

Landscaping Lowdown

Activity Summary

- In this activity students will:
- ♦ Interview an individual in the landscaping industry
 - ♦ Complete a landscaping project budget
 - ♦ Produce a landscaping project quotation
 - ♦ Produce an **Essential Skills** Spreadsheet



Prior Knowledge

- **Essential Skills**
- Completion of a scale model of a yard or part of yard to be landscaped (teacher may provide a generic model if desired)
- Basic computer skills
- Some knowledge of horticulture would be an asset, but not necessary



Teaching Planning Notes

- Review assignment including prior knowledge required and assessment and evaluation tools
- Allow students time to create a scale model of a yard/garden to be landscaped, or create a template model for all students to use
- Discuss conditions in the yard to be landscaped (e.g. amount of light available and soil conditions)
- Arrange for a local landscaper(s) to visit your classroom; ideally, 2 -3 small groups each with a landscaper. Consider inviting your Horticulture teacher, as well.
- Provide students with access to computers and spreadsheet software
- Download copies of the following **Essential Skills** Occupational Profiles:
 - o NOC 8432: (Nursery and Greenhouse Workers)
 - o NOC 0123, 0621, 0631, 0632, 0712 (Small Business Owner-Operators)
 - o Website: http://www15.hrdc-drhc.gc.ca/English/general/all_profiles.asp
- Make 2 -3 copies of the **Essential Skills** Occupational Profiles

FOCUS ON LEARNING

Essential Skills:

Reading Text

All Activities

Writing

Conducting Interview

Oral Communication

All Activities

Numeracy

Spreadsheet Activities 1-3

Thinking Skills

All Activities

Document Use

Conducting Interview

Working with Others

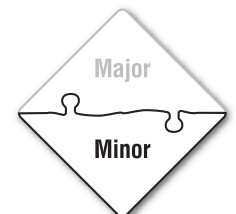
All Activities

Computer Use

Spreadsheet Activities 1-3
Skill Tally Activity

Assessment of Student Achievement

Task	Tool / Type
Landscaper Interview	The Green (\$) for Green Landscaping Lowdown Interview Sheet (Formative)
Spreadsheet Explorations	The Green (\$) for Green Landscaping Quote Assessment Tool (Formative)
Skill Tally Activity	The Green (\$) for Green Skill Tally Worksheet (Formative) The Green (\$) for Green Skill Tally Rubric (Summative)
Essential Skill Tally Discussion	



Activities and Assessment Materials

- Landscaping Lowdown Interview Sheet
- Spreadsheet Explorations # 1 – 3
- Skill Tally Worksheet
- Landscaping Quote Assessment Tool
- Skill Tally Rubric

Curriculum Linkages For Ontario Educators

Essential Skills truly are everywhere and as teachers we are always teaching students the **Essential Skills!** As subject teachers and specialists, we know that many of the curriculum expectations we are accountable to teach and assess, also address the **Essential Skills** and while the linkages are not always readily apparent, the linkages exist nonetheless.

While this activity connects to a variety of courses it is most closely aligned to the following course(s):

- Mathematics for Everyday Life – Grade 12 – MEL 4E
- Essential Horticulture and Landscape Course – THL 2/THX 3

To assist you, the teacher, in making more transparent linkages, we have identified the following curriculum linkages for this activity.

Essential Horticulture and Landscape Course – THL 2/THX 3

Coded Overall Expectations	Coded Specific Expectations
OV.TF2 describe procedures and necessary record keeping used in hard and soft landscape renovation, maintenance and construction	TF3 describe procedures involved in landscape renovation, planting and maintenance
	TF4 distinguish between different plant groups and identify common landscape plants by using key identification characteristics
OV.SP4 perform proper measurements and calculations required for various applications in landscape construction and maintenance	SP4 demonstrate oral, written and hand communication skills necessary in the landscaping industry

Mathematics for Everyday Life – MEL 4E

Coded Overall Expectations	Coded Specific Expectations
AMGV.02 solve problems involving measuring and design	AMG2.09 investigate the making of a household improvement (e.g., landscaping a property, decorating a room), design the improvement, and estimate and calculate the cost, using technology (e.g. spreadsheets, design or drawing software)

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Landscaping Lowdown Interview Sheet

What better way to the “dirt” on landscaping than by getting the answers from someone in the industry. What do we need to find out from interviewing the landscaper? Your group may already know some answers to the following questions. Use the interview to help you obtain the required information for this major assignment. Write some rough notes in the spaces provided.



1. Show the landscaper a copy of your landscaping plan. Be sure to explain to him/her that your customer is working on a \$3,500 budget, including labour. (You may want to ask him/her to comment on your plan; e.g. Do you think there are enough gardens? Are the shapes of the gardens suitable? etc.)

2. Which local nurseries would you recommend purchasing trees and flowers from? What are the criteria for your recommendation? (price, quality, availability, etc.)

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3. What plants and/or trees would you recommend for this project, keeping in mind the budget? (Be sure that your group knows and has discussed the conditions of the yard; for example, sunny, shady, sandy soil, etc.)

NAME OF PLANT	SCIENTIFIC NAME	GROWING CONDITIONS	ROUGH PRICE ESTIMATE
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

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4. What would be an approximate total labour cost to have a landscape team complete this landscaping job?

5. How long might it take a team to complete this landscaping job?

6. Roughly label your diagram with locations of specific trees and plants to provide a visual of what will be planted where.

The Green(\$\$) for Green Spreadsheet Exploration

Spreadsheet Exploration #1: Creating the Template

1. Open your spreadsheet program, on your computer.

Are you new at using spreadsheet software? Here's some background information:

- Cells are the boxes in the spreadsheet
- In a cell you can enter a numerical value, written labels and formulas
- Similar to a chart, the cells are arranged into columns and rows
- To refer to a cell by its name, use the letter for the column and the number for the row that meet at that cell (e.g. "B3" is where column B and row 3 meet at a cell)

2. Create the following spreadsheet, using your company name and address.

	A	B	C	D	E	F	G	H	I	J	K
1	Name										Invoice #
2	Street Address										24310
3	City, Province										
4	Postal Code										
5											
6											
7	Plant Name			Common Name			Unit Price		Quantity		Total
8											
9											
10											
11									Subtotal		
12									PST		
13									GST		
14									Labour		
15											
16									Total Cost		

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3. Merge the cells that contain your business name and address.
 - Highlight cells A1 and B1 (hold down your shift key when highlighting more than one cell)
 - Under Format, choose Cells, then Alignment
 - Choose the “Merge cells” box
 - Repeat for A2 and B2, A3 and B3, A4 and B4
4. Make your company name and address stand out by changing the font type and size.
 - Highlight the desired cells (A1-A4)
 - Under Format, choose Cells, then Font
 - Make your choice!
5. Aligning numbers to the right, left or centre.
 - Highlight the desired cells
 - Choose the left, centre or right alignment button in the toolbar

Note: Align the text to the left and the unit cost, quantity and prices to the right.

6. Show dollar signs where necessary.
 - Highlight the desired cells
 - Under Format, choose Cells, Number, then Currency
 - Do this for all cells that will have a \$ sign (remember to highlight blocks of cells to save time)
7. You may wish to insert a picture on your invoice
 - Under Insert, choose Picture, then Clip Art
 - Click on a picture
 - Drag picture to desired location
8. Save your spreadsheet.
 - Under File, choose Save As
 - Use a suitable file name



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Spreadsheet Exploration #2: Entering the Data

In this exploration, you will enter the data obtained for your landscaping project into your spreadsheet.

1. Open your spreadsheet.
 - Under File, choose Open
 - Double click on your file name
2. Highlight the cell that you want to enter information into, and fill in the data. Enter data for the Plant Name, Common Name, Unit Price and Quantity ONLY!!
3. Decide if you like the look of your invoice or whether you want to change any font styles or sizes. Refer to Spreadsheet Exploration #1 for help.
4. Save your spreadsheet.

Spreadsheet Exploration #3: Calculating the Data

Spreadsheets can do the basic math functions for you. In this exploration, you will finalize the numbers for your quote.

Some Helpful Information:

- Formulas in a spreadsheet always START with an = sign
- + means addition
- - means subtraction
- * means multiplication
- / means division
- ^ means exponents
- brackets can be used () for order of operations

1. Open your spreadsheet.
2. To total the cost for the first plant listed:
 - Click on the cell that the answer will go into (K9 in this case)
You must know the formula or mathematics required to get the answer. The total cost in this case would be the _____ x _____.
 - Enter = G9*I9 (Be sure to check that you have the data for the first plant in cells G9 and I9! If not, adjust the formula.)
 - Press Enter

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3. What would the formula be for the total cost for the second plant listed?

4. What would the formula be for the total cost for the third plant listed?

5. To save the time of entering the formula multiple times, you can instruct the spreadsheet to do so.
 - Highlight cell K9 which has the formula in it
 - Hold down the Shift Key and drag the mouse down until all of the cells in column K that need totals are highlighted
 - Under Edit, choose Fill and Down
6. Think about the formulas required to calculate the subtotal, PST and GST. Write them in the spaces below using spreadsheet symbols.
 Subtotal: _____
 PST: _____
 GST: _____
7. Try entering them into your spreadsheet. Use a calculator to check your answers.
8. Enter in the labour costs that your company has decided to charge.
9. Tally the Total Cost by creating a formula. Remember to think about the values that make up the total cost. Check your answer by using a calculator.
10. Save your spreadsheet.

What If....

1. **Your calculations do not seem to add up?**
Ask another group or your teacher for help.
2. **You are over budget?**
Determine what is to be cut out of the landscaping project as the budget is \$3500 firm (i.e. not one penny more!!). When you change your plant quantities, your formulas will readjust the costs...easy!
3. **You are under budget?**
If your company is under budget by a few dollars, you likely won't worry. However, if you are a few hundred dollars under budget, think about what you might add (e.g. more plants, some decorative rocks, cedar mulch?).

The Green(\$) for Green Skill Tally Worksheet

Part A

What is an **Essential Skill** worth in the landscaping industry? You have \$100,000 to spend on the **Essential Skills**. You and your partner will allocate a \$ value for each **Essential Skill** you have used in this project and decide how much of a particular skill you needed. To complete this activity you and your partner will create a spreadsheet similar to the one used in the Spreadsheet Exploration.



1. Open a new spreadsheet.
2. Enter your company's name, address, etc. in an appropriate location. (Refer to the Spreadsheet Explorations, if needed.)
3. Enter the invoice number information.
4. Create columns titled "**Essential Skill**", "Use In This Assignment", and "Total Value".
5. Create a cell labeled "Final Total" in an appropriate location.
6. Merge cells, change fonts or font sizes, change cell alignment, add dollar signs, etc. to perfect your invoice. (Refer to the Spreadsheet Explorations, if needed.)
7. Enter the information in your columns. In the column titled "Use In This Assignment", keep your ideas in point form.
8. Create a formula to tally the Final Total, in the appropriate cell.
Record your formula here: _____
9. Be sure that your Final Total adds up to \$100,000.
10. Save your spreadsheet, and then print it.

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Part B

Pair up with another group to compare and discuss your value choices for the **Essential Skills**. Answer the following questions.

1. Did both groups use all 9 **Essential Skills** in their invoices? If not, which ones did both groups NOT use?

2. Did both groups assign the highest dollar value to the same **Essential Skill**? Explain why or why not.

3. List the top 3 choices of **Essential Skills** used for each group.

Your Group

Other Group

Do you notice any similarities? Explain.

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4. Can you make any predictions for the entire classes top 3 choices?

5. Ask your teacher for a copy of the Job Profiles for a Small Business Owner-Operators, and Nursery and Greenhouse Workers (these two most closely resemble owning a landscaping company).

a) List the most important **Essential Skills** for each occupation.

Small Business Owner/Operator

Nursery and Greenhouse Worker

b) How do these **Essential Skills** compare to the ones that your group chose? Explain.

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6. List two ways that you could help improve your comfort and skill level for each of the *Essential Skills* outlined in these two job profiles.

Essential Skill	WAYS TO IMPROVE
1.	
2.	
3.	
4.	



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Landscaping Quote Assessment Tool

CRITERIA	QUOTE TO CUSTOMER	<input checked="" type="checkbox"/>	RATING (1=NEEDS IMPROVEMENT/ 5=EXCELLENT)	COMMENTS
1. Completeness	Did I submit a rough sketch of plant location? Is the spreadsheet complete?	<input type="checkbox"/>	1 2 3 4 5	
2. Correctness	Are the plant/choices suitable? Have I identified them correctly? Is the final quote correct? Did I accurately use the spreadsheet software and techniques?	<input type="checkbox"/>	1 2 3 4 5	
3. Organization	Is the quote (diagram and spreadsheet) well organized and easy to read?	<input type="checkbox"/>	1 2 3 4 5	
4. Communication	Did I communicate my prices? Does my quote reflect the customer's needs?	<input type="checkbox"/>	1 2 3 4 5	

The Green(\$\$) for Green Skill Tally Rubric

CATEGORIES/ CRITERIA	LEVEL 1 (50-59%)	LEVEL 2 (60-69%)	LEVEL 3 (70-79%)	LEVEL 4 (80-100%)
<p>Knowledge and Understanding</p> <p>Demonstrates an understanding of using spreadsheet software to perform mathematical calculations and estimates</p> <p>Demonstrates an understanding of Horticulture and Landscape Design concepts</p>	Limited Understanding	Some Understanding	Considerable Understanding	Thorough Understanding
	Limited Understanding	Some Understanding	Considerable Understanding	Thorough Understanding
<p>Communication</p> <p>Effectively uses technology to present data, creating an invoice through a spreadsheet</p>	Limited Effectiveness	Some Effectiveness	Considerable Effectiveness	High Degree of Effectiveness
<p>Application</p> <p>Makes connections between Mathematics, Horticulture and the real world (Essential Skills Spreadsheet)</p>	Limited Effectiveness	Some Effectiveness	Considerable Effectiveness	High Degree of Effectiveness

Note: A student whose achievement is below Level 1 (50%) has not met the expectations for this assignment or activity.