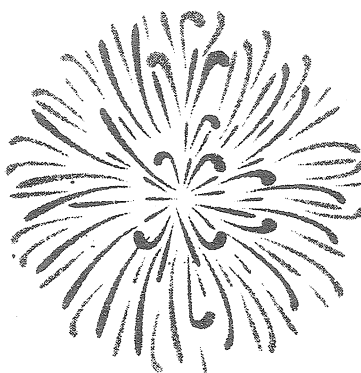


# **MINISTRY OF EDUCATION**

## **MATHEMATICS PRESCRIPTION**

### **CLASSES 1 - 2**



**REVISED 1996**

**CURRICULUM DEVELOPMENT UNIT  
SUVA, FIJI.**

# PRIMARY MATHEMATICS PRESCRIPTION

## CLASS 1

### 1.0 PREAMBLE

- 1.1 Mathematics in the primary schools is principally a body of knowledge, skills and attitudes which should 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 learning of the numerals 0 to 10 and what they stand for are the most important and difficult part of the work of the first year. The development of these early mathematical ideas need to be carefully guided.
- 1.4 The course lays a sound foundation of the Mathematics that will be taught in Class 2.

### 2.0 AIMS AND OBJECTIVES

#### 2.1 AIMS

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

- (a) the pre-number concepts
- (b) their ideas and of movement and position
- (c) their understanding of numbers 0 to 10 and basic addition facts
- (d) the skills and understanding required for estimating, comparing and measuring length, weight and time
- (e) their understanding of the use of money
- (f) the skills and understanding required to construct and interpret tables and graphs
- (g) their ability to reason logically and solve problems
- (h) their ability to communicate mathematical ideas
- (i) positive attitudes towards, and a continuing interest in Mathematics
- (j) confidence in their ability to do mathematical activities

## 2.2 OBJECTIVES

On completing the class 1 Mathematics course, the pupils should have

### 2.2.1 acquired the knowledge and understanding required to

- (a) compare and sort out objects according to shapes, sizes, weights and numbers
- (b) explore shapes and objects, and positional relationships
- (c) name simple shapes and colours
- (d) investigate length, mass and time and make comparisons
- (e) compare groups of objects by 1-1 correspondence
- (f) count, recognise, order and write numbers to 10
- (g) recognize and complete number patterns
- (h) describe the action of the joining of objects
- (i) build and use addition facts to 10
- (j) use ordinal names to 'tenth'
- (k) recognise and match sets of coins of equivalent value to 10c
- (l) use the coins in shopping activities
- (m) use the names of the days of the week
- (n) collect and display simple data

### 2.2.2 acquire the skills required in

- (a) classifying objects into groups and discussing the results
- (b) matching, copying and making simple patterns
- (c) tracing, drawing and constructing models of shapes and solids
- (d) estimating length, mass and time and discussing the results
- (e) writing the numerals 0-10
- (f) using mental strategies for recalling basic facts of addition
- (g) expressing mathematical ideas using their own language and appropriate mathematical language and diagrams
- (h) listening and responding to the views of others
- (i) interpreting simple graphs
- (j) solving simple problems using objects, pictures and diagrams

### 2.2.3 developed values and attitudes which help them to

- (a) appreciate that Mathematics is an interesting, enjoyable and a challenging subject
- (b) gain confidence in their ability to do Mathematics
- (c) become aware of the uses of Mathematics both in and beyond the classroom
- (d) work co-operatively with others
- (e) exercise self-discipline
- (f) achieve a sense of self-worth through success in doing Mathematical activities

### 3.0 **COURSE CONTENT : OUTLINE**

The course is divided into 7 sections :

1. Prenumber Activities
2. Number and Numeration
3. Addition
4. Money
5. Geometry
6. Measurement
7. Graphs and Statistics

### 4.0 **COURSE CONTENT : DETAILS**

#### 4.1 **PRENUMBER ACTIVITIES**

- (a) Sorting and Classifying
- (b) Patterns
- (c) Ordering
- (d) Colours
- (e) Relationships

#### 4.2 **NUMBER AND NUMERATION : Numbers 0 - 10**

- (a) Number Names, counting ; symbols
- (b) Ordinal Numbers
- (c) Comparing, sequencing and ordering

#### 4.3 **ADDITION : Number 0 - 10**

- (a) Concepts : join, add
- (b) Addition : symbol; facts

#### 4.4 **MONEY**

- (a) Recognition of coins up to 10c
- (b) Value of coins up to 10c
- (c) Shopping

#### 4.5 **GEOMETRY**

- (a) Basic shapes : triangle, circle, square, oblong – properties; names
- (b) Solid shapes : boxes, balls, tins – identifying, describing
- (c) Position and movement : vocabulary; following directions

#### 4.6 **MEASUREMENT**

- (a) Length : vocabulary; using non-standard measure
- (b) Weight : vocabulary; comparing; using balance
- (c) Time : sequencing; day and night; using a timer; days of the week

#### 4.7 **GRAPHS AND STATISTICS**

- (a) Collecting data
- (b) Making simple graphs
- (c) Interpreting graphs

#### 5.0 **TIME ALLOCATION**

2 periods of 30 minutes each and 3 periods of 45 minutes each should be allocated to Mathematics in Class 1 on the timetable.

#### 6.0 **EVALUATION**

- 6.1 The assessment will be continuous, on-going and an informal process. It is designed to determine what pupils know the skills they can perform and how they think about mathematics.
- 6.2 Formal testing is not recommended at this stage. In the early years, children's understanding is tied to the use of physical materials, and assessment tasks that allow them to use such materials are better indicators of learning.
- 6.3 The strategies for assessing pupils' knowledge, understanding, skills and attitudes in Mathematics at this level should include the following
  - (a) observation
  - (b) talking to students
  - (c) looking at work samples
  - (d) practical tasks
  - (e) diagnostic tasks
- 6.4 The assessment needs to be accompanied by appropriate recording of pupil's development and progress.

#### 7.0 **TEACHER'S NOTES**

##### 7.1 **General**

- (a) Teachers need to prepare, and continually revise the '**scheme of work**' to suit the class 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) In the early stages mental and oral work should play a major part in the learning of Mathematics before the children are introduced to formal recordings.

- (e) 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 for example popscicle sticks, offcuts and cardboard boxes can be used to prepare other teaching and learning aids.
- (f) **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.
- (g) The key communication skills are explaining, discussing, recording and presenting mathematical ideas and results to others. Teachers should view these as an integral part of mathematics teaching. Children must be encouraged to think and explain what they are doing and why, and to listen critically to the views of others, as they engage in mathematical activities.
- (h) Daily lessons should include revision of concepts and skills related to any new lesson. Teachers should systematically carry out reviews of the concepts and skills which are required for the introduction of the new topic. Short review of selected topics are important as they help improve performance and retention and contribute to higher levels of learning.
- (i) Teachers should attempt **integrate** the teaching of Mathematics in the other areas of the curriculum.

## 8.0 RESOURCES

### 8.1 Prescribed Texts for Pupils

Pacific Maths 1, Margaret Thomson, Longman Paul, NZ

### 8.2 Prescribed Texts for Teachers

Teacher's Guide Pacific Maths 1, Margaret Thomson, Longman Paul, NZ

### 8.3 Supplementary Texts

- (i) Pupil's Workbook – First Steps – Sets and Shapes, Longman Paul, NZ.
- (ii) Teacher's Handbook – First Steps – Sets and Shapes, Longman Paul, NZ

### 8.4 Materials

The materials required in Class 1 Mathematics are listed in the Teacher's Guide.

# PRIMARY MATHEMATICS PRESCRIPTION

## CLASS 2

### 1.0 PREAMBLE

- 1.1 Mathematics in the primary schools is principally a body of knowledge, skills and attitudes which should 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 course builds on the foundation laid in class 1. The numbers 11 to 20 and the place value of 2-digit numbers are the important ideas that are introduced at this level.
- 1.4 The course lays a sound foundation for the Mathematics that will be taught in Class 3.

### 2.0 AIMS AND OBJECTIVES

#### 2.1 AIMS

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

- (a) the ideas of place value using 2-digit numbers
- (b) their understanding of addition and subtraction using numbers up to 20
- (c) the basic concepts of multiplication and sharing
- (d) their understanding of the use of money up to 20 cents
- (e) their knowledge and understanding of the geometrical properties of shapes and solids
- (f) the skills and understanding required for estimating, comparing and measuring length, capacity, weight and time
- (g) their skills and understanding required to construct and interpret tables and graphs
- (h) their ability to reason logically and to solve problems
- (i) their ability to communicate mathematical ideas
- (j) positive attitudes and a continuing interest in Mathematics
- (k) confidence in doing mathematical activities

## 2.0 OBJECTIVES

On completing the Class 2 Mathematics course, the pupils should have

2.2.1 acquire the knowledge and understanding required to

- (a) count, recognize and write numbers to 99
- (b) represents numerals in tens and ones to 99
- (c) build and use addition and subtraction facts to 20
- (d) give related facts of numbers to 20
- (e) show that the order of addends can be changed without changing the sum
- (f) recognise patterns of odd and even numbers
- (g) continue a pattern or supply a missing element
- (h) use the symbols  $=$ ,  $>$  and  $<$
- (i) measure length, mass and capacity
- (j) use coins up to 20c in shopping activities
- (k) build simple multiplication facts using the idea of repeated addition
- (l) share objects equally
- (m) compare, classify and describe shapes and objects
- (n) relate a half and a quarter to one whole
- (o) distinguish between symmetrical and asymmetrical shapes
- (p) tell time using o'clock and half past
- (q) use the calendar to describe months
- (r) solve simple word problems

2.2.2 acquired the skills involved in

- (a) classifying objects and numbers and discussing the results
- (b) matching, copying and creating simple patterns
- (c) tracing, drawing and constructing models of shapes and solids
- (d) using mental strategies to recall basic facts
- (e) estimating length, mass and capacity
- (f) interpreting simple tables and pictorial graphs
- (g) computing and solving problems using objects, pictures and diagrams
- (h) translating problems into mathematical sentences
- (i) explaining mathematical ideas using their own language and appropriate mathematical language and diagrams
- (j) recording ideas and discussing results

2.2.3 developed the values and attitudes which help them to

- (a) become aware of the uses of Mathematics both in and beyond the classroom
- (b) appreciate that Mathematics is an interesting, enjoyable and a challenging subject
- (c) gain confidence in their ability to do Mathematics



- (d) appreciate that Mathematics is a relevant and useful activity
- (e) work co-operatively with others
- (f) exercise self-discipline
- (g) achieve a sense of self-worth through success in doing mathematical activities

### 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**

##### **Numbers 11-20**

- (a) Number names; counting; symbols
- (b) Place value; tens and ones
- (c) Comparing, sequencing, ordering
- (d) Patterns

##### **Numbers to 99**

- (a) Number names; symbols
- (b) Place value; tens and ones

#### 4.2 **ADDITION AND SUBTRACTION**

- (a) Concepts: join, take away, minus, subtract
- (b) Addition and subtraction facts; thinking strategies; related facts; commutative property
- (c) Vertical and horizontal forms

#### 4.3 **MULTIPLICATION AND DIVISION**

- (a) Groups of objects
- (b) Repeated addition
- (c) Sharing

#### 4.4 **MONEY**

- (a) Recognition of coins up to 50c
- (b) Value of coins up to 20c
- (c) Shopping

#### 4.5 **GEOMETRY**

- (a) Further shapes and solids, triangles, oblongs, square, circles, boxes, balls, tins; their properties
- (b) Symmetrical and asymmetrical shapes

#### 4.6 **MEASUREMENT**

##### 4.6.1 **Length**

- (a) Non-standard units
- (b) Need for a standard
- (c) Metre, centimetre

##### 4.6.2 **Capacity**

- (a) Non-standard units
- (b) Need for a standard
- (c) Litre

##### 4.6.3 **Weight**

- (a) Non-standard units
- (b) Need for a standard
- (c) Kilogram

##### 4.6.4 **Time**

- (a) O'clock; half hour times
- (b) Months of the year
- (c) Study of calendar

#### 4.7 **GRAPHS AND STATISTICS**

- (a) Collecting data
- (b) Making and interpreting graphs

#### 5.0 **TIME ALLOCATION**

2 periods of 30 minutes each and 3 periods of 45 minutes each are allocated to Mathematics in class 2 on the timetable.

#### 6.0 **EVALUATION**

- 6.1 The assessment will be **continuous**, on-going and an informal process. It is designed to determine what pupils know the skills they can perform and how they think about mathematics.
- 6.2 **Formal testing** is not recommended at this stage. In the early years, children's understanding is tied to the use of physical materials, and assessment tasks that allow them to use such materials are better indicators of learning.

6.3 The strategies for assessing pupils' knowledge, understanding, skills and attitudes in mathematics at this level should include the following

- (a) observation
- (b) talking to students
- (c) looking at work samples
- (d) practical tasks
- (e) diagnostic tasks

6.4 The assessment needs to be accompanied by appropriate recording of pupil's development and progress.

## 7.0 TEACHER'S NOTES

- (a) Teachers need to prepare, and continually revise the '**scheme of work**' to suit the class they are teaching.
- (b) Suggestions for teaching each lesson are provided in the Handbook. 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) In the early stages **mental and oral work** should play a major part in the learning of mathematics before the children are introduced to formal recordings.
- (e) 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 for example popscicle sticks, offcuts and cardboard boxes can be used to prepare other teaching and learning aids.
- (f) **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.
- (g) The **key communication skills** are explaining, discussing, recording and presenting mathematical ideas and results to others. Teachers should view these as an integral part of mathematics teaching. Children must be encouraged to think and explain what they are doing and why, and to listen critically to the views of others, as they engage in mathematical activities.
- (h) Daily lessons should include revision of concepts and skills related to any new lesson. Teachers should systematically carry out reviews of the concepts and skills which are required for the introduction of the new topic. Short review of selected topics are important as they help improve performance and retention and contribute to higher levels of learning.
- (i) Teachers should attempt **integrate** the teaching of Mathematics in the other areas of the curriculum.

## 8.0 RESOURCES

### 8.1 PRESCRIBED TEXTS FOR PUPILS

Pacific Maths 2, Margaret Thomson, Longman Paul, NZ

### 8.2 PRESCRIBED TEXTS FOR TEACHERS

Teacher's Guide, Pacific Maths 2, Margaret Thomson, Longman Paul, NZ

### 8.3 SUPPLEMENTARY TEXT

- (i) Pupil's Workbook – Second Steps – Numbers and Measures, Longman Paul, NZ.
- (ii) Teacher's Guide – Second Steps – Numbers and Measures, Longman Paul, NZ

### 8.4 MATERIALS

The materials required in Class 2 Mathematics are listed in the Teacher's Guide