Unit 2

Topic: **Philippine Coins**

Objectives:

a. To identify/recognize the different Philippine coins (in circulation)
b. To give the value of each coin
c. To read and write the value of each coin

Prerequisite Concepts and Skills:

a. Intuitive concept of money
b. Intuitive knowledge of Philippine coins
c. Concept of numbers
d. Reading and writing numbers

Materials:

- Real coins ●Drawings or pictures of coins ●Toy coins

Instructional Procedures:

A. Introducing the Task

Show the pupils real Philippine coins. Let them identify the different coins. Ask them when they use these coins. (We use coins when we pay or buy something, when we give change, when we pay our fare.)

Ask: Which of these coins do you often use? (Pupils may give various answers except for the 1-centavo, 5-centavo, and 10-centavo coins which are not used very often.). What are the things that you buy with your 25-centavo coin? 1-peso coin? 5-peso coin? and 10-peso coin? (It is expected that pupils give different answers depending on their exposures and experiences in their locality.)

B. Performing the Task

Have the pupils bring out their coins. (The day before, they must be instructed to bring to class the different coins in circulation.) Individually, let them observe the appearance of each coin. It is possible that not all pupils bring the complete set of coins in circulation. Just let them observe the coins they have. After sometime, group the pupils. Let them put together all their coins. Make sure that each group has a complete set of coins. Make the pupils discuss among themselves what they have observed.

In consolidating their observations, let the pupils focus on the shape, color, size, appearance and what can be seen on the faces of the coins.

C. Discussing the Observations

Ask the pupils to give their observations.
Possible observations:
All the coins are circular in shape but they have different sizes.

1. The 10-piso coin has two colors.
   - The 5-sentimo coin has a hole in the center.
   - The smallest coin is the 5-sentimo while the 10 piso and the 5 piso have the same size.

- Some coins have prints of faces on one of its faces while others do not have.
- All coins have 1993 and Bangko Sentral ng Pilipinas on one face and Republika ng Pilipinas and a number on the other face.

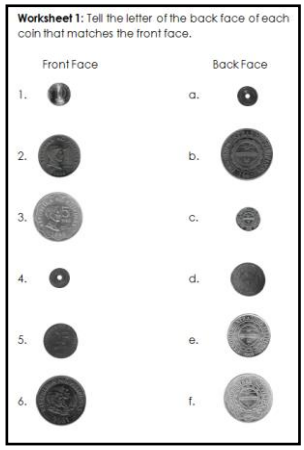
Presented above are some possible observations that pupils may give. They may not be able to read the numbers (year) appearing on the coins. Tell them how to read the numbers. Instead of saying “faces”, pupils may say “side.” Accept the word “side” but correct them by saying “faces.” However, in the language of the Bangko Sentral ng Pilipinas, the faces are called “obverse” and “reverse”.

Given above are general observations. Let the groups describe what they see on the faces of each coin. Call on one group to describe the 5-sentimo. Then ask other groups to add if they have observed other things that were not yet given. Do the same for the other coins. Make a summary table of the observations on the board.

Coin	Shape	Color	Prints	
			Front Face (Obverse)	Back Face (Reverse)
10 piso	Round	Gray Pale yellow	Face of Andres Bonifacio and Apolinario Mabini and year made	Logo of Bangko Sentral ng Pilipinas and the year 1993.
5 piso	Round	Pale yellow	Face of Emilio Aguinaldo and year made	Logo of Bangko Sentral ng Pilipinas and the year 1993.
1 piso	Round	Gray	Face of Jose Rizal and year made	Logo of Bangko Sentral ng Pilipinas and the year 1993.
25 sentimo	Round	Yellow	“25 sentimo” and year made	Logo of Bangko Sentral ng Pilipinas and the year 1993.
10 sentimo	Round	Copper red	“10 sentimo” and year made	Logo of Bangko Sentral ng Pilipinas and the year 1993.
5 sentimo	Round	Copper red	“5 sentimo” and year made	Only the words “Bangko Sentral ng Pilipinas and the year 1993 printed along the border.

Help the pupils name these colors because they may not be familiar with them. Also, ask leading questions like, “Do you see faces of people on the face of the coin? Who are these people?” to make the pupils realize the features of each coin.
The 1-centavo coin or the 1 sentimo, although still considered as one of the denominations of Philippine coins, is seldom seen or used.
Tell pupils that piso is the Tagalog word for peso while sentimo is the Tagalog word for centavo.

2. Let the pupils answer Worksheet 1. Then discuss the answers.


Worksheet 1: Tell the letter of the back face of each coin that matches the front face.

Front Face	Back Face
1.	a.
2.	b.
3.	c.
4.	d.
5.	e.
6.	f.

Show the pupils the different coins and let them identify each one.

Focus on the 10-piso coin. Post a drawing, picture or replica of the coin on the board. Show the pupils the coin and tell them that the value of the coin is 10 pesos. Write ₱ 10.00 on the board beside the drawing of the coin. Tell the pupils that the “₱ “ is the symbol for peso. Let the pupils read the amount.

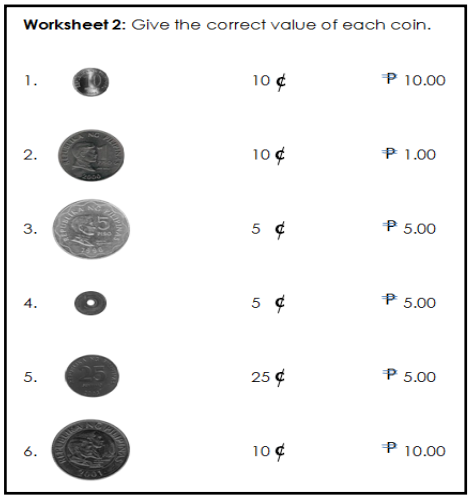
Do the same for the 5-piso and 1-piso coins.

Focus on the 25-sentimo coin. Show the pupils a drawing, picture or replica of the coin. Tell them that the value of the coin is 25 sentimo or 25 centavos. Write 25c on the board beside the drawing of the coin. Tell them that the “ ¢ is the symbol for centavos. Let the pupils read amount.

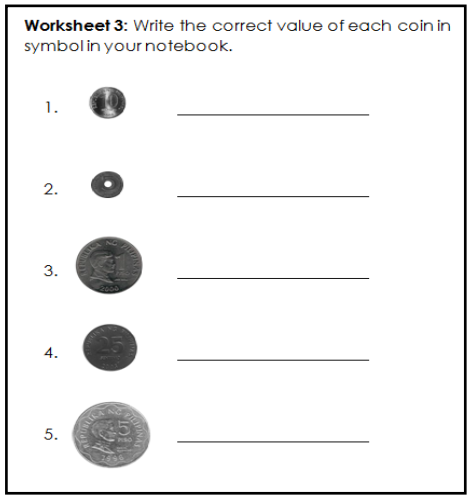
Do the same for the 10-sentimo and 5-sentimo coins.

D. Reinforcing the concepts and skills

Ask the pupils to bring out their show me board. Tell the pupils to write the value of the coin that you will show them. When showing the coin, at times show the front face and at other times show the back face.
Have the pupils answer Worksheets 2 and 3. Then discuss the answers.


Worksheet 2: Give the correct value of each coin.

1.		10 ¢	₱ 10.00
2.		10 ¢	₱ 1.00
3.		5 ¢	₱ 5.00
4.		5 ¢	₱ 5.00
5.		25 ¢	₱ 5.00
6.		10 ¢	₱ 10.00


Worksheet 3: Write the correct value of each coin in symbol in your notebook.

1. _____
2. _____
3. _____
4. _____
5. _____

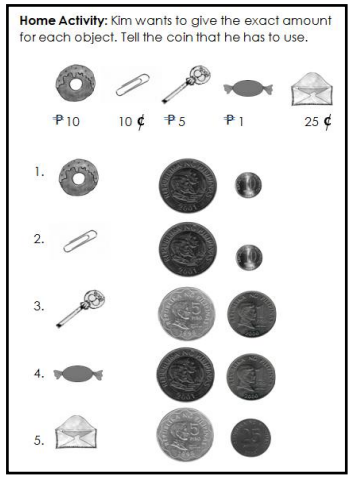
E. Summarizing the Lesson

Describe the coins and let the pupils name them. Ask the pupils their value and how it is written.

Emphasize that the symbol for centavos is ¢ while ₱ for pesos.

F. Applying to New and Other Situations

Assign the Home Activity as home work.



Topic: **Philippine Paper Bills**

Objectives of the Lesson:

a. To identify/recognize Philippine paper bills (P20.00, P50.00, and P100.00)
b. To give the value of each Philippine paper bill
c. To read and write the value of each Philippine paper bill

Prerequisite Concepts and Skills:

a. Intuitive concept of money
b. Intuitive knowledge of Philippine paper bills
c. Concept of numbers
d. Reading and writing numbers

Materials:

- Real Philippine paper bills ●Play money ●Drawings or pictures of Philippine paper bills

Instructional Procedures:

A. Introducing the Task

Show the pupils the following real Philippine paper bills which are also called peso bills: 20-peso bill, 50-peso bill, and 100-peso bill. (Note that the Bangko Sentral ng Pilipinas call them bank notes and not paper bills.) Let them identify the different paper bills. Ask them when they use these paper bills. (We use paper bills when we pay or buy something, when we give change, etc.)

Ask: Which of these paper bills do you often use? (Pupils may give various answers.)

What are the things that you buy with your 20-peso bill? 50-peso bill? 100-peso bill? (It is expected that pupils give different answers depending on their exposures and experiences in their locality.)

B. Performing the Task

Tell the pupils to bring out their play money. (These should be a replica of the new set of Philippine paper bills.) Individually, let them observe the appearance of each paper bill. After sometime, group the pupils. Let them put together all their paper bills. Make sure that each group has a complete set of

paper bills. Make the pupils discuss among themselves what they have observed.

In consolidating their observations, let the pupils focus on the shape, color, size, appearance, and what can be seen on the faces of the bills.

C. Discussing the Observations
Ask the pupils to give their observations. Possible observations:
- ✓ All the paper bills are rectangular in shape.
- ✓ All of them have the same size.
- ✓ The *dalawampung-piso* bill has more than one color.
- ✓ All paper bills have a print of a face of a person on one face and a place on the other face.
- ✓ All paper bills have Republika ng Pilipinas.

Presented above are some possible observations that pupils may give. Tell them how to read the numbers. Instead of saying "faces", pupils may say "side." Accept the word "side." However, in the language of the Bangko Sentral ng Pilipinas, these are called "obverse" and "reverse".

Given above are general observations. Let the groups describe what they see on the faces of each paper bill. Call on one group to describe the *dalawampung – piso* bill. Then ask other groups to add if they have observed other things that were not yet given. Do the same for the other paper bills. Make a summary table of the observations on the board.

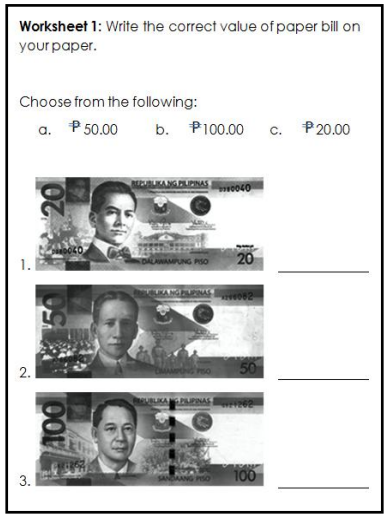
Paper bill	Shape	Color	Prints	
			Front Face (Obverse)	Back Face (Reverse)
Dalawampung piso (20)	Rectangular	Orange	Face Manuel L. Quezon	Banaue Rice Terraces and Palm Civet animal
Limampung piso(50)	Rectangular	Pink	Face of Sergio Osmena	Taal Lake and Maliputo fish
Sandaang piso (100)	Rectangular	Violet	Face of Manuel Roxas	Mayon Volcano and Whale shark

Help the pupils name these colors because they may not be familiar with them. Also, ask leading questions like, "Do you see faces of people on the face of the paper bill? Who are these people?" to make the pupils realize the features of each paper bill.

Let the pupils answer Worksheet 1. Then discuss the answers.

Show the pupils the different paper bills and let them identify each one.

Focus on the dalawampung-piso bill. Post a drawing, picture, or replica of the paper bill on the board. Show the pupils the paper bill and tell them that the value of the bill is 20 pesos. Write P 20.00 on the board besides the drawing of the paper bill. Tell the pupils that the "P " is the symbol for peso. Let the pupils read the amount.

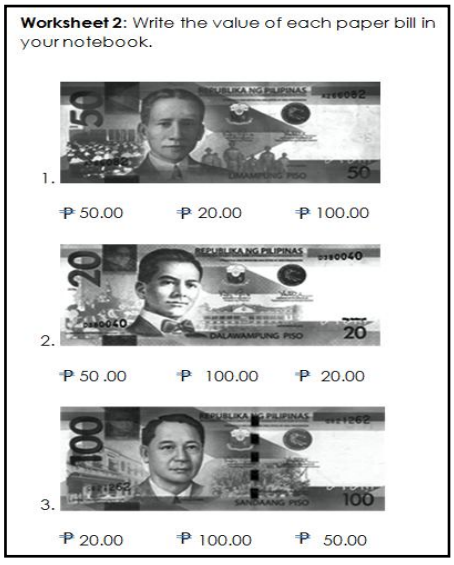


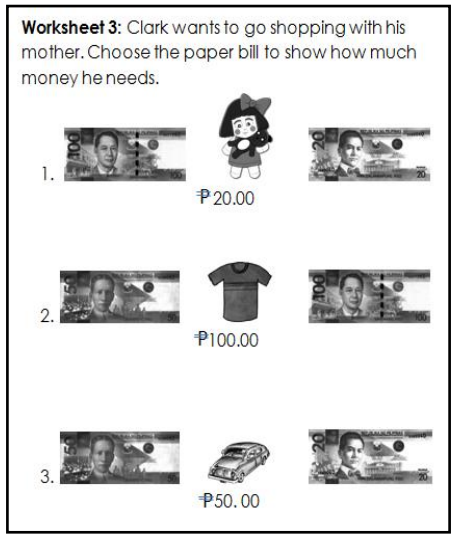
Do the same for the limampung - piso bill and sandaang - piso bills.

D. Reinforcing the Concepts and Skills

Ask the pupils to bring out their show me board. Tell them to write the value of the paper bill that you will show them. When showing the bill, at times show the front face and at other times show the back face.

Have the pupils answer Worksheets 2 and3. Then discuss the answers.





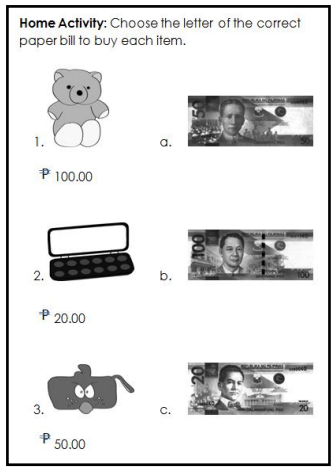
E. Summarizing the Lesson

Describe the paper bills and let the pupils name them. Ask the pupils their values and how they are written.

Emphasize that the symbol for pesos is ₱.

F. Applying to new and other situations

Assign the Home Activity as home work.



Topic: **Ordinal Numbers 1st, 2nd, 3rd up to 10th**

Objectives:

To read and write the ordinal numbers 1st, 2nd, 3rd, up to 10th

Prerequisite Concepts and Skills:

a. Intuitive concept of order b. Counting

Materials:

- Pictures

Instructional Procedures:

A. Posing the Task

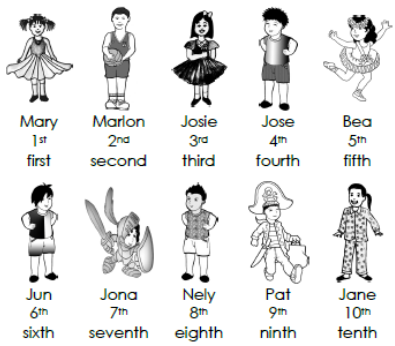
Say: The Grade 1 – Mabini class has a program. Ten children will wear their favourite costume for the program. They will stand up in front of the class one by one.

Say: The first who stands up is Mary. Then post the picture of Mary with her name below and under it write 1st. Say "first" and let the pupils say it with you as you point to "1st."

Say: The second who stands up is Marlon. Then post the picture of Marlon with his name below and under it write 2nd. Say "second" and let the pupils say it with you as you point to "2nd."

Repeat the process for the third, fourth, fifth, sixth, seventh, eighth, ninth, and tenth child. Refer to the illustrations below.

Ask: Whose costume do you like most? Why
Do you also have a favourite costume? Describe it.



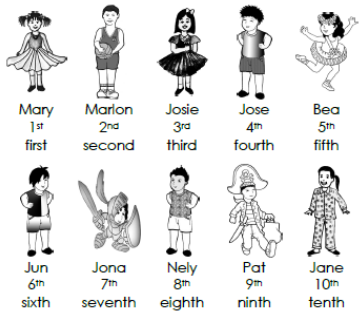
B. Performing the Task and Processing Answers

Ask: What do you observe about what are written below the names of the children? (They start with numbers and the numbers are increasing by 1 from 1 to 10.)

Point to the numbers 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th and 10th. Say: These are also numbers. They tell the order of objects or persons that are arranged. Numbers that tell the order of objects or persons are called ordinal numbers.

Ask:
Who is the first child to stand up? (Mary is the 1st child to stand up.)
Who is the seventh child stand up? (Jona is the 7th child to stand up.)
Who is the fifth child to stand up? (Bea is the 5th child to stand up.)
Who is the tenth child to stand up? (Jane is the 10th child to stand up.)
Who is the third child to stand up? (Josie is the 3rd child to stand up.)
Who is the eighth child to stand up? (Nely is the 8th child to stand up.)
Who is the second child to stand up? (Marlon is the 2nd child to stand up.)
Who is the sixth child to stand up? (Jun is the 6th child to stand up.)
Who is fourth child to stand up? (Jose is the 4th child to stand up.)
Who is the ninth child to stand up? (Pat is the 9th child to stand up.)

Below the ordinal numbers shown in the illustrations on the board, write the corresponding words. See illustration below.



Read each ordinal number in symbol and in word and ask the pupils to repeat after you.

C. Reinforcing the Concepts and Skills

Ask the pupils to do Worksheets 1, 2, and 3. Then discuss the answers.

Worksheet 1: Copy in your notebook. Then connect the ordinal numbers in symbols in Column A with the words in Column B. Use lines.

Column A	Column B
1st	ninth
2nd	fourth
3rd	second
4th	fifth
5th	sixth
6th	eighth
7th	tenth
8th	first
9th	third
10th	seventh

Worksheet 2: Practice writing the ordinal numbers. Write each number two times in your notebook.

1st	
2nd	
3rd	
4th	
5th	

Worksheet 3: Look at the objects in each layer. Then answer the questions by writing ordinal numbers in symbol.

1. On which layer is the toothbrush? ____
2. On which layer is the cup? ____
3. On which layer is the hammer? ____
4. On which layer is the handkerchief? ____
5. On which layer is the scissor? ____
6. On which layer is the pencil? ____
7. On which layer is the brush? ____
8. On which layer is the spoon? ____
9. On which layer is the ballpen? ____
10. On which layer is the cellphone? ____

Topic: **Identifying the Order of Objects**

Objectives:
a. To identify the 1st, 2nd, 3rd up to 10th object in a given set from a given point of reference
b. To determine the position of an object using 1st to 10th from a given point of reference

Prerequisite Concepts and Skills:
a. Concept of ordinal numbers b. Reading and writing ordinal numbers

Materials:
- Real objects ● cut-outs ●pictures ●crayons

Instructional Procedures:

A. Introducing the Task

Ask the pupils what animals they have seen and where they had seen them. Then say: “Jason and his family went to the zoo. He saw different kinds of animals there. “

(Before the class starts, post the pictures of the following animals.)

B. Performing the Task

Ask: Do you recognize the animals?
Then tell the pupils to write on their show me board the names of the animals whose order from the left you would point to.

5th from the left (The 5th animal from the left is the lion.)
9th from the left (The 9th animal from the left is the carabao.)
1st from the left (The 1st animal from the left is the dog.)
6th from the left (The 6th animal from the left is the monkey.)
3rd from the left (The 3rd animal from the left is the elephant.)
10th from the left (The 10th animal from the left is the pig.)
4th from the left (The 4th animal from the left is the hen.)
7th from the left (The 7th animal from the left is the zebra.)
2nd from the left (The 2nd animal from the left is the horse.)
8th from the left (The 8th animal from the left is the tiger.)

C. Processing of Answers

Ask: How did you get your answers? (I counted starting from the left. For example, to tell the 5th animal from the left, I counted 1,2,3,4, and 5 from the left. The animal is the lion.)
Ask: What do you call these numbers that tell the position of an object or person in a given set? (These are called ordinal numbers.)

D. Reinforcing the Concept and Skills

Ask the pupils to do Worksheet 1. Then discuss the answers.

Worksheet 1: Look at the word “Mathematics”. Write your answer to the following questions on your paper.

M A T H E M A T I C S

What is the first letter? _____
What is the fourth letter? _____
What is the tenth letter? _____
What is the seventh letter? _____
What is the eighth letter? _____
What is the fifth letter? _____
What is the second letter? _____
What is the ninth letter? _____
What is the third letter? _____
What is the sixth letter? _____
What letters are the same? _____
What are their orders? _____

E. Summarizing the Lesson

Make the pupils tell the ordinal numbers from 1st to 10thand to write these in symbols on their show me board.

F. Applying to New and Other Situations

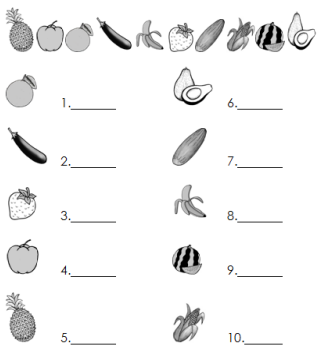
Ask the pupils to do Worksheets 2 and 3. Then discuss the answers.

Give the Home Activity to the pupils as an assignment.

Worksheet 2: Draw then color the objects. Start from the left in ordering.

1. Color the 1st object yellow.
2. Color the 4th object red.
3. Color the 8th object green.
4. Color the 10th object blue.
5. Color the 5th object pink.
6. Color the 9th object violet.
7. Color the 2nd object orange.
8. Color the 7th object brown.
9. Color the 3rd object blue violet.
10. Color the 6th object yellow green.

Worksheet 3: Starting from the left, write the ordinal number in symbol of each fruit and vegetable in the set on your paper.



Home Activity: Look at the pictures. Do what is asked on your paper. Begin at the right.

1. Encircle the 6th object.
2. Draw the 10th object big.
3. Box the 3rd object.
4. Draw a line under the 7th object.
5. Cross out the 1st object.
6. Draw three lines on the 8th object.
7. Cross out the 4th object .
8. Put a check on the 9th object.
9. Box and ring the 2nd object.
10. Encircle the 5th object twice.

Topic: **Addition as Putting Together and as Joining Sets and Subtraction as Taking Away**

Objectives:

a. To illustrate addition as putting together and as joining sets
b. To illustrate subtraction as taking away objects from a set
b. To represent a story problem by a drawing or by a number sentence
c. To determine the missing number in addition or subtraction sentences

Prerequisite Concept and Skills:

a. Whole numbers b. Counting

Materials:

●marbles ● picture cards ●cut outs of different objects

Instructional Procedures:

A. Posing Problem 1

Post the problem below on the board. Read the problem aloud while the pupils read silently.

> Problem 1
> Ronald had 5 marbles. His brother gave him 2 more marbles. How many marbles did he have in all?

Ask:

a. Who are the children in the problem? [The children in the story are Ronald and his brother.]
b. How many marbles did Ronald have at first? [Ronald had 5 marbles at first.]
c. What did his brother do? [His brother gave him 2 more marbles.]
d. What does the problem ask? [The problem asks for the number of marbles Ronald had in all.]

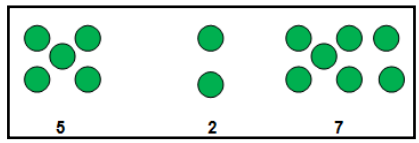
B. Solving the Problem in Different Ways

Tell: Now solve the problem in different ways.

Solution 1: Act It Out

Call on 2 pupils to act out the problem.
One will play the role of Ronald and the other will play the role of the brother.]
Provide them real marbles that they can use to represent the problem.
The total number of marbles Ronald had in all can be found by counting the number of marbles after his brother gave him two marbles.

Solution 2: Using Drawings



So Ronald, had 7 marbles all in all.

C. Processing the Answers/Solutions.

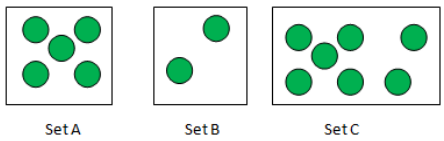
Tell: Let us discuss your solutions.
Ask: In Solution 1, what did you do to find the number of marbles Ronald had in all?
[We counted the number of marbles after Ronald received the 2 marbles from his brother.]

Ask: In Solution 2, what did you do to find the number of marbles Ronald had in all?
[We made drawings of 5 marbles together and 2 marbles together. We then made another drawing where the 5 marbles and the 2 marbles are together and counted them.]

Focus on the idea that the process involved when things or objects are put together is addition.

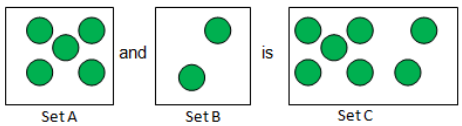
Tell: Let us consider the drawing in Solution 2. We can enclose each drawing by a rectangle and name the drawing with 5 marbles as Set A, the drawing with 2 marbles as Set B, and the drawing with 7 marbles as Set C.

Ask: When we join the two sets of marbles, Sets A and B how many marbles do we have in the new set, Set C? [There are 7 marbles in the new set.]



Focus on the idea that the process of joining two or more sets to form a new set is also addition.

Tell: We can denote the idea of joining by the word “and” and “to form” by is. So, we have
We can also represent the number of marbles in each set by 5, 2 and 7 respectively and replace the word “and” by **+**, and **“**is**”** by **=**. So, we have



5 + 2 = 7

Focus on these ideas: The addition process is denoted by the symbol + (read as plus), 5 and 2 are addends, and 7 is the sum; 5 + 2 = 7 is an example of a number sentence. It is called an addition sentence. " = " is the symbol that indicates that the value of one side of the number sentence is equal to the value of the other side.

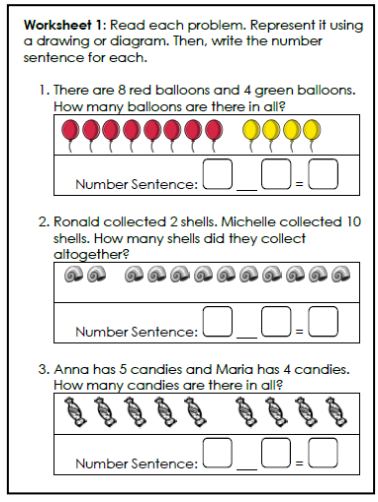
5 + **2** = **7**

addend *addend* *sum*

Addends are the numbers to be added. **Sum** is the answer in addition.

D. Reinforcing the Concept and Skill

Let the pupils do Worksheet 1. Then discuss the answers.


Worksheet 1: Read each problem. Represent it using a drawing or diagram. Then, write the number sentence for each.

1. There are 8 red balloons and 4 green balloons. How many balloons are there in all?

Number Sentence: ☐ __ ☐ = ☐

2. Ronald collected 2 shells. Michelle collected 10 shells. How many shells did they collect altogether?

Number Sentence: ☐ __ ☐ = ☐

3. Anna has 5 candies and Maria has 4 candies. How many candies are there in all?

Number Sentence: ☐ __ ☐ = ☐

E. Posing Problem 2

Post the problem below on the board. Read the problem aloud while the pupils read them silently.

Problem 2
Suppose Ronald who now had 7 marbles gave 3 marbles to his cousin. How many marbles were left to Ronald?

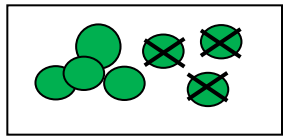
Ask:

a. How many marbles did Ronald have? [Ronald had 7 marbles.]
b. What did Ronald do to the 7 marbles? [Ronald gave 3 marbles to his cousin.]
c. What does the problem ask? [The problem asks for the number of marbles left to Ronald.]

F. Solving the Problem in Different Ways

<u>Solution 1: Act it Out</u>
Call on 2 pupils to act out the problem. One will play the role of Ronald and the other will play the role of the cousin. Provide them marbles.

The number of marbles left to Ronald is found by counting after Ronald had given the three marbles to his cousin.



<u>Solution 2: Using Drawings</u>
The number of marbles left to Ronald is found by counting after crossing out the 3 marbles which represent the number of marbles Ronald gave to his cousin.

G. Processing the Solutions and Answer

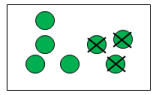
Ask: In both Solutions 1 and 2, what did you do to find the number of marbles left to Ronald? [We counted the marbles after three marbles were given

away.]. Tell: Let us consider your drawing and name the set with seven marbles as the first set.
How many marbles were there in the first set? [There were 7 marbles in the first set.]. How many marbles were given away? [Three marbles were given away]. How did you show in the set that two marbles were given away? [We crossed out 3 marbles to show that they were taken away from the set].

Let us translate the process into a number sentence. We can represent the number of marbles in the first set by 7, the number of marbles taken away as 3, and replace the phrase "take away" by **-** and the word "is" by **=**. So, we have

7 - 3 = 4

Focus on the idea that the process of taking objects away from a set is subtraction. The figure below illustrates the process.



7 take away 3 is 4

What number did you take away from 7? [We took away 3.]
What is the answer when you take away 3 from 7? [The answer is 4.]

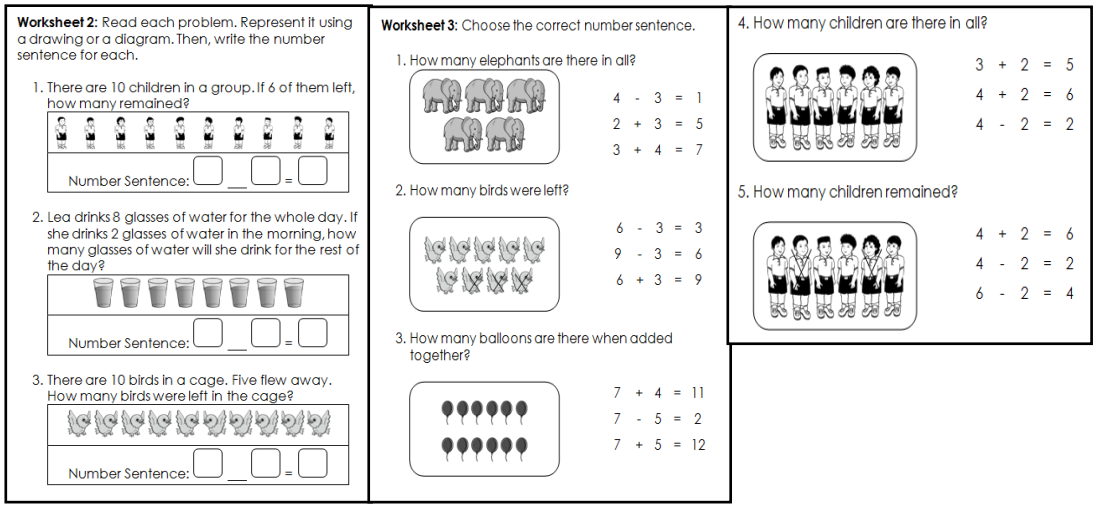
Focus on these ideas: The subtraction process is denoted by the symbol – (read as minus) to mean "take away;" 7 is the minuend, 3 is the subtrahend and 4 is the difference. Taking away is one meaning of subtraction.
7 - 3=4 is an example of a number sentence. It is called a subtraction sentence. The = symbol indicates that the value of one side of the number sentence is equal to the value on the other side.

7	**-**	**3**	**=**	**4**
minuend		subtrahend		difference

Minuend is the number where we subtract from. **Subtrahend** is the number that we subtract. **Difference** is the answer in subtraction.

H. Reinforcing the Concept and Skill

Let the pupils do Worksheets 2, 3, 4, and 5. Then discuss the answers.



Worksheet 2: Read each problem. Represent it using a drawing or a diagram. Then, write the number sentence for each.

1. There are 10 children in a group. If 6 of them left, how many remained?

Number Sentence: ☐ __ ☐ = ☐

2. Lea drinks 8 glasses of water for the whole day. If she drinks 2 glasses of water in the morning, how many glasses of water will she drink for the rest of the day?

Number Sentence: ☐ __ ☐ = ☐

3. There are 10 birds in a cage. Five flew away. How many birds were left in the cage?

Number Sentence: ☐ __ ☐ = ☐

Worksheet 3: Choose the correct number sentence.

1. How many elephants are there in all?

4 - 3 = 1
2 + 3 = 5
3 + 4 = 7

2. How many birds were left?

6 - 3 = 3
9 - 3 = 6
6 + 3 = 9

3. How many balloons are there when added together?

7 + 4 = 11
7 - 5 = 2
7 + 5 = 12

4. How many children are there in all?

3 + 2 = 5
4 + 2 = 6
4 - 2 = 2

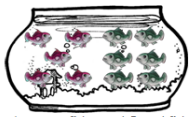
5. How many children remained?

4 + 2 = 6
4 - 2 = 2
6 - 2 = 4

Worksheet 4: Choose the letter of the correct answer.

1. Mother bought 13 ripe mangoes. If she shared 8 to her daughters, how many mangoes were left?

13 + 8 = 21	13 - 5 = 8	13 - 8 = 5
A	B	C



2. There are 6 green fish and 5 red fish. How many fish are there altogether?

6 + 5 = 11	6 - 5 = 1	6 + 8 = 14
A	B	C

3. Karen has 3 pencils in her bag. She put 7 more pencils. How many pencils are there in the bag?

7 + 5 = 12	7 - 3 = 4	3 + 7 = 10
A	B	C

4. Liza prepared 5 orange plates and 3 red plates. How many plates did Liza prepare in all?

5 + 3 = 8	2 + 3 = 5	5 - 3 = 2
A	B	C

5. There are 14 tomatoes. If 9 of these are not ripe, how many are ripe?

9 + 5 = 14	14 - 9 = 5	9 - 5 = 4
A	B	C

I. Summarizing the Lesson

Ask the pupils to do the following:
Give a number sentence involving addition and identify which are the addends and which is the sum.
Give a number sentence involving subtraction and identify which is the minuend, subtrahend, and difference.

Worksheet 5: Write the number sentence for each on your paper. Write the number in the square and plus (+) or minus (-) sign in the circle.

1. There are 5 girls and 4 boys in a group. How many children are there in the group?
2. There are 10 birds in a tree. Four birds fly away. How many birds are left?
3. Six girls are playing while the 3 girls are studying. How many girls are there altogether?
4. There are 10 fish in an aquarium. Gale adds 2 more fish. How many fish are there in all?
5. There are 8 children in the group. If 2 go home already, how many children remain?

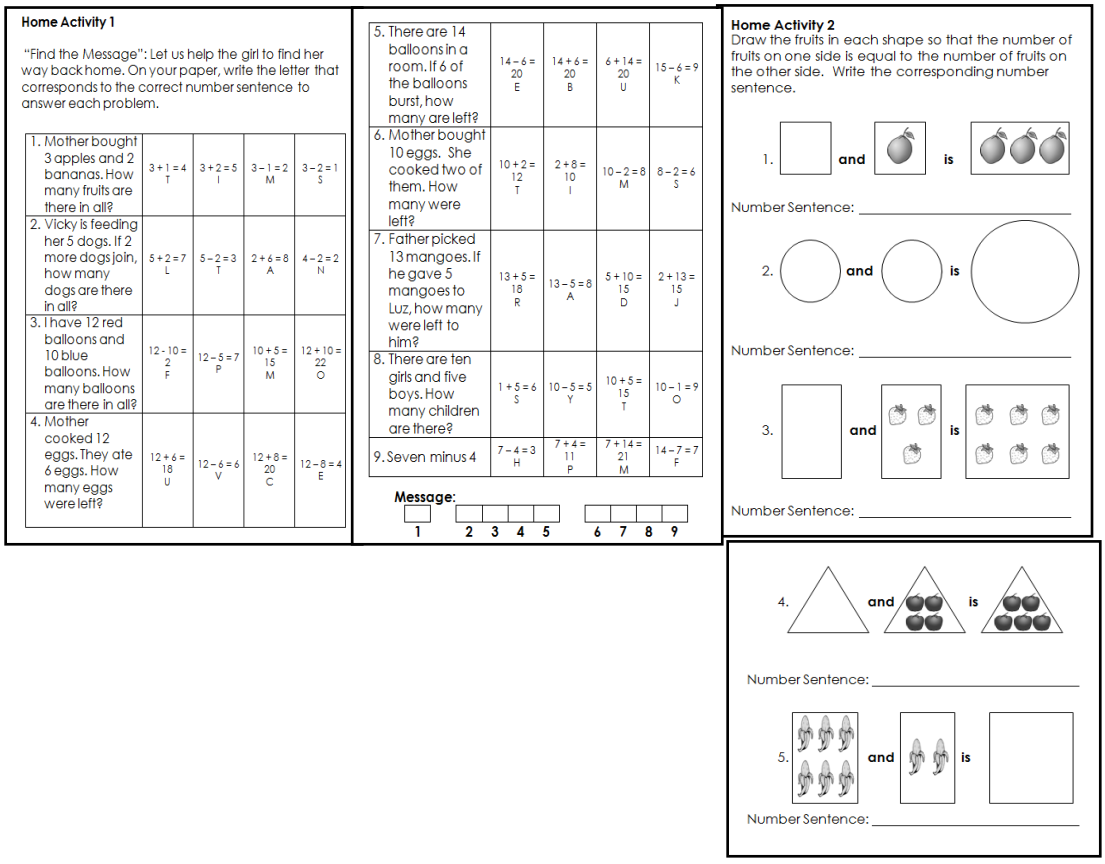
Remember:

Addition is the process of putting objects together. it is also a process of joining two sets to form a new set. The process is indicated by the symbol **+** read as plus.

Subtraction is a process of taking objects away from a set and is indicated by the symbol **-** read as minus.

The numbers that we add are called ***addends***. The answer in addition is called ***sum***.
In subtraction, the number that we take away from is called the ***minuend***. The number that we take away is called the ***subtrahend***. The answer in subtraction is called ***difference***.

J. Applying to New and Other Situations
Let the pupils do the Home Activity as an assignment.



Home Activity 1

"Find the Message": Let us help the girl to find her way back home. On your paper, write the letter that corresponds to the correct number sentence to answer each problem.

1. Mother bought 3 apples and 2 bananas. How many fruits are there in all?	3 + 1 = 4 T	3 + 2 = 5 I	3 – 1 = 2 M	3 – 2 = 1 S
2. Vicky is feeding her 5 dogs. If 2 more dogs join, how many dogs are there in all?	5 + 2 = 7 L	5 – 2 = 3 T	2 + 6 = 8 A	4 – 2 = 2 N
3. I have 12 red balloons and 10 blue balloons. How many balloons are there in all?	12 - 10 = 2 F	12 – 5 = 7 P	10 + 5 = 15 M	12 + 10 = 22 O
4. Mother cooked 12 eggs. They ate 6 eggs. How many eggs were left?	12 + 6 = 18 U	12 – 6 = 6 V	12 + 8 = 20 C	12 – 8 = 4 E
5. There are 14 balloons in a room. If 6 of the balloons burst, how many are left?	14 – 6 = 20 E	14 + 6 = 20 B	6 + 14 = 20 U	15 – 6 = 9 K
6. Mother bought 10 eggs. She cooked two of them. How many were left?	10 + 2 = 12 T	2 + 8 = 10 I	10 – 2 = 8 M	8 – 2 = 6 S
7. Father picked 13 mangoes. If he gave 5 mangoes to Luz, how many were left to him?	13 + 5 = 18 R	13 – 5 = 8 A	5 + 10 = 15 D	2 + 13 = 15 J
8. There are ten girls and five boys. How many children are there?	1 + 5 = 6 S	10 – 5 = 5 Y	10 + 5 = 15 T	10 – 1 = 9 O
9. Seven minus 4	7 – 4 = 3 H	7 + 4 = 11 P	7 + 14 = 21 M	14 – 7 = 7 F

Message:

1 2 3 4 5 6 7 8 9

Home Activity 2

Draw the fruits in each shape so that the number of fruits on one side is equal to the number of fruits on the other side. Write the corresponding number sentence.

1. and is

Number Sentence: _____

2. and is

Number Sentence: _____

3. and is

Number Sentence: _____

4. and is

Number Sentence: _____

5. and is

Number Sentence: _____

Topic: **Subtraction as Comparing and Adding Up**

Objectives:

a. To illustrate subtraction as comparing
b. To illustrate subtraction as adding up
c. To apply subtraction as comparing and as adding up in solving problems

Prerequisite Concepts and Skills

a. Addition as putting together
b. Subtraction as taking away

Materials:

- Candies ●picture cards

Instructional Procedures:

Part I. Subtraction as Comparing

A. Posing the Problem

Show a picture of a mother giving candies to her 2 children.

Post the following problem on the board. Ask the pupils to read the problem silently and to solve it.

Problem 1: Mother gave 5 candies to Cora and 3 candies to Allan. How many more candies does Cora have than Allan?

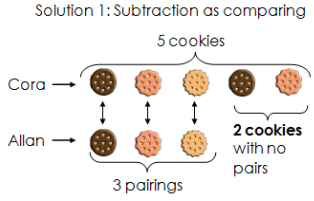
B. Solving the Problem

Pupils may act out the problem. The pupil taking the role of Allan compares the number of candies he has with the number of candies the pupil taking the role of Cora has. They will say that Cora has 2 more candies than Allan has.

C. Processing the Solution

Ask: How did you get your answer? [We compared by pairing the candies Allan and Cora have. The number of candies that Cora has which cannot be paired with the candies that Allan has is 2. So Cora has 2 more candies than Allan.]

Show the drawing below to emphasize the process described by the pupils.



Cora has 2 candies which do not have a pair. So Cora has 2 more candies than Allan has.

Say: We also write the process as a subtraction sentence: 5 – 3 = 2.

Focus on the idea that problems involving "How many more?" and "How much more?" can be solved by comparing. Write the subtraction sentence and find the difference.

Part II. Subtraction as Adding up

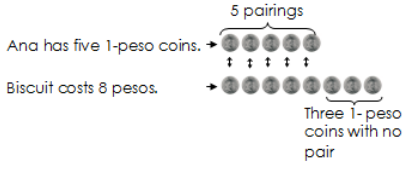
A. Posing the Problem

Show a picture of a girl buying a biscuit in a sari-sari store.

Post the following problem on the board. Ask the pupils to read the problem silently and to solve it.

Problem 2: Ana has five 1-peso coins. She wants to buy a biscuit that costs 8 pesos. How much more money does she need?

B. Solving the Problem



Pupils may solve the problem by comparing.

So, Ana needs 3 pesos more so that she can buy the biscuit.

C. Processing the Solution

Ask: How did you get your answer? (We paired the coins. The number of 1-peso coins for the cost of the biscuit which cannot be paired with the 1-peso coins that Ana has is 3. So the money that Ana still needs to buy the biscuit is 3 pesos.)

Say: The subtraction sentence for this is

$$8 - 5 = 3.$$

Another way to solve the problem is to think of the amount of money that should be added to 5 pesos in order to get 8 pesos. That is, answer the question "What should I add to 5 to get 8?" We can write this as:

$$5 + \square = 8$$

If you add 1 to 5, you get 6; if you add 1 more you get 7; and if you still add 1 more you get 8. So, you need to add 3 to 5 to get 8. So, Ana needs 3 pesos more so that she can buy the biscuit.

Focus on the idea that problems that can be solved by subtraction can also be solved by addition where the difference is the missing addend.

$8 - 5 = \boxed{3}$ ← difference

$\boxed{5} + 3 = 8$

↑

missing addend

Problem 1 can also be solved by finding the missing addend. That is, answer the question "What should I add to 3 to get 5?" This can be written as:

$$3 + \square = 5$$

If you add 1 to 3, you get 4 and if you add 1 more you get 5. So, you need to add 2 to 3 to get 5. So, Cora has 2 more candies than Allan has.

D. Reinforcing the Skill

Let the pupils do the Worksheet. Then discuss the answers.

Worksheet 1: Solve these problems in different ways on your paper.

1. Edna has 5 chocolate bars.
   Kim has 7 chocolate bars.
   How many more chocolate bars does Kim have than Edna?

2. Dana has 3 pesos.
   She wants to buy a ballpen which costs 8 pesos.
   How much more money does she need?

3. Lino has 6 toy cars.
   Rico has 4 toy cars.
   How many more toy cars does Lino have than Rico?

4. Mr. Ruiz asked his pupils to bring 10 crayons.
   Beth has 6 crayons.
   How many more crayons does Beth need?

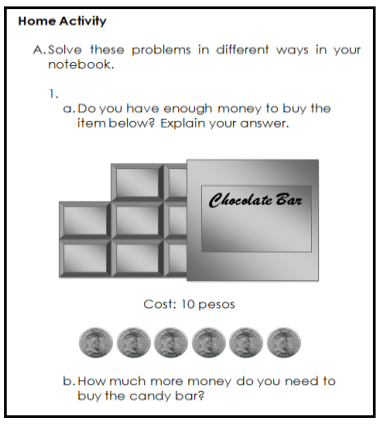
5. Lily has 3 oranges.
   She has 7 friends.
   She plans to give an orange to each of her friends.
   How many more oranges does she need so that she can give to all her friends?

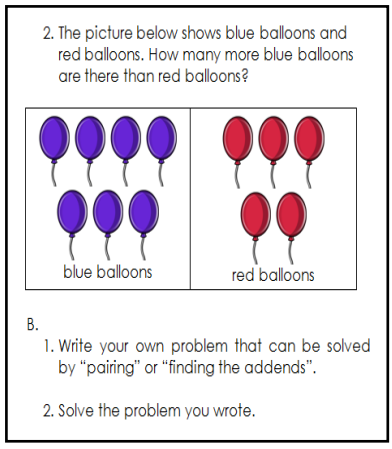
E. Summarizing the Lesson

Problems involving "How many more?" and "How much more?" require finding the difference. The difference can be found by "pairing" or by finding the missing addend. Both ways are related to performing the operation subtraction. Give 2 examples for each so that the pupils can clearly understand the meaning of subtraction as comparing and as adding up.

F. Applying to New and Other Situations

Let pupils do the Home Activity as an assignment.





Topic: **Addition and Subtraction as Inverse Operations**

Objective:

To show that addition and subtraction are inverse operations

Prerequisite Concept and Skills:

a. Concept of whole numbers
b. Counting
c. Concept of addition and subtraction

Materials:

- real hair clips ●small bag or wallet ● picture cards,
- cut- outs of different objects

Instructional Procedures:

A. Posing the Problem

Show a drawing of two girls.

Tell: Gale had 6 hair clips in her bag. She gave 2 hair clips to her sister. How many hair clips were left inside her bag?

Ask:

a. Who is the girl in the story? [The girl in the story is Gale.]
b. What does Gale have inside her bag?[Gale has 4 hair clips in her bag.]
c. What did Gale do with her hair clips? [She gave 2 hair clips to her sister.]
d. If you were Gale, will you share what you have with your sister? Why?

Post the problem on the board. Read the story aloud while pupils read silently.

> Gale had 6 hair clips in her bag. She gave 2 hair clips to her sister. How many hairclips were left inside her bag?

B. Solving the Problem in Different Ways

Let the pupils solve the problem on their own.

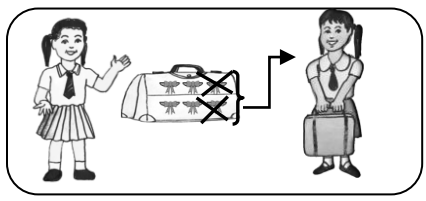
Solution 1: Role play
Call on two pupils to act out the problem.
One will act as Gale and the other one as the sister.
Give them real hair clips and a bag to represent the objects in the story.
Guide them in acting the roles of the characters in the story.
So, the number of clips that Gale has is 6. The number of clips left to Gale after giving 2 clips to her sister is 4.

Solution 2: By drawing
6 take away 2 is 4.
So there are 4 clips left in the bag.

C. Processing the Solutions and Answers

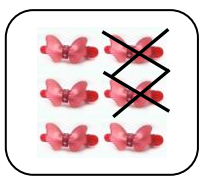
Ask :
What did you do to find the number of hair clips left inside Gale's bag after she gave 2 hair clips to her sister?
[We took away two hair clips from the bag.]
What process is involved?
[We call this process subtraction.]

And this can be illustrated by your drawing (in Solution 2) or by this diagram.



Emphasize at this point that subtraction is taking objects away from a set.

Let us represent the drawing by a number sentence:



"6 take away 2 is 4."

6	-	2	=	4

Ask: Now, what will you add to 2 to get 6? [We will add 4 to 2 to get 6.]

Say: Let us represent my question and your answer by a number sentence.

2 + □ = 6

The small rectangle is where you put the answer, which is 4. So we have

2 + 4 = 6

Ask: Compare the two sentences, what do you observe?

6 - 2 = 4
2 + 4 = 6

Possible Answers:

[The 4 which is the difference of 6 – 2 is an addend in 2 + 4 = 6. The 6 which is a minuend in 6 – 2 = 4 is the sum in 2 + 4 = 6. The 2 which is a subtrahend in 6 – 2 = 4 is an addend in 2 + 4 = 6.]

Say:

Notice that if 6 – 2 = 4, it follows that 2 + 4 = 6 or 4 + 2 = 6.

Also, if 2 + 4 = 6 it follows that 6 – 2 = 4 and 6 – 4 = 2.

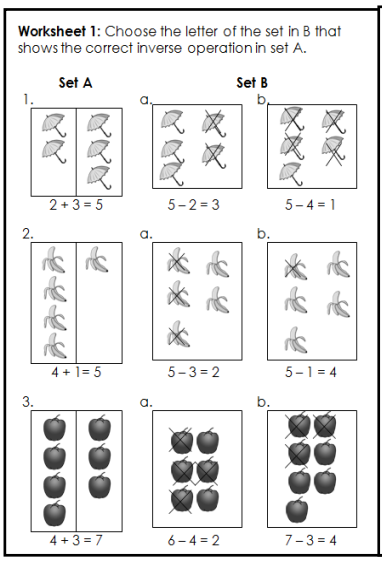
This process shows that subtraction and addition are inverse operations.

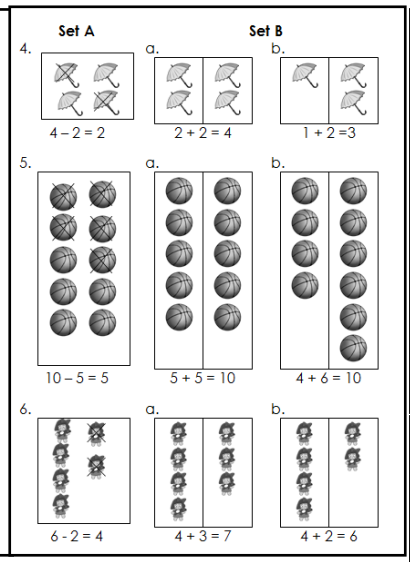
The following examples further show that subtraction and addition are inverse operations:

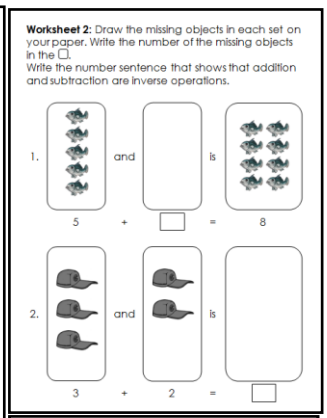
3 + 5 = 8	9 - 1 = 8	5 - 4 = 1
So, 8 - 5 = 3	So, 1 + 8 = 9	So, 4 + 1 = 5
8 - 3 = 5	8 + 1 = 9	1 + 4 = 5
2 + 7 = 9	6 – 1 = 5	4 + 5 = 9
So, 9 – 7 = 2	So, 1 + 5 = 6	So, 9 – 5 = 4
9 – 2 = 7	5 + 1 = 6	9 - 4 = 5

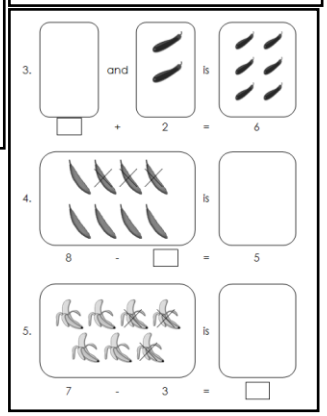
D. Reinforcing the Concept and Skill

Let the pupils do Worksheets 1 and 2. Then discuss the answers.









E. Summarizing the Lesson

Let the pupils give their own number sentences to illustrate that addition and subtraction are inverse operations.

Emphasize that addition and subtraction are inverse

F. Applying to New and Other Situations
Let the pupils do the Home Activity as an assignment.

Home Activity

Liza prepared 7 plates for dinner. Only 3 plates were used. How many plates were not used?

1. Solve the problem in different ways.
2. Use the problem above to show that subtraction and addition are inverse operations.

Topic: **Equivalent Number Expressions Using Addition or Subtraction**

Objectives:
a. To represent word problems using drawings and number expressions
b. To identify equivalent number expressions involving addition or subtraction
c. To make equivalent number expressions using addition or subtraction

Prerequisite Concept and Skills:
a. Counting numbers b. Concepts of addition and subtraction

Materials:
- real objects ●picture cards ●cut outs of different objects

Instructional Procedures:

A. Posing the Problem

Show a drawing of two girls. Say: These are Ria and Liza. Then post the problem below on the board. Read the problem aloud while the pupils read with you softly.

Mother asked Ria and Liza to go to their garden to pick some flowers for her two vases. Ria picked 3 roses and another 4 roses. Liza picked 2 roses and 5 more roses. How many roses did each girl pick in all?

Ask:
Who are the two girls? (The two girls are Ria and Liza.], Where did they go? (They went to their garden.), What did they do there? (They picked some flowers.), Why did they pick some flowers? (They picked some flowers because Mother asked them to.), If you were Ria or Liza, would you follow what your mother asked you to do? Why?
At first, how many roses did Ria pick? (Ria picked 3 roses at first.), Then how many roses did Ria pick? (Ria picked another 4 roses.), At first, how many roses did Liza pick? (Liza picked 3 roses at first.), Then how many roses did Liza pick? (Liza picked another 4 roses.)

Make the pupils solve the problem in different ways.

B. Solving the Problem in Different Ways

Solution 1: Role play
Two girls act out the situation in the problem. One plays the role of Ria. At first, she shows 3 roses and then another 4 roses to represent the number of

flowers she picked. She may count all the roses and gets 7. She may also say 3 + 4 = 7. Finally, she may say that Ria picked 7 roses in all.

Another girl plays the role of Liza. She at first shows 2 flowers and shows another 5 flowers to represent the number of flowers she picked. She may count all the roses and gets 7. She may also say 2 + 5 = 7. Finally, she may say Liza picked 7.

Solution 2: Using Illustrations

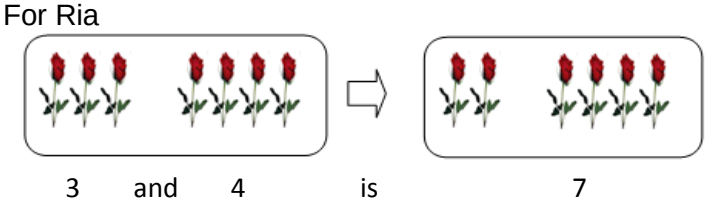
You may call on two pupils in front of the class to draw or stick on the board cut outs of roses that represent the number of roses each girl picked.

It is possible that the pupils will also count the roses picked by each girl and get 7 for each. They may also write 3 + 4 = 7 and 2 + 5 = 7 for the number of roses picked by Ria and Liza, respectively.

C. Processing the Solutions and Answer

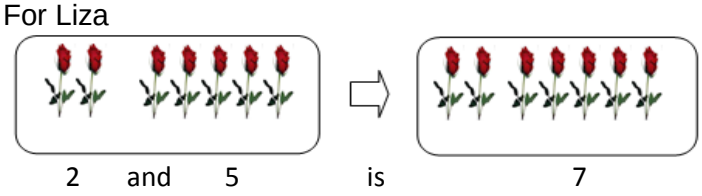
Ask: What did you do to find the total number of flowers each girl picked? (We added the number of flowers to get the total number of flowers each girl picked.)

Say: This can be shown by your drawing in Solution 2 or by the diagram below.



Ask: What is the addition sentence for the total number of flowers Ria picked?

(3 + 4 = 7)



Ask: What is the addition sentence for the total number of flowers Liza picked?

(2 + 5 = 7)

Ask: What can you say about the two addition sentences? (Both have the same sum.) Since both 3 + 4 = 7 and 2 + 5 = 7 have the same sum, can we

say that 3 + 4 = 2 + 5 ? (Yes.) The expressions 3+ 4 and 2 + 5 are examples of number expressions. Since both of them have the same value which is 7, we say that the number expression 3 + 4 is equivalent to the number expression 2 + 5.

D. Posing the Second Problem

Show a drawing of two girls. Say: These are Gina and Aisa. Post this problem on the board. Read the problem aloud while the pupils read with you softly.

> Gina and Aisa prepared sandwiches for their classmates who would go to their house. Gina prepared 8 sandwiches. Aisa prepared 9 sandwiches. But not all of their classmates came. Gina gave her 4 classmates who came a sandwich each. Aisa gave her 5 classmates who came a sandwich each. How many sandwiches were left to each girl?

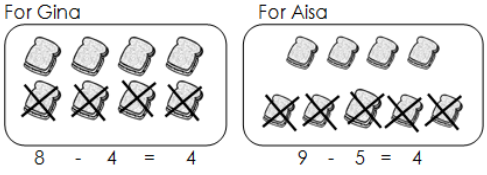
Ask:
Who are the two girls? (The two girls are Gina and Aisa.)
What did they do? (They prepared sandwiches.)
Why did they prepare sandwiches? (They prepared sandwiches because their classmates would go to their house.)
If you were Gina or Aisa, would you prepare something for your classmates if they go to your house? Why?
How many sandwiches did Gina prepare? (Gina prepared 8 sandwiches.)
How many sandwiches did Gina give to her classmates? (Gina gave her 4 classmates a sandwich each.)
How many sandwiches did Aisa prepare? (Aisa prepared 9 sandwiches.)
How many sandwiches did Aisa give to her classmates? (Aisa gave her 5 classmates a sandwich each.)

Then tell the pupils to solve the problem in different ways.

E. Solving the Problem

Ask: What did you do to find the number of sandwiches left to each girl? (We used drawings or cut outs to represent the situation and did subtraction.)

Using drawings or cut outs:



So, Gina had 4 sandwiches left and Aisa had 4 sandwiches left, too.

F. Processing the Solutions

Ask: What can you say about the two subtraction sentences? (Both have the same difference.) Since both 8 – 4 = 4 and 9 - 5 = 4 have the same

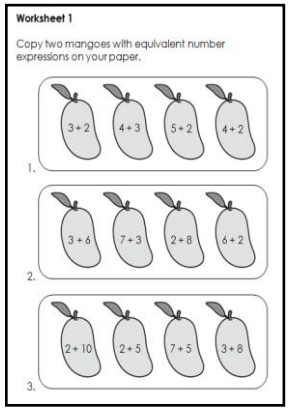
difference, can we say that 8 – 4 = 9 - 5 ? (Yes.) The expressions 8 – 4 and 9 – 5 are examples of number expressions. Since both of them have the same value which is 4, we say that the number expression 8 - 4 is equivalent to the number expression 9 - 5.

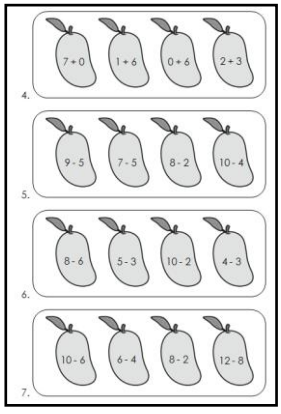
Equivalent number expressions are expressions having the same or equal value.

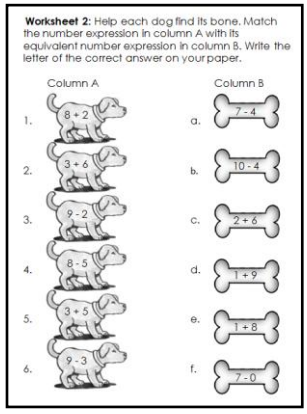
Examples: 8 + 1 is equivalent to 2 + 7
10 -7 is equivalent to 6 – 3
8 – 2 is equivalent to 7 - 1

G. Reinforcing the Concepts and Skills

Ask the pupils to do Worksheets 1 and 2. Then discuss the answers.





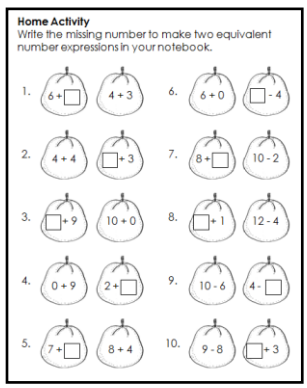


H. Summarizing the Lesson

Ask:
How will you know if two number expressions are equivalent?
(Two number expressions are equivalent if they have same or equal value.) Say: Give your own examples of equivalent number expressions.

I. Applying to New and Other Situations

Ask the pupils to do the Home Activity as an assignment.



Topic: **Patterns in Composing and Decomposing Numbers Using Addition**

Objectives:

a. To recognize a pattern in decomposing and composing a given number
b. To decompose and compose a given number

Prerequisite Concept and Skill:

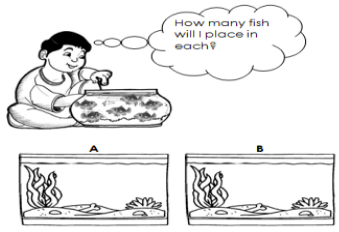
Addition of whole numbers

Materials:

- transparent
- plastic containers
- cut-outs of fish

Instructional Procedures:

A. Posing the Problem



Show a drawing similar.
Tell: "This is Ronald. He brought home 6 fish. He is thinking of how many fish he will put in each of the two aquariums."

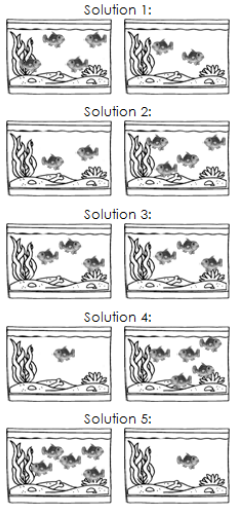
Ask:

1. Who is the boy in the story? [The boy in the story is Ronald.]
2. What did Ronald bring home? [Ronald brought home fish.]
3. How many fish did he bring home? [He brought home 6 fish.]
4. What will he do with the fish? [He will put them in two aquariums.]
5. Do you also have a pet animal? What is it?
6. How do you take good care of your pet animal?

Post the problem on the board. Read the story aloud while the pupils read softly.

> Ronald brought home 6 fish. He wanted to put them into the two aquariums. How many fish will he put in each of the two aquariums?

B. Solving the Problem in Different Ways



Call on a pupil to pretend as Ronald. Give the pupil 6 cut outs of fish and two transparent plastic containers that represent the two aquariums. Let the pupil put the fish cut outs in each of the two aquariums while the rest of the pupils observe. Some pupils will have other ideas on how many fish to put into the container. So call on those pupils also. Pupils may have the following possible solutions.

Ask: How many fish does Ronald have in each set? [Ronald has 6 fish in each set]

In Solution 1, how many fish does each aquarium contain? [Aquarium A contains 4 fish and Aquarium B contains 2 fish.]

How about in Solution 2? [Aquarium A contains 2 fish and Aquarium B contains 4 fish.]

How about in Solution 3? [Aquarium A contains 3 fish and Aquarium B contains 3 fish.]

How about in Solution 4? [Aquarium A contains 1 fish and Aquarium B contains 5 fish.]

How about in Solution 5? [Aquarium A contains 5 fish and Aquarium B contains 1 fish.]

C. Processing the Answers and Solutions

Say: "Let us put together the fish in the two aquariums and write the addition sentence."

Solution 1	**4**	**+**	**2**	**=**	**6**
Solution 2	**2**	**+**	**4**	**=**	**6**
Solution 3	**3**	**+**	**3**	**=**	**6**
Solution 4	**1**	**+**	**5**	**=**	**6**
Solution 5	**5**	**+**	**1**	**=**	**6**

Ask: "What have you noticed? [All sums are 6.]
How about the addends? [We have different addends with the sum of 6.] What if one aquarium does not contain fish, what will be the addition sentence for that? [The addition sentence is 6 + 0 = 6 or 0 + 6 = 6] Will it also have the sum of 6? [Yes, the answer is also 6.]

Let us arrange the addition sentences this way:

What do you observe? [You can get the same sum from different combinations of addends.]

6 + 0 = 6
5 + 1 = 6
4 + 2 = 6
3 + 3 = 6
2 + 4 = 6
1 + 5 = 6
0 + 6 = 6

[In the different addition sentences that give the same sum, the order of the 1st addends increases while the order of the second addends decreases. The first addend in the first addition sentence is 6 and the last addition sentence starts with 0.]

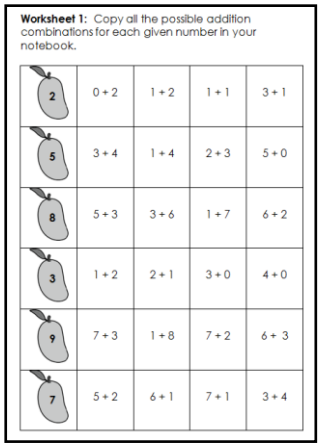
Continue the discussion and let the pupils recognize the pattern in obtaining the two different addends for the sum 6. The pattern is that to obtain the two addends of the sum 6, start first the addition sentence with the number itself as the first addend and zero as the second addend. Then continue decreasing the first addend by 1 until it reaches 0 and continue increasing the second addend by 1 until it reaches 6 .

Then focus on these ideas:

- A number can be decomposed into two or more addends. For example, 6 can also be decomposed into 3 addends. 6 = 1 + 2 + 3
- A number is composed by getting the sum of the addends:
  Example: 6 + 1 = 7 or 2 + 4 +1 = 7

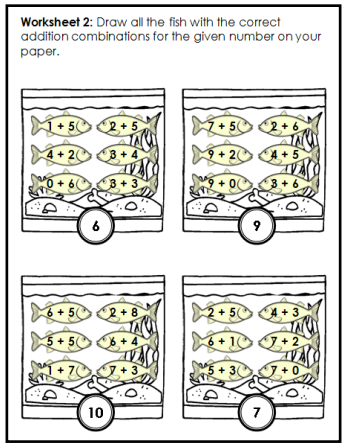
D. Reinforcing the Concept and Skill

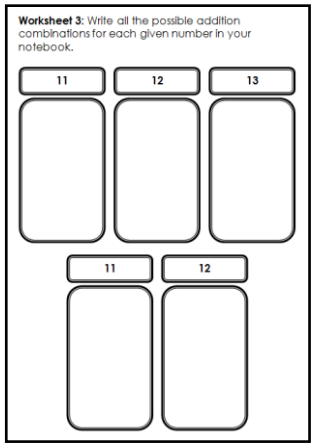
Ask the pupils to do Worksheets 1, 2 and 3. Then discuss the answers.



Worksheet 1: Copy all the possible addition combinations for each given number in your notebook.

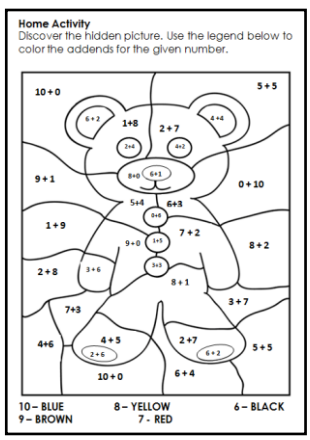
2	0 + 2	1 + 2	1 + 1	3 + 1
5	3 + 4	1 + 4	2 + 3	5 + 0
8	5 + 3	3 + 6	1 + 7	6 + 2
3	1 + 2	2 + 1	3 + 0	4 + 0
9	7 + 3	1 + 8	7 + 2	6 + 3
7	5 + 2	6 + 1	7 + 1	3 + 4





E. Summarizing the Lesson

- A number can be decomposed into two or more addends.
- A number is composed by getting the sum of the addends
- We can obtain the two addends of a certain number by following a certain pattern. We start first the addition sentence with the number itself as the first addend and zero as the second addend. Then continue decreasing the first addend by 1 until it reaches 0. Also, continue increasing the second addend by 1 until it reaches the number itself.



F. Applying to New and Other Situations

Ask the pupils to do the Home Activity as an assignment.

Topic: **Addition of Two One-digit Numbers with Sums up to 18 Using the Order or Zero Properties of Addition**

Objectives of the Lesson

a. To visualize the order and zero properties of addition
b. To add two one-digit numbers with sums of up to 18 using the order properties of addition

Pre-requisite Concepts and Skills:

Addition

Materials:

- Real objects or cut-outs of red or white roses

Instructional Procedures:

A. Posing the Problem
Show a drawing of two girls in the garden picking flowers.

1. Posing Problem 1
Post the problem on the board.
Problem 1: Mother asked Grace and Jasmine to pick flowers from her garden. She asked Grace to pick red roses and Jean to pick white roses. Grace saw red roses and picked 8 of them. Jean did not find any white rose so she was not able to pick any. How many flowers did Grace and Jean pick in all?
Ask the pupils the following:
Who are the girls in the garden? [The children in the garden are Grace and Jean.]
What are they doing in the garden? [They are picking flowers.]
What color of roses did Mother ask Grace to pick? [Mother asked Grace to pick red roses.]
What color of roses did Mother ask Jean to pick? [Mother asked Jean to pick white roses.]
How many red roses did Grace pick? [Grace picked 8 red roses.]
How many white roses did Jean pick? [Jean did not pick any rose.]

2. Solving Problem 1 and processing the solutions and answer
Solution 1:
Put 10 to 15 red roses on the table. Ask 2 pupils to act as Grace and Jean.
Ask Grace to pick 8 red roses and ask Jean to pick white roses.
Ask a pupil to write on the board the number of red roses that Grace picked. [8]
Ask another pupil to write on the board the number of white roses that Jean picked. [0]
Ask: How many flowers did Grace and Jean pick in all? [Grace and Jean picked 8 flowers in all.]
Ask: What number sentence gives the total number of flowers that Grace and Jean picked? [The number sentence is 8 + 0 = 8].

Find the sum of the following and give a reason for your answer.

a. 9 + 0 c. 0 + 7
b. 4 + 0 d. 0 + 6

What do you observe about the sums in 9 + 0 = 9, 4 + 0 = 4, 0 + 7 = 7, and 0 + 6 = 6? [When a number is added to zero, the sum is the number itself.]

Focus on the idea that the sum of a number and 0 is equal to the number itself or the sum of 0 and a number is the number itself.

3. Posing Problem 2
Problem 2: Suppose that during the following week, the white roses bloomed. If Mother asked Grace to pick 8 red roses and Jean to pick 7 white roses, how many flowers can they pick in all?

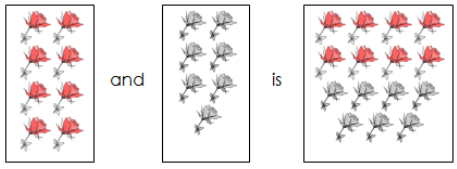
4. Solving the Problem in Different Ways

Solution 1: Role play

Ask 2 pupils to act as Grace and Jean. Give 8 red roses to Grace and 7 white roses to Jean. Let Grace count her red roses and let Jean continue to count on the red roses. Then ask "How many roses are there in all?"

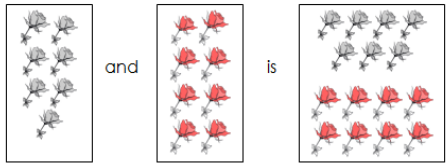
7 white roses and 8 red roses are 15 roses in all.

Solution 2: Using drawing



8 red roses + 7 white roses = 15 roses

So there are 15 roses in all. or

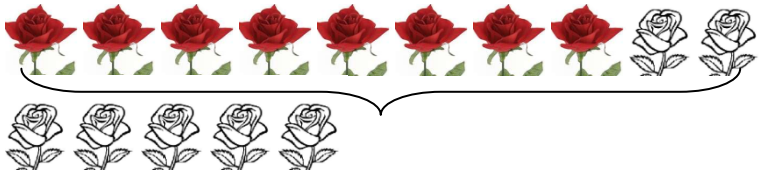


7 white roses + 8 red roses = 15 roses

Solution 3: Counting on

8 roses and by counting on: 9, 10, 11, 12, 13, 14, 1 5. So there are 15 roses in all.

Solution 4: Forming a group of 10 and then counting on.



10 roses

Forming a group 10 roses and then counting on: 11, 12, 13, 14,15. So there are 15 roses in all.

5. Processing the Solutions and Answer

Ask some pupils to show their answer on the board.

Say: If we have 8 red roses and 7 white roses, altogether we have 15 roses. We write 8 + 7 = 15. Also, if we have 7 white roses and 8 red roses, altogether we have 15 roses. We write 7 + 8 = 15.

Ask: What do you observe about the sum of 8 + 7 and 7 + 8?[The sum of 8 + 7 is the same as the sum of 7 + 8. They are both 15.]

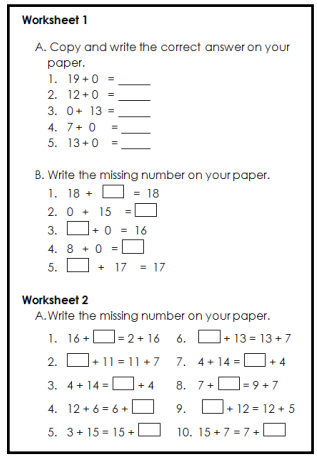
What do you observe about the order of the addends? [The orders of the addends are interchanged.]

So what can you say about changing the order of the addends?

(If we change the order of the addends, the sum does not change.)

This is called the order property of addition. Focus on this idea.

6. Reinforcing the Concepts and Skills
   Let the pupils answer Worksheets 1 and 2. Then discuss the answers.



Worksheet 1

A. Copy and write the correct answer on your paper.

1. 19 + 0 = ____
2. 12 + 0 = ____
3. 0 + 13 = ____
4. 7 + 0 = ____
5. 13 + 0 = ____

B. Write the missing number on your paper.

1. 18 + ☐ = 18
2. 0 + 15 = ☐
3. ☐ + 0 = 16
4. 8 + 0 = ☐
5. ☐ + 17 = 17

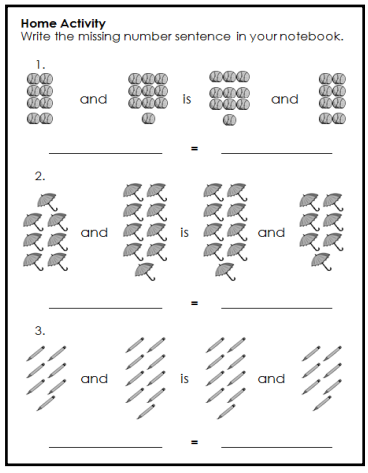
Worksheet 2

A. Write the missing number on your paper.

1. 16 + ☐ = 2 + 16
2. ☐ + 11 = 11 + 7
3. 4 + 14 = ☐ + 4
4. 12 + 6 = 6 + ☐
5. 3 + 15 = 15 + ☐
6. ☐ + 13 = 13 + 7
7. 4 + 14 = ☐ + 4
8. 7 + ☐ = 9 + 7
9. ☐ + 12 = 12 + 5
10. 15 + 7 = 7 + ☐

7. Summarizing the Lesson
   Make the pupils write 3 examples on their show me board to show that the sum of any number and 0 is the number itself.
   Make the pupils write 3 examples on their show me board to show that changing the order or position of the addends will not change the sum.

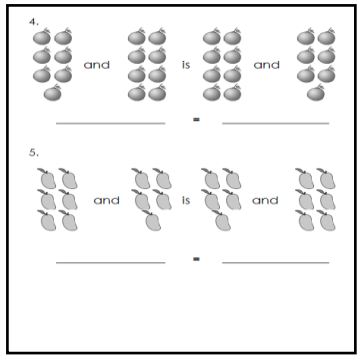
8. Applying to New and Other Situations
   Let the pupils answer the Home Activity as an assignment.



Home Activity

Write the missing number sentence in your notebook.

1. and is and = _____
2. and is and = _____
3. and is and = _____



4. and is and = _____
5. and is and = _____

Topic: **Addition of Three 1-Digit Numbers Horizontally and Vertically with Sums up to 18 Using Order and Grouping Properties of Addition**

Objective of the Lesson:

To add three 1- digit numbers having sums up to 18 vertically or horizontally using order and grouping properties of addition.

Prerequisite Concepts and Skills:

a. Adding two 1- digit numbers b. Using order property of addition

Materials:

- Counters of 3 different colors

Instructional Procedures:

A. Posing the problem

Show a drawing of children planting. Say: These children are all Mathematics Club officers. They help beautify our

mathematics garden. If you were the officers, how are you going to help your school?
Ask: What are the children doing? (The children are planting.)
What are they planting? (They are planting gumamela, rose and santan.)
Why are they planting? (They are planting to beautify their mathematics garden.) How do you help your school?

Post the problem below on the board. Read it aloud while the pupils read it with you softly. Ask them to solve the problem in different ways.
Problem:

For the beautification of the mathematics garden, the Mathematics Club officers planted the following flowering plants: 9 orchids, 4 roses, and 5 santans. How many did they plant in all?

B. Solving the Problem in the Different Ways

Solution 1:
We use counters to represent the number of plants.

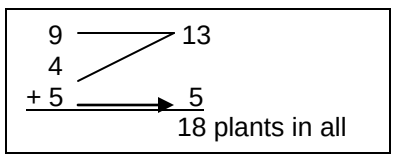
||||||||| and |||| and ||||| is ||||||||||||||||||

Solution 2: We want to add 9, 4, and 5. Add 9 and 4 first. The sum is 13. Then add 13 and 5. The sum is 18. So 9 + 4 + 5 = 18 plants in all.

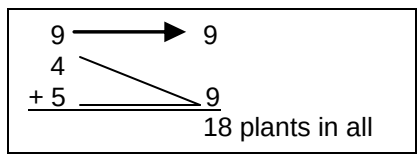
Solution 3: We want to add 9, 4, and 5. Add 4 and 5 first. The sum is 9. Then add 9 and 9. The sum is 18. So 9 + 4 + 5 = 18 plants in all.

Solution 4: We want to add 9, 4, and 5. We change the order of 4 and 5. This we can do because changing the order of the addends does not change the sum. We add 9 and 5 first. The sum is 14. Then we add 14 and 4. The sum is 18. So 9 + 4 + 5 = 18 plants in all.

Solution 5:



Solution 6:



These are sample answers which the pupils may or may not give. However, the teacher should prepare correct and incorrect ways of solving the problem. Wrong solutions are important to have something to compare with the correct solutions.

C. Processing the Solutions and Answers

Let the pupils focus on Solution 1 which is using counters.
Ask: How did you get your answer? (We put together the 9 counters which represent the 9 gumamela plants, the 4 counters which represent the rose plants and the 5 counters which represent the santan plants. Then we counted. So 9 + 4 + 5 = 18 plants in all.)
Let the pupils focus on Solution 2. Ask the pupils having this way of getting the answer to raise their hands. Then explain that what they had done can be written this way:

$$(9 + 4) + 5 = 13 + 5$$
$$13 + 5 = 18 \text{ plants in all}$$

Say: The pair of parentheses that enclosed 9 + 4 mean that 9 and 4 have to be added first. That is 9 + 4 = 13. Then to this sum, 5 is added. That is, 13 + 5 = 18.

Let the pupils focus on Solution 3. Ask the pupils having this way of getting the answer to raise their hands. Then explain that what they had done can be written this way:

$$9 + (4 + 5) = 9 + 9$$
$$9 + 9 = 18 \text{ plants in all}$$

Say: The pair of parentheses that enclosed 4 and 5 mean that 4 and 5 have to be added first. That is 4 + 5 = 9. Then 9 is added to this sum. That is, 9 + 9 = 18.

Ask: What do you observe about Solutions 2 and 3? (The addends are the same in both Solutions. But in Solution 2 the first two addends are enclosed by parentheses. These are 9 and 4. In Solution 3, the last two addends are enclosed by parentheses. These are 4 and 5. But the sum in both Solutions is 18.)

Let the pupils focus on Solution 4. Ask the pupils having this way of getting the answer to raise their hands. Then explain that what they had done can be written this way:

$$9 + (5 + 4) = 9 + 9$$
$$9 + 9 = 18 \text{ plants in all}$$

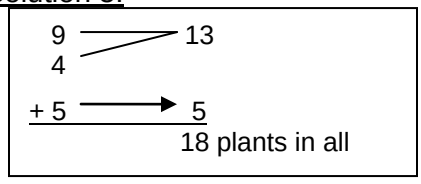
Ask: What do you observe about Solution 3 and Solution 4? (In both Solutions, the addends 4 and 5 are enclosed by parentheses. But the orders of these addends are different in these Solutions. In both Solutions, the answer is 18.)

Focus on the following ideas:

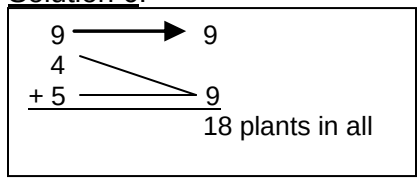
- In adding three 1-digit numbers, 2 addends can be grouped. The sum of these 2 addends can be added to the 3rd addend.
- Parentheses are used to show the grouping.
- Changing the grouping of the addends does not change the sum.

Look at Solutions 5 and 6.

Solution 5:



Solution 6:



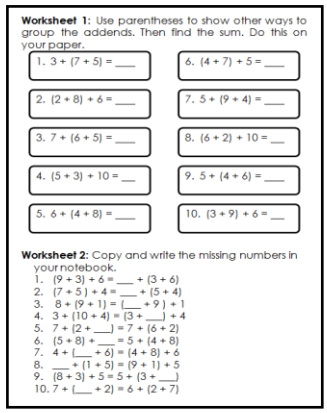
How are the addends written in Solutions 5 and 6? (The addends are written vertically). What do you observe? (The sum is the same as those in the addition sentences where the addends are arranged horizontally).

Focus on these ideas:

- In adding three 1-digit numbers, the addends can be written vertically or horizontally and the sum remains the same.
- In solving problems, it is important to identify the given facts and what is asked in the problem.

D. Reinforcing the Concept and Skill

- Ask pupils to do Worksheets 1 and 2. Then discuss the answers.



Worksheet 1: Use parentheses to show other ways to group the addends. Then find the sum. Do this on your paper.

1. 3 + (7 + 5) = ___
2. (2 + 8) + 6 = ___
3. 7 + (6 + 5) = ___
4. (5 + 3) + 10 = ___
5. 6 + (4 + 8) = ___
6. (4 + 7) + 5 = ___
7. 5 + (9 + 4) = ___
8. (6 + 2) + 10 = ___
9. 5 + (4 + 6) = ___
10. (3 + 9) + 6 = ___

Worksheet 2: Copy and write the missing numbers in your notebook.

1. (9 + 3) + 6 = ___ + (3 + 6)
2. (7 + 5) + 4 = ___ + (5 + 4)
3. 8 + (9 + 1) = (___ + 9) + 1
4. 3 + (10 + 4) = (3 + ___) + 4
5. 7 + (2 + ___) = 7 + (6 + 2)
6. (5 + 8) + ___ = 5 + (4 + 8)
7. 4 + (___ + 6) = (4 + 8) + 6
8. ___ + (1 + 5) = (9 + 1) + 5
9. (8 + 3) + 5 = 5 + (3 + ___)
10. 7 + (___ + 2) = 6 + (2 + 7)

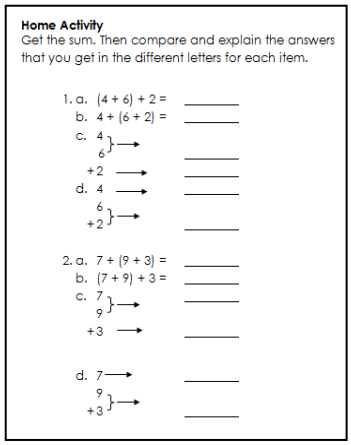
E. Summarizing the Lesson

Let the pupils get the sum of three 1-digit numbers in different ways. Then, let them explain how they arrived at their answers.

Emphasize that changing the grouping of the addends does not affect the sum. And even if the addends are written vertically or horizontally the sum is the same.

F. Applying to New and Other Situations

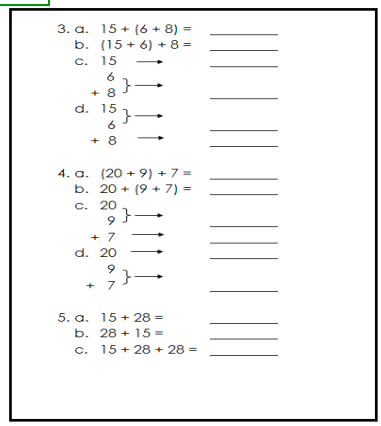
Let pupils do the Home Activity as an assignment.



Home Activity

Get the sum. Then compare and explain the answers that you get in the different letters for each item.

1. a. (4 + 6) + 2 = _____
   b. 4 + (6 + 2) = _____
   c. 4, 6 → +2 → _____
   d. 4 → 6, +2 → _____
2. a. 7 + (9 + 3) = _____
   b. (7 + 9) + 3 = _____
   c. 7, 9 → +3 → _____
   d. 7 → 9, +3 → _____



3. a. 15 + (6 + 8) = _____
   b. (15 + 6) + 8 = _____
   c. 15, 6, + 8 → _____
   d. 15, 6 → + 8 → _____
4. a. (20 + 9) + 7 = _____
   b. 20 + (9 + 7) = _____
   c. 20, 9 → + 7 → _____
   d. 20, 9 → + 7 → _____
5. a. 15 + 28 = _____
   b. 28 + 15 = _____
   c. 15 + 28 + 28 = _____

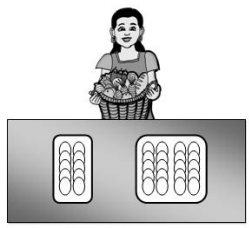
Topic: **Using Expanded Form to Explain the Meaning of Addition**

Objectives:

a. To express a number in its expanded form
b. To add numbers using their expanded form

Prerequisite Concepts and Skills:

a. Addition b. Decomposition of numbers
c. Order and grouping properties of addition



Materials: counters such as sticks

Instructional Procedures:

A. Posing the Problem

Show a picture of a mother looking at a table with one tray of 12 eggs and another tray of 24 eggs.

Then post the following problem on the board.

Mother bought 2 trays of eggs. One tray contained 12 eggs and the other contained 24 eggs. How many eggs were there in all?

Tell the pupils to solve the problem in different ways.

B. Solving the Problem

The pupils may give the following solutions:

Solution 1: By using counters
Count 12 sticks. Then count 24 sticks. Then count all the sticks. There are 36 sticks in all. So12 + 24 = 36 eggs in all.

Solution 2: By counting on
Pupils count on to have 12 numbers after 24. These are 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36. So 12 + 24 = 36. There are 36 eggs in all.

C. Processing the Solutions and Answer

Ask: How did you get 36? (In Solution 1, we used counters to represent the eggs. We counted 12 sticks. Then we counted another 24 sticks. We counted the total number of sticks and got 36. So 12 + 24 = 36 eggs in all. In Solution2, we counted on 12 numbers after 24. These are 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36. So 12 + 24 = 36 eggs in all.)

Say: We can also get 36 by using what we know about decomposing numbers.
Ask: How will you decompose 12 into 2 addends so that the addends are tens and ones? (12 can be decomposed into 10 and 2.) How about 24? (24 can be decomposed into 20 and 4.)

Say: Recall that two or more numbers are a decomposition of a given number if their sum is equal to the given number.

Ask: Can you say that 10 and 2 are a decomposition of 12, and 20 and 4 are a decomposition of 24? (Yes, because 12 = 10 + 2 and 24 = 20 + 4.) Say: Now we can add 12 and 24 by adding the sum of 10 and 20 which is 30 to the sum of 2 and 4 which is 6. We can write this as:

12 + 24	=	(10 + 2) + (20 + 4)
(10 + 2) + (20 + 4)	=	(10 + 20) + (2 + 4)
(10 + 20) + (2 + 4)	=	30 + 6
30 + 6	=	36
So 12 + 24	=	36.

Focus on the ideas: Expressing a number into tens and ones is called the expanded form of a number. The expanded form of a number can be used to add two or more numbers.

Say: Let us consider another example. What is the sum of 33 + 45?

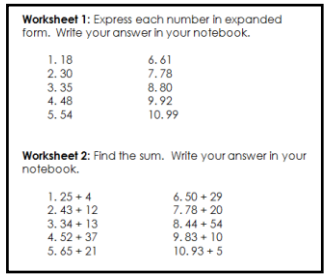
Ask: How can we decompose each number into tens and ones? (We can express 33 as 30 + 3 and 45 as 40 + 5.) So how do you now add 33 and 45? And what is the sum?

Solution:

33 + 45	=	(30 + 3) + (40 + 5)
(30 + 3) + (40 + 5)	=	(30 + 40) + (3 + 5)
(30 + 40) + (3 + 5)	=	70 + 8
70 + 8	=	78
So 33 + 45	=	78

D. Reinforcing the Concept and Skill

Let the pupils do Worksheets 1 and 2. Then discuss the answers.



Worksheet 1: Express each number in expanded form. Write your answer in your notebook.

1. 18
2. 30
3. 35
4. 48
5. 54
6. 61
7. 78
8. 80
9. 92
10. 99

Worksheet 2: Find the sum. Write your answer in your notebook.

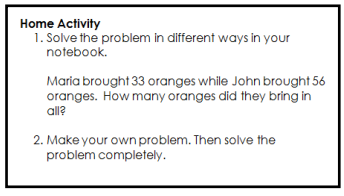
1. 25 + 4
2. 43 + 12
3. 34 + 13
4. 52 + 37
5. 65 + 21
6. 50 + 29
7. 78 + 20
8. 44 + 54
9. 83 + 10
10. 93 + 5

E. Summarizing the Lesson

Ask the pupils to give two numbers and let them find the sum using the expanded form of the numbers.

F. Applying to New and Other Situations

Let the pupils do the Home Activity as an assignment.



Home Activity

1. Solve the problem in different ways in your notebook.

   Maria brought 33 oranges while John brought 56 oranges. How many oranges did they bring in all?

2. Make your own problem. Then solve the problem completely.

Topic**: Addition of Numbers with Sums through 99 without Regrouping**

Objectives of the Lesson

a. To visualize the addition of numbers with sums through 99
b. To deduce the process of adding numbers with sums through 99
c. To add numbers with sums through 99

Pre-requisite Concepts and Skills

a. Place value b. Addition of two 1-digit numbers

Materials:

- longs and units models ●balloon cut-outs

Instructional Procedures:

A. Posing the Problem:

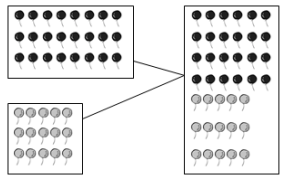
Show a drawing of balloon shop with a mother buying balloons.
Ask: What is mother doing in the 'balloon shop'?
(Mother is buying balloons)
Post the problem on the board.

Problem:
Mother bought 24 red balloons and 15 blue balloons for the birthday party of her daughter. How many balloons did mother buy in all?

B. Solving the Problem:

Solution 1. Act it out
Ask 2 pupils to act as mother and balloon vendor. The pupil acting as the balloon vendor will give 24 red balloons and 15 blue balloons to the pupil acting as mother. The pupils count all the balloons to get the total number of balloons mother bought. So, mother bought a total of 39 balloons.

Solution 2. Using drawings
By counting all the balloons in the big rectangle, we have 39 balloons in all. So, mother bought a total of 39 balloons.



Solution 3. Using the expanded form of a number
24 = 20 + 4
15 = 10 + 5

So, 24 + 15 = (20 + 10) + (4 + 5)

By counting on, 20 + 10 = 30 and 4 + 5 = 9. And 30 + 9 = 39.

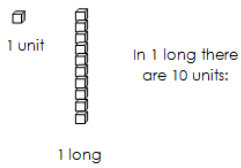
So, mother bought a total of 39 balloons.

C. Processing the Solutions

Ask:
In Solutions 1 and 2, how did you arrive at your answer?
(We counted all the balloons)

How about in Solution 3? (We expressed first the numbers in expanded form and to find the sum, we used the method 'counting on.')

Say:
We can get the sum of 24 and 15 using this model.
(Show the longs and units models and tell that 1 long = 10 units)

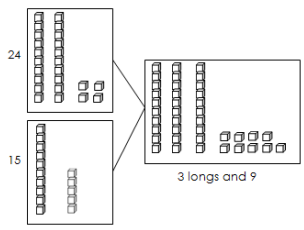


Ask:
In 24, how many longs are there? (There are 2 longs.)
How many units are left? (There are 4 units left.)
In 15, how many longs are there? (There is only one long.)
How many units are left? (There are 5 units left.)

(Show the process by actual demonstration and later represent the process by this diagram.)

How many units are there in 3 longs?
(There are 30 units.)

So in all, how many units are there?
(There are 39 units.)



Say: So, we can say that 24 + 15 = 39 which can also be written as:

24

$$\begin{array}{r} \\ +\ 15 \\ \hline 39 \end{array}$$

Look closely at $\begin{array}{r} 24 \\ +\ 15 \\ \hline 39 \end{array}$. What do you observe? (9 is the sum of 4 and 5 and 3 is the sum of 1 and 2)

Focus on the idea that in adding two 2-digit numbers without regrouping, we add the numbers in the ones place and we also add the numbers in the tens place. This can be quickly remembered by giving this process.

Tens	Ones
2	4
+ 1	5
3	9

Then later on, remove the tens and ones and just give this:

$$\begin{array}{r} 24 \\ +\ 15 \\ \hline 39 \end{array}$$

At this point relate the above idea to Solution 3 which involves the expanded form of a number.

D. Reinforcing the Concept

Let the pupils do the Worksheet. Then discuss the answers.

Worksheet

A. Find the sum of the following number expressions using the longs and units model.

1. 32 + 26 = _____
2. 27 + 30 = _____
3. 38 + 44 = _____
4. 59 + 11 = _____
5. 46 + 32 = _____
6. 63 + 36 = _____
7. 27 + 32 = _____
8. 30 + 40 = _____
9. 54 + 45 = _____
10. 36 + 41 = _____

B. Find the sum of the above number expressions using the process described above on adding 2-digit numbers without regrouping.

E. Summarizing the Lesson

To add two 2-digit numbers without regrouping,

- write the given numbers vertically or in column.
- add the numbers in the ones place. Write the sum just below the addition line. Align it with the ones place.
- then add the numbers in the tens place. Write the sum just below the addition line. Align it with the tens place.

Example:
Find the sum of 64 + 32

Solution:

$$\begin{array}{r} 64 \\ +\ 32 \\ \hline 96 \end{array} \longleftarrow \text{Addition line}$$

F. Applying to New and Other Situations

Let the pupils do the Home Activity. The activity may be a given as an assignment.

Home Activity
Write your answer in your notebook.

1. Give two 2-digit numbers whose sum is 99. Compare your answer to those of your seatmates. What do you observe?
2. Use the numbers 1, 2, 3 and 4, to get:
   a. The greatest sum $\begin{array}{r} \square\square \\ +\ \square\square \\ \hline \end{array}$
   b. The least sum $\begin{array}{r} \square\square \\ +\ \square\square \\ \hline \end{array}$

Topic: **Addition of Numbers with Sums through 99 with Regrouping**

Objectives of the Lesson:

a. To represent a situation in different ways
b. To visualize adding 2-digit numbers using longs and units
c. To add 2-digit numbers with regrouping

Prerequisite Concepts and Skills:

a. Place value b. Addition of two 1-digit numbers c. Concept of whole number

Materials

- picture cards ●longs and units ●place value chart

Instructional Procedures:

A. Posing the Problem

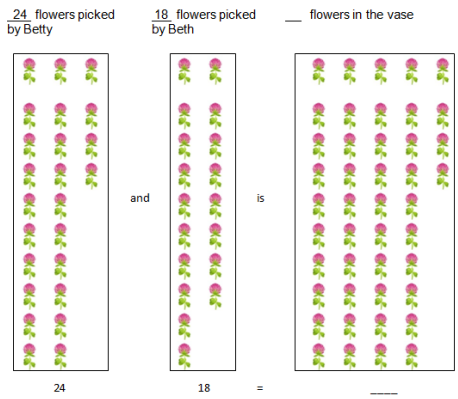
(Post a picture of two girls in the garden). Post the problem on the board. Call one pupil to read it.
Problem: Betty and Beth went to their garden. Betty picked 24 flowers. Beth picked 18 flowers. They put the flowers in a vase. How many flowers are there in the vase?

Ask:

a. Who are in the garden? (Betty and Beth are in the garden.)
b. What are they doing in the garden? (They are picking flowers.)
c. How many flowers did Betty pick? (Betty picked 24 flowers.)
d. How many flowers did Beth pick? (Beth picked 18 flowers.)

B. Solving the Problem in the Different ways

1. Solution 1: Act It Out
   Call two girls to act as Betty and Beth. These two girls act out the situation. Then they counted the flowers after putting them in the vase. They were 42 flowers.



   We counted the flowers in the big rectangle. There are 42 flowers in the vase.

2. Solution 3: Using the idea of expanded form of a number
   We can rewrite 24 into 20 + 4, 18 into 10 + 8. So,

   24 ⇒ 20 + 4
   +
   18⇒ 10 + 8
   30 + 12

   We can rewrite 12 into 10 + 2. So, 30 + 12 = 30 + 10 + 2
   = (30 + 10) + 2
   = 40 + 2
   = 42

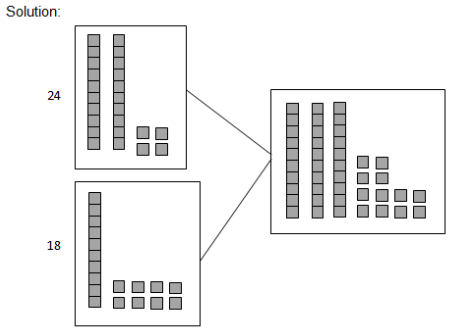
   So, there are 42 flowers in the vase.

C. Processing the Solutions

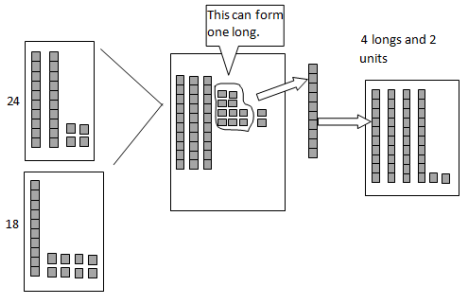
Ask: In Solutions 1 and 2, how did you find the total number of the flowers? (We counted the flowers.)

How do use the longs and units model to arrive at 42?
(Note: Pupils may give the following solution which is incomplete because what they know is adding numbers without regrouping. However, you can use this solution to build up the idea of adding numbers with regrouping.)

Ask:
When we combine the 4 units and the 8 units, how many units are there in all? (There are 12 units in all.)
How many longs can you form from 12 units? (We can form 1 long.)
After forming one long, how many units are left? (There are 2 units left.)
We can combine this one long with the 3 longs, so how many longs do we have now? (We have now 4 longs.)



Tell:
After the process, we have now 4 longs and 2 units. The process is called regrouping. The process is shown by this drawing.
[Note: The process should be illustrated by using real longs and units.]

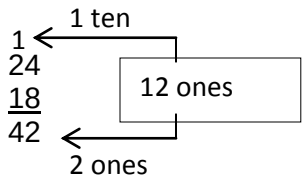


Ask:
Remember that 1 long = 10 units, so how many units are there in 4 longs? (There are 40 units.) In 4 longs and 2 units, how many units are there? (There are 42 units).

Tell:
So we can now say that, 24 + 18 = 42
Note: That we can also write 24 + 18 = 42 as

$$\begin{array}{r} 24 \\ +\ 18 \\ \hline 42 \end{array}$$

Ask:
What do you think should you do with the digits of 24 and 18 so that you obtain a sum of 42? (We add 4 and 8 to get the sum of 12. Write the 2 below the addition line aligned with the ones place. Then add the 1 to the sum of 2 and 1 in the tens place. This gives 4. Write this below the addition line under the tens place. So we have 42.)
Relate their answer to the idea of “ones and tens’ and show this illustration.



Focus on this idea:
To add 2-digit numbers with regrouping:
- write the two numbers vertically or in column.
- add the numbers in the ones place then regroup the sum into tens and ones.
- add all the numbers in the tens place.

Tell:
To remember the process quickly, let us use the place value chart:

Tens	Ones
2	4
1	8
3	12

(Add)

Or simply we have,

$$\begin{array}{r} \begin{bmatrix}1\\2\\1\end{bmatrix}\ 4 \\ +\ 1\ 8 \\ \hline \end{array}$$

Ask:
How are numbers arranged? (They are arranged in column.)
What should we add first? (We add the numbers in the ones place first.)
What will you do next? (We regroup the sum of the ones into tens and ones.)
After regrouping, what will you do next? (We add the numbers in the tens place tens.)

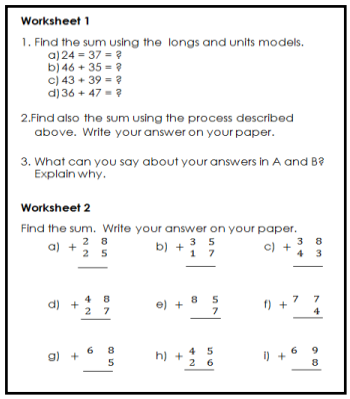
Let us find the sum of each of these:

1.
$$\begin{array}{r} \overset{1}{} \\ 4\ \begin{bmatrix}7\\5\end{bmatrix} \\ +\ 1 \\ \hline 6\ 2 \end{array}$$

2.
$$\begin{array}{r} \overset{1}{} \\ 4\ \begin{bmatrix}7\\8\end{bmatrix} \\ +\ 3 \\ \hline 8\ 5 \end{array}$$

Give more examples and go around to see if the pupils are following the process on how to add two 2-digit numbers with regrouping.
Now relate the process to Solution 3 which uses the expanded form of a number to get the sum.

D. Reinforcing the Concept
Let the pupils do Worksheets 1, 2 and 3. Then discuss the answers.



Worksheet 1

1. Find the sum using the longs and units models.
   a) 24 = 37 = ?
   b) 46 + 35 = ?
   c) 43 + 39 = ?
   d) 36 + 47 = ?

2. Find also the sum using the process described above. Write your answer on your paper.

3. What can you say about your answers in A and B? Explain why.

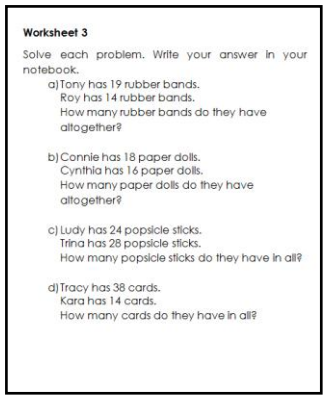
Worksheet 2

Find the sum. Write your answer on your paper.

a) $\begin{array}{r} 28 \\ +\ 25 \\ \hline \end{array}$ b) $\begin{array}{r} 35 \\ +\ 17 \\ \hline \end{array}$ c) $\begin{array}{r} 38 \\ +\ 43 \\ \hline \end{array}$

d) $\begin{array}{r} 48 \\ +\ 27 \\ \hline \end{array}$ e) $\begin{array}{r} 85 \\ +\ 7 \\ \hline \end{array}$ f) $\begin{array}{r} 77 \\ +\ 4 \\ \hline \end{array}$

g) $\begin{array}{r} 68 \\ +\ 5 \\ \hline \end{array}$ h) $\begin{array}{r} 45 \\ +\ 26 \\ \hline \end{array}$ i) $\begin{array}{r} 69 \\ +\ 8 \\ \hline \end{array}$



Worksheet 3

Solve each problem. Write your answer in your notebook.

a) Tony has 19 rubber bands.
   Roy has 14 rubber bands.
   How many rubber bands do they have altogether?

b) Connie has 18 paper dolls.
   Cynthia has 16 paper dolls.
   How many paper dolls do they have altogether?

c) Ludy has 24 popsicle sticks.
   Trina has 28 popsicle sticks.
   How many popsicle sticks do they have in all?

d) Tracy has 38 cards.
   Kara has 14 cards.
   How many cards do they have in all?

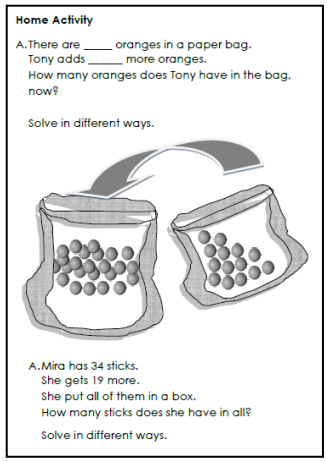
E. Summarizing the Lesson

To add two 2-digit numbers with regrouping:

- write the two numbers vertically or in column.
- add the numbers in the ones place first.
- regroup the sum into tens and ones.
- then add all the numbers in the tens place.

F. Applying to New and Other Situations

Let the pupils do the Home Activity as assignment.



Home Activity

A. There are ____ oranges in a paper bag.
   Tony adds _____ more oranges.
   How many oranges does Tony have in the bag, now?

   Solve in different ways.

A. Mira has 34 sticks.
   She gets 19 more.
   She put all of them in a box.
   How many sticks does she have in all?

   Solve in different ways.

Topic: **Mentally Add Three 1-digit Numbers With Sums Up to 18**

Objectives of the lesson

To add three one-digit numbers mentally with sums up to 18

Prerequisite Concepts and Skills:

- Adding three 1-digit numbers horizontally and vertically with sums up to 18

Materials: Number cards

Instructional Procedures

A. Posing the Problem

Show a picture of three children. Say: “This is Malou, Mira and Macy. They are in a bookstore buying boxes for their project.”

Ask:
Who are in the bookstore? [Malou, Mira and Macy are in the bookstore.]
What are they doing in the bookstore? [They are buying boxes.]

Post the following problem on the board. Call one pupil to read it.

Malou, Mira and Macy went to a bookstore.
Malou bought 3 blue boxes.
Mira bought 7 red boxes.
Macy bought 5 yellow boxes.
How many boxes did the girls buy altogether?

Ask:
How many blue boxes did Malou buy? [Malou bought 3 blue boxes.]
How many red boxes did Mira buy?[Mira bought 7 red boxes.]
How many yellow boxes did Macy buy? [Macy bought 5 yellow boxes.]
How many boxes did they buy altogether?

To answer the last question, ask the pupils to show different solutions.

B. Solving the Problem in Different Ways

<u>Solution 1</u>:

(3 + 7) + 5 = 10 + 5 = 15 or 3 + (7 + 5) = 3 + 12 = 15 or (3 + 5) + 7 = 8 + 7 = 15

So, the three girls bought 15 boxes.

<u>Solution 2:</u>

3 + 7 5	> 10 5 15	or	3 + 7 5	> 3 12 15	or	3 + 5 7	> 8 7 15

So, the three girls bought 15 boxes.

C. Processing the Solutions and Answer

Ask: How did you get your answer? [We got the sum of 3, 7, and 5 by grouping the addends.]

Tell: We can also find the sum of 3, 7, and 5 mentally by taking the sum of 3 and 7. This is equal to 10. Then add this sum to 5. This gives us 15. We can write the process as:

3 + 7 = 10
10+ 5 = 15

Let us consider this other example: 3 + 9 + 4

Notice that there are no two addends whose sum is 10. To get the sum of 3, 8, and 4 mentally we can take the sum of 3 and 4 first. This is 7. Then add this sum to 9. This gives 16. We can write the process as:

3 + 4 = 7
7 + 9 = 16

Another way is to take the sum of 3 and 9 which is 12 and add the sum to 4.This gives 16.

Still another way is to take the sum of 9 and 4 which is 13 and add this sum to 3. This gives 16.

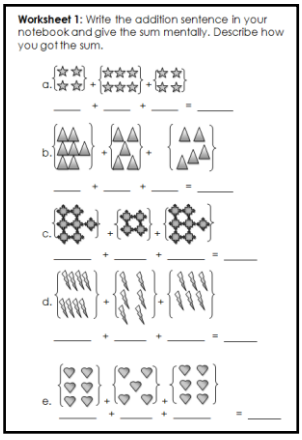
Focus on:
To add 3 one-digit numbers mentally, look for 2 addends whose sum is 10 then add this sum to the remaining addend. If there are no addends which when added give a sum equal to 10, take the sum of any 2 addends and add this sum to the remaining addend.

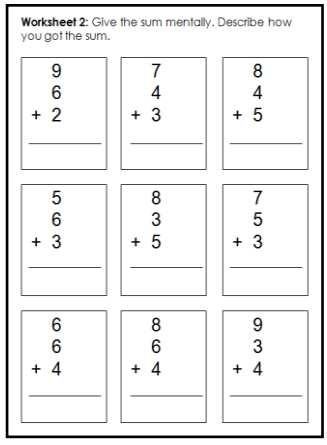
D. Reinforcing the Concept

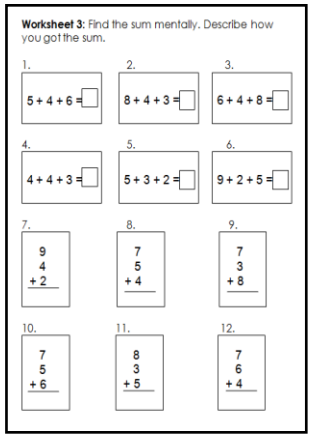
1. Give the following activity:
   Call 4 pupils in front of the class. Give each child one number card. Tell the rest of the class to check if the sum that is given is correct.
   The first child will shout his/her number.
   The second child will shout the word “plus” then his/her number.
   Then, the third child will shout the word “plus” then his/her number.
   Finally, the fourth child will shout the sum of the 3 numbers.
   The class checks if the sum is correct.

   You may repeat the activity until several groups have been called to participate.

2. Let the pupils do Worksheets 1, 2, and 3. Then discuss the answers.





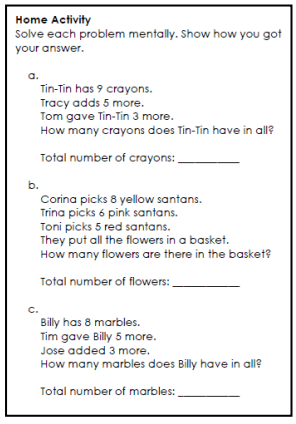


E. Summarizing the Lesson

To add 3 one-digit numbers mentally, look for 2 addends whose sum is 10. Then add this sum to the remaining addend. If there are no addends whose sum is 10, get the sum of any 2 addends. Then add this sum to the remaining addend.

F. Applying to New and Other Situations

Give the Home Activity as an assignment.



Topic: **Mentally Add a 2-Digit Number and 1-Digit Number with Regrouping**

Objectives of the Lesson:

a. To visualize adding 2-digit and 1-digit numbers with regrouping
b. To add mentally 2-digit and 1-digit numbers with regrouping

Prerequisite Concepts and Skills:

a. Adding three 1-digit numbers mentally
b. Expressing a 2-digit number into its expanded form

Materials: Squares or picture cards to represent stickers

Instructional Procedures:

A. Presenting the Task

Show a picture of two boys collecting stickers. Then post the following problem on the board. Read it aloud while the pupils follow you silently.
Tom and Totoy are friends.
They collect stickers.
Tom has 18 stickers.
Totoy gives him 9 more stickers.
How many stickers does Tom have in all?
Ask:
Who are the friends? [Tom and Totoy are friends.]
What do they do? [They collect stickers.]
How many stickers does Tom have? [Tom has 18 stickers.]
How many stickers does Totoy give Tom? [Totoy gives Tom 9 stickers.]
How many stickers does Tom have in all?

Tell the pupils to think of ways of how to get the answer mentally.

B. Performing the Task

Pupils may get the answer by applying what they already know about adding numbers with regrouping.

Solution:

$$\begin{array}{r} 18 \\ +\ 9 \\ \hline 27 \end{array}$$

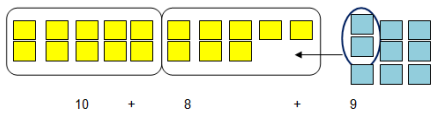
So, Tom has 27 stickers in all.

Encourage the pupils to use their picture cards or squares to show a solution described in “Processing the solution” as a way to mentally get the answer. It would be good if the pupils themselves can think of this solution.

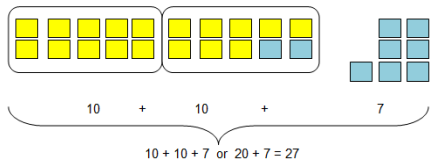
C. Processing the Solution

Ask: How did you get your answer? [We got the sum of 18 and 9 by adding the numbers using regrouping.]

Say: We can also get the sum of 18 and 9 mentally. Let us visualize first. We want to add 18 and 9. Eighteen stickers can be shown as 10 stickers and 8 stickers.



Take away 2 stickers from the 9 stickers and add them to the 8 stickers to form another group of 10 stickers. Seven stickers are left in the original group of 9 stickers. The results are as shown.



How many stickers are there all in all? [There are 10 + 10 + 7 stickers, or 27 stickers in all.]

Focus on this idea: To add 2-digit and 1-digit numbers mentally, first express the 2-digit number into its expanded form. Then mentally add the 3 numbers.

Applying this idea to get the sum of 18 and 9, we have
18 + 9 = (10 + 8) + 9 since the expanded form of 18 is 10 + 8.
Then we have,

10 + 8 + 9 = 10 + (8 + 9)
= 10 + 17
= 27.

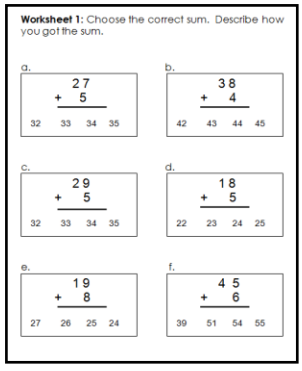
Let us apply this idea to these two examples:

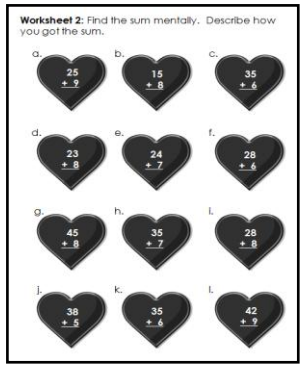
1. Find the sum: 25 + 8
   25 + 8 = (20 + 5) + 8 since the expanded form of 25 is 20 + 5.
   (20 + 5)+8 = 20 + (5 + 8)
   = 20 + 13
   = 33
   So 25 + 8 = 33.

2. Find the sum: 38 + 7
   38 + 7 = 30 + 8 + 7 since the expanded form of 38 is 30 + 8.
   = (30 + 8) + 7
   = 30 + 15
   = 45
   So 38 + 7 = 45.

G. Reinforcing the Concept

Let the pupils do Worksheets 1 and 2. Then discuss the answers.





H. Summarizing the Lesson

To add 2-digit and 1-digit numbers, express the 2-digit number into its expanded form. Then mentally add the 3 numbers.

I. Applying to New and Other Situations

Let the pupils do the Home Activity as an assignment.

Home Activity
Solve each problem mentally.

1. There are 17 doves and 9 parrots. How many birds are there in all?	2. There are 25 boys and 8 girls. How many children are there in all?
3. There are 26 hens and 9 roosters. How many chickens are there in all?	4. There are 19 red balloons and 5 blue balloons. How many balloons are there in all?
5. Anna has 19 white roses and Maria has 6 red roses. How many roses are there in all?	6. In Rizal Elementary School, there are 28 male teachers and 9 female teachers in Grade 1. How many Grade1 teachers are there in all?
7. Jane bought candies for her birthday party. There are 36 chocolate candies and 9 mint candies. How many candies are there in all?	8. There are 15 guavas and 8 mangoes. How many fruits are there in all?

Topic: **Solving One-step Word Problems Involving Addition of Whole Numbers Including Money**

Objectives of the Lesson:
a. To transform a problem into a number sentence
b. To solve problems

Prerequisite Concepts and Skills:
a. Concept of whole number c. Writing addition sentences
b. Adding 2-digt numbers with or without regrouping

Materials: ●Real objects ●Charts ●Picture cards

Instructional Procedures:

A. Posing the Problem

Ask: When is your birthday? How do you celebrate your birthday?
Show a picture of a girl. Say: This is Cathy. She celebrated her 7th birthday. Mother prepared spaghetti, fried chicken and sandwiches. Cathy was so happy. There were 18 boys and 15 girls who attended the party. How many children attended the party?

Post the problem on the board.
Cathy invited her friends to celebrate her 7th birthday. Mother prepared sandwiches, spaghetti and fried chicken. There were 18 boys and 15 girls who attended the party. How many children attended the party?

Ask the pupils the following questions:
a. Who celebrated her birthday? [Cathy celebrated her birthday.]
b. How old is she? [Cathy is 7 years old.]
c. What foods did mother prepare for her? [Mother prepared spaghetti, fried chicken and sandwiches.]
d. How many boys attended the party? [There were 18 boys who attended the party.]

e. How many girls attended the party? [There were 15 girls who attended the party.]

B. Solving the Problem in Different Ways

Solution 1: Act it out
Call a pupil who will act as Cathy and another pupil who will act as mother.
Call 18 boys and 15 girls. Ask them to act out the situation.
So there were 33 children who attended the party.
Solution 2:

$$\begin{array}{r} 18 \\ +\ 15 \\ \hline 33 \end{array}$$

So, there were 33 children who attended the party.

The children may give other ways on how to solve the problem.

C. Processing the Solutions and Answer

Say: Let us discuss how you solved the problem.

Ask:

- What did you do first in solving the problem? [We read and understood the problem.]
- To understand the problem, what did you note? (Pupils may give many answers. But it is important that these include: eighteen boys and fifteen girls attended the party and that the problem asks for the number of children who attended the party.)
- What did you do next after understanding the problem?[We thought of the operation to use to answer the problem. We also thought of the number sentence.]
- After this, what did you do? [We performed the operation to arrive at the answer.]
- How sure are you that you were able to answer what was asked for in the problem? (We checked our answer.]

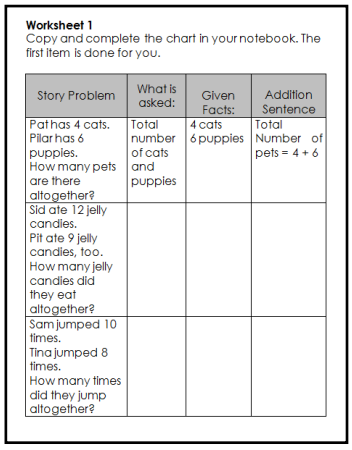
Focus:
Step 1: Read and understand the problem. In understanding the problem, take note of the given facts and what is being asked for in the problem.
Step 2: Plan the solution. In planning the solution, determine the operation, the representation be it a number sentence or a drawing that will be used to solve the problem.
Step 3: Carry out the plan. Solve the number sentence.
Step 4: Verify the answer. Check the answer if it is reasonable or it makes sense.

D. Reinforcing the Concept

Give this other problem: Mang Baste earned 23 pesos for selling old newspapers. He also earned 25 for selling old magazines. How much did Mang Baste earned?

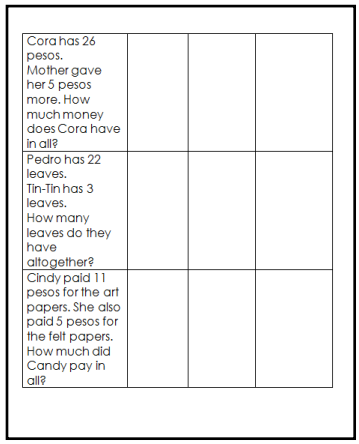
What are the given facts? What is asked? What number sentence will you use?
Solution:
Final Answer:

Let the pupils answer Worksheets 1, 2, and 3. Then discuss the answers.

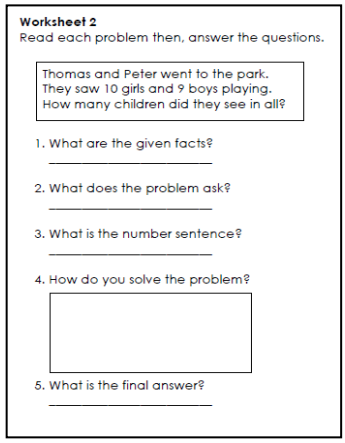


Worksheet 1
Copy and complete the chart in your notebook. The first item is done for you.

Story Problem	What is asked:	Given Facts:	Addition Sentence
Pat has 4 cats. Pilar has 6 puppies. How many pets are there altogether?	Total number of cats and puppies	4 cats 6 puppies	Total Number of pets = 4 + 6
Sid ate 12 jelly candies. Pit ate 9 jelly candies, too. How many jelly candies did they eat altogether?			
Sam jumped 10 times. Tina jumped 8 times. How many times did they jump altogether?			



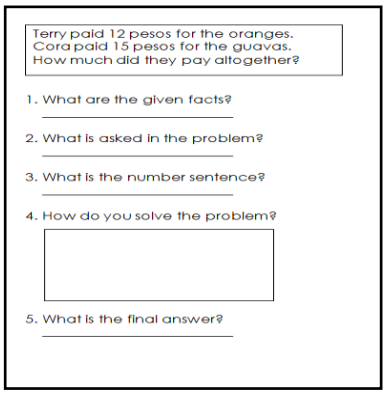
Cora has 26 pesos. Mother gave her 5 pesos more. How much money does Cora have in all?			
Pedro has 22 leaves. Tin-Tin has 3 leaves. How many leaves do they have altogether?			
Cindy paid 11 pesos for the art papers. She also paid 5 pesos for the felt papers. How much did Candy pay in all?			



Worksheet 2
Read each problem then, answer the questions.

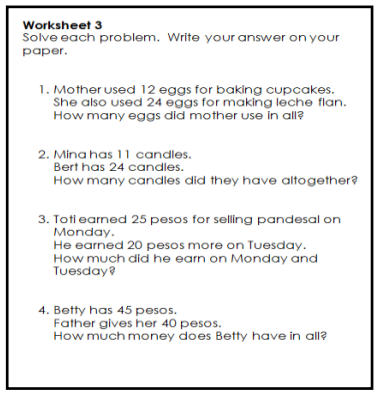
Thomas and Peter went to the park.
They saw 10 girls and 9 boys playing.
How many children did they see in all?

1. What are the given facts?
2. What does the problem ask?
3. What is the number sentence?
4. How do you solve the problem?
5. What is the final answer?



Terry paid 12 pesos for the oranges.
Cora paid 15 pesos for the guavas.
How much did they pay altogether?

1. What are the given facts?
2. What is asked in the problem?
3. What is the number sentence?
4. How do you solve the problem?
5. What is the final answer?



Worksheet 3
Solve each problem. Write your answer on your paper.

1. Mother used 12 eggs for baking cupcakes. She also used 24 eggs for making leche flan. How many eggs did mother use in all?
2. Mina has 11 candles. Bert has 24 candles. How many candles did they have altogether?
3. Toti earned 25 pesos for selling pandesal on Monday. He earned 20 pesos more on Tuesday. How much did he earn on Monday and Tuesday?
4. Betty has 45 pesos. Father gives her 40 pesos. How much money does Betty have in all?

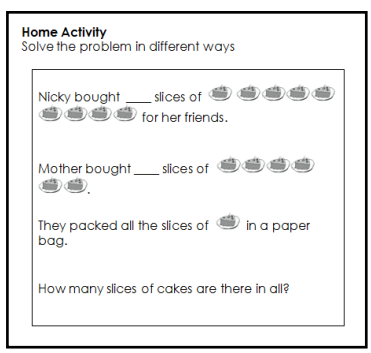
E. Summarizing the Lesson

In solving a problem, we follow these steps:

- Step 1: Read and understand the problem. Know the given facts and what the problem asks.
- Step 2: Plan the solution. Represent the problem by drawing (if needed) then by a number sentence.
- Step 3: Carry out the plan. Solve the number sentence.
- Step 4: Verify the answer. Check the answer if it makes sense.

F. Applying to New and Other Situations

Let the pupils do the Home Activity.



Home Activity
Solve the problem in different ways

Nicky bought ____ slices of for her friends.

Mother bought ____ slices of .

They packed all the slices of in a paper bag.

How many slices of cakes are there in all?