STANDARD SIX

1.0 NUMBERS

1.1 WHOLE NUMBERS

1.2 Specific Objectives

By the end of the topic, the learner should be able to:

a) recognize and identify place value and total value up to hundreds of millions
b) read and write numbers up to millions in symbols and in words
c) round off numbers to the nearest thousands
d) recognize and identify numbers divisible by eight
e) identify and work out squares of numbers
f) work out square roots of perfect squares of up to 3 - digit numbers.

1.3 Content

1.3.1 Place value and total value.
1.3.2 Reading and writing numbers up to millions in symbols and words.
1.3.3 Rounding off numbers.
1.3.4 Divisibility test for 8.
1.3.5 Squares of numbers.
1.3.6 Square roots of perfect squares.

2.0 FRACTIONS

2.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) recognize and identify reciprocals of numbers
b) recognize and identify squares and square roots of fractions involving perfect squares.

2.2 Content

2.2.1 Reciprocals.
2.2.2 Squares of fractions.
2.2.3 Square roots of fractions.

3.0 DECIMALS

3.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) recognize and identify place value up to 4 decimal places
b) round off a number to a given number of decimal places
c) convert fractions to decimals with and without recurring
d) convert decimals to fractions without involving recurring decimals.

3.2 Content

3.2.1 Place value up to 4 decimal places.
3.2.2 Rounding off decimals to a given number of places.
3.2.3 Conversion of fractions to decimals.
3.2.4 Conversion of decimals to fractions.

4.0 PERCENTAGES

4.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) recognize and identify percentage as a fraction
b) write percentage using the symbol (%)
c) convert fractions and decimals to percentage
d) convert percentage to fractions and decimals.

4.2 Content

4.2.1 Percentage as a fraction.
4.2.2 Using the (%) symbol.
4.2.3 Conversion of fractions to percentage.
4.2.4 Conversion of decimals to percentage.
4.2.5 Conversion of percentage to fractions.
4.2.6 Conversion of percentage to decimals.

5.0 OPERATIONS

5.1 WHOLE NUMBERS

5.2 Specific Objectives

By the end of the topic, the learner should be able to:

a) add and subtract numbers
b) multiply numbers
c) divide up to 5 - digit numbers by up to 2 - digit numbers
d) recognize and identify simple number sequence
e) work out problems involving LCM and GCD in real life.

5.3 Content

5.3.1 Addition and subtraction of numbers.
5.3.2 Multiplication of numbers.
5.3.3 Division of up to 5 - digit numbers by up to 2 - digit numbers with divisor less than the dividend.
5.3.4 Number sequences.
5.3.5 Working out problems involving LCM and GCD.

6.0 FRACTIONS

6.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) add and subtract up to 3 fractions using LCM
b) add and subtract up to 3 mixed numbers using LCM
c) multiply a fraction by a fraction and mixed numbers by a fraction
d) divide a whole number by a fraction
e) divide a fraction by a fraction
f) work out division involving mixed numbers
g) recognize and identify number sequence involving fractions.

6.2 Content

6.2.1 Addition and subtraction of fractions.
6.2.2 Addition and subtraction of fractions and mixed numbers.
6.2.3 Multiplication of fractions by fractions.
6.2.4 Multiplication of mixed numbers by fractions.
6.2.5 Division of a whole number by a fraction.
6.2.6 Division of a fraction by a fraction.
6.2.7 Division involving mixed numbers.
6.2.8 Number sequence involving fractions.

7.0 DECIMALS

7.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) add and subtract decimals up to 4 decimal places
b) multiply decimals with products not exceeding 4 decimal places
c) divide decimals by whole numbers and vice versa
d) divide a decimal by a decimal.

7.2 Content

7.2.1 Addition and subtraction of decimals.

7.2.2 Multiplication of decimals by decimals.

7.2.3 Division of decimals by whole numbers.

7.2.4 Division of whole numbers by a decimal.

7.2.5 Division of a decimal by a decimal.

8.0 PERCENTAGES

8.1 Specific Objective

By the end of the topic, the learner should be able to work out quantities given the percentages and work out percentages given quantities.

8.2 Content

8.2.1 Percentage of quantities.

9.0 MEASUREMENT

9.1 LENGTH

9.2 Specific Objectives

By the end of the topic, the learner should be able to:

a) recognize and identify millimetres as a unit of measuring length
b) convert millimetres to centimetres and centimetres to millimetres
c) recognize and identify pi (π) as a relationship between circumference and diameter
d) work out problems involving circumference of a circle.

9.3 Content

9.3.1 Millimetre as a unit of length.

9.3.2 Conversion of millimetres to centimetres and vice versa.

9.3.3 Pi (π) as a relationship between circumference and diameter, practically.

9.3.4 Circumference of a circle.

10.0 AREA

10.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) recognize and identify ***are*** and **hectare** as units of measuring area
b) work out area of a triangle, a square and a rectangle

10.2 Content

10.2.1 ***Are*** and ***hectare*** as units of measuring area.

10.2.2 Area of triangles, rectangles and squares including borders and shaded regions.

11.0 VOLUME

11.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) recognize and identify cubic metre (m^3) as a unit of measuring volume
b) convert cubic metre (m^3) to cubic centimetre (cm^3) and cubic centimetres to cubic metre
c) work out problems involving volume of cubes and cuboids in cubic metre (m^3) and cubic centimetre (cm^3).

11.2 Content

11.2.1 Cubic metre (m^3) as a unit of measuring volume.

11.2.2 Conversion of cubic metres to cubic centimetres and vice versa.

11.2.3 Volumes of cubes and cuboids.

12.0 CAPACITY

12.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) recognize and identify decilitre as a unit of measuring capacity
b) convert litres to millilitres, litres to decilitres and decilitres to litres
c) work out the four basic operations involving litres, millilitres and decilitres.

12.2 Content

12.2.1 Decilitre (dl) as a unit of measuring capacity.
12.2.2 Conversion of millilitres to litres and litres to decilitres and vice versa.
12.2.3 Addition and subtraction involving litres, millilitres and decilitres.
12.2.4 Multiplication and division involving litres, decilitres and millilitres.

13.0 MASS

13.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) recognize and identify the tonne (t) as a unit of measuring mass
b) convert tonnes to kilograms, kilograms to grams and grams to kilograms
c) work out problem involving units of mass.

13.2 Content

13.2.1 Tonne (t) as a unit of measuring mass.
13.2.2 Conversion involving tonnes (t), kilogram (kg) and grams (g).
13.2.3 Operations involving tonne (t), kilogram (kg) and gram (g).

14.0 MONEY

14.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) work out problems involving bills in buying and selling
b) work out problems involving profit and loss
c) work out percentages involving profit and loss.

14.2 Content

14.2.1 Bills in buying and selling.
14.2.2 Profit and loss.
14.2.3 Percentage profit and loss.

15.0 POSTAL CHARGES

15.1 Specific Objective

By the end of the topic, the learner should be able to work out problems involving postal charges.

15.2 Content

15.2.1 International postal charges.
15.2.2 Telegrams.
15.2.3 Money orders.

16.0 TIME AND SPEED

16.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) convert units of time from one to another
b) convert time from one system to another
c) read and interpret air, bus and train time tables
d) recognize and identify speed as distance covered in unit time

e) work out problems involving speed in m/s and km/h.

16.2 Content

16.2.1 Converting minutes to seconds and seconds to minutes.

16.2.2 Conversion of the 12 hour system to 24 hour system and 24 hour system to 12 hour stystem.

16.2.3 Reading and interpreting air, bus and train time tables.

16.2.4 Speed in kilometres per hour (km/h) and metres per second (m/s).

16.2.5 Work out problems involving speed.

17.0 GEOMETRY

17.1 LINES

17.2 Specific Objectives

By the end of the topic, the learner should be able to:

a) draw and bisect lines using a ruler and a pair of compasses

b) construct perpendicular and parallel lines using a ruler and a pair of compasses.

17.3 Content

17.3.1 Drawing and bisecting lines using rulers and pairs of compasses.

17.3.2 Perpendicular lines.

17.3.3 Parallel lines from a point on the line.

18.0 ANGLES

18.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) recognize identify and measure vertically opposite and supplementary angles

b) bisect angles using a pair of compasses and a ruler

c) construct 90°, 60° 120°, 45°, 30°, 75° and 15° using a ruler and pair of compasses

d) draw a triangle using a protractor and a ruler

e) recognize and identify angle properties of triangles

f) make patterns involving squares, triangles, and rectangles.

18.2 Content

18.2.1 Vertically opposite angles

18.2.2 Supplementary angles.

18.2.3 Construction of 90°, 60°, 120°, 45°, 30°, 75° and 15°.

18.2.4 Bisecting angles.

18.2.5 Drawing triangles.

18.2.6 Interior and exterior angles of a triangle.

18.2.7 Making patterns.

19.0 CIRCLES

19.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) draw circles using a pair of compasses

b) recognize and identify a sector as a part of a circle

c) make patterns using circles.

19.2 Content

19.2.1 Drawing circles.

19.2.2 Centre, radius and diameter of a circle.

19.2.3 Sectors of circles.

19.2.4 Making patterns.

20.0 MODELS

20.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) recognize and identify edges, faces and vertices of cubes and cuboids

b) make models of cubes and cuboids.

20.2 Content

20.2.1 Cubes and cuboids.
20.2.2 Nets of cubes and cuboids.
20.2.3 Making models.

21.0 ALGEBRA

21.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) simplify algebraic expressions
b) solve equations in one unknown
c) compare quantities using 'greater than', 'less than' and 'equal to' symbols.

22.2 Content

22.2.1 Use of brackets in algebraic expressions.
22.2.2 Simplifying algebraic expressions.
22.2.3 Equations in one unknown.
22.2.4 The symbols greater than (>) and less than (<).
22.2.5 Comparison of quantities using =, > and < symbols.

23.0 TABLES AND GRAPHS

23.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) represent data from tables on graphs
b) read and interpret information from graphs
c) recognize, identify and work out arithmetic mean of a given data.

23.2 Content

23.2.1 Tables.
23.2.2 Bar graphs.
23.2.3 Line graphs.
23.2.4 Pie charts.
23.2.5 Travel graphs.
23.2.6 Working out arithmetic mean.

24.0 SCALE DRAWING

24.1 Specific Objectives

By the end of the topic, the learner should be able to:

a) read, interpret and write linear scales in statement form
b) make scale drawing.

24.2 Content

24.2.1 Interpreting drawing using linear scale.
24.2.2 Reading and writing linear scale in statement form.
24.2.3 Making scale drawings.