

MODULE AGR1110: RESOURCE MANAGEMENT

Level: Introductory

Theme: Management and Conservation

Prerequisite: None

Module Description: Students describe the practices used to manage water, soil and land use; and they present the results of research on one or more related issues in agriculture.

Module Parameters: Access to community and government agencies responsible for sustainable resource management.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> describe the nature and extent of Alberta's water resource, and explain practices for managing its use 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> given outline maps of Alberta, locating and describing: <ul style="list-style-type: none"> four major rivers and four major lakes geographic areas where irrigation is a common practice. <p><i>Assessment Tool</i> <i>Task Checklist for Mapping, AGRMAP</i></p> <p><i>Standard</i> <i>Complete applicable mapping tasks to a standard of 1 on the rating scale</i></p> <ul style="list-style-type: none"> explaining three or more practices used in Alberta to manage limited and/or excess water supplies for agriculture. <p><i>Assessment Tool</i> <i>Knowledge/Application Assessment: Water Management Practices, AGR1110-1</i></p> <p><i>Standard</i> <i>Respond to a standard of 1 on the rating scale</i></p>	<p>25</p>

MODULE AGR1110: RESOURCE MANAGEMENT (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • describe the nature and characteristics of soil in Alberta, and explain practices for managing its use • explain different uses of land in rural and urban Alberta and the factors upon which land use decisions are made 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • a presentation or report that describes the characteristics of soil in Alberta and its influence on agriculture practices. Presentation/report to address: <ul style="list-style-type: none"> – the identification of major soil zones in Alberta – the characteristics of soil within each zone and their influence on agriculture – explanations of three or more soil management practices commonly used in Alberta. <p><i>Assessment Tool</i> <i>Presentations/Reports: Introductory Level, AGRPRE-1</i></p> <p><i>Standard</i> <i>Achieve a minimum rating of 1 on the rating scale for Presentations/Reports</i></p> <ul style="list-style-type: none"> • completing a research project on rural and urban land use in Alberta. Research to include: <ul style="list-style-type: none"> – examples of five rural and five urban land uses – consideration of factors involved in making each land use decision – development of a plan (including a 2-D/3-D model) for the use of a specific piece of rural or urban land. <p><i>Assessment Tool</i> <i>Research Process: Rural and Urban Land Use, AGR1110-2</i></p> <p><i>Standard</i> <i>Complete all components of research to a standard of 1 on the rating scale</i></p>	<p>25</p> <p>25</p>

MODULE AGR1110: RESOURCE MANAGEMENT (continued)

Concept	Specific Learner Expectations	Notes
<p>Water Management (continued)</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • research techniques used to manage limited and excess water supplies in agriculture; e.g.: <ul style="list-style-type: none"> – irrigation, storage, conservation practices – diversion, drainage, flood control • cite examples of legislation used to manage the water resource in Alberta • describe the effects of agricultural practices on water quality • explain the impacts of limited, excessive or inappropriate water supplies on humans, livestock, crops, wildlife and ecosystems • propose strategies for managing water within a specific rural, urban and/or indoor agriculture environment. 	<p>Compare and contrast effective and ineffective management strategies.</p> <p>Examples:</p> <ul style="list-style-type: none"> • water rights • pollution control. <p>Relate prevailing winds and topography to precipitation patterns in Alberta.</p> <p>Consider/discuss trade-offs in water use.</p>
<p>Soil Management</p>	<ul style="list-style-type: none"> • describe the nature and composition of soils present in different regions of Alberta, and their potential to support agriculture • identify physical, chemical and biological characteristics of soil that determine its suitability for use in agriculture • describe the advantages and disadvantages of different management practices; e.g.: <ul style="list-style-type: none"> – chemical treatments, addition of organic material – cultivation, no tillage practices – water conservation practices • explain the impacts of soil quality on crops and livestock • propose strategies for managing soil within a specific rural, urban and/or indoor environment. 	<p>Investigate:</p> <ul style="list-style-type: none"> • soil development process • soil functions • soil zones and classification • mineral, organic, air and water content. <p>Compare different soil types in relation to water retention/movement.</p> <p>Research nutrient cycles.</p> <p>Identify organic and inorganic nutrients.</p> <p>Cite practices leading to:</p> <ul style="list-style-type: none"> • erosional loss • nutrient loss. <p>Discuss alternatives in soil management.</p> <p>Research composting methods. Construct/monitor a compost pile.</p>

MODULE AGR1110: RESOURCE MANAGEMENT (continued)

Concept	Specific Learner Expectations	Notes
Land Use	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • describe different uses of land in rural and urban Alberta; e.g.: <ul style="list-style-type: none"> – resource development – urban development – recreation/protected and natural areas – transportation corridors • define and give examples of multiple use, conservation and sustained yield within the context of water, soil and land use • describe legislation and policies used to manage land in Alberta; e.g.: <ul style="list-style-type: none"> – land zoning/classification – environmental impact assessment – multiple use/range management courses • identify appropriate uses for land in agriculture by considering: <ul style="list-style-type: none"> – soil characteristics and topography – water and climate – market value of products – environmental stewardship. 	<p>Research public and private land stewardship agencies.</p> <p>Examine historical changes in land use.</p> <p>Set goals for land use in an area.</p> <p>Identify concerns related to land use:</p> <ul style="list-style-type: none"> • depletion of moisture/nutrients • soil erosion • removal of natural pest control organisms. <p>Assess alternative uses of a specific land site:</p> <ul style="list-style-type: none"> • agriculture • wood land • recreation • wildlife habitat • building site.
Issues in Resource Management	<ul style="list-style-type: none"> • present the results of research on an issue involving water, soil or land use in agriculture; e.g.: <ul style="list-style-type: none"> – identify major viewpoints and stakeholders – distinguish among facts, opinions and beliefs – outline alternatives and consequences • explain the issue by analyzing information gathered. 	<p>Contact local government agencies.</p> <p>Collect news articles.</p> <p>Resource management is also important in agriculture processing. Consider issues related to water use, solid waste, packaging reduction and energy conservation.</p> <p>Use computer simulation programs.</p>

