

Unit D: Spreadsheets

Half Course I

HALF COURSE I

Unit D: Spreadsheets

Hours: 8

General Learning Outcome:

Design and use a spreadsheet to make and justify decisions.

This unit is intended to give students experience with spreadsheet software for use in other parts of the Consumer Mathematics programs.

Specific Outcomes

- D-1 Create a spreadsheet and use different formatting options.
- D-2 Create a spreadsheet using formulas and functions.
- D-3 Use a spreadsheet template to solve problems.
- D-4 Use a spreadsheet to answer “what if” questions.

SPREADSHEETS

Instructional Materials

- BLM
- book computer lab
- spreadsheet program
- setup templates for students (optional)
- *Essentials of Mathematics 10*

Connections with Problem Analysis and Analysis of Games and Numbers

Any of the Problem Analysis and Analysis of Games and Numbers activities may be interspersed with problems from the Spreadsheets unit.

PRESCRIBED LEARNING OUTCOMES

General Outcome

Design and use a spreadsheet to make and justify decisions.

Specific Outcome(s)

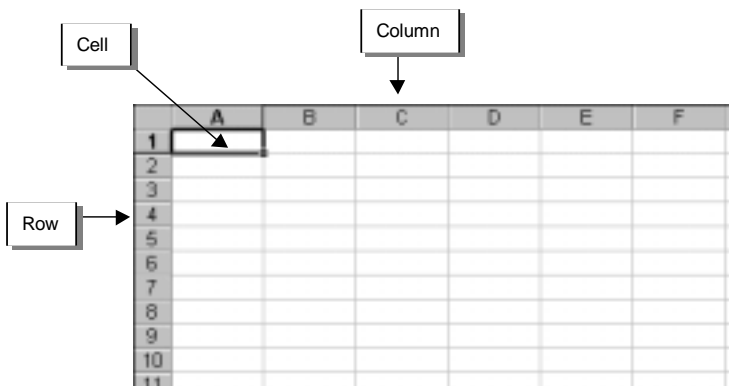
D-1 create a spreadsheet and use different formatting options

SUGGESTIONS FOR INSTRUCTION

This is a brief introduction to spreadsheets. Students will only become proficient in using spreadsheets if spreadsheets are used throughout the course.

The entire unit has been set up using Microsoft Excel, therefore, some of the formulas may be different if you are using a different program. Templates are provided for Microsoft Excel. Students should be introduced to the menus and online help features of the particular program they are using so they can find information themselves.

D-1.1 Introduce students to the concept of spreadsheets. It would be helpful to introduce spreadsheets first on pen and paper and then move to the computer (especially if students have not used a spreadsheet before). A suggestion for introducing the concept on pen and paper is to introduce the parts of a spreadsheet, and then complete a spreadsheet on pen and paper (Blackline Master 1). Provide the students with a blank spreadsheet where they can fill in the information for the data and the formulas as guided by the teacher. When using the computer, a projection device hooked up to the teacher’s computer to lead students through an example will aid the teaching process. Setting up the spreadsheet in advance would facilitate this process.



Communications	Patterns
Connections	Problem Solving
Number Sense	Reasoning
✓ Organization and Structure	✓ Technology Visualization

(continued)

SUGGESTIONS FOR ASSESSMENT

Monitoring students' work as they work onscreen allows performance assessment on a regular basis.

Written tests/quizzes of terminology, creation of a spreadsheet, and using a spreadsheet to solve a problem are all appropriate assessment tasks.

In the assessing of assignments, both product and process aspects should be included.

Teachers may wish to develop rubrics for each of the above forms of assessment.

If some students are proficient in spreadsheets, pairing them up with less proficient students is helpful.

Students may create spreadsheets in other courses which could be used in Consumer Mathematics as an item for assessment or for their portfolios.

**SUGGESTED LEARNING
RESOURCES**

Print

Senior 2 Consumer Mathematics (25S) Part I: A Course for Distance Learning. Winnipeg, MB: Manitoba Education and Training, 2000.
— Module 2, Lesson 5

Baron, Celia, Rick Wunderlich, and Leanne Zorn. *Essentials of Mathematics 10.* Vancouver, BC: British Columbia Ministry of Education, 2002.
Chapter 3
ISBN 0-7726-4675-9

Manuals for spreadsheet software such as *ClarisWorks, Excel, Lotus, Quattro Pro, and Microsoft Works*

Microsoft Excel: Challenging Simple Projects. Steve Butz. Teacher Created Materials, Inc.
ISBN 1-57690-734-1.

**PRESCRIBED LEARNING
OUTCOMES**

D-1 create a spreadsheet and use different formatting options
– *continued*

SUGGESTIONS FOR INSTRUCTION

A **spreadsheet** is a big calculator. It is a powerful tool used in business and by individuals. Some examples include keeping track of payroll, expenses, inventory, keeping track of marks, managing an investment portfolio, and budgeting.

Columns are referred to by the letters of the alphabet.

Rows are referred to by numbers.

Cells are the intersection of a row and a column. They are named (referenced) by the column and the row they are in. A1 and Z300 are examples of cell references. Labels (text), Values (numbers) or Formulas can be keyed into a cell.

A **formula** is a mathematical equation using cell references to tell the computer what numbers to use.

Function is a word used to instruct the computer to perform a multi-step calculation using the cells referred to in the formula. For example, =average(b5:b9), means to calculate the average of the numbers in the cells B5 to B9. The computer knows to add up all the numbers and divide by the amount of numbers there are. Functions save you time!

Review with the students the different operators:

- + Addition
- Subtraction
- * Multiplication
- / Division
- ^ Exponent (3^2 means 3^2)

Review with the students the order of operations:

- () Brackets
- ^ Exponents
- / Division
- * Multiplication
- + Addition
- Subtraction

Communications	Patterns
Connections	Problem Solving
Number Sense	Reasoning
✓ Organization and Structure	✓ Technology Visualization

(continued)

SUGGESTIONS FOR ASSESSMENT

**SUGGESTED LEARNING
RESOURCES**

**PRESCRIBED LEARNING
OUTCOMES**

D-1 create a spreadsheet and use different formatting options
– *continued*

SUGGESTIONS FOR INSTRUCTION

Basic information:

- Text is automatically left-aligned.
- Numbers are automatically right-aligned.
- **All** formulas start with an = sign.
- Never leave blank columns or rows within your data list.
- Once a formula has been entered the “answer” will be displayed. To view the formula click on the desired cell and look at the formula bar.
- Always print preview before printing.
- The results generated by the spreadsheet are only as accurate as the information in the cells and formulas keyed in.

Possible pen-and-paper sample to do with the students.

	A	B	C	D
1	ABC Company Payroll			
2	Two Weeks Ending September 14, 20--			
3				
4	EMPLOYEE	HOURS	RATE	GROSS PAY
5	Wong	50	14.5	=B5*C5
6	Gibson	30	10.25	=B6*C6
7	Lu	40	16	=B7*C7
8	Demski	20	8.5	=B8*C8
9	Kandia	35	9.75	=B9*C9
10				
11	TOTAL			=sum(D5:D9)

NOTE:

You may have to adjust the column width so the text will show when displaying formulas.

NOTE:

When keying in formulas, it does not matter if the letter reference is capital or lower case.

Communications Patterns
Connections Problem Solving
Number Sense Reasoning
✓ **Organization and** ✓ **Technology**
Structure ✓ **Visualization**

(continued)

SUGGESTIONS FOR ASSESSMENT

**SUGGESTED LEARNING
RESOURCES**

**PRESCRIBED LEARNING
OUTCOMES**

D-1 create a spreadsheet and use different formatting options
- *continued*

SUGGESTIONS FOR INSTRUCTION

Using the provided sample, have the students prepare it on the computer. You can walk them through it or have them jump right in. Remember to have the students save their work. It is best to have the students use the same file name when they save their work (for example, *Sample 1*), and then to add their own names as part of the file name (for example, *Sara Sample 1*).

There are many options for assessing the students' work. The students could either show you their work on screen, submit their work on disk, save their work to the network in their own folder, email their work to you, or print their work and hand you a paper copy.

If students are printing their work, have them add their name on their work before they print it. They could place it on the spreadsheet in a cell(s) that wouldn't interfere with the assignment, or you could introduce the use of headers and/or footers.

To access headers and footers, click on **File, Page Setup, Headers/Footers** tab, choose **Header** (appears in the top margin of the page) or **Footer** (appears in the bottom margin of the page), and in the desired section(s) have them key in the information you would like.

Students can print out their work with the formulas showing (**Tools, Options**, on the **View** tab go to **Windows Options** and choose **Formulas**). They will have to adjust the column width and may need to print landscape (**File, Page Setup, Page** tab and choose **Landscape**).

An additional feature that will benefit the students for using spreadsheets is the **Fill Handle**. The **Fill Handle** copies the formula to the desired adjacent cells and automatically adjusts the formula. It saves time and minimizes the probability of error.

To demonstrate the **Fill Handle**, use this sample and have the students delete **only** the information in cells **C6:C9** leaving the formula in **C5**.

Communications	Patterns
Connections	Problem Solving
Number Sense	Reasoning
✓ Organization and Structure	✓ Technology Visualization

(continued)

SUGGESTIONS FOR ASSESSMENT

**SUGGESTED LEARNING
RESOURCES**

**PRESCRIBED LEARNING
OUTCOMES**

D-1 create a spreadsheet and use different formatting options
– *continued*

SUGGESTIONS FOR INSTRUCTION

Fill Handle

	GROSS PAY
0	\$ 725.00
5	
0	
0	
5	

The square in the bottom right corner of the cell is where you place the mouse pointer for it to turn into the fill handle.

	GROSS PAY
0	\$ 725.00
5	
0	
0	
5	
	\$ 725.00

This is the fill handle. Just drag (click and hold) it down over the cells you would like the formula copied to. Or, double-click and it will automatically fill for you.

D-1-2 Using the sample above, demonstrate how to apply basic formatting features.

Sample formatting features are:

- apply two ***decimals*** to the rate of pay
- apply the ***currency style*** to the pay and the total
- ***bold*** and ***enlarge*** the title
- ***bold*** and ***centre*** the column titles
- apply ***border(s)*** around the information

Communications	Patterns
Connections	Problem Solving
Number Sense	Reasoning
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SUGGESTIONS FOR ASSESSMENT

**SUGGESTED LEARNING
RESOURCES**

**PRESCRIBED LEARNING
OUTCOMES**

D-2 create a spreadsheet using formulas and functions

SUGGESTIONS FOR INSTRUCTION

D-2-1 As students will input the formulas, it may be beneficial for you to review and set up the first formula with them before they tackle this on their own.

For an extension to the sample provided, have the students add the following columns (students will need a set of the current Payroll Deductions tables, available from the National Forms Line 1-800-959-2221 or they can be viewed online at <www.ccra-adrc.gc.ca>).

	A	B	C	D	E	F	G	H	I
1	ABC Company Payroll								
2	Two Weeks Ending September 14, 20--								
3									
4	EMPLOYEE	HOURS	RATE	GROSS PAY	EI	CPP	FED. TAXES	PROV. TAXES	NET PAY
5	Wong	50	14.50	\$ 725.00	=D5*2.25%	=D5*4.3%			=D5-E5-F5-G5-H5
6	Gibson	30	10.25	\$ 307.50					
7	Lu	40	16.00	\$ 640.00					
8	Demski	20	8.50	\$ 170.00					
9	Kandia	35	9.75	\$ 341.25					
10									
11									
12	EMPLOYEE	FEDERAL CLAIM CODE	PROVIN. CLAIM CODE						
13	Wong	1	1						
14	Gibson	3	3						
15	Lu	2	2						
16	Demski	1	1						
17	Kandia	2	3						

Students then complete the information, formulas, and formatting.

Students will manually enter the amounts in columns G and H after looking up the appropriate information in the tax tables.

See the Appendix for more sample templates (Templates 1 to 5).

- ✓ **Communications** Patterns
- ✓ **Connections** Problem Solving
- ✓ **Number Sense** ✓ **Reasoning**
- ✓ **Organization and Structure** ✓ **Technology**
- ✓ **Visualization**

SUGGESTIONS FOR ASSESSMENT

Project 1

See Project 1 (page I-D-25). This assignment could be a portfolio item.

**SUGGESTED LEARNING
RESOURCES**

Print

*Senior 2 Consumer
Mathematics (25S) Part I:
A Course for Distance
Learning.* Winnipeg, MB:
Manitoba Education and
Training, 2000.
— Module 2, Lesson 3, 4

**PRESCRIBED LEARNING
OUTCOMES**

D-3 use a spreadsheet template to solve problems

SUGGESTIONS FOR INSTRUCTION

D-3-1 Spreadsheets are not always created from scratch. If a spreadsheet is to be used over and over or if more than one person will be using the same spreadsheet layout, a template can be created. A template has the layout and formulas built in and all that is required is the data.

You may want your students to use some templates. This helps if students are not proficient at the keyboard or if time is limited, and provides an alternate way of investigating formulas. When constructing the template, first decide whether you want to provide the formula or if you want the students to add the formula themselves.

Once the template is created, it should be saved as a template so that the students cannot alter it when they open it. To save the template as a template, click on **File, Save As...**, change the **Save As File Type** (located at the bottom of the dialogue box) to **Template**, and save the template with an appropriate name. Note the file location of the template in case you need to modify it later. Once a template has been created, the original file template is not accessed by the students. To open the template, click on **File, New**, and choose the appropriate template.

To modify a template click on **File, Open**, and go to the location where the template was saved (usually it is saved in <C:\program files\microsoft office\templates>). Make the required changes and then remember to save the changes.

Example

Calculate the perimeter, area, and diagonal length of a rectangle.

	A	B
1	Length	
2	Width	
3		
4	Perimeter	=B1*2+B2*2
5	Area	=B1*B2
6	Diagonal Length	=SQRT(B1^2+B2^2)

Students will need to put in the measurement for the length and width for the answers to appear beside the perimeter, area, and diagonal length. See Templates 6 and 7 in the Appendix for additional problems.

Communications	Patterns
Connections	Problem Solving
Number Sense	Reasoning
✓ Organization and Structure	✓ Technology Visualization

SUGGESTIONS FOR ASSESSMENT

Journal Entries

1. Give the students a formula and then have them explain what it means. This could be a portfolio item.

Example

$$= B6 * C6 + 100.$$

Possible Answer

The value in cell B6 is multiplied by the value in C6, and then 100 is added to that.

Example

$$= \$B\$3 + D10$$

Possible Answer

The value that is in cell B3 is to be added to the value in cell D10. If the formula were copied, the cell reference to B3 would remain (it would not change).

SUGGESTED LEARNING RESOURCES

Print

Senior 2 Consumer Mathematics (25S) Part I: A Course for Distance Learning. Winnipeg, MB: Manitoba Education and Training, 2000.
— Module 2

**PRESCRIBED LEARNING
OUTCOMES**

D-4 use a spreadsheet to answer “what if” questions

SUGGESTIONS FOR INSTRUCTION

D-4-1 Spreadsheets can be used to answer the “what if” questions. A spreadsheet can be created and numbers can be “plunked” in to answer “what if” queries.

Example 1

Kam wanted to know how many hours she had to work to earn a certain amount of money to save for her trip. Assume she saves all of it.

	A	B	C
1	HOW MUCH DO I HAVE TO WORK TO EARN \$ _____		
2			
3	Wage	\$6.90	
4	Hours Worked		
5			
6	Earn	=B3*B4	
7			
8			
9			
10			

Provide students with an amount or have them decide how much money Kam would like to earn for her trip.

Example 2

You have started your own business, Thirst Mobile. It consists of a drink stand that you have set up on Broadway. Your business is selling cold beverages to the public during the hot Winnipeg summer months. You carry bottled water and canned drinks. Each bottle of water sells for \$1.50 and each canned drink sells for \$1.00. You must decide what is the most profitable inventory combination. Your cart can hold 5500 cm³. Each bottle of water is 50 cm³ and each can is 35 cm³. You know that you must have at least 12 of each.

- ✓ **Communications** Patterns
- ✓ **Connections** Problem Solving
- ✓ **Number Sense** ✓ **Reasoning**
- ✓ **Organization and** ✓ **Technology**
Structure ✓ **Visualization**

(continued)

SUGGESTIONS FOR ASSESSMENT

Projects

See Projects 2 to 4 (pages I-D-26 to I-D-32). All projects are opportunities for portfolio inclusion.

**SUGGESTED LEARNING
RESOURCES**

**PRESCRIBED LEARNING
OUTCOMES**

D-4 use a spreadsheet to answer “what if” questions
– *continued*

SUGGESTIONS FOR INSTRUCTION

	A	B	C
1	THIRST MOBILE		
2	Inventory		
3			
4	ITEM	QUANTITY	
5	Bottles		
6	Cans		
7			
8			
9	VOLUME	$=50*B5+35*B6$	
10	PROFIT	$=1.50*B5+1.00*B6$	
11			

See Templates 8 and 9 in the Appendix.

- | | |
|-------------------------------------|------------------------|
| ✓ Communications | Patterns |
| ✓ Connections | Problem Solving |
| ✓ Number Sense | ✓ Reasoning |
| ✓ Organization and Structure | ✓ Technology |
| | ✓ Visualization |

SUGGESTIONS FOR ASSESSMENT

**SUGGESTED LEARNING
RESOURCES**

Appendix I

Projects

Project 1

Create the following worksheet for Byrd & Son’s birdseed company. Save it as *Name Payroll1*.

	A	B	C	D	E	F	G	H
1	Employee Name	Reg Hours	Hourly Rate	Reg Pay	Overtime Hours	Overtime Rate	Overtime Pay	Gross Pay
2								
3	Finch	37.5	8.95			2.5		
4	Jay	38.25	7.55					
5	Sparrow	39	6.15			3		
6	Parrot	33	8.88					
7	Byrd Junior	40	6.05			26.75		
8	Byrd Senior	38.5	36.05					
9								

- The employees of the company believe their salaries are for the birds. They all flock to Hiram Byrd Senior and insist on raises. Hiram is nervous that his expenses will go through the ceiling but he agrees to the increases. What are their new regular hourly rates of pay? Assume that each employee continues to work the same number of regular and overtime hours. Their gross weekly wages are now as follows:

Finch	\$400
Jay	\$350
Sparrow	\$325
Parrot	\$375

- Hiram Byrd Junior feels he deserves a substantial increase in wages. He tells his father he is tired of being under his wing and wants more responsibility. He also negotiates not to work any more overtime hours. His father doesn’t want to ruffle his son’s feathers so he reluctantly agrees. What is Hiram Byrd Junior’s new hourly rate of pay if his gross weekly wage is now \$700 a week? This wage does not include overtime pay.
- Increase the hourly rates of pay of the employees and Hiram Byrd and save this worksheet as *Name Payroll2*.

Project 2

Your assignment is to construct a spreadsheet as an order form for a restaurant.

1. Your order form should look like the one on the following page.
2. Include the name of the restaurant and a graphic.
3. Include enough food and drink items for a party of 20 people (at least 10 items).
4. Use formula:
 - subtotal
 - PST (7% of subtotal)
 - GST (7% of subtotal)
 - Tip (15% of subtotal)
 - Total Bill (add subtotal, PST, GST, and tip)
 - The amount each person owes (Total Bill \div number of people)
 - All headings are bold and centred
 - All \$ amounts are centred
5. Draw borders as shown in the example (gridlines off).
6. Include a header with the date centred and your name right-justified.
7. Include a footer with 'Project 1' centred and bolded.

One of the powers of a spreadsheet is that it lets the user make predictions about future outcomes.

Once you have completed your spreadsheet, determine the future outcomes by changing the values or formulas. Change only one at a time, record your answers, and re-enter the original values before beginning the next question.


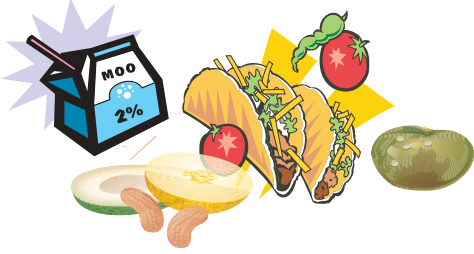
Type the responses to each question below your spreadsheet using complete sentences. For example, "If the GST rose from 7% to 8%, the total cost would increase to \$135.98."

1. What is the new cost per person if the number of people increased by three?

Remember to change the number of people back to the original value.

2. What happens to the total bill if you decide on a 20% tip?
3. Pick one of your food items, and increase the cost per item by \$1.00. What effect does this have on the total bill and on the cost per person?
4. How would the cost per person change if the PST rose 2.5%?

Project 2 (continued)

<div style="display: flex; justify-content: space-around; align-items: center;">  <div style="text-align: center;"> <h2 style="margin: 0;">THE LUNCH ROOM</h2> <p style="margin: 0;">1234 Roblin Avenue</p> </div> </div>													
Item	Cost/Item	# Ordered	Total										
Cheese Toast	\$3.25	4	\$13.00										
Soup of the Day	\$1.90	20	\$38.00										
Garlic Toast	\$1.75	15	\$26.25										
Small Pizza	\$6.95	7	\$48.65										
Medium Pizza	\$9.99	4	\$39.96										
Lasagna	\$8.95	6	\$53.70										
Club Sandwich	\$7.50	3	\$22.50										
Diet Coke	\$1.99	8	\$15.92										
Sprite	\$1.99	7	\$13.93										
Chocolate Milkshake	\$2.15	3	\$6.45										
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;">  </div> <div style="width: 45%; border: 1px solid black; padding: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right; padding: 5px;">Subtotal</td> <td style="padding: 5px;">\$278.36</td> </tr> <tr> <td style="text-align: right; padding: 5px;">PST</td> <td style="padding: 5px;">\$19.49</td> </tr> <tr> <td style="text-align: right; padding: 5px;">GST</td> <td style="padding: 5px;">\$19.49</td> </tr> <tr> <td style="text-align: right; padding: 5px;">Tip</td> <td style="padding: 5px;">\$46.97</td> </tr> <tr> <td style="text-align: right; padding: 5px;">Total Bill</td> <td style="padding: 5px;">\$364.31</td> </tr> </table> </div> </div>				Subtotal	\$278.36	PST	\$19.49	GST	\$19.49	Tip	\$46.97	Total Bill	\$364.31
Subtotal	\$278.36												
PST	\$19.49												
GST	\$19.49												
Tip	\$46.97												
Total Bill	\$364.31												
		Number of people	20										
		Each person owes	\$18.22										

Project 3

Your assignment is to construct and complete a spreadsheet to calculate the net profit for a music store.

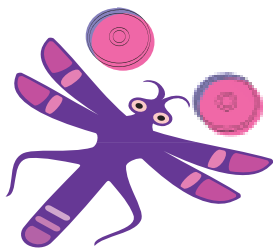
1. Construct a spreadsheet like the sample.
2. Enter all the labels and values that are given.
3. Create formulas in each cell containing an “*.”
 - a) Sales #'s Totals: sum of the values in that column
 - b) Sales #'s Stock Cost: Totals x Cost/Item
 - c) Sales Dollars: total items sold x retail price (You will have to use an absolute reference for this one!)
 - d) Sales Dollars Totals: sum of the Sales Dollars for each month (row) and each type of item (column)
 - e) Total Stock Cost: sum of the stock cost for each item sold
 - f) Sales Commissions: Sales Dollars Grand Total x 10%
 - g) Sale Tax on all sales: Sales Dollars Grand Total x 7%
 - h) Interest on loans to buy stock: Total Stock Cost x 12%
4. Paste a suitable graphic on the spreadsheet.
5. Print out two versions of the completed spreadsheet — both with your name and Project 3 in the header.
 - a) Version 1: showing values
 - b) Version 2: showing formulas
6. Create a pie chart of the Expenses section of the spreadsheet.
7. Answer the following questions by changing the appropriate values in the spreadsheet.

*Be sure to change the values back to the original before answering the next question.

 - a) How does your profit change if the unit cost for CDs increases by \$1.00?
 - b) How does your profit change if the unit cost of tapes drops by \$1.50?
 - c) What would happen to profit if you reduced the selling price of CDs to \$19.99 and then sold 150 more in April?
 - d) Explain how the total expenses and the total profit change if the interest rate for the loan drops to 7.5%.

Hand in the pie chart, the two spreadsheet printouts, and the answers to the above questions.

Project 3 (continued)

<h1>DRAGONFLY MUSIC STORE</h1>					<p>Specializing in Compact Disks Tapes LPs 45s</p>																						
Month	45s	LPs	Tapes	CDs	45s	LPs	Tapes	CDs	Totals																		
Jan	14	12	34	14	*	*	*	*	*																		
Feb	25	33	45	30	*	*	*	*	*																		
Mar	22	56	61	70	*	*	*	*	*																		
Apr	45	121	190	96	*	*	*	*	*																		
Totals	*	*	*	*	*	*	*	*	*																		
Cost/Item	\$0.99	\$7.00	\$3.00	\$12.00	Expenses				*																		
Stock Cost	*	*	*	*	<table border="1" style="width: 100%;"> <tr> <td>Total Stock Cost</td> <td>*</td> <td></td> </tr> <tr> <td>Sales Commission</td> <td>*</td> <td></td> </tr> <tr> <td>Sales Tax on All Sales</td> <td>*</td> <td></td> </tr> <tr> <td>Interest on Loans</td> <td>*</td> <td></td> </tr> <tr> <td>Total Expenses</td> <td>*</td> <td>*</td> </tr> <tr> <td colspan="2"></td> <td>Profit</td> <td>*</td> </tr> </table>				Total Stock Cost	*		Sales Commission	*		Sales Tax on All Sales	*		Interest on Loans	*		Total Expenses	*	*			Profit	*
Total Stock Cost	*																										
Sales Commission	*																										
Sales Tax on All Sales	*																										
Interest on Loans	*																										
Total Expenses	*	*																									
		Profit	*																								
Prices	Retail																										
45s	\$3.99																										
LPs	\$12.99																										
Tapes	\$8.99																										
CDs	\$22.99																										

Project 4

Use a spreadsheet to construct an invoice for a mail order music source. You will need to create a store name and logo (graphic). At the end of this assignment is a sample invoice which you may use to help in the creation of your invoice.

1. Design the layout for this music store's invoice. You need to include company name, logo, complete address, phone number, fax number, email address, and website.
2. The following information must be on your invoice: invoice number, a spot for the customer's name and complete mailing address, catalogue number, item, unit price, quantity, cost, subtotal, GST, PST, shipping and handling, and total. You will need to leave room for a maximum of five items to be on the invoice.
3. Save your invoice as your company's name.
4. Set up formulas in the appropriate cells (cost, subtotal, GST, PST, shipping and handling [\$0.85 per item] and total).
5. Apply appropriate formatting features to your invoice (borders, currency, decimals, et cetera).
6. Save your changes.
7. Print two copies of the invoice, one with the formulas showing and one with values.
8. Complete your invoice with the following order for Slip Disks Company, 25 – 8765 St. Mary's Road, St. Vital Centre, Winnipeg, MB R3K 2L3.

Catalogue #	Item	Unit Price	Quantity
859-65	Guess Who	15.85	10
758-63	Blink 182	13.72	12
125-96	Shania Twain	14.98	15
546-25	Destiny's Child	11.45	10
658-98	Bryan Adams	10.44	5

9. Save your work as Slip Disks Company.
10. Print out two copies of the invoice, one copy showing the formulas and one copy showing the values.

Project 4 (continued)

Once you have completed your spreadsheet, determine the “what ifs” by changing the values and/or formulas. Change only one at a time, record your answers, and re-enter the original values before beginning the next question.

Type the responses to each question below your spreadsheet using complete sentences.

1. How does the total cost change if shipping and handling increases from \$0.85 per item to \$1.10 per item?
2. Your supplier contacted you to say that the Guess Who CD is now on sale for \$13.50. What is the new total cost?
3. Your customer reduced the number of Destiny’s Child CDs by three. What is the new total cost?
4. You decide to offer your customer a “Pay No PST Sale.” What would this customer’s new total cost be?

Project 4 (continued)



music galore

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Fax: (204) 727-4321

Email: musicgalore@escape.ca

www.musicgalore.com

TO

INVOICE #:

DATE:

CAT. #	ITEM	UNIT PRICE	QTY	COST
			SUBTOTAL	
			PST	
			GST	
			S&H	
			TOTAL	

Appendix II
Additional Template Samples

Additional Template Samples

Template 1

	A	B
1	Monthly Bills	
2		
3	BILL	AMOUNT
4	Clothes	50.00
5	Movies	20.00
6	Bus Fare	32.50
7	Gum, etc.	3.75
8	Gifts	27.60
9		
10	TOTAL	=sum(B4:B8)

Template 2

	A	B	C	D	E
1	PETS & FRIENDS STORE				
2	August 20--				
3					
4	ANIMAL	BEGINNING INVENTORY	BOUGHT	SOLD	ENDING INVENTORY
5	Dogs	1	2	2	=B5+C5-D5
6	Cats	5	4	3	
7	Fish	100	200	275	
8	Snakes	3	5	2	
9	Hamsters	6	10	12	
10	Birds	15	3	3	
11					
12	TOTAL	=SUM(B5:B10)	=SUM(C5:C10)	=SUM(D5:D10)	=SUM(E5:E10)

Additional Template Samples (continued)

Template 3

Students will have to apply knowledge as to what items should be totalled.

	A	B	C	D	E	F	G
1	Weekly Newspaper Company Payroll						
2	For Two Weeks Ending March 18, 20--						
3							
4	EMPLOYEE	REG. HRS.	OT HRS.	WAGE	REG. EARNINGS	OT EARNINGS	GROSS PAY
5	Alder	40	5	11.00	=B5*D5	=C5*D5*1.5	=E5+F5
6	Beaudette	38	4	12.50			
7	Compton	40		9.75			
8	Cruz	38.5	10	12.50			
9	Gates	37.5		11.00			
10	Margolis	40	3	8.85			
11	Pratt	35		13.00			
12	Roch	33	2	12.50			
13	Velano	40		11.00			
14	Wazir	40	0.5	10.00			
15	Zeilig	39		10.50			
16							
17	TOTAL				=SUM(E5:E15)	=SUM(F5:F15)	=SUM(G5:G15)

Additional Template Samples (continued)

Template 4

Have the students create their own formulas. They may need guidance with calculating the **Mark Out Of 70** (=E4/\$E\$17*70).

In the formula, =E4/\$E\$17*70, the cell reference \$E\$17 is an absolute cell reference. This feature is used when you need to make sure that the cell reference(s) in the formula do not change when the formula is copied (filled down or over).

	A	B	C	D	E	F	G	H
1	MATH MARKS							
2								
3	STUDENT	TEST 1	TEST 2	TEST 3	TOTAL	MARK OUT OF 70	EXAM	FINAL
4	Winston	28	38	20	=SUM(B4:D4)	=E4/\$E\$17*70	18	=F4+G4
5	Ullah	19	35	22.5			25	
6	Jemma	22.5	22.75	18			22	
7	Zinovia	22.5	28	22			27	
8	Trisha	18.75	19.5	21			15	
9	Ariel	23	33	20			18	
10	John	25	34	23			35	
11	Dave	27	36.5	24.5			29	
12	Jenine	11.5	32	18			22	
13	Harold	12	30	17			14	
14	Amin	18.5	27	14.5			12	
15	Ling	20	34	15			16	
16								
17	TOTAL	30	40	25			30	

Additional Template Samples (continued)

Template 5

The students will have to use an absolute cell reference for the monthly income when calculating the “EXTRA LEFT OVER?????”. For example, in cell B19 the formula should be =\$B\$3–B17.

	A	B	C	D	E
1	PERSONAL BUDGET				
2					
3	Monthly Income	\$1,500.00			
4					
5	EXPENSE	JANUARY	FEBRUARY	MARCH	TOTAL
6	Insurance (auto)	65	65	65	=sum(B6:D6)
7	Insurance (home)	120	120	120	
8	Groceries	225	225	225	
9	Hydro (every 2 weeks)	55		60	
10	Water (every 3 months)	95			
11	Gas (heat)	65	65	65	
12	Gasoline	35	25	20	
13	Entertainment	100	200	135	
14	Mortgage	475	475	475	
15	Saving/Investing	165	165	165	
16					
17	MONTHLY TOTAL	=sum(B6:B15)			
18					
19	EXTRA LEFT OVER?????	=\$B\$3–B17			

Template 6

	A	B	C	D
1		QUANTITY	PRICE	TOTAL
2	Small Widget			=B2*C2
3	Medium Widget			=B3*C3
4	Large Widget			=B4*C4
5				
6	TOTAL			=SUM(D2:D4)

Students can decide on their own quantity or price for the widgets or you can provide them.

Additional Template Samples (continued)

Template 7

	A	B
1	My Earnings	
2	Two Weeks Ending December 31, 20--	
3		
4	Reg. Hours	
5	OT Hours	
6	Wage	
7		
8	Regular Earnings	=B4*B6
9	OT Earnings	=B5*B6*1.5
10	TOTAL	=B8+B9

Students can either fill in their own hours or you can provide them with hours worked.

Template 8

	A	B	C	D
1	BUDGETING FOR GROCERIES			
2				
3	\$ to Spend	\$125.00		
4				
5	ITEM	QUANTITY	PRICE	COST
6				=B6*C6
7				
8				
9				
10				
11				
12				
13				
14				
15			Total Cost	=SUM(D6:D13)
16				
17			Left Over	=\$B\$3-D15

Have the students decide what groceries they could live off if they could only spend a maximum amount of \$125.

Additional Template Samples (continued)

Template 9

	A	B	C
1	HOW FAR CAN I TRAVEL ON A TANK OF GAS?????		
2			
3	Amt. of Fuel (Litres)	25	
4			
5	Type of Vehicle	Km/Litre	Distance in Km
6			=B6*\$B\$3
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

You can choose to have the students find the information in either miles per gallon or kilometres per litre.

The students can investigate their favourite type of vehicles and their respective km/L or you can supply them with a list of vehicles and/or km/L.

Blackline Master

Spreadsheets

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						