Chapter 1 Number and numeration

Whole numbers

Objectives

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

1 review counting, reading and writing numbers up to 200

2 count and read numbers from 0–999.

3 identify place value and value of digit up to 999.

4 write numbers up to 999 in expanded form.

5 write numbers up to 999 in words and figures.

6 compare and order whole numbers up to 999.

7 write numbers in steps of 2, 5, 10, 25, 50 and 100.

8 identify the ordinal number of objects.

9 identify odd and even numbers.

Unit 1 Counting, reading and writing of numbers up to 200

Exercise on page 1

Guide pupils to complete the table on page 1 and also nos. 2, 3 and 4 of the exercise (pages 2–3).

Revise some selected questions from nos. 5–8 (page 4) and give the rest as homework.

Unit 2 Counting and reading of numbers up to 999

Revise the counting, reading and writing up to 200 then extend it to 900. Reference to pages 4–6.

Guide pupils in counting in hundreds in figures and words and let them identify the number of hundreds in 200, 300, 400…

Unit 2 Counting and reading in hundreds, tens and units up to 999

Lead the pupils to counting, reading and writing in hundreds, tens and units up to 999 (Reference to pages 7–9).

Exercise 1on page 11

Give this exercise as classwork.

Unit 3 Place value of digits up to 99

Lead the pupils through the table on page 12. Explain the table and guide them through the example on the same page.

Treat nos. 1, 2, 3, 4 and 5 orally in the class.

Values of digits

Use examples to explain values of digits as illustrated in the table and example on page 13.

Exercise 2 (Page 13)

Guide pupils through nos. 1 and 2 as classwork and no. 3 as homework.

Unit 4 Writing numbers up to 999 in expanded form

Explain using examples on expanded form of numbers.

e.g. 785 = 700 + 80 + 5

Exercise (Pages 15–16)

Guide pupils to use the example to complete the table on pages 15–16.

Unit 5 Writing numerals up to 999 in words and figures

Explain how numbers can be splitted and written in words (Reverence pages 16–17) and the examples).

e.g. 891 = 800 + 90 + 1

= 800 + 91

↙ ↘

eight ninety

hundred one

891 = eight hundred and ninety one

Exercise (page 17)

Lead the pupils through this exercise by making them to read aloud and write each in words.

Writing numbers in figures

Select some questions and use it as examples before leading the pupils to the exercise.

e.g. five hundred and twenty five

five hundred = 500

twenty five = 25

525

Eight hundred and six

eight hundred = 800

six = 6

806

Exercise 2 (Page 18)

Give nos. 1 and 2 as classwork.

Unit 6 Comparing and ordering whole numbers up to 999

Compare numbers

Exercise 1 (page 19)

Lead the pupils through the exercise by filling the gap with the phrase 'greater than' or 'less than'.

Using symbols to compare numbers

Introduce the symbols with their meanings

< less than

> greater than

Lead the pupils through the examples on page 20 on how to use the symbols.

Exercise 2

Guide the pupils to complete the questions by filling the gaps with the symbol $<$. $>$ or $=$ as classwork.

Ordering numbers

Lead the pupils through the examples or explanations on pages 20–21.

Exercise 3 (page 21)

Give questions nos. 1a–1f and 2a–2f as classwork.

Word problems involving ordering of numbers

Exercise 4 (page 21)

Use question no. 1 as example and the rest as classwork.

Unit 7 Counting numbers in steps 2, 5, 10, 25, 50 and 100 (number patterns)

Guide the pupils through examples on pages 22–23.

Exercise on page 23

Selection questions nos. 1, 3, 5 and 6 as classwork.

Exercise in the workbook should be given as homework.

Unit 8 Ordinal numbers

Explain the example on page 25

Exercise (page 25)

Treat the exercises orally with pupils in the class.

Unit 9 Odd and even numbers

Explain what even and odd numbers are e.g. 2, 4, 6, 8, 10, 12… are divisible by 2

1, 3, 5, 7 have remainder when divided by 2

Numbers which are divisible by 2 with no remainder are called **even numbers**.

Numbers which when divided by 2 have remainder 1 are called **odd numbers**.

Exercise (page 26)

Give questions nos. 2, 3 and 4 as classwork. The rest and the exercises in the workbook can be given as homework.

Chapter 2 Frictions

Objectives

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

1 find $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of groups of objects.

2 identify like and unlike fractions.

3 identify fractions that are equivalent.

4 compare and order fractions.

Unit 1 Revision of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, of groups of objects

Lead pupils through the examples on page 31.

Guide pupils through the exercise on page 32.

Unit 2 Meaning of a fraction

Lead pupils through the examples on pages 32–34. Use teaching aids (paper, cardboards cut into shapes, circle, square, rectangle etc loaf of bread, orange etc) to demonstrate by cutting whole objects into fractions. Instruct pupils to cut objects into (fractions) parts $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ etc.

Lead the pupils through Exercises 1–2 of page 34.

Unit 3 Equivalent fractions

Use the chart on page 35 to explain how fractions are equivalent.

e.g. from chart $\frac{1}{2}$ is the same as $\frac{6}{12}$, $\frac{2}{4}$, $\frac{4}{8}$, $\frac{3}{6}$

$\frac{3}{4}$ is the same as $\frac{6}{8}$, $\frac{9}{12}$ etc.

Explain how to obtain equivalent fractions of a given fraction (multiply numerator and denominator by the same number).

e.g. $\frac{1}{3} = \frac{1}{3}\times\frac{2}{2}=\frac{2}{6}$ $\frac{2}{5} = \frac{2}{5}\times\frac{3}{3}=\frac{6}{15}$ etc.

Lead the pupils through Exercise 1 of page 36. When a fraction is in enlarged form, it can be reduce to simpler form by dividing both the numerator and denominator by the same number,

e.g. $\frac{4}{12} = \frac{4\div4}{12\div4}=\frac{1}{3}$, $\frac{18}{30} = \frac{18\div6}{30\div6}=\frac{3}{5}$ etc.

Pupils should be made to remember that equivalent fractions can be obtained by multiplying or dividing both the numerator and denominator by the same number.

Guide the pupils through Exercise 2 of page 37.

Unit 4 Ordering fractions

Lead the pupils through the number line on page 38. Use the number line to guide the pupils through Exercises 1–2.

Give the revision exercise as classwork.

The exercises in the workbook can be given as homework.

Allow pupils to solve problems under Quantitative Reasoning of pages 40–41 as a drill.

Chapter 3 Basic operations

Addition (Whole numbers)

Objectives

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

1 add 2-digit numbers with renaming.

2 add 3-digit numbers without renaming.

3 add 3-digit numbers with renaming.

4 add 2- or 3-digit numbers with renaming by partial sum method.

5 add three numbers together, taking two at a time.

6 solve word problems involving addition of whole numbers.

Unit 1 Addition of 2-digit numbers with renaming

Lead pupils to examples on pages 43–44

$$\begin{array}{rcl} 28 & = & 20 + 8 \\ +\,84 & = & 80 + 4 \\ & & 100 + 12 = 100 + 10 + 2 = 112 \end{array} \qquad \begin{array}{r} 28 \\ +\;\;84 \\ \hline \end{array}$$

Explain the above and introduce the short method

	H	T	U
		2	8
+		8	4
	1	1	2

Explain the short method (see details in the textbook).

Introduce another example and use the same procedure in solving. Ensure that pupils are familiar with the two methods.

Guide pupils to exercise on page 44 (give this as classwork).

Unit 2 Addition of 3-digit numbers without renaming

Exercise 1 on page 45.

Lead pupils through this Exercise 1A by explaining Questions nos. 1 and 3.

325 = 300 + 20 + 5 and 461 = 400 + 60 + 1

Guide them to complete the rest.

Lead pupils through Exercise 1B by explaining Questions nos. 1 and 3.

Guide the pupils to complete the rest.

Lead the pupils through the examples on pages 45–46.

e.g.	H	T	U	=	H		T		U				
	4	4	6	=	400	+	40	+	6	→	4	4	6
+	3	2	3	=	300	+	20	+	3	→ +	3	2	3
	7	6	9		700	+	60	+	9	=	7	6	9

	H	T	U		H	T	U		
	2	5	4	–	||	|||	||||	Units column	4 + 4 = 8 units
						||			
+	1	2	4		|	||	||||	Tens column	5 + 2 = 7 tens
	3	7	8		|||	||||	|||||		
						|||	|||	Hundred column	2 + 1 = hundreds
					3	7	8		

Lead pupils to realise that addition of numbers starts from the units column to the left. Encourage pupils to use counters.

Exercise 2 on page 47

Give this exercise as classwork.

Unit 3 Addition of 3-digit numbers with renaming

Lead pupils through the examples and guide pupils to Exercise 1on page 49.

e.g. 4 tens and 15 units = 4 tens + 1 ten + 5 units

= 5 tens + 5 units

(4 × 10 + 15) = 40 + 15 = 55 or 4 0

1 5

5 5

Explain the above.

The following numbers can be rename as

$$63 = 6 \text{ tens} + 3 \text{ units} = 5 \text{ tens} + 1 \text{ ten} + 3 \text{ units}$$
$$= 5 \text{ tens} + 13 \text{ units}$$
$$46 = 4 \text{ tens} + 6 \text{ units} = 3 \text{ tens} + 1 \text{ ten} + 6 \text{ units}$$
$$= 3 \text{ tens} + 16 \text{ units}$$

The above refers to Exercise 1 (a) and (b).

Exercise 1(c), guide pupils through by giving examples

Adding numbers by regrouping

Explain the examples, both expanded and short methods using the same method under Unit 2.

Exercise 2 on page 52

Guide pupils through the exercise as a classwork.

Unit 4 Addition of 2- or 3-digit numbers with renaming, using the partial sums method

Lead pupils through examples on pages 54–55.

Guide pupils to discover that the expanded sum of a given numbers add up to give the total in the last column.

Exercise on page 55

Give or treat as a classwork.

Unit 5 Addition of 3-digit numbers, taking two at a time

Lead pupils to the examples on pages 56–57.

Guide pupils to understand that when adding three whole numbers, any two numbers can be added first. The order does not affect the result (commutative).

e.g. $\underline{9 + 2} + 6 = \underline{6 + 2} + 9 = \underline{2 + 9} + 6$

Exercise on page 57

Questions no. 1, 3, 5, 7, 9, 11, 13 and 15 can be given as classwork.

The rest and exercises in the workbook can be given as homework.

Unit 6 Word problems involving addition of whole numbers

Lead pupils through the examples, select some of the questions and give as an examples,

e.g. Question A no. 8 page 59

Seven hundred and ninety-four and one hundred and twenty-eight.

700 + 94 + 100 + 28 = 794 + 128 = 922

Question B no. 3 page 59

445 boys and 398 girls

Total is 4 4 5

3 9 8

8 4 3

Exercise on page 59

Question A nos. 1–5 Can be given as classwork

Question B nos. 4–5

Exercises in the workbook can be given as homework.

Chapter 4 Addition of fraction

Objectives

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

1 add fractions that have the same denominator together.

2 solve word problems involving addition of fractions that have the same denominator.

Unit 1 Addition of fractions with the same denominator

Use teaching aids to explain this topic.

Teaching aids: cardboards, papers, crayons etc.

Draw shapes like square, rectangles, triangles, circles etc.

Divide the shape(s) into equal parts as illustrated below.

Illus.

$$\frac{4}{8}+\frac{2}{8}=\frac{6}{8}$$

Illus.

$$\frac{1}{4}+\frac{1}{4}=\frac{2}{4}$$

Lead the pupils through the examples on pages 62–63.

Guide the pupils through Exercise 1 of pages 63–64 and the pupils as classwork.

Unit 2 Word problems on addition of fractions

Use objects (a loaf of sliced bread, cake, pawpaw, pineapple, pebbles, leads, money etc) to illustrate using aids,

e.g. A loaf of bread sliced into 15 parts (pieces)

Illus.

Give the first pupil 5 sliced of bread

second pupil 6 sliced of bread

third pupil 6 sliced of bread

Ask questions,

1 What fraction of sliced bread is given to 1st pupil

2 What fraction of sliced bread is given to 2nd pupil

3 What fraction of sliced bread is given to 3rd pupil

If the 1st and 3rd pupil decide to give their sliced pieces of bread to their teacher, what fraction is given to teacher?

$$\frac{5}{15}+\frac{2}{15}=\frac{7}{15} \text{ etc.}$$

Guide the pupils through the exercise on pages 65–66 using practical examples as above or otherwise.

Give nos. 1, 2, 3, 4 and 6 of exercise on page 65 and part of some selected exercise in the workbook as classwork. The rest should be given as homework.

Chapter 5 Subtraction (Whole numbers)

Objectives

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

1 subtract 2- and 3-digit numbers without renaming.

2 subtract 2-digit numbers with renaming.

3 subtract 3-digit numbers with renaming.

4 subtract three whole numbers taking two at a time.

5 solve word problems involving subtraction.

Unit 1 Subtraction of 2- and 3-digit numbers without renaming

Lead pupils through examples on page 68.

Guide pupils to begin subtraction from the units column, followed y the tens and hundreds column.

Guide the pupils through exercise on page 69.

Give nos. 1–5 of A part and 1–6 of B part of the exercise as classwork.

Unit 2 Subtraction of 2-digit numbers with renaming

Lead the pupils through examples on pages 70 and 71.

Explain the examples following the necessary steps and pick questions from the exercises on pages 70 and 71 and give as more examples.

Guide the pupils through exercise 1 of page 70 and Exercise 2 of page 71 as classwork.

Unit 3 Subtraction of 3-digit numbers with renaming

Treat the examples on page 72 with pupils with explanations (follow necessary steps).

Guide the pupils through selected questions, nos. 1–9 of Exercise 1.

Similarly treat examples on page 73 and give the pupils selected questions from Exercise 2 to be solved.

Use the same procedure by following steps in examples on pages 74–75. Guide the pupils through selected questions from Exercise 3 to be treated as classwork.

Unit 4 Subtraction of 3-digit whole numbers, taking two at a time

Lead the pupils through example on page 76.

Guide the pupils to understand that subtraction must always be in the right way (not commutative),

e.g. $436 - 105 - 101 = (436 - 105) - 101$

$= 331 - 101$

$= 230$

Select some questions from Exercise 1 of page 76, we suggest nos. 1–6 as a classwork.

Introduce some questions from Exercise 2 of page 76 and help the pupils to generate numbers with their difference giving the required answer.

e.g. $\square - \square = 8 \Rightarrow 68 - 60 = 18$

Guide the pupils through some of the questions as classwork.

Unit 5 Problem solving

Lead the pupils through some questions (challenging ones) in exercise under this topic on page 76,

e.g. Joshua's house is 136 years old. How old was the house 25 years ago?

$136 - 25 = 111$

Give the pupils questions 1, 2, 3, 4, 5, 7 and 8 of the exercise above.

Give the pupils the rest of the questions and the exercises in the workbook as homework.

Chapter 6 Subtraction of fractions

Whole numbers

Objectives

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

1 subtract fractions that have the same denominator from each other.

2 solve word problems involving subtraction of fractions that have the same denominator.

Unit 1 Subtraction of fractions with the same denominator

Lead pupils through the examples on page 79.

Introduce teaching aids (cardboards, papers, fruits, beads, counters, loaf of sliced bread, cake etc.)

Draw shapes (square, rectangle, circle etc) and divide the shape into equal parts.

e.g. *Illus.*

$\frac{5}{12}$ $\frac{2}{12}$ $\frac{5}{12} - \frac{2}{12} = \frac{3}{12}$

$\frac{8}{16}$

Illus. $\frac{8}{16} - \frac{4}{16} = \frac{4}{16}$

$\frac{4}{16}$

Beads, bread etc can also be divided into parts to form fractional parts.

Guide the pupils through exercises on pages 79–80.

Give part of the exercise as classwork and the rest as homework.

Unit 2 Problems involving fractions

Use practical examples to illustrate under this topic. Use of teaching aid is very important e.g. a water melon is cut into 10 equal parts and shared among three pupils.

Give the 1st pupils 3 parts

Give the 2nd pupils 2 parts

Give the 3rd pupils 4 parts

Ask questions from pupils

1 What faction of the melon is given to the 1st pupil? $= \frac{3}{10}$

2 What fraction of the melon is given to the 2nd pupils? $= \frac{2}{10}$

3 What fraction of the melon is given to the 3rd pupils? $= \frac{4}{10}$

4 What fraction is left after the three pupils were given 3, 2 and 4 parts respectively?

$$1 - \frac{3}{10} - \frac{2}{10} - \frac{4}{10} = \frac{1}{10}$$

Use other practical examples to explain word problems.

Guide the pupils through the exercise on page 81 as classwork.

Give the exercises in the workbook as homework.

Chapter 7 Multiplication

Objectives

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

1 review multiplication of numbers on a number line.

2 identify the basic multiplication tables of 1 to 10.

3 multiply 2-digit numbers by 1-digit numbers.

4 multiply 3-digit numbers by 1-digit numbers.

5 multiply 3-whole numbers, taking 2 at a time.

6 solve word problems involving multiplication.

Unit 1 Multiplication using of numbers on a number line

Lead pupils through the exercise on page 83. Pick question under A nos. 1, 3, 7 and under B no. 1 as examples and give the rest as classwork. Exercise in the workbook can be given as homework.

Unit 2 Basic multiplication tables from 1 to 10

Guide the pupils through examples on pages 86–87.

Allow pupils to state what they observed (multiplication property of 1) and conclude.

Guide the pupils to revise the multiplication of numbers 1, 2, 3... 10 using number lines (under unit pages 83–86) and grouping.

Guide the pupils through the mental multiplication drill.

Lead the pupils through exercises 1–7. Select some questions from the exercise and give as classwork and the rest as homework.

Unit 3 Multiplying 2-digit numbers by 1-digit number

Lead the pupils through Exercise 1 of page 96.

Guide the pupils to fill the boxes in expanded form.

Lead the pupils through examples on pages 96–97.

Take the pains to explain the examples in details and lead them through Exercise 2 by selecting some of the questions. Let the pupils be used to using both expanded and short methods.

e.g. $\begin{array}{r} 23 \\ \times\ 2 \end{array} = 20 + 3 \quad \text{and} \quad \begin{array}{r} 23 \\ \times\ 2 \end{array}$

$\text{x} \qquad 2 \qquad\qquad \times\ 2$

$20 + 6 = 26 \qquad 46$

Multiplying 2-digit by 1-digit numbers with renaming

Lead the pupils through examples on pages 98–99.

Take the pains to explain the examples, then lead the pupils through Exercise 3 by selecting some questions to be solved as classwork (we suggest you pick Questions 8–24).

Unit 4 Multiplying three whole numbers, taking two at a time

Lead pupils through Exercise 1 of page 100 to be answered as a drill in the class.

Lead the pupils through examples on pages 100–101.

Guide the pupils through Exercise 2 of page 101 and Exercise 3 of page 102. Select some questions from the two exercises to be done as class.

Note: The order of numbers under multiplication does not affect the answer.

e.g. $3 \times 2 \times 8 = 8 \times 3 \times 2 = 2 \times 8 \times 3$

Unit 5 Word problems involving multiplication

Select 2 or 3 questions from the exercise on page 103 to be sued as examples in addition to the given example on page 103.

Give the rest as classwork and the exercises in the workbook should be given as homework.

Chapter 8 Division

Objectives

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

1 review division as sharing and grouping.

2 divide whole numbers not exceeding 48 without remainders.

3 solve story problems involving division of whole numbers.

Unit 1 Division as sharing and grouping

Division as sharing equally (Revision)

Revise this by going through the examples on page 107.

Exercise 1 of page 108 should be given as classwork.

Division as grouping

Lead the pupils through the examples on page 111

Exercise 2 of page 111 should be given as classwork.

Unit 2 Division of numbers not exceeding 48 without remainder

Using a number line

Use the number line to explain division of numbers without remainder. After explaining the examples in the textbook, give them more examples.

e.g.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

$15 \div 3 = 5$

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

$18 - 6 = 3$

Lead the pupils through Exercise 2 of page 115. Select no. 4 as an example and allow them to complete the rest.

$7 \times 6 = \square$	$7 \times 6 = 42$
$42 \div 7 = \square$	$42 \div 7 = 6$
$42 \div 6 = \square$	$42 \div 6 = 7$

Using the division box

Lead the pupils to the examples on page 115 and pick questions from Exercise 3 of page 116.

e.g. 6 | 6 4 | 28
1 7

Exercise 3, page 116 nos. 6–15 given as classwork and the rest with exercises in the workbook as homework.

Word problems

Lead the pupils to examples on pages116–117.

Exercise 4 of page 117, nos. 5 and 10 can be treated as example as well. The remaining questions should be given as classwork.

Exercise in workbook and revision exercises should be given as homework.

Chapter 9 Factors and multiples

Objectives

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

1 find the factors of numbers not exceeding 48.

2 find the multiples of numbers.

3 identify the relationship between multiples and factors.

Unit 1 Factor of numbers

Explain the statement on pages 119–120 and the definition below followed by examples.

Definition

When two or more numbers are multiplied together the number obtained is called the **product** of those numbers.

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

12 is the product of 2, 3 and 5.

Definition

The factors of a given number are the numbers that can divide the given number without remainder.

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

$30 \div 5 = 6$ because $5 \times 6 = 30$

$8 \div 3 = 2$ R 2 $\rightarrow$ 3 cannot divide 8 perfectly because the remainder is

$\therefore$ 3 is not a factor of 8

Number that can divide other numbers without remainder are called their factors.

Ask pupils to mention numbers that divide other numbers perfectly without remainder.

Pick questions from the exercise on page 121 each from A and B and use as examples.

e.g. $38 = 2 \times \square$ and 20: 1, 2, 4, $\square$, $\square$, 20

$38 = 2 \times 14$ and 20: 1, 2, 4, ⑤, ⑩, 20

Guide pupils to solve problems from exercise on page 121 as classwork.

Exercise on page 121

A No. 1, 2, 3, 5, 7, 9 and 10

B No. 2, 3, 4, 7, 9, 11, 14

Exercise in the workbook should be given as homework.

Unit 2 Multiples of numbers

Lead pupils through the table under this unit on page 122 and explain

2, 4, 6, 8, 10, 12…are multiples of 2.

Definition

Multiples of a given whole number are numbers that are obtained by multiplying the given whole number by other whole numbers.

Guide the pupils to copy and complete Table A of Exercise 1, page 123.

Introduce the pupils to Questions B and C of the same Exercise 1 by giving examples.

Pupils should complete the rest as homework in addition to exercises in the workbook.

Successive addition

Lead the pupils through the examples on page 124.

Exercise 2 page 124

The exercise should be given as classwork both A and B.

Guide the pupils to use the table of multiples in B to complete the questions in the next table.

Revision exercise 9 can be given as homework.

Chapter 10 Algebraic processes

Open sentences

Objectives

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

1 find the unknown in addition and subtraction number sentences.

2 find the unknown in multiplication and division number sentences.

3 solve word problems involving number sentences.

Unit 1 Finding the unknown in addition and subtraction of number sentences

Exercise 1 of page 126

Treat this exercise as revision by picking some questions from the exercise and revise with the pupils

We suggest the following questions:

A Nos. 3, 5, 7, 9 and 11

B Nos. 1–4 … the rest as assignment

Guide the pupils through examples on pages 127–128 and lead them through Exercise 2 page 128.

Exercise 2 of page 128

Treat Questions nos. 3, 5, 7, 9, 11, 13, 17 as classwork.

Unit 2 Finding the unknown in multiplication and division number sentences

Multiplication

Exercise 1 page 129

Treat this exercise as revision by leading pupils through Questions 1–6 and A and B of page 130.

Exercise 2 of page 131

Pick Questions 3, 7 and 11 as examples. Use commutative property to explain how to find the missing factor.

Guide pupils to solve Questions 2, 4, 5, 6, 10, 12, 15, 16, 19 and 21 as classwork, the rest should be given as homework.

Division

Lead the pupils through Exercise 3 of page 131.

Treat nos. 1 and 2 as examples and the rest as classwork.

Multiplication and division relationship

Treat the examples on page 132 with the pupils, explain the relationship between multiplication and division.

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

$12 \div \square = 4$

$\Rightarrow \quad 4 \times 3 = 4 \times \square$

$\square = 4$

Exercise 4 page 132

Treat nos. 3, 5, 7, 11, 13, 17 and 19 as classwork and exercise in the workbook as homework.

Unit 3 Word problem

Guide pupils through examples on page 133.

Select some questions from the exercise on page 134 nos. 1 and 3 and treat them as example and treat the rest as classwork.

Exercises in workbook as homework.

Chapter 11 Measurement

Money

Objectives

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

1 change currency to smaller units.

2 shop and receive change with money.

3 add and subtract money.

4 solve word problems involving addition and subtraction of money.

5 multiply money by 1-digit numbers.

6 solve word problems involving multiplication of money.

Unit 1 Changing currency to smaller units

Lead the pupils through the pictures of Nigerian currency on pages 136–137.

If possible introduce real specimen coins and bank notes to the class for pupils to identify.

Guide pupils through pages 137–138 under **changing money**.

Introduce pupils to Activities 1 and 2 and involve them by giving them bank notes (dummy notes) to perform the activities.

Exercise 1 of page 138

Guide the pupils through this exercise by giving it as a classwork.

Lead pupils through the examples on pages 139–140 and give Exercise 2 of page 139 and exercise 3 of page 140 as a classwork.

The exercises in the workbook can be given as homework.

Unit 2 Shopping with money

Introduce the pupils to the items with their price tagged on page 140.

Guide the pupils through the exercise on page 141.

Explain the first two examples and give the rest as classwork.

You can organise the pupils to create a small shop and stuff it with some items with price tag.

Guide the pupils to buying and selling (pay and collect change etc). Assist incase of difficulties in their transactions.

Unit 3 Addition and subtraction of money

Lead the pupils through examples.

₦ 6 • 43	₦ 8 • 04	₦8 • 45	₦12 • 10
+ ₦ 8 • 73	+ ₦ 9 • 12	– ₦4 • 12	– ₦ 6 • 25
₦15 • 26	₦17 • 16	₦4 • 33	₦ 5 • 85

Exercise 1 of page 142

Nos. 3, 5, 7, 9 and 11 as classwork.

Exercise 2 of page 142

Nos. 3, 5, 7 and 9 as classwork.

Word problems involving addition of money

Lead the pupils through examples on page 143

Exercise 3 of page 143

Nos. 1, 3, 5 as classwork.

Exercise 4 of page 144

Nos. 1, 3, 5 as classwork.

Exercise in the workbook can be given as homework.

Unit 4 Multiplication of money

Lead pupils through examples on page 144.

Exercise of page 144

A Nos. 1, 3, 5, 7, 9 and 11

B Nos. 1, 3, 5 Give as classwork

The exercises in the workbook and the remaining exercise above should be given as homework.

Chapter 12 Length

Objectives

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

1 estimate length using natural units.

2 measure in metres and centimetres.

3 change metres to centimetres and vice-versa.

4 add and subtract in metres and centimetres.

5 solve word problems involving addition and subtraction of length.

Unit 1 Estimating length using natural units

Introduce pupils to Activities 1 and 2 of pages 147–148.

Let them compare their results, if their results are the same, why? If not, why?

Allow the pupils to find out why their results are not the same.

Unit 2 Measuring in metres and centimetres

Lead the pupils to Activities 1–2 on pages 149–150.

Guide the pupils to use their ruler to measure the lines correctly.

An **estimate** is a rough answer or idea that is made without measuring with instruments.

In Activity 2, let the pupils estimate the lines first before using ruler to measure.

Guide the pupils on how to estimate.

Guide the pupils to complete the table on page 150.

Lead the pupils to their observations on the estimate and actual measurements.

1 metre = 100 centimetres $\Rightarrow$ 1 m = 100 cm

Guide the pupils through Activity 3 on page 151 to complete the table (to tbe used to measure in metres).

Lead the pupils to exercise on page 151 by selecting some questions as examples.

e.g. convert 246 cm to metres.

$246 \text{ cm} = \frac{246 \text{ m}}{100} = 2.46 \text{ m}$

Convert

a) 5.2 m b) 2 m, 43 cm to centimetres

a) $5.2 \text{ m} = 5.2 \times 100 \text{ cm} = 520 \text{ cm}$

b) $2 \text{ m } 43 \text{ m} = 2 \times 100 \text{ cm} + 43 \text{ cm} = 200 \text{ cm} + 43 \text{ cm} = 243 \text{ cm}$

Give questions

A Nos. 1, 3, 5, 7 and 9

B Nos. 1, 3, 5, 7 and 9 as classwork

Exercise in the workbook can be given as homework.

Unit 3 Addition and subtraction in metres and centimetres

Lead the pupils through examples on pages 152–153.

Guide them to:

Exercise 1 of page 152

Nos. 1, 3, 5, 7 and 11

Exercise 2 of page 153 as classwork

Nos. 1, 3, 5, 7 and 11

Unit 4 Word problems involving length

Lead the pupils through examples on page 154 and guide them to exercise on page 154 Question nos. 1, 2, 3, 4 and 5 as classwork.

The exercises in workbook as homework.

Chapter 13 Perimeter

Objectives

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

1 identify the meaning of perimeter, and find the perimeter of regular and irregular objects by using thread/string.

2 find the perimeter of regular figures by measurement and by using the formula.

3 apply calculating perimeter to real-life situations.

Unit 1 Identifying the meaning of perimeter

Introduce this topic by involving pupils in Activities 1–5 of pages 157–158. Other objects can be used e.g. measurement of the board, top of their tables etc. Lead them to understand that the distance round or length of objects is called perimeter.

Definition

The sum of the distance of all the lengths of the sides of an object is called the **perimeter**. It is the distance round the space covered by an object.

Perimeter of regular and irregular objects and shapes

Regular shapes

Guide the pupils to measure the perimeter of the shapes in Exercise 1 of page 158 and use the measurement to fill the table on page 159.

Irregular shapes and objects

Guide the pupils through Exercise 2 of page 159 to find the perimeter of the irregular shapes using ruler and string or table rule.

Unit 2 Perimeter of regular shapes by measurement

Guide pupils through examples on pages 159–160

Exercise 1 of page 160

Give this exercise as classwork

A Nos. 1–6 B Nos. 1–12

Homework C Nos. 1–2 D Nos. 1–6

Exercise in workbook as homework.

Unit 3 Using the formula to find perimeter

Lead the pupils through example on page 163.

The shape of the lawn is rectangular

Perimeter $= 2l + 2b$ l = length b = breadth

$= 2(l + b)$

Using question number of the exercise on page 163 as an example

$l = 120$ and $b = 60$ m

Perimeter of $= 2(120\text{ m}) + 2(60\text{ m})$

$= 2(120 + 60)$ m

$= 2(180)$ m

$= 360$ m

Exercises on page 163

Question nos. 3–5 can be given as classwork.

The execises in the workbook can be given as homework.

Chapter 14 Time

Objectives

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

1 tell time accurately to the hour and half hour.

2 tell time accurately to the quarter hour.

3 tell time accurately in hours and minutes.

4 read the calendar and know the days of the week and months of the year.

Unit 1 Telling time accurately to the hour and half hour

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

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

Illus.

The **shorthand** is the **hour** hand.

The **longhand** is the **minute** hand.

The minute hand tells the number of minutes to the hour or after the hour.

The hour hand tells the hour e.g. on the diagram, the shorthand is facing 9 and the longhand is facing 12.

The time is 9 o'clock.

Move the hands and ask the pupils to tell the time.

Explain the importance of the long and shorthand and their relationship (one revolution, one circle), e.g. the long hand moves 1 circle in 60 minutes and the hour hand moves to the next number or covers one hour at that moment.

Remind pupils that 30 minutes $= \frac{1}{2}$ hour, 15 minutes $= \frac{1}{4}$ hour etc.

Remind the pupils that if the long hand moves from 12 in the clockwise direction back to 12, the hour hand will move to the next number in the clockwise direction (exactly one hour).

Use the clock hand to make movement and ask the pupils to tell the time. Correct where they have difficulties.

Guide the pupils through the exercise on page 165.

Ask pupils to tell the time orally (treat orally).

Explain to the pupils that the long or minute hand is always facing the number 6.

Lead the pupils to exercise on page 165, Question (B) nos. 1–10, guide them where they have difficulties.

Unit 2 Telling time accurately to the quarter hour (quarter past and quarter to)

Use the same clock face to explain to the pupils by moving the hands as in Unit 1. 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.

Explain the analogue and digital time.

Illus.

Analogue = Quarter to 12

Digital = 11.45

Illus.

Analogue = Quarter past 8

Digital = 8.15

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

Lead the pupils through Exercise 1 on page 169.

Question nos. 1–10 can be given as a classwork.

Exercise 2 on page 171, should be treated in another class after explanation using examples.

Question nos. 1–10 can be given as classwork.

Exercises in the workbook can be given as homework.

Unit 3 Telling time accurately in hours and minutes

Lead pupils through the examples on pages 172–173. Use the clock face to demonstrate to the pupils by showing various times an asking them to tell the time.

Lead the pupils to exercise on page 173.

Guide them through the analogue and digital …

Question A, nos. 1–10 and Question B, nos. 1–8.

Guide them through B by going round to ensure that they do the correct drawing.

Give question C, nos. 1–10 as homework and addition to exercises in the workbook.

Unit 4 Calendar reading

Introduce a big and bold calendar, hung it on the board.

As questions on number of days in a week, month and year.

Ask the pupils to mention some important dates (Christmas day, Independent day, Children's day, Workers' day etc.)

Ask pupils to locate the days on the calendar.

Exercises 1 and 2 on page 177

Treat the questions from this exercise as oral questions in the class.

Give exercises in the workbook as classwork.

Chapter 15 Weight

Objectives

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

1 measure weights of objects in grams and kilograms.

2 make meaningful comparisons of the weights of objects.

Unit 1 Introducing grams and kilograms as units of measuring weights

Introduce topic by using different objects which are not of the same weight. Pick any two and ask pupils to identify which is heavier or lighter.

Introduce the word 'more than' or 'less than' to compare the weight of two objects.

Lead the pupils through Exercise 1 of page 179. This exercise should be treated orally with the pupils.

Standard units of weight

Kilogram (kg) is used for weighing heavy objects (bag of rice, bag of cement etc)

Gram (g) is used for weighing lighter objects like eraser, ruler etc.

Lead pupils to activity on page 181, group the pupils and guide them on how to us the scales and reading.

Introduce some objects and allow the pupils to weight and do the reading themselves and record.

e.g.		**Object**	**Record weight in gram (g)**	**Record weight in kilogram (kg)**
	1	Pencil or biro		
	2			
	3			

Unit 2 Weights of objects

Guide the pupils through Exercise 1 of 182. It can be treated orally in class.

Remind the pupils that

1 000 grams (g) = 1 kilogram (kg)

Exercise 2 of page 183

Lead the pupils to this exercise by going through the examples of page 183.

Select some questions to be done as classwork.

A Nos. 1–4 B Nos. 1–4 C Nos. 1–3

Guide them through D and E and give as homework.

Give exercises in the workbook as homework.

Revision exercise of pages 186–187 can also be additional homework.

Chapter 16 Capacity

Objectives

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

1 identify the litre as the standard unit of capacity.

2 find the capacity of containers.

3 add and subtract litres.

4 solve word problems involving litres.

Unit 1 Identify the litre as a unit of capacity

Introduce this topic by using different types of containers (jug, bucket, cup, pot, bottle etc).

Capacity is the amount of **liquid** a container can hold.

Liquids are water, petrol, kerosene, oil etc. Standard measure for liquids is litre (*l*) millitre (ml).

Display 1 litre containers and other standard containers (250 ml), 150 ml, 50 ml etc).

Ask the pupils to give example of a litre container (Five Alive juice, 1 litre cup etc).

Exercise on page 189

Give this exercise as a classwork orally.

Unit 2 Capacity of containers

Introduce this topic by showing the pupils a graduated litre jug similar to the one on page 129 and explain the graduated (measurements written or printed on the jug) part.

Exercise 1 of page 189

A Nos. 1–10 $\Rightarrow$ guide them through this by demonstrating in the class using litre jug.

B Nos. 1–10 $\Rightarrow$ give them this in the form of oral questions in the class.

C Guide the pupils through this questions by selecting some questions as examples usingt he number line in Question C page 191.

1c $200\ \text{ml} \square \frac{2}{5}\ \text{l} \quad \Rightarrow \quad 200\ \text{ml} < \frac{2}{5}$

2e $\frac{3}{4}\ \text{l} \square \text{ml} \quad \Rightarrow \quad \frac{3}{4}\ \text{l} = 750\ \text{ml}$

3d $600\ \text{ml} \square \text{cl} \quad \Rightarrow 600\ \text{ml} = 60\ \text{cl}$

4f $100\ \text{ml} + \square\ \text{ml} \quad \Rightarrow 100\ \text{ml} + 900\ \text{ml} = 1\,000\ \text{ml}$

Explain the above examples before guiding the pupils through.

You can give Question C as homework and Exercise 2 of page 192 as well.

Exercises in workbook can be given as classwork.

Unit 3 Addition and subtraction involving litres

Lead the pupils through examples on page 193.

Guide the pupils through exercise on page 193.

A Nos. 1, 3 and 5

B Nos. 1, 3 and 4 as classwork

C Nos. 3 and 5

D Nos. 3 and 6

Workbook exercises as homework.

Unit 4 Problems involving capacity

Lead the pupils through Question 1 of the exercise (already solved) and give the rest as classwork.

Exercises in workbook

Select some as classwork and others as homework.

Chapter 17 Area

Objectives

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

1 find the area of regular and irregular figures by counting squares.

2 find the area of rectangles and squares by counting the number of squares or triangles they cover.

3 find the area of rectangles and squares by counting the number of square centimetres.

4 find the area of rectangles and squares, using the formula.

5 solve word problems involving the area of shapes.

Unit 1 Area of regular and irregular shapes

Explain regular and irregular shapes.

Illus. *Illus.*

Irregular shape Regular shape

By drawing the shapes on the board or using objects to illustrate. The two shapes on page 196 are examples

shape (w) is irregular and shape x is regular

Area is the amount of space a shape or object covers.

Exercise (page 197)

Guide he pupils on how to find the area of the shapes by counting the number of small square each contains.

Unit 2 Area of shapes by counting the number of squares

Guide pupils to study the shapes M, N, O, P and Q on page 197.

The small squares are of the same size and area.

Lead the pupils to understand that the shape with more small squares is the largest and the small squares determine the size of the shape.

Exercise on page 198

Guide the pupils through this exercise by giving the exercise as classwork.

Unit 3 Area of shapes by counting the number of square centimetres

Guide the pupils to study the shapes on page 198, A, B, C, Q, R, S, T, U, V and W.

Exercise on page 198

Find the area of 1 or 2 shapes by counting the number of small squares (1 cm^2) as an example.

Guide the pupils to find the area of the rest as classwork.

Units in which area is measured are square centimetres (cm^2), square metres (m^2) and square kilometres.

Exercises in the workbook should be given as classwork.

Chapter 18 Three-dimensional shapes

Objectives

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

1 revise the properties of cubes and cuboids.

2 construct and draw nets of cubes and cuboids.

3 revise the properties of cylinders and spheres.

4 identify the properties of a cone.

5 draw nets of cylinders and cones.

Unit 1 Properties of cubes and cuboids (Revision)

Revise the properties of cubes and cuboids with the pupils (under Unit 1).

Ensure that you use the teaching aids (a box Saint Louis sugar, a box of omo detergent or something similar.

Guide the pupils through exrcise of page 200.

This should be given to pupils as classwork.

Unit 2 Nets of cubes and cuboids

Teaching aids for Activities 1 and 2 on page 201 (drinking straws of equal length, paper tape).

Assist or guide pupils to use the straws and tape to make or construct a model of a cube.

Activity 1

Illus.

Activity 2

Teaching aids or materials needed sticks, erasers or a rubber gum.

Illus.

Lead the pupils through the activities and ask questions.
Guide pupils to answer questions from exercise on page 202 (trace each of the net drawn in the exercises and name the solid shape).

Unit 3 Properties of cylinders and spheres

Introduce solid shapes or objects (cylinders and spheres), e.g. a tin of milk, a tin of milo, football, tennis ball etc.
Ask pupils questions on properties of these shapes.

Illus.	*Illus.*
Cylinder	Sphere

Exercise on page 203

This exercise should be treated orally by asking the pupils questions in the class.

Unit 4 Cones

Lead pupils through this topic by asking pupils to mention where cones can be found, and their properties.

Unit 5 Nets of cylinders and cones

Guide pupils through this topic.
Give the pupils exercises from workbook and Revision Exercise 18 of page 204 as homework.

Chapter 19 symmetry (Plane shapes)

Objectives

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

1 identify objects and shapes with lines of symmetry.

2 identify properties of squares, rectangles, triangles.

3 draw squares, rectangle, triangles and circles.

4 identify and draw straight lines and curved lines.

Unit 1 Identifying objects and shapes with lines of symmetry

Involve the pupils in activity by sharing some pieces of papers in the shape of a rectangle and a circle.

1 Ask the pupils to fold the two papers in half and cut the two papers from the folded edge.

2 Ask pupils about their observations

3 The folded edge (lines) divides the shape into two equal parts.

4 The line (lines) that dives the shape into two equal parts is called **line of symmetry**.

Exercise on page 206

Guide the pupils to identify shapes which has lines of symmetry under this exercise, Question A, nos. 1–9, B nos. 1–12 C nos. 1–9

Unit 2 Properties of squares, rectangles and triangles

Lead pupils to pages 208–209 for the properties of squares, rectangles, triangles, scalene triangles and isosceles triangles. Explain and guide the pupils on these properties.

Exercise on page 209

Guide the pupils to answer questions from this exercise by filling the boxes.

Question A nos. 1–6, B nos. 1–10, D nos. 1–3 as classwork. Give exercise in workbook as homework.

Unit 3 Drawing squares, rectangles and triangles

Guide the pupils to study the shapes in their textbook.

Exercise on page 211

Guide the pupils to draw the shapes of this exercise, nos. 1, 2, 3, 4 and 7.

Unit 4 Straight lines and curved lines

Exercise 1 on page 212

Use the exercises to explain straight lines and curved lines.

Lead the pupils through Question B nos. 1–4, C no. 1

Exercise 2 on page 214

Give pupils Question nos. 1, 2, 3, 6, 7 and 8 as classwork.

Exercises in the workbook should be done as homework.

Chapter 20 Everyday statistics

Pictograms

Objectives

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

1 read and interpret pictograms.

2 represent information using pictograms.

3 identify the mode from pictograms.

Unit 1 Reading and interpreting pictogram

Revise the examples on page 217 with the pupils.

Exercise (page 218)

Treat this orally in the class with pupils by asking questions (question no. 1).

Question no. 2 should be given as classwork.

Workbook exercise can be given as homework.

Unit 2 Representing information using pictogram

Explain vertical and horizontal pictogram to the pupils using the information on pages 220–222.

Guide pupils to realise why a **key** is used in presenting the pictogram.

Exercise (page 222)

Treat Question nos. 1, 3 as classwork.

The exercises in the work should be treated as homework.

Unit 23 Identifying the mode of a pictogram

Explain or define the mode.

Mode is the number that occurs most.

Exercise (page 225)

Use Question A of page 225 as example and Questions B and C as classwork, workbook exercises as homework.