SET UP YOUR OWN STORE

Ages 4 to 7 (Level 1)

Description:	Learners will explore many numeracy and literacy concepts including measurements, numbers, shapes, prices, addition – subtraction and labeling as they set up their own shop
Leading question:	Can you set up your own shop?
Age group:	4 -7 years
Subjects:	Numeracy and Literacy
Total time required:	5 hours for 4 days
Self-guided / Supervised activity:	Medium
Resources required:	Paper, Colours, Scissors

Day	Time	Activity and Description
1	10 minutes	Learners will think of the shops that they have visited and think of the purpose of these shops e.g. grocery shop, pharmacy, clothes shop etc. For this project they will design a general-purpose neighborhood shop that has a range of items

	20 minutes	Learners will gather information about the most useful items for all the family by making a tally chart. Learners will ask family members what the most consumed items in the home are. They will write or illustrate these items and making a tally-chart on what family members agree on using the most
		
		e.g.
		
		       Item Family Members Using the Item
		  1. Milk III
		  2. Toothpaste II
		  3. Pencils IIII

	20 minutes	Learners will decide what items they would like to sell and make an inventory list of 10-15 items (these can be illustrated and written in a list format) that they think will be most "popular" for people to buy e.g.
		  - Clothes: i) T -Shirts; ii) Pajamas; iii) Pants
		  - Fruits: i) Apples; ii) Bananas, iii) Oranges
		  - Drinks: i) Milk, ii) Juice;
		  - Provisions: i) Bread; ii) Cereal
		  - Books: i) Storybooks; ii) Magazines

		- Other: i) Jars; ii) Toothpaste; iii) Pencils etc.
2	20 minutes	Learners will determine the "price" of each item or how much they want to sell each item for. This can be based on their research / understanding of actual prices or how much they value each of these items If learners decide to research the price of the item – they can look up the MRP (Maximum Retail Price) that is usually on the box of the item or look at the receipts or consult a family member on the price
	10 minutes	On the previously created inventory list, add the prices for each the items except the fruits and vegetables e.g. - Books – 10 - Milk – 8 - Bread – 4 - Toothpaste – 9 Learners will create paper money for their shop – this can be designed as a different colour and shape for each currency note e.g. 1 is a yellow star, 2 is a pink circle or it can be done similar to real currency with an illustration of a famous figure etc. Learners will make 2 – 3 note for 1 – 20 in their currency and cut these out
3	20 minutes	Learners will design the weighing scale for the fruit and vegetables. - Cut a hole on the upper edges of two paper / plastic cups, - Use a thick thread, twine or rope through these holes and make a knot at the end of this rope. The rope or twine should look like the handle of a bucket - Hang the two ropes tied on the plastic / paper cups on the notches of a clothes hanger (or any stick on which there can be two notches) - Mark the plastic cups as 1 and 2 or A and B
	10 minutes	Learners will weigh different objects in their scale and create a "standard weight". We can explain to learners that we cannot price the vegetables and fruits based on number since some are much bigger than others for example two tomatoes are not the same size or two potatoes etc. Learners can take small heavy stones, a paperweight, an eraser or any small and heavy object. Learners will weigh the fruits and vegetables in Cup B and the standard measure (stone, paperweight etc.) in Cup A.

	20 minutes	Assume the standard measure is 1 gm for younger learners or 100 gms for older learners in Cup A. Put an object e.g. a tomato in Cup B.
		Is the object in Cup B heavier (does it weigh down like a seesaw)? If so, it is heavier than 1 gm / 100 gm. Add another standard measure (another stone) to Cup A and try it again.
		If the object in Cup B is lighter (Cup A weighs down like a seesaw) then reduce some weight from Cup A.
		Learners will weigh all the fruits and vegetables chosen and make a numerical representation of greater than (>) / lesser than (<) e.g.
		Oranges > Bananas > Grapes
		Explain to the learners that usually in grocery stores, we know the price of fruits and vegetables by weighing them and then calculating their price per gram
		For younger learners who have not learned multiplication, they will assume and write the price of the fruits and vegetables based on how heavy they are e.g. the heaviest will be the most expensive
		For older learners they will set a price per 100 gms, and then do simple multiplication to get the price e.g. 1 Tomato is 300 gms – the price per gm is 5 so the price for 1 tomato is (3*5=15)
4	15 minutes	Learners will think of a name for their shop and create an attractive poster with the name and a logo (*if they would like to make one)
	15 minutes	Learners will create price tags for all their items and set up their shop by arranging all available items
		Learners will invite family members to come to their shop to "buy" items and distribute money giving some of the larger currency to family members and keeping the smaller currency for themselves
	30 minutes	Learners will calculate the price of the total bill based on what customers have purchased and / or calculate the difference and give the customers the change back
		Older learners can make a bill or purchase receipt for each customer with the name of the item and the mathematical formula of amount paid – cost of item and difference paid back
		Learners will calculate their total earnings at the end of the game by adding all the money they made
		Selection and creation of inventory list based on research gathered from family
		Determining prices of the different objects based on the MRP or research

Assessment Criteria:	Design and clarity of the currency notes Effectiveness of the weighing scale Money management when role-playing the shopkeeper

Learning outcomes:	Concept of standard weights and measuring scale Basic addition, subtraction and multiplication functions Completing and computing tally charts Shapes and writing of numbers Concept of price, inventory lists and advertisements
Required previous learning:	Visited a shop
Inspiration:	N/A
Additional enrichment activities:	Learners can calculate the percentage of different objects sold Learners can also create numerical functions for the money
Modifications to simplification:	Removing the weighing scale activity for younger learners

Ages 8 to 10 (Level 2)

Description:	The learner will use basic household items to set up their own store at home. The learner will identify the items that customers might be interested in buying, estimate their costs, and compare the costs of the different items.
Leading question:	How much do the things around your home cost? Which cost more?
Age group:	8-10 years old
Subjects:	Mathematics, Art
Total time required:	~45-60 min a day over 4 days
Self-guided / Supervised activity:	Medium to high supervision
Resources required:	Pencil, paper, color pencils (optional)

Day	Time	Activity and Description
1	5 minutes	Ask the learner to imagine they are creating a small shop. The shop will be filled with items typically found around the home. This can include food items, like a bag of beans, clothes, and other household items such as a pot, pens, pencils, etc.
	10 minutes	The learner will decide on a name and theme for their store (based on what the store will be selling), then will create a list of 10-15 items they would like to include in their shop.

	20 minutes	The learner will ask a family member what each item typically costs. The learners will use the list of items that they created and will write the price of each item next to its name. Use simple whole numbers e.g., $10, $210, $3000, etc. unless the learner is comfortable with decimal places e.g. $10.50. Learners should state the money in their own local currency.

Learners can use the table below to summarize the information collected.

Item	Price of the item
Pot	$20
T-shirt	$10
Pencil	$3

15 minutes

The learner will write a welcome message for customers (e.g., "Welcome to All You Need Grocery Store!!! We sell the best home items in this area.") and a brief description of the types of items that can be found in their store. The learner should be creative and persuasive with this message and description

5 - 10 minutes

The learner will think about some of the reasons why different items have different prices. They can try to hypothesize some reasons and then consult with family members if they have some difficulties coming up with some of the reasons.

Some of the reasons could be:

- Differences in the costs of producing the items
- Some materials are harder to find than others and therefore more expensive
- Some items are more needed than others
- Governments may determine the prices

2 | 60 minutes

Ask the learner to imagine they are going to be drawing the catalogue for their small shop and the items in it. Underneath the drawing of each item, they will write the name and price of the item.

E.g.

Item 1	Item 2	Item 3
T-shirt, $10	Drawing of item 2 *Name of item, price*	Drawing of item 3 *Name of item, price*

Item 4	Item 5	Item 6
Drawing of item 4	Drawing of item 5	Drawing of item 6
Name of item, price	*Name of item, price*	*Name of item, price*

On a sheet of paper, the learner will draw each item. If possible, have the learner place the item in front of them as they draw it. They may also choose to color and/or decorate the items they draw. Under each item, the learner will write the name of the item and the price of the item (refer to the list of 10-15 items the learner created yesterday).

Critique and revision:

Learners present all the day's work (welcome message, list of items, and individual prices) to their parents or family members for feedback and suggestions for improvement. The parents or family members provide feedback using the following prompts:

- What makes the welcome message appealing or unappealing?
- Are the items attractive for a local customer?
- Are the prices fair? Are the prices competitive?
- Two reasons why you would you recommend the learner's store to a new customer

Learners make edits to their list of items and prices to improve their store's chances of success.

3 — 5 minutes

Using the "catalogue" the learner created the day before, a family member will point to several items and ask, "how much does <name of item> cost?"

20 minutes

The learner should state the price of each item e.g., 10 dollars and then calculate the total cost in case someone would be interested in buying them all. Using the catalogue, the learner will write down their total cost by adding up the prices of combinations two items e.g., if a pot costs $20 and a t-shirt costs $10, they might write "$20 + $10 = $30" or "a pot and a t-shirt cost $20 plus $10, which is $30 total".

Learners can use the table below to do the computations.

Item 1	Plus	Item 2	Equals	Answer

		Pot $20	+	Tshirt $10	=	$30	
	30 minutes						

The learner will then add up the prices of all items within the store e.g., if a pot costs $20, a t-shirt costs $10, a pencil costs $3, and a pen is $5, they might write "$20+$10+$3+$5 = $38"

Using the information from the previous activity, learners can then make comparisons and respond to the following questions:

- What is the most expensive item in their store? Hint: Item with the highest price.
- What is the least expensive/cheapest item in their store? Hint: item with the lowest price.
- What two items when added together get you the highest price?
- What two items when added together give you the lowest price?

Critique and revision:

Learners present all the day's work (the additions for a combination of items and comparisons) to their parents or family members for feedback and suggestions for improvement. The parents or family members provide feedback using the following prompts:

Praise: What are some strengths in the learner's work?
Questions of clarification: Any questions or clarifications you have about the work?
Suggestions: In what areas does the learner need to improve their work?

Learners make the edits and work on suggestions (if any) to their work to make it better.

4	20 minutes	Using the "store" the learner created, an older sibling or family member will point to 2 items and ask, "how much *more* does <name of item> cost compared to <name of item>? The learner should use subtraction to identify the difference in cost e.g. "The pot costs more than the t-shirt. $20 minus $10 is $10. The pot costs $10 more than the t-shirt." Repeat this exercise at least 10 times using different combinations of items.
	30-45 minutes	The learner will rank the items in their "store" according to price, from most expensive to least expensive. E.g., Pot, $20 T-shirt, $10

Pencil, $1

They will then write the difference in cost between the items.

E.g., Pot, $20
            } $10
    T-shirt, $10
            } $7
    Pencil, $3

Learners will then make some comparisons for the prices of the various items for the various items in the "store". Using the greater than, less than and the equal sign e.g., if the price of a pot is $20, t-shirt - $10, pen - $5, shoes - $20 etc., you would say:

Comparisons in words	Comparisons in numbers
The price of the pot is greater than the price of a pen	$20 > $5
The price of the t-shirt is less than the price of the shoe	$10 < $20
The price of the pot is equal to the price of the shoe	$20 = $20

Do this for all these comparisons items.

5	45-60 minutes	An older sibling or family member tells the learner that they are entering the store with a *budget* of $<an amount you decide> (that's all the money that they have to spend on the store). They want to know the different combinations of items you can buy with this amount of money. Ask the learner to list each combination of items where the total cost gets close to (but does not exceed) the total amount of money you have.
	10 minutes	Reflection: The learner will now think about all the exercises they have done all week and take note of "TWO" of the following: • What is the most important lesson you have learnt through this project? • What are you found challenging, puzzling or difficult to understand? • What question would you most like to discuss? • What is something you found interesting?
Assessment Criteria:		- The "store" from Day 2 is created. 10-15 items are drawn and labeled with their name and cost. - The learner can add the cost of at least 2 items correctly. - The learner can determine which of 2 items cost more. - The learner can correctly subtract the cost of 1 item from another.

	- The learner can apply both addition and subtraction concepts together to figure out what they can purchase with a fixed amount of money.

Topics/concepts covered	- The concepts of value, money, budget, and catalogue - Addition and subtraction for 2-digit numbers - Rank order lists of 2-digit numbers - Numerical Comparisons (less than, greater than or equal to)
Learning outcomes:	- Assign prices to specific items based on their understanding of the idea of value - state the typical cost of everyday items - Add and subtract the prices of 2 or more everyday items - Compare prices using greater than, less than and equal to. - Arrange items in the order of their prices - Present their work and critically incorporate feedback
Required previous learning:	- Whole numbers - Addition - Subtraction - Understand the concept of money
Inspiration:	N/A
Additional enrichment activities:	- The learner can do the exercise with more household items. - The learner can add or compare the cost of multiple items. E.g. select 3 items, identify which item costs the *most*, and how much more it costs compared to the other two items.

Ages 11 to 14 (Level 3)

Description:	The learner will be able to apply concepts of addition, subtraction, multiplication, division, and greater than/less than within the context of purchasing and selling. The learner will be able to apply concepts of addition and subtraction to calculate profits and losses.
Leading question:	What are the expenses (costs) of running a store?
Age group:	11-14
Subjects:	Mathematics, Accounting
Total time required:	~50-60 min a day over 4 days
Self-guided / Supervised activity:	Moderate
Resources required:	Pencil, paper

Day	Time	Activity and Description
1	25 minutes	Ask the learner to imagine they are setting up a small shop or stall in the community.

9

On a sheet of paper, the learner should write out the name, theme of the shop (e.g., sports, kitchen, etc.) based on what they intend to sell in the shop, and the list of items they will sell in the shop (about 10-20 items), the "catalogue."

Next to each item, ask the learner to indicate the original price of the item (price at which they will buy the item) and the price they will sell the item for.

Finally, ask the learner to calculate the potential profit (i.e. how much the learner will make in case the item is sold) of each item based on the selling price.

If the learner is comfortable with whole numbers, encourage them to stretch themselves by including prices in dollars and cents (E.g. $2.80 instead of $2).

E.g. JR Stationery store

Item for Sale	Original Price	Selling Price	Profit (selling price - original price)
Notebook	$4	$7	$3 ($7-$4)
Pencil	$0.50	$1.50	$1 ($1.50-$0.50)
Pen	$1.20	$3	$1.80- ($3-$1.20)

Ask the learner to list the possible costs of setting up the shop or stall. Things to consider include rent, salaries (if hiring help), utilities (e.g. electricity, water). The learner may ask an adult for help in identifying and estimating these costs or may take a best guess themselves. Total up these costs.

Ask the learner to create scenarios or profiles of customers entering the shop to purchase items. The learner should create 8-10 profiles. Under each profile, list the name of the customer (optional), what item or items they want to purchase, how many of each item(s) they want to purchase, and the amount of money they are bringing with them into the store. The items the customer is seeking to purchase should be listed as items in the learner's store.

For more advanced learners, challenge them to include more items on the customer's list (instead of buying 4 pencils, more advanced learners could use more complex combinations such as 3 pencils, 9 notebooks, 13 pens).

E.g. Customer 1 - Ali
　　Wants to purchase - 5 notebooks and 8 pencils
　　Has - $50 dollars

Learner can use the table below to summarize the information:

Customer	Quantities of items to purchase	Total amount of money they bring to the store
Ali	5 notebooks and 8 pencils	$50

Critique and revision:

Learners present all the day's work (the price/profit computations and the customer profiles) to their parents or family members for feedback and suggestions for improvement. The parents or family members provide feedback using the following prompts:

- Are the listed items attractive for a local customer?
- Are the prices fair? Are the prices competitive?
- Are the profits enough to compensate for the costs of setting up the store?
- What are some suggestions to make the store more profitable?

Learners make the edits and work on suggestions (if any) to their work to make it better.

| 2 | 60 minutes | Using the catalogue and profiles from Day 1, ask the learner to calculate the amount of money each customer will need to purchase the items desired. Use the prices of the items in the learner's store for these calculations.

E.g.: Using the examples above, Ali wants to purchase 5 notebooks and 8 pencils. The cost of a notebook in my store is $7. The cost of a pencil in my store is $1.50. Ali will therefore need 5x$7=$35 to purchase the notebooks. He will need 8x$1.50=$12 to purchase the pencils. In total, he will need $35+$12=**$47**.

Next, the learner should determine if the customer has enough money to purchase what they need.

E.g. Ali has $50. $50 is greater than $47 ($50>$47). He has the money to purchase what he needs.

Finally, ask the learner to calculate either (a) how much more money the customer needs or (b) how much money the customer will have left over after making their purchase.

E.g. Ali will be able to purchase all the items he wants. He will have $50-$47=**$3** leftover.

For customers with money left over, ask the learner what they would recommend the customer purchase with that money. |

	15 minutes	E.g., with $3 leftover, Ali could purchase 1 pen for $3 each or 2 pencils for $1.50 each **Critique and revision:** Learner presents all the day's work (the computations of whether a person has enough money or not to buy what they intend to buy, how much more the customer needs, any leftover money and the recommendations for what to use the left-over money for) to their parents or family members for revision. The parents or family members provide feedback using the following format: Praise: What is the strength of the work done by the student? Questions of clarification: Any questions or clarifications you have about the work? Suggestions: In what areas does the learner need to improve their work? Learners make the edits and work on suggestions (if any) to their work to make it better.
3	45 minutes	Using the store catalogue and profiles from Day 1, ask the learner to come up with different combinations of items each person could purchase in the store before their money runs out. The learner may not come up with all the possible combinations for each customer, but they should try to come up with 3-5 different combinations per customer where possible. E.g. Ali has $50. In my store he could purchase: - $7x7 notebooks = $49 - $3x15 pens + $1.50x3 pencils = $45 + $4.50 = $49.50 - $7x3 notebooks + $3x9 pens + $1.50x1 pencil = $21 + $27 + $1.50 = $49.50
	15 minutes	Ask the learner to imagine they were going with you to the market or a stall/shop with a certain amount of money. Using a rough estimate of the cost of items, what are some combinations of things the learner could buy with that amount of money?
4	15 minutes	Ask the learner to imagine that all the customers (using the customer profiles from Day 1) purchased everything they needed from the store. Calculate the total <u>profit</u> from selling these items (the learner may find it useful to use the table from Day 1 calculating the profit from each item). Was the total profit greater or less than the cost of setting up the store (also calculated in Day 1)? Ask the learner to describe or write down what it means for the profit from the sales of the items to be: 1. greater than the cost of setting up the store. 2. less than the cost of setting up the store.

		Learners can consult with their parents or older siblings in case they need additional support describing what it means for profit to be greater or less than total costs of setting up the store.
	15 minutes	Ask the learner to consider what would happen if they raised the selling price of the items. First, ask them to anticipate what would happen to the profit by describing or writing it down. Next, calculate the changes to profit using the higher selling price. How much more would they make from the sale of the items? Learner can consult with their parents or other family members in case they having trouble thinking through what would happen to the store if they increased prices
	15 minutes	Reflection: Ask the learner to discuss or write down responses to the following questions: - What are some possible consequences for raising or lowering the price of the items? (E.g. if the learner was the customer, how would they react to the prices being raised or lowered? How would their behavior change? Would their reaction be the same for all kinds of items?) - What are some (creative) strategies the learner would use to promote the sale of their items?
	10 minutes	Overall reflection: The learner will now think about all the exercises they have done all week and take note of "TWO" of the following: • What is the most important lesson you have learnt through this project? • What are you found challenging, puzzling or difficult to understand? • What question would you most like to discuss? • What is something you found interesting?
Assessment Criteria:		- Multiple and add to calculate the total cost of a combination of items - Multiple, divide, add, and subtract in combination to calculate what a set amount of money can purchase - Loosely explain the concept of a profit

Topics/concepts covered	- The concepts of money, value, profit - Multiplication, addition and subtraction for 2-digit numbers - Comparisons using less than, greater than or equal to
Learning outcomes:	- Multiply, add, and subtract in order to: - Determine the cost of a set of items and whether they have sufficient money to complete the purchase - Determine the different combination of items a fixed sum of money could purchase

13

	- Determine whether the costs of setting up the store and whether the store is profitable or not. - Apply these skills to decision-making in a real-life shopping scenario
Required previous learning:	- Addition, subtraction - Multiplication, division - Decimals (optional)
Inspiration:	N/A
Additional enrichment activities:	- Encourage the learner to use larger or more complicated numbers e.g. $257.68 or $49.60 vs. $200 or $4 - Have the learner create a sketch of a business plan. If the goal is to make a profit, what must they consider?