Agriculture Studies 30

Curriculum Guide

A Practical and Applied Art

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Introduction

Within Core Curriculum, the Practical and Applied Arts (PAA) is a major area of study that incorporates five traditional areas of Home Economics Education, Business Education, Work Experience Education, Computer Education, and Industrial Arts Education. Saskatchewan Education, its educational partners, and other stakeholders have collaborated to complete the PAA curriculum renewal. Some PAA curriculum guidelines have been updated; some components have been integrated, adapted, or deleted; some Locally Developed Courses have been elevated to provincial status; and some new guidelines have been developed.

A companion *Practical and Applied Arts Handbook* provides background on Core Curriculum philosophy, perspectives, and initiatives. The Handbook articulates a renewed set of goals for PAA. It presents additional information about the PAA area of study, including guidelines about work study and related Transition-to-Work dimensions. In addition, a PAA Information Bulletin provides direction for administrators and others regarding the implementation of PAA courses. Lists of recommended resources for all guidelines will be compiled into a PAA Bibliography with periodic updates.

Philosophy and Rationale

Saskatchewan has been and continues to be a world leader in traditional, production-based agriculture. Over the past decade the agricultural industry has shifted its focus toward developing and improving value-added and diversified agriculture.

In contrast to traditional forms of production-based agriculture, value-added agriculture uses the foundations of production-based agriculture but directs its focus on earning the best possible return for Saskatchewan agricultural commodities by processing the initial commodity. Diversified agriculture focuses on broadening the types of agricultural commodities produced or processed in Saskatchewan.

Integral components of value-added and diversified agriculture are a variety of related goods and services. Related goods include crop and livestock production products; related services include transportation, marketing, manufacturing, as well as information and financial services.

It is important to the Saskatchewan economy that value-added agriculture and diversified agriculture, as well as their related services, change and adapt continually in order to earn the best possible return for Saskatchewan commodities in the domestic and global marketplace. More importantly, however, is the extent to which value-added and diversified agriculture can and is based in local Saskatchewan communities. This means that a wider variety of employment and economic opportunities should be created. These opportunities are particularly important and relevant to students and young people. Providing students with practical knowledge and skills to become involved in value-added or diversified agriculture, as well as their related services, will help them participate in Saskatchewan's future.

Aim, Goals, and Foundational Objectives

Aim

The aim of Agriculture Studies is to provide students with knowledge, skills, and abilities enabling them to pursue careers or employment opportunities in value-added or diversified agriculture or in the related goods and services supporting them.

Goals

Awareness: To provide students with an awareness of the nature of value-added and diversified agriculture as well as the related goods and services that support them.

Connections between School and Work: To create a connection for students between the world of school and the world of work in Agriculture.

Business and Entrepreneurship Attitudes: To develop the skills and abilities which encourage students to pursue opportunities in value-added and diversified agriculture via post-secondary education, apprenticeship programs, entrepreneurial endeavors, or in the workplace.

Community Environment: To use relevant community agriculture examples which will help develop students' skills and abilities as well as encourage a sense of pride and community.

Communication: To develop social and communication skills as potential employees or employers in agriculture.

Employability Skills: To encourage the development of employability skills through agriculture.

Personal Management Skills: To promote self-esteem, confidence, and a pro-active attitude toward agricultural business and the community.

Foundational Objectives

Foundational objectives are the major, general statements that guide what each student is expected to achieve for the modules of the PAA curriculum guidelines. Foundational objectives indicate the most important knowledge, skills, attitudes/values, and abilities for a student to learn in a subject. Both the Foundational Objectives for Agriculture Studies 30 and the Common Essential Learnings (CELs) Foundational Objectives to be emphasized are stated in this document. Some of these statements may be repeated or enhanced in different modules for emphasis. The Foundational Objectives of the Core Modules of the Agriculture Studies 30 curriculum include:

- To demonstrate knowledge of the diversity and significance of Saskatchewan agriculture, agri-food, and agri-fibre industries.
- To develop effective skills in marketing an agricultural product or related service.
- To describe the range of activities involved in selecting, producing, processing, transporting, and marketing an agricultural commodity, value-added product, or service.
- To describe the use of technologies and practices in processing a value-added product, or providing a related service.
- To understand the concept and need for quality assurance of an agricultural commodity, value-added product, or related service.
- To be able to describe and access careers and job opportunities in agriculture.
- To develop effective information gathering and communication skills used in agriculture.

The Foundational Objectives of the Optional Modules of the curriculum include:

- To develop an understanding of customer service.
- To develop an understanding of diversified agriculture.
- To develop an awareness of the requirements of and factors affecting packaging, storage, and distribution of value-added products, diversified agricultural commodities, or the products supplied by agricultural-related services.
- To develop an understanding of the considerations and processes involved in selecting an agricultural enterprise.
- To develop an understanding of value-added agriculture, diversified agriculture, or related goods and services from past and future perspectives.
- To gain knowledge and experience in processing a value-added product.
- To develop workplace skills in the value-added or diversified agriculture sector or in related services.
- To apply concepts and information from the classroom to the workplace.

All of the subject and CELs Foundational Objectives are stated explicitly at the beginning of each module.

Course Components and Considerations

Course Description

Agriculture Studies 30 is a curriculum within the area of Practical and Applied Arts and requires 100 hours of instruction. The course has been developed to provide a balance between:

- *awareness* provided by relevant information and practical application of concepts;
- *exposure* to relevant businesses or farms involved in diversified or value-added agriculture; and,
- *opportunities* for mentoring, job shadowing, or work study using resources in the community.

Important characteristics of the course are:

- use of, or involvement with community industries, human resources and related support services in order to provide relevant examples of the concepts presented in the course;
- integration of career exploration throughout the course; and,
- application of effective communication skills in areas such as customer service and providing quality assurance of products and services.

Insight into community industries and related agricultural services has the potential to provide transitions to occupations in Saskatchewan agriculture, agri-food, and agri-fibre industries.

The course will provide desirable background and skills for entry into related programs at public and vocational colleges, technical institutes, apprenticeship programs, and universities in Saskatchewan.

Modules for Agriculture Studies 30

Agriculture Studies 30 is organized into three sets of modules.

Core Modules (1 - 7 inclusive) encompass 50 - 65 hours of instruction. These modules are “Core” or required modules developed to build basic knowledge, skills, and abilities about value-added and diversified agriculture and about their related services.

Optional Modules (8 - 15 inclusive) encompass 50 - 70 hours of instruction. These optional modules have been developed to assist in meeting the particular interests of individual students. Students should be encouraged to develop learning contracts indicating their particular area of interest. Module 16 and 17 are Work Study modules.

Optional Work Study Modules (16 and 17) encompass 5-10 hours of Work Study Preparation and Follow-up Activities and a minimum of 25 hours of work study.

Module Overview

Module Code	Module	Suggested Time
AGST01	Module 1: Agriculture Today (Core)	5-7 hours
AGST02	Module 2: Production Networks From Producer to Consumer (Core)	15-17 hours
AGST03	Module 3: The Role and Uses of Agriculture Technology (Core)	7-10 hours
AGST04	Module 4: Information and Effective Communication (Core)	5-7 hours
AGST05	Module 5: Marketing (Core)	10-12 hours
AGST06	Module 6: Quality Assurance (Core)	5-7 hours
AGST07	Module 7: Career Exploration (Core)	3-5 hours
AGST08	Module 8: Customer Service (Optional)	4-6 hours
AGST09	Module 9: Diversified Agriculture (Optional)	10-12 hours
AGST10	Module 10: Rules and Regulations (Optional)	5-8 hours
AGST11	Module 11: Local Perspectives (Optional)	4-6 hours
AGST12	Module 12: Packaging, Storage, and Distribution (Optional)	6-8 hours
AGST13	Module 13: Selecting an Enterprise (Optional)	8-10 hours
AGST14	Module 14: Historical Perspectives and Future Trends (Optional)	3-5 hours
AGST15	Module 15: Producing a Value-added Product (Optional)	10-15 hours
AGST16	Module 16: Work Study Preparation and Follow-up Activities (Optional)	5-10 hours
AGST17	Module 17: Work Study (Optional)	25-50 hours

Selecting Modules

All students are required to take Core Modules 1 through 7. Students should begin reviewing the optional modules as soon as possible in order to prepare their own learning contracts either as groups or as an individual. For example, an individual student may be interested in only one area of agriculture (value-added, diversified, or related good and services) and choose to expand his/her knowledge in that particular area.

Students should be encouraged to develop their own learning contracts according to their own needs. Each module has a suggested range of instructional hours allowing for flexibility in designing individual learning plans.

Examples of Course Configuration

<table>
<tr><th>Example 1:

Value-added Agriculture</th><th>Example 2:

Diversified Agriculture</th><th>Example 3:

Related Goods and Services</th></tr>
<tr><td>Core Modules 1- 7
(60 hours)</td><td>Core Modules 1- 7
(50 hours)</td><td>Core Modules 1- 7
(55 hours)</td></tr>
<tr><td>Module 8:
Customer Service
(5 hours)</td><td>Module 9:
Diversified Agriculture
(10 hours)</td><td>Module 16: Work Study Preparation and Follow-up Activities
(10 hours)</td></tr>
<tr><td>Module 10:
Rules and Regulations
(6 hours)</td><td>Module 11: Local perspectives
(6 hours)</td><td rowspan="4">Module 17:
Work Study Module
(35 hours)

Training plan includes foundational and learning objectives from:

• Module 8: Customer Service
• Module 10: Rules and Regulations
• Module 12: Packaging Storage and Distribution</td></tr>
<tr><td>Module 12: Packaging, Storage and Distribution
(6 hours)</td><td>Module 16: Work Study Preparation and Follow-up Activities
(5 hours)</td></tr>
<tr><td>Module 13: Selecting an Enterprise
(8 hours)</td><td rowspan="2">Module 17: Work Study
(29 hours)
Training plan includes foundational and learning objectives from:
Module 10: Rules and Regulations
Module 12: Packaging, Storage and Distribution</td></tr>
<tr><td>Module 15: Producing a Value-added Product
(5 hours)</td></tr>
</table>

Preparing for Agriculture Studies 30

Agriculture Studies 30 is not a "stay in your desk" curriculum. It has been developed to encourage students to learn about agriculture locally. This means providing students with current resources and opportunities to interact with individuals or business in the nearby agricultural community.

Teachers should identify and select instructional resources, work study opportunities, field trips, or demonstration sites prior to implementing the Agriculture Studies 30 course.

Example of a Planning Schedule for Teachers

Time period	To Do
Prior to course	Identify and order resource materials. Identify and select possible field trip or demonstration sites. Identify possible work study opportunities.
Early in course	Work with students to: • identify areas of interest; • locate and gather information; • identify and arrange field trip sites; • identify and arrange work study opportunities. (Consult the guidelines in the *PAA Handbook*.); and, • develop individual learning contracts.
Mid-way	Review/revise individual learning contracts.
Ending of course	Remind students of deadlines. Prepare for final assessment.

Instructional Approaches and Methods

Various instructional approaches and methods are presented in the *PAA Handbook*. Consult Saskatchewan Education's (1991) foundation document *Instructional Approaches. A Framework for Practice*, for additional information.

In addition to Direct Instruction, Agriculture Studies 30 encourages the use of the following instructional strategies and methods.

Indirect Instruction

- case histories
- case studies
- concept mapping
- concept attainment

Interactive

- interviewing
- presentations
- group work
- discussion
- mentoring

Experiential

- field trips
- field observations
- surveys
- job shadowing

Independent Learning

- reports
- research projects
- learning contracts
- journals

Additional information on these instructional methods follows.

Case Histories

Case histories are objective and non-judgmental descriptions or compositions that document the chronology of a particular event or case example. Using case histories of individuals and businesses in value-added or diversified agriculture is an important instructional method and learning opportunity. Students can learn a tremendous amount by gathering case histories of value-added, diversified, or related goods and services aspects of agriculture.

Case histories used in Agriculture Studies 30 are developed in the following way:

- assign scenarios based on real-life value-added and diversified situations that students would observe;
- describe them as objectively as possible;
- develop an overall picture or understanding of a particular diversified or value-added activity; and,
- identify specific aspects such as particular characteristics, technologies used, or skills.

Appendix C provides an example of a case history format.

Case Studies

In contrast to case histories, case studies are subjective, analytical compositions used to identify problem areas or potential opportunities as well as to form conclusions, provide summaries, make recommendations, and formulate plans.

Case studies used in Agriculture Studies 30 are developed in the following way:

- case histories are used for preliminary information;
- problem areas are identified;
- solutions and ideas are suggested; and,
- potential plans are assessed and/or evaluated.

Appendix D provides a format for a case study.

Gathering Case Histories or Case Studies

Case histories and case studies can be gathered using field observations, field trips, job shadowing, or work study. All visits should be pre-arranged and the purpose of each visit made clear to the students and the hosts. To acknowledge the valuable contribution of community resources for the class, students should compose follow-up/thank you letters.

Learning Contracts

Agriculture Studies 30 provides the opportunity for students to engage in more individualized exploration and application of skills and abilities through optional modules in value-added, diversified agriculture, or related goods and services. Learning contracts allow for flexibility and student control of learning. Examples of learning contracts can be found in Saskatchewan Education's (1991) foundation document, *Student Evaluation: A Teacher Handbook.*

Using the Community as a Learning Environment

This course is characterized by the use of businesses, farms, industries, and experts located in the community. Examples of community resources include various places and people:

- stockyards
- processing plants
- greenhouse operators
- local inventors
- entrepreneurs
- grain elevators
- auction marts
- chemical or fertilizer dealers
- local food or fibre processors
- short-line equipment manufacturers
- machinery dealers

Teachers need to consider the characteristics of the community, the nature of community resources, and the experiences of the students when planning for instruction. In other words, adjustments should be made to accommodate the particular circumstances of the community as well as the background of the students.

Confidentiality

Using the community as a resource to find examples of value-added or diversified agriculture can be a rewarding experience. Students should be cautioned about:

- making value judgments;
- misusing the information they have gathered; and,
- revealing personal or business information.

Resource-based Learning

Value-added and diversified agriculture and the related goods and services that support them are evolving and changing continually. Finding and using the most current information on commodities or goods and services are among the most important activities involved in today's world of agriculture.

Throughout Agriculture Studies 30, students and teachers are encouraged to find and use the most current information and resources available in print, on video, and via Internet resources. Field trips, site visitations, and guest speakers also can provide current information.

Saskatchewan Agriculture and Food is an important source of current information resources for Agriculture Studies 30. Resources can be ordered from the Publication Distribution Centre Order Desk by telephone at 1-888-613-3975; by fax at (306) 721-4626 or email pad@sk.sympatico.ca. The Saskatchewan Agriculture and Food's website is http://www.agr.gov.sk.ca/saf.

Agriculture Studies 30 and the World of Work

One of the goals of Agriculture Studies 30, as well as other Practical and Applied Arts, is to create a connection between the world of school and the world of work.

Agriculture Studies 30 helps students make this connection using a continuum of activities ranging from instructional methods which help create awareness and develop skills and abilities to an optional module on Work Study.

Opportunities involving transition-to-work occur on a continuum.

Awareness **Exploration**

Instructional Methods

- classroom instruction using various methods including:
  - field trips
  - demonstrations
  - mentoring
  - job shadowing

Work Study

- 25 - 50 hours in a workplace involving:
  - training plans
  - student preparation, monitoring, and evaluation by the certified teacher

Additional information can be found in Saskatchewan Education's *Instructional Approaches: A Framework for Practice* (1991), *Practical and Applied Arts Handbook* (TBD), and the *Work Experience Education Guidelines* (1989).

Common Essential Learnings (CELs) Coding

COM	**=**	**Communication**
NUM	**=**	**Numeracy**
CCT	**=**	**Critical and Creative Thinking**
TL	**=**	**Technological Literacy**
PSVS	**=**	**Personal and Social Values and Skills**
IL	**=**	**Independent Learning**

Although certain CELs are to be emphasized in each module, as indicated by the CELs Foundational Objectives, other interrelated CELs may be addressed at the teacher's discretion.

Core Modules

Module 1: Agriculture Today (Core)

This module is intended to help students develop an understanding of current and future trends in Saskatchewan agriculture; specifically, value-added and diversified agriculture as well as the related services that support this sector of the economy. Throughout the modules, students become acquainted with agricultural vocabulary and terms. They will also become familiar with the concepts of value-added, related services, and diversified agriculture.

Suggested time: 5-7 hours

Foundational Objective

- To demonstrate knowledge of the diversity and significance of Saskatchewan agriculture, agri-food and agri-fibre industries.

Common Essential Learnings Foundational Objective

- To promote deductive, intuitive, and imaginative thought on the current status and future of Saskatchewan agriculture. (CCT)

Other CELs may be emphasized.

	Learning Objective	Notes
1.1	To describe the diversity of Saskatchewan's agricultural industry.	Encourage a class discussion on the following description of: Agriculture, Agricultural System, Food and Fibre system. These terms are used broadly and include the production of agricultural commodities, such as food, fibre, wood products, horticultural crops, and other plant and animal products. The terms also include the financing, processing, researching, marketing, and distribution of agricultural products, farm production supply and service industries; health, nutrition, and food consumption; the use and conservation of land, and water resources; and related economic, sociological, political, environmental, recreational and cultural characteristics of the food and fibre system. (Saskatchewan Education. (1992). *Agriculture in the Classroom Reference Committee: Final Report*, p. 25)

Learning Objectives **Notes**

Use the above description of agriculture or one that has been developed by the class to act as a framework for students to brainstorm examples of the diversity of Saskatchewan agriculture, particularly in the local area. Write the examples on chart paper. Ask students to categorize these examples into traditional, value-added, diversified agriculture, and related services.

Value-added agriculture is described as: adding value to an agricultural commodity through processing

Diversified agriculture is described as: increasing the number of types of agricultural businesses

Related goods and services are described as: those businesses, organizations, and services, including government, that provide various functions and support to all sectors of agriculture.

Discuss and emphasize the contrast but also ask students to consider the interrelationship among the categories.

Use field trips to enhance students understanding as well as to identify potential work experience situations. Opportunities for field trip sites include:

- greenhouses
- food processors
- auction marts
- elevators
- inland terminals
- stockyards
- diversified livestock operations (elk, deer, bison, emu)
- equine ranches
- machinery dealership
- feedlot operations
- agricultural shows
    - Canadian Western Agribition
    - Farm Progress Show
    - Gardenscape
    - Crop Production Show

	Learning Objectives	Notes
1.2	To develop an understanding of the vocabulary and concepts of diversified and value-added agriculture and of their related services.	Have students prepare a journal using terminology and concepts associated with value-added and diversified agriculture. The journal should be used throughout the course and could be used as a self-assessment for students to check their own understanding of the concepts and terms of value-added and diversified agriculture. Case histories, case studies, and the student's own records could be included in the journals. Encourage students to use vocabulary associated with agriculture. Have students prepare a journal using terminology and concepts in their writing. The journal should be used throughout the course and could be used as a self-assessment for students to check their own understanding of the concepts and terms of value-added and diversified agriculture as well as related services. At this stage, encourage students to discuss their understanding of a number of terms associated with agriculture including: • primary production • production agriculture • commodities • producers • consumers • markets • diversification • food • fibre • non-food • value-added agriculture • diversified agriculture • related services
1.3	To keep informed about current events and issues pertaining to value-added and/or diversified agriculture or related goods and services. (IL)	Agriculture and the agri-food industry will continue to change rapidly. It is important for producers to remain informed and use the most current information possible. As an activity continuing throughout the year, have students prepare a portfolio (a binder works well) of information about value-added and/or diversified agriculture or related goods and services. Using the *Western Producer*, as well as other publications and websites, have students maintain a record of specific sections or topics of personal interest. They could prepare a precis of the article or website. Have students include sections on economics, markets, careers, innovations, editorials, current issues, people, research and development, etc. After a time, students may wish to focus on a particular topic of personal interest. Use websites to gather career information supporting planning for career pathways.

	Learning Objectives	Notes
1.4	To describe the economic, environmental, and social significance of agriculture.	Relate examples of consumer needs and wants (consumption) to the production of agricultural goods and services at a local, regional, and global level. Select several news stories from local papers or the *Western Producer* or have students recall recent or historical events in agriculture that had significant social, environmental or economic impact. Discuss the impact of the event with students. Include the influence of or the impact on consumers. Have students prepare a report of the impact of recent agricultural research, a value-added product, or related service. Some examples include: • processed food products; • speciality crops; • new crop varieties; • biotechnology; • machinery manufacturing; and, • new techniques in crop production. The report should consider: • a description of the product, development, or event; • the impact on agricultural practices, the environment, the community, producers, or consumers; • interactions with other agencies, community services, other business sectors; and, • the influence of consumer and/or producer trends. Assessment should consider the student's use of related vocabulary.
1.5	To demonstrate an understanding of the term multiplier effect.	The term *multiplier effect* refers to the ability of one sector of the economy to extend its impact over other sectors of the economy. In the agricultural sector, various types of agriculture have different effects on the economy. These effects on the economy can be estimated mathematically using the following multipliers: cow/calf 1.97 feedlot 2.02 grain 1.90 hog production 2.06 For example, grain that is sold by producers as a raw commodity affects the economy at a value of 1.90 of its selling price. Each time a commodity or product is changed or altered by additional processing, the multiplier effect of the raw commodity increases. Discuss with students why increased processing or finishing has a multiplier effect on the rest of the economy. Have students demonstrate an understanding of the term multiplier effect by tracing a food product or meat, from the selling price to the consumer to the selling price by the producer.

Module 2: Production Networks From Producer to Consumer (Core)

This module explores the production networks involved in producing a diversified agricultural product, in processing value-added products, or in providing a related service. Production networks consist of various activities and processes that are affected by factors including inputs, human resources, buildings, and equipment.

Students should be encouraged to investigate all career and employment opportunities. This module can be integrated with Module 7 which provides specific learning objectives relating to career exploration.

Suggested time: 15-17 hours

Foundational Objectives

- To describe the range of activities involved in selecting, producing, processing, transporting, and marketing an agricultural commodity, value-added product, or service.
- To be able to describe and access careers and job opportunities in agriculture.

Common Essential Learnings Foundational Objective

- To observe, research, and reflect on the range of activities in value-added or diversified agriculture. (CCT)

Other CELs may be emphasized.

	Learning Objectives	Notes
2.1	To identify the sequence of activities involved in moving a commodity from producer to consumer.	Select a variety of actual value-added agricultural products, diversified agricultural operations, and related services. Use case histories to prepare descriptions of the activities involved in the production networks as well as flow charts. The series of activities in production networks includes producing, marketing, transporting, processing, grading, packaging, storing, merchandising, wholesaling, and retailing. Students should be evaluated on their understanding of the production networks and the use of appropriate terminology such as: • production operations • processing systems • value-added products • marketing and distribution systems • business and labour which provides inputs and services • community services • urban agricultural activities

	Learning Objectives	Notes
2.2	To identify and describe the various factors which influence or affect each of the major stages of production.	Producing a value-added product or diversified agricultural product as well as providing related services follows a sequence of activities. Each step of a production network is influenced or affected by a variety of factors such as: • inputs to the product or service • processes and techniques • markets • safety and environmental standards • human resources • storage and transportation • buildings and equipment Have students develop concept webs to show the factors that influence the activities involved in a production network. Use a variety of perspectives such as production, processing, shipping, distribution, and consumer demand to demonstrate the factors that need to be considered at each stage. Following this initial understanding, have students select a particular agricultural operation and prepare a case history report identifying the specific factors that influence the production activities. (CCT) Evaluation of this module could be based on assessment of assignments such as: • flow charts indicating the production network; • concept webs showing where and how various factors influence activities; and, • a case history identifying the specific factors.

Module 3: The Role and Uses of Agricultural Technology (Core)

Agriculture is referred to as an "applied science" meaning that research and technology are used to provide practical solutions or to encourage change and new developments for food and fibre production. This module is designed to give students an understanding of the variety of technologies that are used in agriculture today. Students will use a case history approach to investigate the wide variety of technologies used in a value-added or diversified agriculture operation or related service. Students will also prepare a list of research and technology resources which can assist producers, processors, and related services personnel with research and development.

Newspapers and other publications are often front-line sources of information. Information on new processes, technologies, and advancements are prevalent throughout the *Western Producer*, in the business section of most newspapers, as well as in information bulletins from Saskatchewan Agriculture and Food and other agricultural organizations. Biotechnology bulletins are good sources of information on that industry.

Suggested time: 7-10 hours

Foundational Objective

- To describe the use of technologies and practices in processing a value-added product, or providing a related service.

Common Essential Learnings Foundational Objective

- To develop a contemporary view of agriculture and technology in today's society including the importance of research, the uses and the purposes of technology. (TL)

Other CELs may be emphasized.

	Learning Objectives	Notes
3.1	To define and describe the types of technologies used in agriculture. (TL)	Technology is used to: • alter existing products, create new crop varieties, or improve farm machinery; • develop new processes and products for food and non-food products; and, • support various activities (production, marketing, processing, purchasing commodities and inputs, transportation, distribution, storage, etc.). Various kinds of technologies are used in value-added agriculture including biotechnology, environmental technology (such as soil and water reclamation), mechanical technology, information technology, and transportation and storage technology.

	Learning Objectives	Notes
		Research is the foundation of technology. Applied science and research puts technology to work. Discuss the reasons why agriculture is called an applied science. Then, have students brainstorm and describe the various types of technologies that are used throughout value-added agriculture, diversified agriculture, and related services.
3.2	To understand the importance of research and development on agriculture.	Research and development are critical to the development of new production techniques, processing agricultural products, or diversifying farms. Invite an extension agrologist, consulting agrologist, value-added processor, or producer to talk to students about the importance of research and development to producers, processors, and the industry as a whole. Alternately, students may wish to visit a research station or demonstration site.
3.3	To investigate the role of various research and applied technology organizations in Saskatchewan that are involved in value-added and diversified agriculture as well as related services.	Various research and applied technology organizations can provide assistance in the development of value-added products or diversified agriculture. Here are some examples. • Saskatchewan Research Council • Crop Development Centre • Agriculture Canada Research Stations • Prairie Swine Centre • Prairie Implement Manufacturers' Association (PIMA) • Prairie Agricultural Machinery Institute (PAMI) • POS Pilot Plant Corporation • College of Agriculture • Western College of Veterinary Medicine • AgWest Biotech • various producer organizations (Use the Saskatchewan Farm Directory, a supplement from *The Western Producer*, for a more complete listing.) Have students investigate and prepare reports on a number of the organizations involved in applied research and technology in agriculture. Include in the reports: • a brief description of the role and mandate of the organization; • key contact persons; • the services that the organization provides and the costs; and, • suggestions on how producers, processors, and others might use the organization. Compile the reports into a directory for students to use as a future reference.

	Learning Objectives	Notes
3.4	To consider issues and/or conflicts resulting from the use of technology in agriculture. (COM, PSVS)	Developing and adopting new technologies in agriculture often raises issues and/or conflicts over such things as energy use, ethical issues, safety concerns, or environmental issues. Many technologies require further investigation before opinions are formed on their merit. Following any investigation, group discussion or debates work well for examining issues in agriculture. Investigate an agricultural-related technology. Prepare for group discussions and/or debate issues associated with agricultural technology. Some technologies include: • biotechnology; • intensive livestock operations; and, • use of agricultural chemicals and fertilizers. Debate the use of various technologies.
3.5	To prepare a case history that examines the applications of a research and technology.	Using a case history format, have students select a value-added product, diversified agricultural operation, or related service(s) and prepare a report of the applications of research and technology specific to that operation. Depending on the product, operation, or service, students should include in their reports reference to the specific applications of technology: • processing systems • quality control • pollution and odour control • storage • preservation • equipment • transportation • marketing • career and employment opportunities Students should demonstrate their understanding by using appropriate vocabulary and an acceptable case history format that could include video and multimedia productions. Before and during the preparation of the reports, remind students that they are not making value judgments on the operation and that they should respect the rights of the owner or organization.

Module 4: Information and Effective Communication in Agriculture (Core)

Producers, processors, and consumers rely on reliable information and effective communication throughout the production network. Throughout this module, students develop and use skills required to gather, to find, to sort useful information, and to communicate effectively.

Suggested time: 5-7 hours

Foundational Objective

- To develop effective information gathering and communication skills used in agriculture.

Common Essential Learnings Foundational Objective

- To be able to communicate effectively with others about value-added products, diversified agriculture or related service. (COM)

Other CELs may be emphasized.

	Learning Objectives	Notes
4.1	To understand the need for reliable information throughout the production networks of value-added diversified agriculture or for those providing a related service.	Current and reliable information is needed throughout any kind of production network. For example: • producers need reliable information on crop prices, markets, and growing conditions; • processors need reliable information on markets and input costs; • transportation companies need information on highways, storage and costs; • support services such as banks need information on the product and expected returns; and, • consumers need reliable information on the quality of a product. Using a variety of different production networks, have students identify the kind of information that is required by/throughout the production network. After identifying these information needs, have students find examples of information that would support these needs.

	Learning Objectives	Notes
4.2	To locate and sort useful information about a value-added product or process, diversified agricultural enterprise, or related service.	Agriculture is a rapidly changing and highly competitive industry; therefore, it is important for processors, producers, and suppliers to locate and use the most current information. Finding, sorting, and using information (in other words, managing information) about a value-added product or a process of diversified agriculture or related service are important skills in determining and maintaining the viability of agriculture. Hold an information week dedicated to finding and locating the most current information about the products, activities, equipment, etc. related to value-added agriculture, diversified agriculture, or related services. Have students gather, sort, and critique information on a value-added product, diversified agricultural enterprise, or related service. As a class or in groups, have students prepare a resource listing of information including the source and availability of the information and where and how it might be used. Try to include all the activities of a production network (e.g., inputs, transportation, regulations, etc.). Each student should prepare a critique evaluating the information by asking questions such as: • who would use it? • is it current? • how available is it?; and, • who is the audience (producers, consumers, researchers, etc.)? Accumulate the reports. Prepare class displays for handy reference.
4.3	To recognize the importance of effective communication in agriculture. (COM)	All sectors in agriculture, as well as those involved in each of step of the production network, require the use of effective communication skills in order to understand or to be understood by suppliers and customers. For example: Producers need effective communication skills to: • obtain and use related goods and services effectively; • market their products effectively. Producers and processors need effective communication skills to: • stimulate additional business; • persuade customers; • sell ideas, services, and products; • make the best use of human resources; • create a healthy workplace environment; • improve working relationships.

Learning Objectives	Notes
	Employees need effective communication skills to: • analyze, organize, and clarify information; • create good will for their organizations; • communicate ideas to both technical and nontechnical colleagues; • promote better workplace and interpersonal relationships; Have students analyze the process of communication in a value-added business or related organization. List examples of the written communications and oral communication skills that would be needed if students were a: • manager of a pasta plant • professional agrologist • rancher • diversified livestock producer • manufacturer of jams, jellies • meat inspector • short-line machinery manufacturer • employee or employer in a value-added or diversified agriculture operation • consumer • trucker
4.4 To consider communication tools and strategies for a value-added operation, a diversified producer, or related service area.	Describe the various methods and tools for communicating and the skills that are required to do each of them effectively. When and how they would be used? Consider: **Writing and Publications** Word processing systems Word processing accessories; such as, grammar and spell checkers Desktop publishing packages - Powerpoint, PageMaker, Claris Works, Presentations. **Information management** Spreadsheets Database management Teleconferencing Accounting packages **Office tools** Facsimile (Fax) Electronic mail LANs - Local area network Voice mail Have individual students prepare a synopsis of their communication and computer skills including such things as, their familiarity with various software packages.

	Learning Objectives	Notes
		Have students prepare effective communication strategies for handling these or other examples: • ensuring consistent high quality of a product; • handling customer complaints; • promoting of a product; • hosting trade shows and displays; • preparing funding proposals • marketing a product; and, • maintaining employee/employer relations.
4.5	To develop skills in preparing the kinds of communication required throughout agriculture and food processing.	Have students practice developing the kinds of reports, communiqués, memos, financial statements, etc. that would be required in agriculture. Examples are: • business plans; • proposals; • projections; and, • memos to employees/employers, customers, suppliers, etc. Place these in a portfolio. Have students prepare a communication strategy to announce a new product or innovation, or to respond to an issue.

Module 5: Marketing (Core)

Effective skills in marketing are critical to achieving success in production of diversifed agriculture product. These skills are also critical in selling related goods or services that support these operations. The Saskatchewan Education curriculum *Entrepreneurship 30*, marketing textbooks, *The Western Producer*, and other newspapers can be used to support or enhance this module.

This module can also be used to research the careers and occupations related to marketing an agricultural commodity, product, or service.

Suggested time: 10-12 hours

Foundational Objective

- To develop effective skills in marketing an agricultural product or related service.

Common Essential Learnings Foundational Objective

- To develop critical and creative thinking skills necessary for effective skills in agricultural marketing. (CCT)

Other CELs may be emphasized.

	Learning Objectives	Notes
5.1	To describe the basic steps involved in marketing an agricultural commodity, product, or service.	Marketing of any product involves a series of activities. These activities include but are not limited to: • locating, sorting, and analyzing market information for current and potential markets; • identifying and considering the factors which influence marketing; such as, product supply and demand, imports and exports, consumer trends, economic conditions; • preparing labels and packaging according to safety standards and product guidelines; • distribution, storage, and transportation for a variety of national and international destinations; • pricing commodities, products or goods, and services; • assessing the potential of a variety of markets; • advertising and promoting in a variety of markets. Discuss the various activities involved in marketing. Have students select a product, commodity, or service and describe the various activities that involve marketing at each stage during the production network. Flow charts can be used to ensure that students consider all stages in the processing a value-added product, operating a diversified agriculture operation, or, in providing related good and services. If possible, have students verify their descriptions of marketing activities with processors, producers, or suppliers.

	Learning Objectives	Notes
5.2	To gain first-hand knowledge of how marketing information is used in producing an agricultural commodity, or product, or in providing a service.	Use a field trip to an auction barn, inland terminal or grain elevator, food or fibre processor, fertilizer or chemical dealer, implement manufacturer, and so on as a real-life introduction to marketing. Prepare hosts ahead of time by discussing the level of students' understanding and the kind of information that would be helpful to students. Have students prepare a case history.
5.3	To develop skills in gathering and using current and potential market information. (IL)	Current and potential market information is available from a wide variety of sources; however, the usefulness of the information varies widely. For class presentations, contact the local extension agrologist for names of marketing specialists who could discuss marketing systems, as well as the trading of commodities and the futures market. A database for market information is available through Saskatchewan Agriculture and Food's website and FBMInet. Have students select a number of different commodities, products, or services. Compile a list of useful sources of market information including marketing specialists, business centres, Internet addresses, and publications.
5.4	To develop basic skills in following and analyzing commodities' markets. (CCT)	Using newspapers, commodity reports, radio and television reports or databases, have students select a commodity or product to track over a period of time. Using graph paper, chart the actual cash price and the futures price. Students should be able to follow the "basis," the difference between the cash price and the futures price, as it widens and narrows. Using this experience, students will learn to determine a good basis that signals that exporters or processors are short of supply and want a commodity (called a rally) or whether there is a slump in the market. Have students look for price increases at certain times of the year such as December/January, March/April, and June/July. For each of the products such as canola, have students research competing products (e.g., soybeans) and check out supply and demand.

	Learning Objectives	Notes
5.5	To identify and assess the suitability of different kinds of markets.	There a number of ways to market a value-added product, diversified agricultural commodity, or related goods and service. Identify and discuss the variety of marketing strategies including: • marketing boards; • cooperatives; • direct producer marketing; • open markets; • niche markets; and, • franchise markets. Have students compare and contrast the different marketing systems and provide examples of value-added products, diversified agricultural commodities, or related service which are most suited to each kind of marketing system.
5.6	To identify local, national, and international markets for agricultural products, commodities, or related goods and services.	Producers and processors market Saskatchewan's agricultural products, commodities, and related goods and services around the world as well as locally and nationally. Use students' knowledge to identify some well-known markets for agricultural commodities and products. Expand this knowledge to include specialized markets, new and emerging markets, and niche markets. Contact the Industry Development Branch of Saskatchewan Agriculture and Food for information on identifying local, national, and international markets. Have students identify the local, national, and international markets for at least five different commodities, products, or related goods and services.
5.7	To develop marketing strategies.	Producers and processors develop plans on how they will market a product, commodity, or goods and services. These plans, known as marketing strategies, need to respond and adapt to changes in supply and demand as well as production costs. Have students develop a marketing strategy for a product, commodity, or related goods and services. Have students suggest the changes they would make to their strategy when there are changes in supply and demand or increases in production costs.

	Learning Objectives	Notes
5.8	To examine the characteristics of effective marketing strategies including advertising and promotion, packaging, and labelling.	Discuss the role of consumer preference in determining marketing strategies. Have students visit a grocery store or specialty shop and note the trends in advertising and promotion, packaging, and labelling. As a class, identify the characteristics of effective marketing strategies. Compare these characteristics with the marketing plans that the students have developed.

Module 6: Quality Assurance (Core)

Assuring the quality of a service, product, or commodity is an important component to value-added agriculture, diversified agriculture, or a related service.

Suggested time: 5-7 hours

Foundational Objective

- To understand the concept and need for quality assurance of an agricultural commodity, value-added product, or related service.

Common Essential Learnings Foundational Objective

- To develop critical and creative thinking skills necessary to assure the quality of an agricultural service, product or commodity. (CCT)

Other CELs may be emphasized.

	Learning Objectives	Notes
6.1	To describe the term quality assurance.	Discuss recent examples (either personal or those in the news) of issues and problems that relate to product or service quality. This is a good topic for group discussions, role playing, or improvised dramas. Have students consider: • examples of poor quality; • what is meant by customer satisfaction; and, • experiences that help describe the concept of quality assurance. Have students describe the characteristics of quality assurance throughout an agricultural production network.
6.2	To explain the need for quality assurance.	Have students investigate the repercussions of events such as outbreaks of food poisoning, mad-cow disease, etc.

	Learning Objectives	Notes
6.3	To investigate the concept and processes associated with Hazard Analysis at Critical Control Points.	Building on student's understanding of the stages and activities in production networks, have students describe the points at which quality assurance is critical. Enhance student understanding with an investigation of the inspection regimen known as Hazard Analysis at Critical Control Points. Hazard Analysis at Critical Control Points (HACCP) is a "gate to plate" inspection system implemented throughout a variety of food industries. Contact the Beef Information Centre or the Saskatchewan Food Processors' Association for information on HACCP. Have students develop a poster presentation on HACCP.
6.4	To understand the role and responsibilities of various organizations and government agencies in assuring quality assurance.	Many agricultural organizations such as the Saskatchewan Food Processors' Association, the Prairie Machinery Manufacturers' Association, and commodity organizations as well as the federal and provincial governments have defined roles and mandates to ensure quality assurance of agricultural products or related services. Provide students with a list of various organizations and agencies that have a responsibility for quality assurance. Have them identify the roles and responsibilities of each organization and investigate the services that it provides. The Agricultural Awareness Series available from Saskatchewan Agriculture and Food (SAF) or Prairie Farm Rehabilitation Administration (PFRA) describes quality assurance in the following areas: Biotechnology, food safety, and crop protection. Invite an industry representative as well as a representative from the Consumers' Association of Canada to talk about quality control. Have students describe criteria and techniques for assuring quality at each step of the production network. The following should be included in their discussion: • parameters of quality; • inspection and grading; and, • ethical considerations.

Module 7: Career Exploration (Core)

Career exploration in all sectors of agriculture should be incorporated throughout the entire course. This module can be used as a guideline for career development throughout all modules.

Suggested time: 3-5 hours

Foundational Objective

- To be able to describe and access career information and determine job opportunities in the value-added sector, in diversified agricultural enterprises, and in related services.

Common Essential Learnings Foundational Objective

- To be able to describe and access careers and job opportunities in agriculture. (COM)

Other CELs may be emphasized.

	Learning Objectives	Notes
7.1	To research career clusters and the range of occupational opportunities related to processing an agricultural commodity or to providing a value-added product/service.	Identify careers or occupations in terms of the following: • primary production - science and management; • processing (food, fibre, industrial); • marketing, distribution, and retail services; • support services - production and processing inputs, financial, governmental; • resource management. Have students examine careers throughout the course. Consider job descriptions, employment market, education requirements, wage expectations. Individual/group research and presentation could be used for this.

Optional Modules

Module 8: Customer Service (Optional)

Providing effective customer service is essential at each stage of the production network. In this module, students consider the meaning of good customer service and analyze various ways that it might be achieved.

Suggested time: 4-6 hours

Foundational Objective
- To develop an understanding of customer service.

Common Essential Learnings Foundational Objective
- To value and use the opinion and perspectives of others to provide good customer service. (PSVS)

Other CELs may be emphasized.

	Learning Objectives	Notes
8.1	To develop an awareness of the importance of good customer service.	Using examples from value-added agriculture, diversified agriculture, or related goods and services, have students role play various scenes that compare varying degrees of customer service. From these situations, have students brainstorm and develop a description of good customer service as well as the ways in which good customer service can be achieved. Consider a variety of methods including verbal and non-verbal communication. Ask students to reflect on the need for customer service.
8.2	To compare the concept of customer service from a variety of perspectives.	Customer service is important at each stage of the production network. Have students interview a variety of customers and/or suppliers on their opinion of the nature of customer service. Develop some guidelines for providing customer service. Sample questions include: • How do you provide customer service? • What are your standards for customer service? • What kinds of special service do you provide or would you like to see provided? • What is the best way for you to receive information about customer service?

	Learning Objectives	Notes
8.3	To consider ways to achieve good customer service. (TL)	Have students consider examples that businesses and organizations use to provide good customer service. Some examples are obvious such as warranty work or return policies. Value-added agriculture, diversified agriculture, and related goods and services are often unique situations where the conventional methods of providing customer service may not apply. Present students with a number of situations and have them consider ways that they might provide customer service. Some situations, businesses, or examples include: • providing specialty crops to a local outlet; • selling jams and jellies at a trade fair; • selling vegetables and other produce at a farmer's market; • supplying fertilizer and chemicals; • hauling livestock; • repairing and maintaining agricultural buildings; • providing financial services to farmers; • meeting employer's needs; • accommodating employee perspectives.

Module 9: Diversified Agriculture (Optional)

Saskatchewan Agriculture and Food describes three ways of accomplishing diversification in agriculture:
1. Vertical diversification - the production of products or services from the existing production base. (Value-added agriculture)
2. Horizontal diversification - the expansion of the production base; e.g., including new crops or different types of livestock.
3. Services - the related goods and services that support vertical and horizontal diversification.

See Saskatchewan Agriculture and Food. Marketing Development Branch. (1996). *Evaluating Diversification Projects.* Regina, SK: Author.

For practical purposes, the module refers broadly to the term "diversification" as the expansion of the agricultural production base.

Suggested time: 10-12 hours

Foundational Objective
- To develop an understanding of diversified agriculture.

Common Essential Learnings Foundational Objective
- To seek and use information on diversified agriculture. (IL)

Other CELs may be emphasized.

	Learning Objectives	Notes
9.1	To understand the concept of diversified agriculture.	In Saskatchewan, traditional agricultural production produces large amounts of high quality grain/cereal crops and livestock. Traditional agriculture is also the foundation of the practices used in diversified agriculture as well as the supplier of commodities used in value-added agriculture. Diversified agriculture is described as increasing the number of types of agricultural production. Discuss the changes in the kinds of agricultural commodities over the last 50 years. Have students give examples of traditional agricultural production and diversified agriculture. Both traditional and diversified agriculture production have places in Saskatchewan's agriculture and agri-food industry.

	Learning Objectives	Notes
9.2	To research specialty crops or diversified livestock. (IL)	Ask students for examples of specialty crops, diversified livestock, or other on-farm diversified activities such as greenhouses, vacation farms, eco-tourism ventures. Have them select an area of interest and prepare a feasibility report for their community. Possible sources of information include: • research stations; • rural service centres; • interviews with local producers; • websites; and, • Saskatchewan Agriculture and Food Library. Components of the feasibility study for a specialty crop include: • a brief description of the crop type and varieties available; • uses for the crop; • advantages and disadvantages of growing the crop in the local area; • specialized cropping practices; • input costs and expected revenue (e.g., fertilizers, pesticides, etc.); • specialized operations and equipment; • marketing options; • storage and transportation; • charts. Components of the feasibility study for diversified livestock include: • brief description of the animal; • uses for the animal; • advantages and disadvantages for raising the animal; • specialized care and facilities; • input costs and expected revenue; • marketing options; • transportation. Ensure that students list the reference sources and websites they used in their feasibility studies.

	Learning Objectives	Notes
9.3	To develop ideas for agricultural diversification based on the available resources.	Many producers are looking at ways to diversify their farming or ranching operations. One of the first steps in diversification is the need to examine and analyze existing conditions such as available resources (natural resources, buildings, equipment, human resources, money). The kind of diversification depends on these factors. Using an actual farm or community, have students prepare an inventory of the existing conditions. Have students consider how and when equipment, buildings, and resources are used throughout the entire year. Using this inventory, have students suggest possible diversification projects for their farm or community. As an optional extension of this activity, students could evaluate the diversification projects using the booklet *Evaluating Diversification Projects* from the Marketing Development Branch at Saskatchewan Agriculture and Food.

Module 10: Rules and Regulations (Optional)

Rules, regulations, legislation, laws, and controls are embedded in all sectors of agriculture and food production, as well as services, that support these sectors. Knowledge of and/or compliance with these rules and regulations are essential components of value-added processing, diversified farming operations, or related services.

Suggested time: 5-8 hours

Foundational Objective

- To develop an awareness of the rules and regulations that apply throughout the industry.

Common Essential Learnings Foundational Objective

- To recognize that learning about and adhering to rules and regulations is an individual's responsibility. (IL)

Other CELs may be emphasized.

	Learning Objectives	Notes
10.1	To explain the role of government in various sectors of agriculture.	Various federal, provincial, and municipal governments are involved throughout the production network in maintaining the quality and safety of agricultural commodities, services, and food and fibre products. Have students reflect and discuss the importance of maintaining product quality and safety throughout the production network.
10.2	To research the mandates of specific government agencies in maintaining product quality and safety (e.g., Agriculture and Agri-food Canada, Saskatchewan Agriculture and Food, Consumer and Corporate Affairs, Health Canada, Saskatchewan Health, Public Health). (IL)	Have students investigate the relevant legislation regarding quality and safety regulations in each sector of government. Using the production network, have students indicate which areas of government are involved in: • the inspection of raw materials; • product grading; • packaging and labelling; • sanitation standards; and, • safety regulations. Contact Saskatchewan Food Talk or the Saskatchewan Food Processors' Association for videos and information. Another good starting point for information and further references is the Public Awareness Series on Agriculture, specifically, *Food Safety*, *Biotechnology* and *Crop Protection*. These booklets are available from Saskatchewan Agriculture and Food or Agriculture in the Classroom.

Learning Objectives	Notes
10.3 To investigate the environmental rules and regulations that pertain to diversified agricultural production, value-added processing, and related services.	Environmental rules and regulations apply to all sectors of agriculture and include a variety of policies and legislation on such practices as handling effluent disposal, water treatment after use, soil conservation practices, use of biodegradable materials, storage, and handling and disposal of hazardous products. Invite a panel of experts, producers, or processors to discuss the environmental rules and regulations that apply to their particular operation. Interview a value-added processor, diversified farming operator, or someone in a related service. Describe the rules and regulations that govern the operation. Have students prepare a summary of the rules and regulations that need to be considered. Include: • human resources such as labour laws and workplace safety; • environmental regulations; • health and safety standards; and, • transportation regulations.

Module 11: Local Perspectives (Optional)

This module encourages students to explore value-added agriculture, diversified agriculture, as well as related services from a local perspective. This exploration will help students understand the local factors and conditions that affect the choice of agricultural activity in a community.

Suggested time: 4-6 hours

Foundational Objective

- To describe local and community resources and perspectives.

Common Essential Learnings Foundational Objective

- To reflect on why certain agricultural activities have dominated and continue to dominate in a region and to speculate on and imagine other forms of agriculture. (CCT)

Other CELs may be emphasized.

	Learning Objectives	Notes
11.1	To examine an historical perspective of agriculture in the local area.	All types of agriculture - primary production, value-added, or diversified agriculture - are grounded in the environmental, economic, or cultural circumstances of the local area. The knowledge level and understanding of the current and historical perspectives of Saskatchewan agriculture will vary from student to student and from class to class. It will also vary from one school or region to another. Regardless of the level of knowledge, it is important to begin with the student's understanding of agriculture in Saskatchewan. Starting at the students' own level of knowledge will encourage them to investigate and explore new ideas and understanding. To develop an historical perspective of the local area, have students interview a variety of people involved in agriculture from producers to chemical dealers. Interviews should focus on the changes in agriculture. Have students prepare interview questions in advance. Remind them to avoid sensitive or personal issues. Have students present and discuss their findings on how agriculture has changed in the local area. If possible, have students consider all factors (environmental, economic, and social factors) that have changed in the area. Visit local museums. Have students create or display collections of historical photographs.

	Learning Objectives	Notes
11.2	To develop a profile of the local and regional agricultural activities.	Have students prepare a profile of the agricultural activities in the local or regional area. Encourage them to use a variety of media including audio-visual presentations, video productions, and guest speakers. The profile should consider and give examples of: • physical resources - soil, water, climate; • climate; • transportation systems; • human resources; • area population; • educational institutions; • value-added processors; • diversified agriculture; and, • related goods and services. Using this profile, have students suggest a number of possible value-added, diversified agricultural operations, or related goods and services that might be possible in the area. Students might wish to conduct community surveys and compare their ideas with members of the community.

Module 12: Packaging, Storage, and Distribution (Optional)

Processors of value-added products need to consider how their products will be packaged, stored, and distributed. This module examines what agricultural producers, processors, and suppliers need to consider as part of their production or supply network.

Suggested time: 6-8 hours

Foundational Objective

- To develop an awareness of the requirements of and factors affecting packaging, storage, and distribution of value-added products, diversified agricultural commodities, or the products supplied by agricultural-related services.

Common Essential Learnings Foundational Objective

- To recognize the need for proper package, storage, and distribution of agricultural products. (CCT)

Other CELs may be emphsized.

	Learning Objectives	Notes
12.1	To describe product packaging and labeling practices, products, or commodities.	Different products require different packaging and labeling. First hand information is the best way to begin researching the packaging and labeling requirements of a product. Invite experts to speak to the class or have students interview staff from the Saskatchewan Food Processors' Association, Saskatchewan Food Talk, Health Canada, or Agriculture and Agri-food Canada. Have students investigate packaging and labelling requirements for a variety of value-added products including processed and fresh meat, poultry, vegetables, jams, jellies, and other types of processed food.
12.2	To investigate storage requirements and facilities. (IL)	Value-added products, diversified agricultural commodities, as well as products used by related goods and services, require a variety of storage options. Have students select a field site and prepare a case history on storage requirements and facilities. Include a description of safe handling and storage of products, as well as any special building requirements.

	Learning Objectives	Notes
12.3	To investigate the distribution of agricultural products.	Have students investigate and describe the distribution of agricultural projects. Include the role of customs brokers, and legal requirements for transportation and storage.

Module 13: Selecting an Enterprise (Optional)

This module introduces students to some of the factors that influence or affect the selection of an agricultural enterprise. Students become acquainted with these factors and apply what they have learned by preparing a business plan.

Guest experts will enhance the relevance and importance of identifying the factors that need to be considered in enterprise analysis. Invite financial managers, experts in specialty crops and diversified livestock, and producers to present students with some of the realities of selecting an enterprise.

Appendix E is a business plan that can be used with this module.

Suggested time: 8-10 hours

Foundational Objective

- To develop an understanding of the considerations and processes involved in selecting an agricultural enterprise.

Common Essential Learnings Foundational Objective

- To compare and contrast and make judgments about different agricultural situations and scenarios. (CCT)

Other CELs may be emphasized.

	Learning Objectives	Notes
13.1	To become acquainted with the resources and services that are available to assist producers with decision making and enterprise selection.	Have students research and prepare a comprehensive list of appropriate resources including: industry organizations, government agencies, websites, and financial institutions that are specific to a particular agricultural enterprise. Students should gather as much information as possible before proceeding. Reinforce the notion that it is important that agricultural enterprises make use of information and support services on a regular basis.

Learning Objectives	Notes
13.2 To investigate the effect of various economic factors on an agricultural enterprise.	Invite an industry or marketing expert to talk to students about the economic factors that affect the selection of an agricultural enterprise. These factors include: • availability of inputs; • size of the market - current and potential; • access and location of markets; • fixed and variable costs; • land and building requirements; • human resource requirements; • packaging, storage, and distribution. Also invite experts from financial institutions to talk to students about the concepts of debt-load, financing, and the meaning of viability. Have students compare a number of enterprises based on economic factors; for example, students could compare various diversified livestock operations. Students could also work through a business plan with a local banking institution or the Canada-Saskatchewan Business Service Centre in Saskatoon.
13.3 To identify and analyze how environmental factors affect the selection of an agricultural enterprise.	Economic factors are not the only factors that need to be considered when analyzing an agricultural enterprise. For example, environmental factors such as climate, soil, and water conditions need to be considered. Environmental policies and zoning regulations also needed to be considered when analyzing or selecting an agricultural enterprise. Have students reflect on how environmental factors affect decisions about agricultural enterprises. Consider for example, the water requirements of intensive livestock operations or the climatic conditions to grow specialty crops. Have students investigate the environmental factors that affect agriculture in the areas. Invite the local extension agrologist or officials from the rural municipality or town to talk about environmental rules, regulations, and requirements.

	Learning Objectives	Notes
13.4	To identify the energy requirements as well as the technical and human resources that affect the selection of an agricultural enterprise.	Have students compare and contrast the energy requirements as well as the technical and human resources required to operate a variety of agricultural enterprises. Some examples include: • hog barn • feedlot • greenhouse • berry farm • market garden
13.5	To explain the role of market research in enterprise selection.	Market research provides valuable information on the potential of a product, good, or service to meet present and future market needs. Market research can be gathered through consumer polls, surveys, or focus groups. Have students design and conduct market research regarding a product, good, or service.

Module 14: Historical Perspectives and Future Trends (Optional)

This module is a brief examination of the history of agriculture in Saskatchewan. It also encourages students to research some of the future developments and trends in agriculture.

Suggested time: 3-5 hours

Foundational Objective

- To develop an understanding of value-added agriculture, diversified agriculture, or related goods and services from past and future perspectives.

Common Essential Learnings Foundational Objective

- To appreciate value-added agriculture and diversified agriculture historical and futuristic perspectives. (CCT)

Other CELs may be emphasized.

Learning Objectives	Notes
14.1 To explore the history of agriculture in Saskatchewan.	Investigating the historical background and past developments in Saskatchewan's agriculture is intended to lead students to understand the evolution from traditional, primary production agriculture, to more value-added and diversified agriculture. Many of the most important foundations that enable and encourage value-added and diversified agriculture are the long-standing and world-renowned advancements made by Saskatchewan's traditional or primary production agricultural industry. These advancements continue today and provide essential support to value-added and diversified agriculture. Throughout all areas of agriculture, related services have provided and continue to provide essential goods and services such as transportation, marketing, and storage as well as research and development. Have students prepare a report or timeline on Saskatchewan's agricultural industry. Involve the class in a discussion of the evolution of agricultural developments. Invite local farmers or ranchers to discuss the changes that they have seen during their time in agriculture.
14.2 To develop an awareness of the future trends in agriculture.	Have students research future trends. Some of these trends include: • precision farming; • using geographical information systems (GIS); • biotechnology; • alternative uses of agricultural commodities including cosmetics, pharmaceuticals, fibres, and lubricants. Information can be obtained from various commodity groups, the College of Agriculture, extension agrologists, chemical and fertilizer dealers, and research stations.

Module 15: Producing a Value-added Product (Optional)

This module is used to give students experience in processing a value-added product.

Suggested time: 10-15 hours

Foundational Objective
- To gain knowledge and experience in processing a value-added product.

Common Essential Learnings Foundational Objective
- To work cooperatively in the production of a value-added product. (PSVS)

Other CELs may be emphasized.

	Learning Objectives	Notes
15.1	To develop experience in researching market demand for a product.	Have students suggest a number of value-added products that could be processed by the class. Then research the market demand in the school canteen, local community, or farmer's market. Some ideas for value-added products from Saskatchewan agricultural commodities include: • beef jerky; • jams and jellies; • a variety of homemade soap containing oats, herbs, etc.; • paper making; • candles. Have students use a risk/benefit analysis to decide which value-added product they should produce.
15.2	To process a value-added product.	Have students identify the sequence of activities involved in processing a value-added product. Have students speculate on how this sequence of production might be the same or different in large scale processing of a value-added product. Have students prepare and package the value-added product.

	Learning Objectives	Notes
15.3	To market and promote a value-added product.	Have students develop a marketing and promotional plan for their value-added product.
15.4	To prepare a business plan for a value-added product.	Have students prepare a business plan using Appendix E.

Module 16: Work Study Preparation and Follow-up Activities (Optional)

This module is used to prepare students for work study placement. Learning objectives include pre-placement information, preparation for interviews, and expectations for the workplace experience.

Suggested Time: 5-10 hours

Foundational Objective
- To develop workplace skills in the value-added or diversified agriculture sector or in related services.

Common Essential Learnings Foundational Objective
- To apply a variety of employability skills in the workplace. (CCT, COM, PSVS, TL)

	Learning Objectives	Notes
16.1	To create an awareness of the expectations of each of the partners in the work study component.	In order to establish a successful working relationship with all of the partners involved in the workplace, it is important to define the expectations of each partner. Refer to Guidelines for Work Study, a section of *the Practical and Applied Arts (PAA) Handbook* for expectations of business, student, teacher monitor, and school.
16.2	To determine factors that would affect the student contribution in the workplace. (CCT)	The students may formulate a list of what they can bring to the workplace and how each may impact on their jobs. • school subjects • past experiences • self-concept and personality • needs, values and interests • knowledge skills and attitudes • career goals and plan Ask students to do a self-assessment of skills using the influences in the above list as a guide. They are to explain how these skills would be valuable to the food service industry. Try to incorporate the value of communication and teamwork in the discussion.
16.3	To foster an awareness of building good communication in the workplace.	Discuss verbal and non-verbal communication. List some ways in which negative non-verbal communication may be displayed. Encourage students to role play ways of demonstrating effective techniques of verbal communication on the job when giving or receiving instructions, and resolving conflict. With the use of case studies, divide the students into groups and role play to show how effective use of communication can be used to resolve conflict on the job.

Learning Objectives	Notes
16.4 To develop a resumé and cover letter that can be forwarded to a potential employer.	The student will develop a resumé and cover letter using the correct format. Agriculture Studies teachers can work with other staff members to ensure resumé and cover letter preparation is covered. The resumé and cover letter is currently covered in English Language Arts 20 and 30A, Information Processing, and Work Experience Education 20. Students should develop the resumé on a computer disk and update the resumé during the progression of the course as references are accumulated. If students have already completed the resumé and cover letter in another course, the teacher may do a review and encourage students to update their resumé. Students shall submit a resumé for teacher approval prior to going to the workplace. The resume and cover letter may be used as an introduction to the employer of a workplace site prior to an interview with the student.
16.5 To determine student guidelines in preparation for an interview.	Through a classroom discussion or in groups students generate a list of guidelines for an interview. After the students formulate their list, the instructor may add missing items to the list. Outline and describe the three stages of an interview. Point out to the students in what stage each of their guidelines previously discussed will be used. The **greeting** involves an introduction between the student and employer. Discuss or demonstrate how this should be done. The **exchange** is where the employer asks a series of questions and engages in a conversation with the student about information on the resumé and other matters relating to the job placement. The **parting** brings the interview to a close. It can be just as important as the greeting. Explain how this can be done. Provide the students with a list of questions frequently asked by employers or ask students to formulate a list in a group and role play the stages of the interview.

Learning Objectives	Notes
16.6 To discuss the post interview.	After the student has completed the interview with the employer, do a follow-up activity. Review the interview with the student using the three stages as a point for discussion.
16.7 To develop procedural guidelines for the work site.	Discuss the following work site guidelines with students. • transportation • hours of work • absence and tardiness • procedures for conflict resolution • role of the student, teacher and work place supervisor • dress code • job description • school and employer expectations Ensure that students understand these guidelines by asking students to describe each of these guidelines.
16.8 To relate feedback from the work placement.	Students provide feedback about workplacement including: where they were placed, type of business, duties, most rewarding experience, most difficult situation, and how they handled it. Note: It is recommended that each student send a thank you note or card to the employer upon the completion of each work placement. If more than one placement has been made in the course, follow-up activities must be completed after each placement.

Module 17: Work Study (Optional)

Refer to the Work Study Guidelines included in the *Practical and Applied Arts Handbook* for direction on implementing work study.

Suggested Time: 25-50 hours

Foundational Objective

- To apply concepts and information from the classroom to the workplace.

Common Essential Learnings Foundational Objective

- To develop employability skills in the workplace. (CCT, COM, TL, PSVS)

References

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Kreps, Gary L. (1984). *Using the case study method in organizational communication classes.* Paper presented to the Annual Meeting of the International Communication Association, San Francisco.

Manitoba Education and Training. (1997). *Senior 3, Visions and Ventures, An Entrepreneurship Practicum: A Foundation for Implementation.*

Saskatchewan Agriculture and Food. Marketing Development Branch. (February 1996). *Evaluating diversification projects.* Regina, SK: Author.

Saskatchewan Agriculture and Food. Website and miscellaneous documents.

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Appendix A: Recordkeeping Sheet

Student Name_____

Student Number_____

Module Code	Module	Date	Teacher's Initial
AGST01	Module 1: Agriculture Today (C)		
AGST02	Module 2: Production Networks From Producer to Consumer (C)		
AGST03	Module 3: The Role and Uses of Agriculture Technology (C)		
AGST04	Module 4: Information and Effective Communication (C)		
AGST05	Module 5: Marketing (C)		
AGST06	Module 6: Quality Assurance (C)		
AGST07	Module 7: Career Exploration (C)		
AGST08	Module 8: Customer Service (O)		
AGST09	Module 9: Diversified Agriculture (O)		
AGST10	Module 10: Rules and Regulations (O)		
AGST11	Module 11: Local Perspectives (O)		
AGST12	Module 12: Packaging, Storage, and Distribution (O)		
AGST13	Module 13: Selecting an Enterprise (O)		
AGST14	Module 14: Historical Perspectives and Future Trends (O)		
AGST15	Module 15: Producing a Value-added Product (O)		
AGST16	Module 16: Work Study Preparation and Follow-up Activities (O)		
AGST17	Module 17: Work Study (O)		

C = core module
O = optional module
* = refers to modules required for post-secondary articulation/recognition

It is recommended that this document be printed on school letterhead.

Appendix B: Student Evaluation

There are three areas of importance in this course for teachers to collect data on student progress. Teachers should make sure that students are aware of the expectations for concept attainment, application, and experiential knowledge and application.

Areas of importance	Range of emphasis	Suggested assessment techniques
Content - concept attainment	20 - 30%	• Quizzes and tests (including extended open-response, short answer items, multiple choice) • Student activities including on-going written assignments, presentations, homework
Application: knowledge and application of basic competencies and processes	30 - 40 %	• Basic competencies of employability skills: teamwork, service, accountability • Performance assessments or presentations; anecdotal records • Information on checklists or rating scales listing specific employability skills to be assessed.
Experiential application of knowledge, developing skills and abilities, processes and attitudes using actual situations, site visitations, work study.	30 - 50 %	• Learning contracts (personal development and application of skills, abilities, and attitudes) • Written assignments such as case histories/case studies or presentations, to assess skills with specific criteria listed on a checklist or rating scale (include peer/self-assessments from students; individual and group assessments from teachers) • Anecdotal records for assessment of attitudes • Observation checklists • Work study component

Refer to the Saskatchewan Education (1992) *Student Evaluation: A Teacher Handbook* for examples of a variety of evaluation and assessment techniques.

Appendix C: Program Evaluation

Program evaluation is the systematic process of gathering and analyzing information about some aspect of school program, in order to make a decision or to communicate to others what is happening in a program.

By its nature as a Practical and Applied Art, the Agriculture Studies 30 course responds to the interests and needs of each individual student. While difficult, it is important that student programs are assessed on a continual basis to ensure that:

- the program is meeting the needs of the individual student; and
- the program provides meaningful awareness, adequate exploration opportunities, and relevant experiences.

Suggestions for gathering and analyzing information on the course are anecdotal records, interviews, as well as surveys at various times of the year. The information that is gathered can be used to make decisions about the program in future years.

Appendix D: Suggested Format for Case Histories

Student:

Date:

Description: Describe the operation in no more than five sentences.	**Description:**
Critical Information: Using no more than five sentences for each, present the most important information on this operation in the following areas: • who is involved? • what happens? • when do these activities take place? • why is this operation in existence?	**Who?** **What happens?** **When?** **Why?**
Key names, dates, references or sources of information: Indicate the key people, important dates or times of the year, references, or sources of additional information. Keep the list to the most important names, dates, and sources.	**Key people:** **Important dates:** **References:** **Additional information:**

Diagram Use a flow chart to describe the production network of the operation.	
Elaboration Provide additional details on a particular aspect or concept such as marketing, applied technology, or quality assurance.	

Appendix E: Suggested Format for Case Studies

Student:

Date:

Description: Provide a description of the situation.	**Description:**
Problem: Clearly define the problem.	**Problem:**
Solutions: List a reasonable number of proposed solutions.	**Solution #1:** **Solution #2:** **Solution #3:** **Solution #4:** **Solution #5:**

Consequences: Identify the consequences of each proposed solution.	**Consequences for:** **Solution #1:** **Solution #2:** **Solution #3:** **Solution #4:** **Solution #5:**
Best solution: Present the best solution giving reasons to support the decision.	**Best Solution:** **Supporting Reasons:**
Diagram: Use a flow chart to describe the production network of the best solution.	**Diagram:**

Appendix F: Business Plan Guide

Taken from: Manitoba Education and Training. (1997). *Senior 3, Visions and Ventures, An Entrepreneurship Practicum: A Foundation for Implementation.* Used with permission.

Business Plan Guide

Student name: _____

Student Address: _____

_____

City: _____ Province: _____ Postal Code: _____

Telephone Number _____ Fax Number _____

This Business Plan Guide is Step 1 in the preparation of The Business Plan. Please complete the questions in this guide using **point** form.

Please complete this guide following instructions as set out in the module assignments.

Section 1 — Introduction

1. Identify the product or service you are planning to offer in your business.

   _____

   a. Is this a product or service? _____

   b. Is this a need or a want? _____

2. Describe the product or service you are planning to offer in your business.

   - _____
   - _____
   - _____
   - _____

Section 2 — Organization

3. Is this business a

   ❑ new business?

   ❑ takeover of an existing business?

   ❑ franchise? Name _____

4. Is your business going to be a
   - ❑ sole proprietorship?
   - ❑ partnership? Who will your partner(s) be? _____
   - ❑ corporation?
   - ❑ co-operative?

5. Describe your personal skills and abilities. Include
   a. education _____
   b. experience (child care, restaurant, retail) _____
      _____
      _____
   c. hobbies _____
      _____
   d. special skills (keyboard, computer, sports, music, languages) _____
      _____
   e. personal traits (caring, organized, punctual) _____
      _____

Section 3 — Market

6. Who is your target market? Answer the following questions to develop a profile of the target market.
   a. age range _____
   b. male or female _____
   c. family income (under $25 000, $26 000 - $50 000, over $50 000) _____
   d. education (secondary or postsecondary) _____
   e. married or single _____
   f. number of children (0, 1 or 2, 3 or more) _____
   g. occupation (student, office worker, labourer, retired) _____
   h. size of the community _____

7. Describe your target market's buying habits. Think about when customers will purchase your product:

   a. season (spring, summer, fall, winter) _____

   b. frequency (monthly, weekly) _____

   c. contract (weekly, seasonal) _____

   d. time (morning, noon, afternoon, evening) _____

8. Explain why people will purchase your product or service. Think about
   a. Need or want
   b. Luxury item (tour of the Maritimes)
   c. impulse purchase
   d. planned purchase

   _____

   _____

   _____

   _____

9. a. What method of selling will you choose for your product or service. Consider or choose one of the following:

   - ❑ a table at the mall
   - ❑ telephone sales or orders
   - ❑ catalogue sales
   - ❑ retail store or store-front location
   - ❑ space in a retail store
   - ❑ other_____

   b. Describe the channels of distribution that your product or service will follow to reach the customer.

   _____

   _____

   _____

Section 4 — Competition

10. Describe your direct competition.

    a. Name: _____

    Address: _____

    Brief description of the business. How well is it doing? _____

    _____

    b. Name: _____

    Address: _____

    Brief description of the business. How well is it doing? _____

    _____

    c. Name: _____

    Address: _____

    Brief description of the business. How well is it doing? _____

    _____

11. Describe your indirect competition.

    a. Name: _____

    Geographic location: _____

    Brief description of the business: _____

    _____

    b. Name: _____

    Geographic location: _____

    Brief description of the business: _____

    _____

12. Describe why you think customers will buy from you. Think about

a. better product or service
b. lower price
c. improved technology
d. convenience
e. new product (no competition)
f. more experience

13. Describe the market potential in your industry. Include the number of anticipated direct competitors.

14. What per cent of the market (market share) do you think that you may be able to capture?

Section 5 — Cash Flow Projection

15. Prepare a cash flow projection. Include all calculations.

a. What will be the cost of each product?	a. What price do you plan to charge for each product or service?
b. Estimate the number of products that you will need.	b. How many products or services will you sell in one day/week?
c. Calculate the total cost of the products needed for one day.	c. Calculate the total revenue for one day/week (number of products x the price).
d. Calculate the total cost of the products needed for one week.	d. Calculate the total revenue for one week.
e. Calculate the total cost of the products needed for one month.	e. Calculate the total revenue for one month.
f. Calculate the total cost of the products needed for one year.	f. Calculate the total revenue for one year.

Section 6 — Name and Location

16. The name of my company is _____

Explain why this name was chosen. _____

_____

17. The logo for my company is

18. My company, (insert the name _____), will be located at: _____

Explain the reasons why you chose this location.

_____

_____

_____

19. The factors of production involved in my business are:

land _____

capital _____

labour _____

technology _____

entrepreneurship _____