

# AFRICAN CANADIAN EXHIBIT

## Teacher's Package

CC7T12

The International African Inventors Museum has developed an intriguing school program in keeping with the Ministry of Education's goal for **'teachers to work with the community to develop programs that help students to make connections among various technologies and among broad-based technology and real life experiences.'** The exhibit presents the African Canadian Experiences that helped to shape the development of science and technology throughout the world. Students will learn about the key roles played by individuals to overcome their challenges and make an impact in their respective fields.

Teachers may wish to review the curriculum expectations for specific connections to their programs.

Overall the students will:

- **Understand basic concepts of science and technology;**
- **Demonstrate skills, strategies and habits of mind required for scientific inquiry and technological design; and**
- **Relate scientific and technological knowledge to each other and to the world outside the school**

### Assessment and Evaluation

The student **worksheet** compliments the self-guided time spent viewing the exhibit and will help to ensure that students are completing all elements of the assigned task.

You may wish to make observations of the students' commitment to task, willingness to examine exhibits carefully and completion of assigned task.

### Introductory Activity Suggestion

Have students begin to research specific technological developments and other important developments of African Canadians.

### Follow up Activities

#### Respond to the Exhibit

Sending students' & teachers' opinions about the Exhibit to the Black Scientist and Inventors Museum

#### Research projects in a variety of interdisciplinary areas;

- History
- Science (past and present contributors)
- Social Issues (racism, immigration)
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**AFRICAN CANADIAN EXHIBIT**  
**Teacher's Package**  
**Grades 7- 8**  
**CURRICULUM CONNECTIONS**

**Ontario Ministry of Education Expectations Addressed by the Exhibit**

**SCIENCE & TECHNOLOGY CURRICULUM CONNECTIONS**

<b>Strand</b>	<b>Grade 7</b>	<b>Grade 8</b>
<b>Life Systems</b>	<b>Interactions with Ecosystems</b> ~ Demonstrate an understanding of the effects of human activities and technological innovations, as well as the effects of changes that take place naturally, on the sustainability of ecosystems.	<b>Cells, Tissues, Organs and Systems</b> ~ Describe ways in which study of the structure, function and interdependence of human organ systems can result in improvements in human health.
<b>Matter and Materials</b>	<b>Pure substances and Mixtures</b> ~ Identify a variety of manufactured products made from mixtures or solutions and explain their functions (e.g., medicines)	<b>Fluids</b> ~ Identify some designs features and explain how the design makes use of one or more of the properties of fluids.
<b>Energy and Control</b>		<b>Optics</b> ~ Identify ways in which properties of reflection are used in everyday situations.
<b>Structure and Mechanisms</b>	<b>Structural Strength and Stability</b> ~ Tell the 'story' of a product used everyday, identifying the need it meets and describing its production, use and eventual disposal.	<b>Mechanical Efficiency</b> ~ Make informed judgments about products designed and made by others.

**HISTORY CURRICULUM CONNECTIONS**

<b>Strand</b>	<b>Grade 7</b>	<b>Grade 8</b>
<b>Canada</b>	<b>British North America</b> ~ Locate relevant information about how early settlers met the challenges of the new land, using a variety of sources (e.g., artifacts, field trips, original documents etc.) ~ Analyse, synthesize, and evaluate historical information (e.g., examine historical accounts for evidence of bias)	<b>The Development of Western Canada</b> ~ Demonstrate an understanding of how diverse groups and individuals have contributed to the growth and development of the Canadian West. ~Analyse and describe conflicting points of view about an historical event
<b>Canada</b>		<b>Canada: A Changing Society</b> ~ Demonstrate an understanding of how diverse groups and individuals have contributed to the historical, cultural, and economic development of Canada ~ Analyse, synthesize, and evaluate historical information (e.g., compare and evaluate the role of women in the nineteenth century and the twentieth century);

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**Grades 9-10**  
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**SCIENCE & TECHNOLOGY CURRICULUM CONNECTIONS**

<b>Strand</b>	<b>Grade 9</b>	<b>Grade 10</b>
<b>Biology</b> Academic & Applied	<b>Reproduction</b> ~ Describe/examine the importance of Canadian research and technological developments in genetics and reproductive biology. ~ Investigate careers that require an understanding of reproductive biology. ~ Select and integrate information from various sources, including electronic and print resources, community resources to answer questions chosen.	<b>The Sustainability of Ecosystems</b> ~ Analyse issues related to environmental sustainability and the impact of technology on ecosystems. ~ Investigate careers that involve knowledge of ecology or environmental technologies.
<b>Chemistry</b>	<b>Atoms and Elements</b> ~ Describe technologies associated with the refinement, use and recycling of chemical elements and compounds. ~ Describe technologies that have depended on understanding atomic and molecular structure; ~ Describe potential careers associated with an understanding of physical and chemical properties of elements and compounds	<b>Chemical Processes</b> ~ Demonstrate why knowledge of chemical reactions is important in developing consumer products and industrial processes and in addressing environmental concerns. ~ Select and integrate information from various sources, including electronic and print resources, community resources to answer questions chosen. ~ Identify everyday examples where the rates of chemical reactions are modified. ~ Describe careers based on technologies that utilize chemical reactions.
<b>Physics</b>	<b>The Characteristics of Electricity</b> ~ Explain practical applications of static and current electricity. ~ Describe how some common household electrical appliances operate.	<b>Motion</b> ~ Analyse everyday phenomena and technologies in terms of the motions involved.
<b>Technological Education</b>	<b>Integrated Technologies</b> ~ Demonstrate understanding of how to develop products or provide services to meet identified needs.	

**HISTORY CURRICULUM CONNECTIONS**

<b>Strand</b>	<b>Grade 9</b>	<b>Grade 10</b>
<b>Canada &amp; World Studies</b>	<b>British North America</b> ~ Locate relevant information about how early settlers met the challenges of the new land, using a variety of sources (e.g., artifacts, field trips, original documents etc.) ~ Analyse, synthesize, and evaluate historical information (e.g., examine historical accounts for evidence of bias)	~ Demonstrate an understanding of the impact of technological developments on Canadians. ~ Evaluate/analyse information when researching historical topics or issues ~ Demonstrate an ability to draw conclusions base on adequate and relevant supporting evidence. ~ Make reasoned generalizations or appropriate predictions based on research

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**Grades 11-12**  
**CURRICULUM CONNECTIONS**

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**SCIENCE & TECHNOLOGY CURRICULUM CONNECTIONS**

<b>Strand</b>	<b>Grade 11</b>	<b>Grade 12</b>
<b>Biology</b> Academic & Applied	<b>Internal Functions</b> ~ Identify examples of technologies that have enhanced scientific understanding of internal systems. ~ Analyse ways in which societal needs have led to technological advances related to cellular processes. ~ Identify and describe Canadian contributions to technologies and techniques related to genetic processes.	<b>Genetics</b> ~ Describe some of the theoretical issues surrounding scientific research into genetic continuity; the general impact and philosophical implications of the knowledge gained; and some of the issues raised by related technological applications.  ~ Investigate careers that involve knowledge of ecology or environmental technologies.
<b>Chemistry</b>	<b>Matter</b> ~ Describe how an understanding of matter and its properties can lead to the production of useful substances and new technologies.	~ Demonstrate examples of technologies that depend on exothermic or endothermic changes
<b>Physics</b>	<b>Forces and Motion</b> ~ Evaluate and describe technological advances related to motion; and identify the effects of societal influences on transportation and safety issues. ~ Analyse ways in which an understanding of the dynamics of motion relates to the development and use of technological devices.	<b>Energy</b> ~ Analyse and describe the application of the concepts of energy and momentum to the design and development of a wide range of collision and impact - absorbing devices used in everyday life. ~ Analyse and describe, using the concepts and laws of energy and of momentum, practical applications of energy transformations and momentum conservation.
<b>Technological Education</b>	<b>Integrated Technologies</b> ~ Demonstrate understanding of the principles of science underlying applications of technology in everyday life. ~ Evaluate the design and function of an everyday technology using identified criteria. ~ Describe the importance of contributions of Canadian scientists to the development of modern everyday technologies.	

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**HISTORY CURRICULUM CONNECTIONS**

	<b>Grade 11</b>	<b>Grade 12</b>
Canadian and World Studies	<p><i>(Canadian History and Politics Since 1945)</i>  <b>Communities: Local, National, and Global</b>            ~ Demonstrate an understanding of the contributions of recently arrived and more established peoples and cultures to Canadian society.</p>	<p><i>(Canada: History, Identity and Culture)</i>  <b>Change and Continuity</b>            ~ Evaluate the extent to which technological and scientific innovations in the home have affected Canadians' everyday lives and helped shape national identity.            ~ Analyse how obstacles that made it difficult for immigrants to participate fully in Canadian society have been challenged and reduced over time.</p>
	<p><i>(Twentieth Century History)</i>  <b>Citizenship and Heritage</b>            ~ Analyse key factors that have interfered with individual and group rights during the twentieth century</p>	<p><i>(Adventures in World History)</i>  <b>Communities: Work, Technology, and Construction</b>            ~ Identify key developments in communications technologies from the Stone Age to the present and evaluated their effects on interactions between communities             ~Identify key developments in transportation technologies from the Stone Age to the present and evaluate their effects on interactions between communities             ~ Identify key developments in scientific and medical technologies from the Stone Age to the present and describe their impact on the community   <b>Change and Continuity</b>            ~ Demonstrate an understanding of key developments in agriculture through the course of history</p>