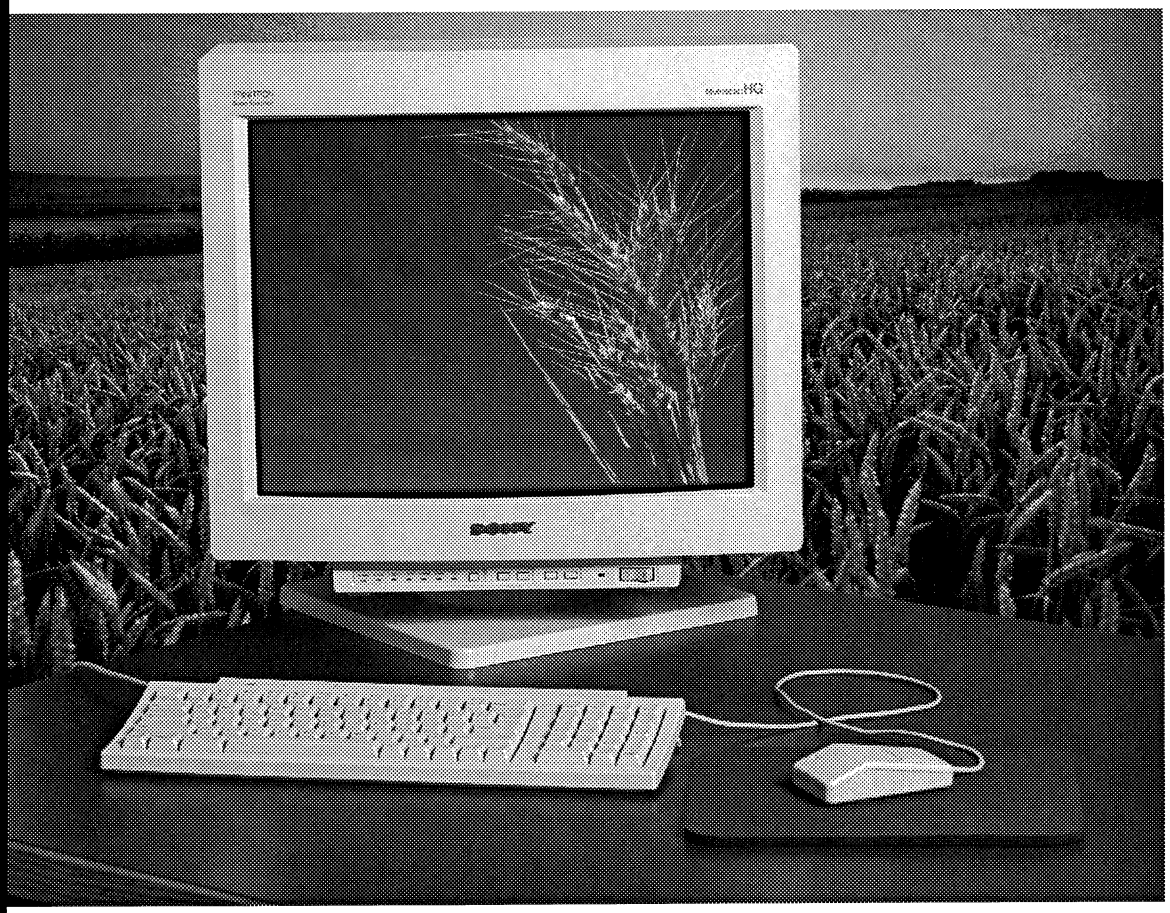
10-0010-S



Computer Lab Activities in Agriculture

Student Reference

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

Student Reference

Computer Lab Activities in Agriculture

Computer-related Activities to Support Existing Agricultural Curricula

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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.

The 27 activities in the 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.*

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

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

Table of Contents

Introductory

Computer Lab Activities in Agriculture

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:

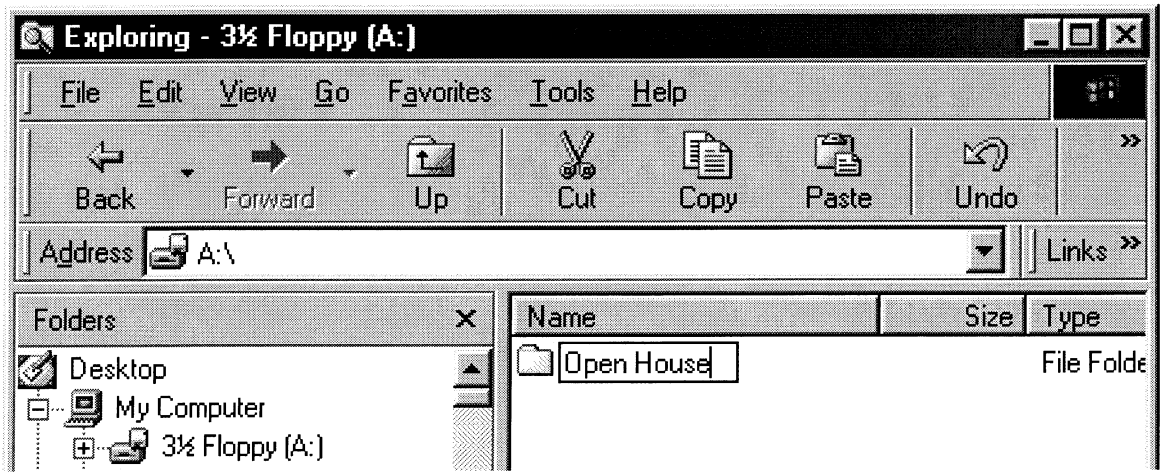
1. Refer to SG 1.1 for the tasks you will be graded on.

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."

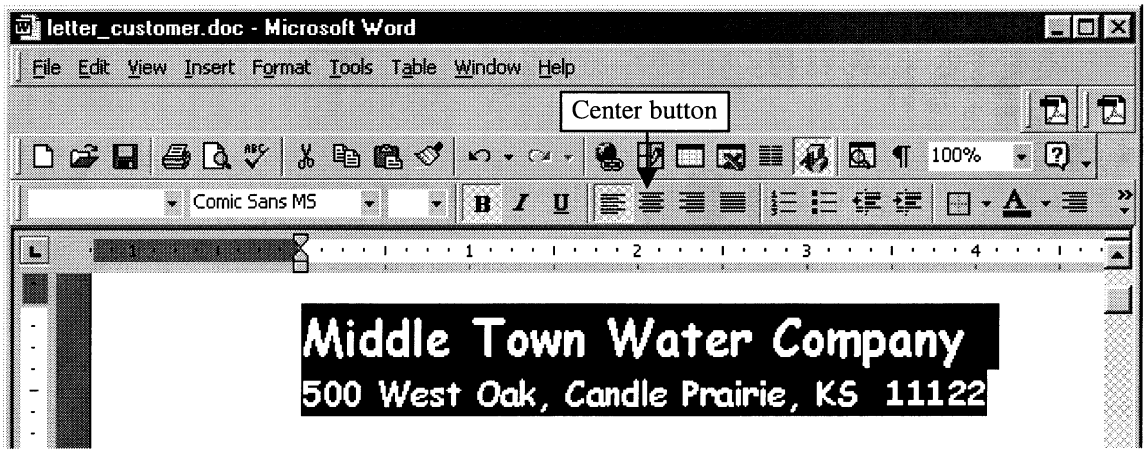


Note: The following procedures were done using Microsoft Word. If you are using another program, some of the commands and/or features may be different.

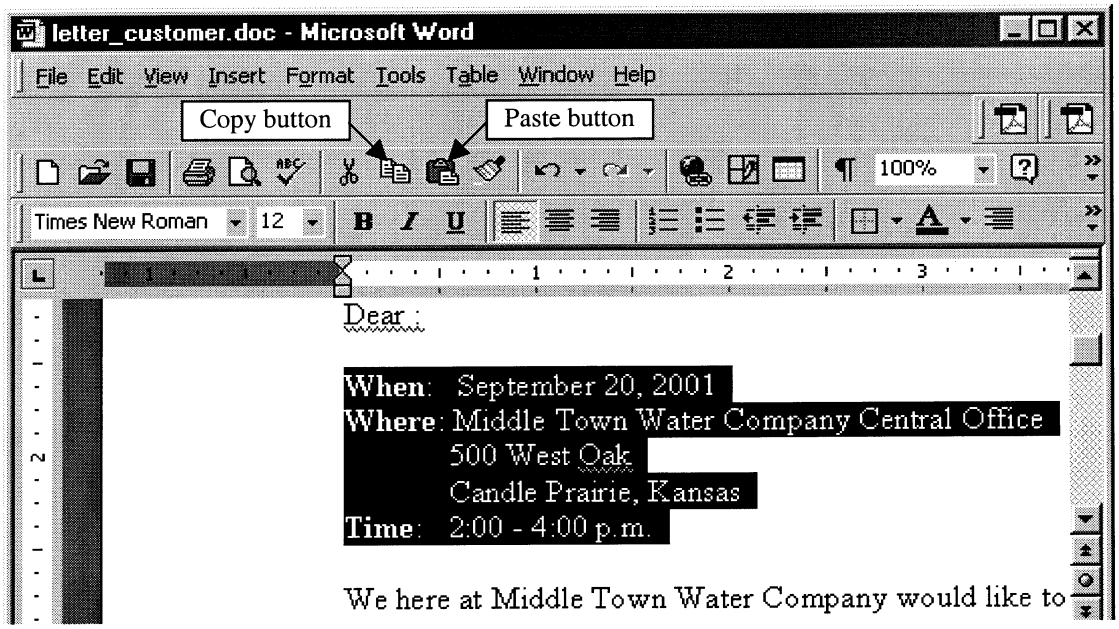
5. Open the file named "letter_customer" located on the *Computer Lab Activities in Agriculture* CD-ROM (usually the D: or E: drive). With the file open, go to the menu bar and select *File, Save As*, and save the file in the "Open House" folder on your floppy disk.

   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.

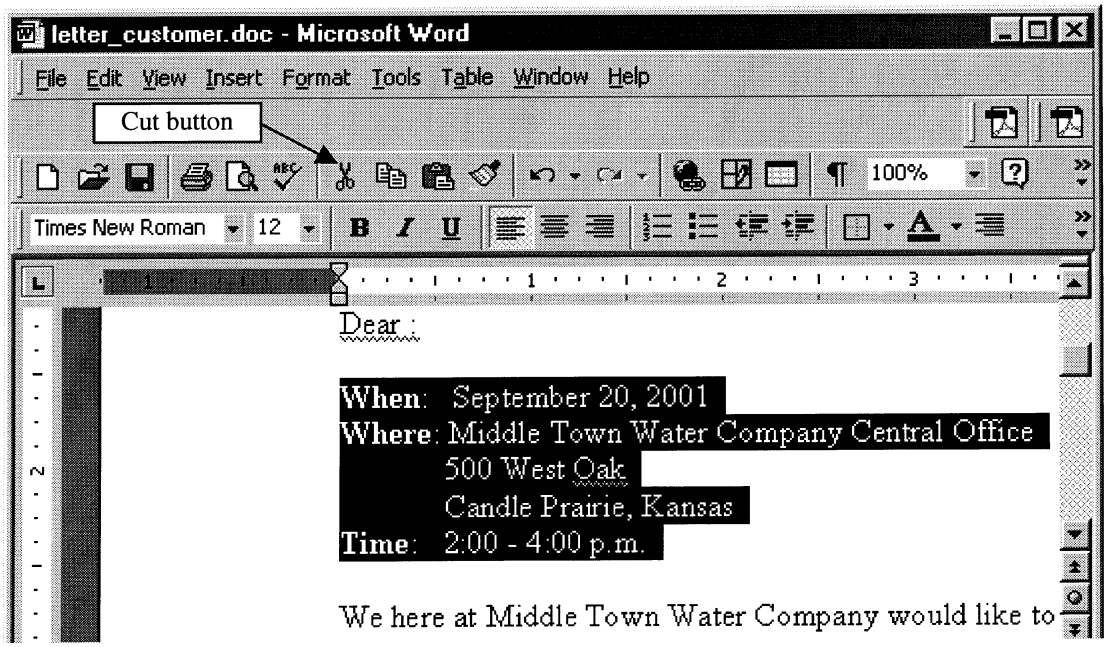
6. Refer to Figure 1.1 at the end of the procedure for the changes that Mr. Cook wants to the customer letter. Highlight the company name and address. Click the center button on the toolbar to center the text horizontally on the page. (Optionally, select *Format* and then *Paragraph*. Next to *Alignment*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

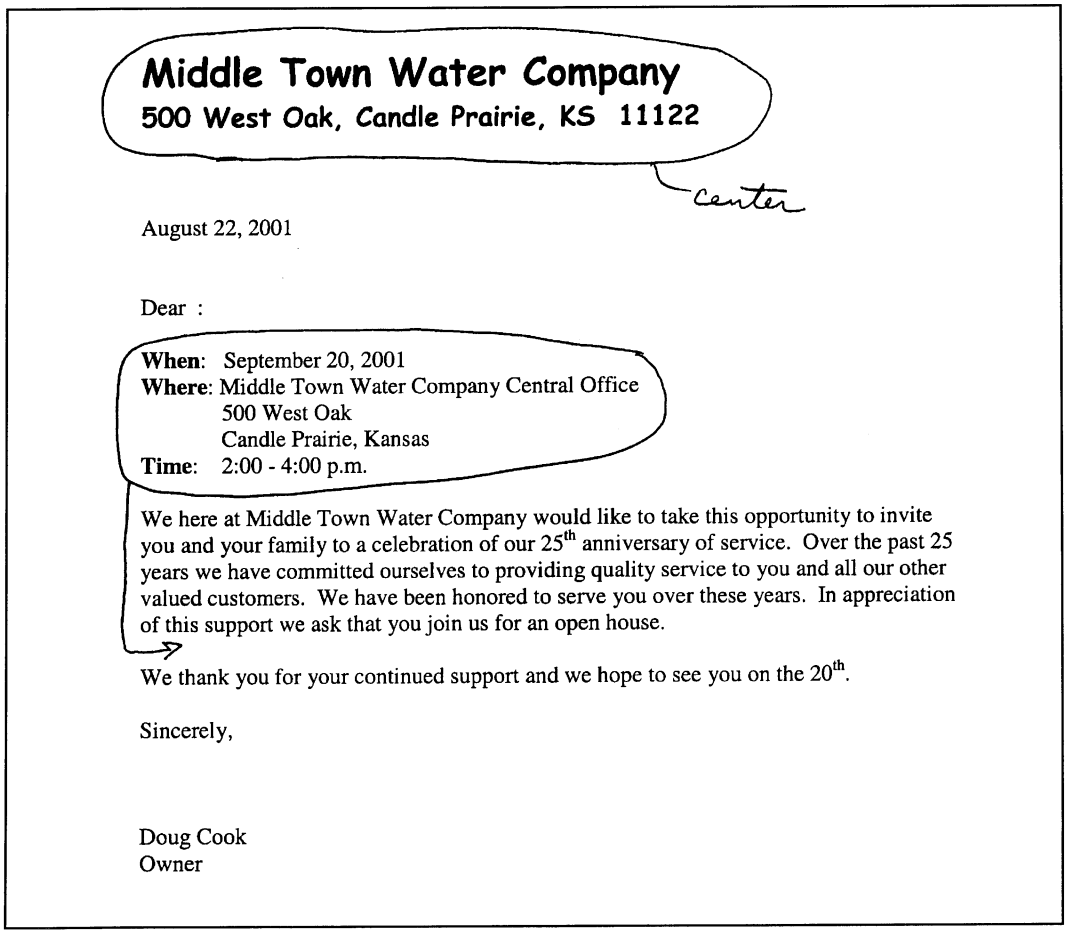


Figure 1.1 - Letter_customer changes

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 ~~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	_____

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.

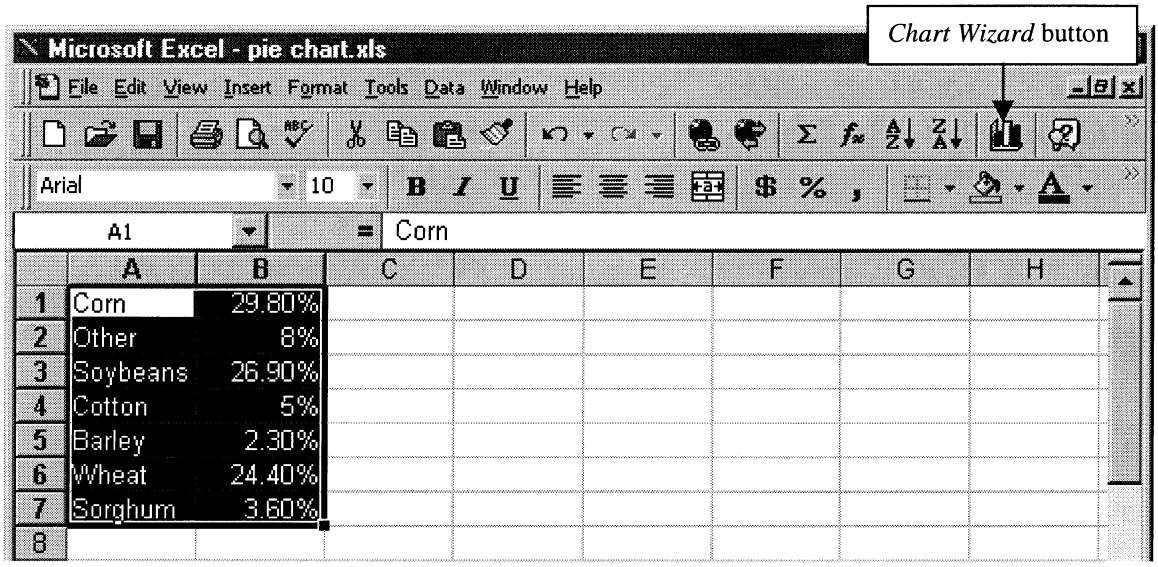
Corn 29.8%	Barley 2.3%
Other 8.0%	Wheat 24.4%
Soybeans 26.9%	Sorghum 3.6%
Cotton 5.0%	

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

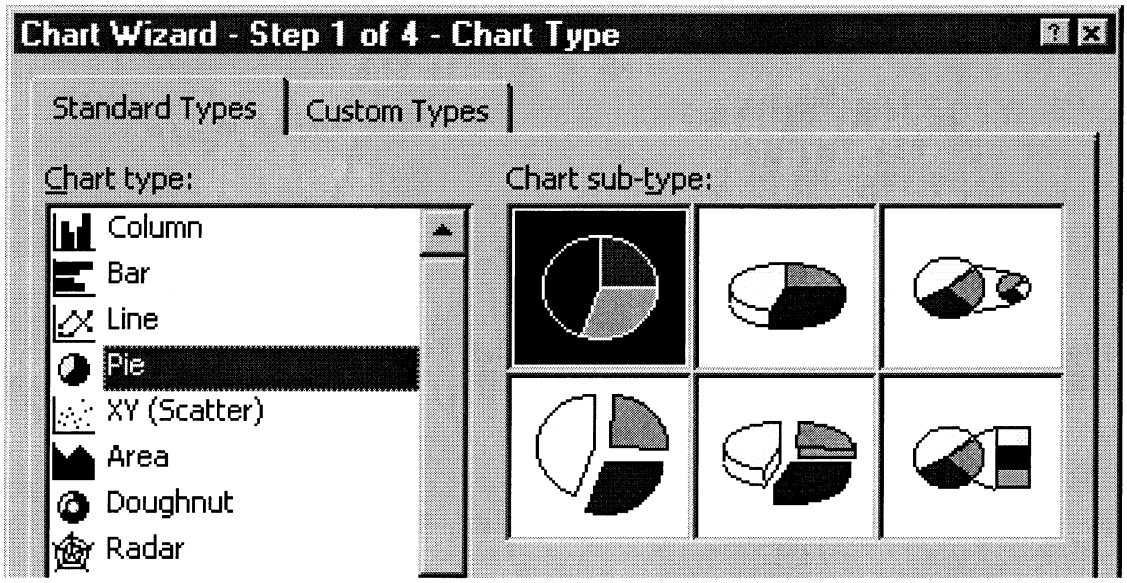
5. Save the file as "pie chart" to a floppy disk or a location your instructor specifies.

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.

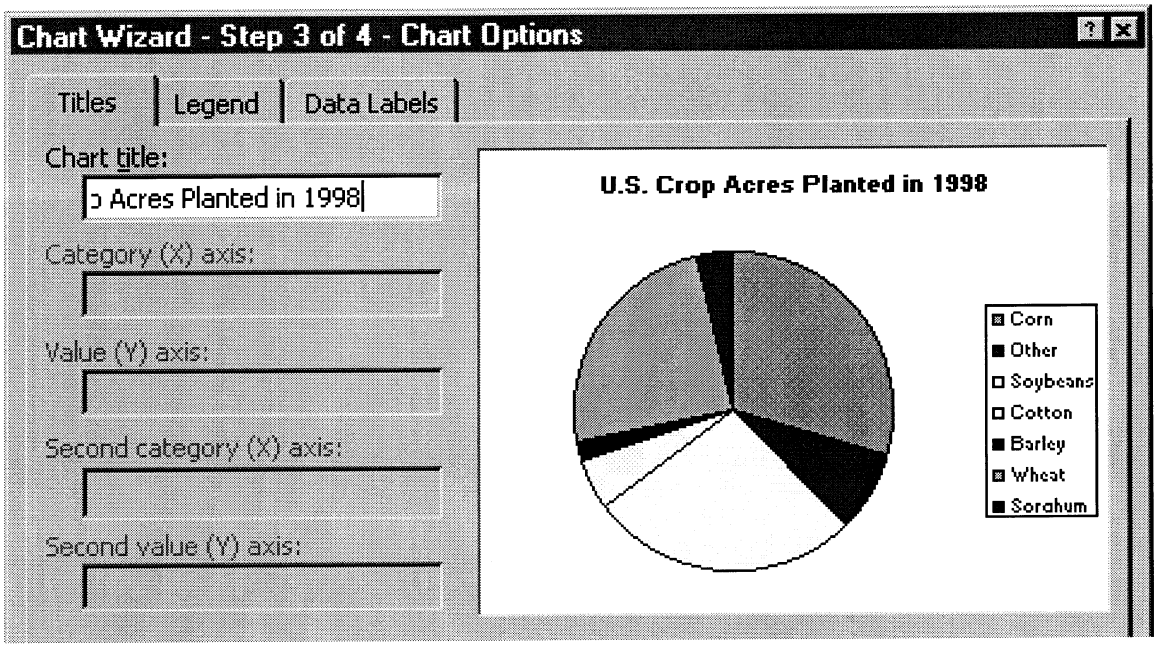


8. On the *Standard Types* tab, select "Pie" for the *Chart type* and select the complete pie (first circle, left-hand side, on the top row) for the *Chart sub-type*. Then click the *Next* button.

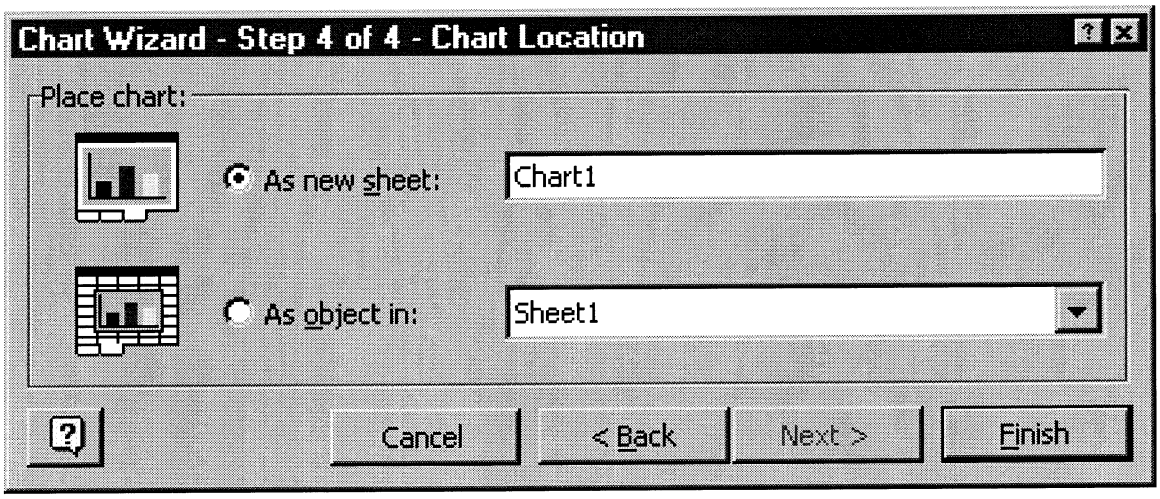


9. Click *Next* again at the *Chart Source Data* step to display the *Chart Options* step.

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	_____

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

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

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 ($).

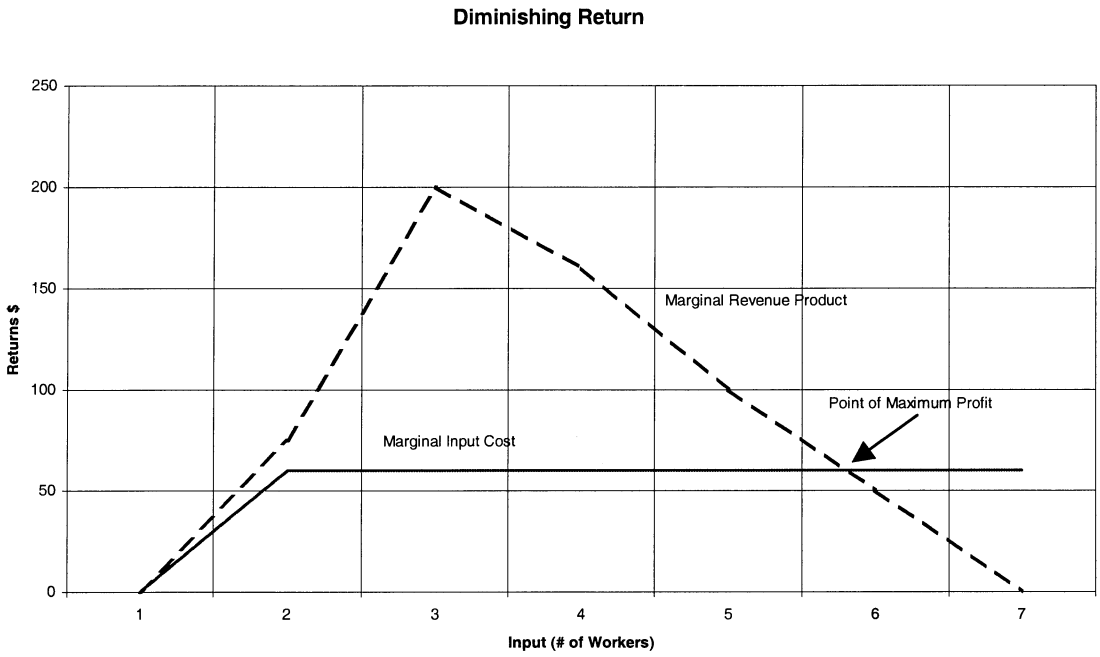


Figure 5.2 - Example of line graph illustrating diminishing return

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 _____

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.

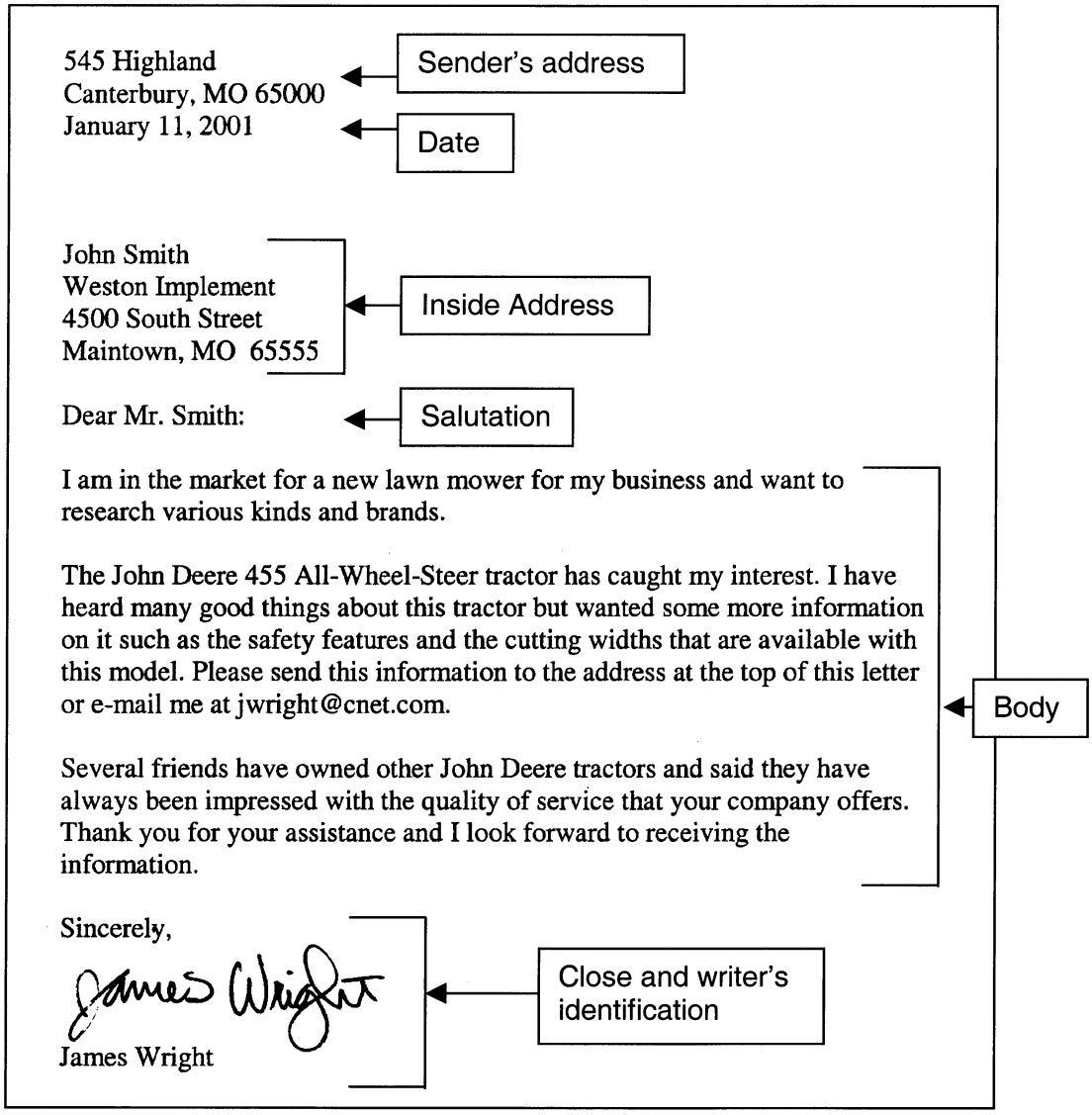


Figure 6.1 - Sample business letter

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.

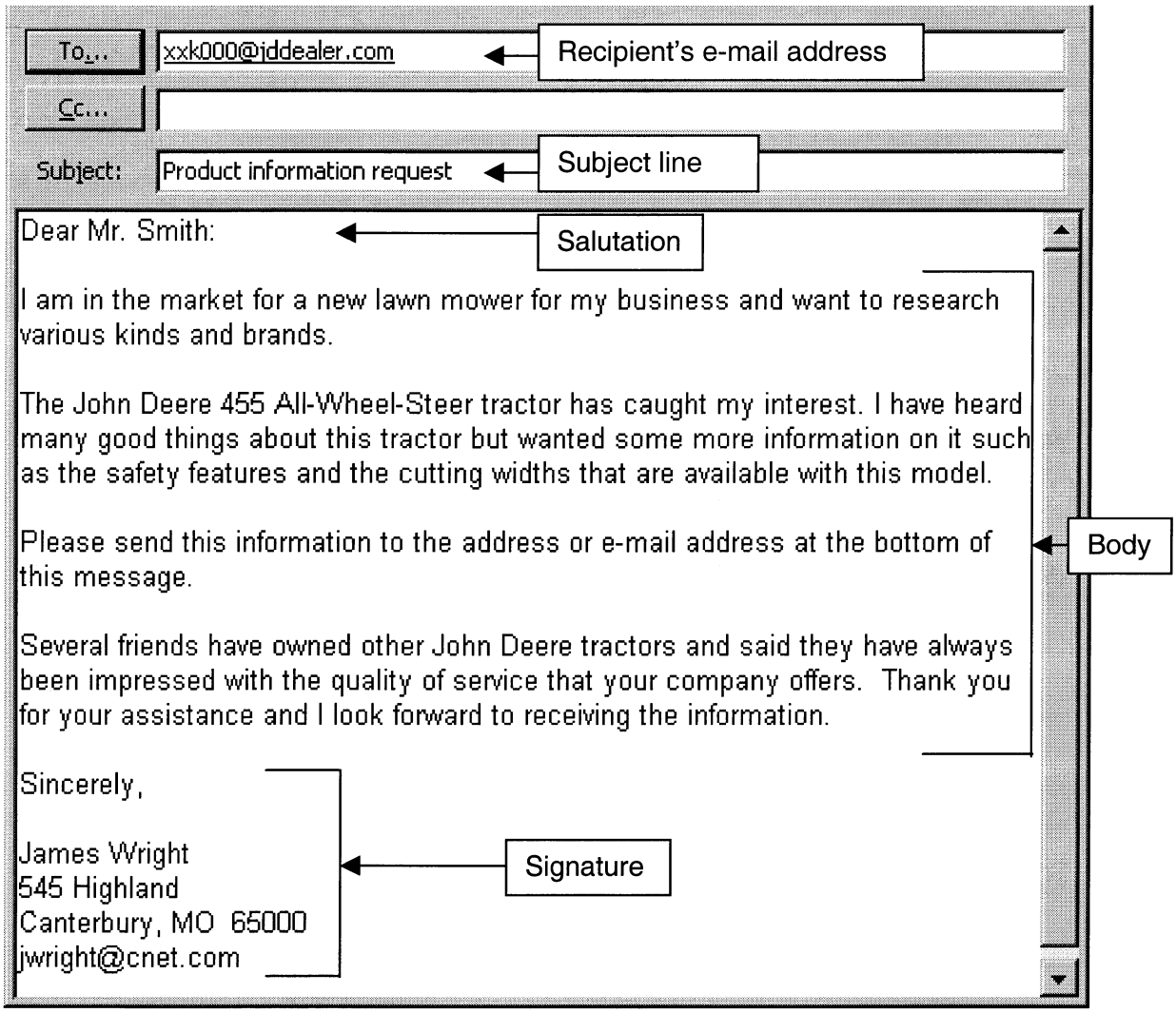


Figure 6.2 - Business e-mail message

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)

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?

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.

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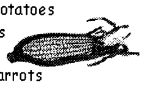
Vegetables
Au Gratin Potatoes
Green Beans
Corn
Buttered Carrots



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

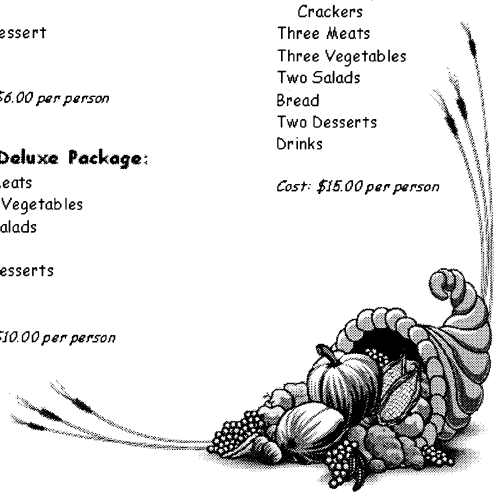
The Deluxe Package:
Two Meats
Three Vegetables
Two Salads
Bread
Two Desserts
Drinks

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 _____

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 _____

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.

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.

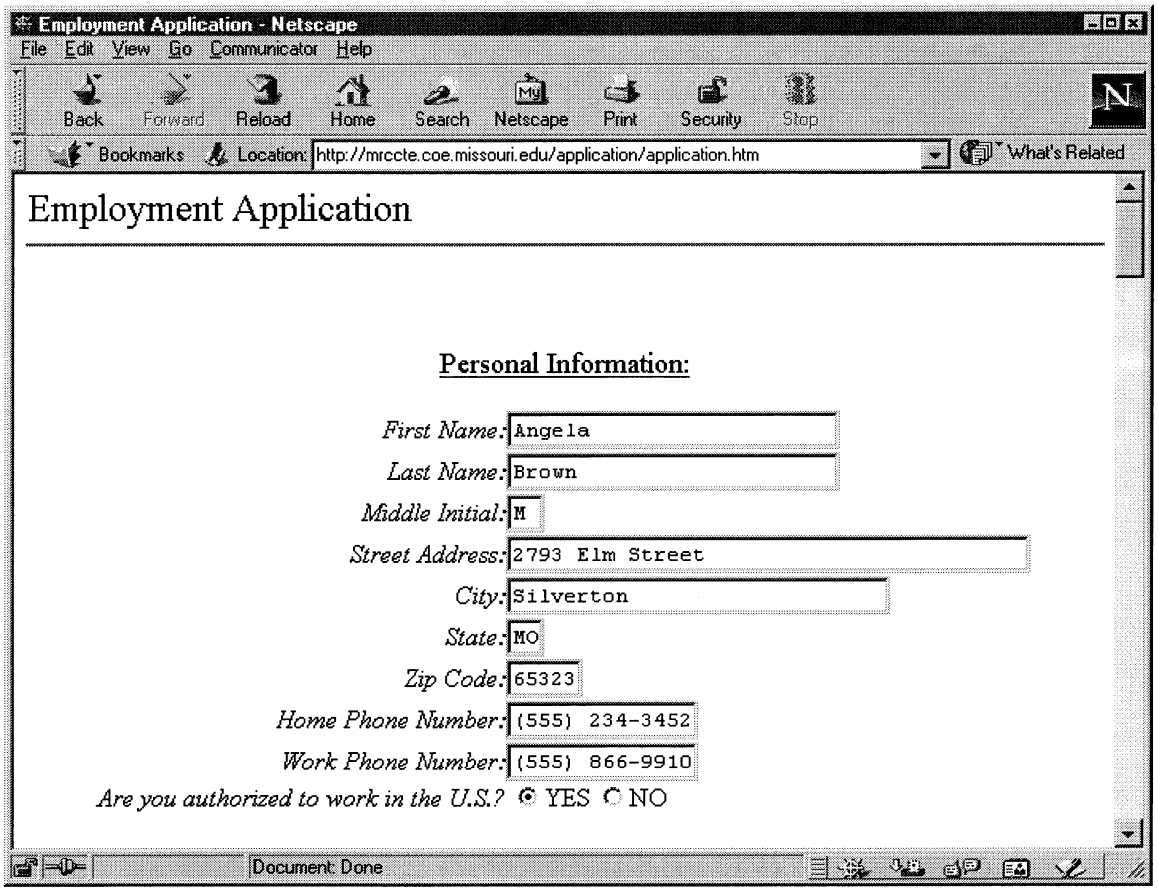


Figure 11.2

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.

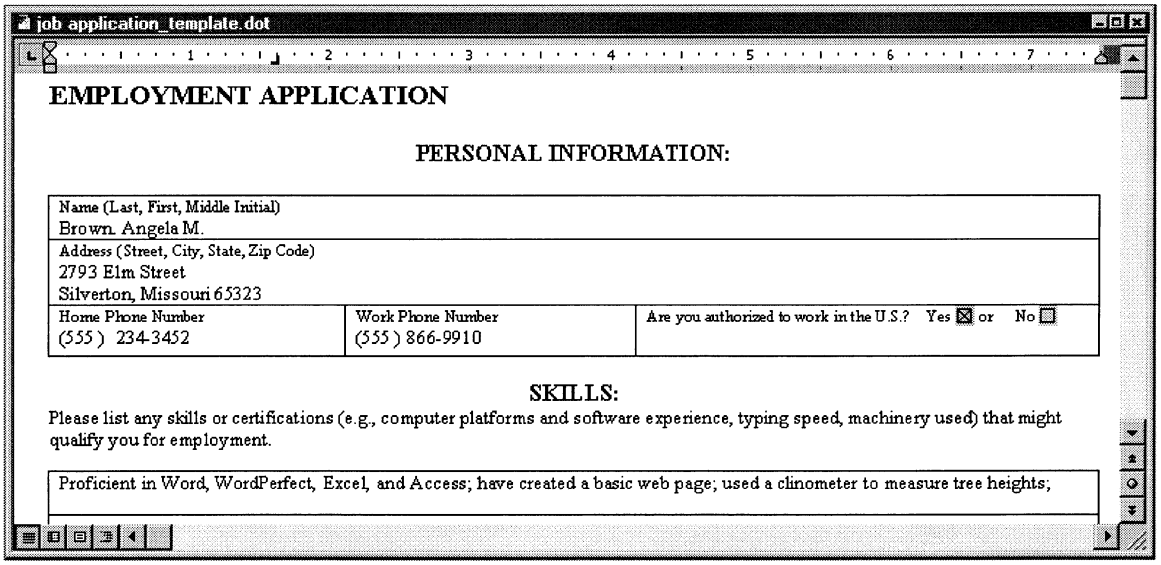
Word Processing Option:

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.


job application_template.dot

EMPLOYMENT APPLICATION

PERSONAL INFORMATION:

Name (Last, First, Middle Initial) Brown, Angela M.		
Address (Street, City, State, Zip Code) 2793 Elm Street Silverton, Missouri 65323		
Home Phone Number (555) 234-3452	Work Phone Number (555) 866-9910	Are you authorized to work in the U.S.? Yes ☒ or No ☐

SKILLS:

Please list any skills or certifications (e.g., computer platforms and software experience, typing speed, machinery used) that might qualify you for employment.

Proficient in Word, WordPerfect, Excel, and Access; have created a basic web page; used a clinometer to measure tree heights;

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)

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.

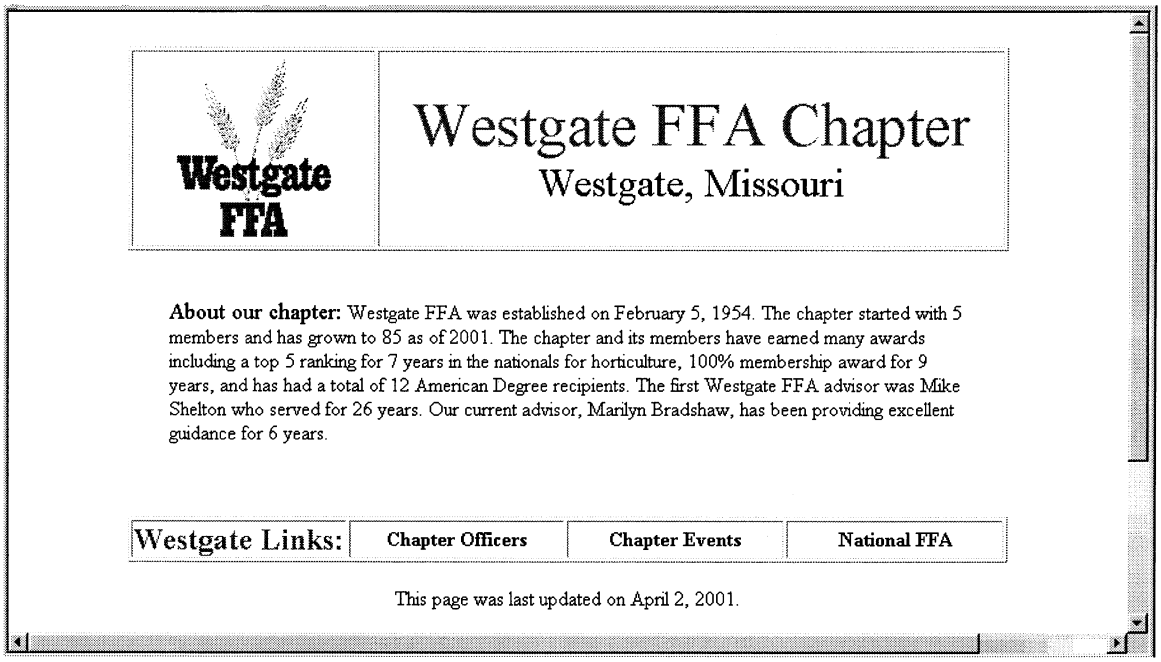


Figure 12.1

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.

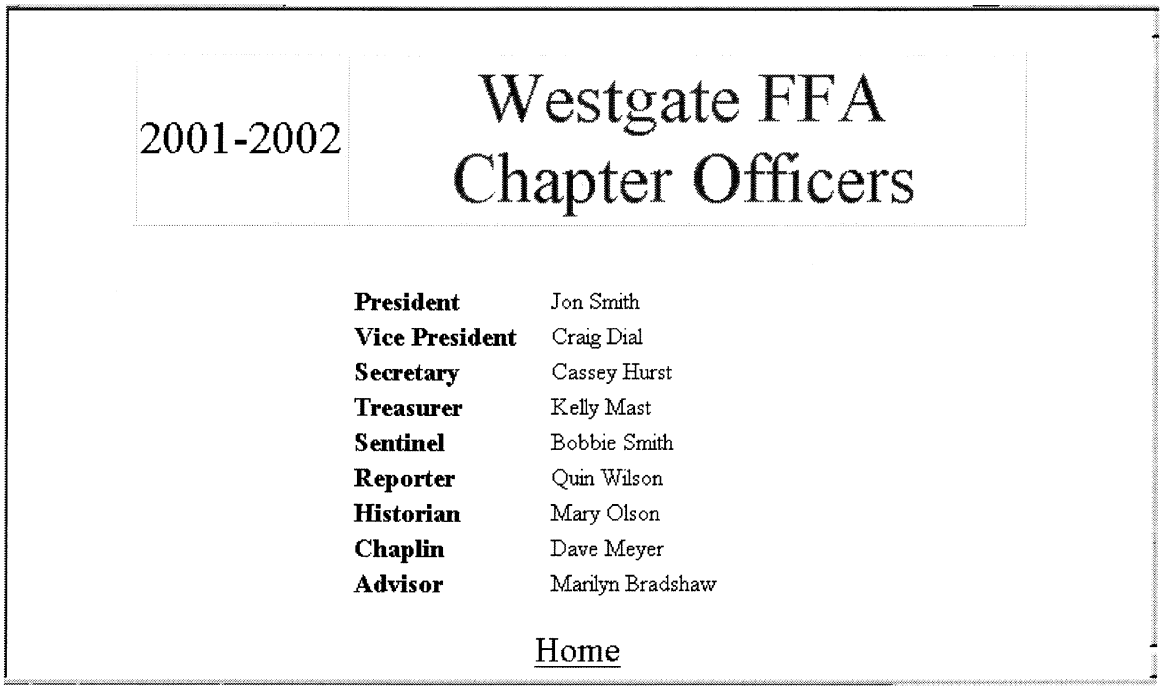


Figure 12.2

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

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)

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

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

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

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

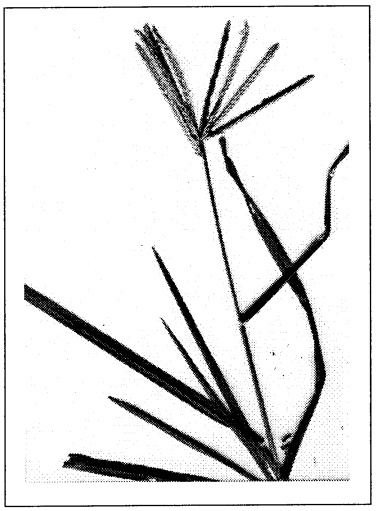


Figure 17.2 - Scanner image of goosegrass

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

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

    _____

    _____

    _____

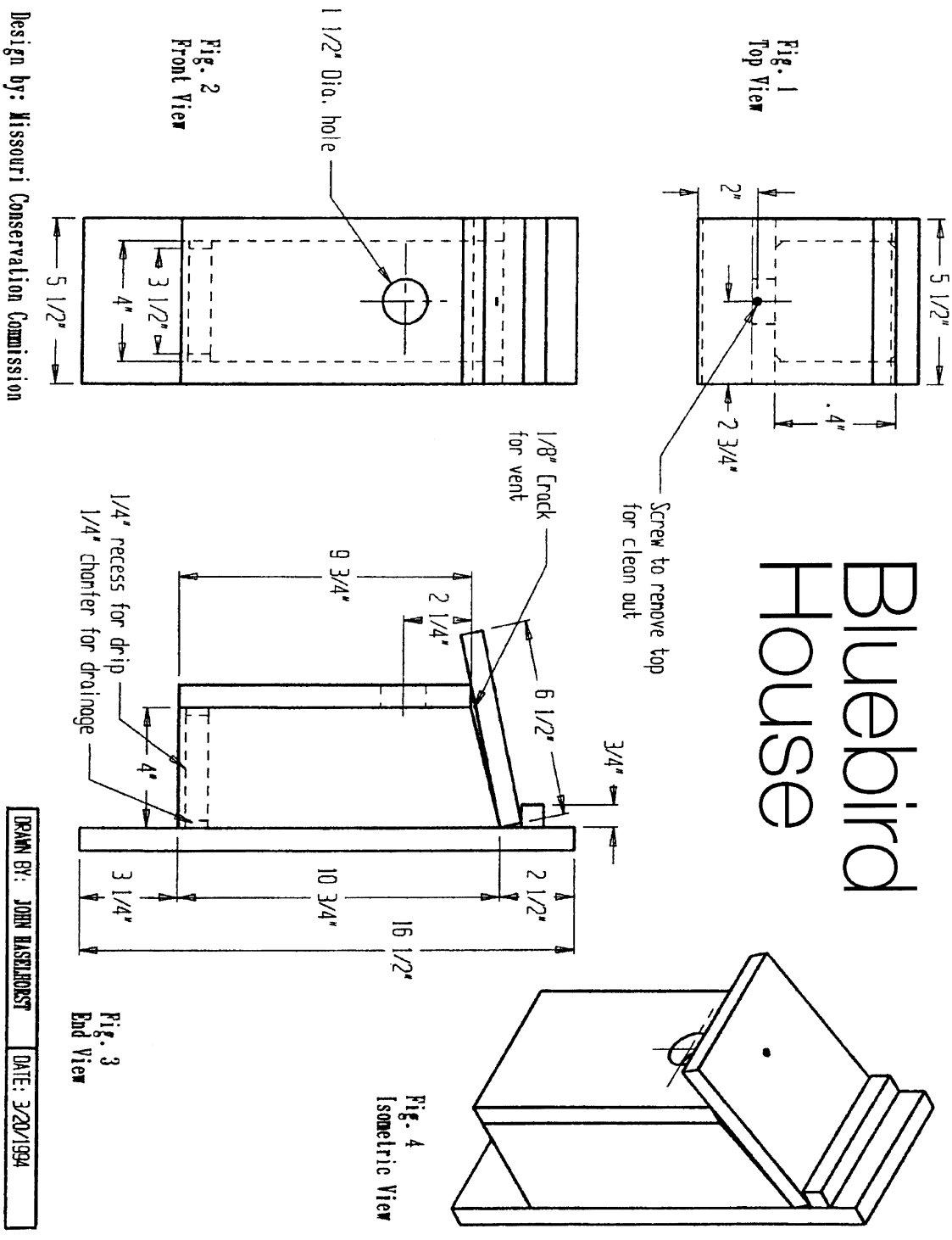
    _____

15. Again for this project, call the local hardware store to determine the prices for the materials you will need.

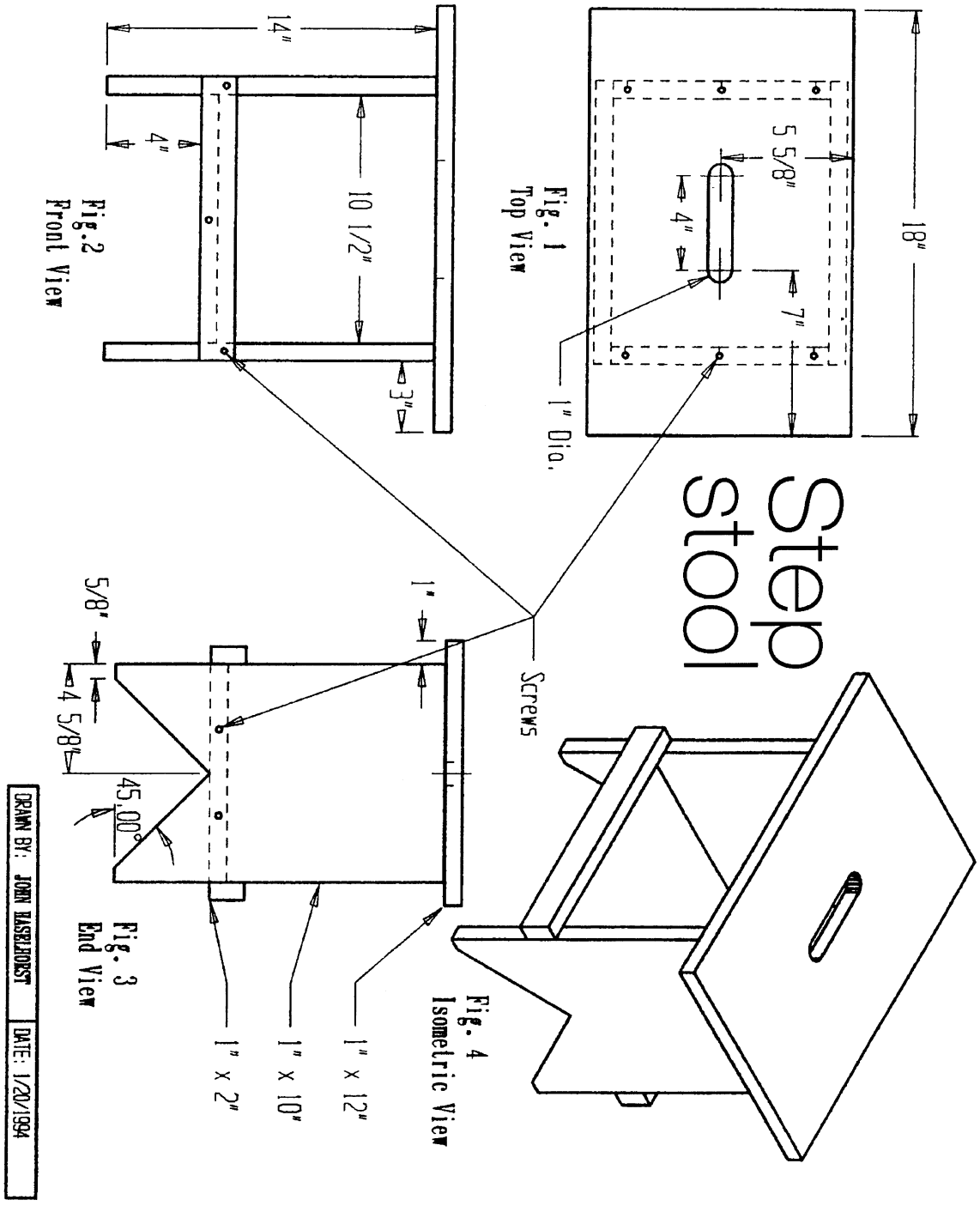
16. Open the bill of materials_birdhouse file and save the file as "bill of materials_park bench."

17. Enter the purchasing bill of materials information for the park bench into the spreadsheet. Note how the totals are calculated instantaneously.

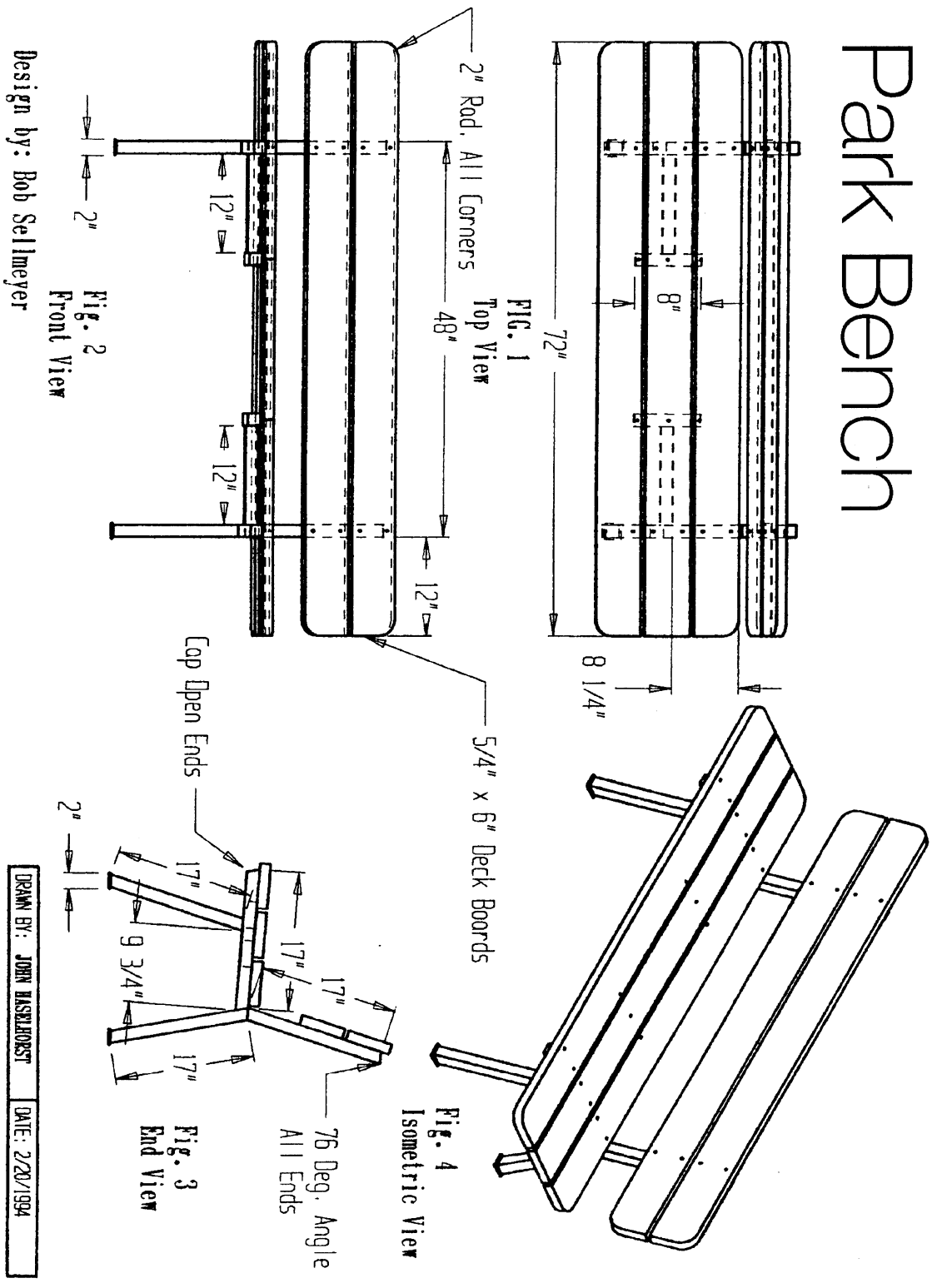
18. When the bill of materials is complete, save and print the file. Ensure your name is on the bill of materials.



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

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 2001	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
	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

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.

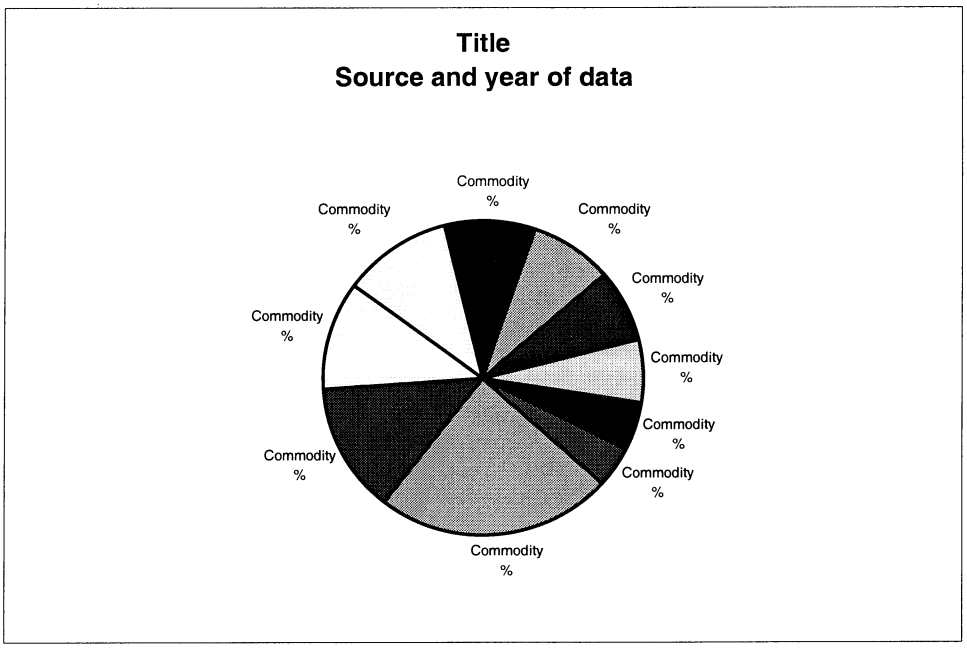


Figure 20.1- Example of pie chart

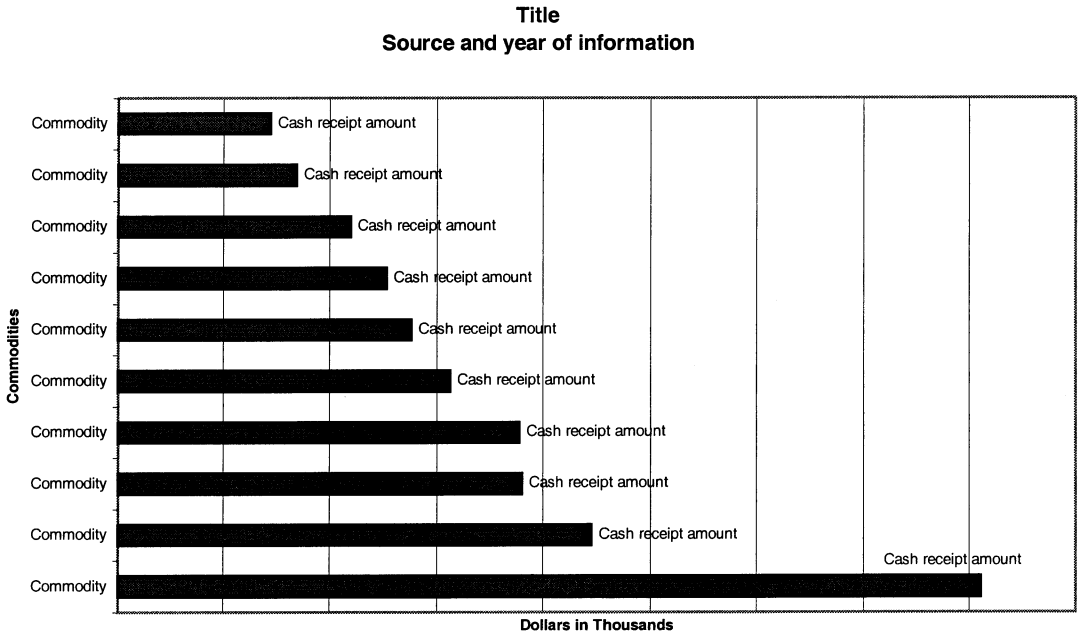


Figure 20.2 - Example of bar graph format

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)

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

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)

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

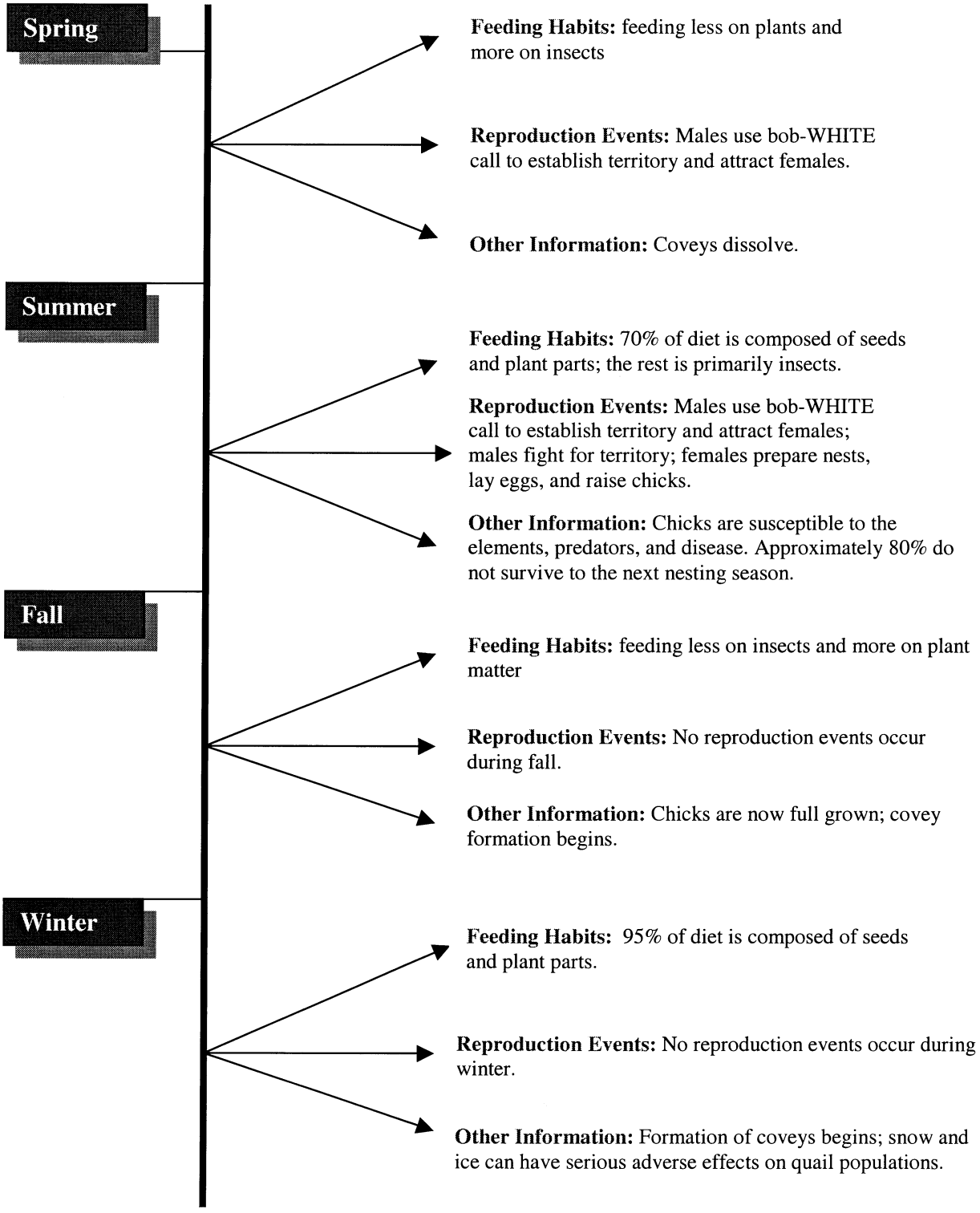


Figure 23.1 - Example of timeline

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

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

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)

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.

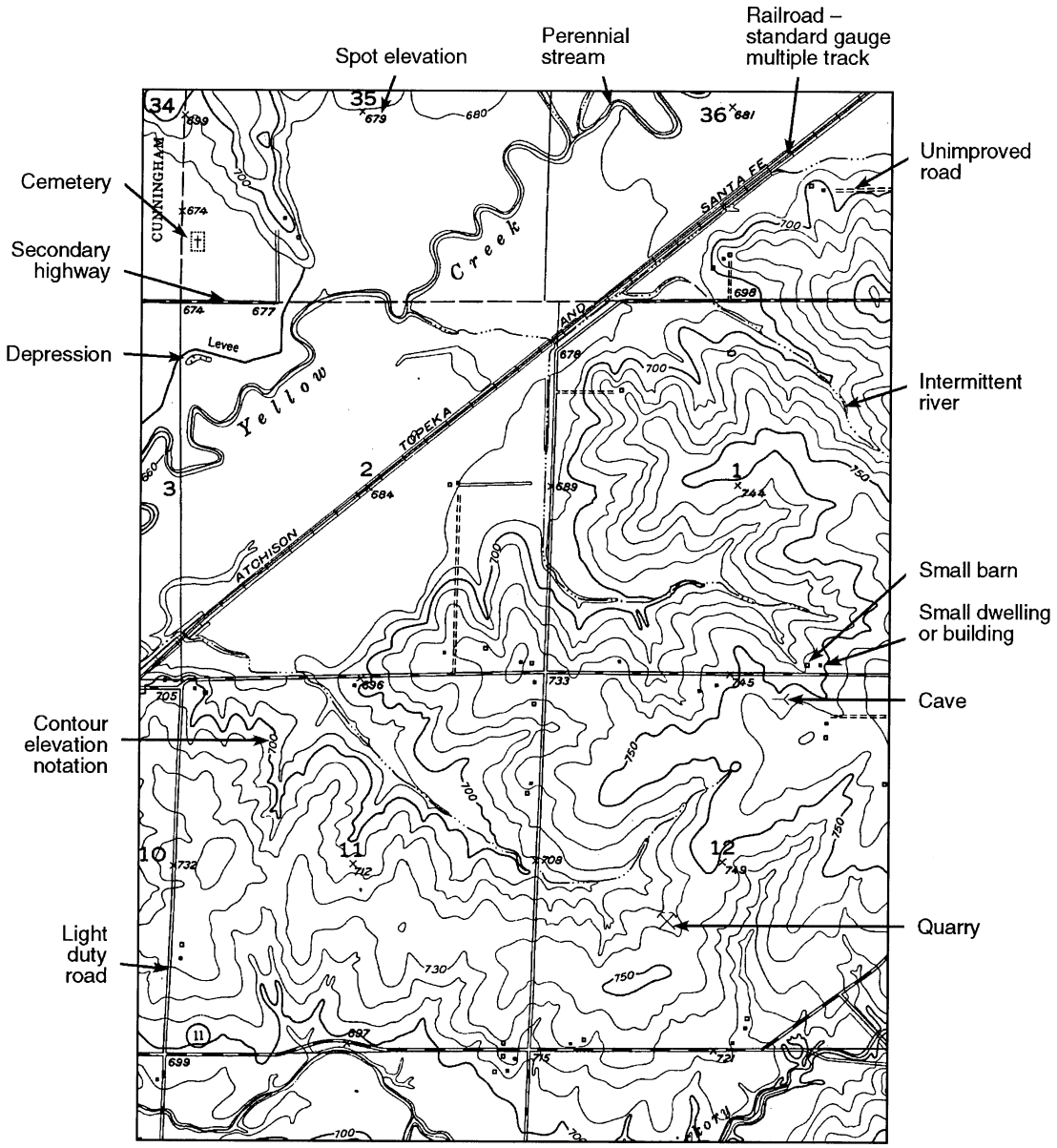


Figure 26.1- Example of feature labeling

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

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)