

## LESS IS MORE (LEVEL 2)

<b>Description</b>	Learners will look into home expenses and identify how they can reduce extra costs while maintaining or improving the quality of life for the family.
<b>Leading Question</b>	Can we spend less on our household expenses?
<b>Total Time Required</b>	7-7.5 hours over 5 days.
<b>Supplies Required</b>	Paper and pencil
<b>Subject</b>	Numeracy & Literacy
<b>Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Add and subtract numbers with up to 3 digits</li> <li>2. Multiply and divide within 100.</li> <li>3. Estimate the answer to a calculation.</li> <li>4. Solve problems using number facts.</li> <li>5. Interpret and present data using bar charts, and tables.</li> <li>6. Develop their use of formal mathematical knowledge to interpret and solve problems, including financial mathematics.</li> <li>7. Make sense of problems and persevere in solving them.</li> <li>8. Reason abstractly and quantitatively.</li> <li>9. Express relations between variables graphically.</li> <li>10. Enhance the learners' problem solving, critical thinking and communication skills.</li> </ol>
<b>Previous Learning</b>	Fractions, percentages and arithmetic operations.
<b>Supervision</b>	Medium

## DAY 1

Today you will learn about life expenses and how to use your money wisely.

<b>Suggested Duration</b>	<b>Activity and Description</b>
<b>10 minutes</b>	<ul style="list-style-type: none"> <li>• Parents should call for a family meeting. The goal of the meeting is to invite children to help with managing house expenses. Hence, this project is to learn more about house expenses, and to see if the family can do well with less expenses. [Parents may encourage participation by offering the kids a gift worth 10% (or part of) of the savings they help generate!]</li> <li>• House expenses refers to the money spent buying things needed to keep the entire household functioning well on a day-to-day basis.</li> </ul>

<p><b>10 minutes</b></p>	<ul style="list-style-type: none"> <li>● Engage with your parents/family members to find out what the common expenses around the home are and categorize them into different groups.</li> <li>● Seek guidance from your parents on how to categorize the different expenses.</li> </ul> <p>Generally, house expenses, can be mainly clustered into 4 categories:</p> <ul style="list-style-type: none"> <li>- Food &amp; beverages (F&amp;Bs),</li> <li>- Toiletries and detergents,</li> <li>- Rent/mortgage &amp; utilities, and</li> <li>- Furniture &amp; appliances.</li> </ul> <ul style="list-style-type: none"> <li>● For the sake of this project, we will only focus on <u>rent/mortgage &amp; utilities, and food &amp; beverages</u>.</li> </ul>
<p><b>10 minutes</b></p>	<ul style="list-style-type: none"> <li>● Start by looking into expenses within <u>rent, utilities and services</u>.</li> </ul> <p>Some of the definitions for these expenses are:</p> <ul style="list-style-type: none"> <li>- Rent - monthly cost paid to a landlord for the use of property or land.</li> <li>- Mortgage – monthly payments made to the bank/lending institution as payment for the ownership of the house/property you currently stay in.</li> <li>- Utilities – payments made for services used at home such as water, electricity, landline/phone service, internet, other subscriptions</li> <li>- Services – like cleaning, laundry or others</li> </ul> <p>Think about the various ways in which you can collect information on these expenses.</p> <p>Some of the options could be</p> <ul style="list-style-type: none"> <li>- Interviews with parents to find out the current costs</li> <li>- Check current recipes of the services</li> <li>- Get estimates of these from an adult</li> </ul>
<p><b>20 minutes</b></p>	<ul style="list-style-type: none"> <li>● Look for ideas on how to reduce these costs. You can ask yourself and /or your parents/family members questions to help you learn about cost cutting strategies.</li> </ul> <p>Suggested questions:</p> <ul style="list-style-type: none"> <li>- How can we reduce the cost of .....</li> <li>- Which of these cost cutting suggestions will have a positive impact on our life? (or in simpler words: which of these can make us more healthy, or make us more happy if we used the saved cost somewhere else...etc)</li> </ul>

	<p>Some ideas on how to cut costs</p> <ul style="list-style-type: none"> <li>- Barter trade</li> <li>- Cheaper alternatives</li> <li>- Free/used alternatives available</li> <li>- Purchase of used items</li> <li>- Reduce on the quantities</li> <li>- Discounts and offers from other companies</li> <li>- Check out substitute service providers who may provide services at cheaper rates</li> <li>- Buying in bulk</li> </ul> <p>Find out the new cost of the item with the new proposed cost savings strategy and summarize the information in a table like one below:</p> <table border="1"> <thead> <tr> <th>Item</th> <th>Cost Saving Strategy</th> <th>Old cost</th> <th>Proposed new cost</th> <th>Cost saving</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr> <td colspan="4">Total savings</td> <td> </td> </tr> </tbody> </table> <p>Cost saving = old cost – proposed new cost Total savings = sum of all savings per item</p>	Item	Cost Saving Strategy	Old cost	Proposed new cost	Cost saving																															Total savings				
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<p><b>25 minutes</b></p>	<ul style="list-style-type: none"> <li>● Prepare a presentation based on your suggestions</li> <li>● You can use drawings, role playing or a speech.</li> </ul>																																								
<p><b>10 minutes</b></p>	<ul style="list-style-type: none"> <li>● Present to parents/family members and they should note down their assessment of the presentation.</li> </ul> <p>Parents/family members will provide feedback:</p> <ul style="list-style-type: none"> <li>- what they loved about the presentation,</li> <li>- what could have been improved,</li> </ul>																																								

	- and the parents' approval on the cost cutting suggestions Make the suggested edits and revisions to your work.
<b>5 minutes</b>	Note down the approved cost cutting suggestions and revise your work.

## DAY 2

Today you will learn about how much you spend on food and beverages in the house.

<b>Suggested Duration</b>	<b>Activity and Description</b>
<b>10 minutes</b>	<ul style="list-style-type: none"> <li>Over the next 4 days, you're going to be focusing on the foods and beverages (F&amp;Bs) expenses and understanding if you are wasting anything, the costs of the F&amp;Bs and developing a cost reduction plan for the home.</li> <li>Today, we will focus on identifying the wasted F&amp;Bs. Once this is determined, you will then determine the cost of the wasted F&amp;B and can come up with suggestions to reduce costs without having any negative effects on the quality of life in the next few days.</li> </ul>
<b>Continued to end of day</b>	<ul style="list-style-type: none"> <li>Note down all food, snacks, water and other beverages served during the day for all the family members in their household.</li> <li>Note down the quantities of wasted food and beverage in each category.</li> <li>You can create your own table or use the template provided in <a href="#">Day 2 worksheet</a>.</li> </ul>
<b>10 minutes</b>	<ul style="list-style-type: none"> <li>Present the sheet with the identified wasted F&amp;Bs to the parents and family members for discussion. Parents/family members will provide feedback on: <ul style="list-style-type: none"> <li>What they loved about the presentation or what are new ideas that occurred to them based on what the child presented</li> <li>What are some other aspects that learners can think about</li> </ul> </li> </ul> <p>Make edits based on the feedback provided.</p>

## DAY 3

Today will focus on identifying the cost of the different food items within their household and computing the cost of the wasted F&Bs.

Suggested Duration	Activity and Description
20 minutes	<ul style="list-style-type: none"> <li>Start by identifying the cost of the food items you noted down in the worksheet yesterday. To do this you need the items' price (of the same brand and size). Think about the different ways you can obtain the cost information for the food items.</li> </ul> <p>Some options on how you can get this information include:</p> <ul style="list-style-type: none"> <li>The supermarket/shop receipt. Ask your parents/family members for the receipts of the different items from the last shopping that was done in the household.</li> <li>A price list (either paper copy, or the phone application of the supermarket/shop if available).</li> <li>Internet search on the supermarket website or any other supermarket you can look up on the internet.</li> <li>Collect the information through an interview with a shopkeeper in a nearby shop or supermarket.</li> <li>Approximate price by asking an adult family member/ parent/ neighbour.</li> </ul> <p>Add the cost details to the cost column of the worksheet developed on Day Two. At the bottom, compute the total cost of food consumed that day.</p>
1-1.5 hours	<ul style="list-style-type: none"> <li>Using the table/Worksheet that was filled the day before, calculate the costs of wasted food items, that is food not consumed and gets thrown away, with the help of parents.</li> <li>Costs are calculated according to the quantity consumed. Example 1: If a croissant is for \$2, then the wasted <math>\frac{1}{2}</math> croissant is for 1\$.</li> <li>Example 2: If 1 L of fresh milk costs 12 \$, then the wasted 100 ml of milk is worth 1.2 \$.</li> <li>* If you have not yet studied division or are having a hard time with division, then parents/family members can help, or provide estimates of the daily or monthly costs, along with estimates of the value of waste.</li> <li>Add the wasted F&amp;Bs cost details to the worksheet developed on Day 2 and compute the total cost of wasted F&amp;Bs for the day.</li> </ul>
10 minutes	<p>Present the sheet with the identified costs of the food items and the costs of wasted F&amp;Bs to the parents and family members to critique and revision. Parents/family members will provide feedback:</p> <ul style="list-style-type: none"> <li>What they loved about the presentation,</li> <li>What could have been improved,</li> </ul>

Make the suggested edits and revisions to your work.

## DAY 4

Today you will compute the estimated monthly cost of wasted F&B consumption, and think through suggestions on how to reduce costs of wasted F&Bs.

Suggested Duration	Activity and Description
20 minutes	<ul style="list-style-type: none"> <li>● Calculate the estimated value of wasted F&amp;Bs per month. Think through how you can estimate this cost and why it is important to know this cost.</li> <li>● To compute the estimated value of wasted F&amp;Bs per month is the daily value computed on day 3 above is multiplied by 30 (since a month has ~30 days on average).</li> <li>● This is the estimated/projected monthly reduced cost for F&amp;Bs.</li> </ul> <p>After computing the estimated value of wasted F&amp;Bs, think about why it is important to know this value. Some of the probing questions could be:</p> <ul style="list-style-type: none"> <li>- What is the monthly value of wasted F&amp;Bs?</li> <li>- In what other ways can this money be used by the family? (Saved, used to purchase other essential commodities or expenses in the home etc.)</li> <li>- Can we save the expenses on wasted food, and instead donate this to feed a hungry person or find ways to store leftovers or plan meals in a way that prevents waste? How many days do you think a hungry or homeless person can survive on the wasted F&amp;Bs?</li> </ul>
30 minutes	<p>Think of and discuss ways to reduce costs without having any negative effects on the quality of life. Prepare to present the ideas to the parents/family members.</p> <p>Some ideas on how they can reduce costs include:</p> <ul style="list-style-type: none"> <li>- Only buying essential and healthy food stuffs and avoiding junk food.</li> <li>- Asking the different family members to only get the food amount that is exactly enough for them.</li> <li>- Make savings by deducting the monthly wasted F&amp;Bs amount from the monthly food expenses</li> </ul>

<b>20 minutes</b>	<ul style="list-style-type: none"> <li>Present the estimated monthly value for wasted F&amp;Bs, the reasons why it is important to know this value and cost saving ideas to the parents and family members to critique and revise.</li> </ul> <p>Parents/family members will provide feedback:</p> <ul style="list-style-type: none"> <li>The suggestions that they approve and why</li> <li>The suggestions that they don't approve and why</li> <li>Additional suggestions</li> </ul> <p>Make the suggested edits and revise your work.</p>
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## DAY 5

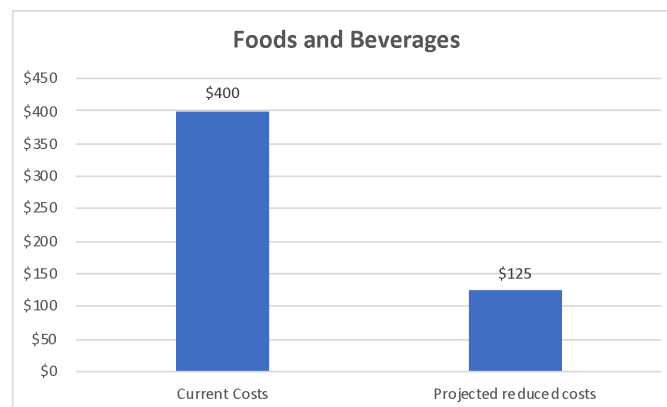
Today you will design and implement an action plan to reduce the family living costs as per the approved suggestions from the previous days of activities.

<b>Suggested Duration</b>	<b>Activity and Description</b>						
<b>10 minutes</b>	<p>The last activity of this project is to design and implement an action plan to reduce the family living costs as per the approved suggestions from the previous days of activities.</p> <p>The main tasks are:</p> <ul style="list-style-type: none"> <li>Present the agreed upon recommendations that they got the parents' approval on</li> <li>Present how much savings they estimate the family can generate from the two categories (mortgage, rent &amp; utilities, And F&amp;B). each recommendation</li> <li>Set a plan (<a href="#">see the cost cutting plan template</a>) to implement all the suggestions, with clear monitoring roles amongst family members to ensure the implementation</li> <li>Observe the cost reduction over 2 months to verify whether expenses have gone down</li> <li>(If parents agree, to provide a gift of a value of 10% (1\$ for every \$10 saved) of the saved amount after 2 months)</li> </ul>						
<b>20 minutes</b>	<p>Prepare a display showing the current costs (from all categories) versus the projected reduced costs. You can develop a table (like the one below) or bar graphs (like the one below) to illustrate this.</p> <p>Table showing current cost vs projected reduced costs</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Expense Category</th> <th style="width: 33%;">Current costs</th> <th style="width: 33%;">Projected reduced costs</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Expense Category	Current costs	Projected reduced costs			
Expense Category	Current costs	Projected reduced costs					

Rent/Mortgage and utilities		
Foods and Beverages (F&Bs)		

Bar Graph showing current cost vs projected reduced costs:

If the current cost of F&Bs is \$400 and cost of wasted F&Bs also known as projected reduced cost is \$125, then your bar graph who look like the one below:



Some guidelines on how to plot the bar graph using the example above:

- o Draw a vertical line and horizontal line starting at the bottom of the vertical line going right as shown above. These are your axes. The y-axis is the vertical line in the graph and the x-axis is the horizontal line. Write zero at the corner where the two lines meet.
- o The y-axis is like a vertical number line. You can write numbers in 1, 5, or any interval. We used intervals of 50 in the example above because we had a high maximum value of 400 for the Y axis. This axis represents the costs. It starts from 0 and ends with the maximum cost of the two costs we have i.e., current cost and projected reduced costs
- o The x-axis represents the categories of the costs we are interested in i.e., current cost and projected reduced costs. Draw rectangles representing the two cost types as shown above
- o The rectangles will be as high as the total number of each category. For example, in the graph above, the



	<p>current costs are \$400. What are the projected reduced costs? Is it properly captured on the graph?</p> <ul style="list-style-type: none"> <li>o Color or shade each rectangle using a different color or shading pattern for each of the rectangles to ensure it can be seen clearly.</li> </ul>
<b>30-45 minutes</b>	<ul style="list-style-type: none"> <li>● Create a cost cutting plan (using the template shared in the appendix) to implement and monitor the suggestions.</li> <li>● Clear responsibilities must be divided amongst relevant family members to ensure proper implementation:</li> <li>● Who are the ones responsible to monitor various suggestions to reduce costs of rent/mortgage and utilities consumption? What will each do?</li> <li>● Who are the ones responsible to monitor various suggestions to reduce food waste? What will each do?</li> </ul> <p>Prepare to present your plan and suggested roles.</p>
<b>20 minutes</b>	<p>Overall project reflection on the learning experience. Suggested questions:</p> <ul style="list-style-type: none"> <li>- How would consuming less affect the environment and other people?</li> <li>- What did you love about this project?</li> <li>- What have you enjoyed doing?</li> <li>- What skills have you gained/practiced?</li> <li>- What would you do differently from now on?</li> <li>- What strengths have you discovered in you? What weaknesses have you overcome by working on this project?</li> <li>- What advice would you give your parents?</li> </ul>

<b>Extension Activities</b>	<ul style="list-style-type: none"> <li>● Using pie charts and bar graphs in the final presentation of findings.</li> </ul>
<b>Modifications for Simplification</b>	<ul style="list-style-type: none"> <li>● Simplified language and concepts</li> <li>● Fewer reflection questions</li> <li>● Manageable tasks</li> </ul>

## ASSESSMENT CRITERIA

- Coherence of the presentation with convincing conclusion
- Presentations are clear and doable whilst maintaining the quality of life
- Demonstrates understanding of positive impacts
- Showcases developed math, literacy and financial literacy skills
- Responds to and appreciates feedback from friends and family

## APPENDIX

### APPENDIX 1: DAY 2 WORKSHEET

#### Food & Beverages

In each of the cells, there must be a detail of all ingredients and quantities. The more accurate the better it is to estimate the costs.

Name	Food				Drinks		Waste	Example
	b/fast	lunch	dinner	Others (snacks, desserts, fruits..)	Coffee, tea, hot beverages	Water and cold beverages		
1							All left over food or drinks that get thrown away	Ex: member 1 2 eggs, 2 slices of toast, 1 avocado, 10 olives, & 1 croissant

								(*waste: 2 olives and ½ croissant)
2								Members 2, 3 & 4 600 ml of milk, 300 g of cereal, 3 cookies.
3								(*waste: ½ cookie, 100 ml milk.)

## APPENDIX 2: COST CUTTING PLAN TEMPLATE

Cost cutting suggestion	Who is responsible to monitor it	Punishment to the violator (can be a fee paid)
