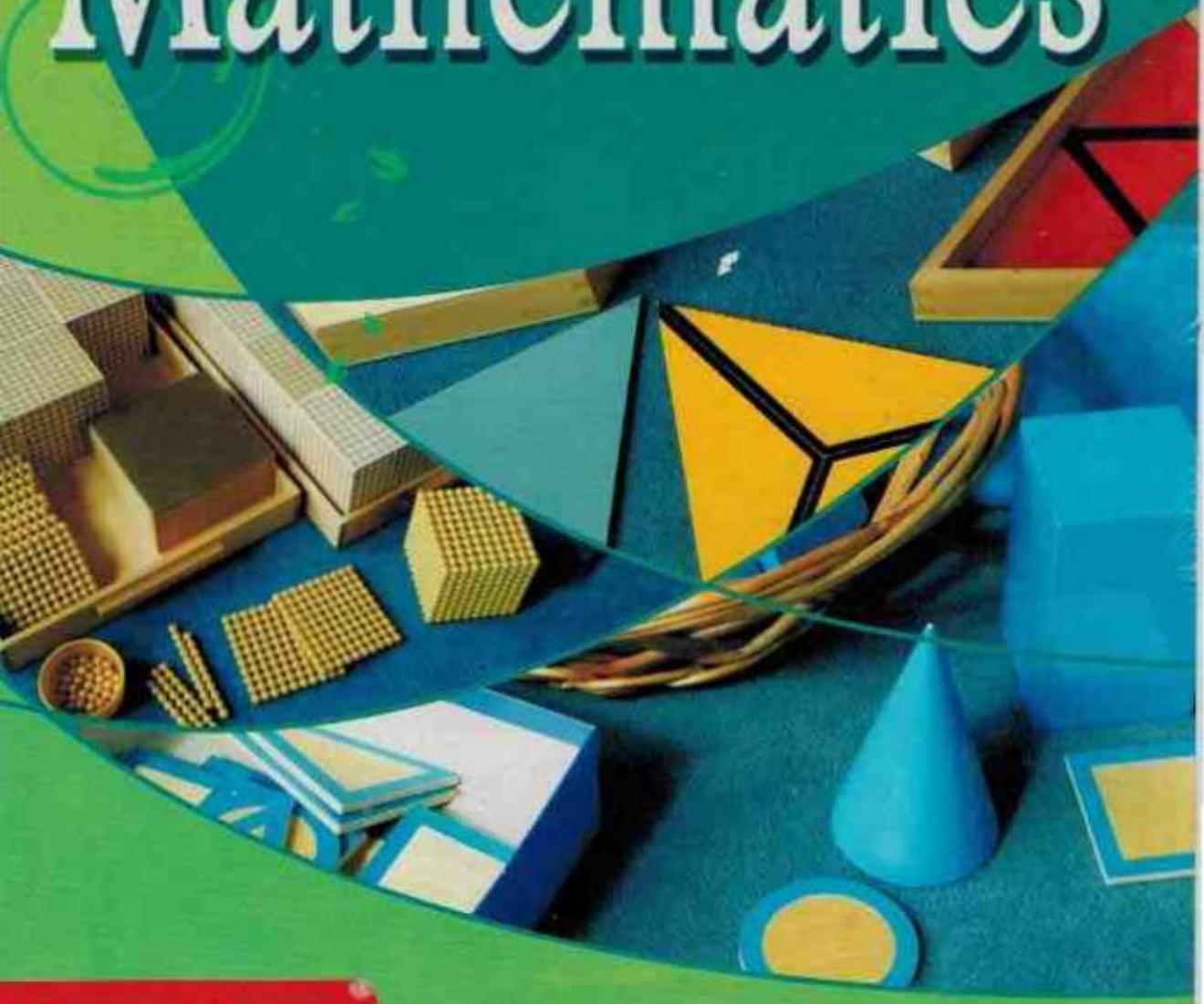
New Edition

Book 3

My Mathematics



Class Three

My Mathematics

Class 3

Government of Nepal
Ministry of Education
Curriculum Development Centre
Sanothimi, Bhaktapur

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Email address : cdc@ntc.net.np *Website : www.moescds.gov.np*

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Preface

With the intention of making school level education more purposeful, behavioral and contextual, a process of continuous revision and reform is adopted by the Curriculum Development Centre (CDC). It is obvious that the curriculum is the core part of teaching-learning process, and the textbooks are major means of implementing school curricula at grassroots level. In accordance with the school curricula, the text books keep on changing with a view to addressing societal needs, demands of learners and modern technology in the field of teaching and learning, especially to foster knowledge, skills and positive attitudes in the students so that we can produce skilful, moral, obedient and globally competent citizens. To accomplish this purpose, an attempt is made to bring this book in the present form.

The contents of **"My Mathematics"** of grade 3 are presented in the two page display system with clear teaching instructions, pictures and activities. This book (Nepali version) was originally written by Mr. Shambhu Narayan Baidhya and Sungma Tuladhar. Likewise, in accordance with the revised curriculum of primary level, it was revised by Mr. Bhoj Raj Sharma, Ms. Nirmala Gautam, Mr. Narayan Prasad Wagley, Mr. Shyam Prasad Acharya, Mr. Maheshwor Nyaupane, and Mr. Daya Ram Simkhada. Similarly, Mr. Haribole Khanal, Dr. Siddhi Prasad Koirala, Dr. Shiva Ram Nyaupane, Mr. Dandapani Sharma, Mr. Dillishwor Pradhan and Mr. Mukund Raj Sharma have also contributed significantly. In the same way, the language of Nepali version was edited by Mr. Bishnu Prasad Adhikari and Mr. Lok Prasad Pandit. Hence, the CDC would like to express its thanks to all of them.

Finally, a textbook is a vital tool of effective teaching learning process in the schools. However, both experienced teachers and inquisitive students can use a number of reference materials and various other resources available in the market to teach and learn a variety of subject matters respectively. Due to lack of different types of reference materials in all schools throughout the country, most of the teaching-learning activities highly depend on the textbooks. In this context, it is expected that the experienced teachers are capable enough to design additional activities as per the demands that usually emerge in the classroom. Moreover, an attempt is made to make this book child friendly by including several motivating teaching-learning activities. Despite our sincere efforts, there may be some mistakes and errors in terms of subject matter, language, presentation style and graphics. In this regard, we definitely expect the constructive suggestions from the teachers, students, parents, readers and other concerned stakeholders to improve the book in its future editions.

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About the English Version

The Curriculum Development Centre (CDC), from the very beginning of its inception, has been involved in developing school curricula and textbooks of school education. Moreover, it revises school curricula and textbooks at different time intervals as mandated by the government of Nepal with a view of making school education more purposeful, practical and employment oriented. In the present era, creating a sense of national integrity and democratic culture on students is increasingly becoming a need of Nepalese society. Equally important is to developing linguistic and mathematical skills, and providing fundamental knowledge relating to the fields of Technology, Environment and Health.

In Nepal, English language, as a medium of instruction, is gaining popularity. The public schools are gradually making efforts in using English as a medium of instruction. Keeping this fact in view, the CDC made an attempt to translate all the textbooks of primary level from Nepali into English, mainly to meet the needs of learners, parents and teachers. The CDC is hopeful that these textbooks in English versions will definitely help in meeting the needs of both public and private schools of the country. Besides, we look forward to reducing our dependency on textbooks written by foreign writers.

The subject experts involved in translating the textbook **"My Mathematics"** was Mr. Viranchi Shah. The CDC would like to express its gratitude to him for bringing the book in the present form. At the end, Ms. Durpada Sapkota also deserves a lot of thanks for her painstaking efforts in editing the language of the textbook.

A textbook is not all in all. It is only a means of executing the curriculum. An experienced and well trained teacher can use a variety of instructional resources for effective teaching-learning transaction in the classroom. Last but not the least; the CDC would be glad to express its hearty thanks to all experts who directly or indirectly made meaningful contributions to the translation of this book. The book could have some mistakes and errors despite the CDC's endeavors in making it child friendly and interesting. So, the CDC welcomes all the constructive suggestions for its further improvement in the forthcoming editions.

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Lesson 1

LINE SEGMENT

A. RULER AND ITS MEASUREMENT

Look, discuss and learn:

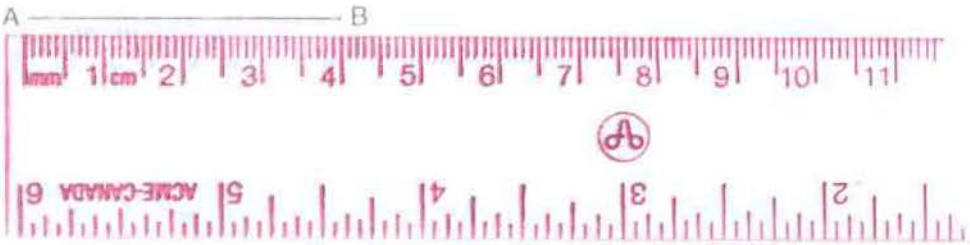
We use a ruler to find the length of short things. The length of these things is measured in centimeter or inch. Centimeter is also written 'cm' in its short form . Observe the given picture and Discuss on the following questions.

- Which unit is written on the right side of the ruler?
- What is the difference between the units written on the left and right side of the ruler?
- Is it the same ruler as you have?
- Find inch and centimeter in your ruler.
- Upto which number is written along the centimeter in your ruler?
- The ruler alongside is 15 centimeter long. How long is your ruler?

Teaching instructions:

1. Use different things like sticks, pen, match- stick, eraser or piece of thick paper and practise students to measure with the help of ruler.
2. Give flashcards with different line segments, tell them to measure the line segments and discuss.

- How long is the pencil placed above the ruler in the given picture?
- From which side do you start to count in measuring the length of a pencil and upto which number do you count?
- In the above figure, one side of the pencil is at 0 and tip of the pencil at 7. Counting from 0 to 7, it is 7 centimeter. Therefore, the length of this pencil is 7 centimeter.
- How long is your pencil? Measure it.

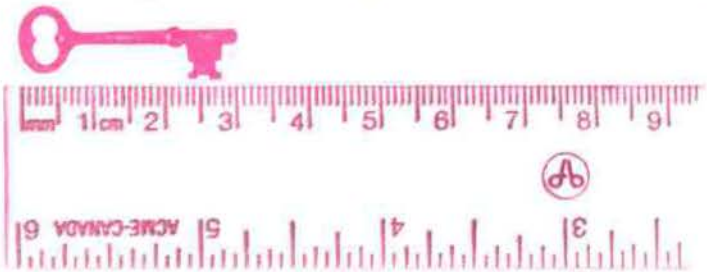


In the figure one side of the line segment (point A) is at 0 and other side (point B) is at 4. Counting from 0 to 4, it is 4 centimeter. Therefore, the length of the line segment is 4 centimeter.

EXERCISE

A. How long are the things given below? Write in centimeter.

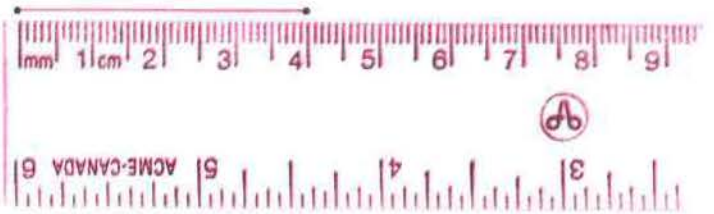
1.

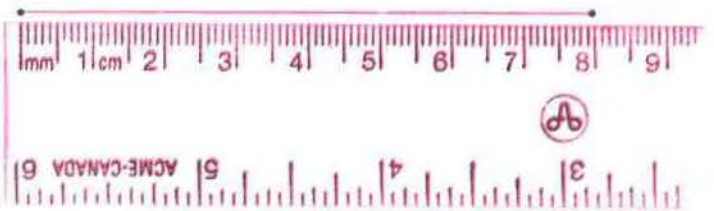


The length of the key is 3 cm.

2.

B. How long are the line segments given below, write answer in your exercise book.

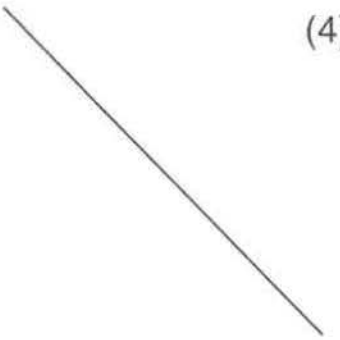
1. 

2. 

C. Measure the following line segments with your ruler and write their length.

(1)

(2)

(3) 

(4)

(5)

B. NAMING AND DRAWING LINE SEGMENT

Look, discuss and learn:

Naming of the line segment

A ———————————— B

What are the left and right end points of the line segment in the figure?

Above line segment has joined the points A and B so, it is the line segment AB.

Example

Name the line segment given below.

C ———————————— D

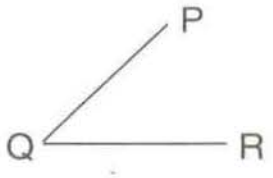
The end points of the line segment are D and E. So, it is line segment DE. In symbol, it is written $\overline{DE}$.

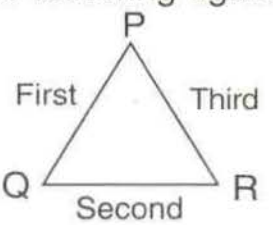
Methods of drawing line segment

- Place the ruler horizontally in the middle of your exercise book.
- Hold the ruler with your one hand and mark points at 0 and 8 of the ruler by another hand.
- Join these points with a straight line,
- Name A and B to the end points of the line . The line segment is 8 cm long.

Example

Observe the line segments in the following figures and discuss :





Teaching instructions: While teaching the naming of the line segments, first demonstrate line segments, angle, triangle and quadrilaterals on blackboard or chart and have a discussion. Then only tell the students to draw the line segments.

In the first figure above, the end points of the first line segment are P and Q. So, the name of this line segment is PQ. The end points of the second line segment are Q and R. So the name of this line segment is QR. In the same way, name the line segments of the second figure and write their length.

EXERCISE

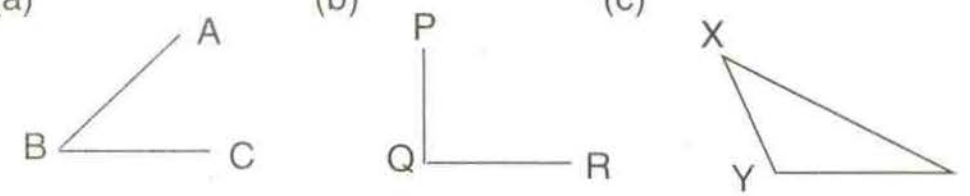
1. Write the name of the following line segments:

   (a) A ———— B (b) P ———— Q (c) X ———— Y

   line segment AB

2. Write the name of the line segments of the following figures.

   (a) (b) (c)



3. Write the name of the line segments of the following figures.

   (a) (b)

4. Draw the line segments of the following length with the help of ruler:

   a. AB = 6 cm b. CD = 7 cm c. PQ = 8 cm

   d. EF = 5 cm e. GH = 9 cm f. XY = 4 cm

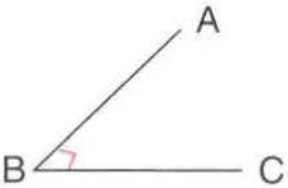
Lesson 2

ANGLE

CONCEPT AND NAMING OF AN ANGLE

Look, discuss and learn:

- How many hands are there in the clock along side?
- Do the hour and minute hands coincide at a point?
- How far are the tip of the minute hand and the hour hand set apart?
- The extent of splitness of space between the minute hand and hour hand is called angle. Can you mark the angle made by the hands in the picture of a clock?
- How many line segments (line) are there in the figure alongside?



- Do the line segments (sides) meet at a point?
- Which point lies on the both line? Mark and show.
- Is an angle formed in the figure?

In this way, when the two line segments meet at one point, there becomes an angle. This figure denotes an angle.

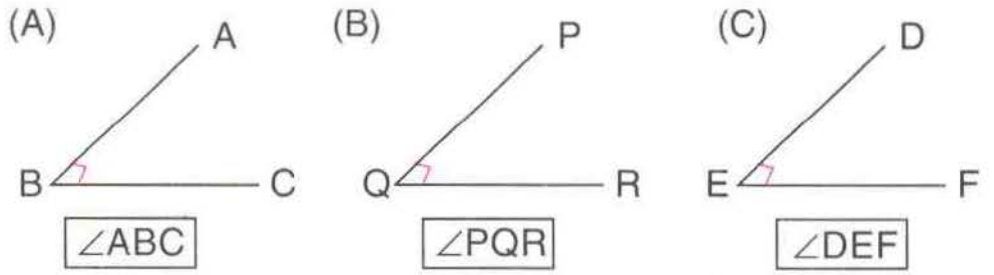
- What are the parts of an angle? There are two line segments AB and BC in an angle. They are called arms of that angle.
- At which point the arms AB and BC meet?
- The meeting point of the two arms is called the vertex of the angle.

Teaching instructions: Give the concept of the angle using the concrete objects that denote angles.For example: by opening and closing doors, moving arms and folding books etc.

- What is the vertex of the angle shown above?
- An angle is denoted by three letters keeping the letter that denotes vertex in the middle. What are the names of the above angle?

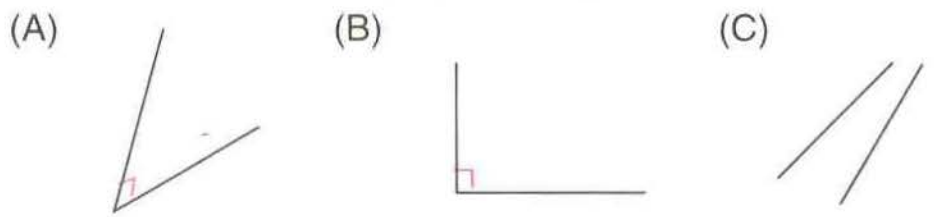
In the above figure, the vertex is B. Now name of the angle can be written keeping B in the middle. It is angle ABC or angle CBA. The angle ABC is written ∠ABC in symbol.

Similarly, observe the names of the angles below:

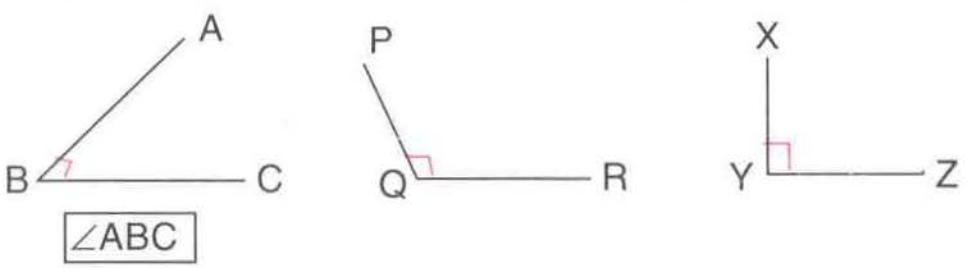


EXERCISE

1. In which of the folowing figures angle is formed?



2. Mark the angles in the following figures and write their name.



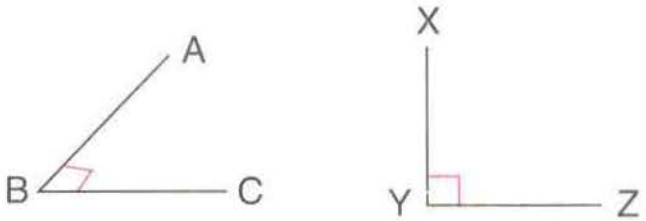
(B) COMPARISON OF THE ANGLES

Look, discuss and learn:

Fig. 1

Fig. 2

- Are the minute hand and the hour hand formed an angle in the above figures?
- Can you show the angle formed between the minute and the hour hand?
- In which picture the tip of the minute hand is near to the tip of the hour hand and in which it is far?
- When the minute hand and the hour hand come near, small angle is formed. When they go in a distance, big angle is formed. Find the small angle and big angle in the given figures.



- Which angle is more splitted in the above figure?
- More splitted angle is called big angle.
- Less splited angle is called small angle.

In this way, on the basis of splitness small and big angles can be separated.

Example: Which angle is big in the figures below?

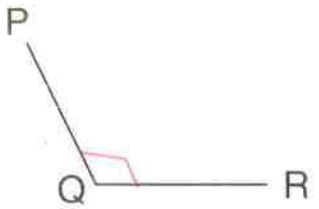


Fig. A

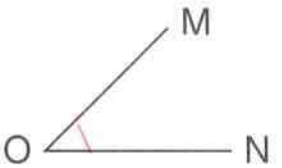


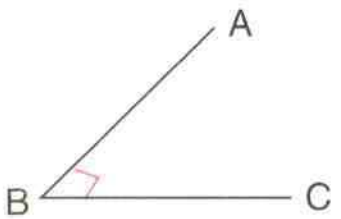
Fig. B

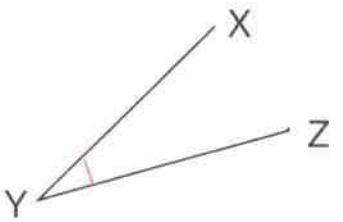
The angle in Fig. A is more splitted than the angle in Fig. B. Therfore, the angle in Fig. A is bigger.

EXERCISE

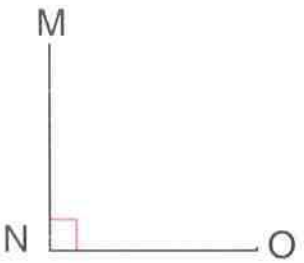
1. Which angle is big in the pair of the following figures? Write.

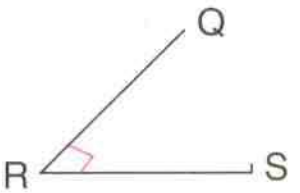
(A)



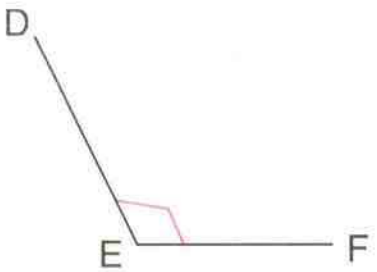


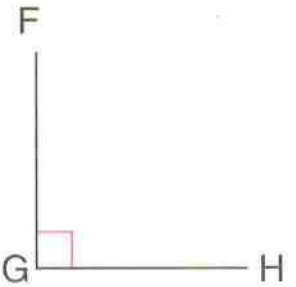
(B)





(C)





2. Draw an angle and then draw a smaller and a bigger angle than the first angle.

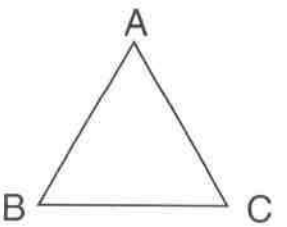
Lesson 3

TRIANGLE

A. Triangle and its parts

Look, discuss and learn:

- How many match-sticks are there in the figure alongside?
- How many corners are there in the figure?

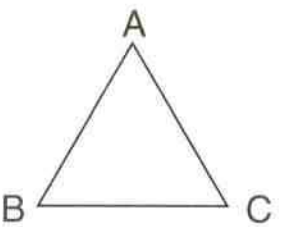


- How many line segments and angles are there in the figure at the right side?
- There are three sides and three angles in this figure.

Thus, the closed plane figure made by three sides is called a triangle.

B. Naming of a triangle

Look, discuss and learn:



- How many corners are there in the figure alongside?
- Write the name of the corners in the picture in right side.

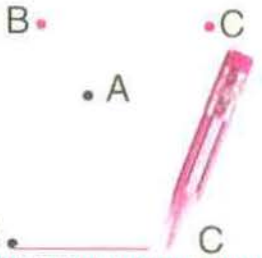
In the above figure, the corners are respectively A, B and C. They are called vertices.

While naming a triangle, the letters at the corners are written in order. Therefore, name of above triangle is ABC. This is also written BAC or CAB.

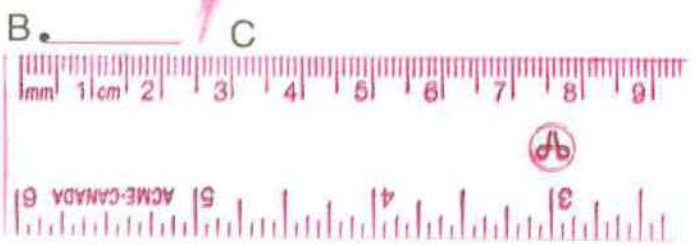
C. Construction of a triangle

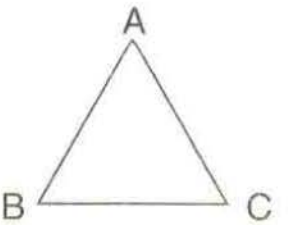
Look, discuss and learn:

- Mark three points A, B, and C in your exercise book as given in the figure.



- Can you join B and C by a ruler? Do this in your exercise book.





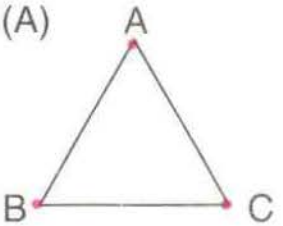
- After this, join A and B as well as A and C. What figure do you get? Say. The figure you made is ABC.

Teaching instructions: Draw triangles of different shapes on the blackboard or in the charts and let students draw and name the different parts. Give them additional exercisesof drawing triangles practically. Get students cut in the shape of triangles and write their name.

EXERCISE

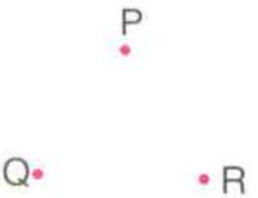
1. Join the given points in order as in the figure. Then write the name of the figure.

(A)



ABC or ΔABC

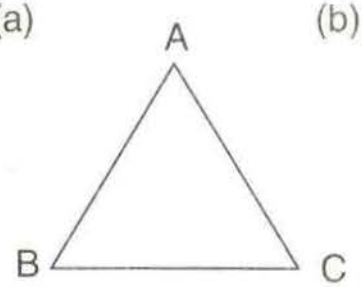
(B)



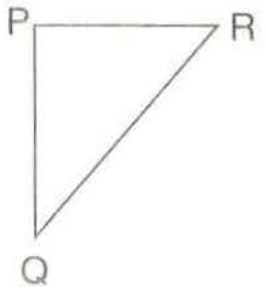
(C)

2. Write the name of the vertices, angles and sides of the following triangles.

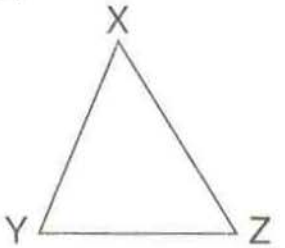
(a)



(b)

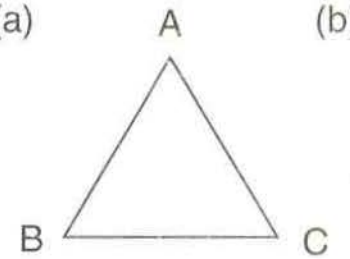


(c)

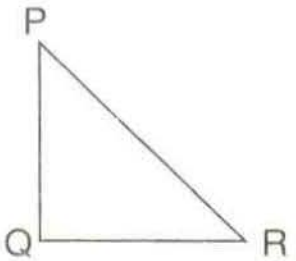


3. How can the following triangles be named differently? Discuss and write.

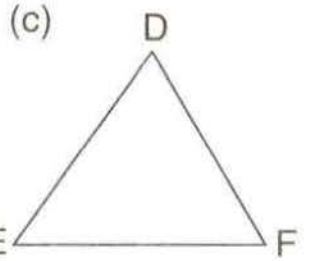
(a)



(b)

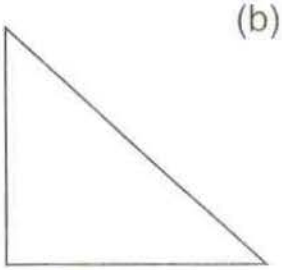


(c)

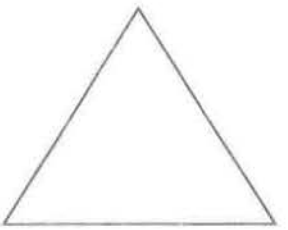


4. Name the triangles given below.

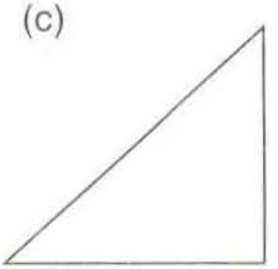
(a)



(b)



(c)



5. Construct four triangles with different size and write their names.

6. Mark three points in your exercise book and join each other. Write the name of the figure you get.

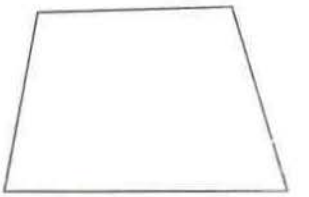
Lesson 4

QUADRILATERAL

A. QUADRILATERAL AND ITS PARTS.

Look, discuss and learn:

- How many match-sticks are there in the figure at your right?
- How many corners are there in the figure?
- As given above, make four cornered figure with four different match-sticks or sticks and discuss with your friends.



In the figure alongside,

How many sides are there?

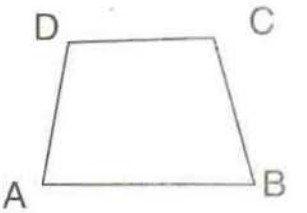
How many angles are there?

How many vertices are there?

The closed plane figure made by four sides is called a quadrilateral.

B. NAMING OF A QUADILATERAL

Look, discuss and learn:

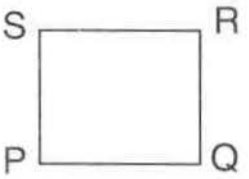


- How many corners are there in the figure alongside?
- These corners are called vertices. Tell the name these vertices.
- Reading the vertices in order, it is ABCD. Therefore, the name of the above figure is quadrilateral ABCD or quadrilateral BCDA or quadrilateral CDAB or quadrilateral DABC. It is also written //ABCD but it is not written ABCD or ABDC.

In this way, while naming a quadrilateral four vertices are written in order.

Example

Write the name of the quadrilateral given alongside.



The name of the vertices of this quadrilateral are P, Q, R and S respectively. Therefore, its name is quadrilateral PQRS.

C. CONSTRUCTION OF A QUADRILATERAL

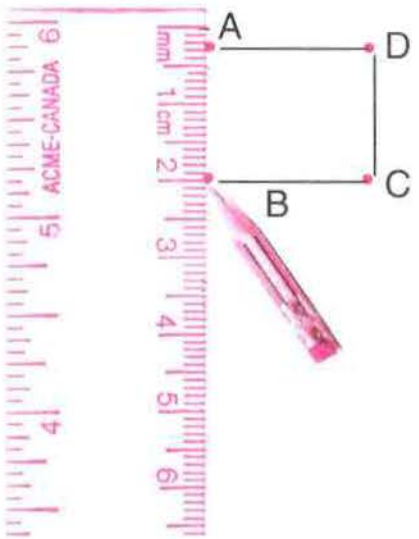
Look at the picture, discuss and learn:

A • • D

B • • C

- Can you mark the four points A, B, C and D as shown here? Mark in your exercise book.

- Join the points A and B with the ruler.
- Similarly, join the points B and C, C and D as well as D and A.

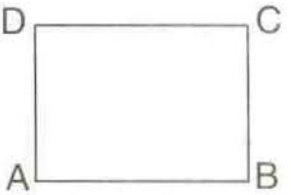


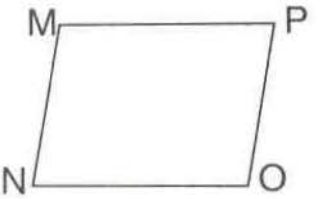
- What figure do you get? Say.
- In this way, we can construct a quadrilateral ABCD.

Teaching instructions: While discussing the concept of a quadrilateral, tell the students to put the match-sticks or sticks of equal size, different size in different place. Then tell them to write the different quadrilaterals using the symbol. Induce students to move the ruler in the exercise book while drawing or measuring a line.

EXERCISE

1. Name vertices, sides and angles of the quadrilateral as shown in the fig. (a).

(a) 

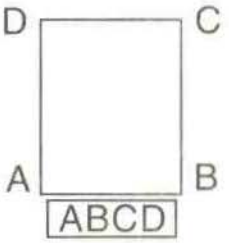
(b) 

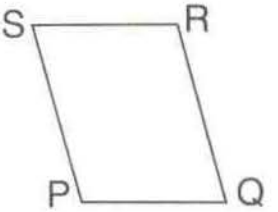
vertices: A, B, C and D

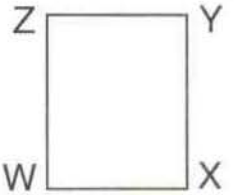
sides: AB, BC, CD and DA

Angles: ∠ABC, ∠BCD, ∠ADC, ∠DAB

2. Write the name of each quadrilateral below.

(a) 

(b) 

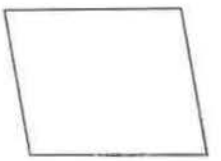
(c) 

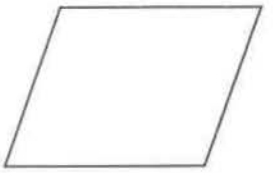
3. Mark four points in your exercise book as given below. Join the points with the ruler and tell the name of the figure.

(a) D• •C (b) S• •R (c) Z• •Y

A• •B P• •Q W• •X

4. Draw the quadrilaterals as given below in your exercise book and write their name.



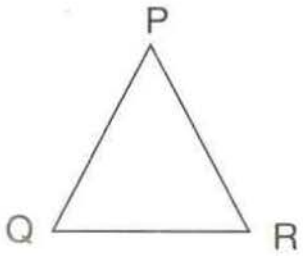


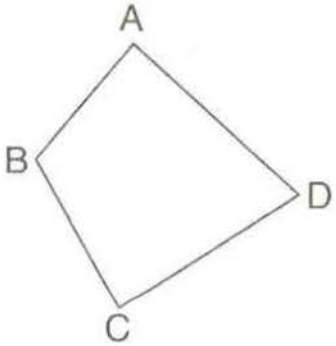
5. Draw two quadrilaterals of different size and name them.

MIXED EXERCISE

1. Write the name and measurement of the line segment given at the right.

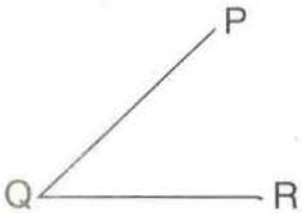
2. Write the name of the line segments in the following figures.



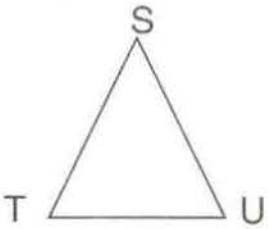


3. Write the name of the following figures.

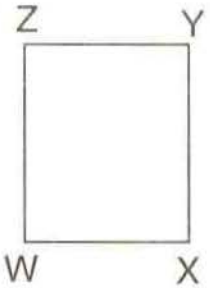
(a)



(b)



(c)



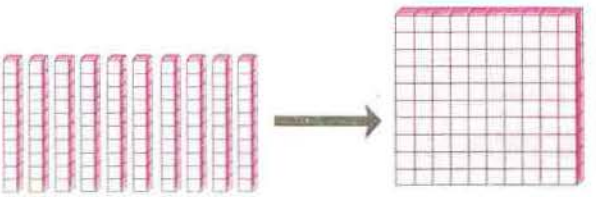
4. Construct a triangle and a quadrilateral and write their name.
5. Answer the following questions:
   a. What is used to measure the length of an object?
   b. What is the unit of length?
   c. How many sides, vertices and angles does a triangle have?
   d. How many sides, vertices and angles does a quadrilateral have?

Lesson 5

FOUR DIGIT NUMBERS

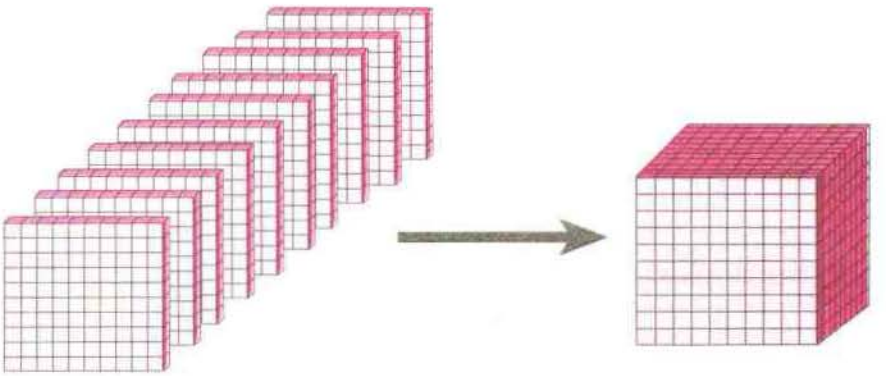
A. CONCEPT OF THOUSAND

Look, discuss and learn:



Hundred	Ten	One
1	0	0

Ten Ten One hundred = 100



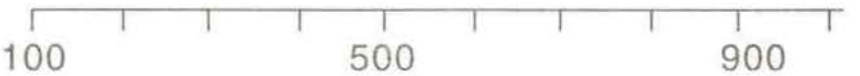
Ten hundred One thousand

Thousand	Hundred	Tens	Ones
1	0	0	0

= 1000 (one thousand)

EXERCISE

Count in the interval of 100-100. Copy the following sums in your exercise book and fill in the blanks with the correct number.



B. PLACE AND PLACE VALUE OF A DIGIT IN NUMBERS.

Read, discuss and write in your exercise book:

Hundreds	Tens	Ones
5	4	8

Here,

5 is in hundreds place. So, place value of 5 is = 5 hundred = 500.

4 is in tens place. So, place value of 4 is = 4 ten = 40.

8 is at ones place. So, place value of 8 is = 8 one = 8.

Thousands	Hundreds	Tens	Ones
1	8	7	5

Here,

1 is in thousands place.So, the place value of 1is = 1 thousand = 1000.

8 is in hundreds place. So, the place value of 8 is = 8 hundred = 800.

7 is in tens place. So, the place value of 7 is = 7 ten = 70.

5 is in ones place. So, the place value of 5 is = 5 one = 5.

EXERCISE

1. Find the place circled digit and write their place value.

   a. 1 (2) 3 4

   Here, 2 is in hundreds place.

   The place value of 2 is = 2 hundred = 200

   b. (1) 3 4 5

   c. 1 (5) 6 8

   d. (1) 3 6 6

   e. 1 4 6 (5)

   f. 1 6 (5) 7

   g. 1 (6) 9 8

   h. (1) 7 6 3

   i. 1 (8) 6 2

   j. 2 9 (3) 9

C. NUMBERS 1001 TO 1999.

Look, read and write in your exercise book:

Thousands	Hundreds	Tens	Ones
1	0	0	1

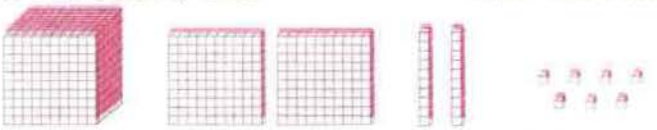
Thousands	Hundreds	Tens	Ones
1	1	0	0

1000 + 1 = 1001

One thousand one

1000 + 100 = 1100

One thousand one hundred



[1] thousand [2] hundred [2] tens [7] ones = 1227

EXERCISE

1. Fill the boxes with the correct number.

[ ] thousand [ ] hundred [ ] tens [ ] ones = [ ]

2.

[ ] thousand [ ] hundred [ ] tens [ ] ones = [ ]

3. Count in the interval of 1-1 and fill the blanks with the correct number.

1205 [ ] 1207 [ ] [ ] [ ] [ ]

4. | 1993 | | | | | | 1999 |

Teaching instructions:

1. Give the concept of numbers 1000 to 1999 by using local things like scale, charts, etc.and teach them to write number in words and figures.
2. Get the students cut pieces of paper and write numbers 1, 10, 100 and 1000 on them. Then tell them to show numbers. Help them to learn by giving the example like, 1204 can be written as 1000 100 100 1 1 1 1

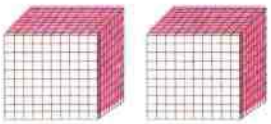
D. THOUSAND NUMBERS

Look, read and learn:

1 thousand = 1000 = One thousand

Thousands	Hundreds	Tens	Ones
1	0	0	0

2 thousand = 2000 = Two thousand



Thousands	Hundreds	Tens	Ones
2	0	0	0

EXERCISE

1. Fill the blanks with the correct number.

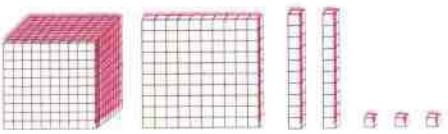
1000	2000		4000	5000
6000		8000		10000

2. Write the numbers from 1000 to 10000 in the interval of one thousand and read it in the classroom.

Teaching instructions: Give the concept of numbers of 1000 upto 10,000 by using blocks, charts, etc.

E. WRITING NUMBERS IN WORDS AND FIGURES:

Look, read and learn:



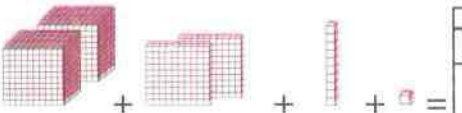
Thousands	Hundreds	Tens	Ones
1	1	2	3

1000 + 100 + 20 + 3 = 1123

In words: One thousand one hundred and twenty three.

EXERCISE

1. Observe the blocks and fill in the boxes:



Thousands	Hundreds	Tens	Ones
2	0	0	0

[ ] + [ ] + [ ] + [ ] = [ ]

2. Count in the interval of 1-1 and fill in the boxes.

a.

9901	9902							9909	

b.

9991					996				

3. Write the numbers in words and figures given in the place value table.

a.

Thousands	Hundreds	Tens	Ones
1	4	2	0

1420 = One thousand four hundred and twenty.

b.

Thousands	Hundreds	Tens	Ones
5	6	9	2

c.

Thousands	Hundreds	Tens	Ones
9	7	0	1

4. Fill the following numbers in the place value table and write in words:

a. 1024 =

Thousands	Hundreds	Tens	Ones
1	0	2	4

= One thousand and twenty four

b. 4835 c. 5652 d. 8459 e. 926

5. Write the following numbers in words:

a. 1957 = One thousand nine hundred and fifty seven.

b. 8959 c. 9582

d. 6666 e. 9957

F. USE OF COMMA (,) IN NUMBERS.

Read, discuss and learn:

There are four digits in 3000. First of all, we use comma (,) before three digits from right. Thus, we write 3,000 for 3000. 7,000 for 7000 and 10,000 for 10000.

EXERCISE

Write the following numbers with comma (,):

1. 3425 2. 5231 3. 6500 4. 9478

Teaching instructions: Tell the students to write the numbers and put commas.

G. ORDER OF NUMBERS

Read and learn:

Which number comes just after 5349? [5350]

Which number comes just before 6375? [6374]

Which number lies between 8374 and 8376? [8375]

EXERCISE

A. Write the numbers which comes just after:

1. 2356 2357 2. 9725 [ ] 3. 9804 [ ]

B. Write the numbers which comes just before:

1. [2376] 2377 2. [ ] 7079 3. [ ] 9856

C. Write the numbers which lies in the middle:

1. 1987 [ ] 1989 2. 9873 [ ] 9875

Teaching instructions: Give the concept of the numbers which come just before, after and in the middle using tables and wordcars. Give additional exercises as above to practise.

H. COMPARISON OF NUMBERS

Use of less than (<), equal (=) and greater than (>) signs.

Read and learn:

Which one is bigger in 6395 and 5986?

Let us see, by keeping in the place value table:

	Thousand	Hundred	Ten	One
6395 =	6	3	9	5
5986 =	5	9	8	6

Let us see, the digits at thousands place first.

6 is greater than 5. So, 6396 > 5986

Which one is less in 8659 and 8569?

In both the numbers digits at thousands place are equal. Let us see the digits at hundreds place. 5 is less than 6. So, 8569 < 8659

Which one is bigger in 7569 and 7596?

7 5 6 9 7 5 9 6

The digits in the thousands place and hundreds place are equal. Let us see the digits in tens place. 9 is greater than 6. So, 7596 > 7569.

Which one is smaller in 5485 and 5487 ?

5 4 8 5 5 4 8 7

The digits in thousands, hundreds and tens places are same. Let us see the digits in ones place.

5 is smaller than 7. So, 5485 < 5487.

The digits in all places in the numbers 8974 and 8974 are same.

So, 8974 = 8974.

EXERCISE

Copy the sums in your exercise book and fill the suitable sign (<, =,>) in the boxes:

1. 1857 ☐ 3999
2. 4395 ☐ 2356
3. 9876 ☐ 9978
4. 5439 ☐ 5439

Teaching instructions: Take three different cards written>, < and =. Write any two numbers on the black board. Have a game of selecting the suitable cards applicable between the two numbers by the students.For example when the numbers are 2207 and 2247, whether the students have taken the card written<, evaluate and discuss:

I. BIGGEST AND SMALLEST NUMBERS

Read and learn:

Find the biggest and smallest numbers:

4395, 6152 and 5290

First let's see the digits at thousands place. 6 is the biggest among 4, 6 and 5. So, 6152 is the biggest. Similarly, 4 is the smallest. So, 4395 is the smallest.

Putting in descending order (from greatest to smaller):

6152 5290 4395

Similarly, putting in ascending order (from smallest to greatest):

4395 5290 6152

Teaching instructions: Give each students one piece of paper and tell them to write any one number from 1 to 1000. Call three students to stand in front of the classroom and to tell their numbers. Similarly, tell the students to sit on the bench according to the numbers they wrote in the paper and evaluate it.

EXERCISE

1. **Copy the sums in your exercise book and circle the biggest number:**

   a. 3569, 5346, 4625 b. 2130, 4265, 5435

   c. 6296, 5794, 6199 d. 7823, 6785, 9946

   e. 4561, 5341, 3214 f. 5612, 6234, 3412

2. **Copy the sums in your exercise book and circle the smallest number:**

   a. 1234, 3452, 3555 b. 3546, 7461, 2235

   c. 4561, 5341, 2105 d. 5612, 6234, 3412

   e. 6231, 3543, 2105 f. 9354, 9214, 9399

3. **Copy the sums in your exercise book and write in descending order:**

   a. 3535, 3529, 3935

   Writing in descending order: 3935, 3535, 3529

   b. 5439, 3294, 4296 c. 7284, 8339, 6152

   d. 2354, 2461, 2392 e. 4161, 8912, 5316

   f. 6141, 5934, 4139

4. **Copy the sums in your exercise book and write in ascending order:**

   a. 4564, 3965, 5745

   Writing in ascending order: 3965, 4564, 5745

   b. 8941, 5140, 6171 c. 5246, 8564, 3391

   d. 3951, 3151, 3429 e. 5714, 6121, 3134

   f. 4689, 4885, 4930 g. 8750, 7850, 5780

Lesson 6

NUMBERS OF FIVE DIGITS

Read, discuss and write in your exercise book:

What will be when 1 is added to 9999? Discuss.

10,000 =

Ten thousand	Thousand	Hundred	Ten	One	= 1 ten thousand
1	0	0	0	0	= Ten thousand

Here, 1 is in ten thousands place. So, place value of 1 is = 10 thousand = 10,000.

35378 =

Ten thousand	Thousand	Hundred	Ten	One
3	5	3	7	8

Here, 3 is in ten thousands' place. So, place value of 3 = 3 ten thousand = 30 thousand = 30,000. 5 is in thousands place. So, place value of 5 = 5 thousand = 5,000. Total is 35 thousand. Similarly, 3 is in hundreds place, 7 is in tens place and 8 at ones place equals 3 hundred 78. So, it is read as 35 thousand 3 hundred 78.

EXERCISE

1. Fill the following numbers in the place value table and write in words:

   (a)

Ten thousand	Thousand	Hundred	Ten	One
1	2	3	5	4

   12,354 = Twelve thousand three hundred and fifty four.

   b. 38,915 c. 56,386 d. 67,832 e. 89,151

2. Write in words:
   a. 14,975 = Fourteen thousand nine hundred seventy five
   b. 28,239 c. 46,230 d. 56,516
3. Write in numbers:
   a. Fifteen thousand six hundred eighty two = 15,682
   b. Twenty two thousand nine hundred twenty.
   c. Ninety three thousand five hundred eighteen.
4. Write the numbers from 99,950 to 99,999.

Teaching instructions: Give the concept of 10,001, 10,002 etc because 10,000 of five digits come after 9999 and tell the students to write in order.

A. ORDER OF NUMBERS

Read and learn:

Which number comes just after 19,532? [19,533]

Which number comes just before 27,847? [27,846]

Which number lies between of 52,535 and 52,537?

[52,536]

EXERCISE

1. Write the numbers which comes just after:

   a. 20,582 [20,583] b. 59,304 [ ] c. 71,508 [ ]

2. Write the number which comes just before:

   a. [26,437] 26,438 b. [ ] 32,584 c. [ ] 87,356

3. Write the number which lies in between of:

   a. 25,943 [25,944] 25,945 b. 76,596 [76,598]

B. COMPARISON OF NUMBERS

Read and learn:

Use of signs, less than (<), equal (=) and greater than (>):

Which is greater in 32,956 and 41,502?

Let us put in the place value table:

32,956 =

Ten thousand	Thousand	Hundred	Ten	One
3	2	9	5	6

41,502 =

Ten thousand	Thousand	Hundred	Ten	One
4	1	5	0	2

Let us see the digits in ten thousands place. 4 is greater than 3. 4>3, So, 41,502 > 32,956.

Which is small in 67,319 and 62,999?

Let us put in place value table:

67,319 =

Ten thousand	Thousand	Hundred	Ten	One
6	7	3	1	9

62,999 =

Ten thousand	Thousand	Hundred	Ten	One
6	2	9	9	9

Here, digits in ten thousands place are equal. So, let us see the digits in thousands place. 2 is smaller than 7. So, 62,999 < 67,319.

EXERCISE

Copy the following sums in your exercise book and fill in the blanks with suitable sign (<, =, >):

a. 22,384 ☐ 31,126 b. 32,204 ☐ 31,927

c. 68,752 ☐ 68,866 d. 87,592 ☐ 87,592

C. THE BIGGEST AND THE SMALLEST NUMBERS

Read and learn:

Find the biggest and the smallest numbers:

26,542 22,967 35,403

Let us see the digits in ten thousands place first.

3 is the biggest among 2, 2 and 3. So, 35,403 is the biggest. Similarly, 2 and 2 are same, so we see the digits at thousands place. In 6 and 2, 6 is greater and 2 is smaller. So, 22,697 is the smallest.

While, putting in descending order:

35,403 26,542 22,967

Similarly, putting in ascending order:

22,967 26,542 35,403

EXERCISE

1. Copy in your exercise book and encircle the biggest numbers.

   a. 24,356 25,486 22986 b. 38,407 36,504 37,699

   c. 80,560 83,390 89,910 d. 92,103 90,386 92,312

   e. 42,385 44,597 41,390 f. 57,508 55,610 54,970

2. Copy in your exercise book and encircle the smallest number:

   a. 26,418 25,913 22,618 b. 31,584 29,656 34,752

   c. 67,705 65,912 66,818 d. 82,584 82,658 84,899

   e. 45,669 48,352 42,656 f. 52,918 38,410 48,917

3. Copy in your exercise book and write in descending order:

   a. 12,597 11,918 16,514

   Writing in descending order: 16,514 12,597 11,918

   b. 23,516 26,815 27,927 c. 36,705 39,652 36,810

   d. 46,567 45,918 45,967 e. 57,815 53,218 59,619

4. Copy in your exercise book and write in ascending order:

   a. 20,519 18,512 21,156

   Writing in ascending order: 18,512 20,519 21,156

   b. 35,564 32,614 36,519 c. 37,156 38,207 36,590

   d. 53,584 53,608 49,308 e. 67,384 68,510 67,445

Lesson 7

ADDITION UP TO FOUR DIGIT NUMBERS

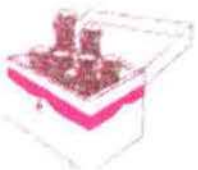
A. Addition without carryover

Look, discuss and learn:

Observe the given pictures. How many rupees are there in the first box? How many rupees are there in the second box? Put rupees of two boxes in one place in the third box. How many rupees will be in the third box? How will we know the total rupees keeping in one place? By adding the given rupees, we know the total rupees.

First box
Rs.5462

Second box
Rs.2327



Third box
Rs.7789

The rupees in the first box = Rs. 5,462

The rupees in the second box = Rs.2,327

To collect money (rupees) of two boxes is addition.

Let us discuss on the method of solving the problem of addition given above:

	Thousand	Hundred	Ten	One
	5	4	6	2
+	2	3	2	7
	7	7	8	9

Step 1: First add the digits at ones place.

Adding 2 one and 7 one equals 9 one.

Step 2: Adding the digits at tens place.

Adding 6 ten and 2 ten equals 8 ten.

Step 3: Similarly, we add the digits at hundred place.
Adding 4 hundred and 3 hundred we get 7 hundred.

Step 4: At last, adding digits at thousands place.
Adding 5 thousands and 2 thousand equals 7 thousand.

EXERCISE

Add:

a.

	thousands	hundreds	tens	ones
	7	3	4	5
+	1	6	4	2

b.

	thousands	hundreds	tens	ones
	5	6	2	9
+	2	2	7	0

c.
$$\begin{array}{r} 5432 \\ +\ 4341 \\ \hline \end{array}$$

d.
$$\begin{array}{r} 6257 \\ +\ 2421 \\ \hline \end{array}$$

e.
$$\begin{array}{r} 7628 \\ +\ 501 \\ \hline \end{array}$$

Teaching instructions: Give the students to add the numbers of four digits with the numbers of four digits as above for additional practice:

B. Addition with carry over:

	thousands	hundreds	tens	ones
		$\boxed{1}$	$\boxed{1}$	
	2	3	4	5
+	6	5	8	7
	8	9	13	12
	$\boxed{8}$	$\boxed{9}$	$\boxed{3}$	$\boxed{2}$

Step 1: At first add the digits at ones place. It is 12 one. 12 one means 1 ten and 2 one. Let us write 2 at ones place and carryover 1 ten at tens place.

Step 2: Add the digits at tens place it is 13.

13 ten means 1 hundred and 3 ten. Let us write 3 in tens place and carryover 1 hundred at hundreds place.

Step 3: Adding the digits at hundreds place, it is 9. Here, It is not necessary to carryover in thousands place because there is 9 hundred only in hundreds place.

Step 4: Let us add the digits in thousands place. Adding 2 thousand and 6 thousand becomes 8 thousands only.

EXERCISE

Add:

a.

	thousands	hundreds	tens	ones
	3	2	5	4
+	4	5	3	7

b.

	thousands	hundreds	tens	ones
	5	7	9	6
+	3	1	4	7

c.
$$\begin{array}{r} 5643 \\ +\ 2328 \\ \hline \end{array}$$

d.
$$\begin{array}{r} 6754 \\ +\ 1078 \\ \hline \end{array}$$

Teaching instructions: Give aditional problems of addition 4 digit numbers with carry over at ones place only, carry over at ones and tens place only and carry over at one, ten and hundreds place only for more practice.

C. ADDITION WITH CARRY OVER

Look the examples below and discuss:

ten thousands	thousands	hundreds	tens	ones
	$\boxed{1}$	$\boxed{1}$	$\boxed{2}$	
	4	7	3	5
	8	3	6	9
	5	2	4	3
	3	2	1	6
	21	15	16	23
$\boxed{2}$	$\boxed{1}$	$\boxed{5}$	$\boxed{6}$	$\boxed{3}$

$$\begin{array}{r} \textcircled{1}\textcircled{1}\textcircled{2} \\ 4735 \\ 8369 \\ 5243 \\ +\ 3216 \\ \hline \boxed{21563} \end{array}$$

Step 1: First add the digits in ones place, it is 23 one.

23 one means 2 tens and 3 one, write 3 at ones place and put 2 in tens place.

Step 2: Add the digits in tens place it is 16 ten. 16 ten means 1 hundred and 6 tens. Write 6 tens in tens place and put 1 hundred at hundreds place.

Step 3: Add the digits at hundreds place, it is 15 hundred.15 hundred means 1 thousand and 5 hundred. Write 5 hundred in hundreds place and put 1 thousand in thousands place.

Step 4: At last, add the digits in thousands place. It is 21 thousand. Write 1 in thousands place and put 2 in ten thousands place.

EXERCISE

Add:

a.
$$\begin{array}{r} 4275 \\ 3698 \\ +\ 4351 \\ \hline \end{array}$$

b.
$$\begin{array}{r} 6921 \\ 748 \\ +\ 1563 \\ \hline \end{array}$$

c.
$$\begin{array}{r} 2647 \\ 9356 \\ 8421 \\ +\ 7459 \\ \hline \end{array}$$

d.
$$\begin{array}{r} 2694 \\ 358 \\ 7123 \\ +\ 8654 \\ \hline \end{array}$$

e. 2345 + 3112 + 3422

f. 7245 + 1029 + 812

Teaching instructions: Give additional problems of addition of 4 digit numbers as given above to the students for further practise.

D. VERBAL PROBLEM

Example 1:

Bina has Rs. 21,367, Kamala has Rs. 1,653 and Binod has Rs. 4,672. What will be the sum while mixing the Rs. of three persons at one place.

Here,

Amount with Bina	Rs. 2367
Amount with Kamala	Rs. 1653
and Amount with Binod	Rs. 4672
Total amount	= Rs. 8692

The total amount of three persons = Rs. 8,692.

Example 2

Among four villages 4,783 persons live in Madanpur, 6,792 live in Divyapuri, 8,723 live in Vijaynagar and 9,065 live in Bhubneshwor. How many persons live in four villages?

Here,

In Madanpur	4783
In Divyapuri	6792
In Vijaynagar	8723
In Bhuvneshwor	9065
Total persons	= 29363

EXERCISE

1. Pemba sold 1,545, 1999 and 2,009 oranges. How many oranges did he sell?

2. Ramesh's father, sister and brother work in office. Salary of father is Rs.7,550, sister is Rs. 5,465 and brother is Rs.4,925. How many rupees will be in salary of them?

3. A person buys a television for Rs. 8,650, a bicycle for Rs.2,798, a watch for Rs. 2,827 and a cupboard for Rs. 3979. How much amount did he pay for all these things?

4. 6,954, 7,325, 9,107 and 8,390 persons live in four wards of a municipality . How many persons live in four villages?

5. 9,725 persons in the first day, 8,961 persons in the second day, 7,995 persons in the third day and 6,079 persons in the fourth day participated in the fair at Bhrikutimandap . How many persons participated in that fair?

6. A cow costs Rs. 7,585, a buffalo costs Rs. 9,653, a sheep costs Rs. 2,754 and a goat costs Rs. 1,979. How many rupees will it cost for all these animals?

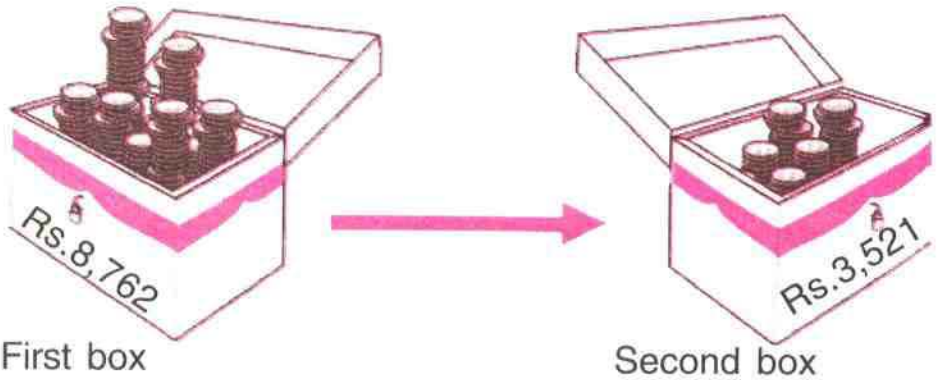
Teaching instructions: Give additional simple verbal problems up to four digits and tell them to solve in a practicl way.

Lesson 8

SUBTRACTION OF FOUR DIGIT NUMBERS

A. SUBTRACTION WITHOUT BORROWING

Look, discuss and learn:



Rs. 3521from Rs. 8,762 of the first box is shifted in the second box . Now tell,how many rupees is left in the first box ? To take small number from a big number is subtraction.

Let us discuss on the above problem:

How mucn money will left if Rs. 31521 is removed from Rs.8762?

First subtract the digit of ones place from the digit of ones place. Similarly, repeat the process for the digits of tens place and for the digits of hundreds and thousands place.

Let us discuss the easy way of above subtraction:

	Thousands	Hundreds	Tens	Ones
	8	7	6	2
–	3	5	2	1
	5	2	4	1

Step 1: Subtract the digit of ones place from the digit of ones place. 2 – 1 = 1.

Step 2: Subtract the digit of tens place from the digit of tens place. 6 – 2 = 4.

Step 3: Subtract the digit of hundreds place from the digit of hundreds place 7 – 5 = 2

Step 4: Lastly, Subtract the digit of thousands place from the digit of thousands place. 8 – 3 = 5.

In this way, subtracting Rs.3521 from Rs.8762 it is Rs.5241.

EXERCISE

Solve:

a.

Thousands	Hundreds	Tens	Ones
8	5	7	6
– 3	2	6	4

b.

Thousands	Hundreds	Tens	Ones
7	9	6	8
– 5	4	3	2

c.
$$\begin{array}{r} 9876 \\ -2351 \\ \hline \end{array}$$

f.
$$\begin{array}{r} 7965 \\ -1204 \\ \hline \end{array}$$

g.
$$\begin{array}{r} 9473 \\ -5021 \\ \hline \end{array}$$

Teaching instructions: Give additional problems of subtraction of four digit numbers without borrowing.

B. SUBTRACTION OF FOUR DIGIT NUMBERS WITH BORROWING

Observe the examples given below, discuss and learn the subtraction:

	Thousands	Hundreds	Tens	Ones
	$\boxed{7}$	$\boxed{14}$	$\boxed{15}$	$\boxed{13}$
		4	5	
	8	5	6	3
−	5	7	8	5
	2	7	7	8

Step 1: First subtract the digit of ones place from the digit of ones place. 5 cannot be subtracted from 3. So, we borrow one ten from tens place. One ten is equal to 10 ones. Adding 3 one and 10 ones it is 13 ones. Now, 5 ones can be subtracted from 13 one. If 5 is subtracted from 13 it is 8.

Step 2: Since one ten was borrowed from 6 at tens place. 5 ten is left at that place. 8 ones cannot be subtracted from 5 ten. So, one hundred is borrowed from hundreds place. 1 hundred means 10 tens. Adding 5 ten and 10 tens it is 15 tens. Subtracting 8 tens from 15 tens it is 7 tens left.

Step 3 : Now, 4 is left in hundreds place. Similarly, 7 hundreds cannot be subtracted from 4 hundreds and so 1 thousand is borrowed from thousands place. 1 Thousand is 10 hundreds. Adding 10 hundreds and 4 hundreds it is 14 hundreds. Subtracting 7 hundreds from 14 hundreds it is 7 hundreds.

Step 4 : At last, 7 is left in thousands place. Subtracting 5 thousands from 7 thousands it is 2 thousands.

EXERCISE

Solve:

a.

Thousands	Hundreds	Tens	Ones
9	2	1	3
− 5	6	8	7

b.

Thousands	Hundreds	Tens	Ones
8	3	5	2
− 5	9	7	8

c. 7983 − 4579

d. 9654 − 1538

e. 4784 − 2399

f. 9631 − 3275

g. 6834 − 2975

h. 9234 − 4658

i. 9765 − 8532

j. 8725 − 6597

k. 7962 − 3785

C. WORD PROBLEM

Example 1

There are 2,561 students in a school. If girls are 1,229, how many are boys?

Here, total students = 2561

number of girls = 1229

number of boys = ?

$$\begin{array}{r} 2561 \\ -\ 1229 \\ \hline 1332 \end{array}$$

There are 1,332 boys in that school.

Example 2

Tara Gurung had Rs. 5,734. She spent Rs. 3,985. How much money had she have?

Here, amount with Tara Gurung = Rs.5,734

amount spent = Rs. 3,985

left amount = ?

$$\begin{array}{r} 5\,7\,3\,4 \\ -\,3\,9\,8\,5 \\ \hline 1\,7\,4\,9 \end{array}$$

Amount left with Tara Gurung Rs. 1,749

Example 3 :

Saurav had Rs. 3,785. Mother gave him some rupees. Now he had Rs.8,321. What amount did his mother give him?

Here, amount with Saurav in the beginning = Rs.3,785

amount with him after mother gave = Rs. 8,321

amount given by mother = ?

$$\begin{array}{r} 8\,3\,2\,1 \\ -\,3\,7\,8\,5 \\ \hline 4\,5\,3\,6 \end{array}$$

Amount given by his mother is Rs.4,536.

EXERCISE

a. Population of Gairigaun was 9,825. Among them 4717 were male, how many were female?

b. Hari Bahadur had Rs.6,724. He bought a bicycle for Rs.4,575. What amount did he have?

c. There were 1520 seats in a cinema hall. 1274 seats were full, how many seats were vacant?

d. There were 3,375 students in a village. Number of girls were 1,996, how many were boys?

e. Dolma had Rs.4,238. She went market to buy a radio. The radio cost Rs.6,125. What amount did she need?

Teaching instructions: *Give the additional problems of subtraction with borrowing at ones place, tens place and hundreds place gradually to practice.*

Lesson 9

SIX DIGIT NUMBERS

Read, discuss and write in your exercise book:

1,00,000 =

lakh	ten thousand	thousands	hundred	ten	one
1	0	0	0	0	0

Here, 1 is in lakh place. So, place value of 1 is = 1 million = 1,00,000

3,56,241 =

lakh	ten thousands	thousands	hundreds	tens	ones
3	5	6	2	4	1

Here,

3 is in lakh place. So, place value of 3 is = 3 lakh = 3,00,000

5 is in ten thousands place. So, place value of 5 is = 5 ten thousand = 50,000

6 is in thousands place. So, place value of 6 is = 6 thousand = 6,000

Total is 56 thousand. Similarly, 2 hundred 4 ten 1 one = 2 hundred 41. So, it is read 3 lakh 56 thousand 2 hundred 41 and in word it is written Three lakh fifty six thousand two hundred forty one.

EXERCISE

1. Fill the following numbers in the place value table and write in words:

a.

1,52,684 =

lakh	ten thousands	thousands	hundreds	tens	ones
1	5	2	6	8	4

One lakh fifty two thousand six hundred eighty four.

b. 3,36,850 c. 5,37,857 d. 7,32,935

2. Write in words:

a. 2,25,462 b. 4,36,907 c. 6,27,832

3. Write in numbers:

a. Three lakh sixty thousand nine hundred seventeen = 3,60,917

b. Five lakh eighty two thousand seven hundred eighty.

c. Six lakh fifteen thousand four hundred sixteen.

A. ORDER OF NUMBER

Read and learn

Which number comes just after 2,39,647?	2,39,648
Which number comes just before 5,35,269?	5,35,268
Which number lies between 8,45,612 and 8,45,614?	8,45,613

EXERCISE

1. Write the numbers which come just after:

   a. 3,67,904 [3,67,905] b. 6,52,853 c. 7,43,318

2. Write the numbers which comes just before:

   a. [2,32,843] 2,32,844 b. 3,56,402 c. 3,67,400

   d. 5,47,815 e. 6,52,885

3. Write the numbers that lie in between of:

   a. 3,45,679 [3,45,680] 3,45,681

   b. 3,76,985 [ ] 3,76987

4. Write the numbers from 1,00,301 to 1,00,325 in orders:

5. Write the numbers from 9,99,950 to 9,99,975 in orders:

B. COMPARISON OF NUMBERS

Use of symbol of less than (<), equal (=) and greater than (>) .

Read and learn:

Which is greater in 3,27,584 and 5,10,278?

Let us see by putting numbers in place value table:

3,27,584 =

lakh	ten thousand	thousand	hundred	ten	one
3	2	7	5	8	4

5,10,278 =

lakh	ten thousand	thousand	hundred	ten	one
5	1	0	2	7	8

Let us see first the digits in lakhs place:

5 is bigger than 3. So, 10,278 > 3,27,584.

Which one is smaller in 9,89,268 and 989,153?

Let us put the numbers in place value table

9,82,268 =

lakh	ten thousand	thousand	hundred	ten	one
9	8	2	2	6	8

9,89,153 =

lakh	ten thousand	thousand	hundred	ten	one
9	8	9	1	5	3

Let us see the digits in lakhs place, they are equal. Then see the digits in ten thousands place, they are also same. Then see the digits in thousands place. 2 is small in 2 and 9. So, 9,82,268 < 9,89,153.

EXERCISE

Copy in your exercise book and put appropriate sign in the box: (<, =, >).

a. 2,78,684 ☐ 2,89,501 b. 5,63,749 ☐ 4,72,304

c. 6,62,384 ☐ 6,62,384 d. 7,48,356 ☐ 8,01,125

B. THE BIGGEST AND THE SMALLEST NUMBER

Read and learn:

Find the greatest and the smallest numbers:

3,12,154 2,56,999 4,36,157

3, 2 and 4 are at lakhs place of the given numbers. Putting them in ascending order:

2,56,999 3,12,154 4,36,157

So, the greatest number is 4,36,157 and the smallest number is 2,56,999.

EXERCISE

1. Copyin your exercise book and encircle the greatest number:

   a. 2,12,318 3,15,316 1,99,186

   b. 4,26,108 4,32,000 5,46,103

2. Copy in your exercise book and encircle the smallest number:

   a. 1,18,151 2,01,912 1,12,316

   b. 3,56,814 5,16,118 4,31,312

3. Write the numbers given in (1) in ascending order:

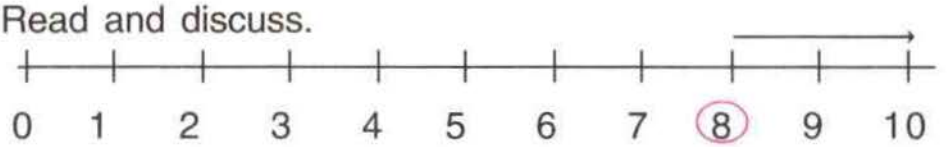
4. Write the numbers given in (2) in descending order:

Lesson 10

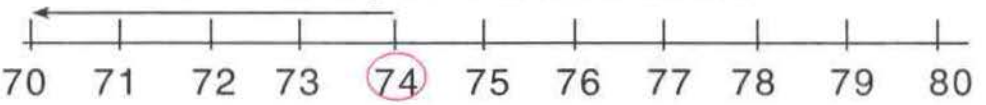
ROUNDING OFF NUMBERS

ROUNDING OFF NUMBERS UP TO 100 TO THE NEAREST 10

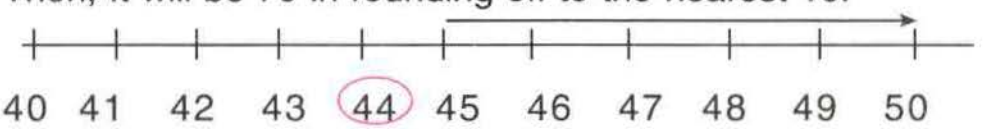
Read and discuss.



Number 8 is near to 10 than 0.
It will be 10 in rounding off to the nearest 10.



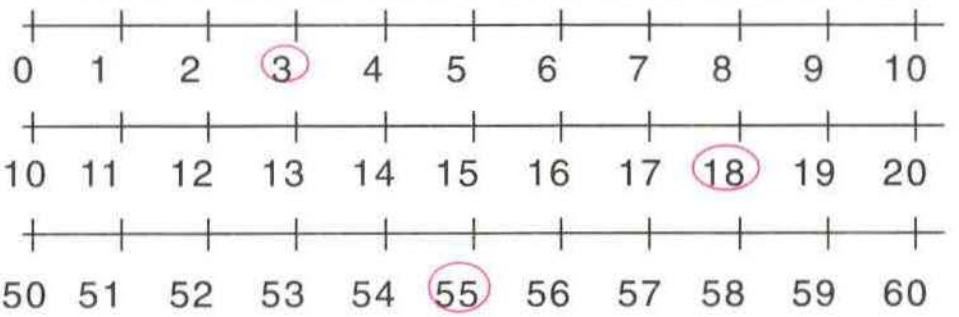
Number 74 is near to 70 than 80.
Then, It will be 70 in rounding off to the nearest 10.



45 is in equal distance between 40 and 50.
It will be 50 in rounding off.

EXERCISE

1. Round off the encircled number to the nearest 10.



2. Round off the following numbers to the nearest10:

   9, 34, 57, 64, 89

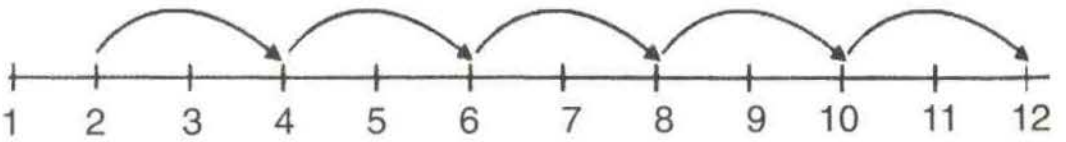
Teaching instructions: Discuss on the method of rounding off by using scale, stick etc..

Lesson 11

EVEN AND ODD NUMBER

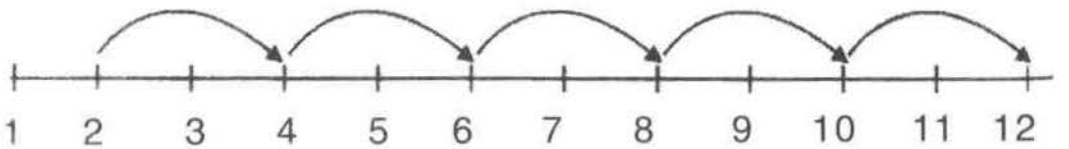
Read and discuss:

Even numbers:



2, 4, 6, 8, 10, 12, etc are the even numbers.

Odd numbers:



1, 3, 5, 7, 9, 11, etc are the odd numbers.

Are the even numbers divisible by 2 without any remainder?

Even numbers are divisible by 2 without remainder.

```
   4          6
2 ) 8      2 ) 12
 - 8        - 12
 ----       -----
   x          x
```

Are the odd numbers divisible by 2 without any remainder?

Odd numbers are not divisible by 2 without any remainder.

```
   4          5
2 ) 9      2 ) 11
 - 8        - 10
 ----       -----
   1          1
```

When the digit at ones place of any number is zero or divisible without any remainder by 2, it is even number. If the digit in ones place is not divisible by 2 without any remainder then it is odd number.

EXERCISE

1. Write only even numbers from the following numbers in your exercise book:

   9, 15, 20, 31, 58, 67, 94, 103, 116, 122

2. Write odd numbers only from the following numbers in your exercise book:

   6, 9, 12, 14, 15, 23, 27, 49, 98, 109

3. Write 4 even numbers which comes after 36 in order.
4. Write 4 odd numbers which come after 97 in order.
5. Is the number that comes just after 27 odd or even?
6. Circle the odd numbers

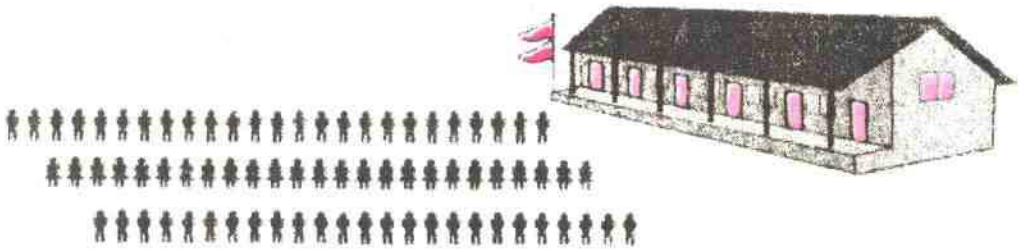
   12, 22, 15, 44, 56, 96

7. Write even numbers between 40 to 60.
8. Write odd numbers between 70 to 90.

Teaching instructions: Tell the students to stand in front of the class dividing them into two groups, odd and even according to their roll numbers.

Lesson 12

MULTIPLICATION



There is a Janata Primary School in New village. There are 25 students in each grade from grade one to three. Discuss, how many students are there in the school?

You have already studied addition, so, let's add:

In grade one	25 persons
In grade two	25 persons
In grade three	25 persons
Total students	75 students

Think the above problem in a different way:

There are equal students in each class. There are 3 such classes. There are 25 students in each class. Therefore, there are 25 students in 3 places and it is 25 x 3.

Does the same result come by both methods, discuss:

25 x 3 = 75

Same result comes by both methods. So, we can say that short form of addition is multiplication.

Teaching instructions: Clear the concept practically using solid objects, pictures and different problems.

A. MULTIPLICATION TABLE

You have studied to construct and say table from 1 to 10 in grade 2.

Multiplication table up to 10

X	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Table of 11 and 12 is given below. How does this table form? Discuss.

11 x 1 = 11	12 x 1 = 12
11 x 2 = 22	12 x 2 = 24
11 x 3 = 33	12 x 3 = 36
11 x 4 = 44	12 x 4 = 48
11 x 5 = 55	12 x 5 = 60
11 x 6 = 66	12 x 6 = 72
11 x 7 = 77	12 x 7 = 84
11 x 8 = 88	12 x 8 = 96
11 x 9 = 99	12 x 9 = 108
11 x 10 = 110	12 x 10 = 120

EXERCISE

1. Write multiplication table of 2 to 10.
2. Multiply by using the multiplication table:

a. 5 x 7 = 35 b. 6 x 8 = ☐

c. 7 x 9 = ☐ d. 10 x 5 = ☐

e. 11 x 7 = ☐ f. 11 x 6 = ☐

g. 11 x 8 = ☐ h. 12 x 8 = ☐

i. 12 x 6 = ☐ j. 12 x 9 = ☐

B. METHOD OF MULTIPLICATION

Multiply 23 by 3:

	Tens	Ones	
	2	3	
	x	3	
		9 ⇒	multiply the digit in ones place by 3. 3 x 3 = 9
+	6	0 ⇒	multiply the digit in tens place by 3. 3 x 20 = 60
	6	9 ⇒	added.

Shortcut method

Tens	Ones	
2	3	first multiply 3 by 3.
x	3	then multiply 2 by 3.
6	9	

Example

Tens	Ones
8	7
x	9

72 ten + 63 one
= 70 ten + 2 ten + 60 one + 3 one
= 7 hundred + 2 ten + 6 ten + 3 one
= 7 hundred + 8 ten + 3 one
= 700 + 80 + 3
= 783

Shortcut method

$$\begin{array}{r} 87 \\ \times\ 9 \\ \hline 783 \end{array}$$

EXERCISE

Multiply:

a.

Tens	Ones
1	2
x	4

b.

Tens	Ones
5	1
x	5

c.

Tens	Ones
4	7
x	6

d.

4	6
x	7

e.

8	6
x	8

f.

7	9
x	9

C. MULTIPLICATION OF TWO DIGIT NUMBERS (WITH CARRYOVER)

Example:

Multiply:

$$\begin{array}{r} 87 \\ \times\ 35 \\ \hline \end{array}$$

Step 1 :

$$\begin{array}{r} 87 \\ \times\ 5 \\ \hline 435 \end{array}$$

Step 2:

$$\begin{array}{r} 87 \\ \times\ 30 \\ \hline 2610 \end{array}$$

$\Rightarrow$

$$\begin{array}{r} 87 \\ \times\ 35 \\ \hline 435 \\ +\ 2610 \\ \hline 3045 \end{array}$$

[Multiply 87 by 30, 0 is added in the number that comes by multiplication of 87 and 3]

EXERCISE

Solve:

a. 48
x 22

b. 56
x 34

c. 85
x 26

d. 64
x 32

e. 94
x 36

f. 98
x 41

Teaching instructions:	Give more exercises to practice. Give the concept of putting zero at ones place while multiplying with the digit at tens place.

B. MULTIPLICATION BY SHORT METHOD

Example:

Solve:

78	
x 47	
546	(multiply by the digit at ones place) (step 1)
+3120	(multiply by the digit at tens place) (step 2)
3666	(add the two products) (step 3)

EXERCISE

Multiply:

a. 59
x 23

b. 76
x 54

c. 68
x 49

d. 78
x 65

e. 67
x 38

f. 39
x 58

E. MULTIPLICATION OF THREE DIGIT NUMBERS BY TWO DIGIT NUMBERS

Example

```
   4 3 5          4 3 5          4 3 5
   x 2 7            x 7          x 2 0
  -------        -------        -------
   3 0 4 5 <----- 3 0 4 5 <----- 8 7 0 0
 + 8 7 0 0 <-------------------
 ---------
 1 1 7 4 5
```

EXERCISE

Multiply:

a. 275 x34

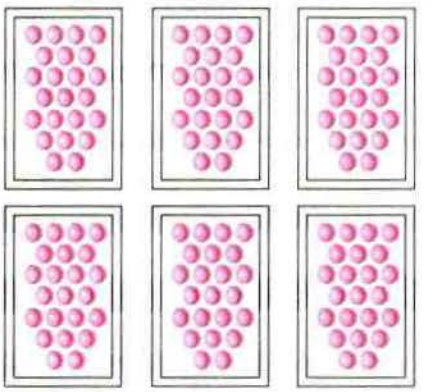
b. 189 x76

c. 319 x65

F. VERBAL PROBLEM:

Read, discuss and learn:

There are 23 oranges in each boxes of the fruits, then how many oranges are there in 6 boxes?



Oranges in the first box = 23

Total boxes = 6

Total oranges =?

Teaching instructions: In the beginning give multiplication with place value and then without place value as given above in the examples:

Now on multiplication:

$$\begin{array}{r} 23 \\ \times\ 6 \\ \hline 138 \end{array}$$

So, there are 138 oranges.

EXERCISE

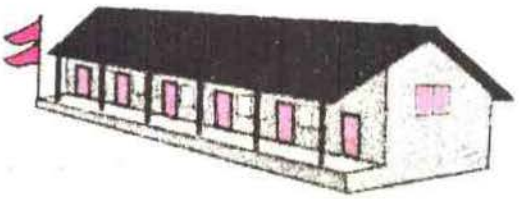
1. A radio costs Rs. 725. What will be the cost of 9 radios?
2. There are 45 seats in a bus. How many seats are there in 15 buses?
3. There are 35 students in a line. How many students are there in 12 lines?
4. There are 55 books in a box. How many books are there in 18 boxes?
5. There are 123 chocolates in a packet. How many chocolates are there in 24 packets?

Teaching instructions: *Give additional simple verbal problems on multiplication and help them to solve in a practical way.*

Lesson 13

DIVISION

Read, discuss and learn:



There are 45 plants planted in the garden of a school. These 45 plants are kept in equal 3 rows. How many plants are there in each row?

Divide 45 by 3.

What is the quotient?

45 is divided by 3 in the right side, where 3 is divisor and 45 is dividend. What is the remainder?

Is it right?

3	x	15	=	45
divisor		quotient		dividend

It is right when the remainder is 0 (zero).

There are 15

```
                 15  quotient
divisor  3 ) 45  dividend
            - 3
            ----
              15
            - 15
            ----
               0
```

A. DIVISION OF TWO DIGIT NUMBERS BY ONE DIGIT NUMBERS (WITHOUT REMAINDER)

Example:

63 ÷ 9

$$\begin{array}{r} 7 \\ 9\,\overline{)\,63} \\ -\,63 \\ \hline x \end{array}$$

Now

63 ÷ 9 = 7

Let us check

divisor x quotient = dividend

9 x 7 = 63

Remember multiplication of 9

9 x 1 = 9
9 x 2 = 18
9 x 3 = 27
9 x 4 = 36
9 x 5 - 45
9 x 6 = 54
9 x 7 = 63
9 x 8 = 72
9 x 9 = 81
9 x 10 = 90

EXERCISE

Divide and check:

1. a. $6\,\overline{)\,48}$ b. $7\,\overline{)\,49}$ c. $8\,\overline{)\,56}$
   d. $9\,\overline{)\,45}$ e. $5\,\overline{)\,45}$ f. $8\,\overline{)\,64}$

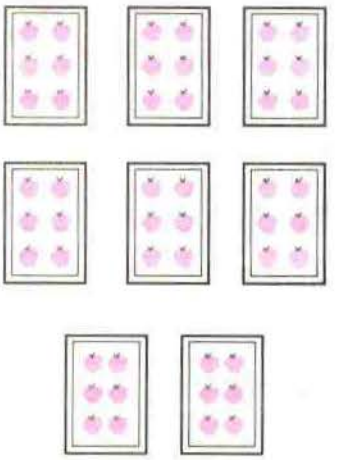
2. a. 48 ÷ 8 b. 56 ÷ 7 c. 81 ÷ 9
   d. 72 ÷ 9 e. 54 ÷ 6 f. 63 ÷ 7

B. DIVISION OF TWO DIGIT NUMBERS BY ONE DIGIT NUMBERS (WITH REMAINDER)

There are 45 apples in a big box along side. There are 7 persons,think how many apples each person gets.

Giving the apples equally to 7 persons, each person get 6 apples and is there any apples left in the box?

Now, solving this problem in short,



Total apples = 45

Total persons = 7

Giving 6 apples to 7 persons 3 apples are left. This 3 is the remainder.

```
      6
  7 ) 45
    - 42
      3 dividend
```

Remainder is always less than divisor.

Now, checking the above problem.

(Divisor x Quotient) + Remainder = Dividend

(7 x 6) + 3 = 45

42 + 3 = 45

45 = 45

Example:

Divide and check:

```
      9
  8 ) 76
    - 72
      4
```

Check

(Divisor x Quotient) + Remainder = Dividend

(8 x 9) + 4 = 76

72 + 4 = 76

76 = 76

EXERCISE

Divide and check:

1. $7\overline{)68}$ 2. $6\overline{)57}$ 3. $8\overline{)77}$

4. $8\overline{)61}$ 5. $9\overline{)85}$ 6. $9\overline{)75}$

Teaching instructions:	Give the concept of division by giving more examples as given above. Give additional problems topractice.

C. DIVISION OF THREE DIGIT NUMBERS BY TWO DIGIT NUMBERS.

Example 1:

315 ÷ 15

Divide:

```
      21
15 ) 315
   - 30
     15
   - 15
      x
```

Check:

Divisor x Quotient = Dividend

15 x 21 = 315

315 = 315

Example 2:

565 ÷ 27

Divide:

```
      22
27 ) 575
   - 54
     55
   - 54
      1
```

Check:

Divisor x Quotient + remainder = dividend

27 x 22 + 1 = 595

594 + 1 = 595

= 595

EXERCISE

Divide and check:

a.	255 ÷ 17	b.	513 ÷ 19	c.	638 ÷ 22
d.	368 ÷ 15	e.	412 ÷ 21	f.	529 ÷ 32

Teaching instructions: Tell the students to guess how many times is it divided by the two digit numbers. After this, tell them to divide. Give similar problems for more practice.

D. VERBAL PROBLEMS

Example:

If Rs.450 is divided equally to 18 students, how many does each get?

Amount to be divided = Rs. 450

total students = 18

Dividing

```
      25
18 ) 450
     36
     ---
      90
      90
     ---
       x
```

So, each gets Rs. 25.

EXERCISE

1. Divide 408 copies equally among 17 students, how many copies does each get?

2. 25 goats can be kept in a pen, how many pens will be needed for 475 goats?
3. There are 735 mangoes in a box of fruits. How many mangoes does each person get if it is divided equally to 35 persons?
4. How many rows will be needed to keep 680 students if 40 students are kept in a row?

MIXED EXERCISE

1. Fill appropriate number in the blanks:

a. ☐ x 15 = 345

b. 12 x ☐ = 348

c. 525 ÷ ☐ = 15

d. ☐ ÷ 16 = 21

e. ☐ ÷ 25 = 25

f. 855 ÷ ☐ = 19

2. Solve the following problems:

a. Which number must be multiplied by 16 to get 172?

b. By which number 625 is to be divided to get the quotient 25?

c. Which number is to be divided by 12 to get the quotient 216?

Teaching instructions: Give simple verbal problems and practice as given above.

Lesson 14

HINDU ARABIC NUMERALS

Read, discuss and learn:

A. We write ०, १, २, ३, ४, ५, ६, ७, ८ and ९ in Devnagari. These digits are written 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 in the Hindu Arabic.

Write ४,५३,२६८ in Hindu Arabic.

Devnagari	४	५	३	२	७	८
Hindu Arabic	4	5	3	2	7	8

Hence, ४,५३,२६८ is 4,53,278 in Hindu Arabic.

Now we write 4,53,278 in English.

ten lakh	lakh	ten thousand	thousand	hundred	ten	one
	4	5	3	2	7	8

Writing 4,53,278 in English with the help of above table.

= Four lakh fifty three thousand two hundred and seventy eight.

Example 1: Write ..... in Hindu Arabic and English.

Answer: .....is written 39,53,784 in Hindu Arabic.

Putting the numbers in place value table

ten lakhs	lakhs	ten thousands	thousands	hundreds	tens	ones
3	9	5	3	7	8	4

In English:

Thirty-nine lakh fifty three thousand seven hundred and eighty-four.

Teaching instructions: First, compare the digits of Devnagari with Hindu Arabic. Then teach them to convert from Devanagari to Hindu Arabic one by one.

EXERCISE

Write the following numbers in Hindu Arabic:

a. ४३,८२,०३४

Answer: 43,82,034

b. ६२,८८,२३० c. ७३,४०,०००५ d. ७९,२०,५५०

2. Put the following Hindu Arabic numbers in place value table and write in English.

a. 40,72,802

Answer: Putting this in place value table.

ten lakhs	lakhs	ten thousands	thousands	hundreds	tens	ones
4	0	7	2	8	0	2

40 lakhs 72 thousands 8 hundreds 0 tens and 2 ones.

Four lakh seventy two thousand eight hundred and two.

b. 53,47,009 c. 43,27,849 d. 94,24,777

3. Write the following numbers in Hindu Arabic:

a. Seventy one lakh forty four thousand one hundred and four.

Answer: 71,44,104

b. Ninety lakh twenty- three thousand five hundred and seventy six.

c. Ninety seven lakh sixty thousand five hundred and three.

d. Fifty lakh three thousand and nine.

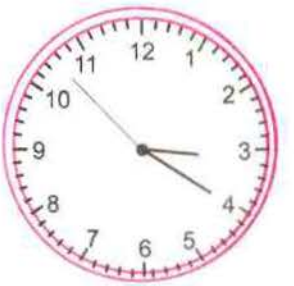
e. Twenty two lakh eighty four thousand.

TIME

A. TIME IN HOUR AND MINUTE

Read and learn:

There are three hands in the clock. The shortest hand denotes hour. The longer hand denotes the minute. The thinnest hand denotes seconds. Minute hand takes 5 minutes to reach from one number to the next. So, the minute hand takes 5 minute to reach at 1 from 12. Similarly, to reach at 12 from 12 it takes 60 minutes. One hour is of 60 minutes. The hour hand takes 1 hour to reach at 1 from 12. So, the hour hand takes 12 hours to complete one round.



In the clock alongside, the minute hand is at 4. The hour hand has crossed 3. Count minute from 12. Count hour hand from 12. It is 20 minutes from 12 to 4. So, the clock shows 20 minutes past 3. It is written 3:20

Example:

In this clock, it is 50 minutes past 7. This means it is 7:50.

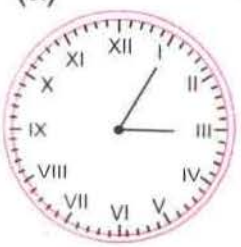
Teaching instructions: Use real clock, model clock and clock that shows different time and tell students to read and write time observing the clocks. You can use digital watches for practice.

EXERCISE

1. Write the time in the following clocks:

a.

It is 5 minutes past 8. It is 8:05.

(a) 

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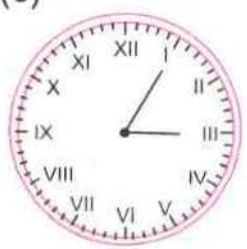
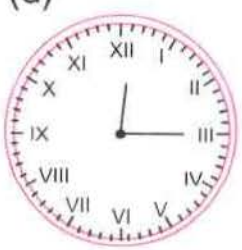
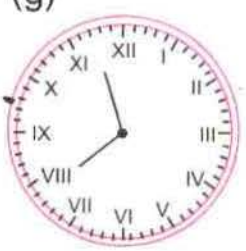
(c) 

(d) 

(e)

(f)

(g) 

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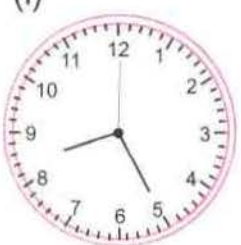
(i) 

(j)

(k)

(l)

2. How many minutes are left to 5 in the following clocks?

B. DAY, WEEK, MONTH AND YEAR

The time from today's sunrise to tomorrow's sunrise is called one day. 1 day includes both day and night. There are 24 hours in 1 day.

Calendar of Mangsir, 2064

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

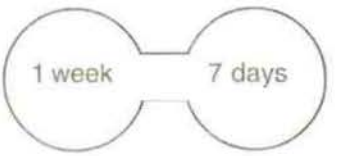
Read these facts and learn:

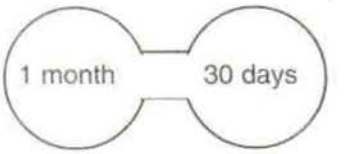
1 day = 24 hours

7 days = 1 week

30 days = 1 month

12 months = 1 year





Let us calculate using the above facts:

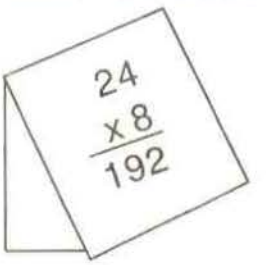
Convert the day in hour:

In 1 day, there are 24 hours. How many hours are there in 8 days?

Answer: 1 day = 24 hours

8 days = 24 x 8 hours

= 192 hours



So, there are 192 hours in 8 days.

Conversion of week in days:

In 1 week, there are 7 days. How many days are there in 4 weeks?

Answer: 1 week = 7 days

4 weeks = 4 x 7

= 28 days

Conversion of month in days:

In a month, there are 30 days. How many days are there in 6 months?

Answer: 1 month = 30 days

5 months = 30 x 6

= 180 days.

Teaching instructions:	Discuss, with the students about the days of a month, days of a week and months of a year with the help of real calendar. In some months there are more than 30 or less than 30 days but in calculation it is taken as 30 days. Teach them to convert week into days and gradually move to the difficult one.

EXERCISE

1. There are 24 hours in 1 day. How many hours are there in 9 days?
2. There are 24 hours in 1 day. How many hours are there in 20 days?
3. There are 7 days in 1 week. How many days are there in 10 weeks?
4. There are 7 days in 1 week. How many days are there in 52 weeks?
5. Convert the days into hours:

   a. 3 days b. 15 days c. 150 days
6. Convert the weeks into days:

   a. 5 weeks b. 8 weeks c. 102 weeks

7. Convert the months in days:

   a. 5 months b. 10 months c. 11 months

8. How many days are there from 5 Jestha to 26? Count the days and convert in hours.

9. Observe the calendar of this year. Select any 6 months and add the days of these months .

10. Look the calendar of this year and find the days. Discuss and write.

    a. Falgun

    b. Ashad and shrawan

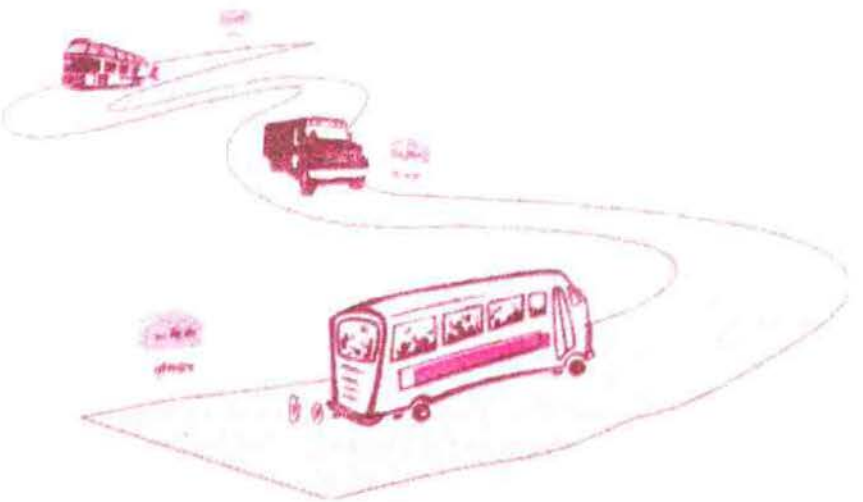
    c. Poush, magh and falgun

Teaching instructions: Give additional exercises as given above and tell the students to practice.

C. ADDITION AND SUBTRACTION OF TIME

Read, discuss and learn:

It takes 7 hour and 15 minutes for a bus to reach Kathmandu from Pokhara. It takes 1 hour and 30 minutes to reach Dhulikhel from Kathmandu. How much time will it take to reach Dhulikhel from Pokhara?



Pokhara – Kathmandu = 7 hour 15 minutes

Kathmandu – Dhulikhel = 1 hour 30 minutes

Now add these two times,

	7 hour 15 minutes	minute is added with minute
+	1 hour 20 minutes	hour is added with hour
	8 hour 35 minutes	

Total time to reach Dhulikhel from Pokhara is 8 hours 35 minutes.

Example:

Solve:

a.

days	hours	minutes
5	14	18
+ 18	5	10
23	19	28

b.

months	days
7	17
+ 4	2
11	19

Solve:

a.

hours	minutes
6	15
+ 3	10
3	5

b.

months	days	hours
4	6	25
+ 4	2	13
x	4	12

Note: Addition and Substraction are possible only for day and day, hour and hour, week and week and month and month.

EXERCISE

1. Solve:

a.
7 hour	13 minute
+ 5 hour	14 minute

b.
15 hour	18 minute
+ 8 hour	41 minute

c.
months	days	hours
8	14	20
+ 2	10	3

d.
months	days	hours
8	20	11
+ 3	1	10

2. Solve:

a.
months	days
5	16
– 2	8

b.
days	hours
27	13
– 19	9

c.
hours	minutes
18	45
– 9	28

c.
months	days	hours
12	13	11
– 10	8	7

e.
weeks	days	hours
52	16	18
– 48	7	9

3. Ram ploughed a field for 3 days and 2 hour and Sita ploughed for 2 days and 5 hour. How long was the field ploughed?

4. It takes 5 days and 7 hour to knit a carpet. Pema knitted the carpet for 3 days and 2 hours. How long does it take to knit the carpet?

Teaching instructions: Give the students additional exercises as given above. Also tell them to make questions of their own and solve.

Lesson 16

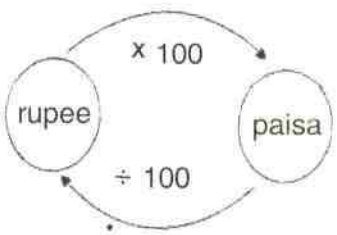
MONEY

(A) Conversion of Rupee and Paisa

Read and learn:

Bimala has Rs. 17 and 50 paisa, then how can the amount with her be changed into paisa. Let us discuss.

How many paisa are there in 1 rupee? How many paisa will be of 17 rupees? What should we do to convert 17 rupees into paisa. Discuss.



Method of converting rupees and paisa

1 rupee is equal to 100 paisa.

To convert the rupees into paisa, multiply by 100.

To convert paisa into rupees, divide by 100.

Convert Rs.7 and 65 paisa into paisa:

Rs.7 and 65 paisa = Rs.7 + 65 paisa

= 7 x 100 paisa + 65 paisa

= 700 paisa + 65 paisa

= 765 paisa

Convert 575 paisa into rupees and paisa:

575 paisa = 500 paisa + 75 paisa

= Rs. 5 + 7 paisa

= Rs. 5 and 75 paisa

Teaching instructions: Discuss on the short method of converting rupees and paisa (dividing by 100 and multiply by 100) . For example:Practice on 2 x 100 = 200, 5 x 100 = 500 and 500 ÷ 100 = 5, 1500 ÷ 100 = 15 etc.

EXERCISE

1. Convert into paisa:

   a. Rs. 15 b. Rs.53 c. Rs. 157

   d. Rs. 23 and 50 paisa e. Rs.333 and 33 paisa.

2. Convert into rupees and paisa:

   a. 200 paisa b. 150 paisa c. 475 paisa

   d. 678 paisa e. 524 paisa f. 840 paisa

   g. 544 paisa h. 999 paisa i. 1025 paisa

   j. 1073 paisa k. 1245 paisa l. 1830 paisa

B. ADDITION OF RUPEES AND PAISA:

Read and learn:

Shila had Rs. 52 and 25 paisa. Her father gave her Rs.50 and 50 paisa. How much money did Shila have?

Amount with Shila	Rs. 52 and 25 paisa
Amount given by father	+ Rs. 50 and 50 paisa
Total amount	Rs. 102 and 75 paisa

> Rupee is added with rupee. Paisa is added with paisa. Similarly, in subtraction rupee is subtracted from rupee and paisa is subtracted from paisa.

Example:

Solve:

Rupees	Paisa
105	57
– 18	13
87	44

Teaching instructions: Organize a short play in a classroom to give the concept of rupees and paisa spent in shopping practically.

EXERCISE

1. Solve:

a.

Rupees	Paisa
63	70
+ 15	5

b.

Rupees	Paisa
632	45
+ 132	35

c.

Rupees	Paisa
888	10
+ 456	65

2. Solve:

a.

Rupees	Paisa
75	90
− 62	75

b.

Rupees	Paisa
342	18
− 243	10

c.

Rupees	Paisa
782	90
− 623	65

3. Hari earns Rs.105 and 75 paisa in a day. Rita earns Rs. 90 and 15 paisa in a day. What will be the amount if their earnings are collected at one place?
4. A book costs Rs.101 and 50 paisa. A copy costs Rs.25 and 30 paisa. What is the cost of the book and copy?
5. Chhotu Chaudhary had Rs.522 and 50 paisa.He spent Rs.115 and 50 paisa in the shopping. What amount did he have?
6. Pasang had Rs.962 and 70 paisa. She bought a geometry box for Rs. 75 and 25 paisa. What amount is left with her?

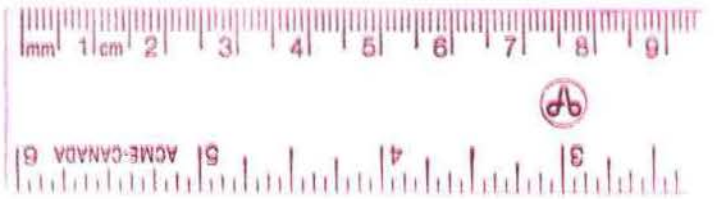
Lesson 17

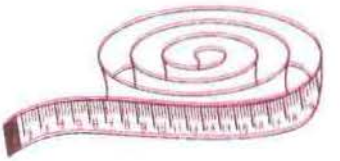
DISTANCE

A. UNITS OF LENGTH

Read and learn:

The length between two places is called distance. We use centimeter, meter, kilometer to measure distance. The ruler or tape are used to measure distance or length.





How long are the lines below?

Measure with ruler and tell.

100 centimeter = 1 meter or 1 meter = 100 centimeter
In short 100cm = 1m or 1m = 100 cm

Activities

1. How long is your bench? Tell by measuring with ruler or tape.
2. What is the distance of two corners of your classroom? Tell by measuring with ruler or tape.
3. Make a straight line by joining hands of all students in your class. Mark the beginning and the end of the line. Find the distance between the marked signs.

EXERCISE

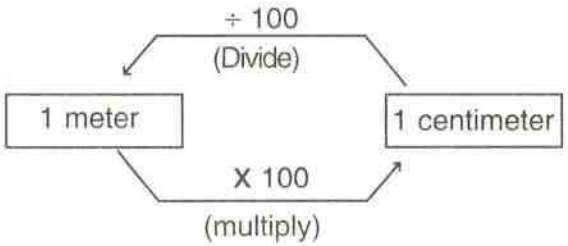
Find the measurements by measuring with the ruler or tape.

1. Length of the blackboard of your classroom.
2. Height of the door of your classroom.
3. Height of tallest and shortest friend of your classroom.
4. Your height.

Teaching instructions:	Along with the problems in activities and exercises give additional problems and tell them to find distance with your direct. Use measurement in whole numbers only.

B. CONVERION OF METER AND CENTIMETER

Sometimes, when length is very long or short, meter is changed into centimeter and centimeter into meter. 100 centimeter is equal to 1 meter so, we multiply by 100 to convert meter into centimeter. We divide by 100 to convert centimeter into meter.



The distance of the houses of Hari and Gita is 70 meters. What is the distance in centimeters, find:

Distance of houses of Hari and Gita is 70 metres.

1 meter = 100 c.m.

70 meters = 100 x 70 c.m.

= 7000 c.m.

Convert 50 meter and 70 centimeter into centimeter.

= 50 meter 70 centimeter

= 50 x 100 c.m. + 70 c.m.

= 5000 c.m. + 70 c.m.

= 5070 c.m.

Note: meter is denoted by m and centimeter by c.m.

B. ADDITION AND SUBTRACTION OF LENGTH

Distance of the school from the house of Rita is 320 meter 65 centimeter. Distance of health post from school is 125 meter 20 centimeter. What distance will she walk to reach the health post through school from house?

distance of school from house = 320 m. 65 c.m.

distance of health post = 125 m. 20c.m.

Adding,

320 meter 65 c.m.

\+ 125 meter 20 c.m.

445 meter 85 c.m.

So, she walked total 445 meter 85 c.m.

Solve:

a.

Meter	centimeter
15	50
+ 118	37
137	87

b.

meter	centimeter
214	77
+ 18	59
196	18

EXERCISE

1. Convert into centimeter

a. 53 meter b. 900 meter c. 30m. 20 cm.

d. 12 m. 15 c.m. e. 55 m. 24 c.m. f. 219 m. 75 c.m.

g. 320 m. 95 c.m.

2. Add:

a. 20 m. 55 c.m.	b. 90 m. 30 c.m.	c. 417 c.m. 11 c.m.
+ 15m. 18 c.m.	+ 50 m. 33 c.m.	+ 315 m. 44 c.m.

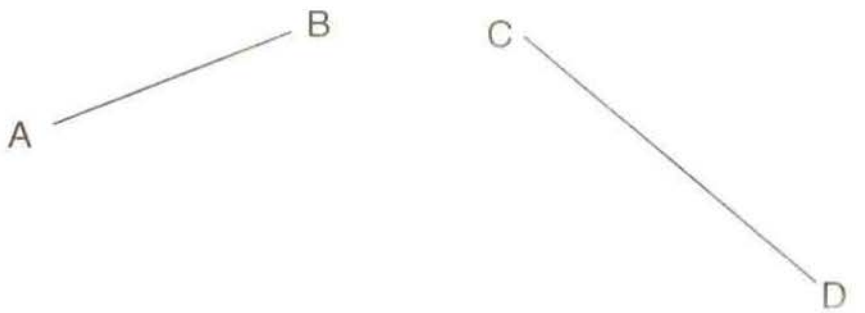
3. Subtract:

a. 314 m. 10 c.m.	b. 48 m. 90 c.m.	c. 94m. 70 c.m.
− 48 m. 10 c.m.	− 30 m. 88 c.m.	− 79 m. 48 c.m.

4. Ram walked 743 m. 50 cm. in 9 minutes. Gita walked 645m. 30 cm. in the same period. How much more distance Ram walked than Gita?

5. A string is 5 meter 15cm. long. Another string is 7 meter 25 cm. long. If both strings are joined. What will be the length?

6. Measure the lines AB and CD. Find the sum of their length.



Lesson 18

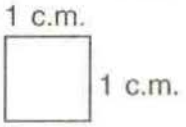
AREA

A. CONCEPT OF AREA

Read, discuss and learn:

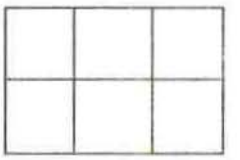
The place covered by the surface of any object is called the area of that surface. Big surface has more area. Small surface has less area. Find which area is bigger in the surface area of match box and surface area of a book.

B. METHOD OF FINDING AREA BY COUNTING SQUARE ROOM.



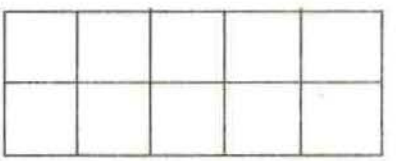
This is square. Its every side is of 1 cm. Its area is 1 square c.m.

How many square rooms have covered the rectangular figure at right, count:



In this figure, there are 6 rooms of 1 square c.m., So, its area is 6 square c.m.

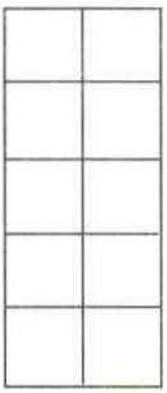
- How many square rooms are there in the figure at right?
- If each room is of 1 square c.m., What is the area of the figure in square c.m.?



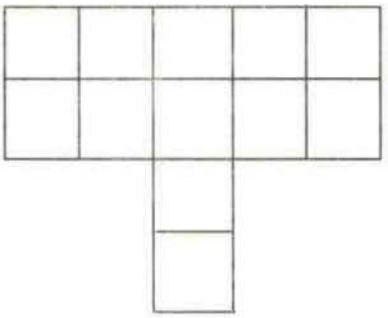
EXERCISE

1. Count the rooms of 1 square c.m. in the following figures and find the area.

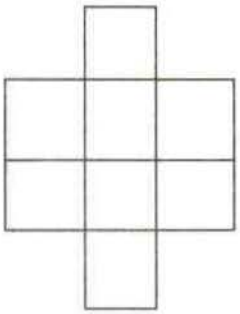
(A)



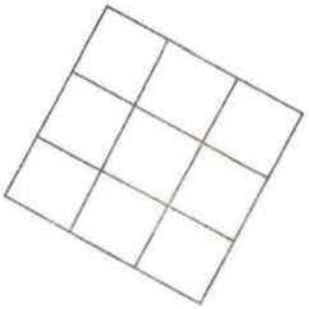
(B)



(C)

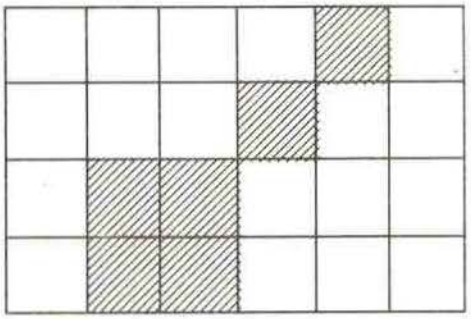


(D)

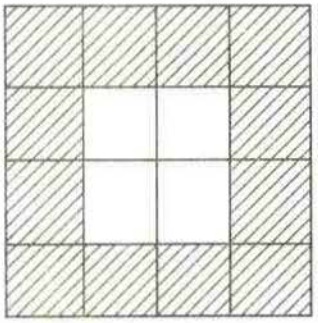


2. Find the area of shaded and not shaded parts in square cm.

(A)



(B)



Teaching instructions: Give the students additional exercises as given above with the help of geo-board. Ask questions with square meter and meter to find area.

Lesson 19

CAPACITY

Read, discuss and learn:

The extent of amount of liquid in a pot is known as the capacity of the pot. A big pot contains much liquid. So, its capacity is also more than small pot.

In which pot given at right is more water?

Which pot has more capacity?

The capacity of pots is measured in millilitre (ml) or litre(l). Standard pots are used to measure capacity. Some standards pots are given:

100 mℓ 200 mℓ 500 mℓ 1 ℓ

Activity:

Fill a pot of 1 litre by 100 ml pot. How many pots are needed to fill it?

Is the pot filled in 10 times?

100mℓ in 10 times is 1000 mℓ.

Discuss.

1000millilitre = 1 litre or 1 litre = 1000 millilitre

In short, 1000 mℓ = 1 ℓ or 1 ℓ = 1000mℓ.

Bring a big galloon. Fill the galloon using standard pots.

Find the amount of water in the gallon in litre or millilitre. What is the capacity of the gallon?

Teaching instructions: Tell the students to collect pots available at local level. Let them fill the pots by standard pots of measuring capacity and find the capacity of those pots.

A. ADDITION AND SUBTRACTION OF CAPACITY

1. Capacity of a bucket is 5 ℓ 300 mℓ. Capacity of another bucket is 7 ℓ 200ml. What is the capacity of both buckets?

   Capacity of first bucket = 5 ℓ 500 mℓ

   Capacity of second bucket = 7 ℓ 200 mℓ.

Adding:

5 ℓ 300 mℓ	Adding mℓ. with mℓ.
+ 7 ℓ 200 mℓ	Adding ℓ. with ℓ.
12 ℓ	500 mℓ

So, total capacity of both buckets = 12 ℓ .500 mℓ.

2. Subtract:

500 ℓ. 250 mℓ.	Subtract mℓ. from mℓ.
170 ℓ . 188 mℓ.	Subtract ℓ. from ℓ.
330 ℓ.	62 mℓ.

EXERCISE

1. Fill the pot of 1 litre by a pot of 100 mℓ. and find in how many times the pot is filled.

2. Collect the pots of 1 litre, 2 litre, 3 litre and 4 litre. Fill these pots by a pot of 500 mℓ. and find in how many times the pots are filled.

3. In how many times is a jug filled by a pot of 100ml.?

Teaching instructions: Tell the students to guess the capacity of pots at their homes like glass, jug, gagri, dekchhi, etc.

4. Guess the capacity of the pots in 100ml.?

5. Capacity of a glass is 300 ml. Capacity of another glass is 400ml. What is the capacity of both glasses?

6. In how many times is a pot of capacity 1 litre be filled by a pot with capacity of 200ml.?

7. Add:

a.
$$\begin{array}{r} 5\ \ell\ 200\ m\ell. \\ +\ 18\ \ell\ 350 m\ell. \\ \hline \end{array}$$

b.
$$\begin{array}{r} 66\ \ell.\ 66\ m\ell. \\ +\ 22\ \ell.\ 55\ m\ell. \\ \hline \end{array}$$

c.
$$\begin{array}{r} 540\ \ell.\ 730\ m\ell. \\ +\ 230\ \ell.\ 150\ m\ell. \\ \hline \end{array}$$

8. Subtract:

a.
$$\begin{array}{r} 30\ \ell.\ 143\ m\ell. \\ -\ 28\ \ell.\ 129\ m\ell. \\ \hline \end{array}$$

b.
$$\begin{array}{r} 90\ \ell.\ 943\ m\ell. \\ -\ 57\ \ell.\ 248\ m\ell. \\ \hline \end{array}$$

c.
$$\begin{array}{r} 444\ \ell.\ 902\ m\ell. \\ -\ 179\ \ell.\ 397\ m\ell. \\ \hline \end{array}$$

9. There is 50 ℓ. 300ml. water in a big drum. If 5 ℓ. 200ml. water is deducted, What amount of water will be left?

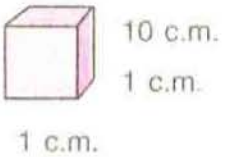
10. Capacity of a gallon is 5 ℓ 700 mℓ. If 2 ℓ 200 mℓ. water was drunk, What amount of water will be left?

Teaching instructions: Use different pots of different capacity to develop the concept of addition and subtraction. Using these pots tell them to compare, add and subtract the capacity.

VOLUME

(A) Volume (in cube cm.)

Read, discuss and learn:



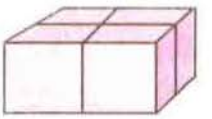
The figure alongside is of cube.

Its all sides are 1 cm.

It's volume is 1 cubic cm.

Example 1

What will be the volume of the block?

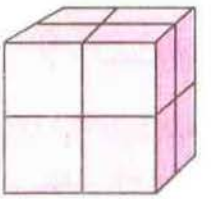


The given block is made of 4 cubes each of volume 1 cubic cm.

So, the volume of the block is 4 cubic c.m.

Example 2

What will be the volume of the given figure?



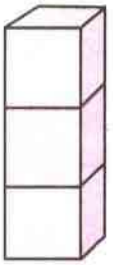
The given block is made of 8 cubes of volume 1 cubic cm. each.

So, the volume of the block is 8 cubic c.m.

EXERCISE

Count the following block of volume 1 cubic c.m. and find the volume of the block:

a.



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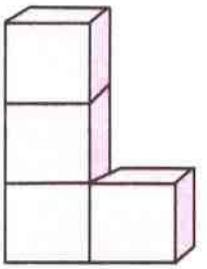
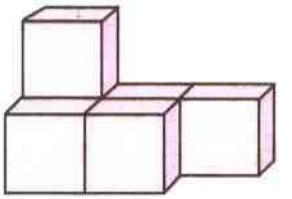


c.



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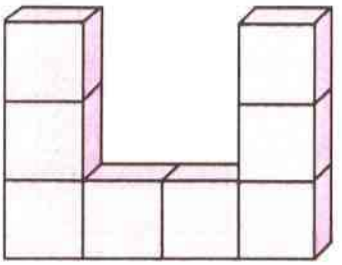

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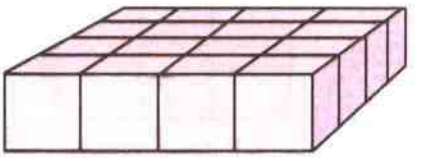

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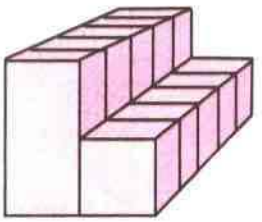
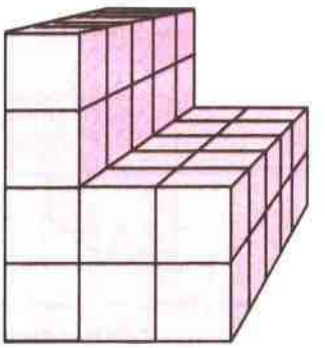


g.



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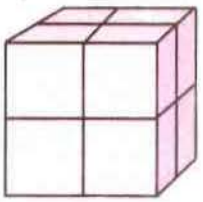
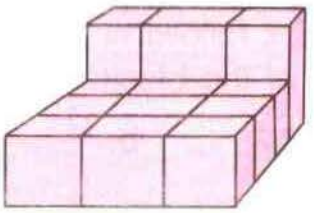


i.



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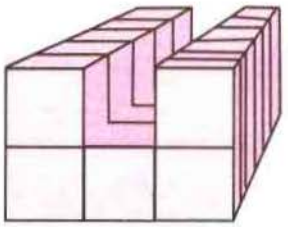

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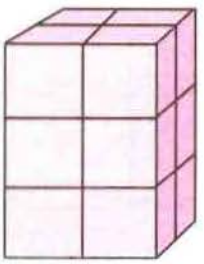

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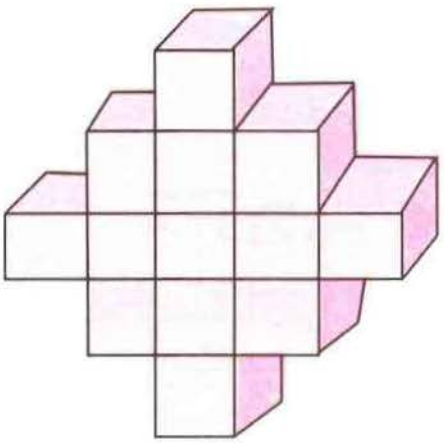
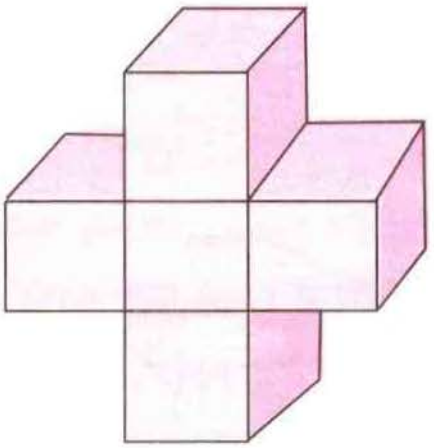


m.



Teaching instructions: Tell the students to count the blocks of volume 1 cubic c.m. Discuss on the problem of finding the volume of the whole block. Give additional exercises as given above and ask them to do practically.

Lesson 21

WEIGHT

A. STANDARD WEIGHT AND THEIR USE

Look at the given weight, read and learn:

The weight of 2 dhak of 500 grams = 1000 grams = 1 kilogram

Weight of 10 dhak of 100 grams = 1000 grams = 1 kilogram

- With the help of weight of an object it can be said whether the object is heavy or light?
- Heavy objects have more weight. Light objects have less weight.
- To measure the weight of objects, balance and weights are used.

Note: 1000 grams = 1 kilogram or 1 kg = 1000 grams

Activity 1: How many weights of 50 grams is equal to 1 kilogram, discuss and find.

Activity 2: Take 1 kg weight in your hand. Guess that the things around you like a book, a bag, etc. are how many times heavy or light?

Teaching instructions: Weight the objects found around the house and school like: fruits, pots, books, bags using the weights of 50 grams and 1 kg and tell the students to guess whether the objects are heavy or light.

B. CONVERSION OF KILOGRAM INTO GRAMS

We know,

1 k.g. is equal to 1000 grams.

To convert kilogram into grams multiply by 1000.

1 k.g. = 1 x 1000 grams

Example 1:

Convert 5 kg into gm.:

1 kg = 1000 grams

5 kg = (1000 x 5) grams

= 5000 grams

Example 2:

Convert 15 kg 200 grams into grams:

15 kg + 200 grams

= (1000 x 15) grams + 200 grams

= 15000 grams + 200 grams

= 15200 grams

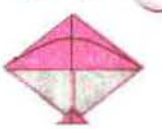
EXERCISE

1. Guess whether the weight of the folowing objects is more or less than 1 kg:

a. Spectacle

b. bicycle

c. Chair

d. kite 

2. Convert into grams:

a. 2 kg b. 4 kg c. 7 kg d. 28 kg

e. 3 kg 15 grams f. 13 kg 570 grams

Teaching instructions: Give additional exercises as above on the blackboard and copy and let them to practice:

MIXED EXERCISE

1. Solve:

   a. 5 days 17 hours 35 minutes
      + 18 days 3 hours 18 minutes

   b. 13 months 18 days 15 hours
      - 5 months 10 days 3 hours

   c. A farmer takes 5 days and 15 minutes to plough a field. If he worked for 3 days 10 minutes, How much time will remain to work?

2. Solve:

   a. 50 rupees 70 paisa
      + 124 rupees 15 paisa

   b. 24 rupees 18 paisa
      + 22 rupees 10 paisa

   c. Hari had 30 rupees. His mother added Rs. 15 and 50 paisa. How much amount did Hari have?

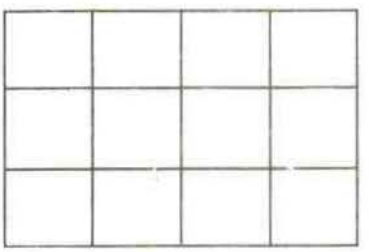
3. Solve:

   a. 33 meter 55 c.m.
      + 47 meter 22 c.m.

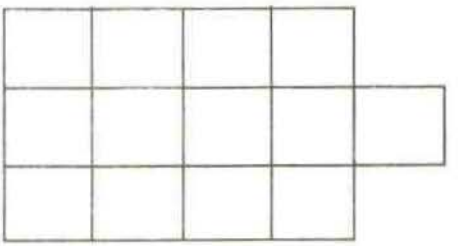
   b. 102 meter 90 c.m.
      + 97 meter 77 c.m.

4. Write the area of the following picture in square c.m

   (a)



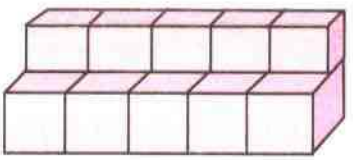
   (b)



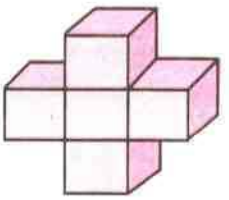
5. The capacity of a jug is 1 litre 250 ml. The capacity of a glass is 600ml. If a pot is completely filled by the water of both pots, find the capacity of the pot.

6. Find the volume of the whole block by counting the blocks of volume 1 cubic c.m. in the figures below:

(a)



(b)

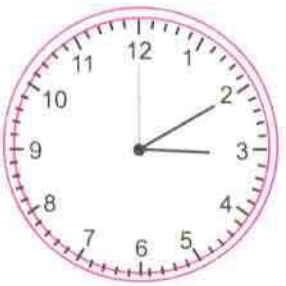


7. Weight of a Pumpkin is 3 kg 68 grams. Convert the weight into grams.

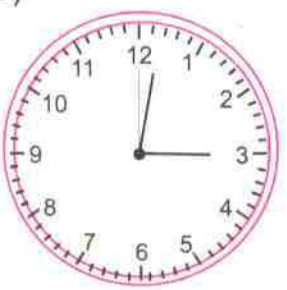
8. Sungma walked 500m 30 c.m. to reach school from house. She walked 30 meter 53 c.m. to a shop from the school, how long did she walk?

9. Write the time denoted by the clocks below:

(a)



(b)



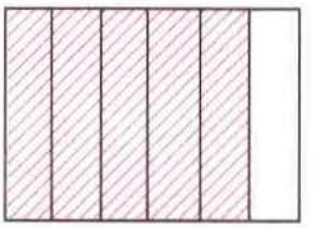
10. Dilu went to the friend's house at 7 o'clock. If she needed 2 hours and 15 minutes to reach there, when did she reach at her friends house?

Lesson 22

FRACTION

A. CONCEPT OF NUMERATOR AND DENOMINATOR.

Look, read, disuss and learn:



- How many rooms are there in the figure?
- Are all the rooms equal to each other?
- Can you write the shaded part in fraction?
- What will be written for non shaded part in fraction?

The shaded part in fraction = $\frac{\text{Shaded parts}}{\text{Total parts}} = \frac{5}{6}$

So, the shaded parts = $\frac{5}{6}$ (numerator) (denominator)

This means 5 parts out of 6 equal parts.

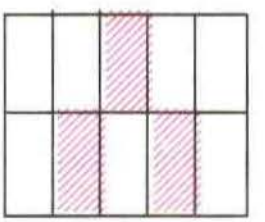
In the fraction $\frac{5}{6}$, 5 is the numerator and 6 is the denominator.

It is read as 6 under 5.

What will be written for the non shaded parts in fraction?

Find numerator and denominator.

Discuss as above for the given figure:



Draw a figure as above. Write the fractions to show shaded and non shaded parts. Discuss with your friends and find numerator and denominator.

Teaching instructions: First of all tell the students to make figures and write the fractions learned in class 2. Then give additional exercises to discuss. Give other exercises using different models and objects to in write fractions in a practical way.

EXERCISE

1. Read the following fractions and find numerator and denominator:

a. $\frac{1}{2}$ b. $\frac{3}{4}$ c. $\frac{7}{10}$ d. $\frac{9}{10}$ e. $\frac{8}{9}$ f. $\frac{4}{5}$

2. Read the following fraction and write numerator and denominator in the blanks:

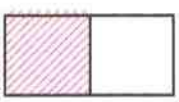
a. In $\frac{1}{2}$

b. 2..... in $\frac{2}{4}$. 4.....

c. 10..... in $\frac{7}{10}$. 7.....

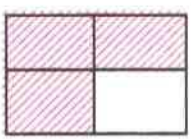
d. 10 ..... in $\frac{10}{20}$. 20.....

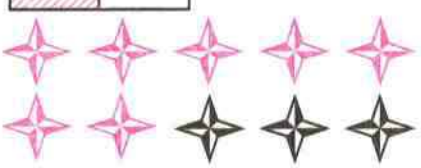
3. Write in fraction the shaded part in the figure below:

a. 

$\frac{1}{2}$ numerator / denominator

b.

c. 

d. 

4. Write the fraction to represent the non shaded part in the above figures and find numerator and denominator.

5 Numerators and denominators are given below. Write in fractions.

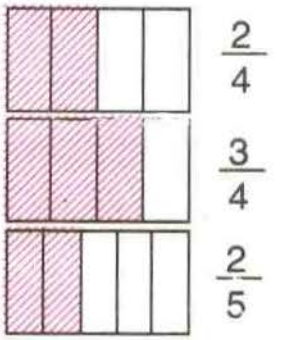
a. Numerator = 5
Denominator = 2

b. Numerator = 10
Denominator = 12

c. Numerator = 11
Denominator = 8

Teaching instructions: Researchers have showed that it is difficult to give the concept of fractions. So, tell the students to make the problems themselves and practice more.

B. LIKE AND UNLIKE FRACTIONS



Read, discuss and learn:

- Which picture has more rooms?
- Are all rooms equal to each other?
- What is the denominator in $\frac{2}{4}$ and $\frac{3}{4}$?

Denominator is 4 in $\frac{2}{4}$ and $\frac{3}{4}$. Denominator is same in both fractions. So, $\frac{2}{4}$ and $\frac{3}{4}$ are callled like fractions.

If the denominator of two or more than two fractions are same they are called like fractions.

What are the denominators in $\frac{3}{4}$ and $\frac{2}{5}$?

Are there same denominators in two fractions?

In $\frac{3}{4}$ denominators is 4 and in $\frac{2}{5}$ denominator is 5. Denominators are different or not equal.

So, $\frac{3}{4}$ and $\frac{2}{5}$ are called unlike fraction.

If the denominators of two or more than two fractions are not same, they are called unlike fractions.

Teaching instructions:	Have activities to write the non shaded parts in the fractions. Draw more figures to practice like fraction and unlike fraction in a practical way.

EXERCISE

1. Write the like fractions.

a. $\frac{3}{4}$, $\frac{4}{6}$ and $\frac{3}{6}$

b. $\frac{8}{10}$, $\frac{2}{10}$ and $\frac{4}{11}$

c. $\frac{6}{8}$, $\frac{3}{4}$, $\frac{7}{8}$ and $\frac{2}{4}$

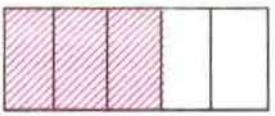
d. $\frac{2}{7}$, $\frac{4}{3}$, $\frac{6}{7}$ and $\frac{3}{7}$

2. Differentiate like fractions and unlike fractions in the following fractions:

Fractions	like fractions	unlike fractions
a. $\frac{2}{7}, \frac{3}{2}, \frac{5}{7}, \frac{9}{7}$ and $\frac{3}{8}$	$\frac{2}{7}, \frac{5}{7}, \frac{9}{7}$	$\frac{3}{2}, \frac{3}{8}$
b. $\frac{2}{20}, \frac{4}{30}, \frac{6}{7}, \frac{7}{30}$ and $\frac{3}{30}$		

C. COMPARISON OF FRACTION

Read, discuss and learn:



- Can you write in fraction for the shaded part in the figure?
- Can you write in fraction for the non shaded part in the figure?
- Are the denominators of both fractions same?
- Which fraction's numerator is bigger?

$\frac{3}{5}$ is shaded in the figure. $\frac{3}{5}$ denotes more part and the fraction denoting non shaded part denotes less part. So, the fraction $\frac{3}{5}$ is bigger than $\frac{2}{5}$.

In comparing the numerator of $\frac{3}{5}$ and $\frac{2}{5}$.

3 is greater than 2. So, $\frac{3}{5}$ is greater than $\frac{2}{5}$

So, $\frac{3}{5} > \frac{2}{5}$

Similarly, $\frac{2}{5}$ is smaller than $\frac{3}{5}$.

So, $\frac{2}{5} < \frac{3}{5}$.

In like fractions, the fraction with greater numerator is greater than the fraction with smaller numerators.

Again, compare the fractions $\frac{3}{5}$ and $\frac{3}{5}$.

- What are the numerators in $\frac{3}{5}$ and $\frac{3}{5}$?
- Are the denominators same in both?
- Are the fractions like fractions?

The above fractions $\frac{3}{5}$ and $\frac{3}{5}$ are like fractions.

Numerators are also same. $\frac{3}{5}$ and $\frac{3}{5}$ are equal fractions. It is written $\frac{3}{5} = \frac{3}{5}$.

When two or more than two like fractions have same numerators, they are equal to each other. These fractions are called equal fractions.

Teaching instructions:	Here, the fractions are compared taking shaded parts only. Tell the students to practice using non shaded parts as fractions and compare them.

EXERCISE

1. Compare the following fractions and use '<', '>' or '=' sign:

   a. $\frac{5}{12}$ and $\frac{5}{12}$ b. $\frac{7}{12} > \frac{5}{12}$ c. $\frac{3}{6}$ and $\frac{5}{6}$

   d. $\frac{4}{10}$ and $\frac{4}{10}$ e. $\frac{5}{20}$ and $\frac{10}{20}$ f. $\frac{15}{16}$ and $\frac{15}{16}$

2. Write the following fractions in ascending order:

   a. Writing in ascending order

   $\frac{1}{5}, \frac{1}{5}, \frac{1}{5}$ we get $\frac{1}{5}, \frac{2}{5}, \frac{4}{5}$

b. $\frac{7}{10}, \frac{4}{10}, \frac{9}{10}, \frac{1}{10}$ c. $\frac{6}{15}, \frac{2}{15}, \frac{5}{15}, \frac{10}{15}$

d. $\frac{2}{9}, \frac{8}{9}, \frac{4}{9}, \frac{5}{9}$

3. Write the following fractions in descending order:

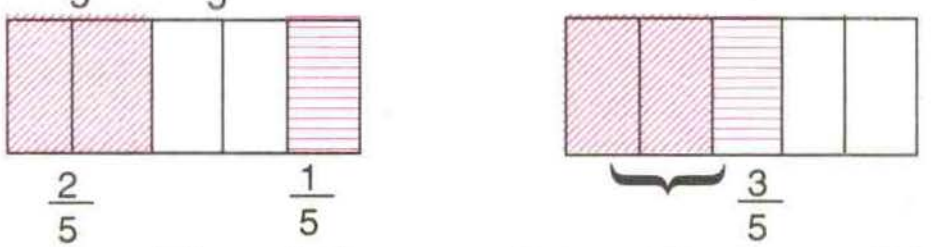
a. Writing $\frac{2}{7}, \frac{4}{7}, \frac{5}{7}, \frac{3}{7}$ in descending order

we get $\frac{5}{7}, \frac{4}{7}, \frac{3}{7}, \frac{2}{7}$ b. $\frac{9}{20}, \frac{12}{20}, \frac{7}{20}, \frac{9}{20}$

D. ADDITION OF FRACTION

Read, discuss and learn:

How can $\frac{2}{5}$ and $\frac{1}{5}$ be added? Let us see:



[2 parts out of 5 equal parts] + [1 part out of 5 equal parts] = [3 parts out of 5 equal parts]

So, $\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$ or, $\frac{2}{5} + \frac{1}{5} = 2 + \frac{1}{5} = \frac{3}{5}$

To add like fractions, add only the numerators and write the denominator as it is.

Teaching instructions: Use lots of figures to give the concept of addition of fractions. Give the addition of fractions with shaded pictures or models and tell them to write numerator by adding numerators of given fractions and keep common denominator as denominator.

EXERCISE

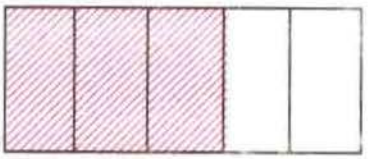
Add:

a. $\frac{1}{3} + \frac{1}{3} = 1 + \frac{1}{3} = \frac{2}{3}$ b. $\frac{3}{5} + \frac{1}{5} = \frac{\square + \square}{5} = \frac{\square}{\square}$

c. $\frac{3}{7} + \frac{4}{9}$ d. $\frac{4}{9} + \frac{2}{9}$ e. $\frac{3}{10} + \frac{5}{10}$

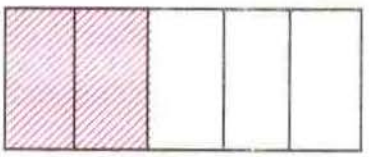
E. SUBTRACTION OF FRACTION

Read, discuss and learn:



How $\frac{1}{5}$ is subtracted from $\frac{3}{5}$?

$\frac{3}{5}$ part is shaded in the figure.



Remove $\frac{1}{5}$ part of the shaded part

Now $\frac{2}{5}$ part of the shaded is left.

So, $\frac{3}{5} - \frac{1}{5} = \frac{2}{5}$

or, Subtracting $\frac{1}{5}$ from $\frac{3}{5}$ we get $\frac{2}{5}$

or, $\frac{3}{5} - \frac{1}{5} = 3 - \frac{1}{5} = \frac{2}{5}$

To subtract the like fractions, subtract smaller numerator from greater numerator and write the numerator but keep the denominator as it is.

Teaching instructions: Use as many figures and models as possible to give the concept of subtraction of fractions. Give subtraction of fractions and tell them to subtract with the help of models and figures. And then practice them to subtract fraction by subtracting one numerator from another numerator.

EXERCISE

1. Subtract:

a. $\frac{\boxed{3}}{4} - \frac{\boxed{1}}{4} = \boxed{3} - \frac{\boxed{1}}{\boxed{4}} = \frac{\boxed{2}}{\boxed{4}}$ b. $\frac{4}{5} - \frac{2}{5} = \frac{\square - \square}{5} = \frac{\square}{\square}$

c. $\frac{5}{7} - \frac{2}{7}$ d. $\frac{6}{10} - \frac{3}{10}$ e. $\frac{8}{15} - \frac{5}{15}$

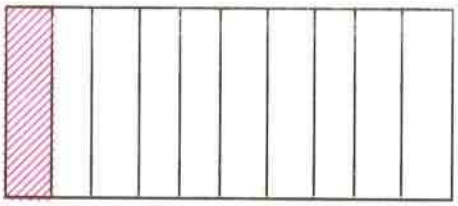
Lesson 23

DECIMAL NUMBER

A. TENTHS

Read, discuss and learn:

Look at the figure:



- How many parts are there in the figure?
- How many parts are shaded?
- How can the shaded part be expressed in fraction?

In the figure, one part is shaded out of ten equal parts. In fraction it is written as $\frac{1}{10}$. $\frac{1}{10}$ is called tenths and is written 0.1. 0.1 is read as 'zero decimal one' or 'decimal one'.

Shade 2 parts in the figure above. Then, How can the shaded part be expressed in fraction? $\frac{2}{10}$ is written in decimal 0.2. It is read as 'zero decimal/point two' or 'decimal two'.

Now, shade 3,4,5,6,7,8,9 and 10 parts and write in fraction and decimal. In number line tenths numbers between 0 to 1can be shown in the following way:

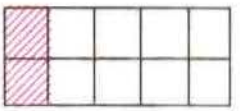
Decimal	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
In fraction		$\frac{1}{10}$	$\frac{2}{10}$	$\frac{3}{10}$	$\frac{4}{10}$	$\frac{5}{10}$	$\frac{6}{10}$	$\frac{7}{10}$	$\frac{8}{10}$	$\frac{9}{10}$	$\frac{10}{10}$

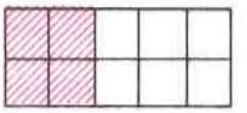
How many tenths numbers are there from 0 to 1, Count and read.

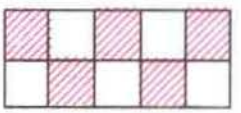
Teaching instructions: Give the concept of tenths by shading fractions from 1/10 to 10/10. Show the fact that 1 is equal to 10/10 using object / picture. Practice students to read and write in fraction and decimal for the non shaded parts.

EXERCISE

1. Observe the given figures and write the shaded parts in fraction and decimal:

a.  $\frac{2}{10} = 0.2$

b. 

c. 

d.

e.

2. Express the following fractions into decimal notation:

a. $\frac{6}{10} = 0.6$ b. $\frac{3}{10}$ c. $\frac{8}{10}$ d. $\frac{7}{10}$

e. $\frac{5}{10}$ f. $\frac{4}{10}$ g. $\frac{9}{10}$

3. Express the following decimal numbers into fractions :

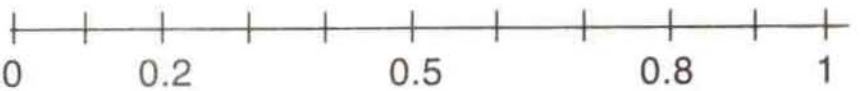
a. $0.2 = \frac{2}{10}$ b. 0.7 c. 0.6 d. 0.8

e. 0.4 f. 0.9

4. Fill the appropriate decimal numbers in the blanks:

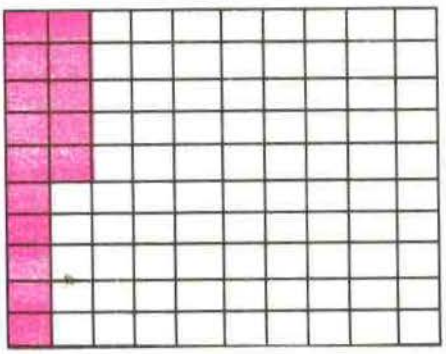
a.

b.



B. HUNDREDTH

Read, discuss and learn:



There are 100 equal parts in the figure. 15 parts are shaded.

In fraction, it is written as $\frac{15}{100}$.

$\frac{15}{100}$ is called 15 hundredth and is written as 0.15. 0.15 is read as 'zero point one five'.

Make 100 equal rooms as given above and shade $\frac{7}{100}$. Also write in decimal and read.

Can you write in fraction and decimal for the non shaded parts in figure? Try.

$\frac{1}{100} = 0.01$, $\frac{2}{100} = 0.002$, $\frac{3}{100} = 0.03$

$\frac{4}{100} = 0.04$, $\frac{5}{100} = 0.05$

$\frac{10}{100} = 0.1$, $\frac{11}{100} = 0.11$

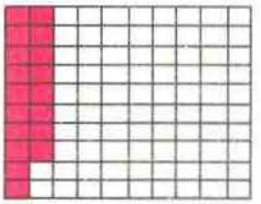
2.1 is read as 'two point two one'. Similarly, how can we read for 1.2 and 3.07?

Teaching instructions: Give the concept of hundredth practically with the help of model and picture as the concept of fraction and tenths. Give additional exercises using 100 pieces of maize, coloured marbles etc. Use figures to show 0.1 and 0.10 are equal or to relate them.

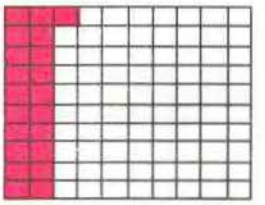
EXERCISE

1. Observe the following figures and express the shaded parts in fraction and decimal numbers. Read out in the classroom.

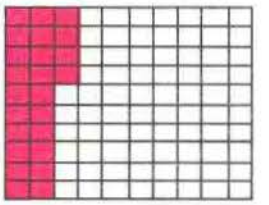
a.



b.



c.



$\frac{18}{100} = 0.18$

2. Collect 100 grains of the maize. Take some from it in your hand and count. Write them in fraction and decimal.

3. Express the folowing fractions into decimal numbers.

a. $\frac{60}{100}$ b. $\frac{9}{10}$ c. $\frac{4}{10}$

d. $\frac{2}{100}$ e. $\frac{40}{100}$ f. $\frac{55}{100}$

g. $\frac{78}{100}$ h. $\frac{17}{100}$

4. Express the following decimal numbers into fractions:

a. 0.6 b. 0.9 c. 0.27 d. 0.05

e. 0.98 f. 0.09 g. 0.95

Lesson 24

UNITARY METHOD

Read, discuss and learn:

A copy costs Rs. 5. What will be the cost of 2 copies?

Rs.5 + Rs. 5 = Rs. 10 or two times Rs. 5 = Rs. 5 x 2 = Rs. 10

Similarly, What will be the cost of 10 copies costing Rs. 5 each?

Here, adding Rs. 5 ten times

Rs. 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 = Rs. 50 or Rs. 5 ten times = Rs. 5 x 10 = Rs. 50

To get the total cost, we multiply the number of objects by per unit price. Total price = Unit price x number of objects.

What is the cost of your one copy, tell to your friends and ask them to calculate the cost of total copies. Then, find the total cost of the copies of your friend.

Teaching instructions: Get students ask the unit price of goods with the shopkeeper or with their parents and find the total price of the different objects. Give additional exercises to find the total cost by demonstrating the pictures of the objects with their price.

EXERCISE

1. Solve the following problems:

   a. price of a pen = Rs. 9

      price of 3 similar pens = Rs. 9 x 3

      = Rs. 27

   b. price of a book = Rs.30

      price of 3 books = ?

1. A shopkeeper says the price of a ball is Rs. 5. What amount should be paid to buy 4 balls?
2. A bag costs Rs.85. Mother gave 2 same bags to Raju and his sister, Samjhana. How much money did she pay for two bags?

MIXED EXERCISE

1. Differentiate the like fractions and unlike fractions:

   $\frac{6}{7}, \frac{3}{2}, \frac{3}{7}, \frac{4}{3}$

2. Rewrite the folowing fractions in ascending and descending order:

   $\frac{3}{15}, \frac{7}{15}, \frac{1}{15}, \frac{4}{15}, \frac{14}{15}$

3. Solve:

   a. $\frac{5}{9} + \frac{2}{9}$ b. $\frac{9}{10} - \frac{3}{10}$ c. $\frac{2}{15} + \frac{1}{15}$

4. Convert the following fractions into decimal number:

   a. $\frac{2}{10}$ b. $\frac{9}{100}$ c. $\frac{80}{100}$ d. $\frac{7}{10}$

5. Convert the following decimals into fractions:

   a. 0.2 b. 0.21 c. 0.30 d. 0.85

6. Write the number name of the following decimal numbers:

   a. 10.5 b. 2.03 c. 0.25 d. 3.52

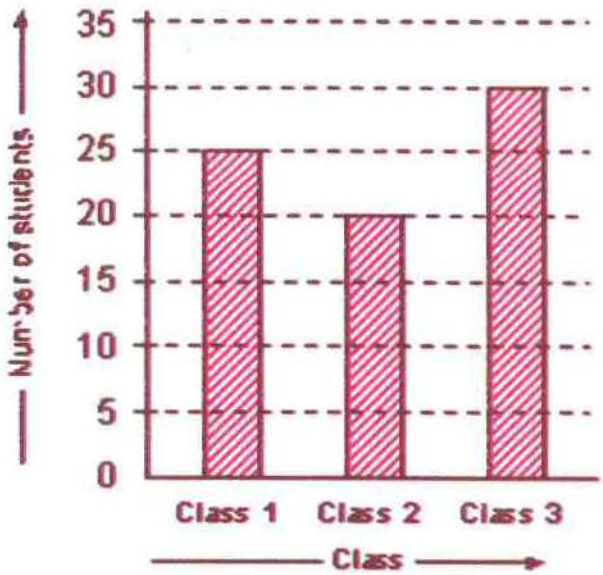
7. There are 12 oranges in a bag. Each orange costs Rs. 3. Find the cost of 9 oranges.
8. If the cost of one pen is Rs. 40, find the cost of 12 pens.

Lesson 25

BAR GRAPH

Read and learn:

There are three classes (1 to 3) in Saraswati Primary School . The number of students of that school is shown below in the figure.

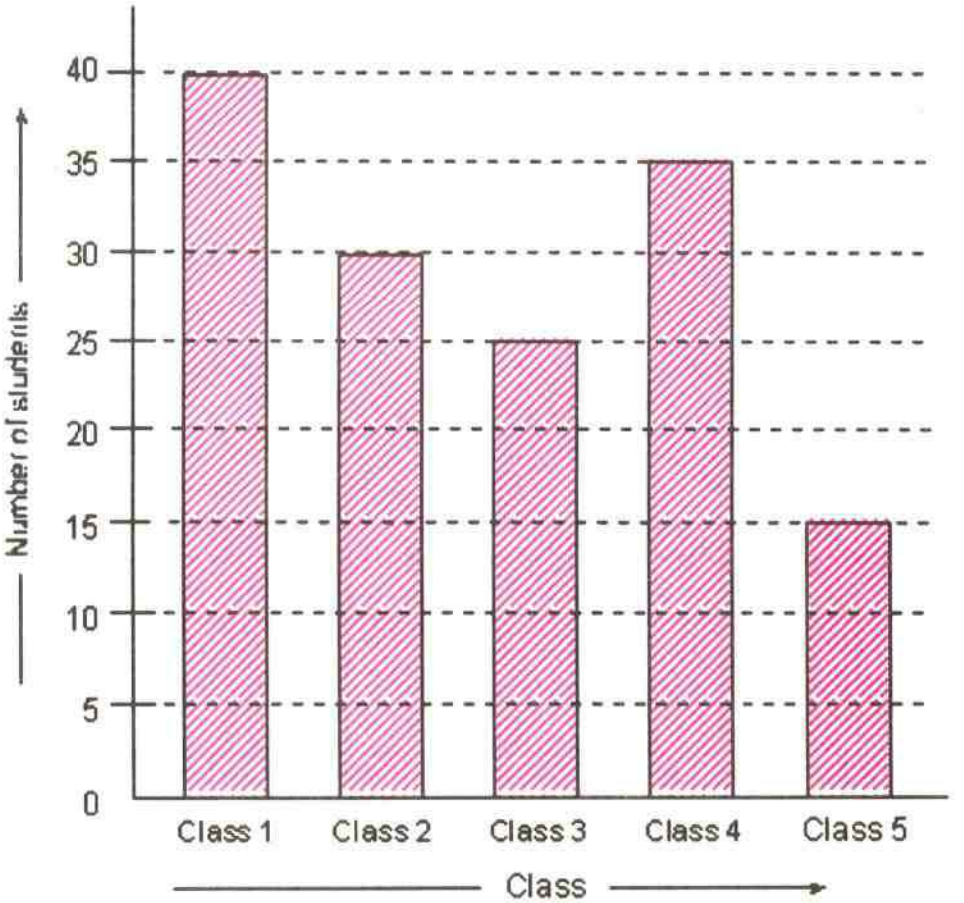


In the figure, number of students have been shown by vertical column. A vertical number line is shown in the left of the column. To find the number of students, we look the height of bar and tally with the number line. For example, there are 20 students in class 1and 30 students in class 3. Number of students of different class can be compared with the help of the height of a bar. The above figure made is is called bar diagram.

Teaching instructions: After the introduction of the bar graph, tell the students to draw bar graph of the students of Class (1-5) in their school. Similarly, note the time taken by the students to reach school and draw a bar graph and discuss. In the same way, draw a bar graph of the students according to their age and discuss.

EXERCISE

1. Number of students in Jivanjyoti Primary School from Class 1 to Class 5 is shown in the bar graph. Answer the following questions with the help of the graph.



a. What is the above figure called?

b. What does the figure show?

c. How many students are there in Class 1?

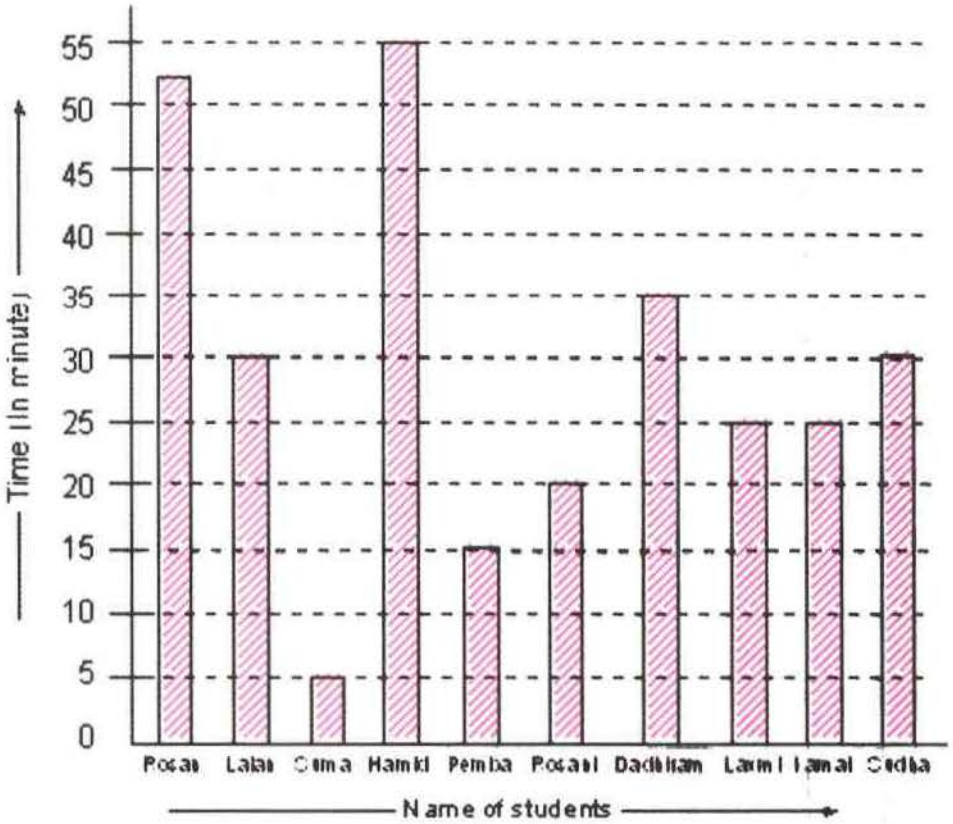
d. How many students are there in Class 3?

e. How many more students are there in Class 1 than in Class 5?

f. How many students are there in the school?

2. Answer the following questions with the help of the given bar diagram.

Time taken by the students of Muktinath Primary School to reach school from house.



a. What time does Suma take to reach school from house?

b. Write the time needed by other students to reach school.

c. Who takes more time to reach school? How much time does he take to reach school?

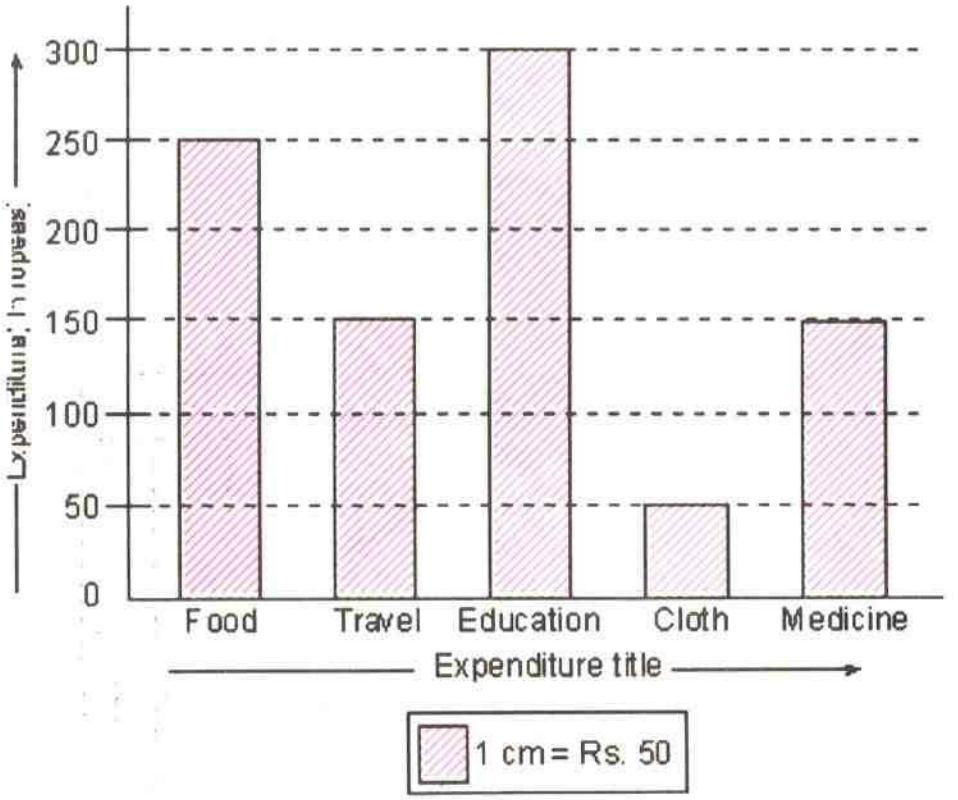
d. Who takes short time to reach the school?

e. Who are the students they reach school in the same time?

f. What time does Sudha take to reach school?

3. Study the given bar graph below and answer the following questions:

Expenditure of Baisakh of the family of RamLakhan



a. What is the expenditure of Baisakh on cloth in the Ramlakhan's family?

b. In which topic is the expenditure most?

c. In which topic is the expenditure least?

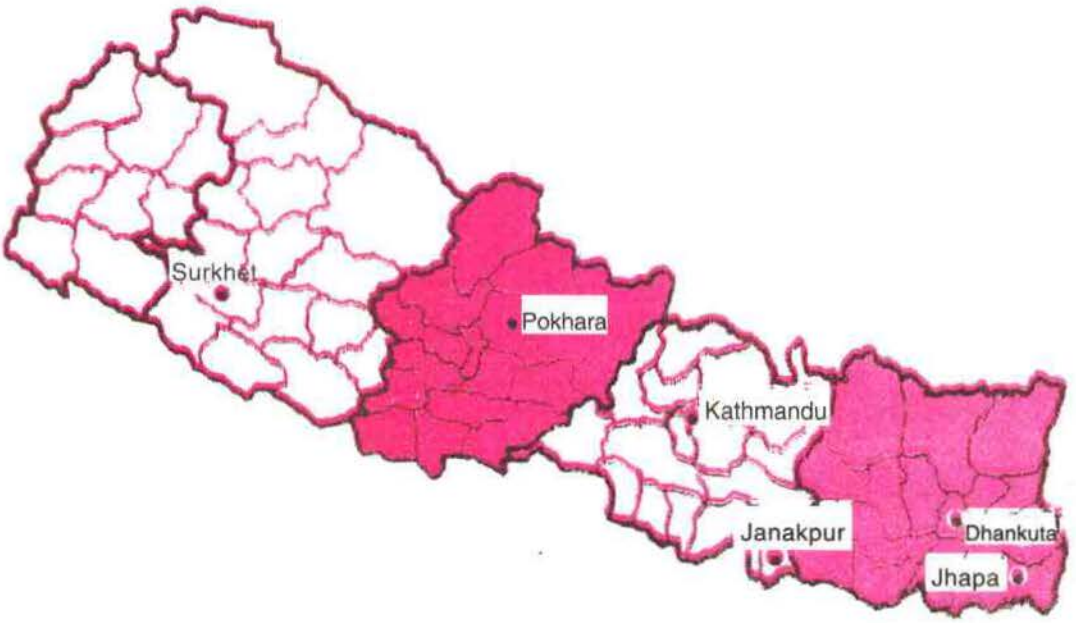
d. What is the expenditure for food of the family?

e. What is the total expenditure in Baisakh of the Ramlakhan's family?

Lesson 26

MAP AND DISTANCE

Read, discuss and learn:



1. Answer the following questions with the help of the figure above:

a. Which is farther from Pokhara, Dhankuta or Surkhet?

b. Which is farther from Kathmandu, Pokhara or Janakpur?

c. Which place is the farthest from Kathmandu?

d. Which is nearer from Janakpur, Pokhara or Dhankuta?

e. Which is farther from Janakpur, Dhankuta or Jhapa?

Teaching instructions: Tell the students to estimate the distance in the map. Guess the distance of two places, but not measure it. The concept can be made clear by drawing the picture of their locality. Similarly, demonstrate the map of wards of Municipality and a Village Dvelopment Committee and tell them to guess distance between different places.

Lesson 27

SET

A. SET AND ITS MEMBERS

Different sets can be formed from the given objects.

a. Set of fruits

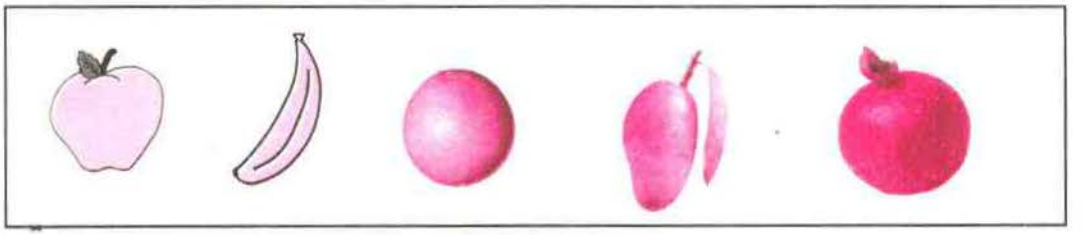
b. Set of instructional materials

c. Set of pots

Collection of well defined objects is called a set.

Members of a set

The things or objects in a set are called its members. Look the set of fruits:



In this set of fruits, there are apple, banana, orange, mango and pomegranate. They are called members of the set.

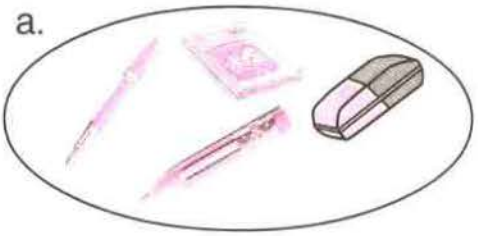
Teaching instructions:

1. Tell the students to collect objects found nearby their house and school and form the sets on the basis of their common properties.
2. Use certain set to give the concept of set and their members. Also, let them to identify, tell the name of sets and their members.

EXERCISE

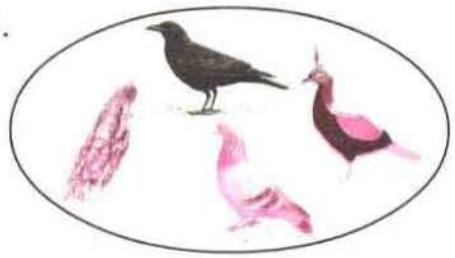
1. Write the name of the following sets and their members:

a.



Name of set:
Members of the set:

b.



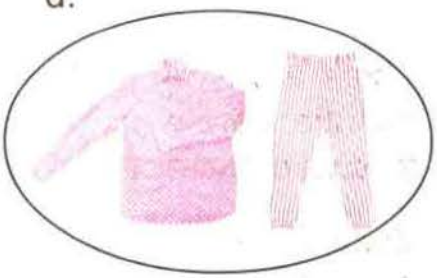
Name of set:
Members of the set:

c.

Name of the set:

Members of the set:

d.



Name of the set:

Members of the set:

2. Various things are given in the figure. Form different sets and write the name of their members:

3. What are the members of the set of the days of a week?
4. What are the members of the set of the numbers less than 10?

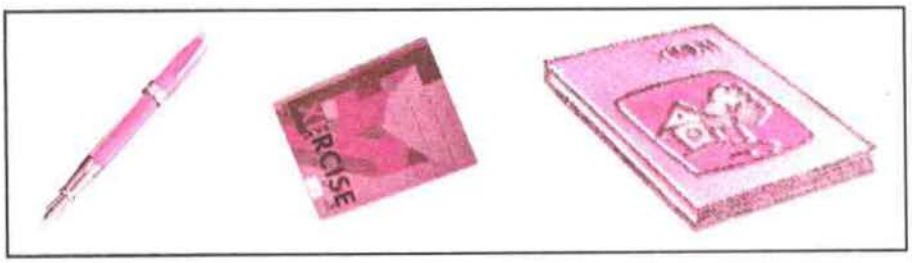
5. Write the members of the set of the first 5 month of the year.
6. Your family is also a set, write the name of its members.
7. Write the members of a set of teachers of your school.
8. The things in your bag form a set. What are its members? Discuss and write.
9. What are the members of a set of vowels of Nepali alphabet? How many members are there in the set? Discuss and write.

Teaching instructions:	Give additional sets as given in the exercise and let the students to identify their members and tell their name.

B. SET NOTATION

There are many methods to write a set. In one of the methods members are written in middle bracket { } and comma (,) is used to separate the members. This is called set notation.

Example 1: A set of instructional materials is given below. Write it in set notation:



Writing it in set notation:

Set of instructional materials = {pen, copy, book}

Every member of the set is separated with comma (,)

Activity:

Discuss on the members of a set of things made of wood in your class. Write its members in set notation and show your teacher.

EXERCISE

1. What are the name of the sets given below. Write in set notation '{ , }' as in the example.

a.

b. 2, 4, 6, 8, 10, 12
14, 16, 18, 20

Set of pots = { glass, plate, small plate, cooker, spoon}

a.

b.

2. Write the days of a week in set notation.
3. Write the three letters of English alphabet in set notation.
4. Write the odd months of a year in set notation.
5. Write the name of 5 girls in your class in set notation.
6. Write the name of the friends whom you like in set notation.
7. Write the letters of the word BAGMATI in set notation.
8. Write the letters of word PALPA in set notation.
9. Write the name of 5 months that you like in set notation.

MIXED EXERCISE

Write the following sets in set notation'{ , }'.

1. Set of three geometrical figures.
2. Set of months that lie between Kartik and Falgun.
3. Set of the days of a week.
4. Set of any 5 girls of your class.
5. Set of members of your family.
6. Set of women members of your family.
7. Set of any 3 villages around your village/town.
8. Set of first 5 numbers divisible by 5.
9. Set of letters of the word NEPAL.
10. Set of letters of the word WATER.
11. Set of letters of the word TOYS.

Lesson 28

BILL AND BUDGET

Look, read, discuss and learn:

When we buy things in the market, the shopkeeper gives us a piece of paper mentioning the name of goods, quantity and their prices. That paper is called bill.

Deurali book shop
Deurali, Baglung

Bill number 432 Date 2062/9/28
Name of customer: Sharda sharma Address: Pariwari-7, Rangkhani

No.	Statement of objects	Quantity	Rate (Rs.)	Price (Rs.)
1.	My Mathematics class- 3	1	40	40
2.	Copy	5	9	45
3.	Pencil	6	3	18
4.	Eraser	4	2	8
			Total	111

Seller: Madan Acharya

In the above bill, ' Rate' is the price of each good. So, if one copy costs Rs.9, the cost of 5 copies is Rs. 9 x 5 = Rs. 45

Now, answer the following questions with the help of the above bill?

a. Who has purchased the goods?
b. Who has sold the goods?
c. What goods had the customer purchase?
d. Which goods has highest price rate?
e. How much money had it need to buy all goods?

Teaching instructions: Clarify the meaning of the words in real bills (without discount and tax). Then, help them to calculate the price after knowing the rate and quantity of the goods. In the same way, havea discussion on other informations in the bill.

EXERCISE

1. Answer the questions with the help of the bill:

Lekali fruits shop
Kalimati

Date: 2062/9/11 Bill No. 327

Name of customer: Dolma Lama

Address: PalloKharka, Mustang

No.	ParticularsQuantity	Rate(Rs.)	Price (Rs.)
1.	Apples 2 kg	25	50
2.	Naspati 4 kg	10	40
		Total	70

Seller: Pema Lama

a. Who has purchased good?

b. Who is the seller?

c. How much has the apple bought?

d. What is the rate of apple per kg.?

e. How many kg pear has bought?

f. What is the total cost of apples and pear?

g. Whose address is Pallokharka, Mustang?

Teaching instructions: Show real bills (not including discount and vat). Tell the students to discuss informations in the bill.

ALGEBRA

A. ALGEBRAIC ADDITION

Read and discuss:

What should be written in the blank box?

15 + ☐ = 19

Let us put 1 in the blank box 15 + 1 = 19, not right

Let us put 2 in the blank box 15 + 2 = 17, not right

Let us put 3 in the blank box 15 + 3 = 18, not right

Let us put 4 in the blank box 15 + 4 = 19, right.

Can you do it orally?

Expressing 15 + ☐ = 19 in words it is said,what should be added to 15 to get 19. Counting with fingers of a hand from 15 it is 16,17,18,19. So, 4 is written in the blank box. Draw lines in place of fingers and solve.

EXERCISE

WRITE THE CORRECT NUMBER IN THE BOX.

a. 35 + ☐ = 40 b. 42 + ☐ = 48

c. 55 + ☐ = 62 d. ☐ + 23 = 25

Teaching instructions: Algebra is an abstract concept. Teach algebraic addition with the help of addition of arithmetic. Give additional exercises and let them practice to use the method of counting fingers, drawing lines and guessing.

B. ALGEBRAIC SUBTRACTION

Read and discuss:

9 - □ = 6

Let us put 1 in the blank box, 9 – 1 = 6, not right

Let us put 2 in the blank box, 9 – 2 = 6, not right

Let us put 3 in the blank box, 9 – 3 = 6, right.

Can you do it orally?

The meaning of above problem 9 - □ = 6 is what is subtracted from 9 to get 6. Subtract from 9 in order with the help of fingers. It is 8,7,6. So, 3 should be written in the box. Solve it by drawing lines.

Think it?

If 9 – 6 = 3, it is 9 – 3 = 6

Solve □ – 1 = 5.

Put 1 in the blank box, 1 – 1 = 5, not right

Put 2 in the blank box, 2 – 1 = 5, not right

Put 3 in the blank box, 3 – 1 = 5, not right

Put 1 in the blank box, 4 – 1 = 5, not right

Put 1 in the blank box, 5 – 1 = 5, not right

Put 1 in the blank box, 6 – 1 = 5, right

□ – 1 = 5 means from what 1 is subtracted to get 5. Try to solve by drawing lines or using fingers.

If 6 – 1 = 5, it is 1 + 5 = 6. In this way answer can be checked .

EXERCISE

1. Fill the correct number in the box:

   a. 15 - ☐ = 11

   b. 20 - ☐ = 15

   c. 27 - ☐ = 21

2. Fill the correct number in the box:

   a. ☐ – 3 = 2

   b. ☐ – 4 = 8

   c. ☐ – 3 = 4

MIXED EXERCISE

Fill appropriate number in the blank place:

a. 40 + ☐ = 50 b. ☐ + 10 = 50

c. 30 - ☐ = 20 d. ☐ – 10 = 20

e. Make the problems of your own and solve. Discuss with your friends. Check the answers of your friends with your answer.

Teaching instructions: Give the concept of algebraic subtraction with the help of the subtraction of arithmetic. Give additional exercises and tell them to practice with the help of counting fingers, drawing lines, guessing and addition.