li> <li>• Environmental Chemistry</li> </ul>	<ul style="list-style-type: none"> <li>• Matter and Chemical Change</li> <li>• Electrical Principles and Technologies</li> </ul>

<b>Program</b>	<b>Life Science</b>	<b>Earth Science</b>	<b>Physical Science</b>	<b>Chemistry</b>
<b>Knowledge and Employability Science 10-4</b>	<ul style="list-style-type: none"> <li>• Investigating Matter and Energy in Living Systems</li> </ul>	<ul style="list-style-type: none"> <li>• Investigating Matter and Energy in the Environment</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding Energy Transfer Technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Investigating Properties of Matter</li> </ul>
<b>Knowledge and Employability Science 20-4</b>	<ul style="list-style-type: none"> <li>• Disease Defence and Human Health</li> </ul>		<ul style="list-style-type: none"> <li>• Understanding Common Energy Conversion Systems</li> <li>• Motion Change and Transportation Safety</li> </ul>	<ul style="list-style-type: none"> <li>• Applications of Matter and Chemical Change</li> </ul>