MINISTRY OF EDUCATION

MATHEMATICS PRESCRIPTION

CLASSES 5 - 6

REVISED 1996

CURRICULUM DEVELOPMENT UNIT
SUVA, FIJI.

2.2 OBJECTIVES

On completing the Class 5 Mathematics course, the pupils should have

2.2.1 acquired the knowledge and understanding required to

- (a) read, write, name and order numbers up to 99999
- (b) name the face and place value of digits in numbers to 99999
- (c) show competence in calculations involving the four operations using up to 5-digit numbers
- (d) show how the operations are related to one another
- (e) identify and use the symbols for union, intersection and cardinal number
- (f) explore patterns and relationships
- (g) explore prime and composite numbers and prime factors
- (h) round numbers to the nearest 10, 100 and 1000
- (i) express the meaning of fractions using region and sets
- (j) find fractions equivalent to a given fraction, and compare fractions
- (k) add and subtract fractions with like and unlike denominators
- (l) recognise and use Fiji coins end notes
- (m) reconise lines, line segments parallel and perpendicular lines, rays and name them using symbols
- (n) recognise, name and explore properties of angles, shapes (including circles) and solids
- (o) explore symmetery in plane figures and in the environment
- (p) estimate and measure lengths in metres and centimetres and capacity in litres and millimetres
- (q) tell the time in one minute intervals using am and pm
- (r) find perimeters and areas of different shapes and surfaces
- (s) interpret pictorial and block graphs
- (t) discuss mathematical ideas
- (u) solve a variety of routine as well as non-routine problems
- (v) estimate a sum, difference, product or quotient and compare the estimate with the worked-out results.

2.2.3 acquired the skills involved in

- (a) classifying objects, numbers and ideas
- (b) recognising and working with patterns
- (c) using mental strategies to recall the basic facts
- (d) computing using basic facts and appropriate algorithms
- (e) computing mentally using appropriate techniques
- (f) tracing, drawing and constructing models of geometric figures
- (g) performing a range of measuring tasks involving length, mass, capacity area and angles
- (h) collecting, organising and displaying data
- (i) interpreting data presented in tables and graphs

4.0 COURSE CONTENT : DETAILS

4.1 NUMBER AND NUMERATION

4.1.1 Whole Numbers

(a) Numbers to 99999
(b) Place Value
(c) Sets
(d) Patterns
(e) Factors
(f) Prime and Composite Numbers
(g) Rounding

4.1.2 Fractions

(a) Equivalent fractions
(b) Procedure for finding equivalent fractions
(c) Common denominator of unlike fractions

4.1.3 Decimal Fractions

(a) Tenths and hundredths
(b) Place Value
(c) Regrouping
(d) Comparing, sequencing, ordering
(e) Converting to common fractions

4.2 ADDITION AND SUBTRACTION

4.2.1 Whole Numbers

(a) Addition and subtraction up to 5-digit numbers without and with regrouping
(b) Properties
(c) Estimation
(d) Problem-solving

4.2.2 Fractions

(a) Addition of simple fractions with like and unlike denominations
(b) Subtraction of simple fractions with like and unlike denominatiors
(c) Addition and subtraction as opposites
(d) Estimation
(e) Problem solving

4.2.3 Decimals

(a) Addition and subtraction of decimals to one place

4.6.4 **Time**

(a) Reading time using digital and traditional clocks
(b) Am and pm
(c) Problems

4.6.5 **Temperature**

(a) Reading and recording temperature
(b) Showing temperature on graph

4.7 **GRAPHS and STATISTICS**

(a) Pictorical graph
(b) Bar graph
(c) Interpreting graph

5.0 TIME ALLOCATION

5 periods of 45 minutes each should be allocated for Mathematics in Class 5 on the timetable.

6.0 EVALUATION

6.1 INTERNAL

(i) Assessment should be **continuous**, and at all times emphasis should be on assessing the full range of processes and skills.

(ii) A variety of strategies may be used to assess pupils' needs, strengths, progress and achievements in mathematics.

(a) **Informal assessment** can be carried out through observing and interacting with pupils as they go about their activities, through interviews and setting appropriate tasks.

(b) **Formal assessment** involves administering **diagnostic tests** that provide information on the strengths and weaknesses of pupils. Diagnostic testing thus enables teachers to plan further learning activities designed to meet the needs of individual pupils.

Summative assessment could be carried out by giving mid-year and annual (or term) examinations to measure pupils' overall achievements.

(c) An important aspect of assessment is **keeping records of pupils' progress** in Mathematics. These records will serve as a basis for reporting.

7.0 TEACHER'S NOTES

(a) Teachers need to prepare and continually revise the **scheme of work** to suit the classes they are teaching.

PRIMARY MATHEMATICS PRESCRIPTION

CLASS 6

1.0 PREAMBLE

1.1 Mathematics in the primary schools is principally a body of knowledge, skills and attitudes which school assist pupils to cope confidently with the Mathematics of everyday life.

1.2 The course emphasises an activity-oriented approach where the children are encouraged to discuss mathematical ideas, use structured and common materials and carry out a variety of activities involving investigations and discovery.

1.3 The work on numbers is extended to six digits at this level. Problem-solving reasoning and communicating mathematical ideas are taught within the context of the individual topics and are emphasised throughout the course

1.4 The course lays a sound foundation of the Mathematics that will be taught in Class 7.

2.0 AIMS AND OBJECTIVES

2.1 AIMS

2.1.1 The aims of the course are to help pupils to ~~develop~~

(a) further extend their knowledge and understanding of the properties of the operations and their relationships using up to 6 digit numbers
(b) develop accuracy and efficiency in computing mentally and on paper
(c) extend their understanding of common and decimal fractions
(d) develop their understanding of the use of money
(e) develop the knowledge and understanding of geometrical shapes and properties
(f) develop the knowledge, skills and understanding required for estimating and measuring length, mass and capacity
(g) develop the knowledge skills and understanding required to interpret and construct tables and graphs
(h) develop their skills and ability in estimating, reasoning and solving problems
(i) extend their skills and ability to communicate mathematical ideas
(j) develop positive attitudes towards, and a continuing interest in Mathematics
(k) develop confidence in their ability to do Mathematics

(l) applying estimation in working with quantities, measurement, computation and problem-solving
(m) using estimates to check if the answers to problems are reasonable
(n) interpreting and using mathematical symbols
(o) generalising from patterns and relationships
(p) presenting and explaining mathematical ideas and results to others
(q) listening and responding to the views of others.

2.2.3 developed the values and attitudes which help them to

(a) appreciate that Mathematics is an interesting, enjoyable and a challenging subject
(b) become aware that the learning of mathematics includes processess of enquiry, investigation, discovery and verification
(c) appreciate the Mathematics is a creative, relevant and useful activity
(d) gain confidence in their ability to do Mathematics
(e) be resourceful, self-reliant and persevering in doing mathematical activities
(f) work co-operatively with others
(g) exercise self-discipline
(h) achieve a sense of self-worth through success in doing Mathematics

3.0 COURSE CONTENT : OUTLINE

The course is divided into 7 sections :-

1. Number and Numeration
2. Addition and Subtraction
3. Multiplication and Division
4. Money
5. Geometry
6. Measurement
7. Graphs and Statistics

4.0 COURSE CONTENT : DETAILS

4.1 NUMBER and NUMERATION

4.1.1 Whole Numbers

(a) Numbers to 999 999
(b) Place Value
(c) Patterns
(d) Factors
(e) Prime and Composite Numbers
(f) Rounding

4.3.3 **Decimals**

(a) Addition to one and two decimal places
(b) Subtraction to one and two decimal places
(c) Estimation
(d) Problems

4.4 **MONEY**

(a) Addition and subtraction
(b) Multiplication and division
(c) Estimation
(d) Problems

4.5 **GEOMETRY**

(a) Lines and rays; parallel, perpendicular and intersecting lines
(b) Angles : right angles, turn, types of angles
(c) Curves ; ovals: circles
(d) Shapes and solids : polygons to hexagons; cubes, cylinders, rectangles; their properties
(e) Symmetry

4.6 **MEASUREMENT**

4.6.1 **Length, Perimeter, Area**

(a) Measuring lengths in m an cm
(b) Estimating and measuring
(c) Perimeter
(d) Area
(e) Problems

4.6.2 **Capacity**

(a) Litres
(b) Estimation and Measuring
(c) Problems

4.6.3 **Mass**

(a) Kilogram and gram
(b) Measuring
(c) Estimating
(d) Problems

4.6.4 **Time**

(a) Reading time using digital and traditional clocks
(b) am and pm
(c) 24 hour clock
(d) Problems

4.6.5 **Temperature**

(a) Reading and recording temperature
(b) Showing temperature on graph

6.2 **EXTERNAL**

FIJI INTERMEDIATE EXAMINATION

- Time allowed : 50 minutes Total Marks : 100
- 5 minutes reading time is allowed for this paper.

The Examination

1. The paper has 40 questions and covers work done up to page 60 (fractions and decimals) of the Class 6 mathematics curriculum.
2. Each question is worth 2½ marks.
3. The paper is designed to test the recall of knowledge, computation, understanding of concepts and application of knowledge and skills.
4. The paper consists of questions of various types :

(a)	questions 1-3	:	choosing the correct sign (>,< or =) (7½ marks)
(b)	questions 4-6	:	writing <u>true</u> or <u>false</u> ($7\frac{1}{2}$ marks)
(c)	questions 7-12	:	filing in the missing numerals (15 marks)
(d)	questions 13-22	:	multiple choice items (25 marks)
(e)	questions 23-40	:	word-problems (45 marks)

TEACHER'S NOTES

(a) Teachers need to prepare and continually revise the **scheme of work** to suit the classes they are teaching.

(b) Suggestions for teaching each lesson are provided in the Teacher's Guide. Teachers may supplement these with their own ideas.

(c) Teachers are advised to use **group work on a regular basis.** Group work provides pupils with a chance to agree, disagree, solve problems, find out what others think and to clarify their own points of view.

(d) Pupils should be encouraged to use **physical objects** to gain a better understanding of Mathematics. Teachers are advised to keep a collection of common materials. Some materials such as popscicle sticks, offcuts and cardboard boxes can be used to prepare other teaching and learning aids.

(e) **Problem-solving** should be the focus of the mathematics curriculum. Problem-solving is not a distinct topic but a process that should permeate the entire mathematics programme.