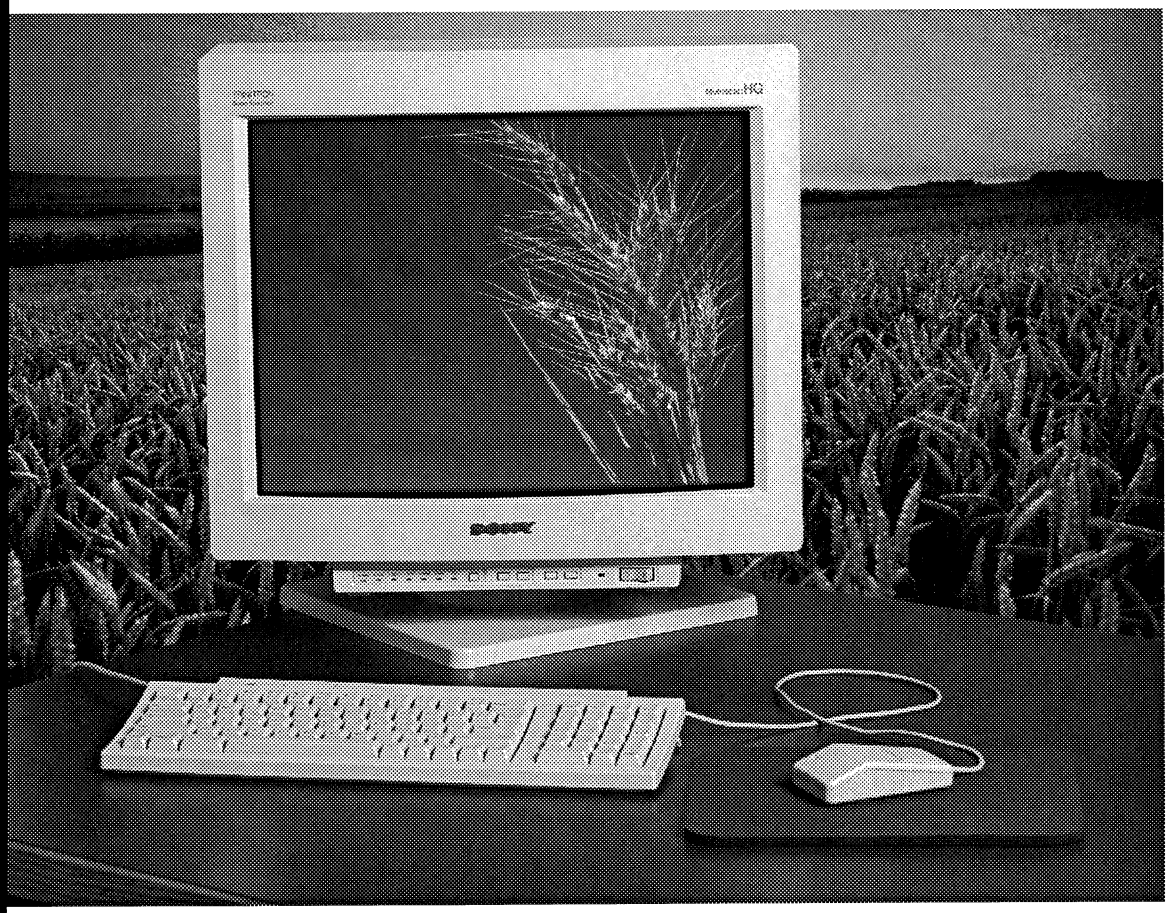

Computer Lab Activities in Agriculture

Instructional Materials Laboratory
University of Missouri-Columbia
College of Education

IN COOPERATION WITH:

Agricultural Education Department
College of Agriculture, Food and Natural Resources
University of Missouri-Columbia

Agricultural Education Section
Division of Vocational and Adult Education
Department of Elementary and Secondary Education
Jefferson City, Missouri

Instructor Guide

Computer Lab Activities in Agriculture

Computer-related Activities to Support Existing Agricultural Curricula

Writers:
James Rinck, Jamie Twente, and Amanda Christine
Agricultural Education
University of Missouri-Columbia

Consulting Editor:
James E. Dyer, Ph.D.
Agricultural Education
University of Missouri-Columbia

Janis Levsen, Project Editor and Coordinator
Instructional Materials Laboratory
University of Missouri-Columbia

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College of Education
University of Missouri - Columbia
1400 Rock Quarry Center
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Acknowledgments

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Janis Levsen, Project Editor and
Coordinator
Instructional Materials Laboratory
University of Missouri-Columbia

Dr. James E. Dyer, Assistant Professor
Agricultural Education
University of Missouri-Columbia

Foreword

The use of computer technology is commonplace in almost every field including agriculture. *Computer Lab Activities in Agriculture* was developed to provide experience with computers and exposure to computer-related applications in agriculture.

Computer Lab Activities in Agriculture is an activities module designed to provide supplemental instruction to existing agricultural curricula. The computer applications used in the activities are word processing or page layout, spreadsheet, graphs and charts, Internet, e-mail, presentation, and web authoring. A crosswalk table is included to show where *Computer Lab Activities in Agriculture* activity objectives relate to Missouri's Show-Me Standards and Missouri's Frameworks for Curriculum Development. A suggested teaching calendar that lists the materials needed for each activity is included at the end of the front matter.

The 27 activities in the instructor guide and the corresponding student reference are broken down by the curricula they support. The curricula include *Advanced Livestock Production and Management; Agribusiness Sales, Marketing, and Management; Agricultural Management and Economics;* Agricultural Science I, *Careers I Unit;* Agricultural Science I, *Introduction to Swine Production;* Agricultural Science II, *Introduction to Grassland Management; Agricultural Structures; Animal Science; Exploring Agriculture in America; Fish and Wildlife Management; Food Science and Technology; Forest Management; and Greenhouse Operation and Management.* A cross-reference table is included in the front matter that breaks down the activities by the computer applications each activity uses.

James E. Dyer, Assistant Professor
Agricultural Education
University of Missouri-Columbia

Terry Heiman, Director
Agricultural Education
Department of Elementary and
Secondary Education

About This Activities Module

Instructional Strategies:

- The agricultural curricula that Instructional Materials Laboratory developed are specified in each activity; however, other curricula can be used.
- The introductory activities at the beginning of this module are general in nature and do not support specific curriculum.
- The activities are not designed to be taught in the order that they are presented in this module. They are stand-alone activities and each supports a different agricultural curriculum and grade level. They should be incorporated into the curriculum identified.
- Before assigning an activity to students, review the content to determine if the required technology and software are available to implement the activity.
- The length specified in each activity is an estimate. The actual amount of time required will vary depending on the students' capabilities.
- As indicated in the activities in this module, pairing computer-literate students with those who are not is strongly recommended. The value of this partnership is first, that it allows the instructor more time and flexibility in conducting the lesson and second, the computer-literate students assume a mentoring role, which enhances their self-esteem and leadership skills. Finally, for students who are not as computer literate, this partnership allows them the freedom to experiment and make mistakes without fear of humiliation, thus encouraging their curiosity and interest in computers.
- If using the activity sheet files on the computer, the students can click on the web addresses and open a web browser to access the web sites.

Components of Each Activity:

Table with Curriculum and Competencies Supported

This lists the existing agricultural curriculum and competencies that the activity can support or supplement.

Curriculum Reference:

This refers to the curriculum listed in the table above. The reference includes both the Instructor Guide and Student Reference for the curriculum.

Overview:

This summarizes what the activity covers and the experience it will provide for the student.

Activity Objective(s):

These are statements that describe what the student should know and/or be able to do upon successful completion of the activity.

Activity Sheet(s):

This is a list of the activity sheet number and name provided in the activity.

Scoring Guide(s):

This is a list of the scoring guide number and name provided in the activity.

Instructor Preparation/Directions:

This lists information that will help the instructor in planning and conducting the activity. It might include directions for using a type of computer software or a suggestion for checking references like web sites to ensure they are available and current. It also includes the suggested length of time for completion of the activity.

Discussion Question(s):

This includes suggested questions to ask students to stimulate discussion after they complete the activity. Suggested answers are provided for each question.

Assessment:

This identifies the assessment method for the activity and will provide answers if the results are objective.

Additional Activities:

This provides suggestions and ideas for taking the activity to a more advanced level or in another direction. These ideas may be used as enrichment for high-achieving students or may be used for advanced courses. Not all activities have additional activities.

Alternative Application(s):

This specifies other agricultural curricula and competencies that the activity can support or supplement. It lists activity ideas for these curricula that support the same computer application used in the activity. In some of the curricula listed, the activity can be used without modification and in others, the activity will need to be adapted for the subject matter. Not all activities have alternative applications.

Credit(s):

This is a listing of references (books, articles, and/or web sites) used to develop the activity.

Activity Sheets - The activity sheets are separate sheets that can be given to students to do the activity. They provide student objectives, equipment and materials needed to complete the activity, and the procedural steps of the activity (directed to the student). For objective activities, the activity sheets include questions. For subjective activities, criteria-based scoring guides are provided.

Scoring Guides - A scoring guide is included at the end of each subjective activity. The scoring guides provide suggested criteria to assist the instructor in evaluating the students' projects. Students receive the activity sheets and scoring guides before they begin the activity so they know the requirements or criteria they will be graded on.

Table of Contents

Activities Listed by Computer Applications Used

Competencies/Objectives

Competencies	Activity and Objectives
Introductory (curriculum nonspecific)	
N/A	1. Basic Computer Skills–Word Processing 1.1 Demonstrate basic computing skills including cut, copy, past, save, save as, copy file, rename file, and create folder.
N/A	2. Basic Computer Skills–Charts and Graphs 2.1 Develop and interpret charts and graphs.
N/A	3. Internet as a Resource 3.1 Explain how to determine the credibility of information on the Internet. 3.2 Understand the ethics and copyright issues involved in using information from the Internet. 3.3 Define what a domain name is. 3.4 Understand the components of a domain name.
Advanced Livestock Production and Management	
C. 3. Select beef animals for production and breeding.	4. Beef Cattle Breeding Database 4.1 Create a herd management database.
Agribusiness Sales, Marketing, and Management	
B. 2. Determine the point of maximum net returns (profit) given a sample list of inputs and outputs and the prices of each.	5. Diminishing Return 5.1 Prepare a series of charts or graphs to illustrate and apply the principle of diminishing return to different situations.
E. 2. Use written communication skills in the sales process. E. 3. Describe the proper use of communications technology.	6. Electronic Business Correspondence 6.1 Identify types of information to include in business correspondence. 6.2 Compose business correspondence requesting information from an agricultural agency, association, or business.
I. 5. Prepare a balance sheet.	7. Financial Analysis 7.1 Use a computer to analyze a given financial situation.
H. 1. Describe the components and purpose of a promotional campaign.	8. Promotional Brochure 8.1 Design a promotional brochure using word processing templates or page layout program templates.
E. 2. Use written communication skills in the sales process. E. 3. Describe the proper use of communications technology. Agricultural Science II, *Leadership II* - 5. Prepare and deliver a presentation.	9. Public Relations Program 9.1 Develop a public relations program for your FFA chapter. 9.2 Prepare and deliver a presentation promoting the FFA chapter.

Competencies	Activity and Objectives
***Agribusiness Sales, Marketing, and Management* (continued)**	
C. 3. Describe the sources of credit and credit guidelines. C. 4. Develop a savings and investment plan as part of a complete financial plan.	10. Time Value of Money 10.1 Compare costs at various interest rates and various periods of time. 10.2 Compare costs at various interest rates and investment periods. 10.3 Describe the advantages of using computer-based amortization tables.
D. 8. Develop a résumé and complete a job application.	11. Tools for Landing a Job 11.1 Develop a résumé in a word processing program. 11.2. Complete a computer-based job application. 11.3. Identify components of an electronic portfolio. 11.4. Build an electronic portfolio.
E. 3. Describe the proper use of communications technology.	12. Web Page Design 12.1 Identify the components of a web page. 12.2 Design a web page using appropriate design strategies and techniques.
Agricultural Management and Economics	
A. 2. Determine the fixed and variable costs of production and use the fixed/variable concepts in making business decisions. B. 14. Calculate the depreciation of an investment.	13. Depreciation 13.1 Develop a spreadsheet that calculates depreciation. 13.2 Customize a spreadsheet to use in given situations.
B. 9. Prepare a sales ticket.	14. Electronic Sales Ticket 14.1 Develop an electronic sales ticket. 14.2 Describe the advantages of using a spreadsheet application to create and complete a sales ticket.
Agricultural Science I, *Careers I Unit*	
1. Identify career opportunities in the agricultural industry. 2. List and classify agricultural occupations by their job requirements and benefits.	15. Career Search on the Web 15.1 Search the web to identify the top 10 agricultural careers and justify your reasons for selecting those careers. 15.2 Research five agricultural careers and list the description, educational requirements, job availability, location, working conditions, skills necessary, and salary for these careers. 15.3 Describe the advantages of researching the web.

Competencies	Activity and Objectives
Agricultural Science I, *Introduction to Swine Production*	
2. Identify the major swine breeds and their significance in the industry.	16. Swine Breed Comparison 16.1 Compare the identifying characteristics of 10 swine breeds on the web. 16.2. Describe the advantages of researching topics on the web.
Agricultural Science II, *Introduction to Grassland Management*	
2. Identify plant classifications found in grasslands. 3. Recognize the characteristics of grassland plants that are used in plant identification. Agricultural Science II, *Leadership II* - 5. Prepare and deliver a presentation.	17. Plant Identification 17.1 Capture plant images electronically using a digital camera or scanner. 17.2 Research plants and identify them by common name, life cycle, type, and identifying characteristics. 17.3 Describe how a digital plant image can be used in plant science or plant production. 17.4 Prepare and deliver a plant identification presentation.
Agricultural Structures	
A. 2. Develop a plan of procedure and a bill of materials for a construction project.	18. Electronic Bill of Materials 18.1 Develop a bill of materials using a spreadsheet program. 18.2 Describe the advantages of using a spreadsheet in developing a bill of materials.
Animal Science	
C. 3. Describe the reproductive cycle of common production livestock. D. 1. Identify the importance of animal health in livestock.	19. Electronic Calendar 19.1 Develop an electronic calendar. 19.2 Describe the advantages of using an electronic calendar.
Exploring Agriculture in America	
A. 3. Describe the role of agriculture in the United States. A. 4. Describe agriculture in Missouri.	20. Current Agricultural Product Information 20.1 Use the web to identify the current top 10 agricultural products by cash receipts in the United States. 20.2 Use the web to identify the current top 10 agricultural products by cash receipts in Missouri. 20.3 Prepare a graphical presentation of the current product information.
A. 5. Identify advances in agricultural technology and their implications. B. 5. Identify current and emerging technologies of plant agriculture. C. 4. Identify current and emerging technologies of animal agriculture.	21. Emerging Agricultural Technologies 21.1 Identify and describe five emerging technologies in agriculture from research performed on the web.

Competencies	Activity and Objectives
Fish and Wildlife Management	
E. 1. Relate the reasons for fish and wildlife regulations and describe how they are made and enforced in Missouri.	22. Hunting and Fishing Seasons Timeline 22.1 Develop a chart/timeline for hunting and fishing seasons using information from the web. 22.2 Describe the advantages of using a word processing program to display information.
D. 2. Outline the life history of the white-tailed deer. Agricultural Science II, *Leadership II* - 5. Prepare and deliver a presentation.	23. White-tailed Deer Timeline 23.1 Develop a timeline of seasonal events for the white-tailed deer. 23.2 Prepare and deliver a presentation of the white-tailed deer timeline of events.
Food Science and Technology	
D. 1. Describe the factors that affect consumer choices of food.	24. Consumer Food Preferences 24.1 Use a database to analyze data to determine consumer food preference.
Forest Management	
C. 4. Estimate diameter at breast height, merchantable height, and basal area per acre. C. 7. Estimate the volume of standing timber.	25. Board Feet of Standing Timber 25.1 Use a spreadsheet to calculate board feet in standing timber.
C. 1. Interpret surface features using aerial photographs and topographic maps.	26. Land Surface Features 26.1 Identify surface features using aerial photographs and topographic maps on the web.
Greenhouse Operation and Management	
A. 23. Describe the various types of records kept in a greenhouse business.	27. Electronic Budget 27.1 Use a budget spreadsheet to calculate various production inputs.

Helpful Instructor References

Computer user manuals for your software version can be found readily by searching the Internet. Several suggested web sites are listed below.

<http://www.dummies.com/> For Dummies® series books
<http://mspress.microsoft.com/> Microsoft Press
<http://www.sybex.com/> Sybex, Inc.
<http://www.mcp.com/que/ > Que

Below are a few examples of computer reference manuals that may be helpful. These books have not been reviewed for quality and are not meant to be recommendations.

Courter, Gini, Annette Marquis. *Microsoft Office 97 : No Experience Required.* Sybex, 1997.

Halvorson, Michael, Michael Young. *Running Microsoft Office 97, Updated Edition.* Microsoft Press, 1998.

Levine Young, Margaret, David Kay, Jordan M. Young. *Corel WordPerfect 8 for Windows for Dummies.* Hungry Minds, Inc., 1997.

Simpson, Alan, Celeste Robinson. *Mastering™ WordPerfect Office 2000.* Sybex, 1999.

Snell, Ned. *Easy Microsoft FrontPage 2000.* Que, 1999.

Wang, Wallace, Roger C. Parker. *Microsoft Office 97 For Windows For Dummies.* Hungry Minds, Inc., 1997.

Warner, Janine, Paul Vachier. Dreamweaver 3 For Dummies. Hungry Minds, Inc., 2000.

Winter, Rick. *Microsoft Office 97 User Manual.* Que, 1998.

Computer Lab Activities in Agriculture - Competency Crosswalk

Duty Band & Task Statement	Activity Obj.*	SHOW-ME STANDARDS		CURRICULUM FRAMEWORKS FOR GRADES 9-12					
		Knowledge (Content)	Performance (Goals)	Communication Arts	Fine Arts	Health/ Physical Education	Math	Science	Social Studies
Introductory (curriculum nonspecific)									
N/A	1.1	CA 3, SC 7	1.4, 1.8, 2.7	CA/II/9-12/4i				SC/I.A/5-8/2a	
N/A	2.1	CA 6, MA 3	1.4, 1.8, 2.7	CA/II/9-12/4i			MA/V/9-12/3a MA/V/9-12/4a		
N/A	3.1	CA 3	1.2, 1.4, 1.7	CA/I/9-12/2c, CA/I/9-12/3d					
N/A	3.2	CA 3, SS 7	1.2, 1.5, 4.2, 4.4	CA/I/9-12/2c					SS/I.A/9-12/6c, m
N/A	3.3	CA 3	1.2, 1.4, 2.7	CA/I/9-12/2c					
N/A	3.4	CA 3	1.2, 1.4, 2.7	CA/I/9-12/2c					
Advanced Livestock Production and Management									
C. 3	4.1	CA 1, CA 3, HP 6, MA 3, SC 7	1.4, 1.8, 2.1, 2.7	CA/I/9-12/1a, 1b, 1c, 1d CA/IV/9-12/1b, 1c, 1d, 1e, 1f, 1g, 1h, 1l CA/I/9-12/3b CA/II/9-12/2c CA/II/9-12/4i CA/II/9-12/5e		HP/II/9-12/4a	MA/V/9-12/1a	SC/I.A/5-8/2a	

References that are not underlined are cross-references to the curriculum competencies, and references that are underlined are cross-references to the activity objectives.
* - Activity objectives are references to the activity number and objective number, e.g., 21.2 refers to activity 21 and objective 2.

Duty Band & Task Statement	Activity Obj.*	SHOW-ME STANDARDS		CURRICULUM FRAMEWORKS FOR GRADES 9-12					
		Knowledge (Content)	Performance (Goals)	Communication Arts	Fine Arts	Health/ Physical Education	Math	Science	Social Studies
Agribusiness Sales, Marketing, and Management									
B. 2	5.1	CA 6, MA 3, SC 7, SS 4	1.4, 1.8, 1.10, 2.1, 2.7	CA/II/9-12/4i			MA/I/9-12/3c, MA/VII/5-8/5d, f	SC/I.A/ 5-8/2a	SS/II.D/5-8/3c, f, g, k
E. 2, E. 3	6.1	CA 4	1.10, 2.1	CA/II/9-12/3c					
E. 2, E. 3	6.2	CA 1	2.1, 2.3, 2.7	CA/II/9-12/3c, CA/II/9-12/4b, CA/II/9-12/6a					
I. 5	7.1	MA 3, SC 7, SS 4	1.4, 1.8				MA/I/9-12/3c, MA/II/9-12/4h	SC/I.A/5-8/2a	SS/IV.D/5-8/1e, g, h
H. 1	8.1	CA 1, CA 5, FA 1, FA 3	1.4, 1.6, 1.8, 2.1, 2.3, 2.7	CA/II/9-12/4i	FA/IV.C/5-8/1a				
E. 2, E. 3	9.1	CA 1, CA 4, CA 6	1.8, 2.1, 2.3, 2.7, 4.5, 4.6	CA/II/9-12/2c, CA/II/9-12/4i, CA/II/9-12/5b, c, e, CA/IV/9-12/3a					

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Duty Band & Task Statement	Activity Obj.*	SHOW-ME STANDARDS		CURRICULUM FRAMEWORKS FOR GRADES 9-12					
		Knowledge (Content)	Performance (Goals)	Communication Arts	Fine Arts	Health/ Physical Education	Math	Science	Social Studies
5. in Leader-ship II	9.2	CA 1, CA 4, CA 6	1.4, 1.8, 2.1, 2.3, 2.7,	CA/II/9-12/2c, CA/II/9-12/3a, b, CA/II/9-12/4i, CA/II/9-12/5a, d, e CA/IV/9-12/3b					
C. 3, C. 4	10.1	MA 3, MA 6, SC 7, SS 7	1.4, 1.6, 2.7, 3.8				MA/I/9-12/3a, b, MA/IV/9-12/3d, MA/V/9-12/3a, MA/VII/9-12/5a	SC/I.A/5-8/2a	SS/IV.D/5-8/1d, e
C. 3, C. 4	10.2	MA 3, MA 6, SC 7, SS 7	1.4, 1.6, 2.7, 3.8				MA/I/9-12/3a, b, MA/IV/9-12/3d, MA/V/9-12/3a, MA/VII/9-12/5a	SC/I.A/5-8/2a	SS/IV.D/5-8/1d, e
C. 3, C. 4	10.3	CA 3	1.5, 1.6, 4.1	CA/IV/9-12/3c					
D. 8	11.1	CA 1, CA 6	1.4, 1.8, 1.10, 2.1, 2.6, 2.7, 4.8	CA/II/9-12/4i, CA/II/9-12/5e, CA/II/9-12/6a, b, CA/IV/9-12/1f					
D. 8	11.2	CA 1, CA 6	1.4, 1.8, 1.10, 2.1, 2.6, 2.7, 4.8	CA/II/9-12/4i, CA/II/9-12/5e, CA/II/9-12/6a, b, CA/IV/9-12/1f					
D. 8	11.3	CA 3	1.6	CA/I/9-12/1b					

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Duty Band & Task Statement	Activity Obj.*	SHOW-ME STANDARDS		CURRICULUM FRAMEWORKS FOR GRADES 9-12					
		Knowledge (Content)	Performance (Goals)	Communication Arts	Fine Arts	Health/ Physical Education	Math	Science	Social Studies
D.8	11.4	CA 1, CA 6	1.4, 1.8, 1.10, 2.1, 2.6, 2.7, 4.8	CA/II/9-12/4i, CA/II/9-12/5e, CA/II/9-12/6a, b, CA/IV/9-12/1f					
E.3	12.1	CA 3	1.6	CA/I/9-12/1b					
E. 3	12.2	CA 1, CA 6	1.4, 1.8, 1.10, 2.1, 2.7	CA/II/9-12/4i, CA/II/9-12/5e, CA/II/9-12/6a, b, CA/IV/9-12/1f					
Agricultural Management and Economics									
A. 2, B. 14	13.1	CA 6, MA 3, SC 7, SS 4	1.4, 1.8, 1.10, 2.1, 2.7	CA/II/9-12/4i			MA/I/9-12/3c, MA/VII/5-8/5d, f	SC/I.A/ 5-8/2a	SS/II.D/5-8/3c, f, g, k
A. 2, B. 14	13.2	CA 6, MA 3, SC 7, SS 4	1.4, 1.8, 1.10, 2.7	CA/II/9-12/4i			MA/I/9-12/3c, MA/VII/5-8/5d, f	SC/I.A/ 5-8/2a	SS/II.D/5-8/3c, f, g, k
B. 9.	14.1	CA 6, MA 3, SC 7, SS 4	1.4, 1.8, 1.10, 2.1, 2.7	CA/II/9-12/4i			MA/I/9-12/3c, MA/VII/5-8/5f	SC/I.A/ 5-8/2a	SS/II.D/5-8/3c, g
B. 9.	14.2	CA 3	1.5, 1.6, 4.1	CA/IV/9-12/3c					

References that are not underlined are cross-references to the curriculum competencies, and references that are underlined are cross-references to the activity objectives.
* - Activity objectives are references to the activity number and objective number, e.g., 21.2 refers to activity 21 and objective 2.

Duty Band & Task Statement	Activity Obj.*	SHOW-ME STANDARDS		CURRICULUM FRAMEWORKS FOR GRADES 9-12					
		Knowledge (Content)	Performance (Goals)	Communication Arts	Fine Arts	Health/ Physical Education	Math	Science	Social Studies
Agricultural Science I: *Careers I Unit*									
1, 2	15.1	CA 3, CA 5, SC 7	1.2, 1.4, 1.5, 1.6, 1.8, 2.6, 4.1,4.8	CA/I/9-12/2c, CA/I/9-12/3f, CA/I/9-12/6d, CA/III/9-12/1d, CA/IV/9-12/1e, CA/IV/9-12/2d				SC/I.A/ 5-8/2a	
1, 2	15.2	CA 3, CA 5, SC 7	1.2, 1.4, 1.5, 1.6, 1.8, 2.6, 4.8	CA/I/9-12/2c, CA/III/9-12/1d, CA/IV/9-12/2d				SC/I.A/ 5-8/2a	
1, 2	15.3	CA 3	1.5, 1.6, 4.1	CA/IV/9-12/3c					
Agricultural Science I: *Introduction to Swine Production*									
2	16.1	CA 3, CA 5, SC 7	1.2, 1.4, 1.5, 1.6, 1.8, 4.8	CA/I/9-12/2c, CA/III/9-12/1d, CA/IV/9-12/2d				SC/I.A/ 5-8/2a	
2	16.2	CA 3	1.5, 1.6, 4.1	CA/IV/9-12/3c					
Agricultural Science II: *Introduction to Grassland Management*									
2, 3	17.1	CA 6, SC 7	1.4, 1.8	CA/II/9-12/4i				SC/I.A/ 5-8/2a	

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* - Activity objectives are references to the activity number and objective number, e.g., 21.2 refers to activity 21 and objective 2.

Duty Band & Task Statement	Activity Obj.*	SHOW-ME STANDARDS		CURRICULUM FRAMEWORKS FOR GRADES 9-12					
		Knowledge (Content)	Performance (Goals)	Communication Arts	Fine Arts	Health/ Physical Education	Math	Science	Social Studies
2, 3	17.2	CA 3, CA 5, SC 7	1.2, 1.4, 1.5, 1.6, 1.8, 4.8	CA/I/9-12/2c, CA/III/9-12/1d, CA/IV/9-12/2d				SC/I.A/ 5-8/2a	
2, 3	17.3	CA 1, CA 6, SC 8	1.5, 1.6, 1.10, 3.6, 2.3, 2.4, 4.1	CA/IV/9-12/3c				SC/I/9-12/2a	
5 (*Leader-ship II*)	17.4	CA 1, CA 4, CA 6	1.4, 1.8, 2.1, 2.3, 2.7, 4.4	CA/II/9-12/2c, CA/II/9-12/3a, b, CA/II/9-12/4i, CA/II/9-12/5a, d, e CA/IV/9-12/3b, g					
Agricultural Structures									
A. 2	18.1	MA 1, CA 1 CA 6, MA 3, SC 7, SS 4	1.4, 1.6, 2.1, 3.2 1.4, 1.8, 1.10, 2.1, 2.7	CA/II/9-12/1a, b CA/II/9-12/4i			MA/V/9-12/1a MA/IV/9-12/3a, 3b, 3c, 3d MA/I/9-12/3c, MA/VII/5-8/5f	SC/I.A/5-8/2a	SS/II.D/5-8/3c, g
A. 2	18.2	MA 1, CA 1 CA 3	1.4, 1.6, 2.1, 3.2 1.5, 1.6, 4.1	CA/II/9-12/1a, b CA/IV/9-12/3c			MA/V/9-12/1a MA/IV/9-12/3a, 3b, 3c, 3d		
Animal Science									
C. 3, D. 1	19.1	CA 6, SC 7, SS 4	1.4, 1.8, 1.10, 2.1, 2.7	CA/II/9-12/4i				SC/I.A/5-8/2a	SS/II.D/5-8/3c, g

References that are not underlined are cross-references to the curriculum competencies, and references that are underlined are cross-references to the activity objectives.
* - Activity objectives are references to the activity number and objective number, e.g., 21.2 refers to activity 21 and objective 2.

Duty Band & Task Statement	Activity Obj.*	SHOW-ME STANDARDS		CURRICULUM FRAMEWORKS FOR GRADES 9-12					
		Knowledge (Content)	Performance (Goals)	Communication Arts	Fine Arts	Health/ Physical Education	Math	Science	Social Studies
C. 3, D. 1	19.2	CA 3	1.5, 1.6, 4.1	CA/IV/9-12/3c					
Exploring Agriculture in America									
A. 3, A. 4	20.1	CA-3, CA-6, SC-8, SS- 5, SS-6 CA 3, SC 7	1.1, 1.6, 1.8 1.2, 1.4, 1.5, 1.10	CA/I/1a, CA/I/3c, CA/II/2a, CA/I/9-12/2c				SC/I.A/ 5-8/2a	SS/II.E/2a, d, j, k; SS/II.E/3a, b, j, k
A. 3, A. 4	20.2	CA-3, CA-6, SC-8, SS- 5, SS-6 CA 3, SC 7	1.1, 1.6, 1.8 1.2, 1.4, 1.5, 1.10	CA/I/1a, CA/I/3c, CA/II/2a CA/I/9-12/2c				SC/I.A/ 5-8/2a	SS/II.E/2a, d, j, k; SS/II.E/3a, b, j, k
A. 3, A. 4	20.3	CA-3, CA-6, SC-8, SS- 5, SS-6 CA 6, MA 3	1.1, 1.6, 1.8 1.4, 1.8, 2.7	CA/I/1a, CA/I/3c, CA/II/2a CA/II/9-12/4i			MA/V/9-12/3a MA/V/9-12/4a		SS/II.E/2a, d, j, k; SS/II.E/3a, b, j, k
A. 5, B. 5, C. 4	21.1	CA-1, CA-3, CA-4, SC-3, SC-7, SC-8, SS-4, SS-5, SS-6, SS-7, CA 3, CA 4, SC 7	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 2.7, 3.5, 4.6, 3.8, 1.2, 1.4, 1.5, 1.8, 1.10	CA/I/1a, CA/I/1b, CA/I/2b, CA/I/3c, CA/II/2c, CA/II/3c, CA/I/9-12/2c, CA/I/9-12/3c				SC/II.A/2a, SC/II/1a, SC/II/2a, SC/VII.D1a, SC/VII.D/2a, SC/I.A/ 5-8/2a	
Fish and Wildlife Management									
E. 1.	22.1	CA 3, CA 6, SC 7	1.2, 1.4, 1.5, 1.10	CA/I/9-12/2c, CA/II/9-12/4i				SC/I.A/ 5-8/2a	

References that are not underlined are cross-references to the curriculum competencies, and references that are underlined are cross-references to the activity objectives.
* - Activity objectives are references to the activity number and objective number, e.g., 21.2 refers to activity 21 and objective 2.

Duty Band & Task Statement	Activity Obj.*	SHOW-ME STANDARDS		CURRICULUM FRAMEWORKS FOR GRADES 9-12					
		Knowledge (Content)	Performance (Goals)	Communication Arts	Fine Arts	Health/ Physical Education	Math	Science	Social Studies
E. 1.	22.2	CA 3	1.5, 1.6, 4.1	CA/IV/9-12/3c					
D. 2	23.1	CA 3, CA 6, SC 7	1.2, 1.4, 1.5, 1.10	CA/I/9-12/2c, CA/II/9-12/4l				SC/I.A/ 5-8/2a	
5 (*Leader-ship II*)	23.2	CA 1, CA 4, CA 6	1.4, 1.8, 2.1, 2.3, 2.7, 4.4	CA/II/9-12/2c, CA/II/9-12/3a, b, CA/II/9-12/4i, CA/II/9-12/5a, d, e CA/IV/9-12/3b, g					
Food Science and Technology									
D. 1	24.1	CA 6, MA 3, SC 7	1.2, 1.3, 1.4, 1.6, 1.8, 1.10, 2.1, 2.3, 2.7, 4.1	CA/I/9-12/6c, d CA/II/9-12/4i			MA/I/9-12/3c, MA/VII/5-8/5f	SC/I.A/9-12/1a SC/I.A/5-8/2a	
Forest Management									
C. 4, C. 7	25.1	CA 6, MA 3, SC 7	1.4, 1.8, 1.10, 2.1, 2.7	CA/II/9-12/4i			MA/I/9-12/3c, MA/VII/5-8/5f	SC/I.A/5-8/2a	
C. 1	26.1	CA 6, SC 7	1.4, 1.8, 1.10, 2.1, 2.7	CA/II/9-12/4i				SC/I.A/5-8/2a	

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* - Activity objectives are references to the activity number and objective number, e.g., 21.2 refers to activity 21 and objective 2.

Duty Band & Task Statement	Activity Obj.*	SHOW-ME STANDARDS		CURRICULUM FRAMEWORKS FOR GRADES 9-12					
		Knowledge (Content)	Performance (Goals)	Communication Arts	Fine Arts	Health/ Physical Education	Math	Science	Social Studies
Greenhouse Operation and Management									
A. 23	27.1	CA 6, MA 3, SC 7, SS 4	1.4, 1.8, 1.10, 2.1, 2.7	CA/II/9-12/4i			MA/I/9-12/3c, MA/VII/5-8/5f	SC/I.A/ 5-8/2a	SS/II.D/5-8/3c, g

References that are not underlined are cross-references to the curriculum competencies, and references that are underlined are cross-references to the activity objectives.
* - Activity objectives are references to the activity number and objective number, e.g., 21.2 refers to activity 21 and objective 2.

Teaching Calendar

Activity	Equipment/Materials	Est. Activity Length
Introductory (curriculum nonspecific)		
Basic Computer Skills–Word Processing	• Computer with Windows operating system • Word (word processing program) • Floppy disks (one for each student) • Letter_customer (Word file) • SG 1.1 Basic Computer Skills–Word Processing Scoring Guide • Printer	100 min.
Basic Computer Skills–Charts and Graphs	• Computer • Excel (spreadsheet program) • Floppy disk • SG 2.1 Basic Computer Skills–Charts and Graphs Scoring Guide • Printer	100 min.
Internet as a Resource	• Computer with Internet access	100 min.
Advanced Livestock Production and Management		
Beef Cattle Breeding Database	• Computer • Spreadsheet software (e.g., Excel, Lotus 1-2-3) • SG 4.1 Beef Cattle Breeding Database Scoring Guide • Floppy disk (one for each student) • Printer	100 min.
Agribusiness Sales, Marketing, and Management		
Diminishing Return	• Computer • Software for graphs and charts (e.g., Excel, Lotus 1-2-3) • SG 5.1 Diminishing Return Graphs Scoring Guide • AS 2.1 through 2.3 from *Agribusiness Sales, Marketing, and Management* • Diminishing Return Sample (Excel file) • Floppy disk • Printer	100 min.

Activity	Equipment/Materials	Est. Activity Length
Electronic Business Correspondence	• Computer (Internet and e-mail access if choosing the e-mail option) • Letter option - word processing program (e.g., Microsoft Word, WordPerfect), e-mail option - e-mail client (e.g., Outlook, Outlook Express, Eudora) or web-based program (e.g., yahoo mail, excite mail, lycos mail) • Floppy disk • SG 6.1a Business Correspondence (Letter) or SG 6.1b Business Correspondence (E-mail) Scoring Guide • Printer	100 min.
Financial Analysis	• Computer • Spreadsheet software (e.g., Excel, Lotus 1-2-3) • Financial analysis_template (Excel file)	100 min.
Promotional Brochure	• Computer • Word processing or page layout program (e.g., Word, WordPerfect, PageMaker, Publisher) • SG 8.1 Promotional Brochure Scoring Guide • Brochure_example (Word file) - view for sample created for another company	200 min.
Public Relations Program-Part 1	• Computer • Word processing software (e.g., Word, WordPerfect) • Floppy Disk (one for each group) • SG 9.1 Public Relations Program Calendar Scoring Guide	60 min.
Public Relations Program-Part 2	• Computer • Scanner • Pictures of members at chapter activities or relevant clip art • Presentation software (e.g., PowerPoint, Corel Presentations) • SG 9.2 Public Relations Program Presentation Scoring Guide • Public relations_blank template (PowerPoint file)	200 min.
Time Value of Money	• Computer with Internet access	100 min.

Teaching Calendar (continued)

Activity	Equipment/Materials	Est. Activity Length
***Agribusiness Sales, Marketing, and Management* (continued)**		
Tools for Landing a Job-Part 1	• Computer • Word processing software, e.g., Word, WordPerfect • Résumé_template (Word file) • SG 11.1 Résumé Scoring Guide • Floppy disk	100 min.
Tools for Landing a Job-Part 2	• Computer (Internet access if choosing the on-line option) • Word processing option - Microsoft Word 97 or higher • Word processing option - job application_template (Word file) • Word processing option - floppy disk • SG 11.2 Job Applicaton Scoring Guide • Printer	50 min.
Tools for Landing a Job-Part 3	• Computer with Internet access • Presentation software, e.g., PowerPoint, Corel Presentations • SG 11.3 Electronic Portfolio Scoring Guide • Electronic portfolio_blank template (PowerPoint file) • Electronic portfolio_presentation (completed sample PowerPoint file)	200 min.
Web Page Design	• Computer with Internet access • Web authoring software, e.g., Composer, FrontPage, Dreamweaver • SG 12.1 Web Page Design Scoring Guide • Floppy disks (one for each student) • Homepage.htm (web page) - view for FFA example	250 min.
Agricultural Management and Economics		
Depreciation	• Computer • Spreadsheet software (e.g., Excel, Lotus 1-2-3) • SG 13.1 Depreciation Spreadsheet Scoring Guide • Depreciation_template (Excel file) • Floppy disk • Printer	100 min.

Activity	Equipment/Materials	Est. Activity Length
Electronic Sales Ticket	• Computer • Spreadsheet program (e.g. Excel, Lotus 1-2-3) • Sales ticket_template (Excel file) • Floppy disk • SG 14.1 Electronic Sales Ticket Scoring Guide • Printer	100 min.
Agricultural Science I, *Careers I Unit*		
Career Search on the Web	• Computer with Internet access	100 min.
Agricultural Science I, *Introduction to Swine Production*		
Swine Breed Comparison	• Computer with Internet access	100 min.
Agricultural Science II, *Introduction to Grassland Management*		
Plant Identification-Part 1	• Computer with Internet access • Digital camera or flatbed scanner • Floppy disk	100 min.
Plant Identification-Part 2	• Computer • Presentation software, e.g., PowerPoint, Corel Presentations • SG 17.2 Plant Identification Presentation Scoring Guide • PlantID_blank template (PowerPoint file) • Floppy disk	300 min.
Agricultural Structures		
Electronic Bill of Materials	• Computer • Spreadsheet program (e.g., Excel, Lotus 1-2-3) • Bill of materials_template (Excel file) • SG 18.1 Electronic Bill of Materials Scoring Guide • Floppy disk (one for each student) • Printer	100 min.
Animal Science		
Electronic Calendar	• Computer • Word processing software (e.g., Word, WordPerfect) • Floppy disk (one for each student) • SG 19.1 Electronic Calendar Scoring Guide • Printer	100 min.

Teaching Calendar (continued)

Activity	Equipment/Materials	Est. Activity Length
Exploring Agriculture in America		
Current Agricultural Products Information-Part 1	• Computer with Internet access	100 min.
Current Agricultural Products Information-Part 2	• Computer • Software for graphs and charts (e.g., Excel, Lotus 1-2-3) • SG 20.2 Top 10 Agricultural Products Bar Graphs and Pie Charts Scoring Guide • Floppy disk • Printer	200 min.
Emerging Agricultural Technologies	• Computer with Internet access	150 min.
Fish and Wildlife Management		
Hunting and Fishing Seasons Timeline	• Computer with Internet access • Word processing program (e.g., Word, WordPerfect) • SG 22.1 Hunting and Fishing Seasons Timeline Scoring Guide • Floppy disk • Printer	100 min.
White-tailed Deer Timeline-Part 1	• Computer • Word processing software (e.g., Word, WordPerfect) • SG 23.1 White-tailed Deer Timeline Scoring Guide • Floppy disk • Printer	150 min.
White-tailed Deer Timeline-Part 2	• Computer • Scanner • Books or magazines with pictures of white-tailed deer • Presentation software (e.g., PowerPoint, Corel Presentations) • SG 23.2 White-tailed Deer Timeline Presentation Scoring Guide • Whitetail Events_blank template (PowerPoint file) • Floppy disk	300 min.

Activity	Equipment/Materials	Est. Activity Length
Food Science and Technology		
Consumer Food Preferences	• Computer • Spreadsheet program (e.g., Excel, Lotus 1-2-3) • Consumer food preferences_template (Excel file) • Floppy disk • Printer	200 min.
Forest Management		
Board Feet of Standing Timber	• Cruising stick • Clipboard and paper to record board feet data • Computer • Spreadsheet software (e.g., Excel, Lotus 1-2-3) • SG 25.1 Board Feet of Standing Timber Spreadsheet Scoring Guide • Floppy disk • Printer	200 min.
Land Surface Features	• Computer with Internet access • Printer	150 min.
Greenhouse Operation and Management		
Electronic Budget	• Computer • Spreadsheet software (e.g., Excel, Lotus 1-2-3) • SG 27.1 Electronic Budget Scoring Guide • Budget_template (Excel file) • Floppy disk (one for each student) • Printer	200 min.

Introductory

Computer Lab Activities in Agriculture

Activity 1

Basic Computer Skills–Word Processing

Overview:

This activity provides experience in performing some basic computer skills in the Windows operating system and a word processing program. The skills covered are cut, copy, paste, save, save as, copy file, rename file, and create folder.

Activity Objective:

Demonstrate basic computing skills including cut, copy, paste, save, save as, copy file, rename file, and create folder.

Activity Sheet:

AS 1.1 Basic Computer Skills–Word Processing

Scoring Guide:

SG 1.1 Basic Computer Skills–Word Processing

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. This activity uses files created in Microsoft Word. If you do not have Word, create similar files in the word processing or page layout program you want to use.

3. Familiarize yourself with the basic computer skills that are part of this activity and the word processing program or page layout program that the students will be using. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

4. Discuss SG 1.1 and review the requirements of the activity with students.

Activity length: 100 minutes

Discussion Question:

What are the advantages of practicing basic computer skills and trying out a program's features?

- The more you work in the program and try the features, the more comfortable you will become at using them.

- When you use the trial-and-error approach, you will usually find something that works. You can always use the *Help* feature for the program when you need assistance.

Assessment:

Collect the floppy disks and letters. Grade the students based on SG 1.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria.

Additional Activities:

1. Have the students change the font of the letters and format portions with bold, italics, underline, etc. Have them use the zoom function to view the letters at different percentages. Show them that when formatting, it's useful to zoom in on text and when reviewing the finished product, it's helpful to zoom out and see the whole page.

2. Have students use basic computer skills in creating a letterhead for their FFA chapter.

Student Activity Sheet
Basic Computer Skills–Word Processing

Student Objective:

Demonstrate basic computing skills including cut, copy, paste, save, save as, copy file, rename file, and create folder.

Equipment and Materials:

- Computer with Windows operating system
- Word (word processing program)
- Floppy disks (one for each student)
- Letter_customer (Word file)
- SG 1.1 Basic Computer Skills–Word Processing Scoring Guide
- Printer

Procedure:

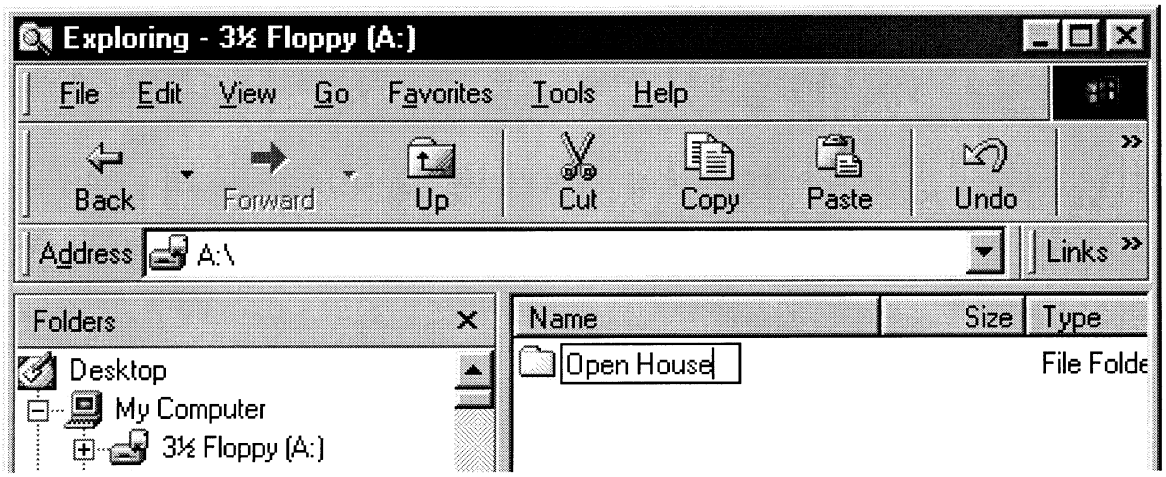
1. Refer to SG 1.1 for the tasks you will be graded on.

2. Read the scenario below.

   Your boss, Doug Cook, has created a letter for the company's upcoming open house, but it needs a few things corrected before it can be mailed. He wants a version for customers and one for business contacts such as contractors.

3. Insert a floppy disk in the A: drive. Right-click on the *Start* button in the lower left corner of your screen and select *Explore*. Find the A: drive, select it, and double-click to open it.

4. To create a folder to store the letters, right-click on your A: drive (floppy disk) and select *New* and *Folder*. Name the folder "Open House."

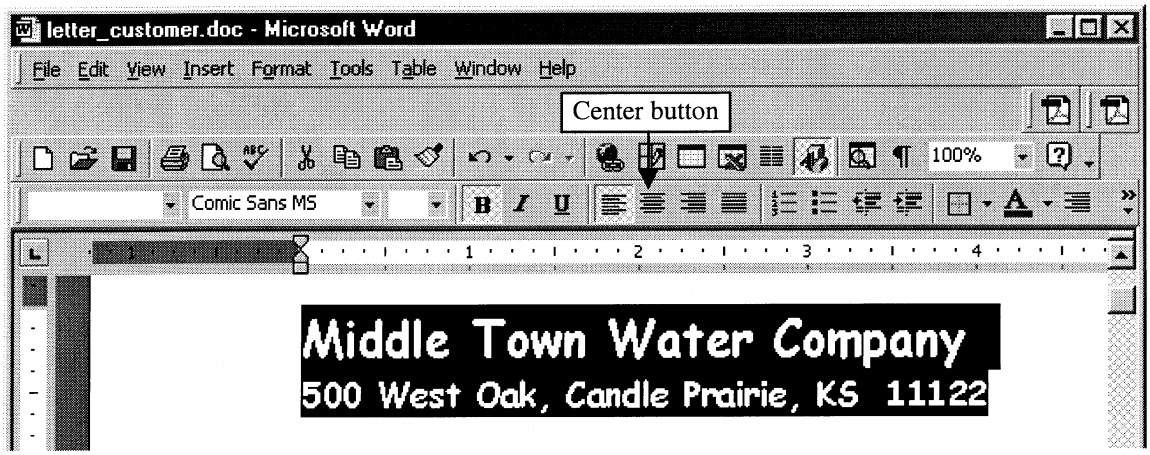


Note: The following procedures were done using Microsoft Word. If you are using another program, some of the commands and/or features may be different.

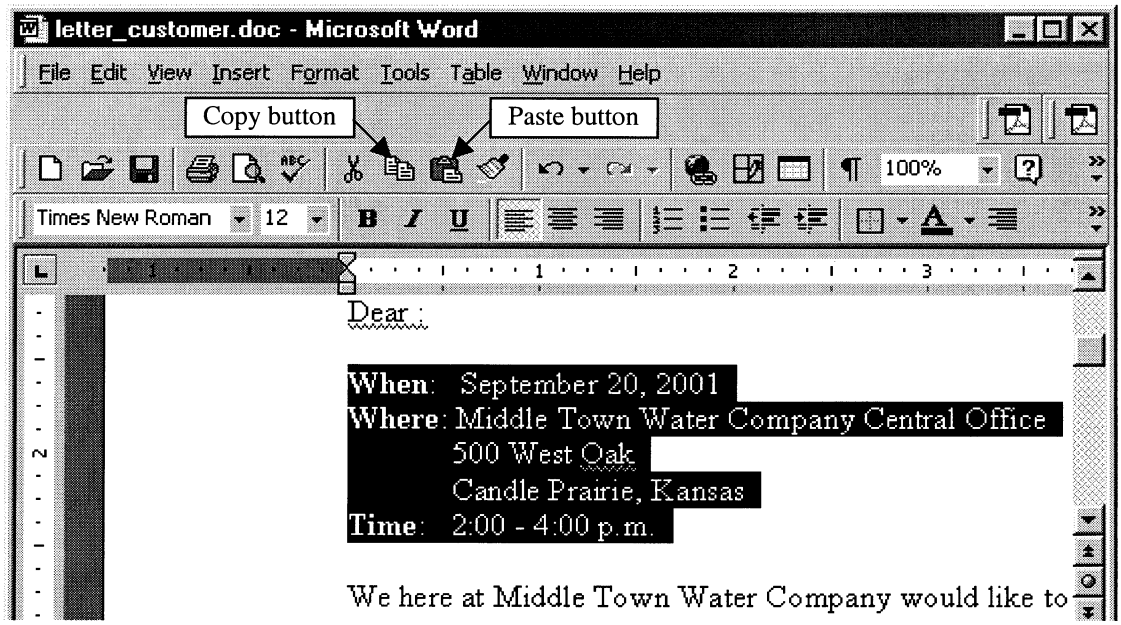
5. Open the file named "letter_customer" located on the *Computer Lab Activities in Agriculture* CD-ROM (usually the D: or E: drive). With the file open, go to the menu bar and select *File, Save As*, and save the file in the "Open House" folder on your floppy disk.

   Note: *Save As* allows you to rename the file and save it to another location whereas the *Save* command saves the file to its current location.

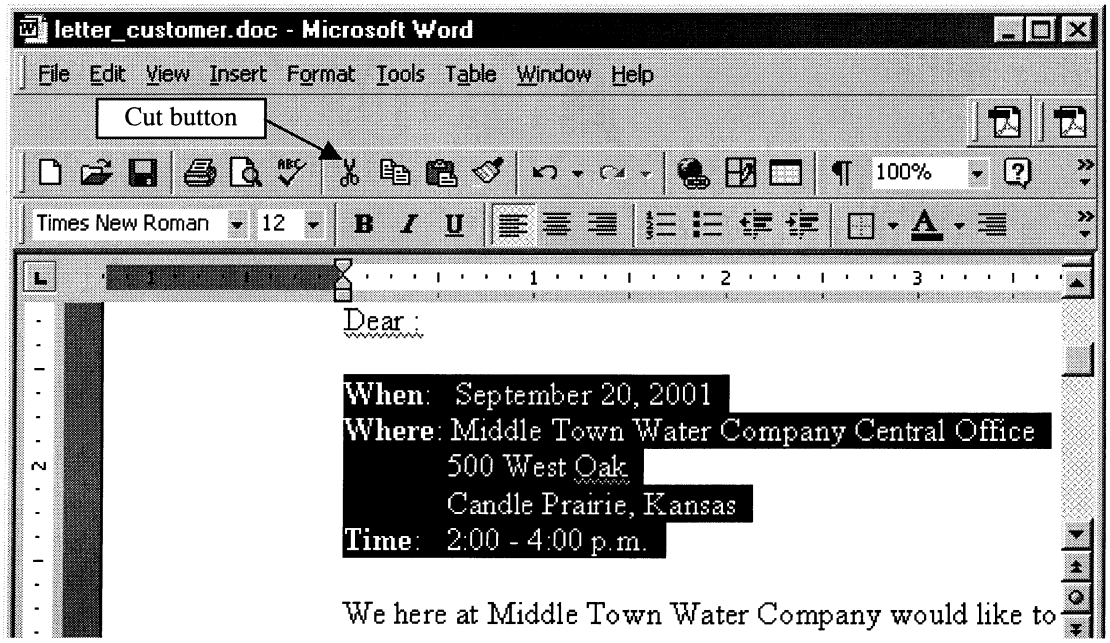
6. Refer to Figure 1.1 at the end of the procedure for the changes that Mr. Cook wants to the customer letter. Highlight the company name and address. Click the center button on the toolbar to center the text horizontally on the page. (Optionally, select *Format* and then *Paragraph*. Next to *Alignment* select *Centered* and then click the *OK* button.)



7. With your cursor, highlight the block of text that specifies when, where, and the time for the open house. Click on the *Copy* button in the toolbar to copy the text. Move your cursor to the location where you want to insert the text and click on the *Paste* button. (You can also select *Edit* and then *Copy* in the menu to copy. To paste, select *Edit* and then *Paste*.) This block of text should now be between the first and last paragraphs.



8. Highlight the top block of text that you copied and click on the *Cut* button in the toolbar to delete the text. (You can also select *Edit* and then *Cut*.)



9. Scroll through the letter and make sure that there is only one blank line between the salutation and each of the paragraphs. If there are more blank lines, delete them. Type your name at the top of the letter and click on the *Save* button to save the file. (You can also select *Edit* and then *Save* to save the file.)

10. Print the file and close it.

11. Open the "Open House" folder on your floppy disk. Right-click on the "letter_customer" file and select *Copy*. Right-click again and select *Paste*. You will now have a file named "Copy of letter_customer."

12. Right-click on the "Copy of letter_customer" file and select *Rename*. Change the file name to "letter_business contacts."

13. Open the "letter_business contacts" file and make the text changes indicated in Figure 1.2 (located at the end of the procedure). Type your name at the top of the letter and save the file.

14. Print the file and close it.

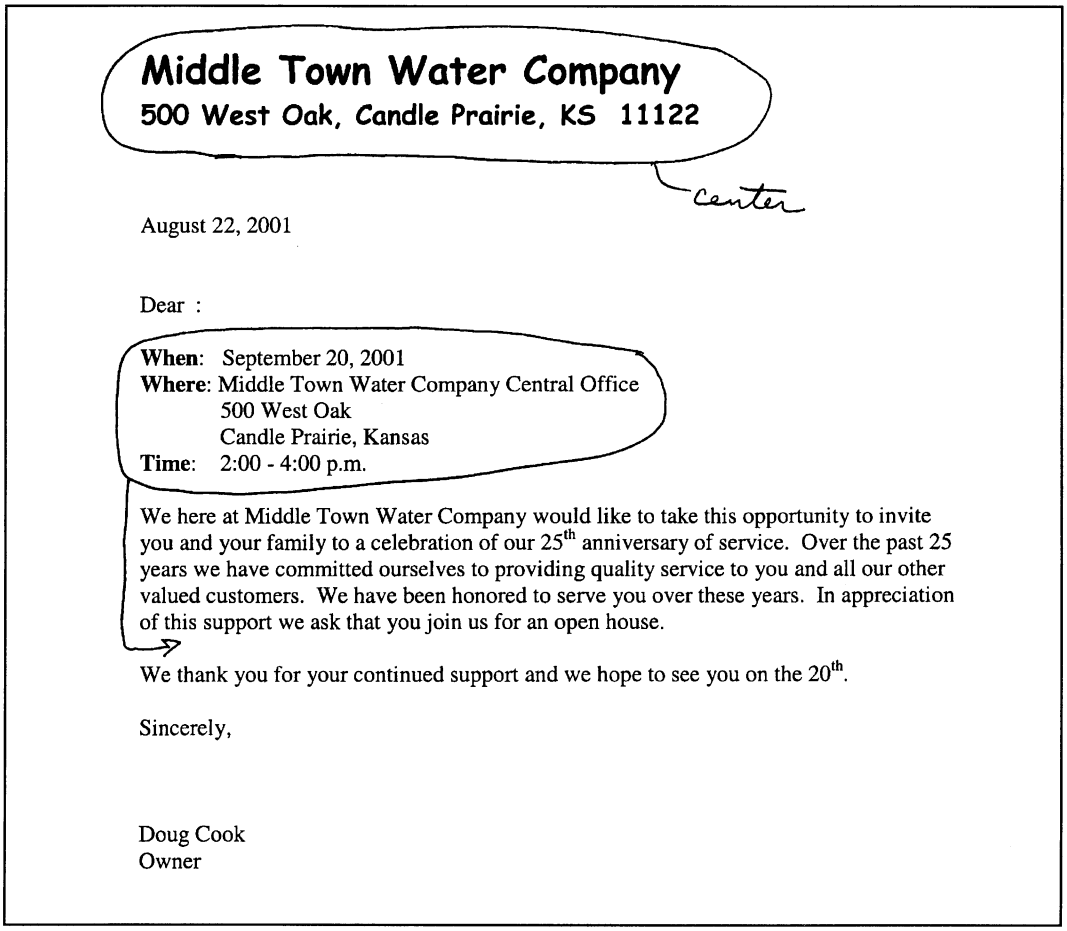


Figure 1.1 - Letter_customer changes

Middle Town Water Company
500 West Oak, Candle Prairie, KS 11122

August 22, 2001

Dear :

We here at Middle Town Water Company would like to take this opportunity to invite you and your family to a celebration of our 25th anniversary of service. Over the past 25 years ~~we have committed ourselves to providing~~ quality service to ~~you and~~ all our ~~other~~ valued customers. We have been honored to ~~serve~~ you over these years. In appreciation of this support we ask that you join us for an open house ~~to~~ work with you have helped us to provide

When: September 20, 2001
Where: Middle Town Water Company Central Office
500 West Oak
Candle Prairie, Kansas
Time: 2:00 - 4:00 p.m.

We thank you for your continued support and we hope to see you on the 20th.

Sincerely,

Doug Cook
Owner

Figure 1.2. Letter_business contacts changes

Basic Computer Skills–Word Processing Scoring Guide

Name _____

Successfully performed the following tasks:	**Two points for each item checked**
Created and named a folder	_____
Copied and pasted text	_____
Cut text	_____
Copied file	_____
Renamed file	_____
Saved files	_____
Edited "letter_customer" file correctly	_____
Edited "letter_business contacts" file correctly	_____
Total points out of 16	_____

Activity 2

Basic Computer Skills–Charts and Graphs

Overview:

This activity provides experience in performing some basic computer skills in a charts and graphs program. The skills covered are entering data into spreadsheet files and creating a pie chart, line graph, and column graph.

Activity Objective:

Develop and interpret charts and graphs.

Activity Sheet: AS 2.1 Basic Computer Skills–Charts and Graphs

Scoring Guide:

SG 2.1 Basic Computer Skills–Charts and Graphs

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are also provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. This activity provides step-by-step procedures for creating charts and graphs in Microsoft Excel. If you are using another program, some of the commands and/or features may be different.

3. Familiarize yourself with the basic computer skills that are part of this activity and the spreadsheet program that the students will be using. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

4. Discuss SG 2.1 and review the requirements of the activity with students.

Activity Length: 100 min.

Discussion Questions:

1. What are the benefits of being able to create charts and graphs on a computer?

   - Charts and graphs created on a computer are considered the norm in the professional world because they are a quick and easy way to effectively illustrate data.

   - Graphs created on a computer can communicate a large amount of information in a short period of time and they are neat and easy to read.

2. What are the advantages of practicing basic computer skills and trying out a program's features?

   - The more you work in the program and try the features, the more comfortable you will become at using them.
   - When you use the trial-and-error approach, you will usually find something that works. You can always use the *Help* feature for the program when you need assistance.

3. What can you determine from the pie chart, line graph, and column graph that you created?

   - From the pie chart, you can readily see that the three crops planted on the most acres in the United States are corn, soybeans, and wheat. The least acres are planted in barley.
   - From the line graph, you can see the declining trend in the number of farms in Missouri since 1900. It also shows that from 1990 to 1999 there has been a slight increase in the number of farms.
   - From the column graph, you can see that over 35% of farms have between 50 and 179 acres. It also shows that a majority of farms (65%) have 50 to 499 acres of land.

Assessment:

Collect the floppy disks, charts, and graphs. Grade the students based on SG 2.1. See Figures 2.1 through 2.3 for the completed chart and graphs. To see the chart and graphs in color, open the files on the *Computer Lab Activities in Agriculture* CD-ROM.

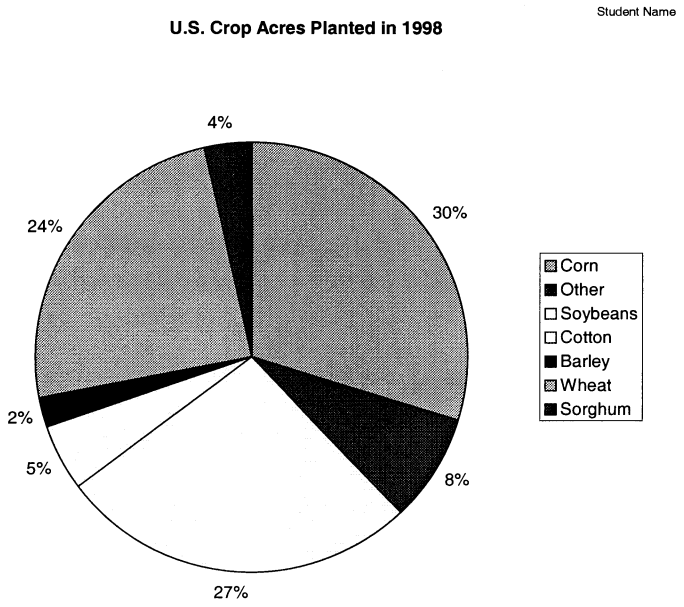


Figure 2.1 - U.S. crop acres pie chart

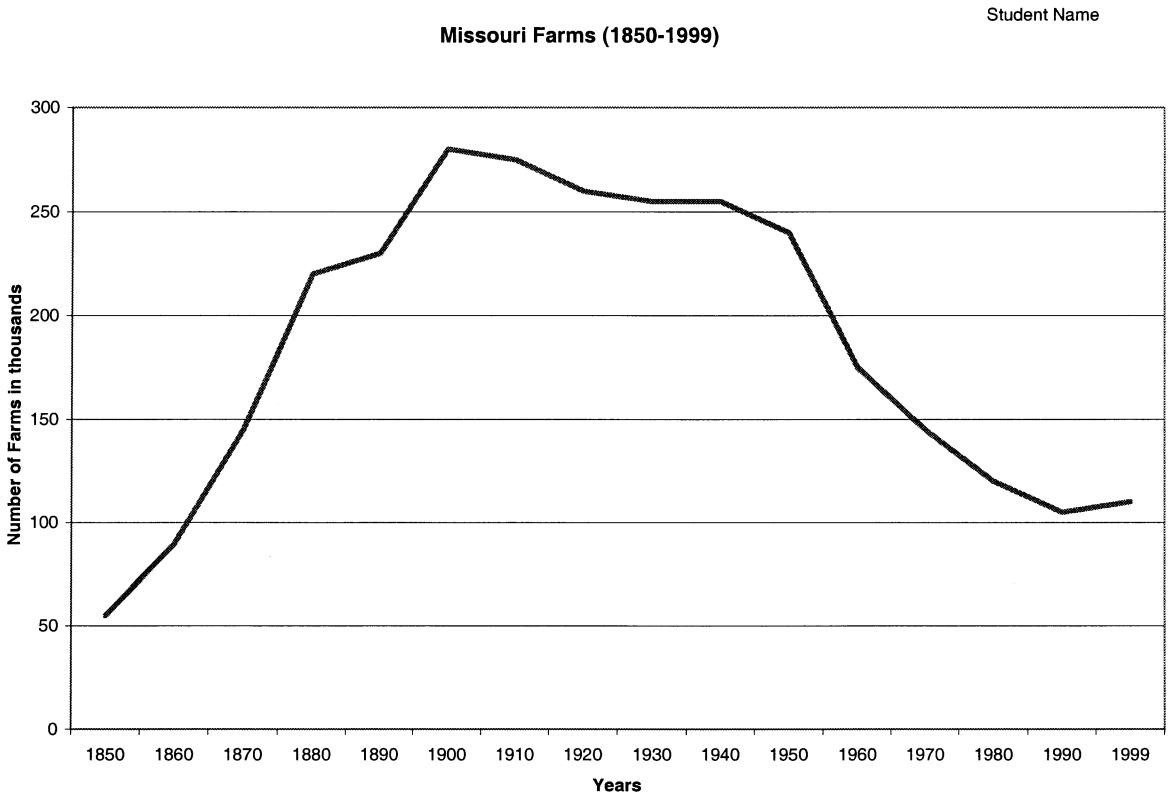


Figure 2.2 - Missouri farms line graph

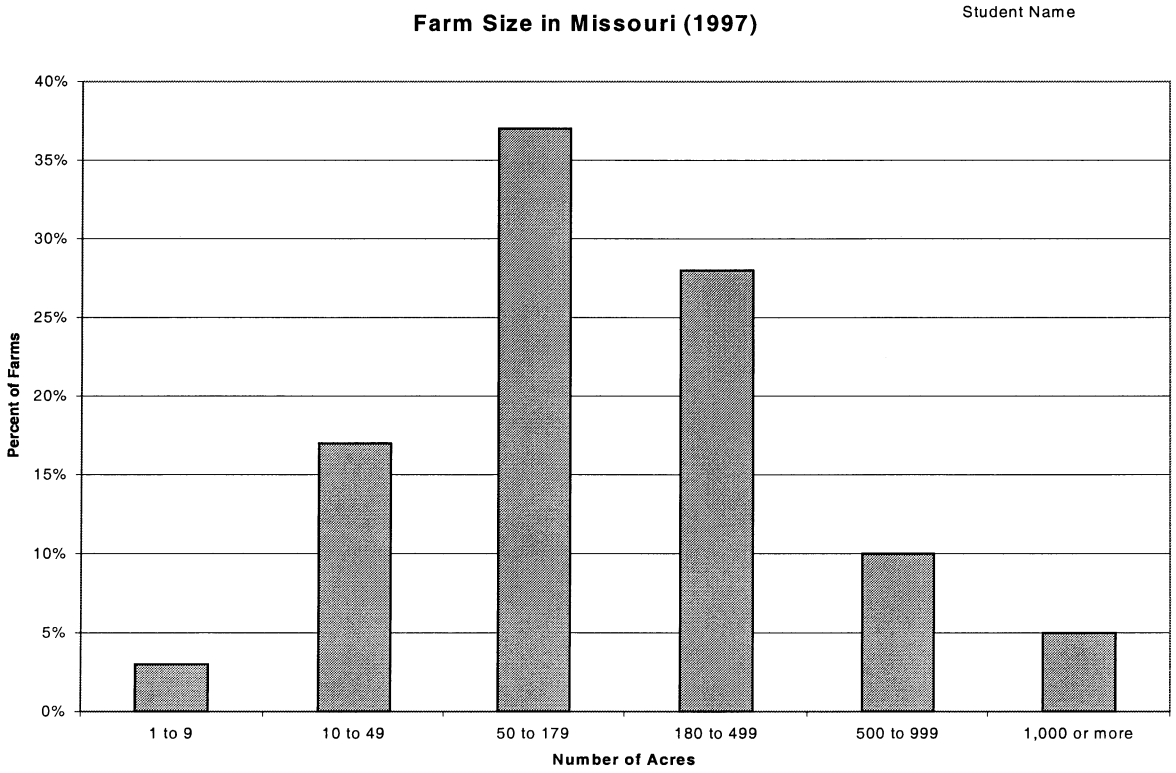


Figure 2.3 - Farm sizes column graph

Additional Activities:

1. Have the students try some different formatting of the charts and graphs that they created such as changing the font size, style, and format (e.g., bold, italic, underlined) and changing the colors or size of the charts and graphs. Have them use the zoom function to view the charts and graphs at different percentages. Show them that when formatting, it's useful to zoom in on text and when reviewing the finished product, it's helpful to zoom out and see the whole page.

2. Have students find other information that they could put into a chart or graph. They could graph membership statistics for the FFA chapter over the past 5 to 10 years, the amount of fruit that was sold for the chapter fund-raiser, etc.

Credits:

Missouri Agricultural Statistics Service. <http://agebb.missouri.edu/mass/indepth/corn/uscrop.htm> April 18, 2001.

Quick Facts From the Missouri Census of Agriculture. National Agricultural Statistics Service, U.S. Department of Agriculture, 1999.

2000 Missouri Farm Facts. <http://agebb.missouri.edu/mass/farmfact/inc-pri/land/number.htm> April 18, 2001.

Student Activity Sheet
Basic Computer Skills–Charts and Graphs

Name_____

Student Objective:

Develop and interpret charts and graphs.

Equipment and Materials:

- Computer
- Excel (spreadsheet program)
- Floppy disk
- SG 2.1 Basic Computer Skills–Charts and Graphs Scoring Guide
- Printer

Procedure:

1. Refer to SG 2.1 for the tasks you will be graded on.

2. Read the following scenario.

   Megan Sanders, your boss, has some data that she would like you to make into charts and graphs for a presentation she is doing. She asks that you make one pie chart, one line graph, and one column graph.

   Note: The following procedures are done using Microsoft Excel. If you are using another program, some of the commands and/or features may be different.

Pie Chart

3. Use the following data to create a pie chart. Ms. Sanders says the data represents the U.S. crop acres planted for 1998.

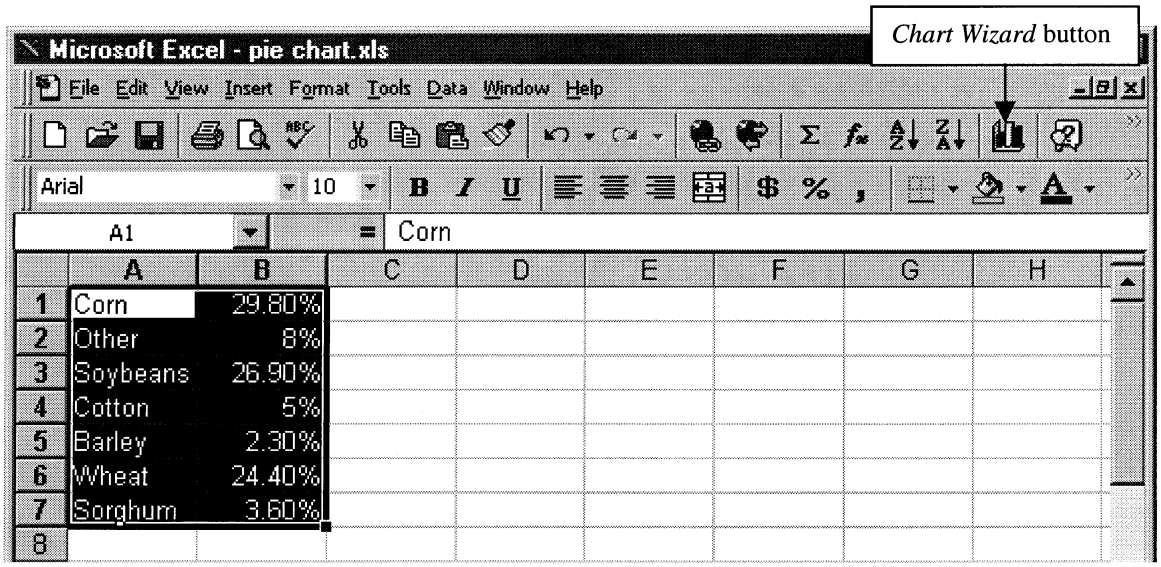
Corn 29.8%	Barley 2.3%
Other 8.0%	Wheat 24.4%
Soybeans 26.9%	Sorghum 3.6%
Cotton 5.0%	

4. Open an Excel spreadsheet. In column A, type the seven crops listed above. In column B, type the corresponding percentages for each crop.

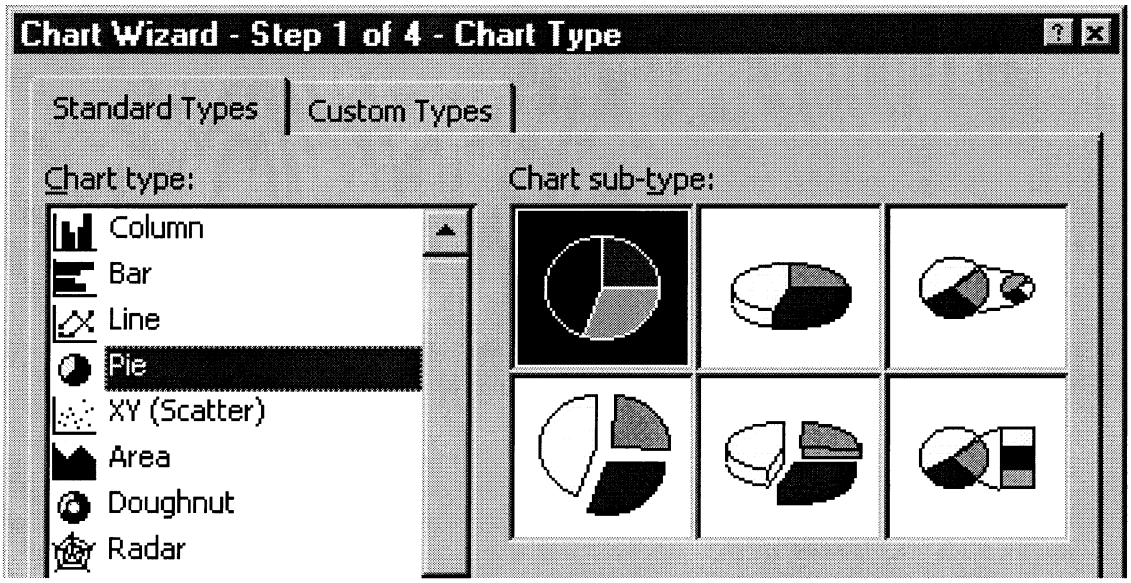
5. Save the file as "pie chart" to a floppy disk or a location your instructor specifies.

6. Select the cells that contain the data for the chart.

7. Click the *Chart Wizard* button on the tool bar. The *Chart Wizard* window will appear.

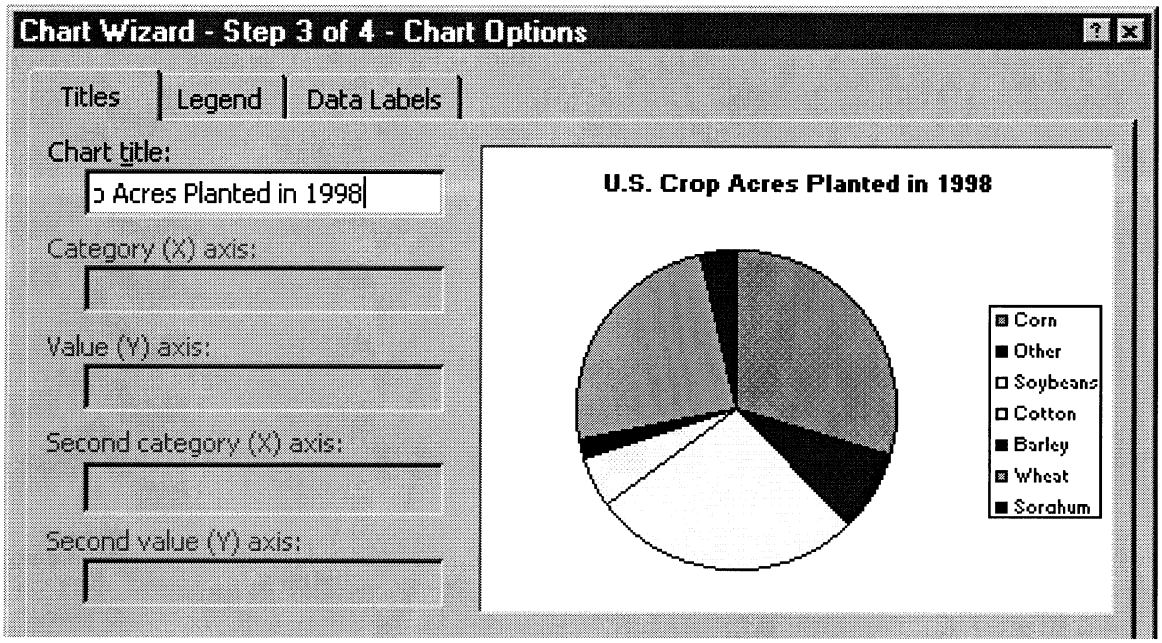


8. On the *Standard Types* tab, select "Pie" for the *Chart type* and select the complete pie (first circle, left-hand side, on the top row) for the *Chart sub-type*. Then click the *Next* button.

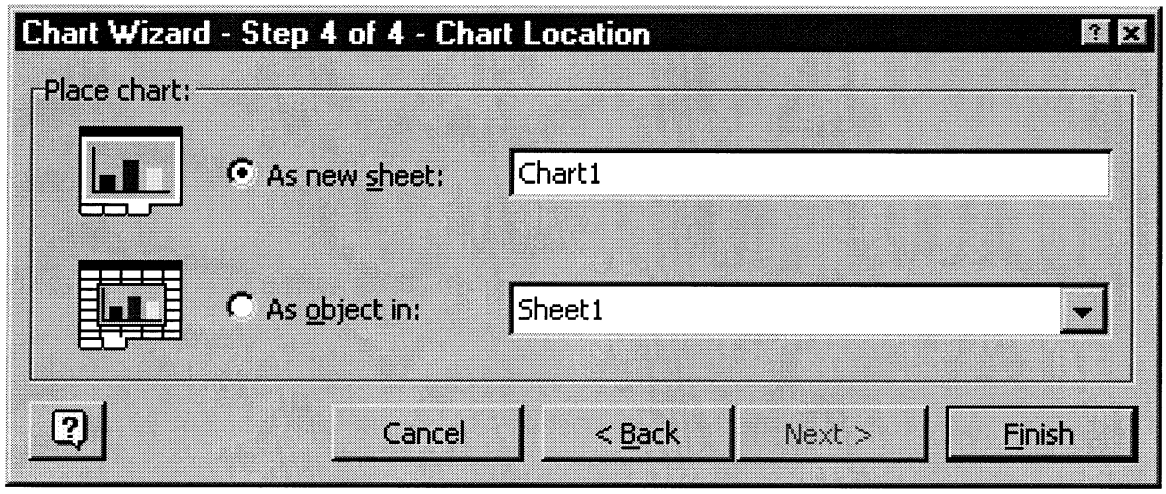


9. Click *Next* again at the *Chart Source Data* step to display the *Chart Options* step.

10. On the *Titles* tab, type the title (U.S. Crop Acres Planted in 1998) in the *Chart title* field. On the *Data Labels* tab, select the *Show percent* radio button and then click the *Next* button.



11. At the *Chart Location* step, select the *As new sheet* radio button. Then click the *Finish* button. The pie chart will appear on your screen.



Note: If changes are needed, try clicking on the area on the chart you want to change, double-clicking on the chart to display a dialog box, or right-clicking for an options menu.

12. Type your name at the top of the document and save the file. Then print and close the file.

Line Graph

13. Next your boss wants you to create a line graph for her with the following data. She says the data is the number of farms in Missouri from 1850 to 1999.

Year	Number of Farms (in thousands)	Year	Number of Farms (in thousands)
1850	55	1930	255
1860	90	1940	255
1870	145	1950	240
1880	220	1960	175
1890	230	1970	145
1900	280	1980	120
1910	275	1990	105
1920	260	1999	110

14. Open an Excel spreadsheet. In column A, type the 16 years listed above. In column B, type the corresponding number of farms for each year.

15. Save the file as "line graph" to a floppy disk or a location your instructor specifies.

16. Select all of the data in column B and click the *Chart Wizard* button on the tool bar.

17. On the *Standard Types* tab, select "Line" for the *Chart type* and select the first line graph, left side, on the top row. Then click the *Next* button.

18. At the *Chart Source Data* step, click on the *Series* tab. Position your cursor in the *Category (x) axis labels* field. Then go to your spreadsheet and select all of the data in column A. This will assign the years as labels for the x-axis. These labels should appear on your screen. Click the *Next* button.

19. At the *Chart Options* step, select the *Titles* tab and type "Farms in Missouri (1850-1999)" in the *Chart title* field. Type "Years" in the *Category (X) axis* field and "Number of Farms in thousands" in the *Value (Y) axis* field.

20. Select the *Legend* tab and remove the check mark from the *Show legend* box. (The legend is unnecessary because there is only one line on the graph.) Click the *Next* button.

21. At the *Chart Location* step, select the *As new sheet* radio button. Then click the *Finish* button. The line graph will appear on your screen.

    Note: If changes are needed, try clicking on the area you want to change, double-clicking on the chart to display a dialog box, or right-clicking for an options menu.

22. Type your name at the top of the document and save the file. Then print and close the file.

Column Graph

23. Your boss has one last chart she would like you to create. She would like the following Missouri farm data put into a column graph. She tells you that the data is for 1997.

Number of Acres	Percent of Farms
1 to 9	3%
10 to 49	17%
50 to 179	37%
180 to 499	28%
500 to 999	10%
1000 or more	5%

24. In column A of a new spreadsheet, type in the six ranges of acres listed above. In column B, type the percent of farms that correspond with each range.

25. Highlight the data in columns A and B and click the *Chart Wizard* button on the tool bar.

26. On the *Standard Types* tab, select "Column" for the *Chart type* and select the first column graph, left side, on the top row. Then click the *Next* button.

27. At the *Chart Source Data* step, check to make sure that the x- and y-axes are labeled correctly. Click the *Next* button.

28. At the *Chart Options* step, select the *Titles* tab and type "Farm Size in Missouri (1997)" in the *Chart title* field. Type "Number of Acres" in the *Category (X) axis* field and "Percent of Farms" in the *Value (Y) axis* field.

29. Select the *Legend* tab and remove the check mark from the *Show legend* box. (The legend is unnecessary because there is only one item on the graph.) Click the *Next* button.

30. At the *Chart Location* step, select the *As new sheet* radio button. Then click the *Finish* button. The column graph will appear on your screen.

    Note: If changes are needed, try clicking on the area you want to change, double-clicking on the chart to display a dialog box, or right-clicking for an options menu.

31. Type your name at the top of the document and save the file. Then print and close the file.

Basic Computer Skills–Charts and Graphs Scoring Guide

Name _____

Successfully performed the following tasks:	**Two points for each item checked**
Pie Chart	
Entered data correctly in spreadsheet	_____
Named file correctly	_____
Followed steps to create a pie chart	_____
Labeled chart correctly	_____
Line Graph	
Entered data correctly in spreadsheet	_____
Named file correctly	_____
Followed steps to create a line graph	_____
Labeled graph correctly	_____
Column Graph	
Entered data correctly in spreadsheet	_____
Named file correctly	_____
Followed steps to create a column graph	_____
Labeled graph correctly	_____
Total points out of 24	_____

Activity 3 Internet as a Resource

Overview:

In this activity, search engines on the Internet are used as tools to search for information on how to determine the credibility of information found on the Internet, the ethics and copyright issues involved in using the information, and the purpose and components of a domain name.

Activity Objectives:

1. Explain how to determine the credibility of information on the Internet.
2. Understand the ethics and copyright issues involved in using information from the Internet.
3. Define what a domain name is.
4. Understand the components of a domain name.

Activity Sheet:

AS 3.1 Internet as a Resource

Instructor Preparation/Directions:

1. Before assigning this activity to students, check the web links provided to ensure they are still available and current.
2. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.
3. Review AS 3.1 with students to ensure they understand the activity.
4. Check to see if there is a student use policy at your school for using the network and Internet. Students and parents may have to sign a form that releases the students to use the network and Internet during class.
5. Discuss Internet cautions with the students before beginning this activity. Inform them not to provide any personal information over the Internet through chat rooms or other sites. Personal information includes full name, address, phone number, social security number, or picture. Check with your school for additional rules and regulations on Internet use.

Activity length: 100 minutes

Discussion Questions:

1. Why should each web site be evaluated before using the information?

   - Some of the information on the Internet can be biased or false.

2. What are citation procedures for information found on the Internet?

   - If students use information from the Internet they must give credit to the author for the information or get permission from the copyright owner. Whether credit is sufficient or permission must be granted depends on the use of the material.

3. What is the purpose of a domain name?

   - Your home address allows people to find where you live. The domain name serves a similar purpose. It allows people to find where you house your web page on the Internet.

Assessment:

Answers to AS 3.1 will vary somewhat but should be similar to the following.

1. Accuracy/Content (The student should list at least three of the following points.)

   - Is the information accurate when checked against other print and electronic sources?
   - Does there appear to be any bias or agenda? (e.g., If a company selling fruit juice states that drinking the juice will help prevent cancer, you have to question that statement because the juice company may just be trying to increase sales.)
   - Does all information appear to be complete and thorough?
   - Is the purpose clearly defined? (e.g., to sell, entertain, or inform)
   - Is the language appropriate for the intended audience?

   Author Credibility (The student should list at least two of the following points.)

   - Are the author and sponsor clearly defined?
   - Is there contact information for the author? (e.g., e-mail address)
   - Is there information on the author's experience or credentials?
   - Are the credentials or experience relevant to the web site content?

Currency (The student should list at least two of the following points.)

- When was the last time the web site was updated?
- Does the information appear to be outdated?
- Are there links that don't work? This could be a sign that the web site has not been updated recently.

Documentation (The student should list one point.)

- Are there citations for the resources used in developing the content?
- Are these citations reliable, complete, and up-to-date?

2. Copyright is a legal right that protects creative works from being reproduced, performed, or disseminated by others without the owner's permission.

3. No. The Copyright Act protects creative works even though they are not registered.

4. Fair use is an exception to the copyright law that allows individuals to use small amounts of copyrighted material when it will not affect the value of the material. Examples include using passages from a book in a review of the book, summarizing a speech, or reproducing a small part of a work to be used for a lesson in school. Appropriate credit should still be given.

5. Copyright issues are important because the authors or owners must be recognized and given proper credit for their work. If you do not respect the copyright laws, the owner may sue for damages. Also, it's unethical to use material that's not credited to the author/owner.

6. A domain name is a group of letters used to identify web page addresses. An example is "missouri.edu," which is the domain name for the University of Missouri home page.

7. A domain name has two components:
   a. The company name, government agency, etc.
   b. The suffix, e.g., com (commercial business), net (network organization), org (nonprofit organization), edu (educational institution), gov (governmental agency), mil (military).

8. Domain names help people find you on the Internet. The characters used can be something easy to remember or it can be a word or phrase that describes what your web site contains (e.g., www.flowerdelivery.com would be a company that delivers flowers).

Additional Activities:

1. Divide the students into groups and have each group present information on a topic it has researched for this activity.

2. Have the students create a fact sheet about copyright issues, Internet ethics, and Internet credibility. Have the students pass out the fact sheets to teachers, administrators, and other students in the school. This could be a very useful resource for them.

3. Instruct each student to find his/her top five agriculture-related web sites and present them to the class explaining why they are good web sites. Have the class pick the top five. Lead a class discussion about what makes a good web site.

4. Have students search for 25 web sites on an agriculture-related topic and categorize them as to purpose (e.g., informational, entertaining, promotional).

Credits:

Copyright Definition - Microsoft Encarta 96 Encyclopedia. <http://www.sba.gov/cgi-bin/print_hit_bold.pl/hotlist/crdef.html> December 7, 2000.

The Copyright Website. <http://www.benedict.com/> December 6, 2000.

Dartmouth College EA Music, Definition of a Copyright. <http://music.dartmouth.edu/~wowem/teletalk/copyright/definition.html> December 7, 2000.

Franklin Pierce Law Center, Copyright on the Internet. <http://www.fplc.edu/tfield/copyNet.htm> December 7, 2000.

Go Domains, Beginners Information. <http://www.godomains.com.au/faq/beginners/> December 7, 2000.

The Naming System. <http://www.webteacher.org/winnet/domain/name.html> December 7, 2000.

State University of New York, Be a Skeptic or Be a Fool: Credibility of Internet Information. <http://www.sunyit.edu/library/html/vl/vlskeptic.html> December 7, 2000.

University at Albany Libraries, Evaluating Internet Resources. <http://www.albany.edu/library/internet/evaluate.html> December 6, 2000.

University of Illinois, Evaluating Internet Resources. <http://www.mlb.ilstu.edu/ressubj/subject/intrnt/evaluate.htm> December 6, 2000.

University of Wisconsin–Eau Claire, Ten C's For Evaluating Internet Sources. <http://www.uwec.edu/Admin/Library/Guides/tencs.html> December 6, 2000.

Webopedia: Online Computer Dictionary for Internet Terms and Technical Support. <http://webopedia.internet.com> December 6, 2000.

Student Activity Sheet
Internet as a Resource

Name _____

Student Objectives:

1. Explain how to determine the credibility of information on the Internet.
2. Understand the ethics and copyright issues involved in using information from the Internet.
3. Define what a domain name is.
4. Understand the components of a domain name.

Equipment and Materials:

- Computer with Internet access

Procedure:

1. To answer questions 1 through 8 on the next page, access a search engine such as Yahoo <http://www.yahoo.com> or Google <http://www.google.com> to search the Internet.
2. Enter key words such as "Internet credibility," "ethics," "copyright issues," "copyright definition," and "domain name" in the search box.
3. Complete the activity sheet using the web site references provided below or sites found while searching the Internet. Be sure to include the web site addresses you use to find the information.

   Sites to research Internet credibility issues:

   <http://www.sunyit.edu/library/html/vl/vlskeptic.html>
   <http://www.albany.edu/library/internet/evaluate.html>
   <http://www.mlb.ilstu.edu/ressubj/subject/intrnt/evaluate.htm>
   <http://www.uwec.edu/Admin/Library/Guides/tencs.html>

   Sites to research Internet copyright issues:

   <http://www.sba.gov/cgi-bin/print_hit_bold.pl/hotlist/crdef.html>
   <http://music.dartmouth.edu/~wowem/teletalk/copyright/definition.html>
   <http://www.fplc.edu/tfield/copyNet.htm>
   <http://www.benedict.com/>

   Sites to research domain names:

   <http://webopedia.internet.com>
   <http://www.webteacher.org/winnet/domain/name.html>
   <http://www.godomains.com.au/faq/beginners/>

Questions:

1. When evaluating the credibility of a web site, what points should you consider? Respond to each category.

   Accuracy/Content (List at least three points.)

   a.

   b.

   c.

   Author Credibility (List at least two points.)

   a.

   b.

   Currency (List at least two points.)

   a.

   b.

   Documentation (List one point.)

   a.

   Web site addresses of sources:

2. What is the definition of copyright?

   Web site addresses of sources:

3. If a web site does not state that the content is protected by copyright, is it fair to use the material without permission? Explain.

Web site addresses of sources:

4. What is "fair use"? Give one example that would be fair use of material.

Web site addresses of sources:

5. Why are copyright issues so important?

Web site addresses of sources:

6. Explain what a domain name is. Give an example of a domain name.

Web site addresses of sources:

7. What are the components of a domain name?

Web site addresses of sources:

8. Why is a domain name needed?

Web site addresses of sources:

Advanced Livestock Production and Management

Computer Lab Activities in Agriculture

Activity 4

Beef Cattle Breeding Database

Curriculum Supported	Related Competency
Advanced Livestock Production and Management	C. 3. Select beef animals for production and breeding.

Curriculum Reference:

Advanced Livestock Production and Management. University of Missouri-Columbia: Instructional Materials Laboratory, 2000.

Overview:

In this activity, a simple beef cattle breeding database is created. Databases are extremely useful when keeping track of vast amounts of information. They are especially useful to livestock producers when making management decisions.

Activity Objective:

Create a herd management database.

Activity Sheet:

AS 4.1 Beef Cattle Breeding Database

Scoring Guide:

SG 4.1 Beef Cattle Breeding Database

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the spreadsheet software the students will be using for this activity. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 4.1. If available, provide related examples of exemplary work.

Activity Length: 100 min.

Discussion Questions:

1. What are the benefits of keeping track of herd information using a database such as the one created in this activity?

   - The data can easily be recorded over an extended period of time. This allows the livestock manager to compare data between different periods of time and aids in making effective management decisions.
   - The increased efficiency and accuracy that a database provides can ultimately lead to increased profitability of the livestock enterprise.

2. What management decisions can a producer make from the information in a beef cattle breeding database?

   - A producer can determine which cows or bulls to cull if they are not effectively producing.
   - A producer can select the replacement heifers for the operation based on the breeding information that is in the database.

3. Why is it important to maintain the database once it is created?

   - The database must be updated on a regular basis to keep the information accurate and current. Effective management decisions can't be made based on outdated information.

Assessment:

Grade the students' databases based on the criteria in SG 4.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. See the completed database below.

Beef Cattle Breeding Database

Data entered: November 2001

ID #	Type	Breed	Date of Birth	Age	Wt	BCS	Calving Date	Calf Birth Wt	Calf Weaning Date	Purchased/ Raised
90	bull	Limousin	3/5/96	4 yr	1800	7	N/A	N/A	N/A	purchased
300	heifer	Angus	1/10/00	9 mo	400	7	N/A	N/A	N/A	raised
304	heifer	Limousin	1/14/00	9 mo	560	8	N/A	N/A	N/A	raised
306	heifer	Limousin	1/25/00	9 mo	500	6	N/A	N/A	N/A	raised
308	heifer	Angus	1/26/00	9 mo	550	7	N/A	N/A	N/A	raised
335	heifer	Angus	1/29/00	9 mo	525	6	N/A	N/A	N/A	raised
185	cow	Angus	3/5/97	3 yr	1000	6	9/1/01	80	15-Oct	purchased
150	cow	Angus	8/25/96	4 yr	985	7	5/1/01	85	15-Oct	purchased
175	cow	Angus	9/2/96	4 yr	1010	7	5/1/01	85	15-Oct	purchased
210	cow	Angus	9/3/97	3 yr	975	7	5/1/01	75	15-Oct	purchased
136	cow	Angus	9/1/95	5 yr	950	7	3/1/01	90	15-Oct	purchased
227	cow	Limousin	2/28/98	2 yr	1100	7	3/1/01	90	15-Oct	raised
230	cow	Angus	3/1/98	2 yr	1050	7	3/1/01	95	15-Oct	purchased
220	cow	Limousin	2/27/98	2 yr	1050	6	2/1/01	90	15-Oct	raised
331	cow	Angus	9/5/98	2 yr	1125	6	2/1/01	100	15-Oct	purchased

Additional Activities:

1. Have the students write a short paragraph stating a management decision that can be made using the data included in the database. As part of the paragraph, have them explain the reasoning behind the decision.

2. Have the students try more formatting techniques with the spreadsheet such as adding a column or an additional worksheet, sorting the data in different ways, adding color to headings, copying down, deleting or adding rows, adjusting column sizes, etc.

Alternative Applications:

1. Develop a database to keep track of the production and breeding records of a herd of dairy animals, swine, or sheep. Use the database to record actual data from the herd selected and use the information to make effective management decisions. See applicable curriculum and competencies below.

Advanced Livestock Production and Management	C. 4. Select dairy animals for production and breeding. C. 5. Select swine for production and breeding. C. 6. Select sheep for production and breeding.

2. Create a database that maintains records of information on crops (e.g., production, profitability, costs), field data (e.g., fertility levels, fertilizer applications, agricultural lime applications), or government regulations (e.g., USDA farm plans). Use the information stored in the database to make effective management decisions. See applicable curriculum and competencies below.

Advanced Crop Science	A. 4. Explain government influence and identify current trends in crop production. C. 4. Identify fertilizers and the applications needed to obtain optimal crop performance. F. 8., G. 8., H. 8., J. 8., K. 8. Calculate cost per acre.

Credit:

Advanced Livestock Production and Management (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 2000.

Student Activity Sheet
Beef Cattle Breeding Database

Name _____

Student Objective:

Create a herd management database.

Equipment and Materials:

- Computer
- Spreadsheet software (e.g., Excel, Lotus 1-2-3)
- SG 4.1 Beef Cattle Breeding Database Scoring Guide
- Floppy disk (one for each student)
- Printer

Procedure:

1. Refer to SG 4.1 for the criteria you will be graded on.

2. Create a beef cattle breeding database in a spreadsheet program with the following column headers in rows 4 and 5 and columns A through K: ID #, type (e.g., cow, heifer), breed, date of birth, age, weight, BCS (body condition score), calving date, calf birth weight, calf weaning date, and raised/purchased (i.e., whether animal was purchased or raised).

   Note: Step 3 contains a formatting procedure for Excel that should be similar to the procedure in other spreadsheet programs. If you are not using Excel, click on the help utility in your program and search for information about how to perform this function.

3. To make the column headers more distinct, add a gray shading.

   a. Select the column headers.

   b. Click on *Format* on the tool bar and select *Cells*. A dialog box will appear.

   c. Select the *Patterns* tab, click on a gray color, and click *OK*.

4. Add an appropriate title to the database in row 1 and indicate when the data was entered (11/2001) in row 2. Leave row 3 blank.

5. Save often during the development process to a floppy disk or location that your instructor specifies.

6. Enter the data from the following sample beef cattle breeding herd.

   Cow #136, Angus, born 9/1/95, 5 yr, wt - 950, body condition score - 7, calving date - Mar-01, calf birth wt - 90, calf weaning date - 15-Oct, purchased

Cow #175, Angus, born 9/2/96, 4 yr, wt - 1010, body condition score - 7, calving date - May-01, calf birth wt - 85, calf weaning date - 15-Oct, purchased

Cow #150, Angus, born 8/25/96, 4 yr, wt - 985, body condition score - 7, calving date - May-01, calf birth wt - 85, calf weaning date - 15-Oct, purchased

Cow #220, Limousin, born 2/27/98, 2 yr, wt - 1050, body condition score - 6, calving date - Feb-01, calf birth wt - 90, calf weaning date - 15-Oct, raised

Cow #185, Angus, born 3/5/97, 3 yr, wt - 1000, body condition score - 6, calving date - Sept-01, calf birth wt - 80, calf weaning date - 15-Oct, purchased

Cow #210, Angus, born 9/3/97, 3 yr, wt - 975, body condition score - 7, calving date - May-01, calf birth wt - 75, calf weaning date - 15-Oct, purchased

Cow #227, Limousin, born 2/28/98, 2 yr, wt - 1100, body condition score - 7, calving date - Mar-01, calf birth wt - 90, calf weaning date - 15-Oct, raised

Cow #230, Angus, born 3/1/98, 2 yr, wt - 1050, body condition score - 7, calving date - Mar-01, calf birth wt - 95, calf weaning date - 15-Oct, purchased

Cow #331, Angus, born 9/5/98, 2 yr, wt - 1125, body condition score - 6, calving date - Feb-01, calf birth wt - 100, calf weaning date - 15-Oct, purchased

Heifer #306, Limousin, born 01/25/00, 9 mo, wt - 500, body condition score - 6, calving date - N/A, calf birth wt - N/A, weaning date - N/A, raised

Heifer #300, Angus, born 01/10/00, 9 mo, wt - 400, body condition score - 7, calving date - N/A, calf birth wt - N/A, calf weaning date - N/A, raised

Heifer #308, Angus, born 01/26/00, 9 mo, wt - 550, body condition score - 7, calving date - N/A, calf birth wt - N/A, weaning date - N/A, raised

Heifer #304, Limousin, born 01/14/00, 9 mo, wt - 560, body condition score - 8, calving date - N/A, calf birth wt - N/A, weaning date - N/A, raised

Heifer #335, Angus, born 01/29/00, 9 mo, wt - 525, body condition score - 6, calving date - N/A, calf birth wt - N/A, weaning date - N/A, raised

Bull #90, Limousin, born 3/5/96, 4 yr, wt - 1800, body condition score - 7, calving date - N/A, calf birth wt - N/A, weaning date - N/A, purchased

7. Double-check the data after it is entered to ensure that it is accurate.

   Note: Steps 8-10 contain procedures for Excel that should be similar to the procedures in other spreadsheet programs. If you are not using Excel, click on the help utility in your program and search for information about how to perform these functions.

8. To list the ID #'s in order, sort the data by ID #.

   a. Select a cell within your list, click on *Data* on the tool bar, and select *Sort*. A dialog box will appear.

   b. Under *Sort by*, select ID # and make sure the ascending (small to large) radio button is selected.

   c. Click *OK*. The program will sort the information in your spreadsheet.

9. To order the list by the most recent calving date, sort the data by Calving Date.

   a. Select a cell within your list, click on *Data* on the tool bar, and select *Sort*. A dialog box will appear.

   b. Under *Sort by*, select Calving Date and make sure the descending (large to small) radio button is selected.

   c. Click *OK*. The program will sort the information in your spreadsheet.

10. Change the way the calving date is displayed.

    a. Highlight the entire Calving Date column. Click on *Format* on the tool bar and select *Cells*. A dialog box will appear.

    b. Click on the *Number* tab. In the category box, select *Date*. In the type box, select the date that displays as m/d/yy (e.g., 3/4/01).

    c. Click *OK*. The date format will change in the spreadsheet.

11. Save the file and print your database. Write your name on the printout.

Beef Cattle Breeding Database Scoring Guide

Name _____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Overall Organization			
Meets all of the following criteria: 1. Appropriate title provided 2. Appropriate headers provided 3. Columns are in logical order	Meets two of the criteria	Meets one or none of the criteria	
Formatting			
Column headers are shaded	***	Column headers are not shaded	
Calving dates are sorted in descending order	***	Calving dates are sorted incorrectly	
Calving dates are the correct format	***	Calving dates are formatted incorrectly	
Content Accuracy			
All data is accurate	One inaccuracy	Two or more inaccuracies	
Content Completeness			
All necessary information is entered	***	Information is missing	

Total points out of 12 _____

***No middle-ground criteria (either exemplary or needs work)

Agribusiness Sales, Marketing, and Management

Computer Lab Activities in Agriculture

Activity 5 Diminishing Return

Curriculum Supported	Related Competency
Agribusiness Sales, Marketing, and Management	B. 2. Determine the point of maximum net returns (profit) given a sample list of inputs and outputs and the prices of each.

Curriculum Reference:

Agribusiness Sales, Marketing, and Management. University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

Overview:

The purpose of this activity is to develop a working knowledge of how to create a chart or graph on the computer. The ability to create visual representations of data is becoming increasingly important in today's job market. Charts and graphs make it very easy to display information clearly in a very short amount of time.

Activity Objective:

Prepare a series of charts or graphs to illustrate and apply the principle of diminishing return to different situations.

Activity Sheet:

AS 5.1 Diminishing Return

Scoring Guide:

SG 5.1 Diminishing Return Graphs

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the graphs and charts software the students will be using for this activity. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 5.1. If available, provide related examples of exemplary work.

4. Have students complete Activity Sheets 2.1, 2.2, and 2.3 in Unit II, Lesson 2 of the *Agribusiness Sales, Marketing, and Management* Instructor Guide before beginning this activity. These activity sheets are reprinted in this activity after the procedure for AS 5.1. The students will use the data from these activity sheets to create their graphs.

Activity Length: 100 min.

Discussion Questions:

1. What are the benefits of being able to create graphs on a computer?

   - Graphs are generally a very effective way of demonstrating data, especially to show trends (e.g., the rise and fall of commodity markets).
   - Graphs created on a computer are considered the norm in the professional world because they make presentations much more clear and understandable.
   - Graphs can communicate a large amount of information in a short period of time.

2. What are other types of information that could be presented in a graphical format?

   - Some examples are commodity markets, supply and demand, political approval polls, crop yields, employment and unemployment rates, etc.

Assessment:

Grade the students' graphs based on SG 5.1 located at the end of AS 5.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. Refer to Figures 5.1 through 5.3 for how the graphs should appear for each activity sheet. Diminishing Return Answers, an Excel file on the *Computer Lab Activities in Agriculture* CD-ROM, is also available to view.

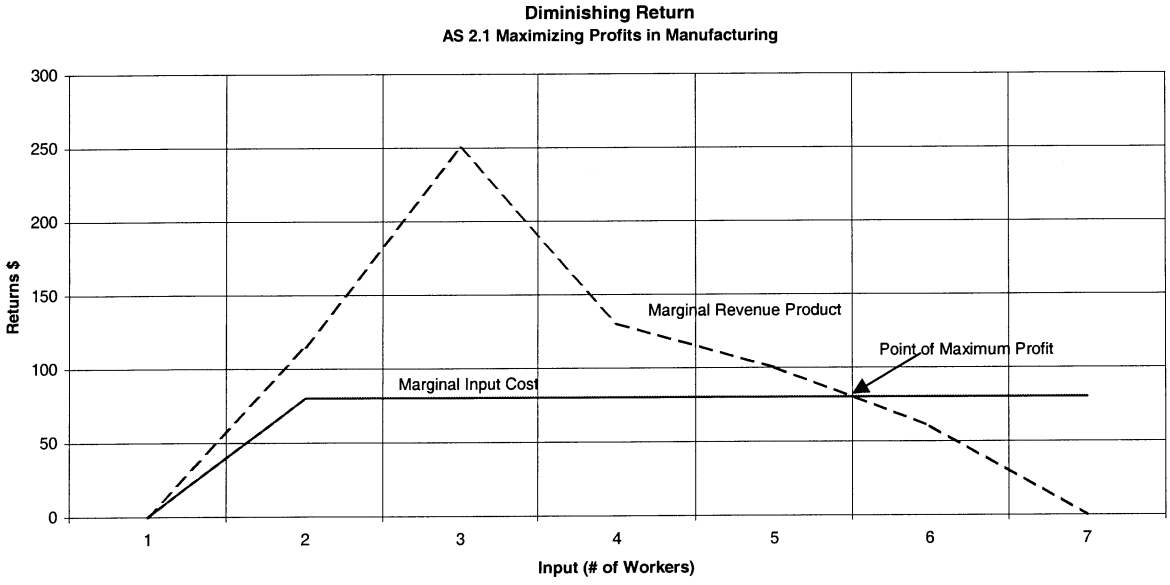


Figure 5.1 - Diminishing return line graph for AS 2.1

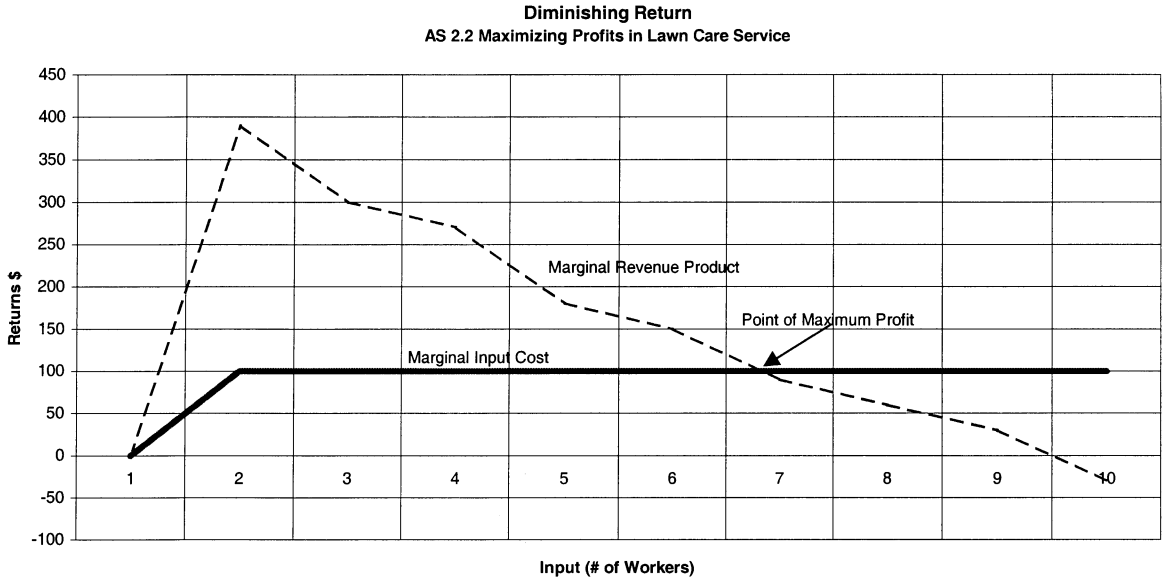


Figure 5.2 - Diminishing return line graph for AS 2.2

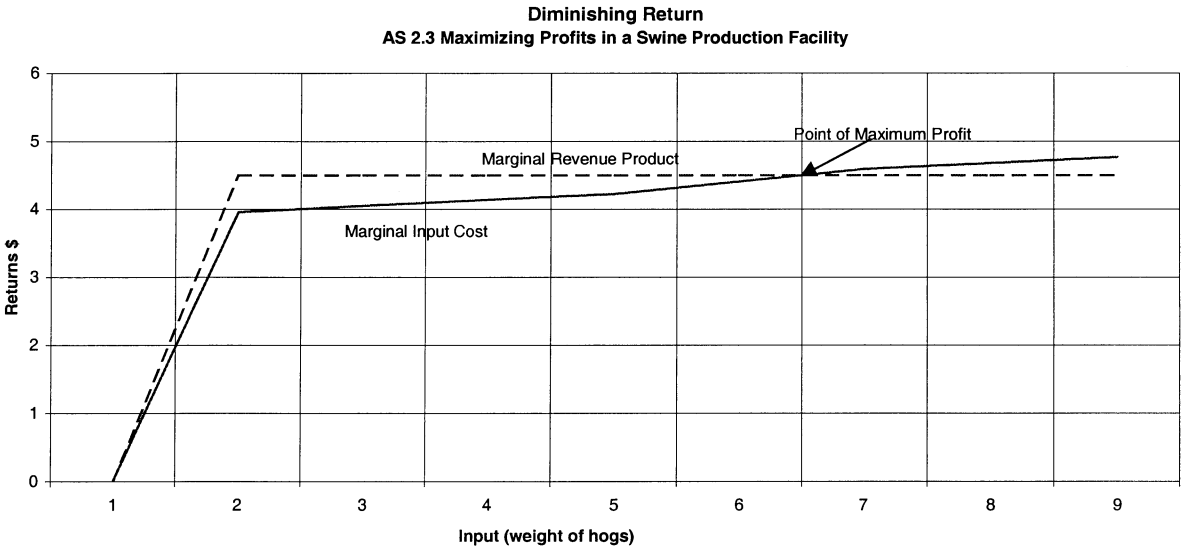


Figure 5.3 - Diminishing return line graph for AS 2.3

Additional Activities:

1. Using data from an SAE program, create a line graph on the computer that demonstrates the principle of diminishing return. Take actual data from the program to calculate the MRP and the MIC.

2. Have students try some simple formatting techniques in the spreadsheet like shading the headings, adding a border beneath the headings, changing text alignment, dragging cells, copying and pasting cell content, etc.

Alternative Application:

Keep track of and record data from either the commodity market or the stock market over a period of time. Take this data and create a line graph that shows the change in the market over time. See the applicable curriculum and competency below.

Agribusiness Sales, Marketing, and Management	B. 6. Identify the major markets for price discovery in the United States.

Credit:

Agribusiness Sales, Marketing, and Management (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

Student Activity Sheet
Diminishing Return

Name _____

Student Objective:

Prepare a series of charts or graphs to illustrate and apply the principle of diminishing return to different situations.

Equipment and Materials:

- Computer
- Software for graphs and charts (e.g., Excel, Lotus 1-2-3)
- SG 5.1 Diminishing Return Graphs Scoring Guide
- AS 2.1 through 2.3 from *Agribusiness Sales, Marketing, and Management*
- Diminishing Return Sample (Excel file)
- Floppy disk
- Printer

Procedure:

1. Refer to SG 5.1 for the criteria you will be graded on.

2. Create a spreadsheet using the marginal revenue product (MRP) and marginal input cost (MIC) data generated from Activity Sheet 2.1-Maximizing Profits in Manufacturing in *Agribusiness Sales, Management, and Marketing.* (AS 2.1 is included at the end of this procedure.) See Figure 5.1 for an example of how to set up the spreadsheet. Diminishing Return Sample, an Excel file on the CD-ROM, is also available to view.

	A	B	C
1	**MRP**	**MIC**	
2	0	0	
3	75	60	
4	200	60	
5	160	60	
6	100	60	
7	50	60	
8	0	60	

Figure 5.1 - Example of spreadsheet and sample data (not the data from AS 2.1)

Tip: If you need to enter the same number in multiple rows, try the following. Enter the number in a cell, click on the cell's fill handle (cross in lower right corner), and drag it the number of rows you want to fill. The same number will fill the cells.

3. Use the data from AS 2.1 to create a line graph with two lines. If available, use the software's graphs and charts utility or "wizard" to take you step-by-step through creating the graph.

4. Make one line the MRP data and the other line the MIC data. See Figure 5.2 for a sample line graph. The x-axis should represent input and the y-axis should represent returns ($).

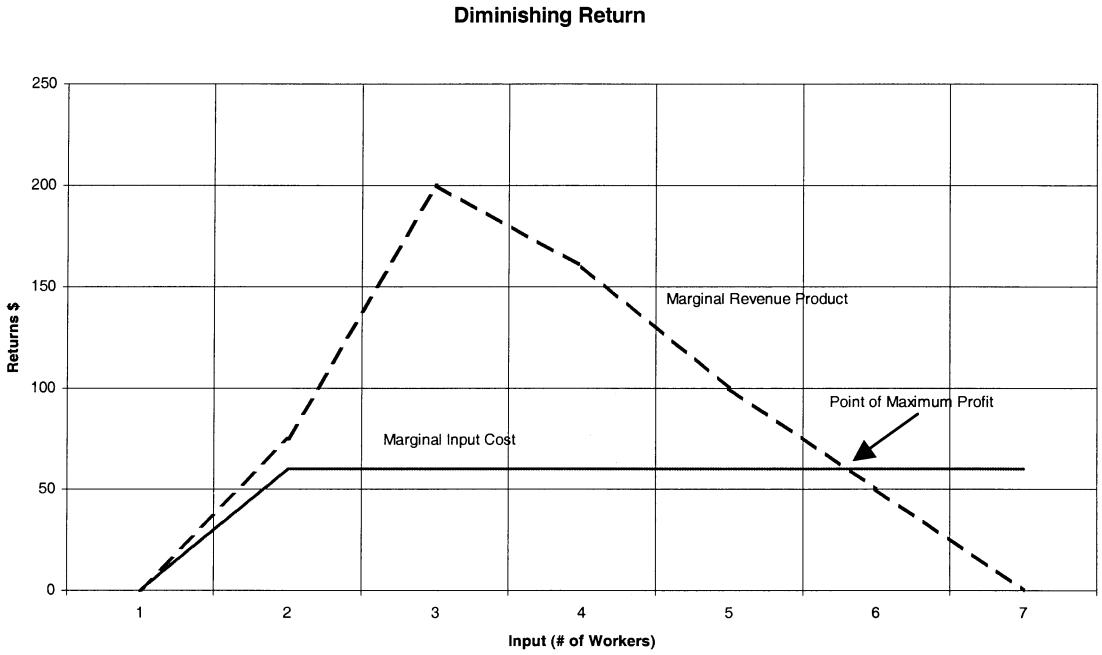


Figure 5.2 - Example of line graph illustrating diminishing return

5. Save the file often during the development process to a floppy disk or location your instructor specifies.

6. When the graph is complete, add textboxes labeling the MIC line, MRP line, and point of maximum profit. Make sure that both axes are labeled properly and the graph has an appropriate title that includes the number and name of the activity sheet (AS 2.1).

7. When your graph is complete, print it and put your name on the sheet.

8. Repeat steps 2 through 7 to create a line graph for the MRP and MIC data from Activity Sheets 2.2 and 2.3. (AS 2.2 and 2.3 are included at the end of this procedure.) When complete, you will have three line graphs (one for each activity sheet).

Activity Sheet reprinted from *Agribusiness Sales, Marketing, and Management*

Unit II - ECONOMIC PRINCIPLES IN AGRIBUSINESS AS 2.1

Lesson 2: The Principle of Diminishing Returns Name _____

MAXIMIZING PROFITS IN MANUFACTURING

Objective: Calculate marginal input, average product, marginal product, total revenue, total cost, marginal revenue product, and marginal input cost.

Jerry is a manager for the Do-Rite Agricultural Manufacturing Company. The company is considering expanding its manufacturing operation to building small portable hog feeders. There is a limited amount of space and equipment to get started, and Jerry has been asked to estimate how many new workers will be needed. Jerry has compiled the following information about the relationship between the number of workers used and the number of hog feeders that can be built in one day. Workers will be paid $80/day. Returns from hog feeders will be $100 each.

Calculate the amount of marginal input, average product, marginal product, total revenue, total cost, marginal revenue product, and marginal input cost. Then answer the question below.

No. of Workers	No. of Hog Feeders/Day	MI	AP	MP	TR	MRP	TC	MIC
1	.5		XX		XX		XX	XX
2	1.4							
3	3.9							
4	5.2							
5	6.2							
6	6.8							
7	6.8							

How many workers are needed? _____

Activity Sheet reprinted from *Agribusiness Sales, Marketing, and Management*

Unit II - ECONOMIC PRINCIPLES IN AGRIBUSINESS AS 2.2

Lesson 2: The Principle of Diminishing Returns Name _____

MAXIMIZING PROFITS IN LAWN CARE SERVICE

Objective: Calculate marginal input, average product, marginal product, total revenue, total cost, marginal revenue product, and marginal input cost.

Chris owns a lawn and garden center and sells trees, shrubs, flowers, and other lawn and garden products. She knows there is a demand in the area for a complete lawn care service, since she already has customers who want the service. Chris has the equipment that will be used, but she is not sure how many workers she will need. She knows she can hire students to work about 20 hours per week to mow and trim lawns. She wants to do as many lawns as possible with the equipment she has available. Employees will be paid $100 per week, and the income for each lawn will be $30. Chris has put together the following information.

Calculate the amount of marginal input, average product, marginal product, total revenue, total cost, marginal revenue product, and marginal input cost. Then answer the questions below.

No. of Workers	No. of Lawns per Week (TP)	MI	AP	MP	TR	MRP	TC	MIC
1	12	XX		XX		XX	XX	
2	25							
3	35							
4	44							
5	50							
6	55							
7	58							
8	60							
9	61							
10	60							

How many workers should Chris hire? _____

How many lawns should she service? _____

Activity Sheet reprinted from *Agribusiness Sales, Marketing, and Management*

Unit II - ECONOMIC PRINCIPLES IN AGRIBUSINESS AS 2.3

Lesson 2: The Principle of Diminishing Returns Name _____

MAXIMIZING PROFITS IN A SWINE PRODUCTION FACILITY

Objective: Calculate marginal input, average product, marginal product, total revenue, total cost, marginal revenue product, and marginal input cost.

Ashley is a manager for a large hog producer. The division of the company she manages receives the hogs at about 210 pounds and raises them to market weight. She is not sure of the most profitable weight at which to market the hogs. Ashley decides to do some research and come up with some estimates using the market price and feed cost, which are $45/cwt and $.09 per pound of feed.

Calculate the amount of marginal input, average product, marginal product, total revenue, total cost, marginal revenue product, and marginal input cost. Then answer the question below.

Weight of Hogs (TP)	AP	Lb. of Feed Fed	MI	MP	TR	MRP	TC	MIC
210#	XX	*650	XX	XX	94.50	XXX	58.50	XX
220#		694						
230#		739						
240#		785						
250#		832						
260#		881						
270#		932						
280#		984						
290#		1037						

At what weight should hogs be marketed? _____

* 650 pounds of feed were needed to get the hog to 210 pounds.

Diminishing Return Graphs Scoring Guide

Name_____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Font Appearance			
Meets all of the following criteria: 1. Readable (type style, size) 2. Eye appealing (compatible fonts) 3. Appropriately formatted (use of bold, italics, etc.)	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No grammar or spelling errors	A few minor errors that are not distracting	Numerous or distracting errors	
Content Completeness			
Meets all of the following criteria: 1. Titles contain required information 2. Lines and points of maximum profit are labeled 3. Axes are labeled	Meets two of the criteria	Meets one or none of the criteria	
Data Accuracy			
Data for all graph lines are correct	Data for one graph is incorrect	Data for two or more graphs are incorrect	
Content Accuracy			
Meet all of the following criteria: 1. Titles are correct 2. Lines and points of maximum profit are correctly labeled 3. Axes are correctly labeled	One or two items are incorrect	Three or more items are incorrect	

Total points out of 10 _____

Activity 6

Electronic Business Correspondence

Curriculum Supported	Related Competencies
Agribusiness Sales, Marketing, and Management	E. 2. Use written communication skills in the sales process. E. 3. Describe the proper use of communications technology.

Curriculum Reference:

Agribusiness Sales, Marketing, and Management. University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

Overview:

This activity addresses the type of information that should be included in a business letter or an e-mail message. This activity provides the option of developing business correspondence in either letter or e-mail form.

Activity Objectives:

1. Identify types of information to include in business correspondence.

2. Compose business correspondence requesting information from an agricultural agency, association, or business.

Activity Sheet:

AS 6.1 Electronic Business Correspondence

Scoring Guides:

SG 6.1a Electronic Business Correspondence (Letter)
SG 6.1b Electronic Business Correspondence (E-mail)

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Review components and types of business correspondence with students. Bring to class examples of good and poor business letters, memos, e-mails, etc., for the students to view.

3. This activity provides the option of composing a letter in a word processing program or an e-mail message in an e-mail client or web-based program. Decide which option to use based on the software/technology available. If students do not have e-mail accounts,

they can sign up for free web-based e-mail at various web sites (e.g., yahoo.com, excite.com, lycos.com, or hotmail.com).

4. Check to see if there is a student use policy at your school for using the network and Internet. Students and parents may have to sign a form that releases the students to use the network and Internet during class.

5. Remind students about e-mail cautions and the proper use of e-mail.

   - Inform them about the many viruses that can be harmful to the computer. Most of these viruses are sent as attachments to e-mail accounts. The students should not open any attachments from unfamiliar sources.

   - Tell them not to respond to chain e-mails, which are a waste of valuable network space.

   - Tell them not to send abusive or insulting e-mail messages.

6. Familiarize yourself with the software the students will be using for this activity. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

7. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 6.1a (letter option) or SG 6.1b (e-mail option). If available, provide related examples of exemplary work.

Activity length: 100 minutes for either option

Discussion Question:

Why and how is written communication effective?

- It is an easy way of giving and receiving information if it is done properly.

- Providing information in writing reduces the chance of a misunderstanding.

Assessment:

Grade the students' correspondence based on SG 6.1a (letter option) or SG 6.1b (e-mail option) located at the end of AS 6.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria.

Additional Activities:

1. Request information from the parks and recreation department about popular parks in the area you live in or in nearby towns.

2. Have students write to a breed association requesting information on a specific breed. Once the students receive the information, have them prepare a memo containing the information. Have them pass out the memo to the class. The students should include all the components of a memo in this extension.

3. Have students create an envelope using a word processing program for the letter.

Credits:

Agribusiness Sales, Marketing, and Management (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

Introduction to E-mail. <http://libweb.uoregon.edu/getready/handson/ex-31/> January 8, 2001.

Krammer, Melinda G., Glenn Leggett, C. David Mead. *Prentice Hall Handbook for Writers.* 12th ed. Upper Saddle River, New Jersey: Prentice Hall, 1995.

Rinaldi, Arlene. The Net: User Guidelines and Netiquette. <http://www.fau.edu/netiquette/net/elec.html> January 5, 2001.

Suler, John, Ph.D. Email Communication and Relationships. <http://www.rider.edu/users/suler/psycyber/emailrel.html> January 5, 2001.

Yudkowsky, Chaim. Apply Business Letter Format to E-mail Messages. <http://www.bizjournals.com/tampabay/stories/1998/06/08/smallb3.html> January 5, 2001.

Student Activity Sheet
Electronic Business Correspondence

Name:_____

Student Objectives:

1. Identify types of information to include in business correspondence.

2. Compose business correspondence requesting information from an agricultural agency, association, or business.

Equipment and Materials:

- Computer (Internet and e-mail access if choosing the e-mail option)
- Letter option - word processing program (e.g., Microsoft Word, WordPerfect), e-mail option - e-mail client (e.g., Outlook, Outlook Express, Eudora) or web-based program (e.g., yahoo mail, excite mail, lycos mail)
- Floppy disk
- SG 6.1a Business Correspondence (Letter) or SG 6.1b Business Correspondence (E-mail) Scoring Guide
- Printer

Procedure:

Letter option:

1. Refer to SG 6.1a for the criteria you will be graded on.

2. Pick a new product on the agricultural market that you would like to know more about. Examples of products are a tractor, fertilizer, feed additive, record keeping program, or anything else you are interested in.

   Note: The web is a good resource for companies and contact information.

3. Open a letter template in the word processing program or, if available in the program, use a utility ("wizard") that takes you step-by-step through creating the letter.

4. Compose a letter to the company requesting information about the product. Include some of the details you know about the product and the questions you have. Here are some guidelines to follow:
   - Directly state what you want the reader to do and why.
   - Specify the exact information you want from the reader.
   - Tell the reader how to send you the information.
   - Include the basic components of a business letter.
   - Format the letter in block style (all text aligned on the left).
   - Ensure the letter is free of punctuation, spelling, and grammatical errors.

   See Figure 6.1 for a sample letter.

5. When the letter is complete, save the file as "business letter" on your floppy disk. Print the letter and sign it.

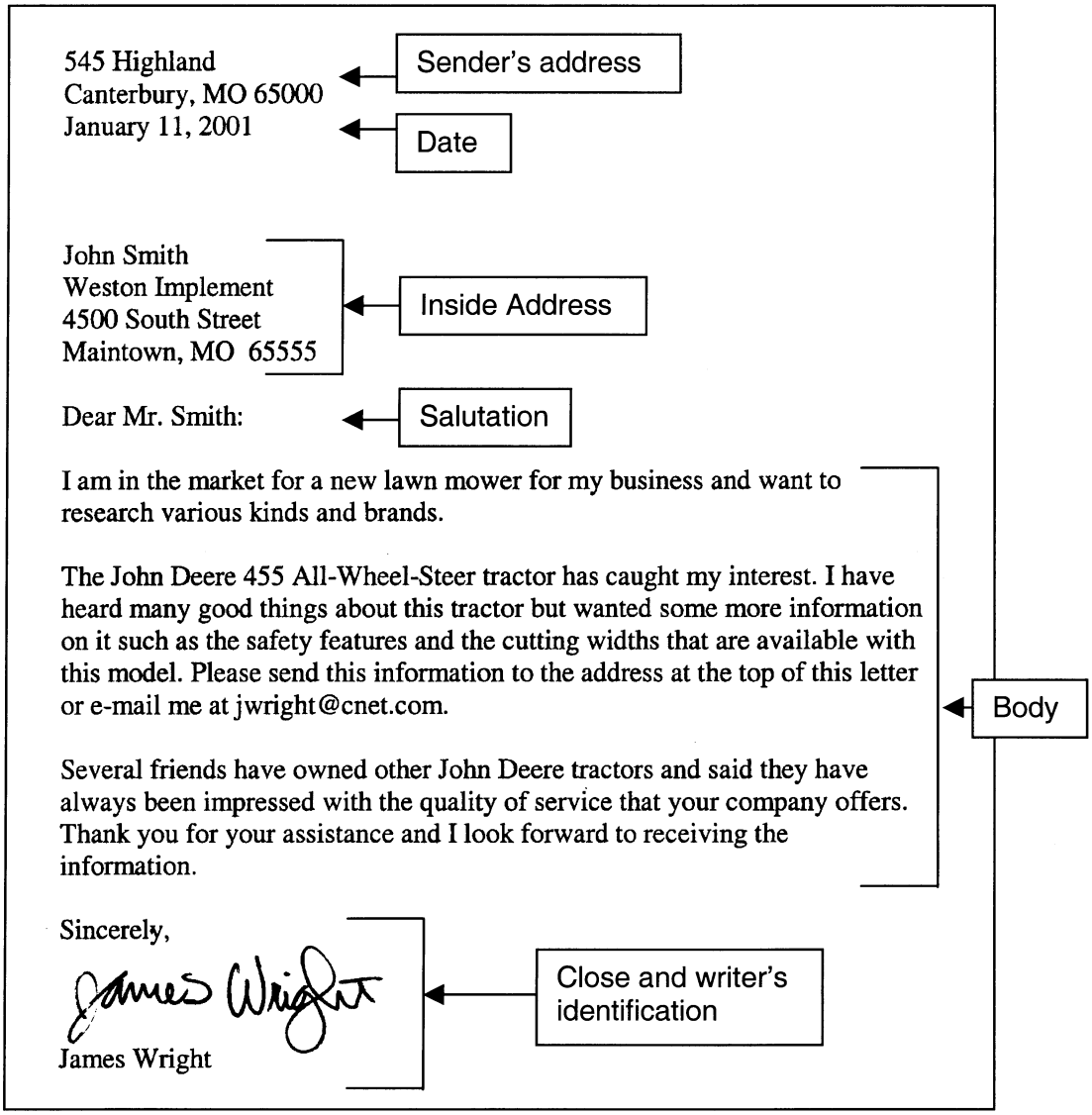


Figure 6.1 - Sample business letter

E-mail option:

1. Refer to SG 6.1b for the criteria you will be graded on.

2. Pick a new product on the agricultural market that you would like to know more about. Examples of products are a tractor, fertilizer, feed additive, record keeping program, or anything else you are interested in.

   Note: The web is a good resource for companies and contact information including an e-mail address for the company.

   Note: A business e-mail message contains many of the basic components of a business letter with a few differences, as you will see in the following procedure.

3. Open a new e-mail message and enter the e-mail address of the recipient. Make sure that the address contains all of the components needed (i.e., the username, the @ symbol, the subdomain, and the major Internet domain). An example of an e-mail address is doej@missouri.edu.

4. In the subject line, enter several words that summarize what the message is about.

5. Start the e-mail message with a salutation just like you would in a business letter such as Dear Mr./Mrs. _____:.

6. Compose the body of the message using the following guidelines:
   - Directly state what you want the reader to do and why.
   - Specify the exact information you want from the reader.
   - Tell the reader how to send you the information.
   - Ensure the body is free of punctuation, spelling, and grammatical errors.
   - Spell everything out. Do not use acronyms like FYI (for your information) or BTW (by the way).
   - Do not use all capital letters since the recipient may think you are upset and shouting.

   Note: In a typical business letter, information about the sender normally appears at the top of the letter. In an e-mail message, this information is put at the very end of the e-mail in what is called a signature.

7. To close, enter "Sincerely," your name, address, and e-mail address. See Figure 6.2 for a sample business e-mail message.

8. When the e-mail is complete, save the file as "business e-mail" on your floppy disk. Print the e-mail and write your name on the printout.

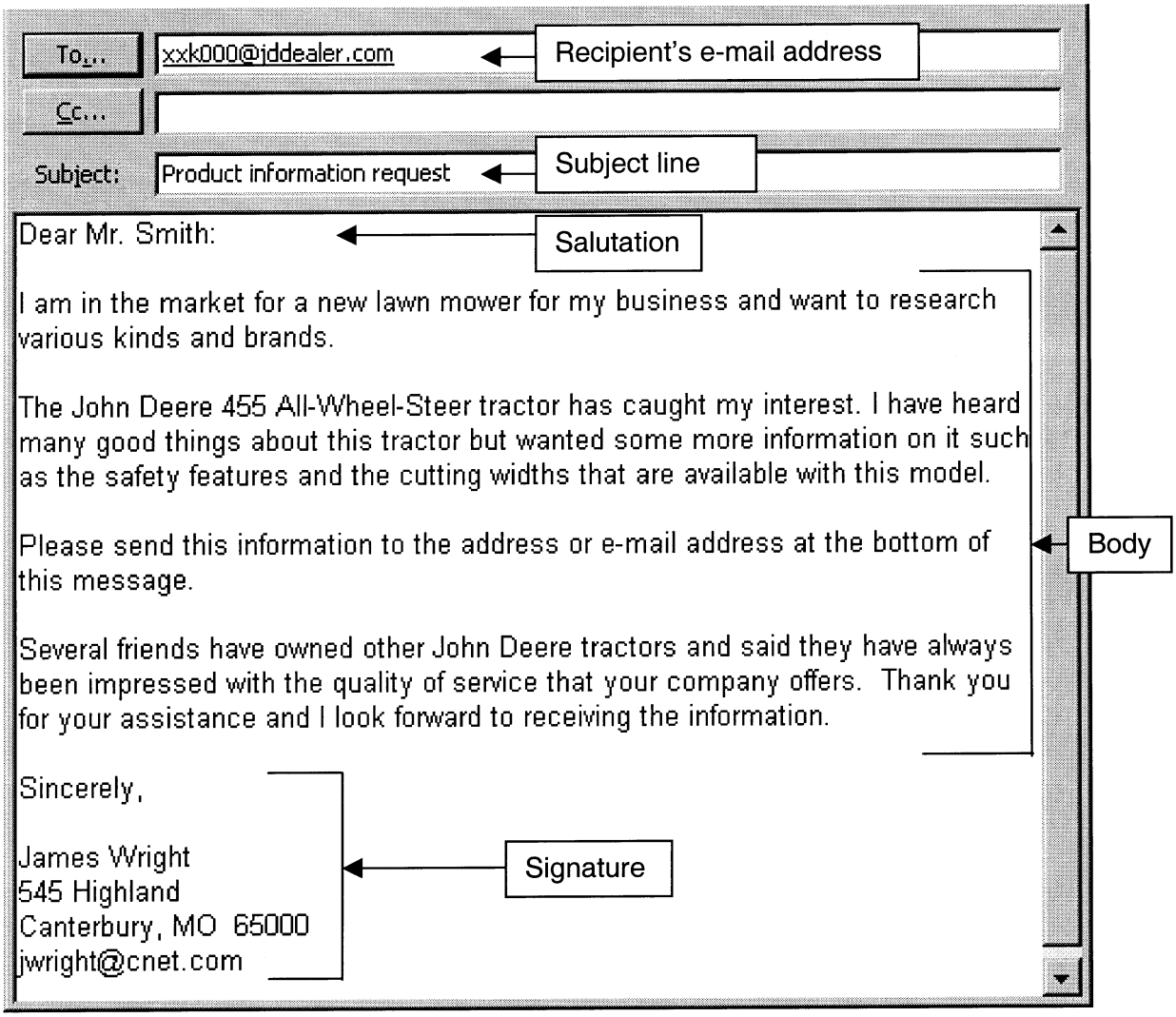


Figure 6.2 - Business e-mail message

Business Correspondence (Letter) Scoring Guide

Name:_____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Components			
Contains all components (sender's address, date, inside address, salutation, body, close, and writer's identification)	One component is missing	Two or more components are missing	
Text Mechanics			
No errors in punctuation, grammar, or spelling	A few minor errors that are not distracting	Numerous or distracting errors	
Body Content			
Meets all of the following criteria: 1. Directly states request and reason why 2. States exact information requested 3. Provides means for reader to contact sender	***	Meets fewer than three of the criteria	
Format			
Formatted in block style	***	Not formatted in block style	

Total points out of 8 _____

***No middle-ground criteria (either exemplary or needs work)

Business Correspondence (E-mail) Scoring Guide

Name:_____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Components			
Contains all components (recipient's e-mail address, subject line, salutation, body, and signature)	One component is missing	Two or more components are missing	
Text Mechanics			
No errors in punctuation, grammar, or spelling	A few minor errors that are not distracting	Numerous or distracting errors	
E-mail Address (Recipient's)			
Contains the correct components	***	One component is missing or incorrect	
Body Content			
Meets all of the following criteria: 1. Subject states purpose 2. Body directly states request and reason why 3. Body states exact information requested 4. Body provides means for reader to contact sender	***	Meets fewer than four of the criteria	

Total points out of 8 _____

***No middle-ground criteria (either exemplary or needs work)

Activity 7

Financial Analysis

Curriculum Supported	Related Competency
Agribusiness Sales, Marketing, and Management	I. 5. Prepare a balance sheet.

Curriculum Reference:

Agribusiness Sales, Marketing, and Management. University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

Overview:

With the advent of many financial analysis computer programs, it is becoming increasingly important to be familiar with their use. Conducting a financial analysis on a computer has the advantages of ease, accuracy, and efficiency. This activity provides experience in using a spreadsheet to calculate ratios that determine the solvency and liquidity of a business.

Activity Objective:

Use a computer to analyze a given financial situation.

Activity Sheet:

AS 7.1 Financial Analysis

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the spreadsheet software the students will be using for this activity, specifically the procedures for entering data and creating formulas. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review AS 7.1 with students and ensure they understand the activity.

Activity Length: 100 min.

Discussion Question:

What are the benefits of using a computer to analyze a financial situation?

- A computer provides a means of providing quick comparisons between different financial situations. These comparisons can provide the business operator/owner valuable information for decisions that will positively affect the operation.
- Computer analysis is very accurate and reliable.
- Using a computer to analyze financial situations develops computer skills that are highly valued in today's job market.

Assessment:

Answers to AS 7.1 are as follows:

1. a. Ace AgriChemical Company - .39
   b. Silo Technologies - .14
   c. Miller's Floral Design - .43

   Miller's Floral Design is the most solvent.

2. a. Ace AgriChemical Company - .65
   b. Silo Technologies - .17
   c. Miller's Floral Design - .75

   Miller's Floral Design is better able to survive a crisis.

3. a. Ace AgriChemical Company - 3.10
   b. Silo Technologies - .45
   c. Miller's Floral Design - 2.67

   Silo Technologies has the worst liquidity.

4. a. Ace AgriChemical Company - 1.53
   b. Silo Technologies - .27
   c. Miller's Floral Design - 1.33

   Silo Technologies would be less able to withstand an unexpected loss.

Additional Activities:

1. Have students reformat the ratio results to 3 or 4 decimal places, change the cell category so that accounting figures appear without the dollar sign, and add shading to the major headings.

2. Download the Finsim program, a financial analysis application, available free at <http://agebb.missouri.edu/download/index.htm>. Have the students enter information from their SAE project into the Finsim program and determine what changes can be made to increase profitability.

Credit:

Agribusiness Sales, Marketing, and Management (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

Student Activity Sheet
Financial Analysis

Name _____

Student Objective:

Use a computer to analyze a given financial situation.

Equipment and Materials:

- Computer
- Spreadsheet software (e.g., Excel, Lotus 1-2-3)
- Financial analysis_template (Excel file)

Procedure:

1. Open the financial analysis_template file that has ratios and formulas already entered. See Figure 7.1 for a copy of the spreadsheet. If you can use this file, skip step 2 and proceed to step 3. If you cannot use this file, go to step 2.

2. Open a spreadsheet file and complete steps a through d below.

   a. Enter the information in Figure 7.1.

   b. Create the formulas to calculate four ratios: the net worth to total assets ratio, net worth to total debt ratio, current ratio, and acid-test ratio.

      For example, to find the ratio between the figure entered in cell C8 and cell C10 below, initiate the formula function in your software and enter the following formula in cell C12: C8/C10. The ratio will be calculated and the result will appear in cell C12.

	A	B	C	D	E
6	**1. Net Worth to Total Assets Ratio = Net Worth/Total Assets**				
7					
8	**Net Worth =**		$ 274,000.00	← Cell C8	
9					
10	**Total Assets =**		$ 698,000.00	← Cell C10	
11					
12	**Net Worth to Total Assets Ratio =**		0.39	← Cell C12 Enter C8/C10 formula here	

   c. Format the cell categories for the ratio results (e.g., C12) to numbers with 2 decimal places.

   d. Proceed to step 3 when all formulas are complete.

	A	B	C	D	E
1	**Financial Analysis Spreadsheet**				
2	**(for comparing balance sheet ratios of businesses)**				
3					
4	**Measures in Tests of Solvency:**				
5			Ace AgriChemical Company	Silo Technologies	Miller's Floral Designs
6	**1. Net Worth to Total Assets Ratio = Net Worth/Total Assets**				
7					
8	**Net Worth =**		$ 274,000.00		
9					
10	**Total Assets =**		$ 698,000.00		
11					
12	**Net Worth to Total Assets Ratio =**		0.39		
13					
14	**2. Net Worth to Total Debt Ratio = Net Worth/Total Debts**				
15					
16	**Net Worth =**				
17					
18	**Total Debt =**				
19					
20	**Net Worth to Total Debt Ratio =**				
21					
22	**Measures in Tests of Liquidity:**				
23					
24	**1. Current Ratio=Current Assets/Current Liabilities**				
25					
26	**Current Assets =**				
27					
28	**Current Liabilities =**				
29					
30	**Current Ratio =**				
31					
32	**2. Acid-test Ratio = Current Monetary Assets/Current Liabilities**				
33					
34	**Current Monetary Assets =**				
35					
36	**Current Liabilities =**				
37					
38	**Acid-test Ratio =**				

Figure 7.1 – Example of financial analysis spreadsheet

3. Review the balance sheet for three agricultural companies below. Each is for the same time period. Assume that net income for each company is $100,000 for 2001 year-end.

Ace AgriChemical Company

Balance Sheet as of 31 December 2001			
Current Assets		**Current Liabilities**	
Cash	$35,000	Accounts payable	$25,000
Accounts receivable	$17,000	Accrued interest payable	$9,000
Inventory 12/31	$56,000		
Total current assets	$108,000	Total current liabilities	$34,000
Noncurrent Assets		**Noncurrent Liabilities**	
Land	$140,000	Land loan	$90,000
Buildings	$300,000	Mortgage	$200,000
Delivery trucks	$100,000	Truck loans	$70,000
Cars	$50,000	Car loans	$30,000
Total noncurrent assets	$590,000	Total noncurrent liabilities	$390,000
		Total liabilities	$424,000
		Net worth	$274,000
Total Assets	$698,000	Total Liabilities and Net Worth	$698,000

Silo Technologies

Balance Sheet as of 31 December 2001			
Current Assets		**Current Liabilities**	
Cash	$10,000	Accounts payable	$325,000
Accounts receivable	$80,000	Accrued interest payable	$10,000
Inventory 12/31	$60,000		
Total current assets	$150,000	Total current liabilities	$335,000
Noncurrent Assets		**Noncurrent Liabilities**	
Land	$140,000	Land loan	$65,000
Buildings	$260,000	Mortgage	$200,000
Delivery trucks	$100,000	Truck loans	$0
Cars	$50,000	Car loans	$0
Total noncurrent assets	$550,000	Total noncurrent liabilities	$265,000
		Total liabilities	$600,000
		Net worth	$100,000
Total Assets	$700,000	Total Liabilities and Net Worth	$700,000

Miller's Floral Design

Balance Sheet as of 31 December 2001			
Current Assets		**Current Liabilities**	
Cash	$50,000	Accounts payable	$50,000
Accounts receivable	$50,000	Accrued interest payable	$25,000
Inventory 12/31	$100,000		
Total current assets	$200,000	Total current liabilities	$75,000
Noncurrent Assets		**Noncurrent Liabilities**	
Land	$300,000	Land loan	$75,000
Buildings	$50,000	Mortgage	$200,000
Delivery trucks	$100,000	Truck loans	$50,000
Cars	$50,000	Car loans	$0
Total noncurrent assets	$500,000	Total noncurrent liabilities	$325,000
		Total liabilities	$400,000
		Net worth	$300,000
Total Assets	$700,000	Total Liabilities and Net Worth	$700,000

4. Enter figures from Ace AgriChemical Company's balance sheet in the appropriate column of the spreadsheet to calculate the four ratios.

5. Repeat step 4 for Silo Technologies and Miller's Floral Design.

6. Compare the ratio results for each of the businesses and answer the following questions.

Questions:

1. What are the results for the net worth to total assets ratio for each business?

   a. Ace AgriChemical Company -

   b. Silo Technologies -

   c. Miller's Floral Design -

   Which business is the most solvent?

2. What are the results for the net worth to total debt ratio?

   a. Ace AgriChemical Company –

   b. Silo Technologies –

   c. Miller's Floral Design -

   Which business would be better able to survive a crisis?

3. What are the results for the current ratio?

   a. Ace AgriChemical Company –

   b. Silo Technologies –

   c. Miller's Floral Design -

   Which business has the worst liquidity?

4. What are the results of the acid-test ratio?

   a. Ace AgriChemical Company –

   b. Silo Technologies –

   c. Miller's Floral Design -

   Which business would be less able to withstand an unexpected loss?

Activity 8 Promotional Brochure

Curriculum Supported	Related Competency
Agribusiness Sales, Marketing, and Management	H. 1. Describe the components and purpose of a promotional campaign.

Curriculum Reference:

Agribusiness Sales, Marketing, and Management. University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

Overview:

This activity provides experience in developing a promotional brochure on the computer. The brochure can be created in a word processing or page layout program. Basic guidelines for good content and design are also discussed.

Activity Objective:

Design a promotional brochure using word processing templates or page layout program templates.

Activity Sheet:

AS 8.1 Promotional Brochure

Scoring Guide:

SG 8.1 Promotional Brochure

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the word processing or page layout software the students will be using for this activity and have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 8.1. If available, provide related examples of exemplary work.

Activity length: 200 minutes

Discussion Questions:

1. Why is it important to follow the basic content and design guidelines?

   - The content guidelines help in planning the purpose and organization of the brochure.

   - The basic design principles help to keep the project neat and organized. By using the design guidelines, everything is unified and has a consistent look that provides visual interest for the reader.

2. Why are thumbnail sketches an important part of the design?

   - A thumbnail sketch gives the creator a sense of what he/she wants the project to look like. It is a great brainstorming tool and it allows the creator to scribble and change things around easily before beginning the actual project.

3. Why is a final evaluation of the brochure important?

   - Final evaluation is important because it allows the students to do an overall check to make sure their brochures are suitable for the intended audience.

Assessment:

Grade the students' brochures based on SG 8.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. To view the brochure example (Figure 8.1) in color, open the brochure_example file on the *Computer Lab Activities in Agriculture* CD-ROM.

Additional Activities:

1. Design a letterhead or business card for The Country Corner (or another company or group). Use a letterhead template in a word processing or page layout program and customize it for the company. For the business cards, if a template is not available, try using a label template that provides a layout of 3 1/2 X 2 in. cards that are 10 up on the page. Have the students pick out letterhead and card stock paper to print their projects.

2. Design a T-shirt for The Country Corner (or for another company or group).

   Equipment and Materials:
   - T-shirt transfer paper (This paper can be purchased at any office supply store. Some of the brands that are available are Avery, Hewlett Packard, Canon, and Epson.)
   - Color inkjet or bubble printer
   - Iron
   - T-shirts

Create a design for the company in a computer program. Some examples of programs include Adobe PhotoShop, American Greetings, Corel Print House, Microsoft Greeting Workshop, Microsoft Word, Microsoft Publisher, The Print Shop, and WordPerfect.

All of the transfer paper products are similar, but you should follow the directions on the product you purchase. The product explains how to print your design and the proper way to iron the decal to a T-shirt.

Many of the brands also have kits available to make magnets, stickers, mouse pads, and window decals. These items could also be used to promote the company.

3. Have students develop brochures for one or more of the following: Agricultural Sales Contest, Products for the 21st Century, Missouri Department of Agriculture, or the Missouri Pork Producers.

Credits:

Kolin, Philip C. *Successful Writing at Work.* 5th ed. Boston, New York: Houghton Mifflin Company,1998.

Webopedia. <http://webopedia.internet.com/TERM/r/resolution.html> March 21, 2001.

Williams, Robin. *The Non-Designer's Design Book.* Berkeley, California: Peachpit Press, 1994.

Student Activity Sheet
Promotional Brochure

Name _____

Student Objective:

Design a promotional brochure using word processing templates or page layout program templates.

Equipment and Materials:

- Computer
- Word processing or page layout program (e.g., Word, WordPerfect, PageMaker, Publisher)
- SG 8.1 Promotional Brochure Scoring Guide
- Brochure_example (Word file) - view for sample created for another company

Procedure:

1. Refer to SG 8.1 for the criteria you will be graded on.

2. Joel and Sandy Turner own The Country Corner, a store in your town that sells gift packs. They have asked you to design a brochure that they can use to advertise their business and increase their sales. Sandy has provided the following information for the brochure.

Location:	1150 Prairie Lane in Canter, Missouri 65512
Contact Info.:	Phone number - (800) 555-1001 E-mail - countrycorner@hotmail.com Web site - www.countrycorner.com
Slogan:	"The perfect gift for anyone any time."
Specialize in:	Country Gift Packs that are famous throughout the Midwest
Sale items:	Pack #1 contains 1 lb of mild sausage and 1 lb of American cheese. Weight: 2.5 lb. Price: $8.00.
	Pack #2 contains 1 lb of mild sausage, 1 lb of American cheese, 1 lb of cheddar cheese, and a marble cutting board with knife. Weight: 4 lb. Price: $16.00.
	Pack #3 is a basket of mixed fruit containing apples, oranges, grapefruits, and pears. Weight: 10 lb. Price: $18.00.
	Pack #4 contains four types of jams: strawberry, peach, apricot, and grape. Weight: 5 lb. Price: $14.00.
	Pack #5 is a variety pack. It contains mixed fruit, 1 lb of mild sausage, 1 lb of American cheese, and the four jams pack (pack #4). Weight: 8 lb. Price: $32.00.
	Custom packages are available upon request. The customer should call for details.
Delivery:	The delivery time for these baskets is about 10 days to 2 weeks. Delivery time is longer around holidays so customers should submit their orders early.
Hours:	Open year-round Monday through Friday, 9:00 a.m. to 5:00 p.m., and on Saturdays from 9:00 a.m. to 12 noon.
Other:	Customers should call for details about fund-raising events for school and community groups.

3. To find design ideas, start by looking for template files for brochures in a word processing or page layout program. You may also create your own template by setting up the page to be viewed as landscape and inserting three columns.

4. Do a thumbnail (miniature drawing) sketch of how your brochure will look. Use the following basic guidelines for content and design when creating the brochure. It is important to think about these guidelines before starting the project so that you know what you want to accomplish. See Figure 8.1 for a sample brochure for another company.

   Content
   - Think of a brochure as a short story with key points, facts, and illustrations about the topic.
   - Establish objectives for the brochure and sort through the information that was given to you.
   - Create a cover that conveys your purpose and arouses the interest of the intended audience.
   - Make sure the language is easy to read and focuses on the interests of the reader.
   - Divide the information into sections and provide informative headers for each section.
   - Use good quality graphics that are relevant to the topic and presented in a logical order.

   Design (four basic principles)*
   - Proximity — Items relating to each other should be grouped close together. When several items are in close proximity to each other, they become one visual unit rather than several separate units. This helps organize information and reduces clutter.
   - Alignment — Nothing should be placed on the page arbitrarily. Every element should have some visual connection with another element on the page. This creates a clean, sophisticated, fresh look.
   - Repetition — Repeat visual elements of the design throughout the piece. You can repeat color, shape, texture, spatial relationships, line thicknesses, sizes, etc. This helps develop the organization and strengthens the unity.
   - Contrast — The idea behind contrast is to avoid elements on the page that are merely similar. If the elements (type, color, size, line thickness, shape, space, etc.) are not the same, then make them very different. Contrast is often the most important visual attraction on a page.

   *R. Williams, *The Non-Designer's Design Book*, page 14, © 1994 by Robin Williams. Reprinted by permission of Pearson Education Inc.

Events We Cater:

Birthdays

Anniversaries

Weddings

Banquets

Holiday Parties

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Mainland, MO 55598
1-800-555-5973
e-mail -
simmons@mailcity.com

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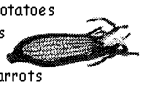
Outside

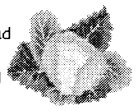
Choices We Offer:

Meat
Brisket
Baked Ham
Pulled Pork
Chicken Breast
Turkey

Vegetables
Au Gratin Potatoes
Green Beans
Corn
Buttered Carrots



Salads
Lettuce Salad
Pasta Salad
Jell-O Salad
Mixed Fruit



Desserts
Carrot Cake
Cheesecake
Chocolate Cake
Pineapple Upside-down Cake

The Basic Package:
One Meat
Two Vegetables
One Salad
Bread
One Dessert
Drinks

Cost: $6.00 per person

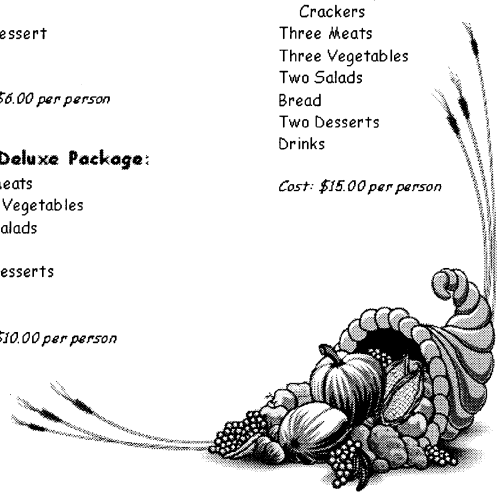
The Deluxe Package:
Two Meats
Three Vegetables
Two Salads
Bread
Two Desserts
Drinks

Cost: $10.00 per person

The Formal Package:
Two Standard Hors d' Oeuvres
- Sausage Balls
- Salmon Dip and Crackers

Three Meats
Three Vegetables
Two Salads
Bread
Two Desserts
Drinks

Cost: $15.00 per person



Inside

Figure 8.1 - Sample Brochure

5. Begin working on your project at the computer. You may either use a template in a word processing or page layout program, or create your own.

6. Save the brochure throughout the development process to a location that your instructor specifies.

7. Check with your instructor about which type of graphic file format to insert in your brochure. See the note below.

   Note: Web page clip art files have a .gif or .jpg extension and a smaller file size. These files are low resolution (lower dots per square inch (dpi)), will print with less detail, and are more likely to have pixelated (jagged) edges. High-resolution (higher dpi) clip art files have extensions such as .tif or .eps and have a larger file size. These files will provide more detail and smoother edges. The choice many times depends on how much disk space you have and the level of quality required for your document.

8. To find relevant clip art or graphics for your brochure, check if a clip art CD-ROM is available or search the Internet for clip art. The Internet has many resources for free clip art. Two resources are the following:

   - Clip Art Connection <http://www.clipartconnection.com/>
   - Absolutely-Free-Clipart <http://www.absolutely-free-clipart.com/main.html>

9. After the brochure is complete, save and print it. Write your name on the printout.

10. Evaluate your efforts. Are all the key points logically organized and clearly identified? Is the brochure easy to read and interesting to the intended audience? Does the customer know how to contact the company? Were the basic content and design guidelines followed?

Promotional Brochure Scoring Guide

Name _____

Exemplary--2 pts.	Acceptable--1 pt.	Needs Work--0 pts.	Pts.
Font Appearance			
Meets all of the following criteria: 1. Readable (type style, size) 2. Eye appealing (compatible fonts) 3. Appropriately formatted (use of bold, italics, etc.)	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No grammar or spelling errors	A few minor errors that are not distracting	Numerous or distracting errors	
Design			
Follows the principles of design: 1. Proximity 2. Alignment 3. Repetition 4. Contrast	Follows three of the design principles	Follows two or fewer of the design principles	
Colors			
Meet all of the following criteria: 1. Good contrast 2. Appropriate number of colors 3. Eye appealing	Meet two of the criteria	Meet one or none of the criteria	
Content Accuracy			
All facts are correct	One or two facts are incorrect	Three or more facts are incorrect	
Content Quality			
Meets all of the following criteria: 1. Cover conveys purpose and arouses interest 2. Key points and facts are easy to read 3. Headers are interesting and appropriate	Meets two of the criteria	Meets one or none of the criteria	
Content Organization			
Well organized (information is divided into parts and clearly identified)	Not completely organized	Poorly organized	
Content Completeness			
All information is presented	One or two pieces of information are missing	Three or more pieces of information are missing	
Images			
Meet all of the following criteria: 1. Represent content 2. Good quality (good resolution, clear) 3. Appropriate size	Meet two of the criteria	Meet one or none of the criteria	

Total points out of 18 _____

Public Relations Program

Curricula Supported	Related Competencies
Agribusiness Sales, Marketing, and Management	E. 2. Use written communication skills in the sales process. E. 3. Describe the proper use of communications technology.
Agricultural Science II, *Leadership II*	5. Prepare and deliver a presentation.

Curriculum References:

1. *Agribusiness Sales, Marketing, and Management.* University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

2. *Leadership and Personal Development.* University of Missouri-Columbia: Instructional Materials Laboratory, 1991.

Overview:

Part 1 of this activity provides experience in developing a yearlong public relations calendar of promotional activities for an FFA chapter. Ways to publicize the chapter are identified through a brainstorming session and the calendar is created in a word processing program. Part 2 of this activity provides experience in creating and delivering a public relations program presentation using presentation software.

Activity Objectives:

1. Develop a public relations program for your FFA chapter. (Part 1)

2. Prepare and deliver a presentation promoting the FFA chapter. (Part 2)

Activity Sheets:

AS 9.1 Public Relations Program Calendar
AS 9.2 Public Relations Program Presentation

Scoring Guides:

SG 9.1 Public Relations Program Calendar
SG 9.2 Public Relations Program Presentation

Instructor Preparation/Directions:

Part 1

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the word processing software the students will be using for this activity and have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Plan to divide students into groups for this activity. Depending on the size of the groups, have each group develop promotional ideas for 2 to 4 months of the year.

4. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 9.1. If available, provide related examples of exemplary work.

Activity-Part 1 Length: 60 minutes

Part 2

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the presentation software the students will be using for this activity and have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Have students bring to class pictures of members at FFA chapter activities or relevant clip art.

4. For help in scanning photographs, refer to the operator's manual for the scanner.

5. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 9.2. If available, provide related examples of exemplary work.

Activity-Part 2 Length: 200 minutes

Discussion Questions:

Part 1

1. What are the functions of a public relations program for an FFA chapter?

   - It serves to inform the public about the chapter and generate community support.

   - It serves to recruit new members.

2. What are the benefits of creating the calendar in a word processing program?

   - The calendar is easy to read and can easily be updated at any time throughout the year. For subsequent years, the file can be revised.

   - The calendar can be printed and posted in a location like the agriculture room so students can see what is planned for each week of every month.

Part 2

1. What are the benefits of making a presentation about your FFA chapter to the community?

   - The presentation will provide valuable publicity for the FFA chapter.

   - With this exposure, the chapter is more likely to get support from the community and recruit new members.

2. How is learning to prepare a presentation beneficial?

   - The creation of this presentation provides students with practice and gives them a basic idea of how to effectively produce a slide presentation. These types of presentations are commonplace among professionals in many fields.

3. How is delivering a presentation beneficial?

   - The ability to deliver a presentation is a very useful skill because leadership and communication skills are highly valued in the professional world. The ability to deliver an effective presentation improves your leadership skills.

Assessment:

AS 9.1 - Grade the students' public relations calendars based on SG 9.1 at the end of AS 9.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria.

AS 9.2 - Grade the students' presentations based on SG 9.2 at the end of AS 9.2. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. For an example presentation, view the public relations_presentation file, a PowerPoint file on the *Computer Lab Activities in Agriculture* CD-ROM.

Additional Activities:

1. Create a brochure to hand out at school events. This brochure can contain the same information as the presentation. It is another way for the chapter to get publicity and also recruit new members to the organization.

2. Develop a yearly activity report for the school administration and/or school board. Include what the chapter plans to do throughout the year and the leadership skills that the members will gain from the activities.

3. Develop a chapter newsletter. The newsletter can contain information on upcoming activities, officers, how to become a member, feature articles on events, etc.

Credit:

Agribusiness Sales, Marketing, and Management (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

Student Activity Sheet
Public Relations Program Calendar

Name _____

Student Objective:

Develop a public relations program for your FFA chapter.

Equipment and Materials:

- Computer
- Word processing software (e.g., Word, WordPerfect)
- Floppy Disk (one for each group)
- SG 9.1 Public Relations Program Calendar Scoring Guide

Procedure:

1. Refer to SG 9.1 for the criteria you will be graded on.

2. Work with your group to plan a public relations program calendar for your FFA chapter. Brainstorm for promotional activities and ideas. Assign one member to write down the ideas. Keep in mind the following:

   - Look at the months your group has been assigned and develop a program based on that time of year (e.g., National FFA Convention, FFA Week).

   - Remember that you want to promote the FFA and inform the community about your chapter's leadership, events, and community involvement.

   - Identify enough ideas that you can assign three to each week of your part of the calendar.

3. After the brainstorming session, review the ideas and assign them to the appropriate week in the months you were assigned. Assign three ideas for every week.

4. Open a new file in a word processing program and create a clean, errorless copy of your group's ideas. The page can be formatted in any way but ensure that the information is organized and easy to read. An example format is to list the month, the week, and the activities for that week. (See below.)

   <u>January</u>
   Week 1
   - Feature article on FFA president
   - Distribute calendars to community
   - Publish chapter newsletter

   Week 2
   - Member interview with local radio station
   - Feature article on contest preparation
   - FFA meeting news

5. When the calendar is complete, save the file on a floppy disk as "Public Relations Calendar." Print the file and write your group's names on the sheet.

Public Relations Program Calendar Scoring Guide

Name _____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Font Appearance			
Meets all of the following criteria: 1. Readable (type style, size) 2. Eye appealing (compatible fonts) 3. Appropriately formatted (use of bold, italics, etc.)	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No errors in grammar, punctuation, or spelling	A few errors that are not distracting	Numerous or distracting errors	
Activity Content			
All activities serve to promote the FFA chapter	One activity is not appropriate	Two or more activities are not appropriate	
Content Organization			
Well organized (information is sequential like a calendar and easy to read)	Not completely organized	Poorly organized	
Content Completeness			
Each week has three promotional activities	One week has two activities	Two or more weeks have two or fewer activities	

Total points out of 10 _____

Student Activity Sheet
Public Relations Program Presentation

Name _____

Student Objective:

Prepare and deliver a presentation promoting the FFA chapter.

Equipment and Materials:

- Computer
- Scanner
- Pictures of members at chapter activities or relevant clip art
- Presentation software (e.g., PowerPoint, Corel Presentations)
- SG 9.2 Public Relations Program Presentation Scoring Guide
- Public relations_blank template (PowerPoint file)

Procedure:

1. Refer to SG 9.2 for the criteria you will be graded on.

2. To get some ideas for the format of your presentation, view some sample PowerPoint presentations at <http://www.foukeffa.org/>. Click on the Ag Lesson Plans link.

3. Create six slides about your FFA chapter using the public relations_blank template file or a design of your own.

4. On the first slide, include the title of your presentation and your name.

5. Add titles to each of the five remaining slides as follows: Chapter Background, FFA Benefits, Chapter Services, Chapter Activities, and Chapter Awards and Accomplishments. Add relevant information to each slide.

6. On each of the five slides above, insert a scanned image of FFA members participating in chapter events or a piece of related clip art. Check with your instructor about which type of graphic file format to insert in your presentation. See the note below.

   Note: Web page clip art files have a .gif or .jpg extension and a smaller file size. These files are low resolution (lower dots per square inch (dpi)), will print with less detail, and are more likely to have pixelated (jagged) edges. High-resolution (higher dpi) clip art files have extensions such as .tif or .eps and have a larger file size. These files will provide more detail and smoother edges. The choice many times depends on how much disk space you have and the level of quality required for your document.

7. When your presentation is complete, test it on the hardware you will be using to ensure there are no technical problems.

8. Give an oral presentation of your slide show to the class.

Public Relations Program Presentation Scoring Guide

Name _____

Exemplary--2 pts.	Acceptable--1 pt.	Needs Work--0 pts.	Pts.
Font Appearance			
Meets all of the following criteria: 1. Readable (type style, size) 2. Eye appealing (compatible fonts) 3. Appropriately formatted (use of bold, italics, etc.)	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No grammar or spelling errors	A few minor errors that are not distracting	Numerous or distracting errors	
Colors			
Meet all of the following criteria: 1. Good contrast 2. Appropriate number of colors 3. Eye appealing	Meet two of the criteria	Meet one or none of the criteria	
Content Accuracy			
All facts are correct	One or two facts are incorrect	Three or more facts are incorrect	
Content Organization			
Well organized (information is consistently presented)	Not completely organized	Poorly organized	
Content Completeness			
All slides are present and complete	One slide is incomplete	Two or more slides are incomplete or missing	
Transitions			
Meet all of the following criteria: 1. Keep viewers' attention 2. Help the flow 3. Consistently used	Meet two of the criteria	Meet one or none of the criteria	
Animation			
Meets all of the following criteria: 1. Helps the flow 2. Uses timing effectively 3. Keeps viewers' attention	Meets two of the criteria	Meets one or none of the criteria	
Images			
Meet all of the following criteria: 1. Represent content 2. Good quality (good resolution, clear) 3. Appropriate size	Meet two of the criteria	Meet one or none of the criteria	
Presentation Delivery			
Enthusiastic throughout	Enthusiastic most of the time	Rarely enthusiastic	
Stands erect on both feet throughout	Stands erect on both feet most of the time	Rarely stands erect	
Maintains good eye contact throughout	Maintains good eye contact most of the time	Rarely maintains good eye contact	
Maintains good volume and tone throughout	Maintains good volume and tone most of the time	Rarely maintains good volume and tone	
Uses appropriate gestures to emphasize key points throughout	Uses appropriate gestures to emphasize key points most of the time	Rarely uses appropriate gestures to emphasize key points	

Total points out of 28 _____

Activity 10 Time Value of Money

Curriculum Supported	Related Competencies
Agribusiness Sales, Marketing, and Management	C. 3. Describe the sources of credit and credit guidelines. C. 4. Develop a savings and investment plan as part of a complete financial plan.

Curriculum Reference:

Agribusiness Sales, Marketing, and Management. University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

Overview:

Time value of money is a very important concept to learn. In this activity, the three factors (money, interest, and time) are calculated using electronic calculators on the Internet. The calculations show how these three factors fit together and what loans cost and investments are worth in the years ahead. This activity illustrates how important it is to save and invest money.

Activity Objectives:

1. Compare costs at various interest rates and various periods of time.

2. Compare costs at various interest rates and investment periods.

3. Describe the advantages of using computer-based amortization tables.

Activity Sheet:

AS 10.1 Time Value of Money

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Before assigning this activity to students, check the web links provided to ensure they are still available and current.

3. Check to see if there is a student use policy at your school for using the network and Internet. Students and parents may have to sign a form that releases the students to use the network and Internet during class.

4. Discuss Internet cautions with the students before beginning this activity. Inform them not to provide any personal information over the Internet through chat rooms or other sites. Personal information includes full name, address, phone number, social security number, or picture. Check with your school for additional rules and regulations on Internet use.

5. Review AS 10.1 with students to ensure they understand the activity.

Activity Length: 100 min.

Discussion Questions:

1. What are the advantages of using tools on the web for calculating investments and creating amortization tables?

   - You can personalize the information to fit your situation.
   - The numbers are calculated instantaneously and they can be changed very easily for different situations.

2. What other valuable information can you find on these web sites and other related sites?

   - The sites tell you what rates are good, the best repayment plans, and they provide investment advice, etc.

Assessment:

Answers to AS 10.1 are as follows:

1. a. 24 months at 7% - $402.95, 9% - $411.16
   b. 36 months at 7% - $277.89, 9% - $286.20
   c. 48 months at 7% - $215.52, 9% - $223.97

2. The 24-month loan at 7% saves you $674.16 in interest. The longer the loan lasts, the more interest you will pay.

3. Answers may vary. A certificate of deposit probably provides the best return.

4. Approximately $84 per month

5. a. Approximately 5.9%
   b. Approximately 9.5%

6. The advantages of using electronic amortization tables provided on the Internet are as follows.
   a. Using electronic amortization tables is much faster than calculating the numbers yourself.
   b. In using these tools, you avoid making mathematical mistakes.
   c. You can make fast and easy changes to figures without having to recalculate them yourself.

Additional Activity:

Have the students develop their own investment plan. They can enter how much they can afford to save every week in an amortization table and then they can see how it will grow.

Credit:

Agribusiness Sales, Marketing, and Management (Student Reference). Instructional Materials Laboratory. University of Missouri-Columbia. 1997.

Student Activity Sheet
Time Value of Money

Name_____

Student Objectives:

1. Compare costs at various interest rates and various periods of time.

2. Compare costs at various interest rates and investment periods.

3. Describe the advantages of using computer-based amortization tables.

Equipment and Materials:

- Computer with Internet access

Procedure:

1. Review questions 1 through 6 on the next page.

2. Access electronic calculators on the Internet to answer the questions. Suggested web sites are as follows:

   Auto loan calculator web sites:
   <http://www.virtualbank.com/loans.asp> Click on the Calculators link.
   <http://www.kbb.com/household.html> Click on the calculator graphic.
   <http://www.edmunds.com/edweb/loan/calculator.html>

   Investment calculator web sites:
   <http://www.waddell.com/fp/ifunding.html>
   <http://www.bygpub.com/finance/InterestCalc.htm>
   <http://www.directbanking.com/cgi-bin/savings>

   Amortization table web sites:
   <http://www.homeowners.com/new47.html>
   <http://www.ewmortgage.com/mortgage/>
   <http://www.virtualsalem.com/resources/amort.shtml>
   <http://www.record-eagle.com/lib/amortc.htm>

Questions:

1. You want to purchase a car that costs $10,000. You have $1,000 in the bank that you plan to use as a down payment. This will be your first vehicle, so you do not have a trade in. You have contacted several banks and their annual percentage rates (APR) are 7% with collateral and 9% without collateral. Using one of the auto loan calculator web sites, determine what your payments each month would be for:

   a. 24 months with an APR of 7% and 9%

   b. 36 months with an APR of 7% and 9%

   c. 48 months with an APR of 7% and 9%

2. Calculate the total cost of the loan above for 24 months at 7% and 48 months at 7%. What is the advantage, if any, of paying off the loan in 24 months rather than 48 months?

3. Your grandmother gave you $1,000 for your birthday. She wants you to invest the money in something with a high return for at least 10 years. The choices of investment vehicles are savings accounts, certificates of deposit, or money market accounts. Using the web sites provided, determine which would be the best way to invest your money to get the most return. (Hint: The directbanking.com web site has this information readily available.)

4. Your sister has just had a baby and she and her husband have decided to start saving for the baby's college education. They want to make an initial investment of $100. How much money would they have to save each month so that in 20 years at 8% APR there would be $50,000 in the account? (Use the waddell.com or directbanking.com web site to answer this question.)

5. Your family wants to buy a house. Your father asks you to create two different amortization tables for him to analyze mortgage loans. He plans to take out a loan for $95,000 to purchase the house. The maximum monthly payment that he can afford is $800. What is the highest interest rate he can afford for the following mortgages?

   a. 15-year mortgage

   b. 30-year mortgage

6. List three advantages of using the computer to do amortization tables.

Activity 11 Tools for Landing a Job

Curriculum Supported	Related Competency
Agribusiness Sales, Marketing, and Management	D. 8. Develop a résumé and complete a job application.

Curriculum Reference:

Agribusiness Sales, Marketing, and Management. University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

Overview:

In this activity the web is used as the main resource and the computer is the tool used for developing a résumé (Part 1), completing a computer-based job application (Part 2), and creating an electronic portfolio (Part 3). The web is a constantly growing resource for information on landing a job. Anything from job postings to information on how to land a job can be found. Computing skills are another essential element in today's job market.

Activity Objectives:

1. Develop a résumé in a word processing program. (Part 1)
2. Complete a computer-based job application. (Part 2)
3. Identify components of an electronic portfolio. (Part 3)
4. Build an electronic portfolio. (Part 3)

Activity Sheets:

AS 11.1 Résumé
AS 11.2 Computer-based Job Application
AS 11.3 Electronic Portfolio

Scoring Guides:

SG 11.1 Résumé
SG 11.2 Computer-based Job Application
SG 11.3 Electronic Portfolio

Instructor Preparation/Directions:

Part 1

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are also provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the word processing software the students will be using for this activity and have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 11.1. If available, provide related examples of exemplary work.

Activity-Part 1 Length: 100 min.

Part 2

1. All materials are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are also provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Before assigning this activity to students, check the web link provided to ensure it is still available and current.

3. a. On-line option - The on-line job application provides students with a realistic experience in filling out an application on the Internet. Please note that the information they submit is not saved anywhere and will be lost when they quit out of the browser. The students must complete and submit the on-line application in one class period because the information cannot be saved in a file.

   b. Word processing option - Conduct this option to complete a job application in a word processing program if you do not have access to the Internet or if you want the students to be able to save their files. You must have Word 97 or higher to use this option.

4. Check to see if there is a student use policy at your school for using the network and Internet. Students and parents may have to sign a form that releases the students to use the network and Internet during class.

5. Discuss Internet cautions with the students before beginning this activity. Inform them not to provide any personal information over the Internet through chat rooms or other sites. Personal information includes full name, address, phone number, social security number, or picture. Check with your school for additional rules and regulations on Internet use.

6. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 11.2. If available, provide related examples of exemplary work.

Activity-Part 2 Length: 50 min.

Part 3

1. All materials are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are also provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the presentation software the students will be using for this activity and have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 11.3. If available, provide related examples of exemplary work.

Activity-Part 3 Length: 200 min.

Discussion Questions:

Part 1

1. What are the benefits of creating a résumé with word processing software?

   - The résumé can be saved on the computer's hard drive or a floppy diskette and reprinted if the hard copy of the résumé is lost or destroyed.

   - It can be accessed for editing whenever necessary. An electronic résumé can easily be tailored to each job opportunity and each version can be saved.

   - A résumé created on the computer looks more professional and also demonstrates proficiency with basic computing skills. In today's competitive job market, a good résumé can give a job applicant the edge necessary for landing a job. This edge can be something as simple as creating the résumé with word processing software.

2. What are the advantages and disadvantages of posting a résumé on the web?

   Advantages:

   - Posting a résumé on the web is a convenient and efficient way to introduce one's self into the job market. With a résumé posted in this fashion, hundreds of potential employers can gain access to an applicant's credentials at the touch of a button.

   - You can limit your job search by specifying which field or geographical area you are interested in (e.g., horticulture in Florida).

   Disadvantage:

   - There is concern that posting personal information on the web will violate one's privacy. The person posting the résumé should read

each site's privacy policy thoroughly to find out how the information is used and who has access to it.

Part 2

1. How is filling out a computer-based job application beneficial?

   - Filling out a computer-based job application is faster, easier, and more efficient.

   - Because of the speed and ease of the on-line applications, job applicants can take advantage of applying for numerous jobs and increase their job options and chances of getting a good job.

Part 3

1. What are the benefits of creating an electronic porfolio on a computer as opposed to a hard-copy portfolio?

   - One benefit is that information can easily be added or taken out of the electronic portfolio.

   - Existing information can easily be changed or edited. This makes it easy to maintain and keep the electronic portfolio as current as possible.

   - An electronic portfolio is not heavy or bulky like a hard-copy version. It can be written to a CD-ROM, published on the web, or e-mailed to a potential employer.

2. What are the benefits of using an electronic portfolio to market yourself for employment?

   - It gives job applicants a competitive edge. This is because a portfolio gives applicants a chance to describe their past experiences in greater detail and to illustrate how they have benefited from them.

   - In presenting an electronic portfolio to a potential employer, you can demonstrate your computer skills, which are almost always critical in today's job market.

   - An electronic portfolio can give you a sense of accomplishment. It provides an overview of what you've done, where you've been, and how you've grown. In other words, a portfolio can be used as a tool to evaluate yourself.

Assessment:

AS 11.1 - Grade the students' résumés based on SG 11.1 located after AS 11.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria.

AS 11.2 - Grade the students' job applications based on SG 11.2 located after AS 11.2. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria.

AS 11.3 - Grade the students' electronic portfolios based on SG 11.3 located after AS 11.3. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. For an example presentation, view the Electronic portfolio_presentation file, a PowerPoint file on the *Computer Lab Activities in Agriculture* CD-ROM.

Additional Activities:

1. Have students submit their résumés and electronic portfolios to a potential employer. Receive feedback from the employer about the quality of the résumés and portfolios.

2. Have students access one of the following web sites and become familiar with the résumé-posting opportunities available. Ask them to think about these questions when looking at these sites: Will I ever use these services? If so, what are the advantages and disadvantages?
   - <http://www.farms.com/careers/index.cfm>
   - <http://www.hotjobs.com>
   - <http://www.careerbuilder.com>
   - <http://www.career-index.com>
   - <http://www.monster.com>

Alternative Applications:

This activity can also be used to support the following curricula and competencies.

Agricultural Science II, *Career and Personal Development II*	3. Describe how to apply and interview for a job.
Leadership and Personal Development (for Advanced Students)	1. Develop a résumé and complete a job application.

Credits:

Agribusiness Sales, Marketing, and Management (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

Barrett, Dr. Helen C. "The Electronic Portfolio Development Process." <http://transition.alaska.edu/www/portfolios/aahe2000.html> November 16, 2000.

Barrett, Dr. Helen C. "Electronic Teaching Portfolios." <http://transition.alaska.edu/www/portfolios/site99.html> November 10, 2000.

ED 306 Home Page, College of Education, University of Missouri-Columbia. <http://courseinfo.coe.missouri.edu> November 10, 2000.

Kimeldorf, Martin. *Portfolio Power.* Princeton, NJ: Peterson's Education Center, 1997.

Student Activity Sheet
Résumé

Name _____

Student Objective:

Develop a résumé in a word processing program.

Equipment and Materials:

- Computer
- Word processing software, e.g., Word, WordPerfect
- Résumé_template (Word file)
- SG 11.1 Résumé Scoring Guide
- Floppy disk

Procedure:

1. Refer to SG 11.1 for the criteria you will be graded on.

2. Use the résumé_template file provided on the CD-ROM or start with a new file to create a résumé including the following information:

   - Personal information (i.e., name, current address, telephone number, e-mail address, and permanent address)
   - Employment objective
   - Educational background
   - Work experience
   - Other information (e.g., activities, honors, awards, skills)
   - References (may be furnished upon request or printed on résumé)

   See Figure 11.1 for a printout of a résumé prepared in the résumé_template file. Also see Figures 11.2 and 11.3 for other résumé examples.

3. Save the résumé often during the development process to a floppy disk or a location your instructor specifies.

4. When creating the résumé, be sure to adhere to the following guidelines:

   - List basic personal information first.
   - List an objective that is specific to each job. For example, if applying for a greenhouse manager position, an appropriate objective could be

"seeking a position in managing greenhouse plants, personnel, and facilities."

- Record educational background and work experience in different sections. List the most recent information first.
- Organize activities, awards, etc., with the most important items first.
- Limit the length of the résumé to one or two pages.
- Use appropriate font size and style.
- Spell all words correctly and use correct grammar.
- Ensure the résumé is neat and easy to read.
- Spell out all words (Missouri, United States, etc.)
- Place your name at the top of the résumé in bold.
- When describing work experience, use action verbs.
- Tailor your résumé to the job you are applying for. For example, a résumé for a graphic artist position may have a more artistic style.

5. After you have completed the résumé, review the content by reading it on the screen or proofing a printed copy. Make corrections as needed and save the file.

6. When complete, print the résumé.

2793 Elm Street
Silverton, Missouri 65323
Phone: (555) 234-3452
E-mail: amb@email.com

Angela Brown

Objective

Seeking a position with the state or federal government to assist in the management of public forests and parks

Education

Graduated May 2000 Silverton High School Silverton, Missouri

- GPA: 4.0
- Class of 2000 Salutatorian

Experience

Summer 1999 U.S. Forest Service Silverton, Missouri

Field Technician

- Planted and maintained trees at Silverton Forest Service Tree Plantation
- Worked with staff foresters in day-to-day maintenance of plantation
- Assisted in making arrangements for field days (tours of tree plantation)

Spring/Summer 1998 U.S. Forest Service Silverton, Missouri

Volunteer

- Assisted with prescribed burns of United States Forest Service land
- Job shadowed a U.S. Forest Service forester
- Planted approximately 2000 trees on United States Forest Service land

May 1997 to May 1999 Al's Burger Palace Silverton, Missouri

Cashier/Cook

- Worked with public in fast-paced environment on a daily basis
- Conducted financial transactions
- Prepared and served quality food items

Activities/Awards

- Silverton FFA Chapter President 1998-1999
- Silverton FFA Chapter Treasurer 1997-1998
- National Honors Society
- Member of Missouri's Forestry Team that placed 2nd in the Forestry Career Development Event in 1998
- Silverton FFA Member 1995-present

References are available upon request.

Figure 11.1 - Sample résumé

Craig D. Jones

Permanent Address:
1989 Highway 10
Mount West, Missouri 68921
(391) 555-8216

cdj@email.com

Current Address:
673 Main Street
Columbia, Missouri 65021
(573) 555-1357

Objective

Seeking a position as an associate buyer in a sales department

Work Experience

Sears Department Store, 1998 to present, Columbia, Missouri - Senior Sales Associate

Garden and automotive department

- Helped customers make informed choices when purchasing merchandise
- Developed employee work schedules

Mount West Tools, 1996-1998, Mount West, Missouri - Assistant Manager

- Ordered stock for the store through computer database
- Assisted customers in making purchases
- Helped hire employees for the business

Tommy's Bar-B-Que, 1994-1996, Highland, Missouri - Food Server

- Waited on customers
- Bussed tables

Education

- Mount West High School, Mount West, Missouri
  Graduated May 1998

- University of Missouri-Columbia
  Major - Agricultural Economics
  Anticipated graduation date - May 2002

Honors

- Employee of the month at Sears Department Store
- Inducted into Sigma Epsilon Academic Fraternity

Activities

- Mid-Missouri Humane Society volunteer
- Service Fraternity treasurer

References are available upon request.

Figure 11.2 - Sample résumé

Megan E. Morris

5592 Grand Avenue, Steelway, Missouri 60521
Phone: (523) 555-9987 E-mail: morrism@email.com

Objective:

Seeking a computer technology position in agriculture

Summary:

- Reliable, hard-working, and honest student
- Work well with others
- Excellent leader and team builder
- Great deal of experience working with computer network systems

Work Experience:

- 2000 to present - Don's Computer Service, Steelway, Missouri. Perform general maintainance tasks on the company's computers.
- 1998 to present - Student Assistant for the Technoloy Coordinator at Steelway High School. Work after school assisting teachers with computer questions and problems.
- 1995 to present - Baby-sitter. Responsible for the care and welfare of young children.

Activities and Accomplishments:

- 1998 to present - Named to Steelway High School Dean's List
- 1998 to present - Member of Steelway High School FFA Chapter; currently serving as Vice-President for the 2000-2001 school year
- 1998 to present - Member of Future Business Leaders of America, Steelway High School Chapter; currently serving as Secretary for the 2000-2001 school year
- 1998 to present - Captain of the Steelway High School varsity volleyball team
- 1998 to present - Member of the Steelway High School cross-country team
- 1999 - Proficiency award winner for Steelway High School FFA Chapter

Education:

- Steelway High School, Steelway, Missouri
- Currently a Junior with a 4.0 GPA

References:

Available upon request

Figure 11.3 - Sample résumé

Résumé Scoring Guide

Name _____

Exemplary--2 pts.	Acceptable--1 pt.	Needs Work--0 pts.	Pts.
Font Appearance			
Meets all of the following criteria: 1. Readable (type style, size) 2. Eye appealing (compatible fonts) 3. Appropriately formatted (use of bold, bullets, etc.)	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No grammar or spelling errors	***	One or more grammar or spelling errors	
Word Usage			
Action verbs used to describe job experience	One item does not contain an action verb	Two or more items do not contain action verbs	
Content Organization			
1. Components are presented in correct order 2. Most recent job experience is listed first 3. Most important award/activity is listed first	Meets two of the criteria	Meets one or none of the criteria	
Content Completeness			
All components are present	***	One or more components are missing	

Total points out of 10 _____

***No middle-ground criteria (either exemplary or needs work)

Student Activity Sheet
Computer-based Job Application

Name _____

Student Objective:

Complete a computer-based job application.

Equipment/Materials:

- Computer (Internet access if choosing the on-line option)
- Word processing option - Microsoft Word 97 or higher
- Word processing option - job application_template (Word file)
- Word processing option - floppy disk
- SG 11.2 Job Applicaton Scoring Guide
- Printer

Procedure:

On-line option:

1. Refer to SG 11.2 for the criteria you will be graded on.

2. Access Links to Teaching Resources on University of Missouri-Columbia's Agricultural Education web site at <http://www.ssu.missouri.edu/AgEd/resource.html>.

3. Click on the Job Application link and fill out the application using the following guidelines. (See Figure 11.2 for a portion of the on-line application.)

   - If a question does not apply, fill in the blank with "N/A" (not applicable).

   - Be sure to explain gaps in your employment history in the "Job duties and accomplishments" field.

   - As with the résumé, it is essential to spell all words correctly and use correct grammar.

   - Returns do not work in the fields, so type continuous text and use punctuation to separate phrases/sentences.

   Note: You must complete and submit the on-line application in one class period because the information cannot be saved in a file.

4. After you have completed the application, click on the Submit button.

   Note: The information you submit is not saved anywhere and will be lost when you quit out of the browser.

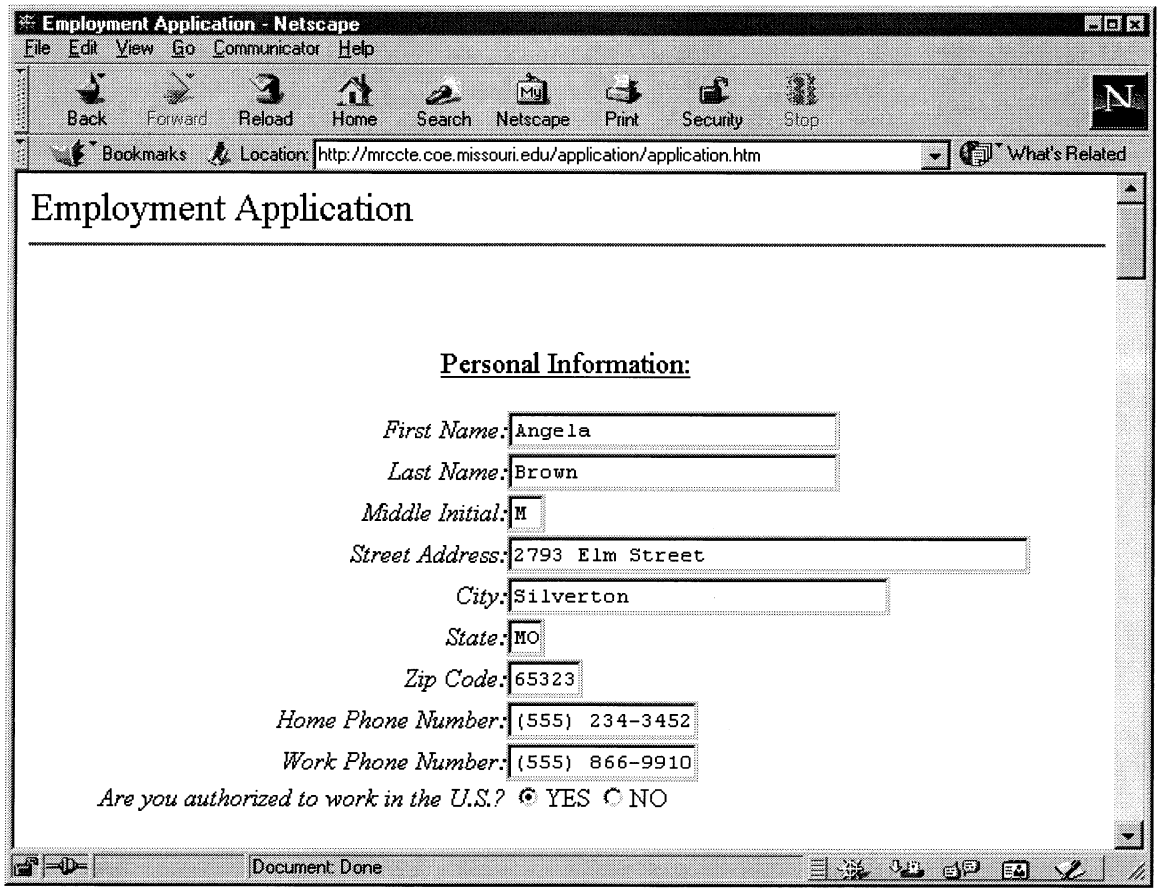


Figure 11.2

5. Review the content by reading it on the screen or proofing a printed copy. To print, click on the Print button on your browser. If you want to make corrections, click on the Back button on your browser, make the changes, and click on the Submit button again.

   Note: Do not quit out of the browser before your application has been printed because you will lose the content.

6. When complete, print, sign, and date the application.

Word Processing Option:

1. Refer to SG 11.2 for the criteria you will be graded on.

2. Open the job application_template (Word file) and fill out the application using the following guidelines. (See Figure 11.3 for a portion of the file.)

   - If a question does not apply, fill in the blank with "N/A" (not applicable).
   - Be sure to explain gaps in your employment history in the "Job duties and accomplishments" field.
   - As with the résumé, it is essential to spell all words correctly and use correct grammar.

3. To check the checkbox fields, double-click the appropriate box and select the Default value of Checked.

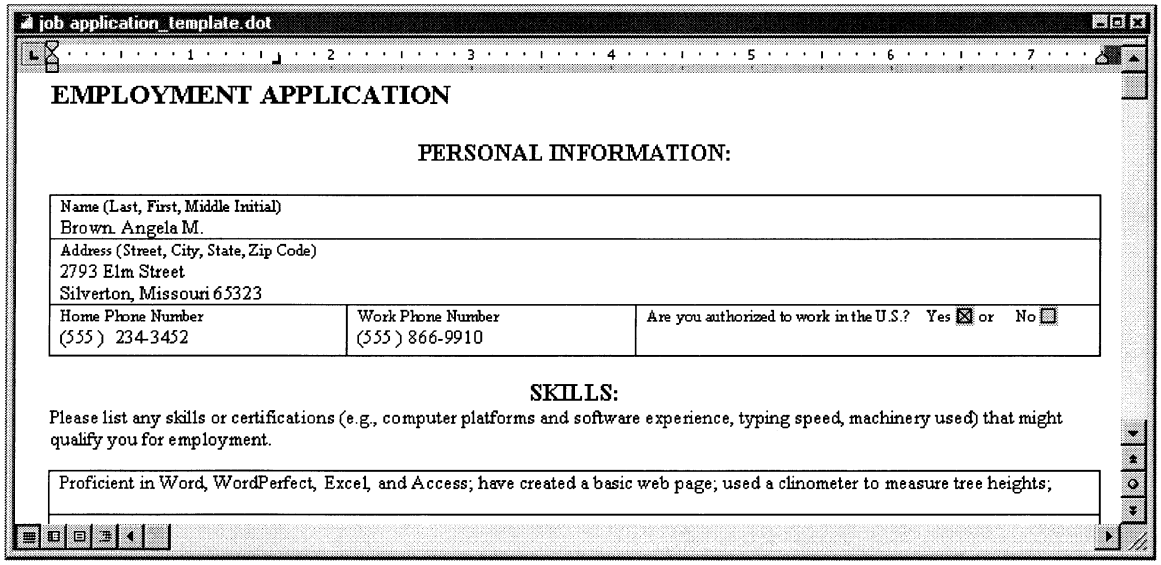


Figure 11.3

4. Save often to a floppy disk while completing the application.

5. After you have completed the application, review the content by reading it on the screen or proofing a printed copy. Make corrections as needed and save the file.

6. When complete, print and sign the application.

Computer-based Job Application Scoring Guide

Name _____

Exemplary--2 pts.	Acceptable--1 pt.	Needs Work--0 pts.	Pts.
Text Mechanics			
No grammar or spelling errors	***	One or more grammar or spelling errors	
Word Usage			
Action verbs used to describe job experience	One item does not contain an action verb	Two or more items do not contain action verbs	
Organization			
1. Most recent job experience is listed first 2. Most important award/activity is listed first	Meets one of the criteria	Meets none of the criteria	
Completeness			
1. All questions are answered or filled in with "N/A" 2. Gaps in employment history are explained 3. Signed and dated	***	Meets fewer than three of the criteria	

Total points out of 8 _____

***No middle-ground criteria (either exemplary or needs work)

Student Activity Sheet
Electronic Portfolio

Name _____

Student Objectives:

1. Identify components of an electronic portfolio.

2. Build an electronic portfolio.

Equipment and Materials:

- Computer with Internet access
- Presentation software, e.g., PowerPoint, Corel Presentations
- SG 11.3 Electronic Portfolio Scoring Guide
- Electronic portfolio_blank template (PowerPoint file)
- Electronic portfolio_presentation (completed sample PowerPoint file)

Procedure:

1. Refer to SG 11.3 for the criteria you will be graded on.

2. Before you can begin creating an electronic portfolio, the following decisions must be made: purpose of the portfolio, who the intended audience is, software to be used. These decisions are the foundation for the creation process.

   Note: For this activity, the purpose of the portfolio is to market yourself for a job and the intended audience is the potential employer.

3. Using a presentation software program, create an electronic portfolio to use in marketing yourself for employment. Use the electonic portfolio_blank template file on the CD-ROM or start with a new file. The portfolio should include the following components:

   - Title page (should be a simple, professional design including your name and at least one relevant graphic or piece of clip art)
   - Table of contents (with hyperlinks)
   - Introduction (purpose, overview of experience, etc.)
   - Education (schools attended, years completed, emphasis areas)
   - Work experience (list like résumé)
   - Awards and certifications (FFA awards, organization affiliations, driver's license, etc.)
   - Special skills (typing, computer skills, etc.)

- Three artifacts with reflections and titles (exemplary schoolwork, career-related photographs, etc.)

- References (List the name, job title, address, and phone numbers of three individuals who know about your work experience, skill, and/or character. Do not include relatives.)

Other requirements:

- The portfolio should include hyperlinks on each page that link the viewer back to the table of contents.

- Provide navigational aids for moving forward or backward in the presentation.

- To eliminate potential distractions, do not use transitions or animation in your portfolio.

4. Check with your instructor about which type of graphic file format to insert in your portfolio. See the note below.

   Note: Web page clip art files have a .gif or .jpg extension and a smaller file size. These files are low resolution (lower dots per square inch (dpi), will print with less detail, and are more likely to have pixilated (jagged) edges. High-resolution (higher dpi) clip art files have extensions such as .tif or .eps and have a larger file size. These files will provide more detail and smoother edges. The choice many times depends on how much disk space you have and the level of quality required for your document.

5. To find relevant clip art or graphics for your portfolio, check if a clip art CD-ROM is available or search the Internet for clip art. The Internet has many resources for free clip art. Two resources are the following:

   - Clip Art Connection <http://www.clipartconnection.com/>

   - AllFreeClipArt.com <http://www.allfreeclipart.com/>

6. Save your portfolio often during the development process to a location your instructor specifies.

7. Present the portfolio to your instructor showing content and navigation. Print the portfolio and give it to your instructor.

Electronic Portfolio Scoring Guide

Name _____

Exemplary--2 pts.	Acceptable--1 pt.	Needs Work--0 pts.	Pts.
Font Appearance			
Meets all of the following criteria: 1. Readable (type style, size) 2. Eye appealing (compatible fonts) 3. Appropriately formatted (use of bold, italics, etc.)	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No grammar or spelling errors	***	One or more grammar or spelling errors	
Colors			
Meet all of the following criteria: 1. Good contrast 2. Appropriate number of colors 3. Consistent, subtle background	Meet two of the criteria	Meet one or none of the criteria.	
Title Page Design			
Meets all of the following criteria: 1. Design has professional appearance 2. Clip art or graphic is relevant to purpose 3. Clip art or graphic is good quality (good resolution, clear)	Meets two of the criteria	Meets one or none of the criteria	
Content Organization			
Meets all of the following criteria: 1. Components are in logical order 2. Text is formatted so that lists, titles, and narrative are easy to read and distinguish 3. Consistent formatting style is used throughout (e.g., bullets, indentions, titles centered)	Meets two of the criteria	Meets one or none of the criteria	
Content Completeness			
All components are present	One component is missing	Two or more components are missing	
Navigational Aids			
All of the following links are present and operational: 1. Forward/backward buttons on all slides 2. Links for each item on table of contents slide 3. Table of contents link on each subsequent slide	Two or fewer links are missing or don't work	Three or more links are missing or don't work	

Total points out of 14 _____

***No middle-ground criteria (either exemplary or needs work)

Activity 12 Web Page Design

Curriculum Supported	Related Competency
Agribusiness Sales, Marketing, and Management	E. 3. Describe the proper use of communications technology.

Curriculum Reference:

Agribusiness Sales, Marketing, and Management. University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

Overview:

This activity introduces the basic elements of web page design, including the organization of multiple pages and how to link them together. It also covers how to find graphics on the web, download them, and insert them in web pages.

Activity Objectives:

1. Identify the components of a web page.

2. Design a web page using appropriate design strategies and techniques.

Activity Sheet:

AS 12.1 Web Page Design

Scoring Guide:

SG 12.1 Web Page Design

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Before assigning this activity to students, check the web links provided to ensure they are still available and current.

3. Familiarize yourself with the web authoring software the students will be using for this activity and have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

4. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 12.1. If available, provide related examples of exemplary work.

Activity length: 250 minutes

Discussion Question:

What are the advantages of publishing a web page for individuals, groups such as an FFA chapter, and businesses?

- By putting the information on the Internet for everyone to see, one can get a lot of free or low-cost publicity.
- The information can easily be changed and kept up-to-date.
- A web page can be a source of valuable reference information. (As an example, an FFA web site with the chapter's meeting schedule published is helpful. If a student knew there was a chapter meeting on Tuesday night but could not remember the time, the student could look at the chapter's home page and determine the time of the meeting.)

Assessment:

Grade the students' web pages based on SG 12.1 located at the end of AS 12.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria.
To view a sample web page, open the homepage.htm file on the *Computer Lab Activities in Agriculture* CD-ROM.

Additional Activity:

Have the students publish their web sites. Check if your school has a server to which the students can upload their web pages. To upload the files, they will probably need to use file transfer protocol software such as WS_FTP95. Check with the server administrator for directions on uploading and updating the files. Once the web sites are posted on the World Wide Web, have the students open them and test them online.

Credits:

Composing and Editing Web Pages. <http://home.netscape.com/eng/mozilla/4.0/handbook/comp.htm> January 2, 2001.

Tollet, John and Robin Williams. *The Non-Designer's Web Book.* Berkeley, CA: Peachpit Press, 1998.

Student Activity Sheet
Web Page Design

Name _____

Student Objectives:

1. Identify the components of a web page.

2. Design a web page using appropriate design strategies and techniques.

Equipment and Materials:

- Computer with Internet access
- Web authoring software, e.g., Composer, FrontPage, Dreamweaver
- SG 12.1 Web Page Design Scoring Guide
- Floppy disks (one for each student)
- Homepage.htm (web page) - view for FFA example

Procedure:

1. Refer to SG 12.1 for the criteria you will be graded on.

2. Think of an idea for a web site that somehow relates to agriculture. You can design a web page for your school's FFA chapter that includes a list of officers, facts about the chapter, news and upcoming events, etc. Optionally, you can design a web page about yourself and your particular agricultural interests. If you create a web page about yourself, you can tell how you first became interested in agriculture, list some of your agriculture-related projects, or include your goals or plans for the future.

   Note: For design ideas, see sample home pages for FFA chapters in the United States at <http://www.ffa.org/chapters/html/customindex.html>.

3. Create an outline of your web site. It should include the following components:

   - Home page - This page is also called the title or index page and should include the title of the web page, purpose of the page, the date it was last updated, and links to second-level pages.

   - Second-level pages -Two or three pages that include information related to your subject such as one second-level page for an FFA chapter web site could be devoted to chapter officers.

4. Before starting on the computer, here are some simple tips to use when designing a web page.

   - It should be neat and easy to read.

   - Use one alignment (center, left, or right) to line up elements consistently on the page.

- Group related items together on the page so they look like a unit.
- Use color, clip art, layout, etc., to make your pages look like they belong together.
- Choose the graphics wisely. Be aware that a lot of graphics in a web page can significantly increase the load time for your page.
- If you use colored text, make sure that it stands out against the background.
- Avoid background patterns that make text hard to read.
- Make sure the text is large enough to read and don't use more than three different fonts.
- The web page should be free of spelling and grammatical errors.
- Refrain from using flashing text or pictures because they are distracting to the reader.
- Keep the information on your web page current.

5. Create a folder on your floppy disk to store the web pages and associated files. Name the folder with your last name and words that describe the contents (e.g., Martin_FFA web page).

6. Open the web authoring program. The program you are using functions very similarly to a word processing program.

7. Begin by making your home page. If you want to change the background color of your page, do this first. The program you are using will offer different color options. Many web sites also offer backgrounds that are free for you to download and use. Here are a couple sites to check out:

   - Free-Backgrounds.Com <http://www.free-backgrounds.com/>
   - WebPageBackground.com <http://www.webpagebackground.com/>

8. Once you have selected a background, type the name or title of your web page at the top of the page followed by a short paragraph of important information. This information should include the purpose of the page and the date it was last updated. Include references to your second-level pages that you will use as links after the pages are created. Be creative and try different fonts, sizes, colors, alignment, formatting, etc. Make your page eye catching but still easy to read! See Figure 12.1 for a sample basic home page.

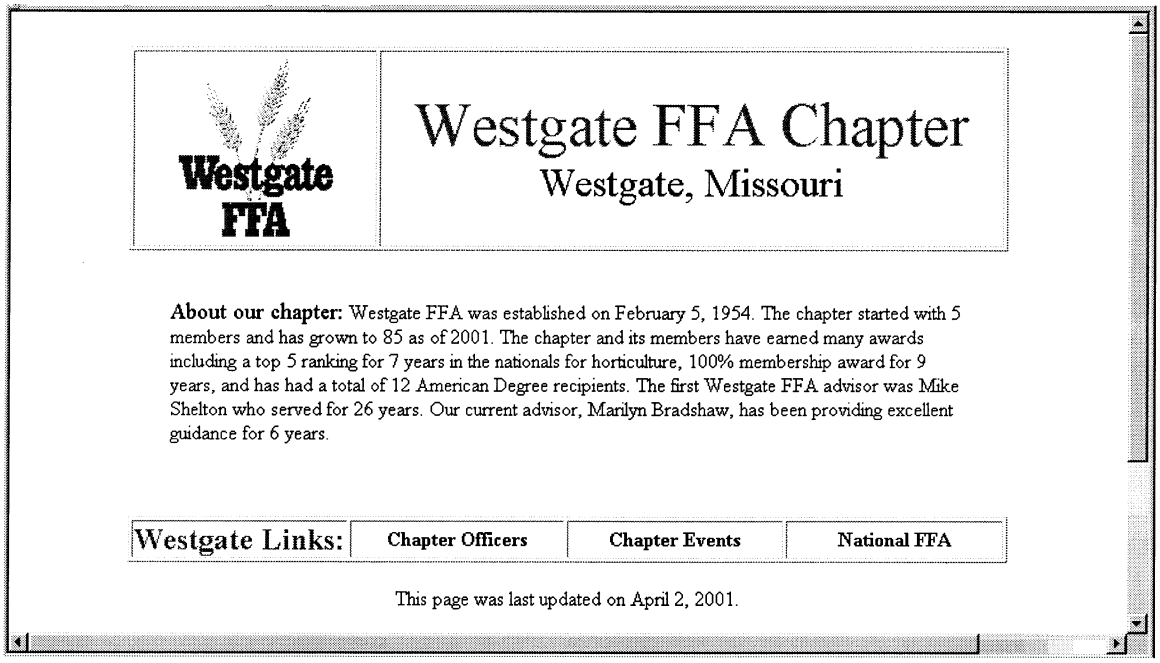


Figure 12.1

9. Incorporate relevant clip art or graphics in your page. Web page graphics or clip art files have a .gif or .jpg extension. The Internet has many resources for free clip art. Two resources are the following:

   - Clip Art Connection <http://www.clipartconnection.com/>
   - AllFreeClipArt.com <http://www.allfreeclipart.com/>

   Note: Be aware that a lot of graphics in a web page can significantly increase the load time for your page.

10. When you find a graphic on the web that you want to add to your web page, right-click on the picture. A list of options appears. Click on "Save Image As..." and save the picture in the web page folder on your floppy disk.

11. Return to the web authoring program and open the page you want to add the graphic to. Position the cursor where you want the graphic. Software may vary slightly, but the commands for inserting an image into a web page are basically the same. Click on "Insert Image," "Place Image," or anything similar and select the graphic file to insert from your floppy disk. The picture should appear on your page.

12. Save the home page on your floppy disk as "homepage."

13. Now you're ready to add your second page (second-level page). Open a new page and set it up using a design and background that are similar or the same as the ones you used for your home page. This is so it will not clash with your home page and they will look like they belong together. To change the background, repeat the same steps you followed for your home page. Add your information in a paragraph, list, chart, table, etc. Somewhere at the bottom of your page, type the word "Home" or "Back" to set up a reference that can be linked to the home page. See Figure 12.2 for a sample page 2.

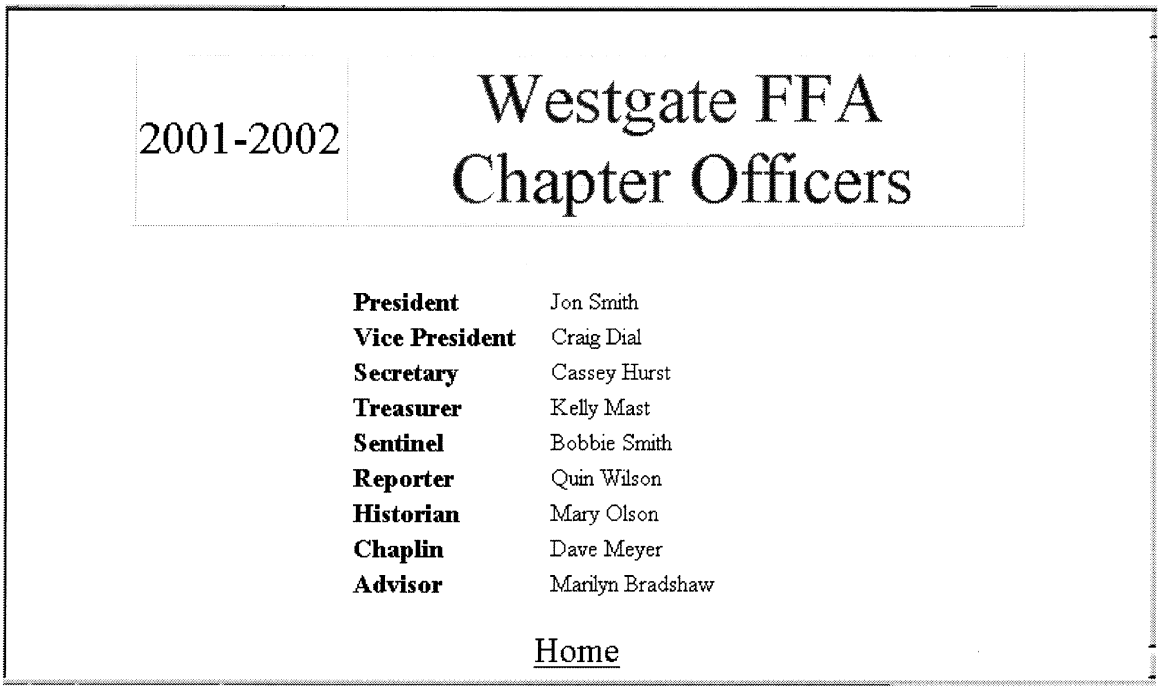


Figure 12.2

14. Save this page to the folder on your floppy disk with the name "page2."

15. Repeat step 13 to create your third and subsequent pages. Save this page to the folder on your floppy disk with the name "page3."

16. Now you are ready to create the links on your home page. Open your home page. Highlight the text you want to link to the page2 file. Software may vary slightly, but the commands for linking are basically the same. Click on "Insert Link" or anything similar, select the page2 file from your floppy disk, and link it. The word(s) are automatically underlined so the viewer knows the text is linked. Highlight the text you want to link to the page3 file and repeat the linking process. When you are done, resave your homepage.

17. Open the page2 file, highlight the "Home" or "Back" text, link it to the home page, and resave the file. Repeat this with the page3 file.

18. Now you can check your links. Select the option in the program that allows you to preview the web pages and check their functionality. Click on all the newly linked text. The page should change to the linked page.

Web Page Design Scoring Guide

Name _____

Exemplary--2 pts.	Acceptable--1 pt.	Needs Work--0 pts.	Pts.
Font Appearance			
Meets all of the following criteria: 1. Readable (type style, size) 2. Eye appealing (compatible fonts) 3. Appropriately formatted (use of bold, italics, etc.) 4. Consistent alignment	Meets three of the criteria	Meets two or fewer of the criteria	
Text Mechanics			
No grammar or spelling errors	A few minor errors that are not distracting	Numerous or distracting errors	
Text and Background Colors			
Meet all of the following criteria: 1. Compatible 2. Good contrast 3. Eye catching	Meet two of the criteria	Meet one or none of the criteria	
Home page			
Includes all of the following: 1. Title 2. Purpose 3. Date last updated 4. Links to at least two second-level pages	Meets three of the criteria	Meets two or fewer of the criteria	
Second-level pages			
Meet all of the following criteria: 1. Logical organization 2. Relevant content 3. Similar design elements as home page	Meet two of the criteria	Meet one or none of the criteria	
Links			
Meet all of the following criteria: 1. Links from home page to second-level pages functional 2. Links from second-level pages back to home page functional	One link not functional	Two or more links not functional	
Images			
Meet all of the following criteria: 1. Relevant to content 2. Good quality (good resolution, clear) 3. Appropriate size 4. Act as common element to connect pages together	Meet three of the criteria	Meet two or fewer of the criteria	

Total points out of 14 points_____

Agricultural Management and Economics

Computer Lab Activities in Agriculture

Activity 13 Depreciation

Curriculum Supported	Related Competencies
Agricultural Management and Economics	A. 2. Determine the fixed and variable costs of production and use the fixed/variable concepts in making business decisions. B. 14. Calculate the depreciation of an investment.

Curriculum Reference:

Agricultural Management and Economics. University of Missouri-Columbia: Instructional Materials Laboratory, 1988.

Overview:

Creating spreadsheets on computer is increasingly becoming the accepted method for calculating financial information such as depreciation, income, and profit. In this activity, a spreadsheet is created to calculate depreciation for an individual's financial situation.

Activity Objectives:

1. Develop a spreadsheet that calculates depreciation.

2. Customize a spreadsheet to use in given situations.

Activity Sheet:

AS 13.1 Depreciation

Scoring Guide:

SG 13.1 Depreciation

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the spreadsheet software the students will be using for this activity, specifically the procedures for entering data and creating formulas. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 13.1. If available, provide related examples of exemplary work.

4. The depreciation method and formulas in this activity are based on information in the 2000 *Farmer's Tax Guide*. Be sure to check the current *Farmer's Tax Guide* for the most up-to-date information.

Activity Length: 100 min.

Discussion Questions:

1. What are the benefits of using a spreadsheet to calculate depreciation?

   - Spreadsheets ensure accurate and efficient calculation of numbers.
   - Spreadsheets are valuable for record keeping because they are easy to store and can be revised or customized each year.

2. How is the ability to create and use a spreadsheet valuable to students?

   - Computer skills are becoming increasingly important to employers in the modern workplace. Having the necessary knowledge to use spreadsheets increases the marketability of an individual seeking employment.

Assessment:

Grade the students' depreciation spreadsheets based on SG 13.1 located at the end of AS 13.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. See the table below for the answers. A depreciation spreadsheet with the formulas entered, depreciation_template 2, is available on the CD-ROM.

Depreciation Spreadsheet

	3-Year	5-Year	7-Year	10-Year	15-Year	20-Year
BASIS	$2,500.00	$1,500.00	$0.00	$25,000.00	$0.00	$12,000.00
Year						
1	$625.00	$225.00	$0.00	$1,875.00	$0.00	$450.00
2	$937.50	$382.50	$0.00	$3,468.75	$0.00	$866.25
3	$468.75	$267.75	$0.00	$2,948.44	$0.00	$801.28
4	$234.38	$187.43	$0.00	$2,506.17	$0.00	$741.19
5		$93.71	$0.00	$2,130.25	$0.00	$685.60
6		$73.63	$0.00	$1,810.71	$0.00	$634.18
7			$0.00	$1,539.10	$0.00	$586.61
8			$0.00	$1,308.24	$0.00	$542.62
9				$1,112.00	$0.00	$501.92
10				$945.20	$0.00	$464.28
11				$803.42	$0.00	$429.46
12					$0.00	$397.25
13					$0.00	$367.45
14					$0.00	$339.89
15					$0.00	$314.40
16					$0.00	$290.82
17						$269.01
18						$248.83
19						$230.17
20						$212.91
21						$196.94

Additional Activities:

1. Have the students enter information from their own SAE project or a list of depreciable items their family owns into the spreadsheet. This gives the students additional experience as to how depreciation affects real-world situations.

2. To familiarize students with the naming function in the spreadsheet program, have them name each cell that will contain the basis figure. Have students click on the 3-year basis cell (B3), select the naming function, and name the cell "Basis3." Then click on the 5-year basis cell (C3) and name it "Basis5." Have students name the remaining basis cells in this fashion. Then have students insert the appropriate name in each formula rather than the cell reference for the basis.

3. Have students calculate straight-line depreciation. Instruct them to use common agricultural items such as lawn mowers, breeding cattle, show hogs, farm trucks, etc. The chart below contains percentages for the straight-line mid-year method of depreciation.

Year	3-Year	5-Year	7-Year	10-Year	20-Year
1	16.67%	10%	7.14%	5%	2.5%
2	33.33%	20%	14.29%	10%	5%
3	33.33%	20%	14.29%	10%	5%
4	16.67%	20%	14.28%	10%	5%
5		20%	14.29%	10%	5%
6		10%	14.28%	10%	5%
7			14.29%	10%	5%
8			7.14%	10%	5%

Sources: Publication 225, *Farmer's Tax Guide* and Publication 946, *How to Depreciate Property*, Department of the Treasury, Internal Revenue Service, 2000.

Credits:

Agricultural Management and Economics (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 1988.

Publication 225, *Farmer's Tax Guide*, Department of the Treasury, Internal Revenue Service, 2000.

Publication 946, *How to Depreciate Property*, Department of the Treasury, Internal Revenue Service. http://www.irs.ustreas.gov/prod/forms_pubs/pubs/p946toc.htm, May 30, 2001.

Student Activity Sheet
Depreciation

Name _____

Student Objectives:

1. Develop a spreadsheet that calculates depreciation.

2. Customize a spreadsheet to use in given situations.

Equipment and Materials:

- Computer
- Spreadsheet software (e.g., Excel, Lotus 1-2-3)
- SG 13.1 Depreciation Spreadsheet Scoring Guide
- Depreciation_template (Excel file)
- Floppy disk
- Printer

Procedure:

1. Refer to SG 13.1 for the criteria you will be graded on.

2. Open the depreciation_template provided or create a depreciation spreadsheet like the example in Figure 13.1.

   Tip: To quickly enter the years in column A, try the following. Enter "1" in cell A5 and "2" in cell A6, select both cells, click on the fill handle (cross in lower right corner), and drag it the number of rows you want to fill. The years will appear in sequence.

3. Enter the following formula for MACRS classes 3 through 20 in the annual depreciation rows to calculate annual depreciation.

   Note: Use regular MACRS and the midyear convention.

   - Year 1 - (150%/property class)*undepreciated value*midyear convention
   - Year 2 and subsequent years - (150%/property class)*undepreciated value, which is the basis minus the previous year's or years' cumulative depreciation

   See example formulas for the 7-year class in the table below.

	A	B	C	D	E	F	G
1	**Depreciation Spreadsheet**						
2		**3-Year**	**5-Year**	**7-Year**	**10-Year**	**15-Year**	**20-Year**
3	**BASIS**	$0.00	$0.00	$12,000.00			
4	**Year**						
5	1	$0.00	$0.00	$1,285.71			
6	2	$0.00	$0.00	$2,295.92			
7	3	$0.00	$0.00	$1,803.94			

Enter (1.5/7)*D3*0.5 in cell D5

Enter (1.5/7)*(D3-D5) in cell D6

Enter (1.5/7)*(D3-(D5+D6)) in cell D7

	A	B	C	D	E	F	G
1	**Depreciation Spreadsheet**						
2		**3-Year**	**5-Year**	**7-Year**	**10-Year**	**15-Year**	**20-Year**
3	**BASIS**	$0.00	$0.00	$12,000.00	$0.00	$0.00	$0.00
4	**Year**						
5	1	$0.00	$0.00	$1,285.71	$0.00	$0.00	$0.00
6	2	$0.00	$0.00	$2,295.92	$0.00	$0.00	$0.00
7	3	$0.00	$0.00	$1,803.94	$0.00	$0.00	$0.00
8	4	$0.00	$0.00	$1,417.38	$0.00	$0.00	$0.00
9	5		$0.00	$1,113.65	$0.00	$0.00	$0.00
10	6		$0.00	$875.01	$0.00	$0.00	$0.00
11	7			$687.51	$0.00	$0.00	$0.00
12	8			$540.19	$0.00	$0.00	$0.00
13	9				$0.00	$0.00	$0.00
14	10				$0.00	$0.00	$0.00
15	11				$0.00	$0.00	$0.00
16	12					$0.00	$0.00
17	13					$0.00	$0.00
18	14					$0.00	$0.00
19	15					$0.00	$0.00
20	16					$0.00	$0.00
21	17						$0.00
22	18						$0.00
23	19						$0.00
24	20						$0.00
25	21						$0.00

Figure 13.1- Example depreciation spreadsheet with a 7-year item entered

4. Save the depreciation spreadsheet often to a floppy disk or location your instructor specifies.

5. When the formulas are complete, assign the correct MACRS property classification to the list of depreciable items below. The classification of each item determines the depreciation rates.

   - Sows (10) Basis: $2,500
   - Computer Basis: $1,500
   - Greenhouse Basis: $25,000
   - Pole barn Basis: $12,000

6. Enter the basis figure for each item in the appropriate column. Totals for annual depreciation are calculated. Review the results for accuracy.

7. Print the spreadsheet and write your name on the sheet.

Depreciation Scoring Guide

Name _____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Overall Organization			
Meets all of the following criteria: 1. Headers provide appropriate labeling 2. Columns are in logical order 3. Logical flow of calculations	Meets two of the criteria	Meets one or none of the criteria	
Property Classification			
All property is correctly classified	One property is incorrectly classified	Two or more properties are incorrectly classified	
Formulas			
All formulas are entered correctly and calculate the data when entered	One formula is entered incorrectly	Two or more formulas are entered incorrectly	
Content Completeness			
All necessary information is entered	***	Information is missing	

Total points out of 8 _____

***No middle-ground criteria (either exemplary or needs work)

Activity 14 Electronic Sales Ticket

Curriculum Supported	Related Competency
Agricultural Management and Economics	B. 9. Prepare a sales ticket.

Curriculum Reference:

Agricultural Management and Economics. University of Missouri-Columbia: Instructional Materials Laboratory, 1988.

Overview:

In this activity, information is input and formulas are created for an electronic sales ticket in a spreadsheet program. Spreadsheets can be used to calculate data so that the person making the transaction will be less likely to make mistakes. Being able to use this software to create and complete a sales ticket provides the experience needed to complete other transactions.

Activity Objectives:

1. Develop an electronic sales ticket.

2. Describe the advantages of using a spreadsheet application to create and complete a sales ticket.

Activity Sheet:

AS 14.1 Electronic Sales Ticket

Scoring Guide:

SG 14.1 Electronic Sales Ticket

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the spreadsheet software the students will be using for this activity, specifically the procedures for entering data and creating formulas. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review components and purposes of a sales ticket. Bring to class examples of good and poor sales tickets. Be sure that some of the examples are handwritten so these can be compared with the computer-generated sales tickets.

4. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 14.1. If available, provide related examples of exemplary work.

Activity length: 100 minutes

Discussion Question:

What are the advantages of creating a sales ticket in a spreadsheet program?

- An electronic spreadsheet provides a clean document that is easy to read.
- When formulas are entered correctly in the spreadsheet, the potential for math errors is eliminated.
- The spreadsheet's calculations are instantaneous.
- Once an electronic sales ticket template is created, it can be used over and over and will not have to be created again. It can also be customized and different versions can be saved that apply to different situations.

Assessment:

Grade the students' sales tickets based on SG 14.1 located at the end of AS 14.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria.

Totals for the four sales tickets are as follows:

Sales ticket 1 - James Blanchard's total purchase is $336.05 and the tax is $22.68 for a grand total of $358.73.

Sales ticket 2 - James Blanchard's total purchase is $166.71 and the tax is $11.25 for a grand total of $177.96.

Sales ticket 3 - Ryan Edward's total purchase is $24.87 and the tax is $1.69 for a grand total of $26.56.

Sales ticket 4 - Ralph Johnson's total purchase is $41.06 and the tax is $2.80 for a grand total of $43.86.

Additional Activity:

Use the transactions from a school fund-raiser or set up a mock fund-raiser and have the students use a spreadsheet program to make sales tickets, purchase orders, and receipts.

Credit:

Agricultural Management and Economics (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 1988.

Student Activity Sheet
Electronic Sales Ticket

Name _____

Student Objectives:

1. Develop an electronic sales ticket.

2. Describe the advantages of using a spreadsheet application to create and complete a sales ticket.

Equipment and Materials:

- Computer
- Spreadsheet program (e.g., Excel, Lotus 1-2-3)
- Sales ticket_template (Excel file)
- Floppy disk
- SG 14.1 Electronic Sales Ticket Scoring Guide
- Printer

Procedure:

1. Refer to SG14.1 for the criteria you will be graded on.

2. Using the sales ticket_template provided on the CD-ROM or starting with a new file, complete a sales ticket in a spreadsheet program with the information given in step 3. See Figure 1 for an example format for a sales ticket.

3. Make a sales ticket for James Blanchard. He lives at 1313 Ashland Road, Columbia, MO 65201. His purchase was in cash and was made on October 20 of the current year. The business that you work for is called Only The Best Products. Use your current address as the company's address.

   James purchased:
   - 20 bushels of corn at $2.10 per bushel
   - 50 landscaping timbers at $2.49 each
   - 10 baskets of fruit at $13.00 per basket
   - 7 cases of soda at $5.65 a case

   The sales tax in your city is 6.75%. Type your name after "Received by."

4. Initiate the formula function in your software and enter formulas to total the amount for each item purchased, total purchase price, sales tax, and grand total.

5. When the sales ticket is complete, save the file as "sales ticket 1" on a floppy disk or a location your instructor specifies. Print the sales ticket 1 file.

Highland Supplies
1245 Main St.
Highland, MO 65112

Margaret Howard
130 E. 7th St.,
Highland, MO 65112

Date 7/3/2001

Cash	Check #	Credit Card #	Charge Acct. #	C.O.D.	Return	Exchange
X						

Qty.	Description	Price/unit	Amount
2	bushel of corn	$ 2.10	$ 4.20
4	50 lb bag of fertilizer	$15.00	$60.00
		Total purchase	$64.20
		Tax (6%)	$ 3.85
		Grand total	$68.05

Received by: (Your name)

Figure 14.1 - Sample sales ticket format

6. Open the sales ticket 1 file and save it as "sales ticket 2." In the sales ticket 2 file, make another sales ticket based on the following information.

   James Blanchard returned the next day to purchase:
   - 13 bushels of corn at $2.10 per bushel
   - 9 landscaping timbers at $2.49 each
   - 9 feet of wire fence at $11.00 per foot
   - 2 hammers at $9.00 each

   He paid in cash again.

7. When sales ticket 2 is complete, save it on a floppy disk or a location your instructor specifies. Ensure you have changed the date and your name is on the ticket. Print the sales ticket 2 file.

8. Open the sales ticket 2 file and save it as "sales ticket 3." In the sales ticket 3 file, make a sales ticket for Ryan Edwards based on the following information. He lives at 1358 Robin Lane, Columbia, MO 65201.

On October 23 of the current year, Ryan purchased:
- 10 pounds of grass seed at $0.99 per pound
- 144 inches of rope at $0.50 per foot
- 3 pairs of gloves at $2.99 each

The sales tax has changed to 6.81%. Ryan paid with check number 1693.

9. When sales ticket 3 is complete, save it on a floppy disk or a location your instructor specifies. Ensure that your name is on the ticket. Print the sales ticket 3 file.

10. Open the sales ticket 3 file and save it as "sales ticket 4." In the sales ticket 4 file, make a sales ticket for Ralph Johnson. He lives at 589 South Bridge, Columbia, MO 65202.

On October 24 of the current year, Ralph purchased:
- 2 dog kennels at $14.99 each
- 6 bones that weighed one half pound each for $0.50 a pound
- 2 leashes at $4.79 each

The sales tax is still 6.81%. Ralph charged his purchase to his charge account. His account number is 5045.

11. When sales ticket 4 is complete, save it on a floppy disk or a location your instructor specifies. Ensure that your name is on the ticket. Print the sales ticket 4 file.

Electronic Sales Ticket Scoring Guide

Name _____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Overall Organization			
Meets all of the following criteria-- 1. Headers provide appropriate labeling 2. Columns are in logical order 3. Logical flow of calculations	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No punctuation or spelling errors	A few minor errors that are not distracting	Numerous or distracting errors	
Formulas			
All formulas are entered correctly and calculate the data when entered	One formula is entered incorrectly	Two or more formulas are entered incorrectly	
Content Completeness			
All necessary information is entered	***	Information is missing	

Total points out of 8 _____

***No middle-ground criteria (either exemplary or needs work)

Agricultural Science I: *Careers I Unit*

Computer Lab Activities in Agriculture

Activity 15 Career Search on the Web

Curriculum Supported	Related Competencies
Agricultural Science I, *Careers I Unit*	1. Identify career opportunities in the agricultural industry. 2. List and classify agricultural occupations by their job requirements and benefits.

Curriculum Reference:

Careers I Unit. University of Missouri-Columbia: Instructional Materials Laboratory, 1988.

Overview:

The purpose of this activity is to increase students' familiarity with career search tools on the web and to aid in identifying agricultural career choices. The search for careers is continuously becoming easier because of the Internet. The Internet provides access to a countless number of web sites. The web sites grow daily and contain information about nearly any career possible in the agricultural industry.

Activity Objectives:

1. Search the web to identify the top 10 agricultural careers and justify your reasons for selecting those careers.

2. Research five agricultural careers and list the description, educational requirements, job availability, location, working conditions, skills necessary, and salary for these careers.

3. Describe the advantages of researching the web.

Activity Sheet:

AS 15.1 Career Search on the Web

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Before assigning this activity to students, check the web links provided to ensure they are still available and current.

3. Check to see if there is a student use policy at your school for using the network and Internet. Students and parents may have to sign a form that releases the students to use the network and Internet during class.

4. Discuss Internet cautions with the students before beginning this activity. Inform them not to provide any personal information over the Internet through chat rooms or other sites. Personal information includes full name, address, phone number, social security number, or picture. Check with your school for additional rules and regulations on Internet use.

Activity Length: 100 min.

Discussion Questions:

1. How is the Internet useful in searching for careers?

   - The web contains a vast amount of information about almost anything imaginable. This information is constantly updated to provide the most current information possible and can be accessed within a very short amount of time.

   - Using search engines on the web is a very quick and effective way to access information. Imagine if the web were not available for searching for things such as career choices. Students would spend a lot more time on the phone and writing letters.

2. How hard is it for students to pick their favorite agricultural careers and what factors go into the decision?

   - It is extremely difficult for some to choose a career and for others it is not difficult at all. Either way, there are certain points to consider when selecting a career: personal fulfillment, pay, working conditions, location of employment, education required, etc. When all of these points are considered, certain choices may be ranked higher while others may be deleted from the list. Some people have only one reason to go into a career (e.g., personal fulfillment) and that is okay. What matters is what career is the best match for you.

Assessment:

Answers to AS 15.1 will vary depending on the careers selected.

Additional Activity:

Using the most desirable career choice, create a presentation on the computer. The presentation could be created with PowerPoint or some other presentation software. Within the presentation include information about what an individual in that career would actually do. Find some pictures of individuals working in this career or pictures related to it and include them in the presentation. Also include the personal reasons why you chose this career.

Alternative Application:

This activity can also be used to support the following curriculum and competency.

Exploring Agriculture in America	A. 1. Define agriculture and identify career opportunities in agriculture.

Credit:

Careers I Unit (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 1988.

Student Activity Sheet
Career Search on the Web

Name _____

Student Objectives:

1. Search the web to identify the top 10 agricultural careers and justify your reasons for selecting those careers.

2. Research five agricultural careers and list the description, educational requirements, job availability, location, working conditions, skills necessary, and salary for these careers.

3. Describe the advantages of researching the web.

Equipment and Materials:

- Computer with Internet access

Procedure:

1. Use a search engine such as Northern Light <http://www.northernlight.com> or Google <http://www.google.com> to find web sites for agricultural careers. Enter the keywords "agricultural career," and after you find specific careers, try entering the career title to find more information. A list of suggested web sites appears below. These pages will provide links to many other agricultural web sites and other career search sites. Visit the web sites that seem the most interesting.

   - Agricultural Electronic Bulletin Board <http://agebb.missouri.edu> This site has information on various areas of agriculture.

   - FFA Career Center <http://www.ffa.org/careers/index.html>. Click on the Ag Career Center link in the listing of links.

   - Penn State, College of Agricultural Sciences <http://www.cas.psu.edu/docs/CASHOME/AGCAREERS.HTML>. This site provides career information on various areas of agriculture.

2. Review the career information and pick the 10 agricultural careers that you are most interested in.

3. Record in the following table the 10 careers you chose and the reasons for choosing them (e.g., wildlife biologist, I'm interested in wildlife and like the outdoors; livestock producer, I could have independence and be my own boss).

4. Provide the web site addresses that you used for your research.

Agricultural Career Choices	Reasons for Selection
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Web site references: _____

5. Access the FFA Career Center web site at <http://www.ffa.org/careers/index.html> and click on the Ag Career Center link in the listing of links.

6. Search for the top 5 careers out of the 10 that you have identified. Click on the career title links for each of the five to find information on the following items:

   - Brief job description
   - Education requirements
   - Job availability
   - Location
   - Working conditions
   - Skills necessary
   - Salary

7. Record the information in the following table.

8. Provide the web site addresses that you used for your research.

1. Career Title:	
Brief Description	
Education Requirements	
Job Availability	
Location	
Working Conditions	
Skills Necessary	
Salary	

The table continues on the following page.

2. Career Title:	
Brief Description	
Education Requirements	
Job Availability	
Location	
Working Conditions	
Skills Necessary	
Salary	
3. Career Title:	
Brief Description	
Education Requirements	
Job Availability	
Location	
Working Conditions	
Skills Necessary	
Salary	

The table continues on the following page.

4. Career Title:	
Brief Description	
Education Requirements	
Job Availability	
Location	
Working Conditions	
Skills Necessary	
Salary	
5. Career Title:	
Brief Description	
Education Requirements	
Job Availability	
Location	
Working Conditions	
Skills Necessary	
Salary	

Web site references: _____

Agricultural Science I: *Introduction to Swine Production*

Computer Lab Activities in Agriculture

Activity 16 Swine Breed Comparison

Curriculum Supported	Related Competency
Agricultural Science I, *Introduction to Swine Production*	2. Identify the major swine breeds and their significance in the industry.

Curriculum Reference:

Introduction to Swine Production. University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

Overview:

The Internet is a rapidly growing resource that contains a vast amount of information in the field of agriculture. Because of the wide breadth of information and speed and ease with which the information can be accessed, the Internet has become a popular research tool. In this activity, the Internet is used to research and compare 10 different breeds of swine.

Activity Objectives:

1. Compare the identifying characteristics of 10 swine breeds on the web.

2. Describe the advantages of researching topics on the web.

Activity Sheet:

AS 16.1 Swine Breed Comparison

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Before assigning this activity to students, check the web links provided to ensure they are still available and current.

3. Check to see if there is a student use policy at your school for using the network and Internet. Students and parents may have to sign a form that releases the students to use the network and Internet during class.

4. Discuss Internet cautions with the students before beginning this activity. Inform them not to provide any personal information over the Internet through chat rooms or other sites. Personal information includes full name, address, phone number, social security number, or picture. Check with your school for additional rules and regulations on Internet use.

5. Review AS 16.1 with students to ensure they understand the activity.

Activity Length: 100 min.

Discussion Question:

What are the benefits of using the Internet to research the characteristics of different breeds of swine?

- You will become more adept at using this resource, a skill that employers of today's job market value highly.
- Being familiar with the Internet can aid you when making decisions (e.g., which political candidate to vote for, which vehicle to purchase).
- Using the Internet to conduct searches will develop your ability and increase your confidence in using this valuable tool.

Assessment:

Answers to AS 16.1 will vary depending on the breeds selected.

Additional Activity:

Have students create a presentation of their research using PowerPoint or another presentation software and present it to the class.

Alternative Applications:

1. Select 10 breeds of beef, sheep, dairy cattle, or poultry and research the identifying characteristics of each breed. See applicable curricula and competencies below. Use a table such as the one for AS 16.1 and customize it for the type of livestock being researched. This activity can also be used to research horses, dogs, etc.

Agricultural Science I, *Introduction to Beef Production*	2. Identify the major beef breeds and their significance to the beef industry.
Agricultural Science I, *Sheep*	2. Combine information and visual selection to choose superior sheep.
Agricultural Science I, *Introduction to Dairy Production*	2. Identify the major dairy breeds in Missouri and their significance to the dairy industry.
Agricultural Science I, *Poultry*	2. Select and evaluate poultry.

2. Using the Internet, compare a list of different crop varieties. Create a table such as the one used in this activity but modify it to include characteristics such as yield potential, disease resistance, insect resistance, winter hardiness, etc. See applicable curriculum and competencies below.

Advanced Crop Science	F. 2. Select a corn and/or grain sorghum variety. G. 2. Select a soybean variety suitable for your area. H. 2. Select wheat and other small grain varieties. J. 2. Select cotton variety with a local cotton consultant. K. 2. Select rice variety and grade to be planted with a local rice consultant.

Credit:

Introduction to Swine Production (Student Reference). Instructional Materials Laboratory. University of Missouri-Columbia. 1997.

Student Activity Sheet
Swine Breed Comparison

Name: _____

Student Objectives:

1. Compare the identifying characteristics of 10 swine breeds on the web.

2. Describe the advantages of researching topics on the web.

Equipment and Materials:

- Computer with Internet access

Procedure:

1. Search the Internet for web sites with information on breeds of swine. Some suggested web sites are listed below.

   <http://frost.ca.uky.edu/agripedia>
   <http://www.ansi.okstate.edu/breeds>
   <http://web.utk.edu/~amathew/breeds.html>

2. Choose 10 breeds of swine and locate the information required in the table below. Complete the table as you do your research.

   Note: Information for the Other category can include physical characteristics such as leanness, muscling, or hair color; mothering ability; growth rate; feed efficiency; origination; etc.

3. Indicate the web addresses that you used for the information.

	Breed	Color	Ear Type	Litter Size	Other
1.					

Table continues on next page

	Breed	Color	Ear Type	Litter Size	Other
2.					
3.					
4.					
5.					

Table continues on next page

	Breed	Color	Ear Type	Litter Size	Other
6.					
7.					
8.					

Table continues on next page

	Breed	Color	Ear Type	Litter Size	Other
9.					
10.					

Web site references: _____

_____

_____

Agricultural Science II: *Introduction to Grassland Management*

Computer Lab Activities in Agriculture

Activity 17

Plant Identification

Curricula Supported	Related Competencies
Agricultural Science II, *Introduction to Grassland Management*	2. Identify plant classifications found in grasslands. 3. Recognize the characteristics of grassland plants that are used in plant identification.
Agricultural Science II, *Leadership II*	5. Prepare and deliver a presentation.

Curricula References:

1. *Introduction to Grassland Management.* University of Missouri-Columbia: Instructional Materials Laboratory, 1997.

2. *Leadership and Personal Development.* University of Missouri-Columbia: Instructional Materials Laboratory, 1991.

Overview:

Part 1 of this activity provides experience in identifying plants and capturing the image of plant specimens with a digital camera or scanner. The images can be used in various applications. One use is to identify the plant and the type of disease or insect damage the plant may have. Part 2 of this activity provides experience in creating and delivering a presentation using presentation software.

Activity Objectives:

1. Capture plant images electronically using a digital camera or scanner. (Part 1)

2. Research plants and identify them by common name, life cycle, type, and identifying characteristics. (Part 1)

3. Describe how a digital plant image can be used in plant science or plant production. (Part 1)

4. Prepare and deliver a plant identification presentation. (Part 2)

Activity Sheets:

AS 17.1 Plant Identification
AS 17.2 Plant Identification Presentation

Scoring Guide:

SG 17.2 Plant Identification Presentation

Instructor Preparation/Directions:

Part 1

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Before assigning this activity to students, check the web links provided to ensure they are still available and current.

3. Check to see if there is a student use policy at your school for using the network and Internet. Students and parents may have to sign a form that releases the students to use the network and Internet during class.

4. Discuss Internet cautions with the students before beginning this activity. Inform them not to provide any personal information over the Internet through chat rooms or other sites. Personal information includes full name, address, phone number, social security number, or picture. Check with your school for additional rules and regulations on Internet use.

5. Refer to the operator's manual for the scanner or digital camera for instructions for use.

6. Instruct each student to find five plants and capture their images with a digital camera or scanner. Have students find plant specimens that are different plant types or have different identifying characteristics. If a digital camera is used, have each student bring the plants to class to photograph or take the class to an overgrown field, agricultural area, or wooded area to photograph the plants on-site. If a scanner is used, have students bring the plants to class.

Activity-Part 1 Length: 100 min.

Part 2

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the presentation software the students will be using for this activity and have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 17.2. If available, provide related examples of exemplary work.

Activity-Part 2 Length: 300 minutes

Discussion Questions:

Part 1

1. What are possible uses for digital plant images?

   - Sending the image via the Internet to plant experts for analysis (e.g., University of Missouri-Columbia Plant Diagnostics Clinic, local University of Missouri-Columbia extension agents, agronomists/plant scientists). The University of Missouri-Columbia Plant Diagnostics Clinic web site can be accessed at <http://www.agebb.missouri.edu/pdc/>.

   - Digital plant images can be used to diagnose diseases and identify insect damage.

   - Digital plant images can be used to compare plants for landscape selection or to design a pruning plan.

2. What is the importance of identifying plants and diagnosing plant diseases or insect damage?

   - This information can be used when making management decisions such as which herbicide program to use or what cultural control methods to use (e.g., crop rotation, no-till, controlled burning, trap crops).

3. What are other applications for using digital images in agriculture?

   - Photographing and cataloging a herd of livestock for calving management

   - Photographing buildings, animals, and equipment for insurance reasons

   - Photographing an animal to advertise for sale

   - Building a plant list for landscaping purposes

   - Developing employee identification records

Part 2

1. Who are the various audiences that would be interested in this presentation?

   - A group of producers interested in learning about plants

   - Wildlife agents and foresters who want to know about the plants that they may encounter

   - Members of a garden club who want to be able to identify plants that are growing in their yards

2. How can learning how to prepare a presentation benefit students?

   - These types of presentations are commonplace among professionals in many fields. The creation of this presentation will provide students with practice and give them a basic idea of how to effectively produce a slide presentation.

3. How can delivering a presentation benefit students?

   - The ability deliver a presentation is a very useful skill because leadership and communication skills are highly valued in the professional world. The ability to deliver an effective presentation improves your leadership skills.

Assessment:

AS 17.1 - Answers to AS 17.1 will vary based on the plants selected. It is suggested that this activity sheet is graded before proceeding to Part 2 of this activity.

AS 17.2 - Grade the students' presentations based on SG 17.2 located at the end of AS 17.2. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. For an example presentation, view the PlantID_presentation file, a PowerPoint file on the *Computer Lab Activities in Agriculture* CD-ROM.

Alternative Applications:

1. Submit a digital image of a diseased plant, weed pest, or insect pest to an expert for analysis. The expert can identify the pest or potential problem and aid the student in making a management decision. For example, an image of a weed pest could be sent to an agronomist. The agronomist could then provide advice in selecting a weed control program (e.g., spray herbicide, different tillage methods). See the related curriculum and competencies below.

Advanced Crop Science	F. 4. Select a pest control program. G. 4. Select a weed control program. H. 4. Select a pest control program. J. 4. Select a weed control program.

2. Have students collect insects, research them, and capture their images with a digital camera. The students could use the digital images to create an entire insect collection. See the related curriculum and competency below.

Agricultural Science II, *Entomology*	2. Prepare an insect collection.

3. This activity can also be used to support the following curricula and competencies.

Advanced Crop Science	D. 1. Identify crop and weed seeds and plants
Agricultural Science II, *Crop Science*	3. Identify common plants and weeds in Missouri.

Credits:

Forages Information System <http://www.forages.css.orst.edu/> 11 October 2000.

Gee, Kenneth L., Michael D. Porter, Steve Demarais, Fred C. Bryant, and Gary Van Vreede. *White-tailed Deer: Their Foods and Management in the Cross Timbers.* Ardmore, OK: The Samuel Roberts Noble Foundation, 1994. Intermediate Web Publishing <http://www.uoregon.edu/~jqj/inter-pub/images/images-gif.html> April 6, 2001.

Missouri Weeds, MU Agronomy Extension. <http://www.psu.missouri.edu/fishel/Default.htm> October 11, 2000.

Presenters Online. <http://www.presentersonline.com> October 10, 2000.

Uva, Richard H., Joseph C. Neal, and Joseph M. DiTomaso. *Weeds of the Northeast.* Ithaca, NY: Cornell University Press, 1997.

Student Activity Sheet
Plant Identification

Name _____

Student Objectives:

1. Capture plant images electronically using a digital camera or scanner.

2. Research plants and identify them by common name, life cycle, type, and identifying characteristics.

3. Describe how a digital plant image can be used in plant science or plant production.

Equipment and Materials:

- Computer with Internet access
- Digital camera or flatbed scanner
- Floppy disk

Procedure:

1. Following your instructor's directions, find five plants and capture their images with a digital camera or scanner. Each specimen should be a different plant type or have different identifying characteristics.

   a. Digital Camera Option:

   1) Capture each of your plant specimens with a digital camera. Make sure that the plant does not blend in with its background. Use a piece of paper or cardstock as a background to provide contrast if needed. See Figure 17.1 for an example of a plant image captured with a digital camera.

   Tip: Freshly collected plants or living plants ensure greater quality images. Try to capture images when the wind is at a minimum so that the image is in focus.

   2) Per manufacturer's instructions, transfer the images to the computer (floppy disk or a location that your instructor specifies).

   3) Convert the files to JPEG format with a resolution of 72 dpi (dots per inch), which is standard screen resolution.

   b. Scanner Option:

   1) Using a flatbed scanner, lay a plant specimen on the glass plate and close the cover.

   Tip: Freshly collected plants or living plants ensure greater quality images. When placing the plant on the scanner glass, try to make the

plant as flat as possible and close the scanner lid carefully. The part of the plant directly on the glass will be the clearest image.

2) Use the scanner's RGB (Red Green Blue) color photo mode and scan at a resolution of 72 dpi (dots per inch), which is standard screen resolution.

3) Save the image in JPEG format to a floppy disk or a location your instructor specifies. See Figure 17.2 for an example of a plant image captured with a scanner.

Note: The JPEG and GIF graphic file formats (with the extensions .jpg and .gif respectively) are both commonly used for screen display. These formats have a relatively smaller file size, which allow for a faster loading time. GIF images are typically used for line art and icons and JPEG images are used for photographs.

Figure 17.1 - Digital camera image of bull thistle

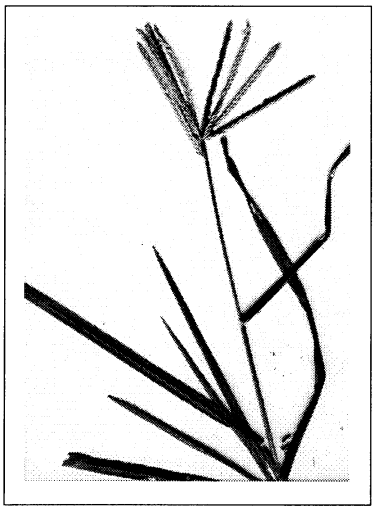


Figure 17.2 - Scanner image of goosegrass

2. Research the plant specimens to find their common name, life cycle, type (e.g., grass, legume, woody, forb), and three identifying characteristics (e.g., stem type, leaf type, flower type, plant uses, habitat, root type). See the following list for suggested references about plant identification.

Plant Identification References:

Books:

- Gee, Kenneth L., Michael D. Porter, Steve Demarais, Fred C. Bryant, and Gary Van Vreede. *White-tailed Deer: Their Foods and Management in the Cross Timbers.* Ardmore, OK: The Samuel Roberts Noble Foundation, 1994.

- Uva, Richard H., Joseph C. Neal, and Joseph M. DiTomaso. *Weeds of the Northeast.* Ithaca, NY: Cornell University Press, 1997.

Web sites:

- Forages Information System. <http://www.forages.css.orst.edu/>
- Missouri Weeds, MU Agronomy Extension. <http://www.psu.missouri.edu/fishel/Default.htm>

3. Record your findings in the following table.

4. Print each image and key it to the information in the table by labeling each printout with the specimen letter. Attach your printouts to this activity sheet.

5. Below the table, be sure to list the references used for the information.

	Common Name	Life Cycle	Identifying Characteristics
Specimen A			1. 2. 3.
Specimen B			1. 2. 3.
Specimen C			1. 2. 3.

Table continues on next page

	Common Name	Life Cycle	Identifying Characteristics
Specimen D			1. 2. 3.
Specimen E			1. 2. 3.

References used:_____
_____
_____
_____

Student Activity Sheet
Plant Identification Presentation

Name _____

Student Objective:

Prepare and deliver a plant identification presentation.

Equipment and Materials:

- Computer
- Presentation software, e.g., PowerPoint, Corel Presentations
- SG 17.2 Plant Identification Presentation Scoring Guide
- PlantID_blank template (PowerPoint file)
- Floppy disk

Procedure:

1. Refer to SG 17.2 for the criteria you will be graded on.

2. Select the four best plant images from Part 1. Use plants that represent at least four different plant types (e.g., grass, legume, woody, forb) or life cycles (i.e., annual, perennial, or biennial).

   TIP: Ensure the images are JPEG format and set at a low resolution (72 dpi). The pictures will take up less space and load in the presentation much faster.

3. Using the PlantID_blank template (provided on the CD-ROM) or a design of your own, create a slide show presentation. On the first slide, type the title of your presentation and your name.

4. As you develop your presentation, save the file often to a floppy disk or to a location your instructor specifies.

5. Insert a plant image on each of the next four slides. Each slide should also contain labels and information about the name of the plant, life cycle, type, and three identifying characteristics.

6. On the last slide, type a bibliography (listing of all the sources you used for the plant identification information). Each listing should include the title, author/publisher, and date.

7. When your slide show is complete, test it on the hardware you will be using to ensure there are no technical problems.

8. Deliver a short presentation discussing the plants on the slides.

Plant Identification Presentation Scoring Guide

Name _____

Exemplary--2 pts.	Acceptable--1 pt.	Needs Work--0 pts.	Pts.
Font Appearance			
Meets all of the following criteria: 1. Readable (type style, size) 2. Eye appealing (compatible fonts) 3. Appropriately formatted (use of bold, italics, etc.)	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No grammar or spelling errors	A few minor errors that are not distracting	Numerous or distracting errors	
Colors			
Meet all of the following criteria: 1. Good contrast 2. Appropriate number of colors 3. Eye appealing	Meet two of the criteria	Meet one or none of the criteria	
Content Accuracy			
All facts are correct	One or two facts are incorrect	Three or more facts are incorrect	
Content Organization			
Well organized (information is consistently presented)	Not completely organized	Poorly organized	
Content Completeness			
All elements are present	One or two elements are missing	Three or more elements are missing	
Transitions			
Meet all of the following criteria: 1. Keep viewers' attention 2. Help the flow 3. Consistently used	Meet two of the criteria	Meet one or none of the criteria	
Animation			
Meets all of the following criteria: 1. Helps the flow 2. Timing is effective 3. Keeps viewers' attention	Meets two of the criteria	Meets one or none of the criteria	
Navigational Aids			
Buttons work on all slides	Buttons work on 5 out of 6 slides	Buttons work on 4 or fewer slides	
Images			
Meet all of the following criteria: 1. Represent content 2. Good quality (good resolution, clear) 3. Appropriate size	Meet two of the criteria	Meet one or none of the criteria	
Bibliography			
All sources are listed and include the following elements: title, author/publisher, and date	All sources are listed but one or two elements are missing	No sources are listed or more than two elements are missing	
Presentation Delivery			
Enthusiastic throughout	Enthusiastic most of the time	Enthusiastic rarely	
Stands erect on both feet throughout	Stands erect on both feet most of the time	Stands erect rarely	
Maintains good eye contact throughout	Maintains good eye contact most of the time	Maintains good eye contact rarely	
Maintains good volume and tone throughout	Maintains good volume and tone most of the time	Maintains good volume and tone rarely	
Uses appropriate gestures to emphasize key points throughout	Uses appropriate gestures to emphasize key points most of the time	Uses appropriate gestures to emphasize key points rarely	

Total points out of 32 _____

Agricultural Structures

Computer Lab Activities in Agriculture

Activity 18 Electronic Bill of Materials

Curriculum Supported	Related Competency
Agricultural Structures	A. 2. Develop a plan of procedure and a bill of materials for a construction project.

Curriculum Reference:

Agricultural Structures. University of Missouri-Columbia: Instructional Materials Laboratory, 1999.

Overview:

This activity identifies the necessary components of a bill of materials and develops skill in creating a bill of materials from a given list of materials. It also provides experience in entering data and creating formulas in a spreadsheet program.

Activity Objectives:

1. Develop a bill of materials using a spreadsheet program.

2. Describe the advantages of using a spreadsheet in developing a bill of materials.

Activity Sheet:

AS 18.1 Electronic Bill of Materials

Scoring Guide:

SG 18.1 Electronic Bill of Materials

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the spreadsheet software the students will be using for this activity, specifically the procedures for entering data and creating formulas. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review the components and purposes of a bill of materials. Bring to class examples of good and poor bills of materials. Be sure that some of the examples are handwritten so these can be compared with the computer-generated bill of materials.

4. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 18.1. If available, provide related examples of exemplary work.

Activity length: 100 minutes

Discussion Question:

What are the advantages of creating a bill of materials in a spreadsheet program?

- An electronic spreadsheet provides a clean document that is easy to read.
- When formulas are entered correctly in the spreadsheet, the potential for math errors is eliminated. In addition, the spreadsheet's calculations are instantaneous.
- Once a bill of materials template is created, it can be used over and over and does not have to be created again. It can also be customized and different versions can be saved that apply to different situations.

Assessment:

Grade the students' bill of materials based on SG 18.1 located at the end of AS 18.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. See below for cut lists, purchase bill of materials, and bill of materials spreadsheets for the projects.

Scenario 1 - The students should have the following information on the bluebird house.

Cut list:
1 - 16 ½" x 1" x 6" pine board - back
1 - 9 ¾" x 1" X 6" pine board - front
1 - 6 ½" x 1" x 6" pine board - roof
2 - 10 ¾" x 1" x 6" pine boards (ripped to 4") - sides
1 - 4" x 1" x 6" pine board (ripped to 4") - bottom
1 - 5 ½" x ¾" x ¾" pine board - roof holder

Purchasing bill of materials:
5' x 1" x 6" pine board
20 - 6p (six-penny) finish nails
1 - 1 ½" screw

Part Name	# of Pieces	Size Thick	Width	Length	Type of Material	Price/ Unit	Price/ Ft	Cost
Board	1	1"	6"	5	Pine board		$0.25	$1.25
Six-penny nails	20			6p	Finish nails	$0.01		$0.20
Screw	1			1 1/2"	Screw	$0.02		$0.02
							Total Cost	$1.47

Scenario 2 - The students should have the following information on the step stool.

Cut list:
1 - 18" x 1" x 12" board - top
2 - 14" x 1" x 10" boards - legs
1 - 10 ½" x 1" x 10" board - bottom shelf
2 - 12"x 1" x 2" boards - side braces
16 - 1 ½" sheet-rock screws

Purchasing bill of materials:
18" x 1" x 12" board
38 ½" x 1" x 10" board
24" x 1" x 2" board
16 - 1 ½" sheet-rock screws

The total cost of the project will vary.

Part Name	# of Pieces	Size Thick	Width	Length	Type of Material	Price/ Unit	Price/ Ft	Cost
Board	1	1"	12"	1.5	Pine board		$0.00	$0.00
Board	1	1	10	3.2	Pine board		$0.00	$0.00
Board	1	1	2	2	Pine board		$0.00	$0.00
Sheet-rock Screw	16			1 ½"	Screw	$0.00		$0.00
							Total Cost	$0.00

Scenario 3 - The students should have the following information on the park bench.

Cut list:
8 - 17" x 1 ½" x 1 ½" x 16-gauge tubes
2 - 12" x 1 ½" x1 ½" x 16-gauge tubes - seat brace
2 - 8" x 1 ½" x 1 ½" x 16-gauge tubes - center support
4 - 2" x 1/8" x 2" flat metal - base for legs
8 - 1 ¼" x 1/8" x 1 ¼" flat metal - end caps
5 - 6' x 5/4" x 6" CCA deck boards

Purchasing bill of materials:
13 - 6" x 1 ½" x 1 ½" x 16-gauge tube
8" x 1/8" x 2" flat metal
10" x 1/8" x 1 ¼" flat metal
5 - 6' x 5/4" x 6" CCA deck boards
26 - 2" trailer floor screws

The total cost of the project will vary.

Part Name	# of Pieces	Size Thick	Width	Length	Type of Material	Price/ Unit	Price/ Ft	Cost
16 gauge tube	1	1 1/2"	1 1/2"	15	Metal tube		$0.00	$0.00
Flat metal	1	1/8"	2"	.67	Metal		$0.00	$0.00
Flat metal	1	1/8"	1 1/4"	.83	Metal		$0.00	$0.00
Board	5	5/4"	6"	6	CCA deck boards		$0.00	$0.00
Screws	26			2"	Trailer floor screws	$0.00		$0.00
							Total Cost	$0.00

Additional Activities:

1. Have the students create a bill of materials for a project they plan to do for the class. Use the bill of materials to order the necessary materials for the students. The bill of materials allows them to see exactly how much the project will cost.

2. Select additional mechanics plans from *Single Sheet Agricultural Mechanics Plans* and have students develop the bill of materials.

Alternative Application:

Customize the bill of materials template to calculate the prices of floral products. Some fields in the bill of materials template can be removed and others added to tailor the template to the specific information needed. Have the students determine the materials that they will need to make a corsage, boutonniere, or other flower arrangement. They will have to research the current prices of the flowers and supplies they plan to use. They may choose to use real or silk flowers. See the applicable curriculum and competency below.

Floristry G. 3. Calculate the price of floral products.

Credits:

Agricultural Structures (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 1999.

Single Sheet Agricultural Mechanics Plans. University of Missouri-Columbia: Instructional Materials Laboratory, 1994.

Student Activity Sheet
Electronic Bill of Materials

Name _____

Student Objectives:

1. Develop a bill of materials using a spreadsheet program.

2. Describe the advantages of using a spreadsheet in developing a bill of materials.

Equipment and Materials:

- Computer
- Spreadsheet program (e.g., Excel, Lotus 1-2-3)
- Bill of materials_template (Excel file)
- SG 18.1 Electronic Bill of Materials Scoring Guide
- Floppy disk (one for each student)
- Printer

Procedure:

1. Refer to SG 18.1 for the criteria you will be graded on.

2. Read scenario 1 below.

   Your grandmother loves watching the birds in her back yard. For her birthday you decide to make her a bluebird house.

3. Review the bluebird house plan at the end of this procedure and develop a list of the cuts of wood you will need for the project. Record the information below.

   Cut list:

   _____

   _____

   _____

   _____

   _____

   _____

4. Convert these into a purchasing bill of materials using the most cost-effective size of lumber available (i.e., size that will produce the least amount of waste). You decide to use pine. Record the information on the next page. The hardware is listed for you.

   Note: Lumber from retailers most commonly starts at 8 feet in length and increases in 2-foot increments and is priced per board foot.

Purchasing bill of materials:

20 - 6p (six-penny) finish nails

1 - 1 ½" screw

5. Use the bill of materials_template provided on the CD-ROM or start with a new file in a spreadsheet program and enter the purchasing bill of materials for this project. See Figure 18.1 for an example format for a bill of materials for another project.

Bill of Materials								
Name: Kevin Matthews					Date: 1/10/2001			
Class: Agricultural Structures					Project: Sawhorse			
Part Name	# of Pieces	Size Thick	Width	Length	Type of Material	Price/ Unit	Price/ Ft	Cost
Side rail	1	2"	4"	12	White pine		$0.70	$8.40
Side rail	1	1"	6"	8	White pine		$0.45	$3.60
Screws	8			3"	Wood screw	$0.01		$0.08
Screws	12			1 ½"	Wood screw	$0.02		$0.24
							Total cost	$12.32

Figure 18.1 - Sample bill of materials format

6. Use the following prices from the local lumberyard for the lumber and hardware for the bluebird house.

Material	Price/ft	Material	Price/unit
2" x 4", 8 feet long	$0.53	6p finish nails	$0.01
2" x 6", 8 feet long	$0.72	1 ½" screw	$0.02
1" x 6", 5 feet long	$0.25		
1" x 6", 6 feet long	$0.36		
1" x 4", 5 feet long	$0.20		

7. Initiate the formula function in your program and enter formulas to total the cost for each item and the cost of all items. See an example formula below for another project.

	A	B	C	D	E	F	G	H	I
1	**Bill of Materials**								
2	Name: Kevin Matthews				Date: 1/10/2001				
3	Class: Agricultural Structures				Project: Sawhorse				
4	Part Name	# of Pieces	Size Thick	Width	Length	Type of Material	Price/ unit	Price/ ft	Cost
5	Side rail	1	2"	4"	12	White pine		$0.70	$8.40
6	Side rail	1	1"	6"	8	White pine		$0.45	$3.60
7	Screws	8			3"	W			
8	Screws	12			1 ½"	W			
9								**Total cost**	$12.32

Cell I5 contains the following formula to calculate the cost for the side rail: E5*H5

8. When the bill of materials is complete, save the file as "bill of materials_birdhouse" on a floppy disk or a location your instructor specifies. Ensure your name is on the bill of materials and print the file.

9. Read scenario 2 below.

   Your grandmother loved the birdhouse and now she would like you to make a step stool that she can climb to hang or clean the birdhouse. Review the step stool plan at the end of this procedure and develop a list of the cuts of wood you will need for the project and the purchasing bill of materials. You decide to use pine. Record the information below. The hardware is listed for you.

   Cut list:

   _____

   _____

   _____

   _____

   _____

   _____

   Purchasing bill of materials:

   16 - 1 ½" sheet-rock screws

   _____

   _____

   _____

   _____

10. For this project, call the local hardware store to determine the prices for the materials you will need.

11. Open the bill of materials_birdhouse file and save the file as "bill of materials_step stool."

12. Enter the purchasing bill of materials information for the step stool into the spreadsheet. Note how the totals are calculated instantaneously.

13. When the bill of materials is complete, save and print the file. Ensure your name is on the bill of materials.

14. Read scenario 3 below.

    Your grandmother has one last request from you. She would like you to make a bench where she can sit to watch the bluebirds in her back yard. You decide to make the following park bench plan. Develop a list of the cuts of wood and metal you will need for the project and the purchasing bill of materials and list them below. For this project, you will use 16-gauge metal pipe for the legs, seat brace, and center support. The hardware is listed for you.

    Cut List:

    _____

    _____

    _____

    _____

    _____

    _____

    _____

    Purchasing bill of materials:

    26 - 2" trailer floor screws

    8" x 1/8" x 2" flat metal

    10" x 1/8" x 1 ¼" flat metal

    _____

    _____

    _____

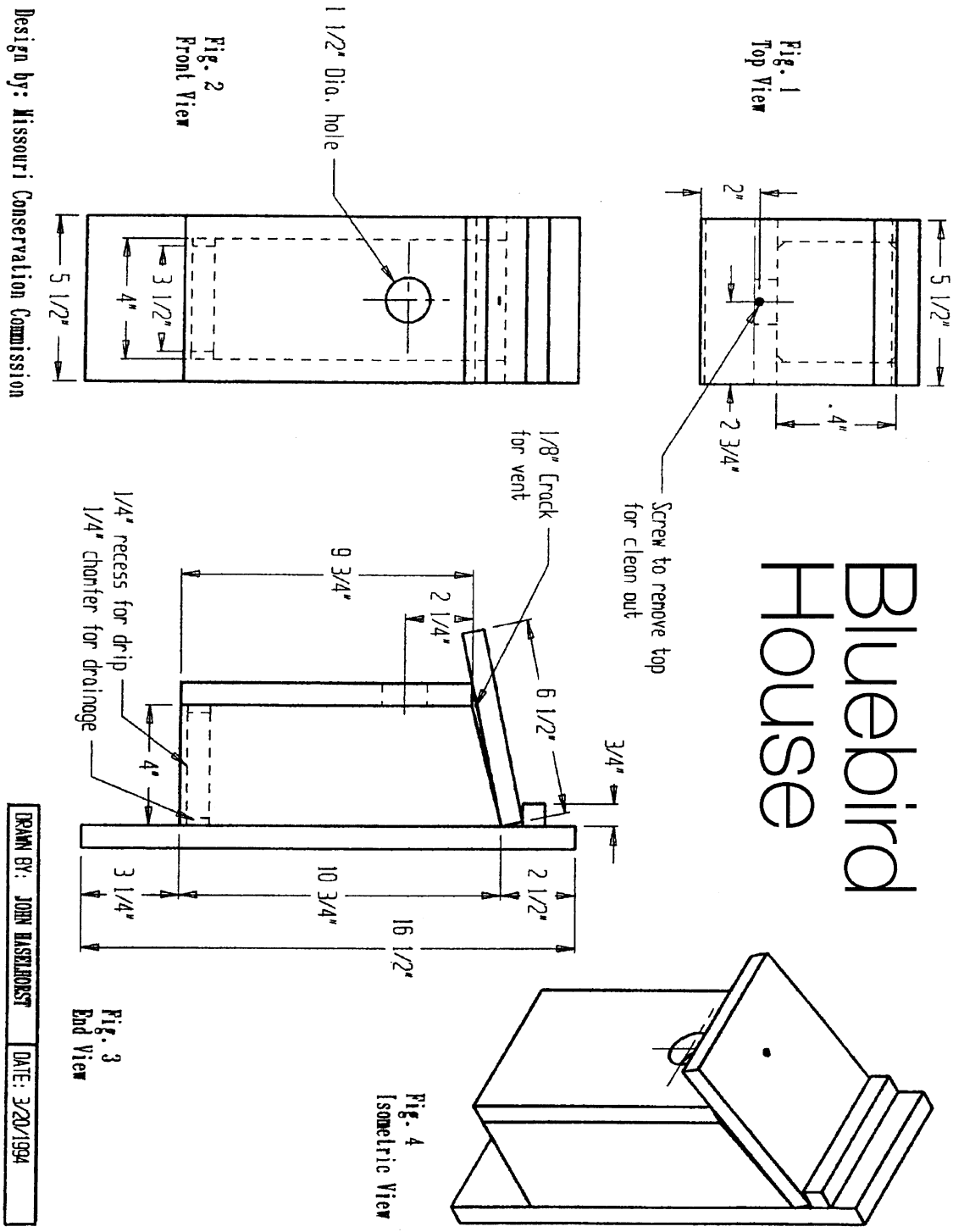
    _____

15. Again for this project, call the local hardware store to determine the prices for the materials you will need.

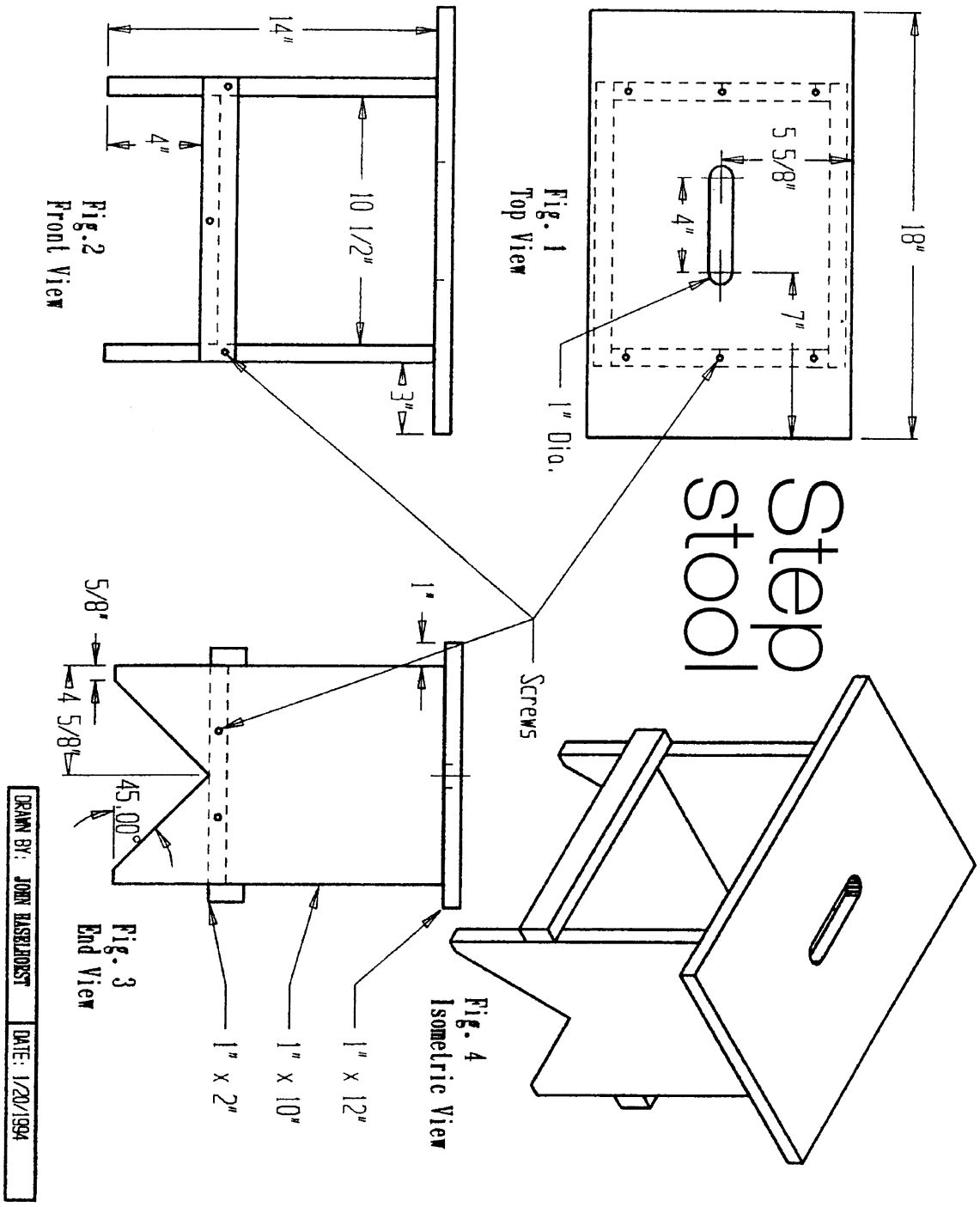
16. Open the bill of materials_birdhouse file and save the file as "bill of materials_park bench."

17. Enter the purchasing bill of materials information for the park bench into the spreadsheet. Note how the totals are calculated instantaneously.

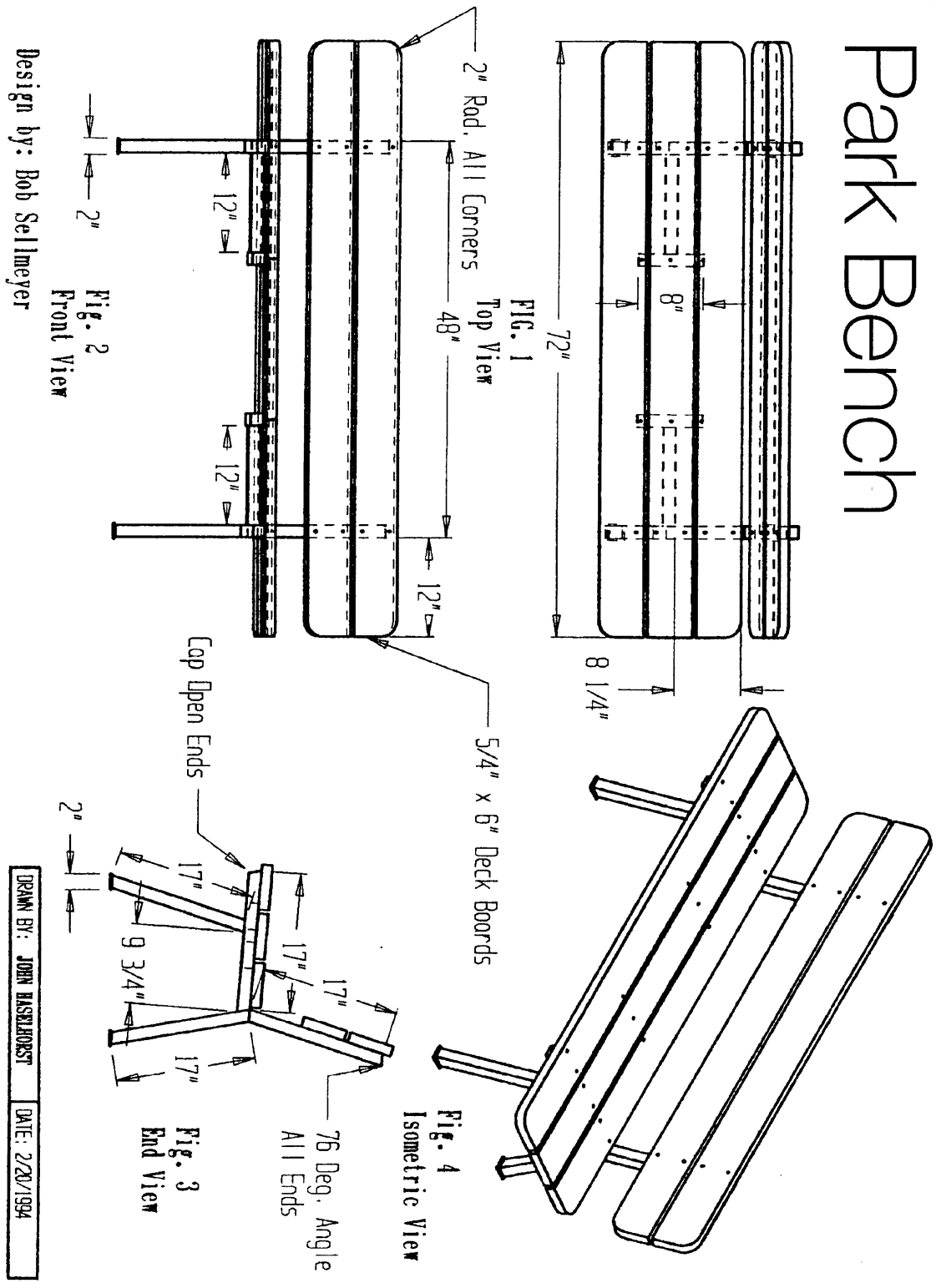
18. When the bill of materials is complete, save and print the file. Ensure your name is on the bill of materials.



Drawing reprinted from *Single Sheet Agricultural Mechanics Plans*. University of Missouri-Columbia: Instructional Materials Laboratory, 1994.



Drawing reprinted from *Single Sheet Agricultural Mechanics Plans.* University of Missouri-Columbia: Instructional Materials Laboratory, 1994.



Drawing reprinted from *Single Sheet Agricultural Mechanics Plans*. University of Missouri-Columbia: Instructional Materials Laboratory, 1994.

Electronic Bill of Materials Scoring Guide

Name _____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Overall Organization			
Meets all of the following criteria: 1. Headers provide appropriate labeling 2. Columns are in logical order 3. Logical flow of calculations	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No errors in punctuation or spelling	A few minor errors that are not distracting	Numerous or distracting errors	
Formulas			
All formulas are entered correctly and calculate the data when entered	One formula is entered incorrectly	Two or more formulas are entered incorrectly	
Content Accuracy			
Meets all of the following criteria: 1. All materials, dimensions, prices, etc., are accurate 2. All lumber/metal is listed in most cost-efficient size 3. Total cost is accurate	One or two minor errors	Numerous errors	
Content Completeness			
All necessary information is entered	***	Information is missing	

Total points out of 10 _____

***No middle-ground criteria (either exemplary or needs work)

Animal Science

Computer Lab Activities in Agriculture

Activity 19 Electronic Calendar

Curriculum Supported	Related Competencies
Animal Science	C. 3. Describe the reproductive cycle of common production livestock. D. 1. Identify the importance of animal health in livestock.

Curriculum Reference:

Animal Science. University of Missouri-Columbia: Instructional Materials Laboratory, 1996.

Overview:

This activity provides experience in creating an electronic calendar and entering herd breeding information. An electronic herd breeding calendar is simple to create and maintain and very helpful to a producer.

Activity Objectives:

1. Develop an electronic calendar.

2. Describe the advantages of using an electronic calendar.

Activity Sheet:

AS 19.1 Electronic Calendar

Scoring Guide:

SG 19.1 Electronic Calendar

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Before assigning this activity to students, ensure that the word processing program the students will be using has a calendar creation utility or "wizard." If not, the utility may be available to install from the program's CD-ROM.

3. Familiarize yourself with the word processing software the students will be using for this activity, specifically the procedures for creating a calendar. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

4. Based on time and how comprehensive you want the activity to be, the students can create only a few months of a gestation period or the entire gestation period.

5. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 19.1. If available, provide related examples of exemplary work.

Activity Length: 100 min.

Discussion Question:

Why is an electric calendar a valuable time management tool for a producer?

- By having everything entered, it is easy to refer to the calendar to see what should be done and when. By having all of this information in one place, the producer can easily tell what has been done and what still needs to be done.

- The electronic calendar can easily be updated at any time and the producer can tailor the calendar to his or her production methods.

Assessment:

Grade the students' calendars based on SG 19.1 located at the end of AS 19.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. To view the completed calendar, open "electronic calendar_complete," a Word file on the *Computer Lab Activities in Agriculture* CD-ROM.

Additional Activities:

1. Have students create a similar calendar for their herd if they have one. If they do not own cattle, they can contact a local producer for information on his/her herd.

2. Provide students with information on a herd of livestock or have them create a herd. Have them research livestock management practices on university agricultural extension or livestock association web sites. Have them create an electronic calendar with the management practices they find.

3. Have students create a calendar containing their daily school activities, athletic events, music concerts, FFA events, after-school activities, etc. that they are involved in.

Alternative Applications:

1. Have students set up a calendar with completion dates for phases of a building project they are working on. Some information in the calendar can be about how long it will take to cut and weld the materials for the project. Students can also include information about when to order materials for their project. See applicable curriculum and competency below.

Agricultural Construction	F. 5. Determine the time frame for completion of a project.

2. Have students design a greenhouse watering calendar. They can determine how often and what time of day to water plants in the greenhouse. Some plants may not need to be watered as often as others and the calendar can contain this information. The calendar can also contain information on when to fertilize and when to spray pesticides. See applicable curriculum and competency below.

Greenhouse Operation and Management	A. 17. Describe the factors involved in the proper watering of greenhouse plants.

3. Have students determine the labor needs for a certain operation. Have them develop a calendar about the schedule for the labor and types of labor required. The calendar will help the user plan for labor needs throughout the year. See applicable curriculum and competency below.

Agricultural Management and Economics	C. 6. Plan for the labor needs of a farm business.

4. Have students develop a calendar about when to start bedding plants and ground cover in a greenhouse so the plants will be ready in the spring or by a designated time. They can include how often and what time to water plants in the greenhouse. Some plants may not need to be watered as often as others and the calendar can contain this information. The calendar can also contain information about when to fertilize and when to spray pesticides. It can also include when plants need to be mowed or pruned. See applicable curriculum and competencies below.

Landscaping and Turf Management	G. 2. Maintain bedding plants and groundcover. H. 3. Maintain turf by properly fertilizing, watering, and mowing.

Credits:

Animal Science (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 1996.

Guyer, Paul Q. Beef Herd Management Calendar. <http://www.ianr.unl.edu/pubs/beef/g477.htm> January 25, 2001.

Student Activity Sheet
Electronic Calendar

Name _____

Student Objectives:

1. Develop an electronic calendar.

2. Describe the advantages of using an electronic calendar.

Equipment and Materials:

- Computer
- Word processing software (e.g., Word, WordPerfect)
- Floppy disk (one for each student)
- SG 19.1 Electronic Calendar Scoring Guide
- Printer

Procedure:

1. Refer to SG 19.1 for the criteria you will be graded on.

2. Open a word processing program and start the calendar creation utility or "wizard." Follow the steps in creating a 12-month calendar.

3. Once the calendar has been created, read the scenario below and enter information for a herd breeding calendar.

   Scenario:

   A beef producer asks you to create a herd breeding calendar for a herd of heifers. Create a calendar to follow the heifers from their days in heat, through their pregnancies, and up to the time they calve. The producer gives you the following breeding information about the heifers and cautions you to be thorough and accurate in creating the calendar.

Heifer #	Date(s) in heat	Approximate date bred	Calving date
345	January 7 January 28	January 29	October 30
390	January 24	January 26	October 31
374	February 5	February 6	November 16
310	February 15	February 16	November 29
352	February 17 March 10	March 11	December 30
339	March 4	March 6	December 28

4. In addition, enter the following management practices on the dates indicated. See Figure 19.1 for an example of 1 month of the electronic calendar.

March
1 Feed high phosphorus-salt mixture.

April
1 Feed high phosphorus-salt mixture.
2 Check if heifers are pregnant and sell ones that are not.
15 Check heifers for health problems (pink eye, cancer eye, and scours).
23 Plan feed supply for the winter.

May
1 Feed high phosphorus-salt mixture.
7 Put heifers in south pasture. Provide additional grain if needed.
25 Rotate heifers to north pasture. Check for adequate water.

June
1 Feed high phosphorus-salt mixture.
4 Spray for fly control.
15 Rotate heifers to northwest pasture. Check for adequate water.

July
2 Spray for fly control.
13 Rotate heifers to south pasture. Check for adequate water.
23 Restock supplies needed for calving season.

August
1 Vaccinate heifers.
6 Spray for fly control.
10 Rotate heifers to north pasture. Check for adequate water.

September
3 Rotate heifers to northwest pasture. Check for adequate water.
23 Vaccinate heifers this week.

October
19 Move heifers due to calve to barn lot.

November
1 Vaccinate calves and identify with ear tags.
2 Revaccinate heifers that have not calved yet.
6 Move heifers due to calve to barn lot.
19 Vaccinate calf and identify with ear tag.
30 Vaccinate calf and identify with ear tag.

December
18 Move remaining heifers to barn lot.
31 Vaccinate calves and identify with ear tags.

5. Save the electronic calendar often during the development process to a floppy disk or location your instructor specifies.

6. When the calendar is complete, print a copy and write your name on the calendar.

June	Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 Feed high phosphorus-salt mixture.	2
	3	4 Spray for fly control.	5	6	7	8	9
	10	11	12	13	14	15 Rotate heifers to northwest pasture. Check for adequate water.	16
	17	18	19	20	21	22	23
2001	24	25	26	27	28	29	30

Figure 19.1 - Example month of the electronic calendar

Electronic Calendar Scoring Guide

Name _____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Calendar Appearance			
Meets all of the following criteria: 1. Readable font (type style, size) 2. Easy-to-read format 3. Appropriately formatted (use of bold, italics, etc.)	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No errors in grammar, punctuation, or spelling	A few minor errors that are not distracting	Numerous or distracting errors	
Content Accuracy			
All information is correct and entered on correct date	One or two pieces of information are entered incorrectly	Three or more pieces of information are entered incorrectly	
Content Organization			
Well organized (information is consistently presented)	Not completely organized	Poorly organized	
Content Completeness			
All information is present	One or two pieces of information are missing	Three or more pieces of information are missing	

Total points out of 10 _____

Exploring Agriculture in America

Computer Lab Activities in Agriculture

Activity 20

Current Agricultural Product Information

Curriculum Supported	Related Competencies
Exploring Agriculture in America	A. 3. Describe the role of agriculture in the United States. A. 4. Describe agriculture in Missouri.

Curriculum Reference:

Exploring Agriculture in America. University of Missouri-Columbia: Instructional Materials Laboratory, 2000.

Overview:

Part 1 of this activity explores the agricultural products that are the most economically important in the United States and Missouri. The most current information is found on federal and state government web sites. In part 2, a computer program is used to create graphs and charts with the information to present it in a clearer and more understandable format.

Activity Objectives:

1. Use the web to identify the current top 10 agricultural products by cash receipts in the United States. (Part 1)

2. Use the web to identify the current top 10 agricultural products by cash receipts in Missouri. (Part 1)

3. Prepare a graphical presentation of the current product information. (Part 2)

Activity Sheets:

AS 20.1 Current Agricultural Product Information
AS 20.2 Top 10 Agricultural Products Bar Graphs and Pie Charts

Scoring Guide:

SG 20.2 Top 10 Agricultural Products Bar Graphs and Pie Charts

Instructor Preparation/Directions:

Part 1

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are also provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Before assigning this activity to students, check the web links provided to ensure they are still available and current.

3. Check to see if there is a student use policy at your school for using the network and Internet. Students and parents may have to sign a form that releases the students to use the network and Internet during class.

4. Discuss Internet cautions with the students before beginning this activity. Inform them not to provide any personal information over the Internet through chat rooms or other sites. Personal information includes full name, address, phone number, social security number, or picture. Check with your school for additional rules and regulations on Internet use.

5. Refer to AS 20.1 and discuss the requirements of the activity with students.

Activity-Part 1 Length: 100 min.

Part 2:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are also provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the graphs and charts software the students will be using for this activity. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 20.2. If available, provide related examples of exemplary work.

Activity-Part 2 Length: 200 minutes

Discussion Questions:

Part 1

1. What other criteria could be used to rank agricultural products?

   - Agricultural products can be ranked for importance by acreage in production, total yield, yield per acre, amount of exportation, consumption, etc.

2. What are the advantages of doing research on the web?

   - Web search engines are easy and powerful tools to use for finding a wide breadth of information very quickly.

   - Information on the web is easy to update and consequently is usually more current.

Part 2

1. What are some of the other applications for graphing agriculture-related data with a computer?

   - Some examples include graphing supply and demand, the commodities market, climatic trends, or comparing the difference in yields among corn varieties.

2. Why is learning to create graphs and charts beneficial?

   - It helps you prepare more effective presentations that include graphs as visual aids, publish research findings, and/or feel more comfortable and confident with using a computer.

Assessment:

AS 20.1 - Answers to the questions will vary based on the current U.S. Department of Agriculture and *Missouri Farm Facts* data. It is suggested that this activity sheet be graded before students go on to AS 20.2 of this activity.

AS 20.2 - Grade the students' graphs and charts using SG 20.2 located at the end of AS 20.2. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. Refer to Figures 20.1 and 20.2 for examples using data from the USDA and Figures 20.3 and 20.4 for examples using data from *Missouri Farm Facts*. To see the charts and graphs in color, open this activity file or Top 10 US Pie, Top 10 US Bar, and Missouri Charts (Excel files on the *Computer Lab Activities in Agriculture* CD-ROM).

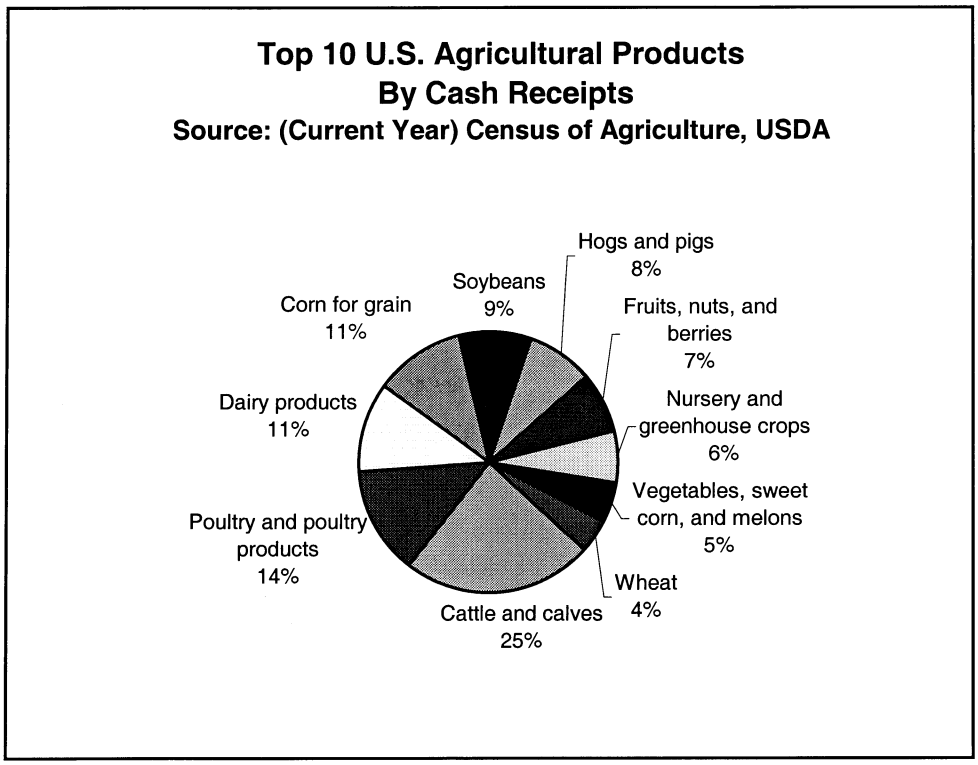


Figure 20.1 - Example U.S. top 10 products pie chart

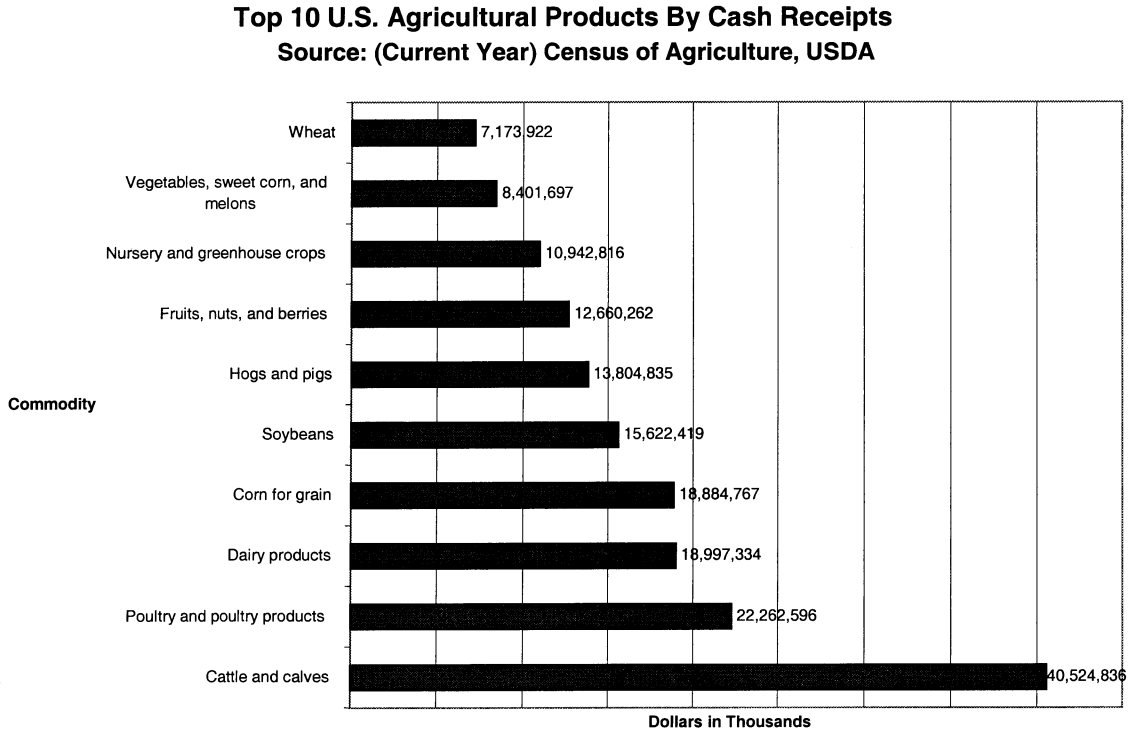


Figure 20.2 - Example U.S. top 10 products bar graph

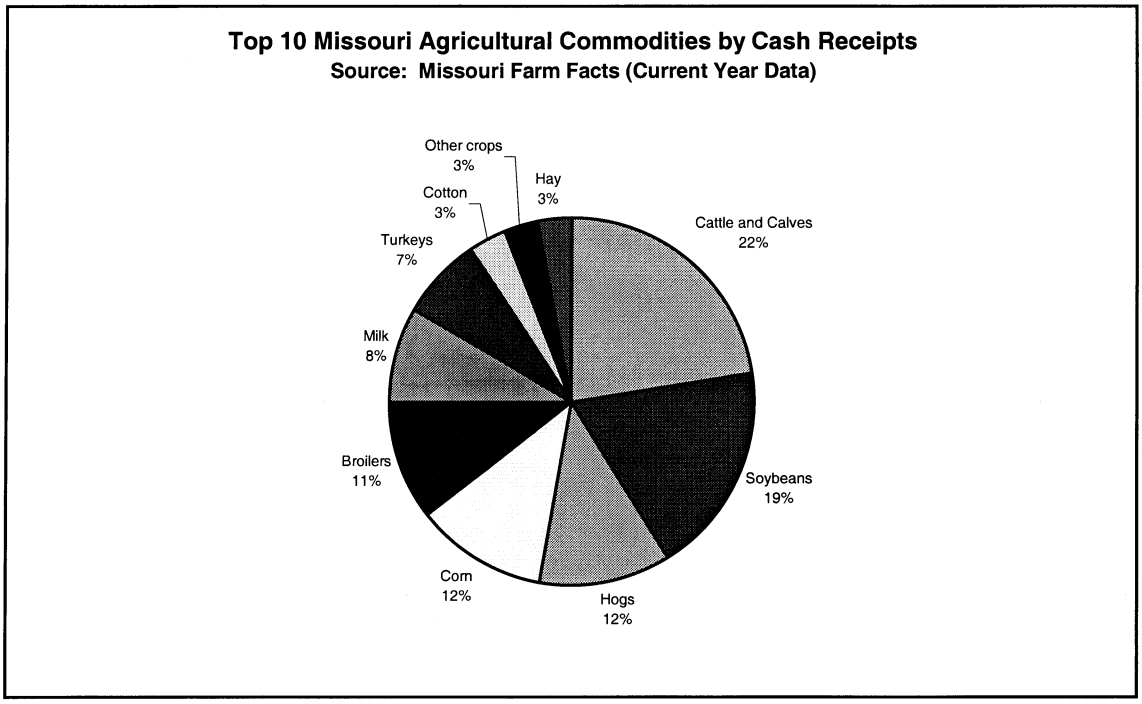


Figure 20.3 - Example Missouri top 10 products pie chart

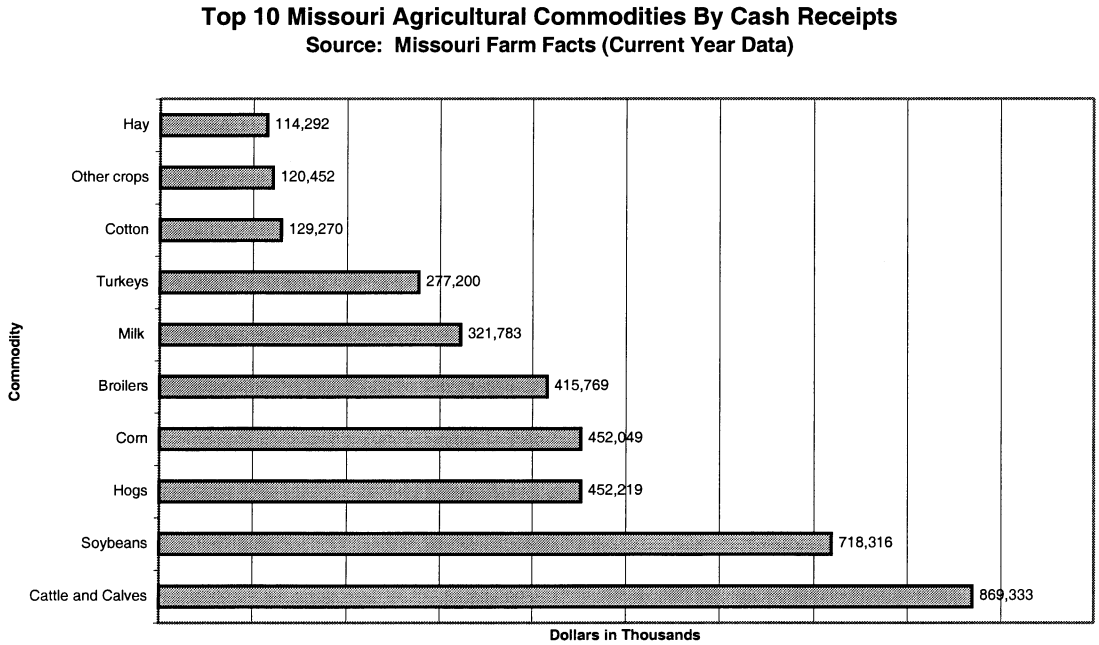


Figure 20.4 - Example Missouri top 10 products bar graph

Additional Activities:

1. Using the graphs and charts created in AS 20.2, have the students construct an informative bulletin board and display it in the school or some other public location. Additional graphical data involving the economic importance of the agricultural industry could also be presented.

2. Have students find the top five producing states for various commodities such as beef, swine, chicken, corn, wheat, soybeans, etc. Have them input the data and create graphs that compare each state's production.

Alternative Application:

Construct a graph that illustrates the principle of diminishing returns given a sample list of inputs and outputs and the prices of each. Place returns on the y-axis and inputs on the x-axis. See applicable curricula and competencies below.

Agricultural Management and Economics	A. 1. Determine the point of maximum profit.
Agribusiness Sales, Marketing, and Management	B. 2. Determine the point of maximum net returns (profit) given a sample list of inputs and outputs and the prices of each

Credits:

2000 Missouri Farm Facts. <http://agebb.missouri.edu/mass/farmfact/index.htm> October 19, 2000.

U.S. Department of Agriculture. National Agricultural Statistics Service (NASS). <http://www.usda.gov/nass/> October 19, 2000.

Student Activity Sheet
Current Agricultural Product Information

Name _____

Student Objectives:

1. Use the web to identify the current top 10 agricultural products by cash receipts in the United States.

2. Use the web to identify the current top 10 agricultural products by cash receipts in Missouri.

Equipment and Materials:

- Computer with Internet access

Procedure:

1. Access the National Agricultural Statistics Service (NASS) home page at <http://www.usda.gov/nass/> to find the top10 agricultural products in the United States.

2. Search the web site for the most current Census of Agriculture publication. Look for a breakdown of agricultural products within the United States as well as cash receipt data.

3. Use the most current cash receipt data to rank the products from 1 to 10 (1 being the most cash receipts and 10 being the least cash receipts). Record your findings in the table on the next page.

4. Access the Missouri Farm Facts web site at <http://agebb.missouri.edu/mass/farmfact/index.htm> to find the top 10 agricultural products in Missouri.

5. Search for cash receipts data for agricultural products in Missouri.

6. Rank Missouri's agricultural products from 1 to 10 (1 being the most cash receipts and 10 being the least cash receipts) using the most current cash receipt data available. Record your findings in the table on the next page.

7. Answer questions 1 and 2 below the table on the next page.

	United States		Missouri	
	Commodity	**Cash Value**	**Commodity**	**Cash Value**
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

1. How many of the top 10 agricultural products in the United States are produced in Missouri? Specify which ones.

_____

_____

2. What sources did you use? _____

_____

_____

Student Activity Sheet
Top 10 Agricultural Products Bar Graphs and Pie Charts

Name _____

Student Objective:

Prepare a graphical presentation of the current product information.

Equipment and Materials:

- Computer
- Software for graphs and charts (e.g., Excel, Lotus 1-2-3)
- SG 20.2 Top 10 Agricultural Products Bar Graphs and Pie Charts Scoring Guide
- Floppy disk
- Printer

Procedure:

1. Review SG 20.2 for the criteria you will be graded on.

2. Use the **national** data recorded in AS 20.1 to construct both a pie chart and a bar graph.

3. The first step is entering the commodities and cash values in a spreadsheet.

4. Use the software's "wizard" for charts, if available, to take you step-by-step through constructing the graphs and charts. See Figures 20.1 and 20.2 for example formats.

   Note: Some items may be edited after the chart or graph is finished. Try clicking on items to edit them.

5. Save the file often during the development process to a floppy disk or a location your instructor specifies.

6. Use the **Missouri** data to construct both a pie chart and a bar graph. When complete, you will have a pie chart and bar graph illustrating the national data and a pie chart and bar graph illustrating the state data.

7. Print the pie charts and bar graphs and write your name on the sheets.

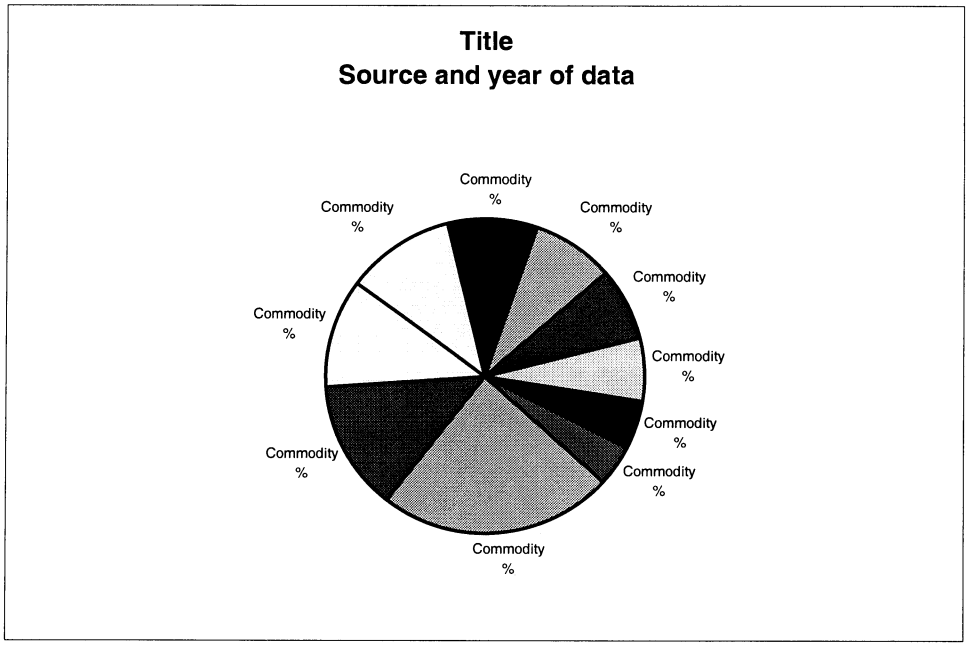


Figure 20.1- Example of pie chart

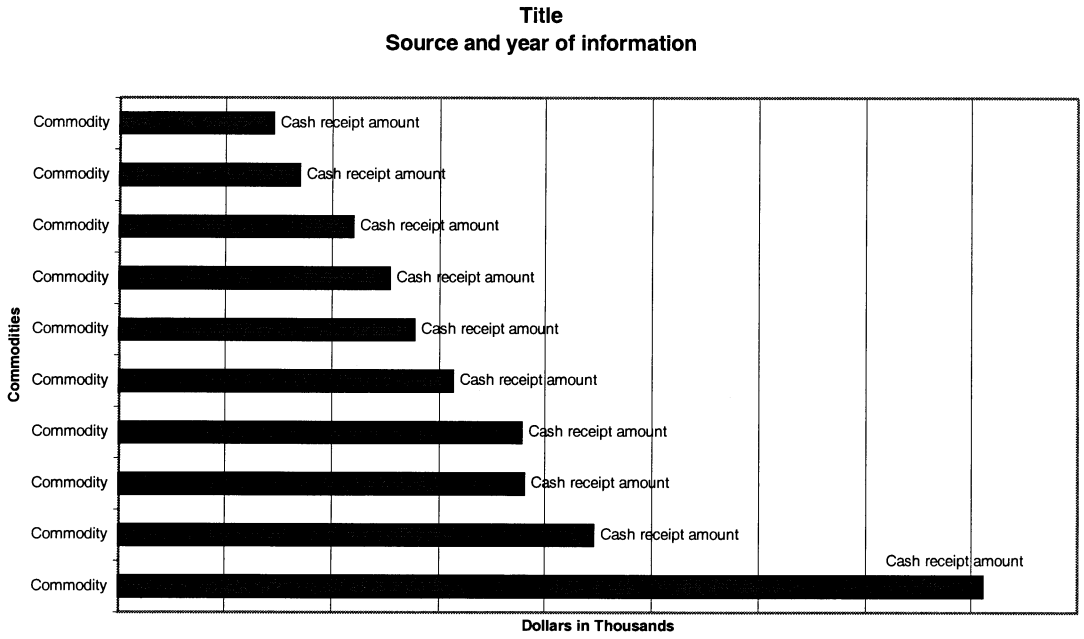


Figure 20.2 - Example of bar graph format

Top 10 Agricultural Products
Bar Graphs and Pie Charts Scoring Guide

Name _____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Font Appearance			
Meets all of the following criteria: 1. Readable (type style, size) 2. Eye appealing (compatible fonts) 3. Appropriately formatted (use of bold, italics, etc.)	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No grammar or spelling errors	A few minor errors that are not distracting	Numerous or distracting errors	
Colors or Fill Patterns			
Meet all of the following criteria: 1. Good contrast 2. Appropriate number of colors or fill patterns 3. Eye appealing	Meet two of the criteria	Meet one or none of the criteria	
Title Information			
Meets all of the following criteria: 1. Title accurate and complete 2. Contains information source 3. Contains year of information	Meets two of the criteria	Meets one or none of the criteria	
Content Accuracy			
All facts are correct	One or two facts are incorrect	Three or more facts are incorrect	
Organization			
Products listed in ascending or descending order	***	No apparent organization	
Content Completeness			
All 10 products provided in the following: U.S. pie chart	***	Fewer than 10 provided	
U.S. bar graph	***	Fewer than 10 provided	
MO pie chart	***	Fewer than 10 provided	
MO bar graph	***	Fewer than 10 provided	

Total points out of 20 _____

***No middle-ground criteria (either exemplary or needs work)

Activity 21

Emerging Agricultural Technologies

Curriculum Supported	Related Competencies
Exploring Agriculture in America	A. 5. Identify advances in agricultural technology and their implications. B. 5. Identify current and emerging technologies of plant agriculture. C. 4. Identify current and emerging technologies of animal agriculture.

Curriculum Reference:

Exploring Agriculture in America. Instructional Materials Laboratory: University of Missouri-Columbia, 2000.

Overview:

The Internet is a valuable resource when searching for the most current information on a given topic. In this activity, the web is used as a source to identify five emerging technologies in agriculture. Each of the technologies is described using information from the various web sites used in the search.

Activity Objective:

Identify and describe five emerging technologies in agriculture from research performed on the web.

Activity Sheet:

AS 21.1 Emerging Agricultural Technologies

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Before assigning this activity to students, check the web links provided to ensure they are still available and current.

3. Discuss with students how to evaluate a web site for reliability. Have them evaluate the following areas: accuracy and purpose of the content, author/sponsor credibility, currency of the information, and citations for resources used in developing the web site.

4. Check to see if there is a student use policy at your school for using the network and Internet. Students and parents may have to sign a form that releases the students to use the network and Internet during class.

5. Discuss Internet cautions with the students before beginning this activity. Inform them not to provide any personal information over the Internet through chat rooms or other sites. Personal information includes full name, address, phone number, social security number, or picture. Check with your school for additional rules and regulations on Internet use.

6. Review AS 21.1 with students to ensure they understand the activity.

Activity Length: 150 min.

Discussion Question:

What are the advantages of finding information about emerging technologies on the web?

- The most up-to-date information is available at a mouse click on the web.
- A vast amount of information can be accessed in a very short amount of time.
- Knowledge and experience with the web are skills that have become increasingly valuable to employers.

Assessment:

Answers to AS 21.1 will vary based on the technologies selected. See below for two example answers.

Example 1:

a. Describe an emerging technology.

One emerging technology is global positioning system (GPS). Satellites are used to pinpoint the location of objects (e.g., a tractor, car, combine) that have GPS receivers.

b. What is one way this technology is currently being applied?

Pioneer and DuPont are using GPS to implement precision farming methods. The technology allows producers to visually map the yields of a field so they can base management decisions upon this data. The yield is recorded with a yield monitor on the harvesting equipment and the GPS receiver/satellite partnership allows the data to be mapped.

c. Web site address for source:

I found this information at <http://www.pioneer.com/usa/technology/sitemap.htm>

Example 2:

a. Describe an emerging technology.

Another emerging technology is gene insertion or genetic manipulation. Beneficial genes from one species of plant are inserted into another plant to modify and improve its performance.

b. What is one way this technology is currently being applied?

Monsanto has inserted genes into cotton that make it resistant to Roundup. Roundup is a nonselective herbicide that will kill any plant. Monsanto has made this cotton immune to the effects of Roundup. Consequently, producers can spray the herbicide on their field of Roundup Ready Cotton at any time in the season and kill weeds and not cotton plants.

c. Web site address for source:

I found this information at:
<http://www.monsanto.co.uk/achievements/roundup_ready_cotton.html>

Additional Activities:

1. Have the students create a presentation about the technology from this activity that they are most interested in. The presentation could be a poster, PowerPoint presentation, or bulletin board.

2. In addition to finding factual information about emerging technologies, have students find several positive and negative opinions or aspects about each technology. Have them state their opinion as well.

Alternative Application:

This activity can also be used to support the following curricula and competencies.

Food Science and Technology	C. 5. Describe the role of biotechnology in the food industry.
Biotechnology: Applications in Agriculture	E. 2. Describe the process of embryo transfer. E. 3. Identify other applications of biotechnology in animals. F. 4. Identify emerging applications of biotechnology in plants.

Credits:

Exploring Agriculture in America (Student Reference). Instructional Materials Laboratory: University of Missouri-Columbia, 2000.

Monsanto, Inc.
<http://www.monsanto.co.uk/achievments/roundup_ready_cotton.html>
December 22, 2000.

Pioneer Hi-Bred International, Inc., Crop Management, Research & Technology.
<http://www.pioneer.com/usa/technology/sitemap.htm> December 22, 2000.

Student Activity Sheet
Emerging Agricultural Technologies

Name _____

Student Objective:

Identify and describe five emerging technologies in agriculture from research performed on the web.

Equipment and Materials:

- Computer with Internet access

Procedure:

1. Access a search engine such as Yahoo <http://www.yahoo.com> or Google <http://www.google.com> to search for information about five emerging technologies in agriculture. Use key words such as "biotechnology," "cloning," "genetically modified organisms," "nutraceuticals," "precision farming," etc.

2. Complete the questions on the next page using the web site references provided below or ones that were found while searching the Internet.

   - AgriInfo:< http://www.agriinfo.com/>
   - Monsanto: <http://www.monsanto.com>
   - Pioneer Hi-Bred International, Inc.: <http://www.pioneer.com/>
   - *Progressive Farmer* Magazine: <http://www.ProgressiveFarmer.com>
   - USDA Agricultural Biotechnology: <http://www.aphis.usda.gov/biotechnology/role.html>
   - USDA Agricultural Research Service: <http://www.ars.usda.gov/>
   - USDA Biotechnology Information Resource: <http://www.nal.usda.gov/bic/>

Questions:

1. a. Describe an emerging technology.

   b. What is one way this technology is currently being applied?

   c. Web site addresses of sources:

2. a. Describe an emerging technology.

   b. What is one way this technology is currently being applied?

   c. Web site addresses of sources:

3. a. Describe an emerging technology.

   b. What is one way this technology is currently being applied?

c. Web site addresses of sources:

4. a. Describe an emerging technology.

b. What is one way this technology is currently being applied?

c. Web site addresses of sources:

5. a. Describe an emerging technology.

b. What is one way this technology is currently being applied?

c. Web site addresses of sources:

Fish and Wildlife Management

Computer Lab Activities in Agriculture

Activity 22

Hunting and Fishing Seasons Timeline

Curriculum Supported	Related Competency
Fish and Wildlife Management	E. 1. Relate the reasons for fish and wildlife regulations and describe how they are made and enforced in Missouri.

Curriculum Reference:

Fish and Wildlife Management. Missouri Department of Conservation, University of Missouri-Columbia: Instructional Materials Laboratory, 1989.

Overview:

This activity provides experience in researching information about Missouri's hunting and fishing seasons on the web. In addition, the activity includes presenting the research in a chart/timeline using a word processing program.

Activity Objectives:

1. Develop a chart/timeline for hunting and fishing seasons using information from the web.

2. Describe the advantages of using a word processing program to display information.

Activity Sheet:

AS 22.1 Hunting and Fishing Seasons Timeline

Scoring Guide:

SG 22.1 Hunting and Fishing Seasons Timeline

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Before assigning this activity to students, check the web link provided to ensure it is still available and current.

3. Check to see if there is a student use policy at your school for using the network and Internet. Students and parents may have to sign a form that releases the students to use the network and Internet during class.

4. Discuss Internet cautions with the students before beginning this activity. Inform them not to provide any personal information over the Internet through chat rooms or other sites. Personal information includes full

name, address, phone number, social security number, or picture. Check with your school for additional rules and regulations on Internet use.

5. Familiarize yourself with the word processing software the students will be using for this activity, specifically the procedures and formatting options for creating a table. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

6. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 22.1. If available, provide related examples of exemplary work.

Activity Length: 100 min.

Discussion Question:

How is learning to present information effectively with a word processing program beneficial?

- Using a word processing program to present information provides legibility and the flexibility to manipulate, organize, and format information in numerous ways.

- These features can be used to present the information in the most effective way for the audience.

- Learning how to use word processing programs to effectively present information is a skill required for many future occupations.

Assessment:

Grade the students' charts based on SG 22.1 located at the end of AS 22.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. Refer to Figure 22.1 for a completed chart. The students may display the data in different ways and use different colors and shading. To see the chart in color, open this activity file on the *Computer Lab Activities in Agriculture* CD-ROM.

HUNTING AND FISHING SEASONS
(Missouri 2000-2001)

HUNTING			
Species	**Opening Date**	**Closing Date**	**Bag/Creel Limits**
Bullfrogs	June 30, 2000	October 31, 2001	8/day
Quail	November 1, 2000	January 15, 2001	8/day
Rabbits (cottontail and swamp)	October 1, 2000	February 15, 2001	6/day (including not more than 2 swamp)
FISHING			
Northern pike	Open all year	Open all year	1/day
Paddlefish	Open all year	Open all year	10/day

Source: Missouri Department of Conservation, *Wildlife Code of Missouri*

Figure 22.1 - Example of hunting and fishing chart/timeline

Additional Activity:

Have students include additional information in the chart created during this activity. For example they could include information about harvesting methods (e.g., shotgun, rifle, trotline) or other special regulations that may apply in their part of the state.

Alternative Applications:

1. Have students find the state-endangered fish, reptiles, birds, and mammals in their county. To find the information, have them access the MDC home page, click on the Nature link, Endangered Species link, then State endangered animal species in the MOFWIS database link. Have them create a chart with the information. See applicable curriculum and competency below.

Fish and Wildlife Management	A. 1. Define and describe natural resource conservation.

2. Create a chart containing information (e.g., birthing characteristics, birth weights, foraging habits) about the different breeds of livestock. See applicable curricula and competencies below.

Agricultural Science I, *Introduction to Beef Production*	F. 2. Identify the major beef breeds and their significance to the beef industry.
Agricultural Science I, *Introduction to Swine Production*	G. 2. Identify the major swine breeds and their significance in the industry.
Agricultural Science I, *Introduction to Dairy Production*	I. 2. Identify the major dairy breeds in Missouri and their significance to the dairy industry.

Credits:

Fish and Wildlife Management (Student Reference). Missouri Department of Conservation, University of Missouri-Columbia: Instructional Materials Laboratory, 1989.

MDC online, Missouri Department of Conservation. <http://www.conservation.state.mo.us/> October 13, 2000.

Student Activity Sheet
Hunting and Fishing Seasons Timeline

Name: _____

Student Objectives:

1. Develop a chart/timeline for hunting and fishing seasons using information from the web.

2. Describe the advantages of using a word processing program to display information.

Equipment and Materials:

- Computer with Internet access
- Word processing program (e.g., Word, WordPerfect)
- SG 22.1 Hunting and Fishing Seasons Timeline Scoring Guide
- Floppy disk
- Printer

Procedure:

1. Refer to SG 22.1 for the criteria you will be graded on.

2. Access *MDC online*, Missouri Department of Conservation's web site, at <http://www.conservation.state.mo.us/>. Once on the web page, click on the Seasons and Regulations link.

3. Click on the *Wildlife Code of Missouri* link and find the opening and closing dates for hunting season and the creel/bag limits for the following species.
   - Bullfrogs
   - Quail
   - Rabbits (cottontail and swamp)
   - Northern pike
   - Paddlefish

4. Use the information found in step 3 to produce a chart/timeline that displays the information. See Figure 22.1 for an example of the 2000-2001 data for a few other species.

5. In your word processing program, click on the table function and insert a table. If you cannot find the table function, try using the help function for assistance.

6. Enter the number of columns and row you want in the table. The example in Figure 22.1 uses four columns and nine rows.

HUNTING AND FISHING SEASONS (Missouri 2000-2001)			
HUNTING			
Species	**Opening Date**	**Closing Date**	**Bag/Creel Limits**
Turkey (fall firearms)	October 9, 2000	October 22, 2000	2 turkeys (either sex), 1/week
Squirrels	May 27, 2000	January 15, 2001	6/day
Ruffed grouse	October 15, 2000	January 15, 2001	2/day
FISHING			
Channel catfish	Open all year	Open all year	10/day
Source: Missouri Department of Conservation, *Wildlife Code of Missouri*			

Figure 22.1 - Example of table containing information for hunting and fishing seasons

7. Begin to enter the information. To eliminate the columns in a row, select the row, right-click, and select Join or Merge Cells. To give emphasis to certain areas, add color or shading.

8. Save often during the development of your chart to a floppy disk or a location your instructor specifies.

9. Be sure to include the source for the information in the chart.

10. Print your chart when it is complete and write your name on the sheet.

Hunting and Fishing Seasons Timeline
Scoring Guide

Name _____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Font Appearance			
Meets all of the following criteria: 1. Readable (type style, size) 2. Eye appealing (compatible fonts) 3. Appropriately formatted (use of bold, italics, etc.)	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No grammar or spelling errors	A few minor errors that are not distracting	Numerous or distracting errors	
Colors			
Meet all of the following criteria: 1. Good contrast 2. Appropriate number of colors 3. Eye appealing	Meet two of the criteria	Meet one or none of the criteria	
Content Accuracy			
All facts are correct	One or two facts are incorrect	Three or more facts are incorrect	
Content Organization			
Well organized (information is consistently presented)	Not completely organized	Poorly organized	
Content Completeness			
All required information is present	One or two pieces of information are missing	Three or more pieces of information are missing	
Source			
Source is cited	***	Source is missing or incorrect	

Total points out of 14 _____

***No middle-ground criteria (either exemplary or needs work)

Activity 23

White-tailed Deer Timeline

Curricula Supported	Related Competencies
Fish and Wildlife Management	D. 2. Outline the life history of the white-tailed deer.
Agricultural Science II, *Leadership II*	5. Prepare and deliver a presentation.

Curricula References:

Fish and Wildlife Management. Missouri Department of Conservation and University of Missouri-Columbia: Instructional Materials Laboratory, 1989.

Leadership and Personal Development. University of Missouri-Columbia: Instructional Materials Laboratory, 1991.

Overview:

Part 1 of this activity provides experience in researching white-tailed deer and producing a timeline of seasonal events using a word processing program. Part 2 of this activity provides experience in creating a timeline presentation and delivering the presentation using presentation software.

Activity Objectives:

1. Develop a timeline of seasonal events for the white-tailed deer. (Part 1)

2. Prepare and deliver a presentation of the white-tailed deer timeline of events. (Part 2)

Activity Sheets:

AS 23.1 White-tailed Deer Timeline
AS 23.2 White-tailed Deer Timeline Presentation

Scoring Guides:

SG 23.1 White-tailed Deer Timeline
SG 23.2 White-tailed Deer Timeline Presentation

Instructor Preparation/Directions:

Part 1

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the word processing software the students will be using for this activity and have a user's manual for the software

available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 23.1 located at the end of AS 23.1. If available, provide related examples of exemplary work.

4. Order *Missouri Whitetails: A Management Guide for Landowners and Deer Enthusiasts* and *The Missouri Deer Game* from the Missouri Department of Conservation. Their contact information is 1110 S. College Dr., Columbia, MO 65201 (573) 882-9880. The publications are free.

Activity-Part 1 Length: 150 min.

Part 2

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the presentation software the students will be using for this activity and have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. For help in scanning photographs, refer to the operator's manual for the scanner.

4. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 23.2. If available, provide related examples of exemplary work.

Activity-Part 2 Length: 300 minutes

Discussion Questions:

Part 1

1. What are the advantages of knowing the life cycles of certain fish/wildlife?

   - Landowners can use this information to create wildlife management plans or to plan farming practices around certain life-cycle events to benefit the wildlife (e.g., controlled burns, haying, harvesting).

   - Knowing this information will lead to a better understanding of why hunting and fishing seasons are timed as they are.

2. What are the advantages of using word processing software effectively?

   - Word processing software is commonly used in today's workplace and being able to use it effectively will make you a competitive candidate for employment.

- Ideas can be communicated in a much faster, more flexible, and clearer fashion with word processing software.

Part 2

1. What are the different types of audiences that this presentation could interest?

   - One example is to present this slide show to a group of individuals interested in learning about wildlife management.

2. How is preparing a presentation beneficial?

   - These types of presentations are commonplace among professionals in many fields. The creation of this presentation provides you with practice and gives you a basic idea of how to effectively produce a slide presentation.

3. How is delivering a presentation beneficial?

   - The ability to prepare and deliver a presentation is very useful because leadership skills are highly valued in the professional world. The ability to deliver an effective presentation improves your leadership skills.

Assessment:

AS 23.1 - Grade the students' projects using SG 23.1 located at the end of AS 23.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. To see the example timeline in color, view this activity file on the *Computer Lab Activities in Agriculture* CD-ROM.

AS 23.2 - Grade the students' projects using SG 23.2 located at the end of AS 23.2. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. For an example presentation, view the Whitetail Events_presentation file, a PowerPoint file on the *Computer Lab Activities in Agriculture* CD-ROM.

Alternative Application:

Choose another species of wildlife and create another timeline and presentation. See the applicable curriculum and competencies below.

Fish and Wildlife Management	D. 1. Outline the life history of the bobwhite quail. D. 3. Outline the life history of the largemouth bass. D. 4. Outline the life history of the bald eagle.

Credits:

Beringer, Jeff, Lonnie P. Hansen. *Missouri Whitetails: A Management Guide for Landowners and Deer Enthusiasts*. Missouri Department of Conservation, 1997.

Fish and Wildlife Management (Student Reference). Missouri Department of Conservation and University of Missouri-Columbia: Instructional Materials Laboratory, 1989.

Pyland, Jim. *The Missouri Deer Game*. Missouri Department of Conservation, 1992.

Student Activity Sheet
White-tailed Deer Timeline

Name _____

Student Objective:

Develop a timeline of seasonal events for the white-tailed deer.

Equipment and Materials:

- Computer
- Word processing software (e.g., Word, WordPerfect)
- SG 23.1 White-tailed Deer Timeline Scoring Guide
- Floppy disk
- Printer

References:

Beringer, Jeff, Lonnie P. Hansen. *Missouri Whitetails: A Management Guide for Landowners and Deer Enthusiasts*. Missouri Department of Conservation, 1997.

Fish and Wildlife Management. Missouri Department of Conservation and University of Missouri-Columbia: Instructional Materials Laboratory, 1989.

Pyland, Jim. *The Missouri Deer Game*. Missouri Department of Conservation, 1992.

Procedure:

1. Refer to SG 23.1 at the end of this activity sheet for the criteria you will be graded on.

2. Using the references listed above, research and record information about the following categories for each season of the year in the life of a white-tailed deer.
   - Feeding habits
   - Reproductive cycles
   - Other information (e.g., growth/development events, molting, habitat)

3. Use this information to create a timeline in a word processing program. See Figure 23.1, a seasonal timeline of events for the bobwhite quail, for a formatting idea. Use this format or design your own.

   Note: The timeline in Figure 23.1 was created by using the line tool to draw the actual timeline and then textboxes were inserted where text is needed.

4. Save often during the development process to a floppy disk or a location your instructor specifies.

Timeline for the Bobwhite Quail

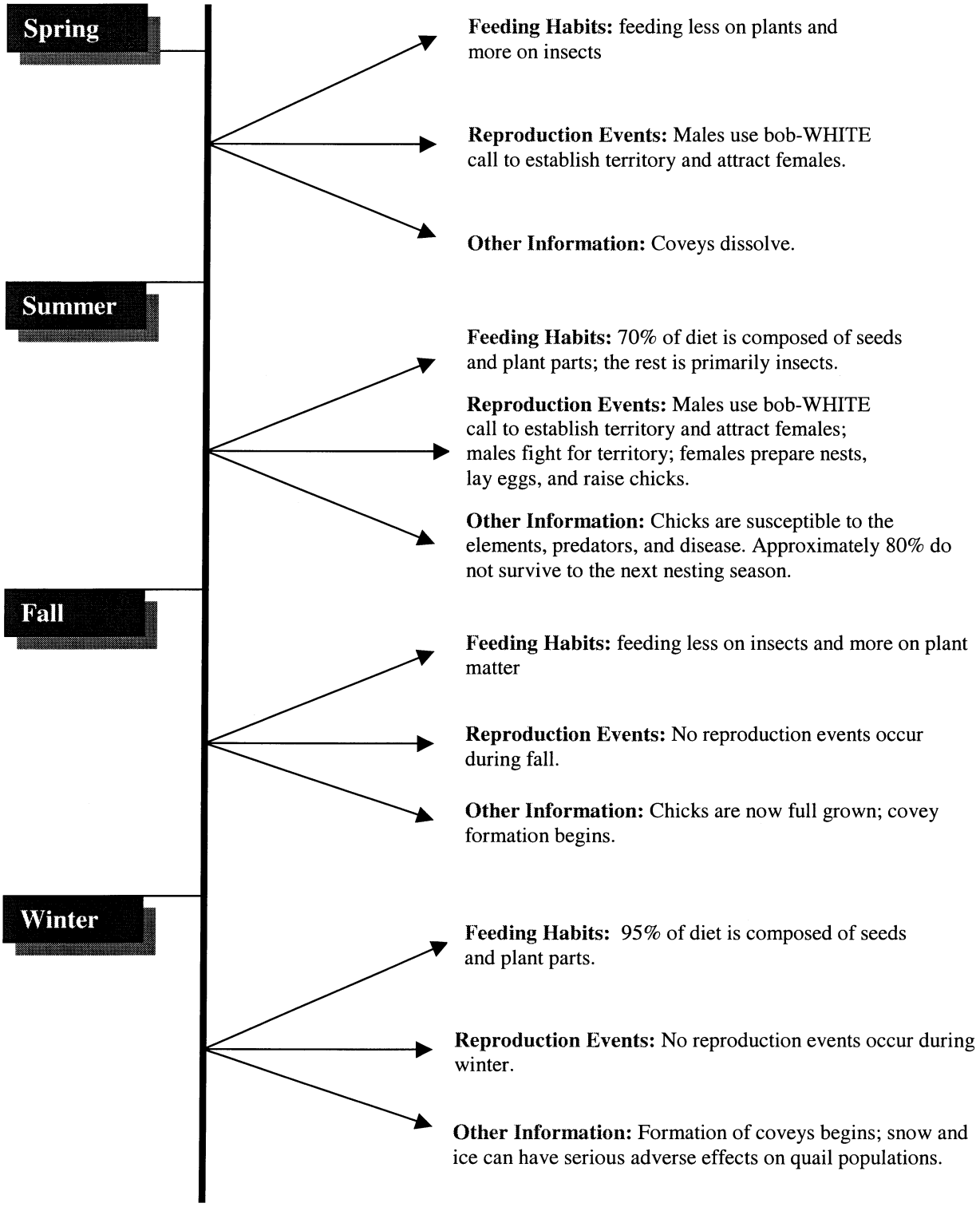


Figure 23.1 - Example of timeline

5. Divide the timeline into the four seasons (spring, summer, fall, winter). For each season include the information about feeding habits, reproductive cycles, and other information listed in step 2.

6. When the timeline is complete, print the timeline and write your name on it.

7. Write the author, title, and year of the references you used for the information on the front or back of the timeline.

White-tailed Deer Timeline Scoring Guide

Name _____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Font Appearance			
Meets all of the following criteria: 1. Readable (type style, size) 2. Eye appealing (compatible fonts) 3. Appropriately formatted (use of bold, italics, etc.)	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No grammar or spelling errors	A few minor errors that are not distracting	Numerous or distracting errors	
Colors			
Meet all of the following criteria: 1. Good contrast 2. Appropriate number of colors 3. Eye appealing	Meet two of the criteria	Meet one or none of the criteria	
Content Accuracy			
All facts are correct	One or two facts are incorrect	Three or more facts are incorrect	
Content Organization			
Well organized (information is consistently presented)	Not completely organized	Poorly organized	
Content Completeness			
All elements are present	One or two elements are missing	Three or more elements are missing	
Sources			
Sources are cited	***	Sources are missing	

Total points out of 14 _____

***No middle-ground criteria (either exemplary or needs work)

Student Activity Sheet
White-tailed Deer Timeline Presentation

Name _____

Student Objective:

Prepare and deliver a presentation of the white-tailed deer timeline of events.

Equipment and Materials:

- Computer
- Scanner
- Books or magazines with pictures of white-tailed deer
- Presentation software (e.g., PowerPoint, Corel Presentations)
- SG 23.2 White-tailed Deer Timeline Presentation Scoring Guide
- Whitetail Events_blank template (PowerPoint file)
- Floppy disk

Procedure:

1. Refer to SG 23.2 at the end of this activity sheet for the criteria you will be graded on.

2. Using the information from your white-tailed deer timeline (AS 23.1), create six slides using the blank PowerPoint template (provided on the CD-ROM) or a design of your own.

3. Save the file often during the development to a floppy disk or a location your instructor specifies.

4. On the first slide, include the title and your name.

5. The next four slides represent each season. Include the information gathered for AS 23.1 for each season.

6. On each of these slides insert an image of a white-tailed deer. Try to find images of whitetails that match that season (e.g., for the fall season find an image of bucks fighting or for the summer find an image of a newborn fawn).

   Note: Convert graphic files to the JPEG format with a resolution of 72 dpi (dots per inch), which is standard screen resolution. This format has a relatively smaller file size, which allow for faster loading time.

7. On the remaining slide, include a bibliography of the sources used for the information.

8. When your presentation is complete, test it on the hardware you will be using to ensure there are no technical problems.

9. Give an oral presentation of your slide show to the class.

White-tailed Deer Timeline Presentation Scoring Guide

Name _____

Exemplary--2 pts.	Acceptable--1 pt.	Needs Work--0 pts.	Pts.
Font Appearance			
Meets all of the following criteria: 1. Readable (type style, size) 2. Eye appealing (compatible fonts) 3. Appropriately formatted (use of bold, italics, etc.)	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No grammar or spelling errors	A few minor errors that are not distracting	Numerous or distracting errors	
Colors			
Meet all of the following criteria: 1. Good contrast 2. Appropriate number of colors 3. Eye appealing	Meet two of the criteria	Meet one or none of the criteria	
Content Accuracy			
All facts are correct	One or two facts are incorrect	Three or more facts are incorrect	
Content Organization			
Well organized (information is consistently presented)	Not completely organized	Poorly organized	
Content Completeness			
All elements are present	One or two elements are missing	Three or more elements are missing	
Transitions			
Each meet all of the following criteria: 1. Keep viewers' attention 2. Help the flow 3. Consistently used	Meet three of the criteria	Meet two or none of the criteria	
Animation			
Meets all of the following criteria: 1. Helps the flow 2. Timing is effective 3. Keeps viewers' attention	Meets two of the criteria	Meets one or none of the criteria	
Navigational Aids			
Buttons work on all slides	Buttons work on 12 out of 14 slides	Buttons work on 11 or fewer slides	
Images			
Meet all of the following criteria: 1. Represent content 2. Good quality (good resolution, clear) 3. Appropriate size	Meet two of the criteria	Meet one or none of the criteria	
Bibliography			
All sources are listed and include the following elements: title, author/publisher, and date	All sources are listed but two elements are missing	No sources are listed or more than two elements are missing	
Presentation Delivery			
Enthusiastic throughout	Enthusiastic most of the time	Enthusiastic rarely	
Stands erect on both feet throughout	Stands erect on both feet most of the time	Stands erect rarely	
Maintains good eye contact throughout	Maintains good eye contact most of the time	Maintains good eye contact rarely	
Maintains good volume and tone throughout	Maintains good volume and tone most of the time	Maintains good volume and tone rarely	
Uses appropriate gestures to emphasize key points throughout	Uses appropriate gestures to emphasize key points most of the time	Uses appropriate gestures to emphasize key points rarely	

Total points out of 32 _____

Food Science and Technology

Computer Lab Activities in Agriculture

Activity 24

Consumer Food Preferences

Curriculum Supported	Related Competency
Food Science and Technology	D. 1. Describe the factors that affect consumer choices of food.

Curriculum Reference:

Food Science and Technology, University of Missouri-Columbia: Instructional Materials Laboratory, 1994.

Overview:

This activity includes predicting the results of a consumer food preference survey, conducting the survey, entering the survey results in a database, and comparing the predictions with the actual results. It provides experience with working in a database and identifying factors that affect consumers' food preferences.

Activity Objective:

Use a database to analyze data to determine consumer food preference.

Activity Sheet:

AS 24.1 Consumer Food Preferences

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the spreadsheet software the students will be using for this activity, specifically the procedures for entering data and creating formulas. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review the Pre-survey and Post-survey Questions with the students and ensure they understand the activity. In the Pre-survey Questions, the students make inferences as to how they think consumers will respond. In the Post-survey Questions, the students determine if their predictions were correct and analyze why or why not.

Activity Length: 200 minutes

Discussion Questions:

1. How does a spreadsheet program assist in analyzing data?

   - A spreadsheet ensures accurate and efficient calculation of numbers.
   - The data can easily be entered and changed, and each time the spreadsheet automatically and accurately calculates new totals.
   - Spreadsheets can be saved and customized to fit your particular needs.

2. Why is creating and using a spreadsheet valuable?

   - Computer skills are becoming increasingly valuable to employers in today's workplace. Having the ability to use computer spreadsheets increases the marketability of an individual seeking employment.
   - The record-keeping and calculating ability of spreadsheets can save you time.

Assessment:

Answers to the Pre-survey and Post-survey Activity Questions will vary.

Additional Activities:

1. Using the data compiled in the survey, create a chart in a computer program for graphs and charts. A pie chart can effectively illustrate how the consumers rated the products and is a good choice to represent the results from the survey.

2. Have the students survey customers at local restaurants. They could work with the business owners to see what they would like to know from the customers. The students could then make up a chart of the items the business owners want to measure in the survey.

3. Have the students survey FFA members to determine their participation in the chapter. They could determine why the students participate in activities and why they do not. The results could help the chapter identify the most and least favorite activities and provide ideas to improve activities and in turn increase participation.

Credit:

Food Science and Technology (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 1994.

Student Activity Sheet
Consumer Food Preferences

Name: _____

Student Objective:

Use a database to analyze data to determine consumer food preference.

Equipment and Materials:

- Computer
- Spreadsheet program (e.g., Excel, Lotus 1-2-3)
- Consumer food preferences_template (Excel file)
- Floppy disk
- Printer

Procedure:

1. Review the Consumer Food Preferences Survey to identify the types of questions that will be asked.

2. Complete the Pre-survey Questions and predict the results of the survey.

3. Use the Consumer Food Preferences Survey to interview 25 people. These interviewees can be teachers, parents, grandparents, neighbors, or peers. Inform the interviewees that the survey will only take about 5-7 minutes of their time.

4. When the survey is complete, open the consumer food preferences_template file. This file contains the categories and formulas to calculate percentages. See Figure 24.1 for a portion of the file.

   Note: If you cannot use this file, create a spreadsheet similar to Figure 24.1. The spreadsheet should contain the product, the totals from the survey, and the percent of people surveyed that chose the item. To calculate the percentages, you will also need to insert formulas into the spreadsheet.

5. Enter the data into the spreadsheet program and determine the percent of people that chose the food item and why.

6. After the information is tallied and the spreadsheet is complete, save it to a floppy disk as "consumer food preferences" and print a copy. Write your name on the spreadsheet.

7. Complete the Post-survey Questions and determine if your predictions are correct and analyze why or why not.

	A	B	C	D	E	F	G	H
1	**Consumer Food Preferences**							
2								
3	Product		Totals	%		Reason	Totals	%
4	**Meat**					Sensory attributes	8	32%
5		Poultry	17	68%		Convenience	1	4%
6		Beef	6	24%		Price	2	8%
7		Pork		0%		Packaging		0%
8		Lamb		0%		Nutritional value	14	56%
9		Fish	2	8%		Culture		0%
10		Other		0%		Religion		0%
11						Other		0%
12								
13	**Milk**					Sensory attributes		
14		Skim				Convenience		
15		1%				Price		
16		2%				Packaging		
17		Whole				Nutritional value		
18		Chocolate				Culture		
19		Other				Religion		
20						Other		

Example: Cell H4 contains the formula G4/25 to calculate the percentage

Figure 24.1- Portion of consumer food preferences database

Pre-survey Questions

Name: _____

Answer the following questions to predict how the consumers you plan to survey will respond. Check one answer only for each question.

1. Which type of meat is the most popular among the consumers you plan to survey?

   Poultry _____
   Beef _____
   Pork _____
   Lamb _____
   Fish _____
   Other (specify) _____

2. Using your answer to question 1, why will they choose this particular meat?

   Sensory attributes (taste, smell, and appearance) _____
   Convenience _____
   Price _____
   Packaging _____
   Nutritional value _____
   Culture _____
   Religion _____
   Other (specify) _____

3. Which type of milk is most popular among the consumers you plan to survey?

   Skim _____
   1% _____
   2% _____
   Whole _____
   Chocolate _____
   Other (specify) _____

4. Using your answer to question 3, why will they choose this particular milk?

   Sensory attributes (taste, smell, and appearance) _____
   Convenience _____
   Price _____
   Packaging _____
   Nutritional value _____
   Culture _____
   Religion _____
   Other (specify) _____

5. Which type of breakfast cereal is most popular among the consumers you plan to survey?

Oatmeal _____
Cold cereal (sweetened) _____
Cold cereal (unsweetened) _____
Other (specify) _____

6. Using your answer to question 5, why will they choose this particular type of breakfast cereal?

Sensory attributes (taste, smell, and appearance) _____
Convenience _____
Price _____
Packaging _____
Nutritional value _____
Culture _____
Religion _____
Other (specify) _____

7. What is the preferred form of fruit of the consumers you plan to survey?

Fresh _____
Dried _____
Canned _____
Frozen _____
Other (specify) _____

8. Using your answer to question 7, why will they choose to eat fruit in this form?

Sensory attributes (taste, smell, and appearance) _____
Convenience _____
Price _____
Packaging _____
Nutritional value _____
Culture _____
Religion _____
Other (specify) _____

Consumer Food Preferences Survey

Check one answer only for each question.

1. Which type of meat do you prefer?

   Poultry _____
   Beef _____
   Pork _____
   Lamb _____
   Fish _____
   Other (specify) _____

2. What is the main reason for your meat choice?

   Sensory attributes (taste, smell, and appearance) _____
   Convenience _____
   Price _____
   Packaging _____
   Nutritional value _____
   Culture _____
   Religion _____
   Other (specify) _____

3. Which type of milk do you prefer?

   Skim _____
   1% _____
   2% _____
   Whole _____
   Chocolate _____
   Other (specify) _____

4. What is the main reason for your milk choice?

   Sensory attributes (taste, smell, and appearance) _____
   Convenience _____
   Price _____
   Packaging _____
   Nutritional value _____
   Culture _____
   Religion _____
   Other (specify) _____

5. Which type of breakfast cereal do you prefer?

Oatmeal _____
Cold cereal
(sweetened) _____
Cold cereal
(unsweetened) _____
Other (specify) _____

6. What is the main reason for your cereal choice?

Sensory attributes (taste,
smell, and appearance) _____
Convenience _____
Price _____
Packaging _____
Nutritional value _____
Culture _____
Religion _____
Other (specify) _____

7. In what form do you prefer to eat fruit?

Fresh _____
Dried _____
Canned _____
Frozen _____
Other (specify) _____

8. What is the main reason for your fruit choice?

Sensory attributes (taste,
smell, and appearance) _____
Convenience _____
Price _____
Packaging _____
Nutritional value _____
Culture _____
Religion _____
Other (specify) _____

Post-survey Questions

Name: _____

Answer the following questions based on the information you received from consumers on the survey.

1. Were your predictions correct about which type of meat is the most popular among consumers? Why or why not?

2. Were your predictions correct about the main reason consumers chose a particular meat? Why or why not?

3. Were your predictions correct about which type of milk is the most popular among consumers? Why or why not?

4. Were your predictions correct about the main reason consumers chose a certain type of milk? Why or why not?

5. Were your predictions correct about which type of cereal is the most popular among consumers? Why or why not?

6. Were your predictions correct about the main reason consumers chose a certain type of cereal? Why or why not?

7. Were your predictions correct about the form in which consumers prefer to eat fruit? Why or why not?

8. Were your predictions correct about the main reason consumers prefer to eat fruit in a certain form? Why or why not?

Forest Management

Computer Lab Activities in Agriculture

Activity 25

Board Feet of Standing Timber

Curriculum Supported	Related Competencies
Forest Management	C. 4. Estimate diameter at breast height, merchantable height, and basal area per acre. C. 7. Estimate the volume of standing timber.

Curriculum Reference:

Forest Management. Missouri Department of Conservation. University of Missouri-Columbia: Instructional Materials Laboratory, 1991.

Overview:

In this activity, the board feet of standing timber for 1 acre is recorded and calculated using a spreadsheet program. Spreadsheet software is extremely efficient for calculating large amounts of data. This type of software is widely used in a large variety of occupations.

Activity Objective:

Use a spreadsheet to calculate board feet in standing timber.

Activity Sheet:

AS 25.1 Board Feet of Standing Timber

Scoring Guide:

SG 25.1 Board Feet of Standing Timber

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the spreadsheet software the students will be using for this activity, specifically the procedures for entering data and creating formulas. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 25.1. If available, provide related examples of exemplary work.

4. Ensure that the students know how to cruise timber and have cruising sticks. To obtain cruising sticks, check with the nearest Missouri Department of Conservation office or a local forester.

Activity Length: 200 min.

Discussion Questions:

1. What are possible uses for spreadsheet software?

   - Some examples include economists entering price data, a wildlife biologist entering data from research on white-tailed deer, a homeowner keeping track of bills, or an animal scientist keeping track of the daily weight gains of livestock.

   - Any occupation in which numbers are used can benefit from using this type of software.

2. How can becoming adept at using spreadsheet software be beneficial?

   - Spreadsheet software can calculate large amounts of data with great speed and accuracy.

   - Spreadsheet software is a good tool for tracking and organizing financial records.

Assessment:

Grade the students' spreadsheets based on SG 25.1 located at the end of AS 25.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria. For an example spreadsheet, view Board Feet, an Excel file on the *Computer Lab Activities in Agriculture* CD-ROM.

Additional Activity:

Have students create a spreadsheet that can calculate the cost of a project based on the amount and cost of materials. Use a student's shop project (or a fictitious project) of either metal or wood and measure the amount of material required to build it. For wood, calculate board feet or for metal, calculate feet of material used. Then figure out the current prices for the material being used (e.g., price/board foot, price/foot). Create a spreadsheet that converts the amount of material to cost of material. This can be done by creating a formula in the spreadsheet that multiplies the cost of material by the amount of material. Enter the data from the project into the spreadsheet and the cost of materials should result.

Alternative Application:

Develop and use a spreadsheet to keep track of monthly and yearly financial records such as cash flow, bills, savings, etc. The spreadsheet could calculate profits, savings, receipts, and expenditures. See applicable curriculum and competencies below.

Agricultural Management and Economics	B. 6. Explain the importance of agribusiness records.
Agribusiness Sales, Marketing, and Management	C. 1. Explain how to manage financial resources.

Credit:

Forest Management (Student Reference). Missouri Department of Conservation. University of Missouri-Columbia: Instructional Materials Laboratory, 1991.

Student Activity Sheet
Board Feet of Standing Timber

Name _____

Student Objective:

Use a spreadsheet to calculate board feet in standing timber.

Equipment and Materials:

- Cruising stick
- Clipboard and paper to record board feet data
- Computer
- Spreadsheet software (e.g., Excel, Lotus 1-2-3)
- SG 25.1 Board Feet of Standing Timber Spreadsheet Scoring Guide
- Floppy disk
- Printer

Procedure:

1. Refer to SG 25.1 for the criteria you will be graded on.

2. Mark off a 1/10-acre plot (66 ft x 66 ft) in a stand of timber. Designate and number the trees to be logged (e.g., 1-15).

3. Using a cruising stick, cruise the timber and calculate board feet numbers for the designated trees. Refer to the International Log Rule scale on the cruising stick for the board feet figures. Record and save these numbers.

4. Set up columns and headers in a spreadsheet that will calculate the total board feet for the 1/10-acre plot as well as for 1 acre. See Figure 25.1 for an example of how to organize it.

Spreadsheet for Calculating Board Feet of Standing Timber

	Tree Species					
Tree Number	Black Oak	White Oak	Pine	Hickory	Other	
1	74					
2		677				
3			175			
4				129		
5			134			
6		406				
7	112					
8	59					
9					585	
10				226		Sum of Board Feet for 1/10th Acre
Subtotals	245	1083	309	355	585	2577
						Total Board Feet/1 Acre
						25770

Figure 25.1 - Example of spreadsheet to calculate board feet in standing timber

5. Save the file often during development to a floppy disk or location your instructor specifies.

6. Initiate the formula function in your program and enter the following formulas to perform the calculations:

   - Formulas that total the board feet for each species of tree
   - A formula that sums the board feet totals for each species of tree (board feet estimate for 1/10-acre plot)
   - A formula that converts the 1/10-acre total to a 1-acre total

   Once the formulas are put into place, the spreadsheet should automatically total the board feet. See below for an example of one formula.

	A	B	C	D	E	F	G
1	**Spreadsheet for Calculating Board Feet of Standing Timber**						
2		**Tree Species**					
3	**Tree Number**	**Black Oak**	**White Oak**	**Pine**	**Hickory**	**Other**	
4	1	74					
5	2		677				
6	3			175			
7	4				129		
8	5			134			
9	6		406				
10	7	112					
11	8	59					
12	9					585	
13	10				226		**Sum of Board Feet for 1/10th Acre**
14	**Subtotals**	245	1083	309	355	585	2577
15							
16							**Total Board Feet/1 Acre**
17							25770

Example: Cell B14 contains the formula SUM(B4:B13) to add the board feet in cells B4-B13

7. Enter the data that was recorded in step 3 in the spreadsheet. The spreadsheet should calculate the total for the 1/10-acre plot and for 1 acre.

8. Type your name on the spreadsheet and print it.

Board Feet in Standing Timber Spreadsheet Scoring Guide

Name _____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Font Appearance			
Meets all of the following criteria: 1. Readable (type style, size) 2. Eye appealing (compatible fonts) 3. Appropriately formatted (use of bold, italics, etc.)	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No grammar or spelling errors	A few minor errors that are not distracting	Numerous or distracting errors	
Overall Organization			
Meets all of the following criteria: 1. Title provided 2. Headers provide appropriate labeling 3. Columns are in logical order 4. Logical flow of calculations	Meets three of the criteria	Meets two or none of the criteria	
Formulas			
All formulas are correct	One formula is incorrect	Two or more formulas are incorrect	
Content Completeness			
All necessary information is entered	***	Information is missing	

Total points out of 10 _____

***No middle-ground criteria (either exemplary or needs work)

Activity 26 Land Surface Features

Curriculum Supported	Related Competency
Forest Management	C. 1. Interpret surface features using aerial photographs and topographic maps.

Curriculum Reference:

Forest Management. Missouri Department of Conservation, University of Missouri-Columbia: Instructional Materials Laboratory, 1991.

Overview:

This activity provides experience in accessing topographic maps and aerial photographs on the Internet and identifying certain land features. Within forestry and other related occupations, it is very important to be able to use aerial photographs and topographical maps to locate surface features.

Activity Objective:

Identify surface features using aerial photographs and topographic maps on the web.

Activity Sheet:

AS 26.1 Land Surface Features

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Before assigning this activity to students, check the web links provided to ensure they are still available and current.

3. Check to see if there is a student use policy at your school for using the network and Internet. Students and parents may have to sign a form that releases the students to use the network and Internet during class.

4. Discuss Internet cautions with the students before beginning this activity. Inform them not to provide any personal information over the Internet through chat rooms or other sites. Personal information includes full name, address, phone number, social security number, or picture. Check with your school for additional rules and regulations on Internet use.

5. Familiarize yourself with the terraserver.com web site or other web sites listed to be able to assist students in this activity. In addition, it is helpful to pair computer-literate students with those who are not.

Activity Length: 150 min.

Discussion Questions:

1. In what ways can accessing this type of information on the Internet be beneficial?

   - It is very helpful when immediate information about a tract of land is needed.

   - Accessing the maps on the Internet is very efficient. A large amount of information is available at the touch of a fingertip and also no storage space is required, as opposed to what is needed for the large and expensive hard copy aerial photographs.

2. What are the advantages of knowing how to use the Internet to access information?

   - The Internet is an invaluable tool and the more that you use it, the more familiar and increasingly efficient you will become at using it.

   - Knowledge of the Internet and how to use it is becoming increasingly important to employers in this technology-driven world.

Assessment:

Results will vary depending on the location selected and the surface features identified.

Additional Activity:

Using the web sites given for this activity, have the students determine the latitude and longitude of the area that they selected. This information can be found on each of the web sites. They can also find information on the elevation of the area.

Alternative Application:

Find the aerial photographs of a farm (your own or someone else's) on terraserver.com. Use the aerial photographs for developing a grazing system. This can be accomplished by dividing the farm into separate fields or by adding in additional fences. Plan the system around existing watering sources or plan for additional ones if necessary. Using aerial photographs for planning purposes provides the opportunity to create different systems and compare them. See the applicable curriculum and competency below.

Grasslands Management C. 5. Develop a grasslands management plan.

Credits:

ArcData Online. <http://www.esri.com/data/online/index.html> April 17, 2001.

Forest Management (Student Reference). Missouri Department of Conservation, University of Missouri-Columbia: Instructional Materials Laboratory, 1991.

Terraserver.com. <http://www.terraserver.com/> October 31, 2000.

Topozone.com. <http://www.topozone.com/> April 17, 2001.

Student Activity Sheet
Land Surface Features

Name: _____

Student Objective:

Identify surface features using aerial photographs and topographic maps on the web.

Equipment and Materials:

- Computer with Internet access
- Printer

Procedure:

1. Access the terraserver.com homepage at <http://www.terraserver.com>.

   Note: The steps in this procedure are for the terraserver page; however, other web sites that can be used are <http://www.topozone.com> and <http://www.esri.com/data/online/index.html>.

2. Click on the View Images link; this will take you to the Coverage Map (a map of the world).

3. Pick an area to locate like your school, home, or a local conservation area. Click on the area in the United States that you are interested in; this will zoom in to a smaller area. Keep zooming in until you are in the vicinity of the area that you want to view.

4. When the Encarta Reference toolbar appears with an image below it, click on Medium for image size and Topo for style (U.S. Geological Survey (USGS) topographic map option). Click on the movement arrows surrounding the map and look for landmarks such as roads, towns, and geographical features to help you locate the area of interest.

   Note: If you can't find the city, type the city and state in the Find box on the Encarta Reference toolbar and click on the go button.

5. When you have located your area of interest, change the map scale to 4m using the zoom scale at the top of the map. This will provide more detail and increase the amount of features that may be identified.

6. On the Encarta Reference toolbar, click on the Print option and examine the image to ensure that it is the desired area of interest. If it is correct, print the image using the print button on your browser.

7. Using the USGS Topographic Map Symbols key provided on page III-17 of the *Forest Management* curriculum, locate and label at least five features on the printed map (e.g., primary highway, secondary highway, telephone line, cemetery, contour elevation notation, power transmission

line, building, cave, trail, and intermittent stream). See Figure 26.1 for a topographic map with feature labeling.

Note: View the map on screen to see the color of each feature. This will help in identification.

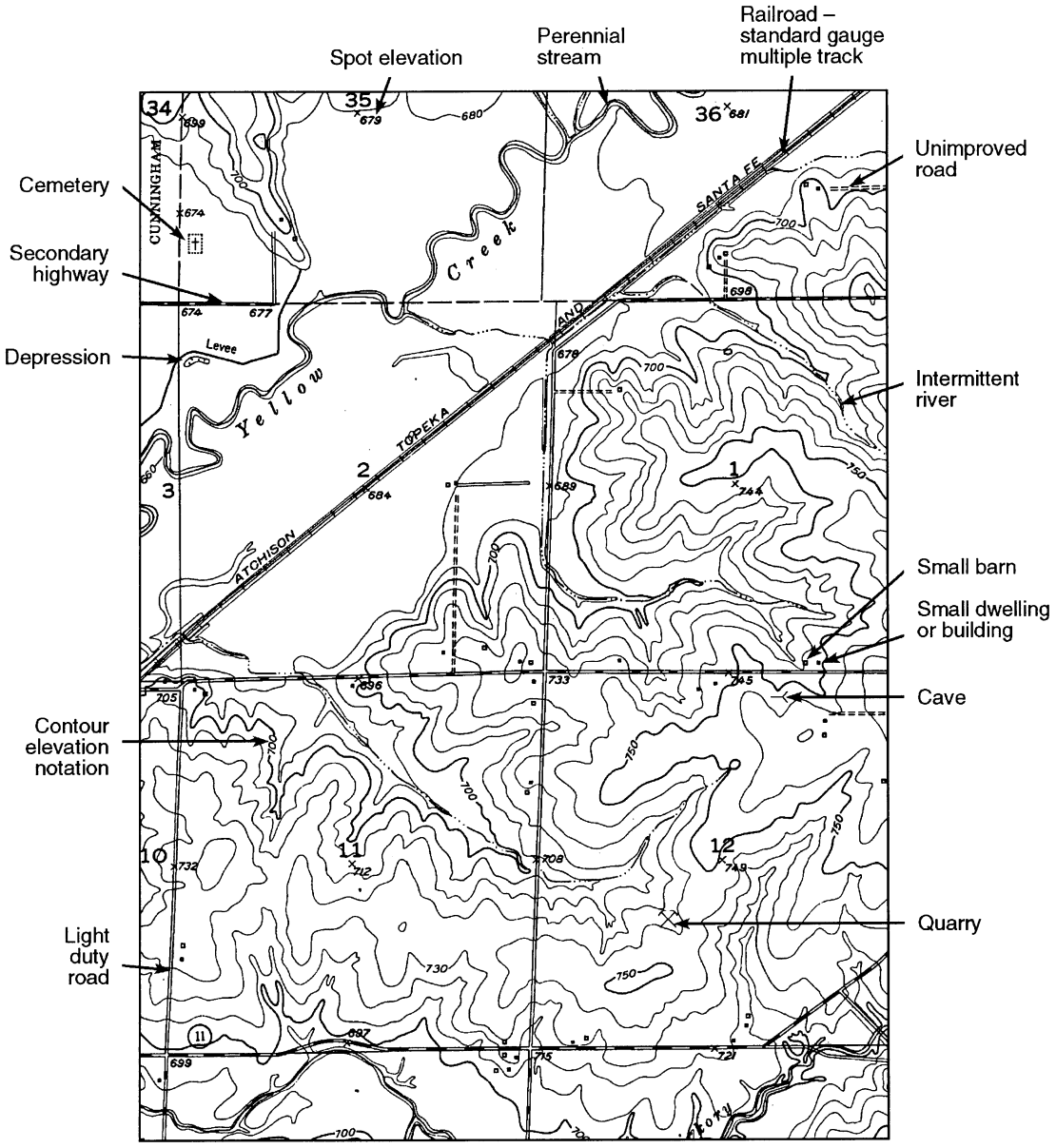


Figure 26.1- Example of feature labeling

8. Convert this topographic map on screen to an aerial photo image by changing the style to Image on the toolbar. Change the scale to 4m and the size to Medium. Click on the Print option and view the image to ensure it covers the same area as the topographic map printed in step 6. Print the aerial photo image.

9. Using what you learned in identifying features on the topographic version, label the surface features that are visible on the printed aerial photograph image.

   Note: Some of the features identified on the topographic map will not be visible on the aerial photograph.

Greenhouse Operation and Management

Computer Lab Activities in Agriculture

Activity 27

Electronic Budget

Curriculum Supported	Related Competency
Greenhouse Operation and Management	A. 23. Describe the various types of records kept in a greenhouse business.

Curriculum Reference:

Greenhouse Operation and Management. University of Missouri-Columbia: Instructional Materials Laboratory, 1990.

Overview:

With the advent of spreadsheet software, tools for financial analysis such as budgets are now typically computer based. This activity provides experience in inputting data and creating formulas in an electronic budget.

Activity Objective:

Use a budget spreadsheet to calculate various production inputs.

Activity Sheet:

AS 27.1 Electronic Budget

Scoring Guide:

SG 27.1 Electronic Budget

Instructor Preparation/Directions:

1. All activities and associated files are provided on the *Computer Lab Activities in Agriculture* instructor CD-ROM. Items followed by the CD-ROM icon are provided on the *Computer Lab Activities in Agriculture* student CD-ROM.

2. Familiarize yourself with the spreadsheet software the students will be using for this activity, specifically the procedures for entering data and creating formulas. Have a user's manual for the software available for reference. In addition, it is helpful to pair computer-literate students with those who are not.

3. Review the procedures of the activity with the students and the specific requirements for the criteria included in SG 27.1. If available, provide related examples of exemplary work.

Activity Length: 200 minutes

Discussion Questions:

1. What are the benefits of using a spreadsheet to prepare a budget?

   - Data can easily be entered and changed and each time the spreadsheet automatically and accurately calculates new totals.
   - The spreadsheet can be saved, customized, and used from year to year.
   - Information in a spreadsheet can also be presented in graphical format; this is another important tool for financial analysis.

2. Why is the ability to create and use a spreadsheet valuable?

   - Computer skills are extremely important in today's job market.
   - Computers can increase the efficiency and profitability of businesses.

Assessment:

Grade the students' budgets based on SG 27.1 located at the end of AS 27.1. To increase the number of points for the project, assign more points to the criteria that you want to emphasize. For example, apply a scale multiplier that makes one or more criteria worth two times as much as the other criteria.

Totals for the budget_1 file are as follows:
Expenditures - $69,475.00, Income - $89,000.00, Profit - $19,525.00.

Totals for the budget_2 file are as follows:
Expenditures - $113,250.00, Income - $109,500.00, Loss - $3,750.00

Additional Activities:

1. Have students modify the budget spreadsheet and enter information from their own SAE project. Have them analyze what changes could be made to increase profitability.

2. Have students modify the spreadsheet and use it for their FFA chapter's actual budget. This way the students will be able to see how the chapter's funds are used.

Alternative Applications:

1. Create a spreadsheet for storing monthly receipt and expenditure entries required for the Missouri Agricultural Record Book for Secondary Students. The spreadsheet should calculate monthly totals for both receipts and expenditures. See the applicable curriculum and competency below.

Agricultural Science I, *Missouri Agricultural Record Book for Secondary Students*	4. Complete receipt and expenditure forms in the Missouri Agricultural Record Book for Secondary Students.

2. This activity can also be used to support the following curriculum and competency.

Agribusiness Sales, Marketing, and Management	C. 2. Develop a budget.

Credit:

Greenhouse Operation and Management (Student Reference). University of Missouri-Columbia: Instructional Materials Laboratory, 1990.

Student Activity Sheet
Electronic Budget

Name: _____

Student Objective:

Use a budget spreadsheet to calculate various production inputs.

Equipment and Materials:

- Computer
- Spreadsheet software (e.g., Excel, Lotus 1-2-3)
- SG 27.1 Electronic Budget Scoring Guide
- Budget_template (Excel file)
- Floppy disk (one for each student)
- Printer

Procedure:

1. Refer to SG 27.1 for the criteria you will be graded on.

2. Using the budget_template file provided on the CD-ROM or starting with a new file, complete a budget in a spreadsheet program with the information given in the scenario below. See Figure 27.1 for an example of the budget format.

   You are employed at Hoskins Greenhouse and have been asked to prepare the budget for the first 6 months of next year. You have researched the following information:

January 1 - June 30

Fixed Expenses:

Depreciation on facilities and equipment - $600.00
Interest - $875.00

Repairs and maintenance on facilities and equipment - $2,000.00
Taxes - $1,900.00
Insurance - $4,000.00
Miscellaneous - $1,500.00

Variable Expenses:

Labor costs - $45,000.00

Chemical costs (insecticides, fungicides, etc.) - $1,200.00
Seed/plant costs - $1,500.00

Plant medium - $900.00
Fertilizer costs - $1,500.00
Utilities - $3,500.00
Sales cost - $3,500.00
Miscellaneous - $1,500.00

Income:

Sales receipts - $55,000.00
Loans - $30,000.00
Interest earned - $4,000.00

	A	B	C	D	E	F	G
1	**Greenhouse Budget**						
2	Budget period: 1/1/01 - 6/30/01						
3							
4	**Expenses**					Amount	Totals
5							
6	Fixed						
7	Depreciation on facilities and equipment					$800.00	
8	Interest					$600.00	
9	Repairs and maintenance on facilities and equipment					$1,500.00	
10	Taxes					$2,000.00	
11	Insurance					$5,500.00	
12	Miscellaneous					$2,000.00	
13							
14	Total Fixed.....						$12,400.00
15							
16	Variable						
17	Labor Costs					$50,000.00	
18	Chemical costs (insecticides, fungicides, etc.)					$1,500.00	
19	Seed/plant costs					$1,800.00	
20	Plant medium					$1,000.00	
21	Fertilizer costs					$2,000.00	
22	Utilities					$4,000.00	
23	Sales costs					$3,000.00	
24	Miscellaneous					$2,000.00	
25							
26	Total Variable.....						$65,300.00
27	TOTAL EXPENDITURES.....						$77,700.00
28							
29	**Income**						
30	Sales receipts					$65,000.00	
31	Loans					$20,000.00	
32	Interest earned					$2,500.00	
33							
34	TOTAL INCOME.....						$87,500.00
35							
36	**PROFIT OR LOSS**.....						$9,800.00
37							

Figure 27.1 - Example of a budget spreadsheet

3. Name the file "budget_1" and save it on a floppy disk or to a location your instructor specifies. Enter the expense figures (fixed and variable costs) and income figures in the spreadsheet. Be sure to add the dates for the budget period.

4. Initiate the formula function in your program and input formulas that will calculate the following totals.
   - Fixed costs
   - Variable costs
   - Expenditures (fixed plus variable costs)
   - Income
   - Profit/loss (income minus expenditures)

   See an example of one formula below.

	A	B	C	D	E	F	G
1	**Greenhouse Budget**						
2	Budget period: 1/1/01 - 6/30/01						
3							
4	**Expenses**					Amount	Totals
5							
6	Fixed						
7	Depreciation on facilities and equipment					$800.00	
8	Interest					$600.00	
9	Repairs and maintenance on facilities and equipment					$1,500.00	
10	Taxes					$2,000.00	
11	Insurance					$5,500.00	
12	Miscellaneous					$2,000.00	
13							
14	Total Fixed.....						$12,400.00

Select cell G14, initiate the formula function, and enter SUM(F7:F12) to add the fixed costs in cells F7-F12.

5. When your budget_1 spreadsheet is complete with a profit or loss figure, put your name on the spreadsheet and print it.

6. Save the budget_1 file as budget_2. Input the following budget figures for the second half of the next year. Note how the formulas you have input calculate the totals instantaneously.

July 1 - December 31

Fixed Expenses:
Depreciation on facilities and equipment - $600.00
Interest - $950.00

Repairs and maintenance on facilities and equipment - $3,000.00
Taxes - $1,900.00
Insurance - $4,000.00
Miscellaneous - $1,500.00

Variable Expenses:
Labor costs - $80,000.00

Chemical costs (insecticides, fungicides, etc.) - $3,000.00
Seed/plant costs - $3,000.00

Plant medium - $1,800.00
Fertilizer costs - $2,000.00
Utilities - $5,000.00
Sales cost - $5,000.00
Miscellaneous - $1,500.00

Income:
Sales receipts - $75,000.00
Loans - $30,000.00
Interest earned - $4,500.00

7. When your budget_2 file is complete with a profit or loss figure, put your name on the spreadsheet and print it.

Electronic Budget Scoring Guide

Name _____

Exemplary 2 pts.	Acceptable 1 pt.	Needs Work 0 pts.	Pts.
Overall Organization			
Meets all of the following criteria: 1. Headers provide appropriate labeling 2. Columns are in logical order 3. Logical flow of calculations	Meets two of the criteria	Meets one or none of the criteria	
Text Mechanics			
No grammar or spelling errors	A few minor errors that are not distracting	Numerous or distracting errors	
Formulas			
All formulas are entered correctly and calculate the data when entered	One formula is entered incorrectly	Two or more formulas are entered incorrectly	
Content Completeness			
All necessary information is entered	***	Information is missing	

Total points out of 8 _____

***No middle-ground criteria (either exemplary or needs work)