



# Curriculum Connections Overview: Air Quality

Metro Vancouver K-12 School Programs align strongly with the B.C. curriculum – supporting place-based, experiential learning through engaging Field Trips, Resources, Teacher Workshops and Youth Leadership Programs. For more information, visit [www.metrovancouver.org](http://www.metrovancouver.org) (search “K-12 School Programs”).

## Science

### Big Ideas

### Content

GRADE <b>1</b>	Observable patterns and cycles occur in the local sky and landscape	<ul style="list-style-type: none"> <li>The knowledge of First Peoples: Shared First Peoples knowledge of the sky, Local First Peoples knowledge of the local landscape, animals and plants, Local First Peoples understanding and use of seasonal rounds</li> <li>Local patterns that occur on Earth and in the sky</li> </ul>
GRADE <b>4</b>	All living things sense and respond to their environment Energy can be transformed	<ul style="list-style-type: none"> <li>Biomes as large regions with similar environmental features</li> <li>Phases of matter</li> <li>The effect of temperature on particle movement</li> <li>Energy has: various forms, is conserved</li> </ul>
GRADE <b>5</b>	Earth materials change as they move through the rock cycle and can be used as natural resources	<ul style="list-style-type: none"> <li>First Peoples concepts of interconnectedness in the environment</li> <li>The nature of sustainable practices around BC’s resources</li> <li>First Peoples knowledge of sustainable practices</li> </ul>
SCIENCE <b>9</b>	The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them	<ul style="list-style-type: none"> <li>The effects of solar radiation on the cycling of matter and energy</li> <li>Matter cycles within biotic and abiotic components of ecosystems</li> <li>Sustainability of systems</li> <li>First Peoples knowledge of interconnectedness and sustainability</li> </ul>
SCIENCE <b>10</b>	Energy is conserved, and its transformation can affect living things and the environment	<ul style="list-style-type: none"> <li>Transformation of energy</li> <li>Local and global impacts of energy transformations from technologies</li> </ul>
EARTH SCIENCE <b>11</b>	The transfer of energy through the atmosphere creates weather, and this transfer is affected by climate change The distribution of water has a major influence on weather and climate	<ul style="list-style-type: none"> <li>Changes in the composition of the atmosphere due to natural and human causes</li> <li>Weather as the interaction of water, air, and energy transfer</li> <li>Solar radiation interactions and impacts on the energy budget</li> <li>Evidence of climate change</li> <li>First Peoples knowledge of climate change and interconnectedness as related to environmental systems</li> </ul>
ENVIRONMENTAL SCIENCE <b>11</b>	Changing ecosystems are maintained by natural processes	<ul style="list-style-type: none"> <li>Abiotic characteristics: aquatic, atmospheric, edaphic</li> <li>Human actions and their impact on ecosystem integrity</li> <li>First Peoples ways of knowing and doing</li> <li>Resource stewardship</li> </ul>
ENVIRONMENTAL SCIENCE <b>12</b>	Human activities cause changes in the global climate system	<ul style="list-style-type: none"> <li>Changes to climate systems</li> <li>Impacts of global warming</li> <li>Mitigation and adaptations</li> </ul>



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## Social Studies

### Big Ideas

### Content

<p>GRADE <b>1</b></p>	<p>We shape the local environment, and the local environment shapes who we are and how we live</p> <p>Healthy communities recognize and respect the diversity of individuals and care for the local environment</p>	<ul style="list-style-type: none"> <li>Relationships between a community and its environment</li> <li>Roles, rights, and responsibilities in the local community</li> <li>Natural and human-made features of the local environment</li> </ul>
<p>GRADE <b>2</b></p>	<p>Local actions have global consequences, and global actions have local consequences</p>	<ul style="list-style-type: none"> <li>Relationships between people and the environment in different communities</li> <li>Rights and responsibilities of individuals regionally and globally</li> <li>Roles and responsibilities of regional governments</li> </ul>
<p>GRADE <b>6</b></p>	<p>Complex global problems require international cooperation to make difficult choices for the future</p>	<ul style="list-style-type: none"> <li>The urbanization and migration of people</li> </ul>
<p>SOCIAL STUDIES <b>8</b></p>	<p>Human and environmental factors shape changes in population and living standards</p>	<ul style="list-style-type: none"> <li>Changes in population and living standards</li> </ul>
<p>SOCIAL STUDIES <b>10</b></p>	<p>The development of political institutions is influenced by economic, social, ideological, and geographic factors</p>	<ul style="list-style-type: none"> <li>Government, First Peoples governance, political institutions, and ideologies</li> <li>Environmental, political, and economic policies</li> <li>Domestic conflicts and cooperation</li> <li>International conflicts and cooperation</li> </ul>
<p>HUMAN GEOGRAPHY <b>12</b></p>	<p>Demographic patterns and population distribution are influenced by physical features and natural resources</p> <p>Human activities change landscapes in a variety of ways</p> <p>A geographic region can encompass a variety of physical features and human interactions</p>	<ul style="list-style-type: none"> <li>Relationships between cultural traits, use of physical space, and impacts on the environment</li> <li>Relationship between First Peoples and the environment</li> <li>Global agricultural practices</li> <li>Industrialization, trade and natural resource demands</li> <li>Factors behind increased urbanization and its influence on societies and the environment</li> </ul>
<p>PHYSICAL GEOGRAPHY <b>12</b></p>	<p>Natural processes have an impact on the landscape and human settlement</p> <p>Interactions between human activities and the atmosphere affect local and global weather and climate</p>	<ul style="list-style-type: none"> <li>Structure of, feedback within, and equilibrium of natural systems</li> <li>Distinguishing features (and interactions between) the atmosphere, hydrosphere, cryosphere, lithosphere, biosphere, and anthroposphere</li> <li>Features and processes of gradation and their effects on human and natural systems</li> <li>Features and Sun-Earth interactions and resulting patterns of climate, landscapes, and ecosystems</li> <li>Climate, weather, and interactions between humans and the atmosphere</li> </ul>
<p>URBAN STUDIES <b>12</b></p>	<p>Decision making in urban and regional planning requires balancing political, economic, social, and environmental factors</p> <p>Urban planning decisions and other government policies can dramatically affect the overall quality of life in cities</p>	<ul style="list-style-type: none"> <li>Functions of local and regional government</li> <li>Urban planning and urban design</li> <li>Decision making in the planning of cities and regions</li> <li>Contemporary issues in urban studies</li> </ul>