# Chapter 1    Number and numeration

**Whole numbers 1–200**

**Objectives**

At the end of this chapter, pupils should be able to:

1    revise counting, reading and writing of numbers 0–99.

2    count numbers 1–200.

3    identify and read numerals 1–200

4    identify place value of numbers.

5    write numerals 1–200 in words and figures.

6    order numbers.

7    identify ordinal numbers.

## Unit 1    Counting, reading and writing 0–99

Revise counting from 0–99 with pupils using objects (pebbles, counters, sticks, card of numbers 1–100 etc.)

Layout objects in rows of 10 and columns.

Arrange the objects in group of tens.

e.g.    *Illus.*

Count each one by one until 99. Guide them to write as well.

Guide the pupils through Exercises 1–2 on pages 3–8.

## Unit 2    Counting up to 200

Lead pupils to count from 1–200.

Set the objects in tens up to 200. Allow the pupils to count on their own using the objects.

Use chart of numbers so that they can identify the numbers before allowing them to use objects to count.

Guide the pupils through page 9 to use the small boxes to count in tens up to 200.

Introduce the Units 1, 2, 3 etc to be used with the tens (see pages 11–12).

Guide them through the exercise on page 12.

Lead them to use the idea of counting in bundles to answer the questions in the exercise.

**Unit 3      Identifying and reading 1–200**

Let the pupils read from 1–100, then lead them from 101–200. Repeat the counting several times, then allow them to read on their own (use the chart of numbers 1–200 etc. (see page 13).

Share the flashcards with numbers to the pupils. When a number is mentioned the pupil with the card number will respond.

Lead the pupils through exercise on page 16.

Guide pupils to fill the empty boxes.

**Unit 4      Place value**

Lead the pupils to recall that $45 = 40 + 5 = 4$ tens $+ 5$ units.

Guide the pupils to Exercise 1 on page 17 to complete the exercise by filling the boxes.

Introduce the pupils to page 18 and guide them by explaining the figures and the abacus.

Ensure that your explanation is done on the board to show the place value of each digit.

e.g.  $147 = 1$ hundred $+ 4$ tens $+ 7$ units

$\quad\quad\quad = \quad 100 \quad\quad\quad 40 \quad\quad + 7$

on the abacus    H     T     U

$\quad\quad\quad\quad\quad\quad$ 1     4     7

Lead the pupils to Exercise 2 on page 19 and guide them through Questions 1 and 2).

**Unit 5      Writing numerals 1–200 in words and figures**

Lead pupils through the examples on page 20.

|  |  | H | | T | | U |  |
|---|---|---|---|---|---|---|---|
| e.g. 168 | = | 100 | + | 60 | + | 8 |  |
|  |  | ↓ |  | ↓ |  | ↓ |  |
|  |  | 1 hundred | | 6 tens | | 8 units |  |
|  |  | 100 + | | 68 | = | 168 |  |

Explain the following and guide them on how to combine the H, T and U.

1 hundred and sixty eight

|  |  | H | | T | | U |
|---|---|---|---|---|---|---|
| 103 | = | 100 | + | 0 | + | 3 |
|  |  | ↓ |  |  |  | ↓ |

1 hundred and   three

100   +   3   =   103

1 hundred and sixty eight

|  |  | H | | T |
|---|---|---|---|---|
| 60 | = | 60 | + | 0 |
|  |  | ↓ |  | ↓ |

6 tens      0 unit

60   +   0   =   60

sixty

|  |  | H | | T |
|---|---|---|---|---|
| 65 | = | 60 | + | 5 |
|  |  | ↓ |  | ↓ |

6 tens      5 unit

sixty and 5

sixty-five

Lead the pupils through Exercise 1 on pages 20–21.

Guide them through the questions. Identify their problems and improve on it.

Give Exercise 2 on pages 21–22 and exercises in workbook as homework.

**Unit 6     Ordering numbers**

Introduce the phrase 'Greater than' and 'Less than' by using numbers to explain

e.g.   33 is less than 40

     95 is greater than 26

Write some set of numbers on the board and them to identify the least and the greatest

e.g.   45, 68, 86, 54, 78, 35

Lead the pupil to Exercise 1 on page 23, explain the 1st question and ask them to do the rest as classwork (A, B and C).

Lead the pupils to Exercise 2 on page 24 and guide them to complete the questions.

Give exercises in the workbook as homework.


**Unit 7     Ordinal numbers**

Tell the pupils in the 1st row to form a line with the shortest pupil in-front followed by the next. The in-front is the first, followed by the next second and so on. Guide them to realise that the order of the line shows the position of each pupils. e.g. is the arrangement of the school attendance register which starts with the names with alphabet A, B, C…

Lead them to the exercise on page 26.

Guide them to complete it as a classwork.

Exercises in workbook can be given as homework.

## Chapter 2    Fractions

**Whole numbers 1–200**

**Objectives**

At the end of this chapter, pupils should be able to:

1    find $\frac{1}{2}$ and $\frac{1}{4}$ of groups of objects.

2    discover the meaning of three-quarter $\left(\frac{3}{4}\right)$.

3    find $\frac{3}{4}$ of groups of objects.

## Unit 1    One-half $\left(\frac{1}{2}\right)$ and one-quarter $\left(\frac{1}{4}\right)$ of a whole

Lead pupils through the shapes on page 30 of the textbook.

Teaching aids: orange, watermelon, apple, cardboard, a tablet soap etc, any of these can be used to demonstrate in the class.

Guide pupils to cut object into two equal parts and 4 equal parts.

*Illus.*                                *Illus.*

Tablet of soap                          Tablet of soap

Ask the pupils to identify $\frac{1}{2}$ and $\frac{1}{4}$ from what they have cut.

Lead the pupils through the examples on pages 30–32 and guide them through Exercise 1 and Exercise 2 of pages 31–32.

Pick one or two questions from each exercise as examples by drawing it on the board and shade $\frac{1}{2}$ and $\frac{1}{4}$.

**Exercise 1 page 31**

Nos. 10 and 8 → Use as examples on the board.

Nos. 1–7 and 9 → Give these questions as classwork.

**Exercise 2 page 32**

Nos. 8 and 6 → Use as examples on the board.

Nos. 1–5 and 7 → Give these questions as classwork.

Guide pupils through this exercise on page 33 by explaining nos. 1 and 2 as examples on the board.

Lead the pupils to draw the shapes and shade the given fractions.

**Unit 2    One-half $\left(\dfrac{1}{2}\right)$ and one-quarter $\left(\dfrac{1}{4}\right)$ of groups of objects**

Lead pupils through the examples on page 34.

Teaching aids: Counters, pebbles, beads, bottles etc.

Divide the pupils into small groups for effective monitoring.

Give each group the same number of beads (objects).

e.g. 12 beads for each group                                    6 beads  +  6 beads = 12
   Instruct some groups to split the numbers        ○ ○ ○        ○ ○ ○

   of beads into two parts as shown .                      ○ ○ ○        ○ ○ ○

                                                                               ○ ○ ○        ○ ○ ○

                                                                               ○ ○ ○        ○ ○ ○

$$\frac{1}{2} \qquad + \qquad \frac{1}{2} \quad = \quad 1$$

   Instruct the other groups to divide their beads        3 + 3 + 3 + 3 =   12
   into four parts                                                           ○    ○    ○    ○

                                                                                      ○    ○    ○    ○

   If possible use coloured beads (or objects)           ○    ○    ○    ○

$$\frac{1}{4} \quad \frac{1}{4} \quad \frac{1}{4} \quad \frac{1}{4}$$

Ask the pupils questions from what they have done (observations).

Repeat the above using 16 beads for each groups.

Guide the pupils through exercises on pages 35–39

Question A     Nos. 2, 3, 5, 7, 9     Treat this as oral class
Question B     Nos. 2, 3, 5, 7       work by asking questions from pupils

Question C     Nos. 3–10
Question D     Nos. 1–5     Treat this as written classwork
Question E     Nos. 1–5

Exercises in the workbook should be given as homework.

## Unit 3     Introduction to three-quarters

Lead the pupils through the examples on pages 40–41.

Teaching aids
Papers, cardboards, fruits like: papaw, apples, oranges etc., beads, pebble etc.

Give the pupils a square or rectangular piece of papers.
Instruct them to fold it into 2 equal parts. Guide the pupils to do this.
Tell them to unfold the papers.
Ask questions from their observation

Paper is divided into 4 equal parts $\qquad \frac{1}{4} \quad \frac{1}{4}$

$$= \quad \frac{1}{4}$$

Tell them to shade or use crayon to colour one part. $\frac{1}{4} \quad \frac{1}{4} \quad \frac{1}{4}$
Ask questions from what they did e.g. what
fraction is coloured.

Repeat the above by giving the pupils another $\qquad \frac{1}{4} \quad \frac{1}{4}$

paper. Tell them to shade 3 parts of the 4. Ask $\qquad = \quad \frac{3}{4}$

questions from their observations, e.g. what fraction $\frac{1}{4} \quad \frac{1}{4}$
is shaded?

$$\frac{1}{4} \; + \; \frac{1}{4} \; + \; \frac{1}{4} \; = \; \frac{3}{4}$$

**Exercise 1 page 41**

Nos. 1–10 $\rightarrow$ should be given as classwork.


**Exercise 2 page 42**

Nos. 1–10 $\rightarrow$ should be treated in class orally.


**Exercise 3 page 43**

Nos. 1–10 $\rightarrow$ should be treated as classwork.


Exercise in workbook can be treated as homework.

## Chapter 3     Basic operations

**Addition of whole numbers**

**Objectives**

At the end of this chapter, pupils should be able to:

1     review the addition of 2-digit numbers.

2     add two 3-digit numbers without renaming.

3     add two 2-digit numbers with renaming.

4     add 3 whole numbers taking two at a time.

5     solve word problems involving addition.

### Unit 1     Revision of addition of 2-digit numbers

Lead the pupils through examples and Exercise 1 of pages 45 and 46 as revision.

**Teaching aids**

Number beads, counters, charts on addition of 3-digits numbers without renaming etc.

Guide pupils on how to use number beads, counters, etc to add two-digit numbers.

Give the pupils some problems from Exercise 2 of page 47 as classwork.

### Unit 2     Addition of two 3-digit numbers without renaming

Lead the pupils through examples on page 48 or something similar.

Guide pupils to solve problems by giving them exercises from Exercise 1, page 48. Exercise 2 on page 50 and Exercise 3 on page 51. Ensure that each problem marked will enable you to know the pupils weakness so that you can explain again.

### Unit 3     Addition of 2-digit numbers with renaming

Lead pupils through examples on page 52. The addition should start from the units before moving to the tens. Carry the tens from units and add it to the tens column.

e.g.  + 4 8          40 + 8

    1 6    =    10 + 6

    6 4          50 + 14


        =    50 + 10 + 4 → unit

                  ↘ tens

        =    60 + 4 →


Guide pupils to solve problems from exercise on page 53 as classwork (Nos. 1–10). Give 11–20 as homework.


## Unit 4    Addition of 3 whole numbers taking two at a time

Lead pupils through examples on page 54 and the examples on pages 55 and 56. Guide the pupils through Exercise 1 page 55 and Exercise 2 of page 56. Classwork, nos. 1–10 and homework nos. 11–20.


## Unit 5    Word problems

Guide pupils through some of the word problems on page 57 and give classwork from the rest.

Ensure that you use the teaching aids before giving them.


Classwork

Give exercises in the workbook as homework.

# Chapter 4    Subtraction of whole numbers

**Objectives**

At the end of this chapter, pupils should be able to:

1    subtract two 2-digit numbers without renaming.

2    subtract two 2-digit numbers with renaming.

3    solve word problems involving subtraction of whole numbers.

**Unit 1    Subtraction of 2-digit numbers without renaming**

Revise subtraction of 1-digit numbers first. Lead pupils through examples on page 59

$$\text{E.g.} \quad \begin{array}{r} 5\ 7 \\ -\ 4\ 3 \end{array} \quad = \quad \begin{array}{r} 50\ +\ 7 \\ 40\ +\ 3 \\ \hline 510\ +\ 4 = 14 \end{array}$$

Explain the tens and units column by separating the two as in above example.

Lead the pupils through Exercise 1 page 60 as classwork.

**Exercise 2 page 61**

Guide the pupils through this exercise.

Select 2 questions as examples. Since word problems explain using practical examples. Example, Question nos. 1 and 2 can be done in the class using pupils and money.

**Unit 2    Regrouping subtraction of 2-digit numbers with renaming**

Lead the pupils through examples on pages 61–62.

Explain to the pupils the reason for regrouping and renaming of 2-digit numbers.

$$\text{e.g.} \quad \begin{array}{r} +\ 6\ 5 \\ 4\ 9 \end{array} = \begin{array}{r} 60\ +\ 5 \\ 40\ +\ 9 \end{array} = - \begin{array}{r} 50\ +\ 10\ +\ 5 \\ 40\ +\ 0\ +\ 9 \end{array} = - \begin{array}{r} 50\ +\ 15 \\ 40\ +\ 9 \\ \hline 10\ +\ 6\ = 16 \end{array}$$

Since 9 cannot be subtracted from 5, the 65 is regroup and renamed as

$$65 \; = \; 50 + 10 + 5 = 50 + 15$$

9 can easily be subtracted from 15 as shown above.

Guide the pupils through exercise on page 62 as classwork.

**Unit 3     Everyday use of subtraction**

Use beads or counter or peddles to demonstrate how to solve some words problems.

e.g. question number 1.

Count 52 beads or pebbles and tell the to remove 28 beads or pebbles from the 52 beads or pebbles. How many remains?

Illustrate this by

E.g.  + 5 2    =    50 + 2              40 + 12

   2 8    =  − (20 +  8)    = −    (20 +  8)

                              20 + 4    =    24 beads on pebbles

Lead the pupils through the exercise on page 63.

Give nos. 4–10 as classwork.

Exercises in the workbook can be given as homework.

## Chapter 5    Multiplication

**Objectives**

At the end of this chapter, pupils should be able to:

1      multiply numbers using repeated addition.

2      multiply numbers using a number line.

3      multiply by grouping objects.

4      use the multiplication tables.

5      multiply numbers using the multiplication tables of 3, 4, 5, 6 and 10.

**Unit 1      Multiplication as repeated addition**

Lead pupils through the illustration in Unit 1 page 66 and the examples on pages 67 and 68. Use beads, counters etc and allow the pupils to carry out multiplication as repeated addition on their own.

Guide the pupils through Exercise 1 page 69 and Exercise 2 page 70.

**Unit 2      Multiplication using a number line**

Lead the pupils through examples on page 71 to 74 of Unit 2. Illustrate it on the board as

   0    3    6    9    12   15   18   21   24   27   30   33   36

1 step represents 3

$3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 \ = \ 27$

is written as  $9 \times 3 \ = \ 27$

Guide the pupils through Exercises 2, 3 and 4. Let them work some of the exercises on their own, go round to guide them to do the exercises correctly. Select some problems from Exercises 2, 3 and 4 and classwork.

**Unit 3      Commutative property of multiplication**

Lead pupils through example on page 77.

Introduce teaching aids, counters, beads, beans etc. to illustrate the commutative property of multiplication.

Example      3    ×    4    =    4    ×    3

OO OO OO     OO OO OO OO

OO OO OO     O   O   O   O

Let them try other numbers

$2 \times 6 = 6 \times 2$ etc.

Guide the pupils through the exercise on page 77.


**Unit 4     Multiplication tables of 3, 4, 5, 6 and 10**

Lead pupils through the multiplication table 3 on page 78. Guide them through Exercise 1 of page 78 and Exercise 2 of page 79.

Use the procedure above for multiplication table 4, 5, 6 and 10 as above.

Ensure that you use teaching aids. The aids play major role by making pupils to understand it practically.

Pick some questions from Exercises 1, 2, 3 4, 5, 6, 7, 8, 9 and 10 of pages 1 to 84 as classwork.

Give the revision exercises on page 85 and exercises in the workbook as homework.

## Chapter 6    Division

**Objectives**

At the end of this chapter, pupils should be able to:

1      divide by sharing equally

2      divide by grouping equally

3      divide numbers not exceeding 24 using division (÷)

**Unit 1      Division as sharing equally**

Lead pupils through the examples on pages 86–87. Use aids like pebbles, counters, beads etc. to demonstrate in the class.

Example, give 30 beads to 6 pupils, tell them to share it equally among themselves.

$$30 \div 6 = \underset{1}{\underset{\downarrow}{\begin{matrix}\bigcirc\,\bigcirc\,\bigcirc\\\bigcirc\,\bigcirc\end{matrix}}} \quad \underset{2}{\underset{\downarrow}{\begin{matrix}\bigcirc\,\bigcirc\,\bigcirc\\\bigcirc\,\bigcirc\end{matrix}}} \quad \underset{3}{\underset{\downarrow}{\begin{matrix}\bigcirc\,\bigcirc\,\bigcirc\\\bigcirc\,\bigcirc\end{matrix}}} \quad \underset{4}{\underset{\downarrow}{\begin{matrix}\bigcirc\,\bigcirc\,\bigcirc\\\bigcirc\,\bigcirc\end{matrix}}} \quad \underset{5}{\underset{\downarrow}{\begin{matrix}\bigcirc\,\bigcirc\,\bigcirc\\\bigcirc\,\bigcirc\end{matrix}}} \quad \underset{6}{\underset{\downarrow}{\begin{matrix}\bigcirc\,\bigcirc\,\bigcirc\\\bigcirc\,\bigcirc\end{matrix}}} = 5$$

Let the same number of pupils share 40, 24 pebbles etc.

Ask questions like:

How many pebbles did they share?

How many pebbles did each pupil got?

Give the pupils classwork from exercise on pages 87–89 (oral exercise)

**Unit 2      Division by grouping**

Lead the pupils through examples on pages 90 and 92.

Introduce practical activities by dividing the pupils into groups of 2, 3, 4, 5 etc. e.g, 15 pupils divided into groups of 3.

*Illus.*

The above gives 5 groups.

You can use objects like pebbles, beads etc to demonstrate in the class by allowing the pupils to do the grouping.

Guide the pupils through Exercise 1 on pages 90–91. This can be done orally by asking pupils questions directly.

**Unit 3    Division using the ÷ sign**

Introduce and explain the sign ÷ first

Illustrate how to use the sign when performing operation on division.

e.g. $6 \div 3 = 2$

Guide the pupils through Exercises 1, 2 and 3 of pages 93–94 by picking one or more questions from each exercise as examples.

Select some questions from the three exercises and give the pupils as classwork.

Explain to the pupils that the symbols or signs ÷, $\lceil$ and $\lfloor$    means    performing operations on division.

e.g. $8 \div 4 \;=\; 2,\;\; 4\overline{\smash{)}8}^{\,2}\;$ or $\;4\dfrac{|8}{|2}$

Another examples is the … of the word 'of' when fractions are involve in division operations.

e.g. $\dfrac{1}{2}$ of 8 means $\boxed{8 \div 2} \times 1$

$$4 \times 1 \;=\; 4$$

'of ' actually means multiply but since fractions are involved, the division comes in. Encourage the pupils to write down their own division problem.

e.g. $\dfrac{3}{5}$ of 20. find one-quarter of 16 mangoes etc. Discuss how to solve such problems with pupils.

Lead the pupils through examples on page 95 and guide them through Exercises 4, 6 and 7 as classwork by selecting some questions from each exercise. If possible give them more example from each exercise before giving them classowork. Exercises in the workbook can be given as homework.

## Chapter 7      Algebraic processes

**Open sentences**
**Objectives**
At the end of this chapter, pupils should be able to:
1      find the missing numbers in addition sentences.
2      find the missing numbers in subtraction sentences.
3      find the missing numbers in multiplication sentences.
4      solve story problems involving open sentences.

### Unit 1      Finding the missing numbers in addition sentences
Lead the pupils through Exercise 1 of page 97 and examples on page 99.
Use the teaching aids to illustrate (counters, beans, pebbles etc).

e.g.    6 beans + ☐ beans = 11 beans

     ◯◯◯ +        = ◯◯◯◯◯
     ◯◯◯           ◯◯◯◯◯
                         ◯

How many beans can be added to 6 beans to give them 11 beans?
Ensure that your illustrations should be in he language the pupils will understand.
Use the number line to illustrate on the board. Encourage the pupils to learn how to use the number lines. It is effective and simple way of evaluating such problems.
Give the pupils some problems from Exercise 1 to Exercise 2 of pages 97–99.

### Unit 2      Find the missing numbers in subtraction sentences
Lead the pupils through Exercise 1A by using the teaching aids (pebbles, counters, fruits or any similar objects) to illustrate. Guide the pupils to use the aids by dividing them into groups for effective monitoring.

Introduce the number line by drawing the line on the board. Divide the line into a number of equal space and number it. Use the line to illustrate how to find the missing number.

e.g.  $10 - \square = 3$     $\square = 7$   Count from 10 to 30 the number of steps.


0    1    2    3    4    5    6    7    8    9    10    11    12


Guide pupils through Exercise 1B, using the number line to solve the exercises. Lead pupils through examples on page 101 and guide them through Exercises 2 and 3 of pages 101–102.

**Unit 3      Finding the missing numbers in multiplication sentences**
Lead pupils through examples on pages 103–105.
Introduce teaching aids (pebbles, beads etc) to demonstrate.


e.g.     $3 \times 4 = 12$

OO + OO + OO = 12
OO   OO   OO


Three 4 pairs of pebbles added together to give 12.
Guide the pupils through Exercises 1, 2 and 3 of pages 103–105 and give some as classwork.


**Unit 4      Word problems**
Introduce this topic by using teaching aids. The aids will motivate the pupils on this topic.
e.g. share some objects (beads, pebbles, fruits etc) among group of pupils.
If John has 6 beads and Mary has 4 beads
If the two add their beads together $6 + 4 = 10$ beads
If Mary collects 2 beads from John, how many beads does John have left? etc.
Guide the pupils through exercise on page 106.
Give Revision exercise 7 of page 108 as classwork. Workbook exercise should be given as homework.

## Chapter 8    Mensuration and geometry

**Money**

**Objectives**

At the end of this chapter, pupils should be able to:

1      list the uses of money.

2      recognise Nigeria coins and currency.

3      change the units of money.

4      shop using money.

5      add and subtract using money.

**Unit 1      Uses of money**

Introduce this topic by explaining to the pupils some of the uses of money (see page 109).

Money is used to buy things. Money is used to pay worker's salary etc.

After mentioning some uses of money, guide the pupils to generate their own ideas about the uses of money.

Types of things they can use money to buy (ask them to list it orally in the class).

Encourage them to begin to save their money.

Lead the pupils to exercise on page 110. This can be done orally.

**Unit 2      Recognition of Nigeria currency**

Guide the pupils through the pictures of Nigerian currency on page 111. It will be better if the original currency is displayed. Explain the various denomination.

Exercise on page 111

Guide pupils through discussion to find out the coins and notes in circulation then. Lead them through the exercise (treat orally in class).

**Unit 3      Changing the units of money**

Lead pupils through illustration (examples) on page 112 and guide them through Exercises 1–2 on pages 112–114. Explain questions which are challenging to the pupils.

Treat examples on page 115 and guide the pupils to Exercises 3–5 on page 115 as classwork.

**Unit 4        Shopping with money**

Lead he pupils through Toy 'R' Us shop on page 116 guide them to identify the items and use it to answer questions from Exercise 1 page 116. Select 1 or 2 questions as examples first.

Allow the pupils to do the rest as classwork. Create a small shop in one corner of the classroom and stuff it with some items with price tag.

Allow pupils to do the selling and buying by picking someone among them to be shop owner or keeper. The rest will go and buy items in the shop.

This enables pupils to understand better and does not make the topic abstract.

Exercise 2 page 117

Give this exercise as classwork.

Exercise 3 page 118

Can be treated orally in the class.

**Unit 5        Adding and subtracting money**

Guide the pupils through examples on pages 118–119.

Give Exercise 1 page 119.

Give Questions 1, 3, 5, 7, 9 and 11 as classwork.

Exercise 2 page 120

Questions 1–6 as classwork.

Exercise 3 page 120

Question nos. 1, 3, 5 and 7 as classwork.

The rest of Exercises 1–3 can be given as homework in addition to the exercises in the workbook.

# Chapter 9    Length

**Objectives**

At the end of this chapter, pupils should be able to:

1    compare and order length of objects.

2    use natural units of measurements to measure and compare.

3    identify metre and centimeter as standard unit of measurements.

4    measure objects using standard unit of measurement.

## Unit 1    Comparing and ordering length

Introduce this topic by using similar objects but not the same size, e.g. buckets, bottles (coca cola or fanta), pencils etc.

Lead the pupils to identify the shorter, longer of the similar objects.

Lead the pupils through the exercise on page 123 as a classwork in the class.

## Unit 2    Using natural units of measurements

Involve pupils in Activities 1–3 on pages 125–126. First explain handspan, armspan, strides etc. Divide the pupils in groups of 4, 5 or 6 and ask them to perform Activity 1. Ask them questions based on their activities.

Activity 2: Guide the pupils through Activity 2 and ask them questions based on their observations e.g. after their activities let them compare their results and explain why they have different results.

Activity 3: Involve the pupils in this activity and lead them through the observation on page 126. Ensure that all measurements are recorded so that it can easily be accessed.

Guide pupils to use the word 'nearly' or 'not quite' in their answer. They should not give the correct or exact answer. To get a more correct result measurements will be taken in metres and centimetres.

## Unit 3    Identifying the metre and centimeter rulers

Introduce the types of tape to the pupils (surveyor tape, carpenter tape, tape rule and metre ruler etc). Explain the uses of each and where is applicable.

Divide the pupils in groups of 4 or 5 and involve them in Activity 1 on page 127.

Guide the groups in their measuring exercise. Allow them to compare and contrast their measurements.

Guide them through Activity 2 on page 128 as a field work (this should be a group work).

Ensure that they record their measurements. Guide the pupils to use the centimeter ruler, tape rule to measure metre correctly the length of objects.

**Unit 4    Measuring objects using standard unit of measurement**

Introduce the pupils to Activity 1 on page 128. Each pupils should do the measurements on his/her own (measurement should be in centimeter).

Remind them that 100 centimetre = 1 metre or 100 cm = 1 m

**Measurement of length and distances in metres and centimetres**

Divide the pupils in groups of 4 or 5 and involve them in Activity 2 page 129.

They should fill the box after measuring.

Ensure that each pupil participate actively by guiding them to take the measurement correctly.

Guide the pupils through Activity 3 on page 129.

Let them draw their own table and fill it after measuring.

Lead the pupils to use their results to answer Questions 1– 4 on page 129.

Guide the pupils through Exercises 1–2 as a classwork.

Exercise in the workbook can be used as homework.

## Chapter 10    Time

**Objectives**

At the end of this chapter, pupils should be able to:

1    identify the hour and minute hands of a clock and read a clock to the hour.

2    read a clock to the half-hour.

3    read a clock to the quarter-hour.

4    read time in analogue and digital form.

5    order days of the work.

**Unit 1    Identify the hour and minute hands of a clock**

Introduce the clock face with hour-hand and minute hand.

Use a cardboard as a clock face with movable hour hand and minute hand. Explain the functions of the hands.

The **short hand** is the **hour** hand.

The **long hand** is the **minute** hand.                                    *Illus.*

Minute hand tells the number of minutes past or to the hour.

Hour hand tells the hour e.g. on diagram is 9 o'clock.

Use the movement of the hands to illustrate how it works to the pupils.

Guide the pupils to answer questions from Exercise 1 (treat this orally) pages 132–133.

Guide the pupils through Exercise 2 on page 133 as a classwork.

**Unit 2    Reading clocks to the half-hour**

Use the clock you used in Unit 1 to explain the reading clock to the half-hour by moving the clock hands.

Guide the pupils to note that in reading to half-hour, the minute hand will always point in the direction of the number 6 on the clock face. It is only the hour-hour that will be in different position. In half-hour time, the hour hand is always between two numbers on the clock face.

E.g. explain this using the clock

*Illus.*                    *Illus.*

half past 4                    half past 10

If possible, call each pupil to tell the time when you make the movement. Ensure that you do this repeatedly before guiding them to Exercises 1–2. Pages 134–135 are given as classwork.

Exercise in workbook can be given as homework.

**Unit 3      Reading clocks to the quarter hour**

Use the same clock to explain by moving the hands as in Unit 2. Guide the pupils by explaining what quarter hour is.

In quarter hour, the minute hand is always pointing to the direction of 3 or 9 on the clock face. The hour hand is almost facing a number on the clock face.

| E.g. explain this moving the hands | *Illus.* | *Illus.* |
|---|---|---|
| of minute and hour hand. | Quarter past 1 | Quarter to 7 |

Repeat the method used in Unit repeatedly and ask pupils to tell the time.

Guide the pupils through Exercises 1–3 on pages 136–137 as a classwork (treat Exercises 1 and 3 first before Exercise 2).

Ensure that you teach the pupils quarter past first and then quarter to in another lesson. Do not teach both in one lesson.

**Unit 4      Writing time in analogue and digital form**

Explain the difference between analogue and digital form of time. Use clock face to illustrate to the pupils.

| E.g. of analogue and digital time | *Illus.* | *Illus.* |
|---|---|---|
| | Digital time 9:00 | 20:30 |
| | Analogue time 9 o'clock | Half past 2 |

Guide pupils to understand that the digital form is used more of these days especially in the airports, train station, supermarkets etc.

Lead the pupils through examples on pages 138 and 139.

Exercises 1 and 2 pages 138–139 should be given as classwork.

Exercises in workbook can be given as homework.

**Unit 5      Days of the week in order**

Lead pupils to recite the days of the week. Introduce the song on page 140 which will help them to remember the days of the week.

Ask the pupils to mention some important dates (Christmas day 25th December, Independence day, 1st October).

Guide the pupils through Exercise 1 page 140 and Exercise 2 page 141 and give Exercise 1 Question nos. 1, 3, 5, 7 and 9 and Exercise 2 Question nos. 1, 3, 5 and 7 as classwork.

Exercises in workbook as classwork.

## Chapter 11    Weight

**Objectives**

At the end of this chapter, pupils should be able to:

1      compare weights of objects.

2      order objects by weight.

**Unit 1      Comparing weight of objects**

Display objects or introduce objects: chair, table, cup, cap, bucket, books, biro, eraser, bottles etc., call the pupils to pick two objects and compare by using the phrase 'heavier than' or 'lighter than'.

Guide the pupils to Exercise 1 page 144 as a classwork (give this to pupils orally).

Exercise 2 page 145

Give this exercises as written classwork.

**Unit 2      Ordering weight**

Introduce the three scales on page 148 (simple balance scale, weighing pan scale and bathroom scale) and explain where they are used. Example, simple balance scales are mostly used in school science lab, goldsmiths, chemical shops etc.

Weighing pan scales are used in butcher's shop, building material sellers, poultry feed sellers etc., bathroom scales are used in the hospitals, schools, homes, etc.

Involve the pupils in Activity 1 on page 138 by dividing them into groups. Allow each group to perform their operation using the scale by following Step 1 and Step 2.

Ask questions on their observations, e.g. which is heavier NMM book and the notebook.

How many notebooks will have the same weight with the NMM book.

Guide the pupils through Activity 2 page 148.

Lead the pupils through Exercise on page 147 by giving them an examples (use question no. 1 as example) and allow them to do the rest as classwork.

Homework should be exercises in the workbook.

## Chapter 12    Capacity

**Objectives**

At the end of this chapter, pupils should be able to:

1    identify and name objects that can be used for measuring capacity.

2    order containers based on their capacity.

3    compare capacity of containers.

**Unit 1    Identifying and naming objects that can be used for measuring capacity**

Introduce some items that can be used for measuring capacity, e.g. 150 cl eva water bottle, 50 cl coca cola bottle, 1 litre jug, 4 litres fine coat pail, 16 litres bucket, 250 ml tea cup, 10 ml spoon etc. Discuss the use of the items with the pupil's. Engage the pupils in practical demonstration by pouring water intot he containers and comparing their (volumes) capacity.

Lead the pupils through the items on page 150. Guide the pupils to use he items to answer questions from Exercise 1, page 150 as classwork. Give Exercise 2 page 151 as homework.

Exercise 3 on page 152

Guide the pupils through this exercise in the class. If possible you can introduce a practical examples by using containers and cup or spoon.

**Unit 2    Ordering capacity**

Guide the pupils through the exercise under this unit page 153 by explaining number nos. 2–5 as class exercise.

**Unit 3    Comparing capacity**

Lead pupils through Exercises 1–2 on pages 154–155. Explain the phrase 'holds more than' and 'holds less than' by using containers to demonstrate to the pupils. Give exercises in the workbook as homework.

# Chapter 13    Area

**Objectives**
At the end of this chapter, pupils should be able to:

1      compare area of objects/shapes.

2      arrange area of objects/shapes in order of size.

3      find and compare area of shapes by counting squares.

**Unit 1      Comparing area of objects and shapes**
Lead the pupils to understand what area is. Area is the amount of space inside a flat shape, e.g. triangles, circle, rectangle, square, oval etc. Remind the pupils that the space should be enclosed by boundary.

*Illus.*            *Illus.*            *Illus.*

A                  B                  C

The three shapes are similar but are different in sizes. The space inside the circles are the areas. Guide the pupils through examples on page 158 and explain that the phrase, 'larger than', 'smaller than' should be used when comparing the sizes of objects or shapes.

Guide pupils through the exercise on page 159 (this can be treated orally in the class).

**Unit 2      Arranging areas of objects and shapes in order of size**
Introduce models of same shapes with different sizes. Papers or cardboards can be cut into shapes and sizes. Mix the shapes together.

Invite the pupils one by one or in groups to identify similar objects and arrange them in order of sizes (treat this practically in class).

The above can be done in a form of competition by inviting two or more groups to identify similar shapes and arrange them in sizes as fast as possible. The group that finishes early will be first.

Exercise 1 on page 160 and Exercise 2 on page 161 can be given as classwork.

**Unit 3     Comparing areas of shapes by counting squares**

Introduce this topic by drawing the shapes on a graph board (graph board has small squares and shapes can easily be drawn on it). Explain to the pupils that the small squares are all the same size and the shape with more small boxes is the largest.

Invite the pupils to the graph board to identify the smallest and the largest shape (they should give reasons for their answers).

E.g.        *Illus.*          *Illus.*          *Illus.*          *Illus.*

        A                B                C                D

Ask the pupils to identify which is the largest and give reasons.

Step A

Do not allow the pupils to count the small squares first. They should tellthe answer at a glance.

Step B

Allow them to count the small squares each shape has (to know if they are right in Step A above).

Exercise 1 on page 162

Guide pupils through this exercise by selecting 1 or 2 as examples. Give the rest as classwork.

Exercise 2 on page 164

Give this exercise as homework.

Workbook exercises part can be given as classwork and the remaining as homework.

# Chapter 14    Three-dimensional shapes

**Objectives**

At the end of this chapter, pupils should be able to:

1    identify objects in our environment that are cubes, cuboids, cylinders and spheres.
2    identify and count the faces, edges and vertices of cubes and cuboids.
3    identify and count the curved faces of cylinders and spheres.

## Unit 1    Identifying and counting the faces, edges and vertices of cube and cuboids

Introduce this topic by using solid objects like boxes (cubes, cuboids, trapezoids etc), tins, balls etc. Arrange and display the objects for the pupils to identify and name each. Ensure that the objects should be the common types we see or come across (by) in our daily activities.

E.g. a tin of milk, milo etc. match box, die, carton of noddle box, football, etc.

Lead the pupils through Exercise 1 on pages 166–167 in the class.

Involve the pupils in Activities 1–4 on pages 168–170. Introduce a cube of sugar and match box. Display this objects and ask questions on this objects from their observations.

Number of flat faces each has

Number of edges each has
}    Activities 1–2

Explain what an edge is (is where flat faces meet)

*Illus.*

Vertices (corners) of cubes and cuboids explain what vertex is

(where the edges meet in a cube or cuboid is the vertex)                    *Illus.*

Plural of vertex is vertices.

After explaining, ask questions from their observations e.g.

How many vertices has a cube of sugar?

How many vertices has a match box?

Why do they have the same number of edges and vertices?

Activity 4

Lead the pupils through this activity by asking questions from Activity 4.

Exercise 2, page 169

Give this exercise as classwork.

## Unit 2      Identifying the curve surfaces of cylinders and spheres

Introduce this topic by asking pupils to name or list objects with curved surfaces.

E.g. a tin of milk, milo, bulb, football, bowl, etc.

Explain what a curve surface is to the pupils by using some of the objects, e.g. surface of football.

Ask questions e.g.,

How many surfaces have a football?

How many surfaces have a tin of milk?

Guide the pupils to discover the properties of a cylinder and a sphere.

### Cylinder

a)    2 flat circular surfaces

b)    2 circular edges                                    *Illus.*

c)    1 curve surface

### Sphere

*Illus.*

a)    1 curve surface

Exercise on page 171

This exercise should be treated orally in the class. The exercises in the workbook should be treated as classwork.

## Chapter 15    Two-dimensional shapes (plane shapes)

**Objectives**

At the end of this chapter, pupils should be able to:

1     identify the square, rectangle, circle and triangle.

2     identify the square corners in two-dimensional shapes.

**Unit 1     Identifying square, rectangle, circle and triangle**

Introduce this topic by asking questions from pupils to identify the shapes of class windows, doors, board, etc.

Guide the pupils through exercises on pages 173–174 and exercises on pages 175–176 as classwork.

**Unit 2     Identifying the square corners in two-dimensional shapes**

Cut cardboard into squares, rectangles and circles. Use the cut shapes to explain square corners.

E.g.            *Illus.*                          *Illus.*

Ask the pupils to identify square corner from the diagrams.

            *Illus.*               *Illus.*                 *Illus.*

Lead the pupils to Exercise 1 on page 177.

Treat this exercise orally with the pupils in the class.

Guide the pupils to Exercise 2 on pages 178–179 as classwork.

Exercise in the workbook can be given as homework.

## Chapter 16    Data collection

**Objectives**

At the end of this chapter, pupils should be able to:

1    read and interpret pictograms.

2    read and interpret block graphs.

**Unit 1    Reading and interpreting**

Lead the pupils through examples  on pages 181–182.

Explain the examples above (this will enable pupils to prepare their own data etc. Divide the pupils into groups and assign each group the type of data you want them to collect.

E.g.

1    Thos born on the days of the week        2    Types of fruits pupils like

| Days | No. of girls | No. of boys | Fruits | No. of boys | No. of girls |
|------|--------------|-------------|--------|-------------|--------------|
| Monday | | | Apple | | |
| Tuesday | | | Mango | | |
| Wednesday | | | Banana | | |
| Thursday | | | Pineapple | | |
| Friday | | | Pawpaw | | |
| Saturday | | | coconut | | |
| Sunday | | | orange | | |

Months of the year, heights in cm, brand of cars each pupil likes etc.

Each group will fill the table given to them. Ensure that the data they need could be obtained in their immediate environment.

Ask questions from the pupils based on their data.

Lead the pupils through Exercises 1–2 of pages 183–184.

Introduce pupils to Activity on page 185.

If pupils are not familiar with the clubs listed. Use other familiar objects, fruits, cars, colours etc.

**Unit 2      Reading and interpreting block graphs**

Lead pupils through Exercise 1 on page 186. Guide pupils to draw a block graph of their birthdays. Write the months of the year and make each birthday child hold each month while others with same birthday stand behind him/her. Let them use this to record as a block graph. Ask them to use their information to answer the questions under Exercise 1 on page 186 (the questions can be in oral form).

Guide the pupils through Exercises 2–4 on pages 187–189 as classwork.

Give the exercises in the workbook as homework.