



MATHEMATICS

TERM 2

**Structured Pedagogy
Lesson Guides**



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Mathematics – Grade 3
Structured Pedagogy
Term 2
First Edition, 2026

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Department of Education – Bureau of Learning Resources (DepEd-BLR)

Office Address: Ground Floor, Bonifacio Building, DepEd Complex Meralco Avenue, Pasig City, Philippines 1600
Telefax: (02) 8634-1054; 8634-1072; 8631-4985
E-mail Address: blr.lrqaad@deped.gov.ph; blr.lrpdp@deped.gov.ph; blr.od@deped.gov.ph

Mathematics

Term 2

Term 2
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Term 2**Lesson 1:****Measurement and Geometry**

Measure mass in grams (g), kilograms (kg), and/or milligrams (mg), using appropriate measuring tools.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. measure mass in grams (g), kilograms (kg), and/or milligrams (mg), using appropriate measuring tools.

II. Development of the Lesson**A. Motivation**

Ask the learners to choose an item in the classroom and share with the class what their item is. Ask them to identify if it is small, medium, or large. Then, ask them if their item is heavier or lighter than the item of their seatmate.

B. Discussion

1. Explain the concept of "mass." Say that when we want to know which of two objects is lighter or heavier, we refer to the mass as an attribute of the objects.

- a. Mass is the amount of material an object has. Lighter means less mass and heavier means more mass.

2. Ask the learners to determine which is heavier or lighter between the ball and the crumpled paper. Please share your ideas on how we can compare their masses.

- a. Possible way: Hold each object in our hands to get a sense of which one is heavier or lighter. If the learners did not mention it, introduce this technique, called hefting, to them. Say that hefting involves holding each object in your hands to compare their masses. This way, you can get a sense of which one is heavier or lighter based on how they feel.

3. Explain that sometimes, weights are too close to estimate. Thus, there needs to be a standard unit to compare these objects.

- a. A standard unit of measurement is a way to measure things, like length (in centimeters or meters) or area (in square centimeters or square meters). Using standard units makes it easier for people to understand and compare

measurements easily and accurately. For mass, we can use **grams**.

- b. Show the learners a mechanical weighing scale. Demonstrate weighing objects on the weighing scale and teach the learners how to read the measurement. If there is no mechanical weighing scale available, the teacher can have a faux weighing scale with a movable dial. Have a set of objects to weigh:

- i. binder clip
 - ii. stapler
 - iii. banana

- c. You may also show a digital scale to the learners, which is another tool that can be used for measuring mass. Since the learners haven't learned about decimals, make sure to not complicate the process if using a digital scale.

C. Practice

1. In groups, ask the learners to estimate the mass of the following objects:

- a. plastic 500 mL water bottle
 - b. plastic 1.5 L bottle
 - c. newspaper
 - d. pencil case
 - e. tissue paper

2. Afterward, let the groups take turns in using the weighing scale and measure the items accurately.

D. Reflection

Ask the learners the following questions:

- What did we learn today?
- How do we measure mass in grams, kilograms, and/or milligrams? What are the appropriate measuring tools?
- How can we best compare masses between objects?

III. Homework

Ask the learners to compare the mass of the following items at home and note which is lighter and which is heavier:

1. flashlight ____ pencil ____
2. backpack ____ scissors ____
3. spoon ____ sandok ____
4. pan ____ pot ____
5. mask ____ mug ____

Term 2
Lesson 2:

Number and Algebra

Estimate mass of an object using grams, kilograms, and/or milligrams.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. estimate mass of an object using grams, kilograms, and/or milligrams.

II. Development of the Lesson

A. Motivation

1. Play a game called "Heavy, Light, or Feather?" Show the students three common classroom objects: a large textbook, a single pencil, and a tiny scrap of paper.
2. Ask: "If you had to carry one of these all day, which would be the easiest? Which would be the hardest?"
3. Explain that we use different "math words" (units) to describe how heavy these items are so we don't have to carry them to find out.

B. Discussion

1. Explain that **Estimation** is making a "smart guess" based on what we already know. To estimate mass, we compare a new object to a "Benchmark" (a famous object we already know the weight of).
2. Provide the following benchmarks:
 - a. **Milligram (mg):** Think of a tiny grain of salt or a small feather. It feels almost weightless.
 - b. **Gram (g):** Think of a single paperclip or a small calamansi fruit.
 - c. **Kilogram (kg):** Think of a large 1-liter bottle of water or a thick dictionary.
3. Explain the "Rule of 5":
 - a. If an object feels like it's more than half a kilogram, we estimate it in **kilograms**.

- b. If it's lighter than a calamansi, we estimate it in **milligrams**.
- c. Everything in between is usually measured in **grams**.

C. Practice

1. Prepare a mystery bag with five hidden items (e.g., a stapler, leaf, stone, coin, bag of rice).
2. Divide the learners into groups.
3. Pass the bag around. Without using a scale, each group must feel the weight and record their Estimated Mass in a table.

Object	Estimated Unit (mg, g, kg)	Estimated Number

4. After all groups finish, reveal the items and discuss them. Ask, "Why did you choose grams for the coin instead of kilograms?"

D. Reflection

Ask the learners the following questions:

- What did we learn today?
- If a baker estimates the flour for a cake incorrectly, what might happen?
- When is it okay to estimate weight instead of using a real scale?

III. Homework

Look around your kitchen at home. Find three items and estimate their mass. Write your answers in the following format:

1. Item: _____, Estimate: _____.
2. Item: _____, Estimate: _____.
3. Item: _____, Estimate: _____.

Term 2
Lesson 3:

Measurement and Geometry

Compare masses of objects including the use of a balance scale.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. compare masses of objects including the use of a balance scale.

II. Development of the Lesson

A. Motivation

Ask students to play the Mass Game. You will show pictures (or say the names) of two objects. The students will tilt their torsos in the direction of the heavier object. Then, they will

complete the sentence: "Ang [object 1] ay **mass (mabigat o magaan)** kaysa sa [object 2]."

The list of objects can include:

- one sheet of paper vs. a ball
- book vs. envelope
- shoebox vs. a pair of shoes

B. Discussion

1. Explain to learners that the mass of objects can also be compared. The objects can be compared if there is a balance scale:



Explain to learners that a balance scale is like a seesaw. When one side goes down, the other goes up, and it depends on which side is heavier.

2. If available, demonstrate how to use a balance scale using various objects. Explain how to tell which is heavier and lighter. If a balance scale is not available and internet is available, use this online [balance scale](#).

C. Practice

1. If a balance scale is available, ask students to volunteer for their items. Then, let the class identify which item is heavier.
2. If a balance scale is not available, prepare printed materials or drawings of different items on a balance scale. Let the class identify which item is heavier.

D. Reflection

Ask the learners the following questions:

- What did we learn today?
- How can we compare the masses of two objects?
- How does a balance scale work?

III. Homework

Ask the learners to draw a tilted balance scale with two objects:

1. pencil vs. notebook
2. candy vs. apple
3. pineapple vs. empty water bottle

Term 2

Lesson 4:

Measurement and Geometry

Measure capacity in liters (L) and/or milliliters (mL), using appropriate measuring tools.

I. Learning Objectives

At the end of the lesson, the learners must be able to determine:

1. identify appropriate units (mL, L) for different containers; and
2. read and record the capacity of liquids using measuring tools.

II. Development of the Lesson

A. Motivation

1. Show the learners a small spoon and a large bucket (or draw them on the board).
2. Ask: "If you were very thirsty after a long walk, which container would you want filled with water?"
3. Ask: "If you only needed to take a small drop of medicine, which would you use?"
4. Explain that just like weight has grams and kilograms, liquids have their own special units called milliliters and liters.

B. Discussion

1. Explain that **Capacity** is how much liquid a container can hold.

a. **The Units:**

- **milliliter (mL)** is used for very small amounts of liquid.

Benchmark: About 20 drops of water or one teaspoon.

- **liter (L)** is used for larger amounts of liquid.

Benchmark: A standard large plastic soda bottle or a carton of milk.

- Tell the learners that 1 000 mL is equal to 1 L.

b. **The Tools:**

- **Measuring Cup/Graduated Cylinder** is used for cooking or science experiments to get an exact amount of mL.

- **Large Jugs/Beakers** is used for measuring liters.

2. Explain that when we measure, we must look at the lines (graduations)

on the side of the container. We read the number where the top of the liquid touches the line.

C. Practice

1. For this exercise, the learners will be making drinks! Bring measuring cups. Assign the learners into groups and designate one drink to each group. It can range from a chocolate drink to orange juice or iced tea.
2. Ask the learners to make three versions of the drinks:
 - a. according to the instructions
 - b. too much water
 - c. too little water
3. Guide the learners throughout the process.
4. Afterward, ask the learners these questions:
 - a. What tasted the best for you? What tasted the worst? Why?

- b. What happens when our measurements are not accurate?

D. Reflection

Ask the learners the following questions:

- What did we learn today?
- Why do we use mL for medicine instead of L?
- When buying gasoline, would you use mL or L?

III. Homework

Go to your kitchen or bathroom at home. Find 4 different liquid containers (shampoo, soy sauce, cooking oil, etc.). Write down the name of the item and the capacity written on the label.

1. _____ : _____ mL/L
2. _____ : _____ mL/L
3. _____ : _____ mL/L
4. _____ : _____ mL/L

Term 2

Measurement and Geometry

Lesson 5:

Estimate capacity using liters and/or milliliters.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. select the most reasonable unit (mL or L) for a given container; and
2. estimate the capacity of various containers using mental benchmarks.

II. Development of the Lesson

A. Motivation

1. The learners will play "The Price is Right," except they will be guessing the capacity of certain containers. Assign the learners to groups and conduct the game in quiz-bee style.
2. Prepare five questions, which can range from liquid products to plastic containers. Whoever guesses the nearest amount wins the point.

B. Discussion

1. Explain that estimation is finding a number that is "close enough" to the real measurement. To do this, there are "mental benchmarks."
 - a. The milliliter (mL) benchmark can be like a small drop of water.
 - b. The liter (L) benchmark can be a large plastic soda bottle, which is exactly one liter.

C. Practice

1. The learners will play a capacity auction. Place five random containers on your desk (e.g., an empty tuna can, a mug, a large bucket, a perfume bottle, and a water jug).
2. Hold up the first object and write three choices on the board.
3. Learners must vote for the best estimate. Then, explain what the right answer is.
4. Then, ask the learners to rank the containers from greatest to least.

D. Reflection

Ask the learners the following questions:

- What did we learn today?
- What are other benchmarks that can be used for milliliters and liters?

III. Homework

Ask the learners to encircle what a better estimate is for the corresponding items:

1. kitchen sink: 20 mL / 20 L
2. soy sauce bottle: 500 mL / 500 L
3. bathtub: 5 L / 150 L
4. eyedropper: 2 mL / 2 L
5. two large soda bottles: 1.5 L / 3 L

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. compare capacities of two containers.

II. Development of the Lesson

A. Motivation

1. Ask the learners where they store the following items:
 - a. Water
 - b. Salt
 - c. Rice
 - d. Sugar
 - e. Shampoo

2. Ask learners if their container for salt can fit water, and other possible comparisons.

This exercise helps the learners imagine or think about how different containers have different or specific capacities.

B. Discussion

1. Bring various containers. It can be any of the following, or it can also be as simple as a plastic container.



2. Fill one container (Container A) with mongo seeds. Then, take Container B and ask the learners if they think it will be filled if the seeds from Container A are transferred to Container B. Then, fill in Container B with the contents of Container A. Ask if Container B holds more mongo seeds or less. Do the same for the remaining containers.
3. Let the learners describe the capacity of each container using the words "full," "half full," "almost full," or "empty."
4. Explain that capacity is the amount of something that a container can hold before spilling. The words "greater than," "equal to," or "less than" can also be used in comparing capacities. Ask the learners to use

these words in comparing the capacities of the containers.

C. Practice

1. Group the learners and give them two containers each. Each group will be assigned a particular material:
 - a. Group 1: Mongo seeds
 - b. Group 2: Cotton
 - c. Group 3: Popsicle sticks
2. Ask the groups to note their observations and answer the following guide questions:
 - a. Which container has greater capacity?
 - b. Which container has less capacity?
 - c. How were you able to reach this statement?

3. Ask the groups to report their findings.

D. Reflection

Ask the learners the following questions:

- What did we learn today?
- Why do we need to know how to compare the capacities of two containers?

III. Homework

Ask the learners to circle the container that can hold more content.

1.  
2.  
3.  
4.  
5.  

Term 2

Lesson 7:

Number and Algebra

Read and write money in words and using (a) Philippine currency symbols (₱ and PhP) up to ₱10 000, and (b) the centavo sign.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. read and write money amounts using the symbols ₱, PhP, and ¢ up to ₱10 000; and
2. express money amounts in words correctly.

II. Development of the Lesson

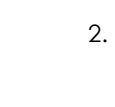
A. Motivation

1. Divide the learners into three groups. Prepare fake money. Each group will get 9 ₱1 000 bills, 2 ₱500 bills, 2 ₱200 bills, 5 ₱100 bills, 5 ₱50 bills, and 5 ₱20 bills.
2. For this exercise, the instructor will say an amount, and the learners will match the amount by using the bills they have.
3. The questions can include:
 - a. 8 370
 - b. 7 890
 - c. 3 250
 - d. 6 340
 - e. 9 990

B. Discussion

1. Recap the value of Filipino bills and coins. The instructor can use flashcards to refresh learners on these various values.

Denomination	Value
	₱ 1000 1 000 pesos
	₱ 500 500 pesos
	₱ 200 200 pesos
	₱ 100 100 pesos
	₱ 50 50 pesos

	₱ 20 20 pesos
	₱20 20 pesos
	₱10 10 pesos
	₱5 5 pesos
	₱1 1 peso
	₱0.25 or 25 ¢ 25 centavos
	₱ 0.05 or 5 ¢ 5 centavos
	₱0.01 or 1 ¢ 1 centavo

2. Explain that counting the total bills follows the same process as before.

C. Practice

1. Assign the learners into three groups. Play "The Price is Right" using the same groupings and bills as earlier. In this exercise, the learners will use their bills to "purchase" the displayed item.
2. In the exercise, all groups will "place bids," but instead of awarding the highest bidder, the criteria will be:
 - a. Submitted bid closest (and higher) to the real price
 - b. In the case that many groups have the closest possible bid, the item will be awarded to the group that placed the correct bid first.
3. The hypothetical items may include:
 - a. backpack – PhP 851
 - b. ten packs of highlighters – PhP 1 130
 - c. smart watch – PhP 2 118
 - d. Bluetooth speaker – PhP 1 970
 - e. guitar – PhP 4 325
 - f. Android tablet – PhP 8 279

D. Reflection

Ask the learners the following questions:

- What did we learn today?
- Why do we need to read money up to ₱10 000?

III. Homework

Ask the learners to determine the value of the following:

	Bills	Answer
1.		
2.		
3.		

		
4.		
5.		

Term 2
Lesson 8:

Number and Algebra

Add numbers with sums up to 10 000, with and without regrouping.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. add numbers with sums up to 10 000, with and without regrouping.

II. Development of the Lesson

A. Motivation

Divide learners into three groups. Ask them to create four stacks of school items. Each stack should be a maximum of 9 items only before they move on to the next. These items can range from a chair, book, notebook, lunchbox, pencil—if it is safe. They cannot start a new stack without completing the current stack. The team with the most stacks will win.

B. Discussion

1. Explain that adding large numbers is like building a tower. If the base isn't straight, the tower falls. The "houses" must be aligned and should each only have one digit (0-9).

2. For adding without regrouping, learners must start from the ones place (the right) and move to the thousands place (the left).

a. Example: $4\,512 + 3\,275$

- i. ones: $2 + 5 = 7$
- ii. tens: $1 + 7 = 8$
- iii. hundreds: $5 + 2 = 7$
- iv. thousands: $4 + 3 = 7$
- v. sum: $7\,787$

- b. This can also be visualized in a vertical manner, which is the friendlier way of solving an equation:

$$\begin{array}{r} + 4\,512 \\ + 3\,275 \\ \hline 7 \end{array} \Rightarrow \begin{array}{r} + 4\,512 \\ + 3\,275 \\ \hline 87 \end{array} \Rightarrow \begin{array}{r} + 4\,512 \\ + 3\,275 \\ \hline 787 \end{array} \Rightarrow \begin{array}{r} + 4\,512 \\ + 3\,275 \\ \hline 7\,787 \end{array}$$

3. For adding with regrouping, there needs to be a carry over. Again, "houses" can only hold one digit. When this happens, if the sum is 10 or more for each "house," we keep the last digit and "carry over" the other digit to the next house to the left.

a. Example: $5\,678 + 2\,535$

- i. $8 + 5 = 13$ (Write 3 in the ones, then regroup 1 to the tens)

- ii. $7 + 3 + 1 = 11$ (Write 1 in the tens, then regroup 1 to the hundreds)

- iii. $6 + 5 + 1 = 12$ (Write 2 in the hundreds, then regroup 1 to the thousands)

- iv. $5 + 2 + 1 = 8$ (Write 8 in the thousands)

v. Sum: $8\,213$

- b. This can also be visualized in a vertical manner.

$$\begin{array}{r} + 5\,678 \\ + 2\,535 \\ \hline 13 \end{array} \Rightarrow \begin{array}{r} + 5\,678 \\ + 2\,535 \\ \hline 113 \end{array} \Rightarrow \begin{array}{r} + 5\,678 \\ + 2\,535 \\ \hline 1213 \end{array} \Rightarrow \begin{array}{r} + 5\,678 \\ + 2\,535 \\ \hline 8\,213 \end{array}$$

Keep only the ones digit Keep only the tens digit Keep only the hundreds digit

C. Practice

1. Divide the learners into three groups. Announce a large 4-digit addition problem on the board.

2. Student 1 runs up to the board and adds the ones (and handles regrouping if needed). Student 2 runs up to accomplish the tens. Student 3 adds the hundreds. Student 4 adds the thousands and announces the final sum.

3. However, if one learner makes a mistake, the next learner can correct the mistake but cannot add the next digit.

4. The first group to correctly finish each problem wins a point.

D. Reflection

Ask the learners the following questions:

- What did we learn today?
- What is the biggest digit that can stay in one place value?

III. Homework

Ask the learners to solve the following problems:

1. $5\,771 + 3\,118 =$
2. $8\,147 + 1\,229 =$
3. $3\,578 + 1\,192 =$
4. $7\,091 + 2\,455 =$
5. $3\,122 + 3\,333 =$

Term 2
Lesson 9:

Number and Algebra

Estimate the sum of addends with up to 4 digits.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. estimate the sum of addends with up to 4 digits.

II. Development of the Lesson

A. Motivation

1. The learners, in groups, will have a "Shopping Spree." On the board are three "stations" with two items each.
 - a. Station 1 (Toy Store): robot (PhP 1 280) and puzzle (PhP 410)
 - b. Station 2 (Grocery): sack of rice (PhP 2 150) and canned goods (PhP 890)
 - c. Station 3 (Clothing): jacket (PhP 1 210) and shoes (PhP 2 360)
2. Assign each group a "budget goal." Group 1 must spend a maximum of PhP 3 000. Group 2 must spend a maximum of PhP 6 000. Group 3 must spend a maximum of PhP 9 000.
3. For this game, the learners cannot use their pens or pencils to compute.
4. For the first five minutes, groups walk around the "stores" to discuss which items (2-3) they can get with their budget.
5. The groups will be given ten minutes to submit their final list to the teacher.
6. Each group will present their assigned budget and what they got.

B. Discussion

1. To get a good estimate, tell the learners that the common strategy is to round the numbers to the highest place value they share.
 - a. To do this, first round both addends, then add the numbers.
 - b. For example, in estimating the sum of 4 220 and 2 893, we round both to the nearest thousand.
 - i. $4\,220 \approx 4\,000$
 - ii. $2\,893 \approx 3\,000$

- iii. $4\,000 + 3\,000 \approx 7\,000$
- iv. estimated sum: 7 000

2. Explain that rounding to different places gives different degrees of "closeness."
 - a. If you round 4 120 and 2 893 to the nearest hundred, we get $4\,200 + 2\,900 \approx 7\,100$.
 - b. If you round 4 120 and 2 893 to the nearest ten, we get $4\,120 + 2\,890 \approx 7\,110$

C. Practice

1. With the learners in groups, conduct a quiz bee.
2. Before starting each round, ask the groups to send a representative to the front.
3. Read out the addition problems and ask the learners to write their estimates on the board in five seconds. The closest to the real answer gets the point.
4. The addition problems can be as follows:
 - $3\,120 + 4\,890$
 - $585 + 210$
 - $1\,999 + 7\,005$
 - $3\,010 + 4\,455$
 - $2\,460 + 1\,001$

D. Reflection

Ask the learners the following questions:

- What did we learn today?
- Is an estimate always the same as the real answer?
- If we round both numbers up, will our estimate be higher or lower than the real sum?

III. Homework

Ask the learners to estimate the sums by rounding to the nearest thousand for the 4-digit numbers, and to the nearest hundred for the 3-digit numbers:

1. $2\,945 + 5\,120 \approx$
2. $570 + 115 \approx$
3. $8\,050 + 1\,200 \approx$

Term 2**Lesson 10:****Number and Algebra**

Solve problems involving addition of numbers with sums up to 10 000, including problems involving money.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. identify the given information and what is being asked in a word problem;
2. apply the steps of problem-solving to addition scenarios; and
3. solve word problems involving sums up to 10,000, including Philippine currency (₱).

II. Development of the Lesson**A. Motivation**

1. Tell the learners to pretend that the school is preparing for a big fiesta. The Food Committee spent ₱4 550 on snacks. The Decoration Committee spent ₱2 875 on banners.
2. Say, "The Principal needs to know the total budget spent so far. How do we help her find the answer without getting confused by the numbers?"
3. Guide the learners in answering the problem.

B. Discussion

1. Recap the steps in solving word problems:
 - a. Identifying the given – What is stated in the problem? What are we working with
 - b. Identifying what is asked – What answer does the problem want?
 - c. Determining the computation/formula to be used: What do we need to do to reach the answer?
 - d. Solution: Solving for the answer
 - e. Final answer: What is the final answer, with units?
2. In solving word problems involving addition of numbers, apply the learnings from the prior lessons.
3. Use the following example: Mang Pedro sold 1 250 kilos of mangos on Monday and 2 845 kilos on Tuesday. How many kilos did he sell in total?

- a. Given: 1 250 kilos and 2 845 kilos
- b. Asked: total kilos of mangos sold
- c. Operation: addition
- d. Solution:
 $1\,250 + 2\,845 = 4\,095$
- e. Final answer: 4 095 kilos

C. Practice

1. Write a "Shopping List" on the board with these items:
 - o bicycle: ₱5 450
 - o helmet: ₱1 200
 - o water bottle: ₱350
2. Divide learners into three groups. Give each group a different "Customer Scenario."
 - a. Group 1: Customer buys the bicycle and the helmet.
 - b. Group 2: Customer buys two helmets and a water bottle.
 - c. Group 3: Customer buys the bicycle and the water bottle.
3. Each group must present their solution on the board using the steps.

D. Reflection

Ask the learners the following questions:

- What did we learn today?
- Why is it important to identify "what is asked" for the word problems?
- If we are solving a money problem, what symbol must always be in our answer?

III. Homework

Ask the learners to solve the following word problems using the steps:

1. A farmer harvested 3 456 coconuts in the first farm and 4 120 coconuts in the second farm. How many coconuts were harvested in all?
2. Nanay bought a rice cooker for ₱2 350 and a fan for ₱1 895. How much did she pay in total?
3. A school library has 5 600 Tagalog books and 3 450 English books. What is the total number of books?

Term 2

Lesson 11:

Number and Algebra

Subtract numbers, where both numbers are less than 10 000, with and without regrouping.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. subtract numbers up to 10,000 without regrouping;
2. subtract numbers up to 10,000 with regrouping; and
3. align numbers correctly by place value before subtracting.

II. Development of the Lesson

A. Motivation

1. Conduct Musical Chairs with the students, but have them in batches (possibly 10 at a time). Two at a time will be eliminated until the last three remain.
2. After every batch's last three, the next batch will start until all batches' last three remain. These "finalists" will play a last round of Musical Chairs.

B. Discussion

1. Explain that subtraction is like "taking away" from a pile. Just like addition, we must keep the "Place Value Houses" straight.
2. To subtract without regrouping, always start from the ones place and move to the left.

a. For example: $8\,796 - 5\,432$

i. ones: $6 - 2 = 4$

ii. tens: $9 - 3 = 6$

iii. hundreds: $7 - 4 = 3$

iv. thousands: $8 - 5 = 3$

Thus, $8\,796 - 5\,432 = 3\,364$

b. This solution and process can also be visualized in a vertical manner.

$$\begin{array}{r} 8\,796 \\ - 5\,432 \\ \hline 4 \end{array} \rightarrow \begin{array}{r} 8\,796 \\ - 5\,432 \\ \hline 64 \end{array} \rightarrow \begin{array}{r} 8\,796 \\ - 5\,432 \\ \hline 364 \end{array} \rightarrow \begin{array}{r} 8\,796 \\ - 5\,432 \\ \hline 3\,364 \end{array}$$

c. Provide more examples for learners.

3. To subtract with regrouping, we regroup a value from the neighboring digit to the left.

a. For example: $5\,243 - 1\,825$

i. ones: $3 - 5$ (cannot do, so we regroup tens from 4. 3 becomes 13, and 4

becomes 3). Thus, $13 - 5 = 8$

ii. tens: $4 - 2$, but since the ones digit regrouped, it becomes $3 - 2 = 1$.

iii. hundreds: $2 - 8$ (cannot do, so we regroup thousands from 5. 2 becomes 12 and 5 becomes 4). Thus, $12 - 8 = 4$.

iv. thousands: $5 - 1$, but since the hundreds digit borrowed, it becomes $4 - 1 = 3$.

b. It can be more understandable to present it visually:

$$\begin{array}{r} 5\,243 \\ - 1\,825 \\ \hline \end{array} \rightarrow \begin{array}{r} 5\,243 \\ - 1\,825 \\ \hline 8 \end{array} \rightarrow \begin{array}{r} 5\,243 \\ - 1\,825 \\ \hline 18 \end{array} \rightarrow \begin{array}{r} 5\,243 \\ - 1\,825 \\ \hline 18 \end{array}$$

Cannot be, so we borrow from the next digit

$$\rightarrow \begin{array}{r} 4\,1\,3\,1 \\ 5\,243 \\ - 1\,825 \\ \hline 418 \end{array} \rightarrow \begin{array}{r} 4\,1\,3\,1 \\ 5\,243 \\ - 1\,825 \\ \hline 3\,418 \end{array}$$

Cannot be, so we borrow from the next digit

c. To make it more grounded, the instructor may use popsicle sticks to visualize the regrouping.

4. Discuss what happens when you need to regroup but the neighboring digit is 0.

$$\begin{array}{r} 6\,300 \\ - 1\,285 \\ \hline \end{array} \rightarrow \begin{array}{r} 6\,300 \\ - 1\,285 \\ \hline \end{array} \rightarrow \begin{array}{r} 5\,9\,10 \\ 6\,300 \\ - 1\,285 \\ \hline 5\,015 \end{array}$$

Since the next digit is also 0, it also borrows from the next digit. It becomes a 9.

Cannot be, so we borrow from the next digit

C. Practice

1. With the learners in groups, conduct a quiz bee.
2. Before starting each round, ask the groups to send a representative to the front.
3. Read out the problems and ask the learners to write their estimates on the board in five seconds. The closest to the real answer gets the point.

4. The addition problems can be as follows:

- i. $7\ 122 - 3\ 010$
- ii. $8\ 869 - 6\ 551$
- iii. $4\ 956 - 2\ 345$
- iv. $2\ 439 - 1\ 022$
- v. $9\ 232 - 7\ 422$

D. Reflection

Ask the learners the following questions:

- What did we learn today?

- How can we use addition to check if our subtraction answer is correct?

III. Homework

Ask the learners to subtract the following:

- $6\ 889 - 3\ 210$
- $9\ 733 - 1\ 621$
- $8\ 113 - 5\ 980$
- $8\ 008 - 3\ 764$
- $3\ 544 - 2\ 803$

Term 2

Lesson 12:

Number and Algebra

Estimate the difference of two numbers of up to 4 digits.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

- round off numbers to the nearest tens, hundreds, or thousands to estimate differences;
- estimate the difference between 3- to 4-digit numbers; and
- determine if an estimate is reasonable compared to the actual difference.

II. Development of the Lesson

A. Motivation

- Tell the learners: "You have ₱5 000. You want to buy a toy that costs ₱2 150. About how much money will you have left? You have 5 seconds to decide!"
- Ask learners to shout out their "quick guesses."
- Most will say "3 000" or "2 800." Ask them how they got that so fast. Explain that they just performed Estimation of Difference—a survival skill for shopping!

B. Discussion

- To get a good estimate, recall the strategy discussed during the estimation of sums. To recap, round the numbers to the highest place value they share.
 - To do this, first round the larger number (minuend). Then, round the smaller number (subtrahend). Then, subtract the numbers.
 - For example, in estimating the difference of 4 220 and 2 893, we round both to the nearest thousand.
 - $4\ 220 \approx 4\ 000$
 - $2\ 893 \approx 3\ 000$

iii. $4\ 000 - 3\ 000 \approx 1\ 000$

iv. Estimated Sum: 1 000

- Explain that rounding to different places gives different degrees of "closeness."
 - If you round 4 120 and 2 895 to the nearest hundred, we get $4\ 100 - 2\ 900 \approx 1\ 200$.
- If you round 4 120 and 2 893 to the nearest ten, we get $4\ 120 - 2\ 890 = 1\ 230$

C. Practice

- Tell the learners there's a sale! List these items and show the original price and the sale price:

Item	Original Price	Sale Price
 Laptop	PHP 9 999	PHP 7 129
 Bag	PHP 1 250	PHP 899
 Shoes	PHP 2 000	PHP 1 379
 Lamp	PHP 975	PHP 547
 Four books	PHP 2 437	PHP 1 898

2. Ask the learners to estimate the discount of the prices.

D. Reflection

Ask the learners the following questions:

- What did we learn today?
- When is it better to have a quick estimate than an exact answer?

III. Homework

Ask the learners to estimate the difference by rounding to the nearest thousand for the 4-digit numbers, and to the nearest hundred for the 3-digit numbers:

1. $8\,432 - 1\,259 \approx$
2. $2\,343 - 1\,022 \approx$
3. $9\,023 - 2\,899 \approx$

Term 2

Number and Algebra

Lesson 13:

Perform addition and subtraction of 3 to 4 numbers of up to 2 digits, observing correct order of operations.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. perform addition and subtraction involving 3 to 4 numbers;
2. apply the Left-to-Right rule for addition and subtraction; and
3. solve multi-step problems correctly by observing the order of operations.

II. Development of the Lesson

A. Motivation

1. Pretend that you are a jeepney barker. Designate one of the students as the driver who will list down on the board the number of passengers.
2. Upon starting, have 15 learners ready as passengers. Then, for the first stop, ask 8 learners to sit down. For the second stop, ask 5 to join. For the third stop, 4 get down. How many passengers are currently in the jeepney?
3. Read out the string of numbers on the board, as written by the "driver:" $15 - 8 + 5 - 4$. Then, guide the learners through the computation process.

B. Discussion

1. Explain that when we have a "string" of addition and subtraction, neither one is more "powerful" than the other.
2. Tell the learners that when addition and subtraction are in the same number sentence, we solve them like we read a book: from **left to right**.
 - a. Example: $45 - 12 + 20$
 - i. $45 - 12 = 33$
 - ii. $33 + 20 = 53$
 - iii. $45 - 12 + 20 = 53$

3. Explain that the process is the same even for four numbers.

a. Example: $80 - 20 - 10 + 5$

- i. $80 - 20 = 60$
- ii. $60 - 10 = 50$
- iii. $50 + 5 = 55$

4. A common mistake is that some people think addition should always come first before subtraction. This is FALSE.

C. Practice

1. Prepare flashcards of numbers that can be pasted on the board. Put four numbers on the board, then write + or - between the numbers. For example:

25	+	4	-	10	+	3
----	---	---	---	----	---	---

Ask the learners to compute the final number.

2. Then, rearrange the same numbers but retain the operations:

10	+	25	-	3	+	4
----	---	----	---	---	---	---

3	+	10	-	4	+	25
---	---	----	---	---	---	----

3. Continue the exercise until learners compute faster and become more familiar with the left-to-right process.

D. Reflection

Ask the learners the following questions:

- What did we learn today?
- What can you compare the left-to-right rule with?

III. Homework

Ask the learners to solve the following:

1. $32 + 15 - 10 =$
2. $50 + 20 - 5 + 12 =$
3. $18 + 9 + 15 - 20$
4. $17 + 2 - 15 + 5 =$
5. $25 + 6 - 3 - 5 =$

Term 2**Lesson 14:****Number and Algebra**

Solve problems involving addition and subtraction with 3 to 4 numbers of up to 2 digits, including problems involving money.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. identify the sequence of operations needed in a multi-step word problem;
2. apply the problem-solving method to problems with 3 to 4 numbers; and
3. solve real-life problems involving Philippine currency (₱) and multiple transactions.

II. Development of the Lesson**A. Motivation**

1. Tell the learners: "Your parents gave you ₱50. First, you buy a juice for ₱12. Then, you buy a biscuit for ₱8. Finally, your friend gives you ₱20 as a late birthday gift.

Ask learners to stand up. For every "expense," they pretend to hand money away (subtraction). For every "gift," they pretend to receive money (addition).

Ask the learners, "How much money do you have left?"

Point out that we didn't just do one math step; we did three! This is a "multi-step" problem.

2. Afterward, count off to group the learners for a quiz bee. For each round, a representative of the group will be on the board. Read out the number sentence, and the first to get the answer correctly gets the point. Questions can be as follows:
 - 1) $70 - 50 + 3 =$
 - 2) $12 + 8 - 5 + 3 =$
 - 3) $13 - 0 + 5 - 5 =$
 - 4) $8 + 7 + 5 - 10 =$
 - 5) $13 + 20 - 15 + 6 =$
 - 6) $99 - 9 - 10 =$
 - 7) $15 - 2 + 13 - 8 =$
 - 8) $10 + 25 - 15 + 5 =$
 - 9) $12 + 3 - 6 + 0 =$
 - 10) $85 - 70 + 10 - 5 =$

B. Discussion

1. Recap the steps in solving word problems:

- a. Identifying the given – What is stated in the problem? What are we working with?
- b. Identifying what is asked – What answer does the problem want?
- c. Determining the computation/formula to be used: What do we need to do to reach the answer?
- d. Solution: Solving for the answer
- e. Final answer: What is the final answer, with units?

2. In solving word problems involving addition and subtraction of 3 to 4 numbers, apply the learnings from the prior lessons.

3. Use the following example: The Grade 3 garden had 45 tomato plants. Insects ate 10 plants. The teacher bought 15 more plants, but 5 of those withered. How many plants are in the garden now?

- i. Given: 45 tomato plants, 10 plants eaten by insects, 15 plants bought by the teacher, 5 plants withered
- ii. What is asked: Current number of plants
- iii. Computation: $45 - 10 + 15 - 5 =$ ____
- iv. Solution:
 1. $45 - 10 = 35$
 2. $35 + 15 = 50$
 3. $50 - 5 = 45$
- v. Final Answer: 45 tomato plants

C. Practice

1. In the same groups they had in the Motivation activity, learners will solve word problems. The instructor will prepare four word problems. Initially, Group 1 will get Problem 1, Group 2 Problem 2, so on and so forth. The problems are as follows:

Problem 1	The Grade 3 classroom library had 85 books. The teacher took 12 books to the faculty room to repair them. Then, a parent donated 25 new storybooks. Later that afternoon, the students borrowed 10 books to read at home. How many
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	books are left in the classroom library?
Problem 2	Ken saved ₱50 from his baon. For his birthday, his Ninong gave him ₱40. Ken used ₱65 of his total money to buy a new toy car. Then, his Tita gave him ₱50. How much money does Ken have left?
Problem 3	Maya went to the school canteen with ₱100. She bought a cup of arroz caldo for ₱35 and a bottle of water for ₱15. On her way back to class, her teacher gave her ₱20 for helping carry some books. How much money does Maya have now?
Problem 4	Mang Juan planted 60 pechay seedlings in his garden. 15 seedlings were eaten by snails, and 8 seedlings withered because of the heat. He decided to plant 30 more seedlings the next day. How many pechay seedlings are now growing in Mang Juan's garden?

- After five minutes, Group 1 will give Problem 1 to Group 2; Group 2 will give Problem 2 to Group 3, so on and so forth.

- After all the groups are done, the class will review the problems together.

D. Reflection

Ask the learners the following questions:

- What did we learn today?
- What is the purpose of doing word problems step by step?

III. Homework

Ask the learners to solve the problems step by step:

- A box had 95 marbles. Mario took 20, Lita took 15, and then their teacher added 10 more to the box. How many marbles are left?
 - Given:
 - What is asked:
 - Formula:
 - Solution:
 - Final Answer:
- Nanay has ₱75. She spent ₱25 for fish and ₱15 for vegetables. On her way home, she found ₱5. How much money does she have now?
 - Given:
 - What is asked:
 - Formula:
 - Solution:
 - Final Answer:
- Challenge: Write your own story problem using the numbers 40, 10, and 5 that uses both addition and subtraction.

Term 2

Lesson 15:

Data and Probability

Collect data from experiments with a small number of possible outcomes (e.g., rolling a die or tossing a coin).

I. Learning Objectives

At the end of the lesson, the learners must be able to:

- collect data from a simple experiment with a small number of possible outcomes (tossing a coin); and
- organize the results in a table using tally mark and frequency.

II. Development of the Lesson

A. Motivation

- Show the class a 1-peso coin. Ask the learners to describe what they see on each side (the value and year on one side, and a symbol or design on the other).

- Play "Heads or Tails?" Ask learners to predict which side will land face up before you toss the coin. Toss it 5 times and let the learners raise their hands if their guess was correct after each toss.

- Ask: Do we always know for certain which side will land face up before we toss the coin? This introduces the idea that the result of tossing a coin cannot be known for certain beforehand—we can only find out by actually doing it.

B. Discussion

- Explain that what the class just did—tossing a coin—is called an **experiment**: an activity that we do,

often repeated several times, to find out something.

2. Explain that each time we toss the coin is called a **trial**, and the result of each trial is called an **outcome**.
3. Tell the learners that in tossing a coin, there are only two possible outcomes: it can either show its head side (Head) or its tail side (Tail).
4. Model the activity: Toss a coin 10 times in front of the class. After every toss, record the result on the board using a simple table.

Toss	Result	Toss	Result
1st		6th	
2nd		7th	
3rd		8th	
4th		9th	
5th		10th	

Note: The results above are only a guide. Use the actual results of your coin toss demonstration.

5. Explain that once we have several results recorded, we can organize them more clearly by counting how many times each outcome (Head or Tail) happened, using tally marks. This is called the frequency of an outcome.

Possible Outcomes	Tally Marks	Frequency
Head		
Tail		

6. Guide the class in counting the tally marks and writing the frequency for

Head and for Tail, based on the actual results of your demonstration.

7. Emphasize why organizing data this way is helpful: it makes the results easier to see, compare, and share with others.

C. Practice

1. Group the learners into pairs. Give each pair a coin (or a piece of paper with a Head drawn on one side and a Tail on the other, if there are not enough coins available).
2. Ask each pair to toss the coin 10 times, recording each result in a Toss-Result table like the one modeled above.
3. After completing their 10 trials, ask the pairs to organize their results into a Possible Outcomes – Tally Marks – Frequency table.

D. Reflection

Ask the learners the following questions:

- What is an experiment? What is a trial? What is the outcome?
- How do we organize the data we collect from an experiment?
- Why is it important to record data accurately during every trial?

III. Homework

With a family member, toss a coin (or a paper cutout with the same design) 10 times. Record the result of each toss, then summarize it using tally marks and frequency.

1. Make a Toss and Result table (just like the one done in class).
2. Make a summary table of Possible Outcomes, Tally Marks, and Frequency.
3. Answer: Which came up more often in your experiment—Head or Tail?

Term 2

Lesson 16:

Data and Probability

Collect data from experiments with a small number of possible outcomes (e.g., rolling a die or tossing a coin).

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. collect data from a simple experiment (rolling a die) with a small number of possible outcomes; and
2. organize the collected data in a table using tally marks and frequency.

II. Development of the Lesson

A. Motivation

1. Show a die to the class. Ask: How many faces does a die have? What numbers can you see on it?
2. Before rolling, ask 2–3 volunteers to predict what number will land face up. Roll the die once and check their guesses. Repeat 2–3 times for fun.

B. Discussion

1. Recall with the class the meaning of experiment, trial, and outcome from the previous lesson.
2. Explain that rolling a die is also an experiment. Unlike tossing a coin (which has 2 possible outcomes), rolling a die has 6 possible outcomes: 1, 2, 3, 4, 5, or 6.
3. Model the experiment as a class: Roll a die 20 times. After each roll, ask a learner to make a tally mark on the board under the correct number.

Possible Outcomes	Tally Marks	Frequency
1		
2		
3		
4		
5		
6		

4. After 20 rolls, guide the class in counting the tally marks and completing the frequency column.
5. Ask: Why does a die have more possible outcomes than a coin? Tell the learners that the number of possible outcomes depends on the experiment being done.

C. Practice

1. Divide the class into small groups of 4–5 members. Give each group a die (or a cube with the numbers 1–6 written on its faces).

2. Ask each group to roll the die 20 times, with members taking turns, and to record every result using a table.
3. Have the groups organize their 20 results into a Possible Outcomes – Tally Marks – Frequency table.
4. Ask each group to identify which number came up most often and which came up least often in their own trials.
5. Let the groups post their tables on the board. Guide a short class discussion: Did every group get the same results? What might explain the differences in results even though the experiment was the same?

D. Reflection

Ask the learners the following questions:

- What are the possible outcomes when rolling a die?
- How do we organize the data we collect from an experiment?
- Why is it important to use tally marks when an experiment is repeated many times?

III. Homework

Using a die (or a homemade cube cutout numbered 1–6 on its faces), conduct an experiment at home:

1. Roll the die 15 times and record each result.
2. Summarize the results using tally marks and frequency in a table.
3. Answer: Which number came up most often? Which number came up least often?

Term 2

Lesson 17:

Data and Probability

Present data in tables and single bar graphs (horizontal and vertical).

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. organize collected data in a table; and
2. present data in a single horizontal bar graph with complete and correctly labeled parts.

II. Development of the Lesson

A. Motivation

1. Conduct a quick class survey: Ask learners to choose their favorite fruit among mango, banana, apple, and

atis by raising their hand for their choice. Tally the results on the board.

2. Ask: How can we present this data more clearly so that it is easier for anyone to understand at a glance?

B. Discussion

1. Organize the survey results from the Motivation into a simple table with two columns: Fruit and Number of Learners.

2. Explain that data can also be shown as a graph—a picture that makes data easier to understand and compare. One kind of graph is the bar graph, which uses bars to represent the number of times something occurs.
3. Introduce the horizontal bar graph, where the bars extend from left to right. Present and label its parts using the class survey data:
 - a. **Title** — tells what the graph is about.
 - b. **Vertical axis** — the line that goes up and down; shows the categories being compared (e.g., the fruits).
 - c. **Horizontal axis** — the line that goes from left to right; shows the scale or frequency.
 - d. **Scale** — the set of numbers along the horizontal axis, used to measure the length of each bar.
 - e. **Bars** — the rectangles that show how many times each category occurred; the longer the bar, the greater the number.
4. Model the step-by-step construction of a horizontal bar graph on the board using the survey data:
 - a. Decide on a title for the graph.
 - b. List the categories (fruits) along the vertical axis.
 - c. Choose an appropriate scale, starting at zero, and label it on the horizontal axis.
 - d. Draw each bar so that its length matches the correct frequency.
 - e. Make sure all bars are of equal width and evenly spaced, with a small, consistent gap between them.

C. Practice

1. Present the table below showing the favorite color of Grade 3 learners.

Color	Number of Learners
Pula	8
Asul	12
Berde	6
Dilaw	4

2. Using grid or graphing paper, ask the learners (individually or in pairs) to construct a horizontal bar graph from the table, following the steps discussed. Remind them to include a title and properly labeled axes.
3. Walk around the room to check learners' graphs and provide immediate feedback and correction.

D. Reflection

Ask the learners the following questions:

- What are the parts of a bar graph, and what does each part tell us?
- Why should the scale of a bar graph always start at zero?
- What would happen if the bars were not equal in width or evenly spaced?

III. Homework

Using the table below, construct a horizontal bar graph. Be sure to include a title and correctly labeled parts.

Kind of Pet: Dog – 10, Cat – 7, Fish – 5, Bird – 3

Term 2

Lesson 18:

Data and Probability

Present data in tables and single bar graphs (horizontal and vertical).

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. present data in a single vertical bar graph with complete and correctly labeled parts; and
2. differentiate a vertical bar graph from a horizontal bar graph.

II. Development of the Lesson

A. Motivation

1. Post the horizontal bar graph made by the class in the previous lesson (Favorite Color of Grade 3 Learners).

2. Ask: What would happen if we flipped the orientation of the bars—instead of sideways, we made them stand upright? Let's find out what this new form is called.

B. Discussion

1. Introduce the vertical bar graph, where the bars stand upright, going from bottom to top.
2. Explain that in a vertical bar graph, the positions of the axes are switched compared to a horizontal bar graph:

- The categories are placed along the horizontal axis (bottom).
 - The scale or frequency is placed along the vertical axis (side).
- Using the same Favorite Color data from the previous lesson, model the construction of a vertical bar graph on the board, following the same steps (title, categories, scale, bars) but with the axes switched.
 - Post the horizontal and vertical bar graphs of the same data side by side. Guide learners to observe: the data is the same—only the direction of the bars is different.
 - Discuss when each type is more appropriate to use:
 - Horizontal bar graph** - more suitable when category names are long, or when there are many categories.
 - Vertical bar graph** - more suitable when category names are short, or when there are only a few categories.

C. Practice

- Present the table below showing the favorite Larong Pinoy of Grade 3 learners.

Larong Pinoy	Number of Learners
Patintero	10

Tumbang Preso	14
Piko	8
Luksong Tinik	6

- Ask the learners to construct a vertical bar graph from the table on grid or graphing paper, making sure to include the title and correctly labeled axes.
- Let 2–3 learners present their finished graphs to the class for quick peer feedback.

D. Reflection

Ask the learners the following questions:

- What is the difference between a horizontal and a vertical bar graph?
- When is it more appropriate to use a horizontal bar graph? When is it more appropriate to use a vertical bar graph?

III. Homework

Using the table below, construct a vertical bar graph. Be sure to include a title and correctly labeled parts.

Favorite Subject:

Math – 11, Filipino – 9, Science – 8, English – 7, MAPEH – 5

Term 2

Data and Probability

Lesson 19:

Interpret data presented in tables and single bar graphs (horizontal and vertical).

I. Learning Objectives

At the end of the lesson, the learners must be able to:

- read and interpret data presented in a table; and
- read and interpret data presented in a horizontal or vertical bar graph, including identifying the greatest, the least, and differences between categories.

II. Development of the Lesson

A. Motivation

- Post a complete bar graph (e.g., the vertical bar graph on Larong Pinoy from the previous lesson) without giving any explanation.

- Ask learners: Just by looking, what can you already tell about this graph? Let a few learners share their observations before formally starting the lesson.

B. Discussion

- Explain that reading or interpreting a bar graph means getting information and meaning from it, not just looking at its shape.
- Model how to read a bar graph step by step, using the posted graph:
 - Read the title first to know what the graph is about.
 - Look at the categories along one axis.

- c. For each category, trace the end of its bar to the scale on the other axis to find its exact value.
 - d. Compare the length or height of the bars: the longest/tallest bar shows the greatest value, and the shortest bar shows the least value.
3. Using the posted graph, model guide questions such as:
 - a. Which category has the greatest number? Which has the least?
 - b. What is the total if we combine all the categories?
 - c. What is the difference between two categories (e.g., How many more learners prefer Tumbang Preso than Piko)?

C. Practice

1. Present the table and its corresponding bar graph below showing the number of storybooks read by five Grade 3 learners in one week.

Learner	Number of Storybooks Read
Mika	5
Carlo	3
Reyna	7
Julian	2
Faith	6

2. In pairs, ask the learners to construct the corresponding bar graph (horizontal or vertical—their choice) based on the table.
3. Using their completed graph, let the pairs answer interpretation questions such as:
 - a. Who read the most storybooks? Who read the least?
 - b. What is the total number of storybooks read by the five learners?
 - c. What is the difference between the number of books read by Reyna and Julian?

D. Reflection

Ask the learners the following questions:

- How do we find the exact number represented by a bar?
- Why is it important to read the title first before reading the data in a graph?

III. Homework

Study the bar graph given by your teacher (or use the graph you made in the previous lesson), and answer the following questions:

1. Which category has the greatest number? Which has the least?
2. What is the total of all the categories?
3. What is the difference between the two categories you chose?

Term 2

Lesson 20:

Data and Probability

Interpret data presented in tables and single bar graphs (horizontal and vertical).

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. interpret data presented in two related tables or bar graphs; and
2. draw conclusions based on the comparison of two sets of data.

II. Development of the Lesson

A. Motivation

1. Post two simple, already-completed bar graphs on the board showing the favorite sport of two different Grade 3 sections (e.g., Grade 3-Diamond and Grade 3-Sapphire).
2. Ask: What do you notice about these two graphs? Are they the same, or are there differences?

B. Discussion

1. Explain that sometimes, we are given two sets of data about a similar topic, and we need to read and compare them to draw conclusions.
2. Emphasize that when comparing two graphs, it helps if both graphs use the same scale, since this makes it easier and fairer to compare their bars directly.
3. Model comparing the two posted graphs by asking guide questions such as:
 - a. Which sport is the favorite in each section?
 - b. Which sport has the same number of learners in both sections?

- c. What is the combined total of learners who chose each sport across both sections?

C. Practice

Present the two bar graphs (already constructed and posted on the board) showing the number of fruits sold by two vendors in the school canteen in one day. Use the tables as your guide in drawing the graphs beforehand.

Fruit	Vendor A
Mango	20
Banana	15
Apple	10
Fruit	Vendor B
Mango	12
Banana	18
Apple	10

- In small groups, ask the learners to study the two bar graphs (not construct them) and answer the following comparison questions:
 - Which of the two vendors sold more mangoes?
 - Which fruit had the same number of sales for both vendors?

- c. If we combine the number of apples sold by both vendors, what is the total?

- Let the groups share and justify their answers using the data shown in the two graphs.

D. Reflection

Ask the learners the following questions:

- Why is it important to use the same scale when comparing two graphs?
- What did you learn this week about reading and comparing data?

III. Homework

Using the two tables below showing the number of books borrowed by Grade 3-Diligence and Grade 3-Obedience from the library in one week, answer the questions.

Grade 3 - Diligence:

Monday – 6, Tuesday – 4, Wednesday – 8

Grade 3 - Obedience:

Monday – 5, Tuesday – 7, Wednesday – 5

- Which section borrowed more books on Wednesday?
- On which day did both sections borrow the same number of books?
- What is the total number of books borrowed by both sections for the whole week?

Term 2

Lesson 21:

Data and Probability

Solve one-step word problems using data presented in a single bar graph (horizontal and vertical).

I. Learning Objectives

At the end of the lesson, the learners must be able to:

- extract the needed data from a bar graph to solve a one-step word problem; and
- solve one-step word problems involving addition or subtraction using data from a bar graph.

II. Development of the Lesson

A. Motivation

- Post a bar graph showing the kilos of vegetables sold by Aling Nena at the market in one day (tomato – 25 kg, cabbage – 18 kg, onion – 12 kg, potato – 20 kg), without any question yet.
- Ask: If this is the data shown in the bar graph, what questions could we

possibly ask using this information? List learners' suggested questions on the board.

B. Discussion

- Explain that a bar graph can also be used as a source of information to solve word problems, similar to how we use a table or a written problem.
- Recall the steps in solving a word problem:
 - Given - the information or data we already have (from the graph).
 - What is asked - what the problem wants us to find out.
 - Operation to be done - the operation (addition or subtraction) needed to solve it.

- d. Solution - the number sentence and computation.
 - e. Final Answer - the complete answer with the correct label or unit.
3. Model solving this problem using the posted graph: *"How many kilos of tomatoes and cabbage did Aling Nena sell in all?"*
 Given: tomato = 25 kg, cabbage = 18 kg (read directly from the bar graph)
 What is asked: The total kilos of tomatoes and cabbage sold
 Operation to be done: Addition
 Solution: $25 \text{ kg} + 18 \text{ kg} = 43 \text{ kg}$
 Final Answer: Aling Nena sold 43 kilos of tomatoes and cabbage in all.
- C. Practice
 Using the same bar graph (Aling Nena's Vegetable Sales), ask the learners to solve the following problems individually or in pairs, using the Given / What is asked / Operation / Solution / Final Answer format:

- How many kilos of vegetables did Aling Nena sell in all, combining all four kinds?
- How many more kilos of tomatoes were sold than onions?
- How many fewer kilos of potatoes were sold compared to tomatoes?

D. Reflection

Ask the learners the following questions:

- How do we get information from a bar graph to solve a problem?
- What operation do we use to find a total? What operation do we use to find a difference?

III. Homework

Using the bar graph given in class (tomato – 25 kg, cabbage – 18 kg, onion – 12 kg, potato – 20 kg), answer the following. Use Given, What is asked, Operation, Solution, and Final Answer for each.

1. How many more kilos of cabbage were sold than onions?
2. How many kilos of onions and potatoes were sold in all?

Term 2

Lesson 22:

Data and Probability

Solve one-step word problems using data presented in a single bar graph (horizontal and vertical).

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. solve two-step word problems using data from a bar graph; and
2. solve word problems involving money using data presented in a bar graph.

II. Development of the Lesson

A. Motivation

1. Recall the previous lesson on solving one-step problems using bar graphs.
2. Post a new bar graph showing the peso amount earned by Mang Jose from selling rice cakes (*kakanin*) over five days (Monday – ₱150, Tuesday – ₱180, Wednesday – ₱200, Thursday – ₱160, Friday – ₱210). Ask learners to describe what they notice.

B. Discussion

1. Explain that some problems need more than one step or operation to solve—these are called two-step problems.

2. Model this problem using the posted graph: *"What was Mang Jose's total earnings on Monday and Tuesday? What is the difference between that total and his earnings on Friday?"*

Given: Monday = ₱150, Tuesday = ₱180, Friday = ₱210

What is asked: The total earnings on Monday and Tuesday, and the difference between that total and Friday's earnings

Operation to be done: Addition, then Subtraction

Solution: Step 1: $₱150 + ₱180 = ₱330$

Step 2: $₱330 - ₱210 = ₱120$

Final Answer: The combined earnings of Monday and Tuesday exceeded Friday's earnings by ₱120.

3. Emphasize the importance of solving two-step problems in the correct order: identify what to solve first before moving to the next step.

C. Practice

Using the same bar graph (Mang Jose's Earnings), ask the learners to solve the following in pairs, using the complete

Given / What is asked / Operation / Solution / Final Answer format:

1. What was Mang Jose's total earnings on Wednesday, Thursday, and Friday?
2. If Mang Jose sets aside ₱300 from his Monday and Tuesday earnings for ingredients, how much will be left?

D. Reflection

Ask the learners the following questions:

- What should we do when a problem needs more than one step to solve?

- Why is it important to know what we are looking for before deciding which operation to use?

III. Homework

Using Mang Jose's bar graph (Monday – ₱150, Tuesday – ₱180, Wednesday – ₱200, Thursday – ₱160, Friday – ₱210), answer the following using Given, What is asked, Operation, Solution, and Final Answer.

1. What was Mang Jose's total earnings for the whole five days?
2. What is the difference between his earnings on Wednesday (highest) and Monday (lowest)?

Term 2

Lesson 23:

Data and Probability

Describe and compare outcomes in real-life situations using the terms likely, unlikely, most likely, and least likely.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. describe outcomes in real-life situations using the terms—likely and unlikely; and
2. describe and compare outcomes using the terms—most likely and least likely.

II. Development of the Lesson

A. Motivation

1. Show a container with 8 blue bottle caps and 2 red bottle caps mixed together (or any similar available materials in unequal quantities).
2. Ask: If you pick one cap without looking, which do you think you are more likely to pick—the blue or the red one? Why?

B. Discussion

1. Explain the idea of chance—the possibility that something will happen.
2. Introduce and define the following terms using the bottle cap container as example:
 - a. **Likely to happen** - the outcome has a greater chance of happening compared to other possible outcomes. (Example: It is likely to pick a blue cap because there are more of them.)
 - b. **Unlikely to happen** - the outcome has a lesser chance of happening compared to other possible outcomes. (Example: It is unlikely to pick a red cap because there are only a few of them.)

3. Present a new example with more than two categories to introduce comparing chances: a box containing 24 triangle cutouts, 2 square cutouts, and 10 star cutouts.

4. Introduce:

- a. **Most likely to happen** — the outcome with the greatest chance among all possible outcomes. (Triangle, because it has the greatest number.)
- b. **Least likely to happen** — the outcome with the smallest chance among all possible outcomes. (Square, because it has the fewest.)

5. Guide the class through 2–3 more real-life scenarios, asking learners to identify and explain the appropriate term for each (e.g., picking a candy from a container with different flavors in unequal amounts).

C. Practice

Present the following situations to the class. In pairs, ask the learners to describe each outcome using likely, unlikely, most likely, or least likely, and briefly explain their reasoning.

1. In a basket, there are 15 plastic vegetables and 3 plastic animal toys mixed together. What is the chance of picking a vegetable?
2. In a class with 20 boys and 20 girls, what is the chance of picking a boy at random?
3. In a container with 30 red candies, 5 yellow candies, and 15 green candies, which is most likely to be picked? Which is least likely?

D. Reflection

Ask the learners the following questions:

- How can we tell if an outcome is likely or unlikely to happen?
- What should we look at when comparing the most likely and least likely outcomes?

III. Homework

Read each situation and describe the outcome using likely, unlikely, most likely, or least likely. Give a short explanation for each answer.

1. A container has 18 white balls and 2 black balls. What is the chance of picking a white ball?
2. A basket of fruits has 10 mangoes, 6 bananas, and 4 apples. Which is most likely to be picked? Which is least likely?

Term 2

Lesson 24:

Data and Probability

Describe and compare outcomes in real-life situations using the terms likely, unlikely, most likely, and least likely.

I. Learning Objectives

At the end of the lesson, the learners must be able to:

1. describe outcomes in real-life situations using the terms equally likely, certain, and impossible; and
2. compare and describe outcomes using all the terms learned this week: likely, unlikely, most likely, least likely, equally likely, certain, and impossible.

II. Development of the Lesson

A. Motivation

1. Show a drawing (or an actual cutout) of a spinner divided into two equal parts—one half red, one half yellow.
2. Ask: If we spin the arrow of this spinner, is the chance of it landing on red the same as landing on yellow? Why?

B. Discussion

1. Using the spinner example, explain:
 - a. **Equally likely to happen** — each outcome has the same or equal chance of happening. (Since the two parts of the spinner are equal in size, the chance of the arrow landing on either one is also equal.)
2. Show a container filled only with green marbles (no other color). Ask: If we pick from this container, are we certain to get a green marble?
3. Introduce:
 - a. **Certain to happen** - the outcome is sure or definite to occur. (It is certain to get a green marble because that is the only color in the container.)
 - b. **Impossible to happen** - the outcome will never occur. (It is

impossible to get a red marble from that container because there are no red marbles in it.)

4. Recall together, as a synthesis, all seven terms learned this week and their meanings: likely, unlikely, most likely, least likely, equally likely, certain, and impossible.
5. Model 2–3 comparison questions where learners choose which of two outcomes is more likely to happen, explaining their reasoning using the correct terms.

C. Practice

Present the following situations. In small groups, ask the learners to describe each outcome using the most appropriate term (choosing from all seven terms learned this week), and explain their answer.

1. A spinner has four equal-sized parts—red, blue, green, and yellow. What is the chance of the arrow landing on green?
2. A box contains 20 pieces of paper, all with numbers written on them. What is the chance of picking a paper with a number?
3. In the same box, what is the chance of picking a paper with a letter written on it (there are no letters in the box)?
4. Compare: In a container with 12 yellow and 12 green balls, which is more likely to be picked — yellow or green? Explain.

D. Reflection

Ask the learners the following questions:

- What is the difference between certain and most likely?

- How do we compare two outcomes to know which is more likely to happen?
- Of all the terms we learned this week, which was the hardest to understand? Why?

III. Homework

Read each situation and describe the outcome using any of the seven terms learned this week (likely, unlikely, most likely, least likely,

equally likely, certain, impossible). Give a short explanation.

1. A container has 10 red toys and 10 blue toys. What is the chance of picking a red toy?
2. A box has 25 pieces of candy, all the same flavor. What is the chance of picking the same flavor?
3. Compare: In a deck of 40 cards—30 with numbers and 10 with pictures—which is more likely to be picked, a number card or a picture card?

