

A Growing Population Will Mean Growing Demand For Food, Energy and Water (Video 5)

This resource is intended for teachers. It outlines how the Alberta WaterPortal’s video *A Growing Population Will Mean Growing Demand for Food, Energy and Water* aligns with the curriculum presented in Alberta Education’s Programs of Study.

<p>Curriculum Links</p> <p>What courses from Alberta Education’s Program of Studies are applicable to this video?</p>	<ul style="list-style-type: none"> • Science 20 – Unit D – Changes in Living Systems • Science 30 – Unit D – Energy and the Environment • Career and Technology Studies (CTS) - Cluster D: Natural Resources (Agriculture and Environmental Stewardship) • Social Studies 10 • Biology 20 – Unit B – Ecosystems and Population Change • ENS 115: Resource Management • ENS 1040: Living with the Environment • ENS 1115: Resource Management • ENS 2010: Water Management 1 • ENS 2030: Ecological Economics • ENS 2040: Environmental Health and Safety • ENS 3040: Energy & the Environment • ENS 3110: Integrated Resource Management • ENS 3120: Water management 2 • Sci 9 Environmental Chemistry • Sci 10: Energy Flow in Global Systems
<p>Key Concepts</p>	<ul style="list-style-type: none"> • The world's population is rapidly growing. As the population increases, so too will the demands for water needed to create energy and grow food. • There is a need to balance the interests of a growing human population with sustainable ecosystems. • Society’s water use has impacts on water quality and quantity. • There is a need for water conservation from both industry and domestic users. • There is a need to develop energy-efficient technologies to conserve water. • The impacts of globalization from people, the economy and the environment must be

	<p>studied to ensure water quality is maintained.</p> <ul style="list-style-type: none"> • Actions and policies associated with globalization impact the environment. • Globalization affects individuals and communities (migration, technology, agricultural issues, pandemics, resource issues, contemporary issues). • More water users will have to share the same amount of water while producing more. • The agriculture industry is expected to face the greatest impact of a growing population, and has begun implementing ways to conserve water while producing more food. • New practices and innovations will conserve water supplies and help Alberta meet the world’s growing demands for food and energy.
<p>Objectives</p>	<ul style="list-style-type: none"> • Students will investigate the potential impacts of population growth on local and global populations. • Students will explore some of the technologies used to mitigate the risks on energy and food supplies due to the rising population. • Students will look at the impact of water conservation efforts on a local and global scale.
<p>Glossary of Terms</p>	<p>Irrigation: the application of controlled amounts of water to plants at needed intervals. Irrigation helps to grow agricultural crops, maintain landscapes, and revegetate disturbed soils in dry areas and during periods of less than average rainfall.</p> <p>Thermoelectric generation: The conversion of thermal energy to electrical energy. Thermoelectric generation relies on a fuel source (e.g. fossil, nuclear, biomass, geothermal, or solar) to heat a fluid to drive a turbine.</p> <p>Generator: A machine that converts mechanical energy to electricity for transmission and distribution over power lines to domestic, commercial, and industrial customers.</p>

<p>Classroom and Online Activity Suggestions</p>	<ul style="list-style-type: none"> • Participate in a group discussion about how globalization impacts water users in Alberta. • Research emerging technologies that are helping conserve water. • Write a report that outlines a potential career related to water conservation. • Prepare a poster that contrasts the diets of people in developing and developed countries in terms of water efficiency and environmental impact, and show ways to address potential food shortages in the future.* • Prepare a presentation that compares the growth pattern of the human population to that of other species. * • Write a report that discusses the use of water by society, the impact such use has on water quality and quantity in ecosystems, and the need for water purification and conservation. Keep in mind activities such as manufacturing and processing, the petrochemical industry, agricultural systems, the mining industry and domestic daily water consumption.*
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*Indicates Activity was amended from the CBE Program of Studies.