



ZIMBABWE

MINISTRY OF PRIMARY AND SECONDARY EDUCATION

CURRICULUM DEVELOPMENT AND TECHNICAL SERVICES

**MATHEMATICS AND  
SCIENCE**  
INFANT SCHOOL LEVEL  
(EARLY CHILDHOOD DEVELOPMENT  
TO GRADE 2)  
2015 - 2022

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**TEACHER'S GUIDE**

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## **ACKNOWLEDGEMENTS**

The Ministry of Primary and Secondary Education wishes to acknowledge the following for their valued contribution in the production of this teacher`s guide:

- The National Mathematics panel
- United Nations Scientific and Cultural Organisation (UNESCO)
- United Nations Children`s Emergency Fund (UNICEF)

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## 1.0 ORGANISATION OF THE TEACHER'S GUIDE

The Infant Mathematics and Science syllabus document covers one of the eight learning areas in the infant school curriculum. This syllabus involves mathematical and scientific learning through practical activities such as matching, ordering, measuring, classifying and identifying amongst others. The learning phase seeks to give learners an appreciation of Mathematics and Science as a learning area in their education and to equip them with life skills through discovery and problem solving. The syllabus was designed to enable a smooth transition from Infant to Junior School learning. The learners are being assessed through continuous assessment (formative and summative).

The Infant (ECD to Grade 2) Mathematics and Science teachers' guide (which borrows mainly from the ECD-Grade 2 Mathematics and Science syllabus is divided into two parts, namely:

### PART A: 2.0 CRITICAL DOCUMENTS

These include among others:

- National syllabus
- Schemes of work
- Lesson plans
- Schemes of work
- Records

### PART B: CURRICULUM DELIVERY

The elements under Curriculum delivery are:

- Content
- Objectives
- Methodology
- Instructional Materials
- Class Management
- Evaluation

### 2.0: CRITICAL DOCUMENTS

#### 2.1 Introduction

- Curriculum Framework
- National Syllabus
- School syllabus
- Schemes of Work/Scheme Cum Plan
- Lesson Plans
- Learner Profile
- Progress Records
- Register of Attendance

#### 2.2 Rationale

The aim is to enable the learners to understand mathematical and scientific concepts as they are central to most facets of everyday life and enterprise skills. The learning area cuts across many fields of endeavour and this will help the learners to understand and apply these concepts in those fields and in the job market. The teachers' guide promotes problem solving, innovativeness, confidence and self-actualisation.

The guide is designed to cover the first four years of Infant Education in Mathematics and Science, which form the basis for Junior Education for all learners. The content to be covered includes identifying, classifying, comparing, numbering, ordering and measuring of objects. You, as a teacher, should however expose learners to mathematical and scientific language. This enables learners to manipulate objects and interact with their environment.

#### 2.2.1 Assumptions

It is assumed that the learners:

- can group objects according to colour, size and shape;
- can use their senses;
- can identify objects in their environment;
- can share;
- can make simple patterns;
- know that buying and selling takes place;
- know time such as morning, afternoon and evening.

## 2.2.1 CROSS CUTTING THEMES

Mathematics and Science learning area encompasses and has a universal thrust on the following cross cutting themes:

- Financial literacy
- Collaboration
- HIV and AIDS
- Heritage studies
- Children's Constitutional Rights and Responsibilities
- Gender
- ICT
- Environmental issues
- Disaster Risk management

## 2.3 Objectives

The guide was developed for the teacher to know the following aspects and be able to implement them. You also need to frequently consult and be familiar with the following critical documents.

- Curriculum Framework
- National Syllabus
- School syllabus
- Schemes of Work/Scheme Cum Plan
- Lesson Plans
- Learner Profile
- Progress Records
- Register of Attendance

## UNIT 1

# CURRICULUM FOR PRIMARY AND SECONDARY EDUCATION (2015 -2022)

## INTRODUCTION

This is a policy document that outlines underpinning principles, national philosophy, learning areas, the description and expectations of Ministry of Primary and Secondary Education (MOPSE) at policy level. It prescribes what the government expects you to deliver as you go about your duties.

The Zimbabwe Curriculum framework sets out the common aims and objectives of the education system and the specific features of different education levels, thereby providing the basis for transparent relationships between schools, parents, and local communities. It provides guidance to schools and education administrators in the organization, management and evaluation of the effectiveness of the school activities. Schools are encouraged to actively engage, as learning organisations, in providing diversified opportunities for all learners to develop the knowledge, key skills and attitudes defined in this framework. This framework is intended to be the main reference document informing the development of syllabuses, revision of syllabuses, development and use of learning resources and the creation of guidelines for in-service teacher training and support. This Curriculum Framework sets out what learners are expected to know, understand, value and be able to do as a result of their learning experiences in schools and no formal education settings from Early Childhood Development (ECD) to secondary level. Its fundamental purpose is to provide a structure around which schools can build educational programmes that ensure learners achieve desired outcomes. This framework identifies learning areas for all learners. It is intended to guide schools and teachers, stakeholders and parents over the curriculum process in a rapidly changing environment.

### Objectives of the Curriculum:

The Curriculum was developed to:

- promote and cherish the Zimbabwean identity
- Prepare learners for life and work in a largely agro-based economy and an increasingly globalised and competitive environment.
- foster life-long learning in line with the opportunities and challenges of the knowledge society
- Prepare and orient learners for participation in voluntary service and leadership
- Prepare and orient learners for participation, leadership and voluntary service

### Key Elements

The Curriculum of Zimbabwe is made up of the following key elements:

- Background
- Principles and values guiding the curriculum
- Goals of the curriculum
- Learning areas
- Teaching and Learning methods
- Assessment and Learning
- Strategies for effective curriculum implementation
- The Future

## UNIT 2

# SYLLABUS INTERPRETATION

## INTRODUCTION

Syllabus interpretation is the process of making sense out of the syllabus. Interpretation is about finding meaning. It is the process of unpacking the syllabus, analysing and synthesising it.

### Objectives

The following are objectives for syllabus interpretation

- Expose the teacher to various teaching/learning methodologies and materials
- Assist the teacher to narrow the gap between planned and implemented curriculum
- Helps the teacher to come up with a comprehensive school based syllabus
- Helps the teacher to break down content into teachable units

As a teacher you therefore need to be familiar with the two syllabuses, that is the national syllabus and school syllabus. This assists you in your lesson delivery.

## Types of syllabuses

### 2.1 National Syllabus

It is a policy document that outlines and specifies the learning area philosophy, aims and objectives, Learning/teaching concepts and content, suggested methodology and assessment criteria at every grade level. As a teacher you should always have and use it to guide you in your day to day teaching and learning activities.

**Aims:** general direction in which you should be guiding your learners (long term)

**Objectives:** learner behaviour after treatment

**Assessment objectives:** examination oriented (what is to be tested)

**Content:** topics or aspects to be covered

**Methodology:** teaching approaches to achieve desired learning outcomes

Learner-centred approaches allow learners to practice skills learnt

**Examination format:** how learners will be assessed

### 2.2 School Syllabus

This is a document drawn from the National Syllabus by reorganising content taking into account local factors. It is a breakdown of the national/official syllabus to suit the contextual environment into which the school is located but without changing the content of the national syllabus. This document is drafted at school level by the teachers.

### Factors influencing drafting of the school syllabus

- Level of learner performance (knowledge they already have)
- Facilities and funds available
- Time allocation in the official syllabus
- Local conditions that affect the choice and sequencing of topics
- Supply of textbooks and other teaching materials
- Education technology
- Community influences (including political, traditional norms and values)
- Geographical set up of the area
- Teachers failing to interpret the national syllabus

### Elements of the School Syllabus

- Preamble
- Aims: broad indication of what the learners should learn
- **Objectives:** learner behaviour at the end of the teaching-learning experience (Competencies)
- **Topics/Activities (Content)**
- **Methodology (Learner – Centred)**
- **Instructional or Teaching Materials**
- **Assessment/Evaluation**



## Types of Syllabi

### 2.1 NATIONAL SYLLABUS

#### Definition

It is a policy document that outlines and specifies the learning area philosophy, aims and objectives, Learning/teaching concepts and content, suggested methodology and assessment criteria at every Infant School Level. As a teacher, you should always have and use it to guide you in your day to day teaching and learning activities.

#### SCHOOL SYLLABUS

This must be drawn from the National Syllabus by reorganising content taking into account local factors that may affect your teaching.

#### FACTORS INFLUENCING DRAFTING

- Level of learner performance (knowledge they already have)
- Facilities and resources available.
- Time allocation in the official syllabus
- Local conditions that affect choice and sequencing of topics
- Education technology
- Community influences

#### ELEMENTS

1. **Cover page**
2. **ACKNOWLEDGEMENT**
3. **PREAMBLE**
  - Introduction
  - Rationale
  - Summary of content
  - Assumptions
  - Cross Cutting Issues
4. **PRESENTATION OF THE SYLLABUS**
5. **AIMS**
6. **OBJECTIVES**

7. TOPICS
8. SCOPE AND SEQUENCE
9. CONTENT MATRIX
10. ASSESSMENT

### UNIT 3

## SCHEMES OF WORK/ SCHEME- CUM PLANS

### DEFINITION

This is a document that you as a teacher should draw from the national and school syllabus. You should outline the objectives activities, content, methodologies (see scheme of work/scheme cum plan template below). You should draw your scheme of work/scheme cum plans two weeks ahead of lesson delivery date. (Use of ICT in drawing the documents is encouraged). It is a weekly breakdown of activities.

### COMPONENTS OF A SCHEME OF WORK

By the end of this unit, you should be able to:

- describe the essential components of a scheme-cum plan
- develop a scheme-cum plan
- explain the advantages of writing down your plan
- realise the merits of planning your lessons well in advance

The following are the components of a scheme of work that you as a teacher should know

WEEK END-ING	TOPIC/ CONTENT	OBJEC-TIVES	COMPE-TENCIES/ SKILLS/ KNOWL-EDGE	SOM	SUGGESTED TEACHING AND LEARN-ING EQUIP-MENT	METHODS/A CTIVITIES	EVALU-ATION
16/12/16	MATCHING	By the end of the week learners should be able to: <ul style="list-style-type: none"> <li>• match familiar objects to colour</li> <li>• match pictures to colour</li> </ul>	<ul style="list-style-type: none"> <li>• Objects matching</li> <li>• Picture matching</li> </ul>	•Mathematics and Science (ECD-GR 2) National Syllabus page 17	<ul style="list-style-type: none"> <li>• Mathematical play area, Manipulative and block play area, Science and discovery play area.</li> <li>• Blocks, coloured pictures, coloured shapes, seeds, cups, hats, satchels, lunch boxes</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration by comparing similar objects to colour</li> <li>• Guided Discovery through pairing objects to colour</li> <li>• Group Work on matching blocks to colour</li> </ul>	

WEEK END-ING	TOPIC/ CONTENT	OBJEC-TIVES	COMPE-TENCIES/ SKILLS/ KNOWL-EDGE	SOM	SUGGESTED TEACHING AND LEARN-ING EQUIP-MENT	METHODS/A CTIVITIES	EVALU-ATION
						<ul style="list-style-type: none"> <li>• Pair work and role play on matching</li> <li>• Being able to match clothes</li> </ul>	

**Example of a scheme-cum plan**

The following is an example of a scheme of work that an ECD Mathematics and Science teacher can follow:

**ECD A**

**General aims**

By the end of the term, learners should be able to:

- develop and show a positive attitude towards Mathematics and Science;
- progress smoothly from Infant to Junior Primary school learning;
- use and communicate mathematical and scientific information to develop critical thinking and problem solving skills;
- acquire mathematical and scientific concepts and skills for use as tools in life.
- develop sound mathematical and scientific skills that will enable them to interact more meaningfully with their environment;
- develop an awareness of the importance of culture in the learning of Mathematics and Science;
- develop psycho-social skills such as self-control and free expression of emotions and contribute to the holistic development of the learner.

## UNIT 4

### LESSON PLANS

#### DEFINITION

This is a detailed daily plan of what you intend to deliver during the lesson. This is to be used in the event of you having drawn a scheme of work rather than a scheme cum plan.

#### COMPONENTS OF A LESSON PLAN

A lesson plan is made up of the following components:

- Date
- Time
- Grade/Class
- Number of learners
- Learning area
- Topic/content
- Sub-topic
- SOM
- Lesson objectives
- Equipment
- Assumed knowledge
- Lesson steps
- Evaluation

## EXAMPLE OF LESSON PLAN

<b>Date:</b>	15 December 2016
<b>Time:</b>	11.40 -12.00
<b>Grade /Class</b>	ECD A/Red
<b>Learning Area</b>	Mathematics and Science
<b>Topic/Content:</b>	Matching
<b>Sub-Topic:</b>	Matching objects and pictures to colour
<b>S.O.M:</b>	Mathematics and Science (ECD-GR 2) National Syllabus page 17
<b>Equipment/media:</b>	Blocks, coloured pictures, coloured shapes, seeds, cups, hats, satchels, lunch boxes
<b>Number of learners:</b>	43
<b>Assumed Knowledge:</b>	Learners have knowledge of objects and colour

### Lesson Objectives

By the end of the lesson, learners should be able to:

- match familiar objects to colour
- match pictures to colour

STAGE	CONTENT	ORGANISATION	COACHING POINTS
<b>Introduction</b> 5min	<ul style="list-style-type: none"> <li>• displays -pictures and objects</li> <li>• identification - objects and pictures</li> </ul>	- Horse shoe	
<b>Lesson Development</b> 10 mins	<ul style="list-style-type: none"> <li>• match - pictures and objects</li> <li>• classification -different objects and pictures</li> <li>- Colour and shapes.</li> </ul>	<ul style="list-style-type: none"> <li>• In pairs, learners discuss how to match pictures and objects to colour and shape.</li> <li>• In groups learners justify their matching with reasons answering questions such as (why and how)</li> </ul>	<ul style="list-style-type: none"> <li>- correct matching</li> <li>- identifying which goes where</li> <li>- teacher ascertain all learners are participating in their pairs</li> </ul>
<b>Conclusion</b> 5 mins	- Lessons learnt	-feedback by learners	- question and answer by the teacher and learners

**LESSON EVALUATION:**

**Strength:**

.....

.....

.....

**Weaknesses:**

.....

.....

.....

**Way Forward**

.....

.....

.....

Teachers to note that a combination of a scheme of work and a lesson plan formulate a scheme-cum plan

**NB It should be noted by teachers that the strengths and weaknesses should reflect on both the learners and the teacher. (Media, methodology, content, activities, timing, level of learners should be looked at when evaluating)**



## UNIT 5

### RECORD KEEPING

#### 5.1 Definition

Record keeping is the maintenance of information about each student, which includes basic biographical data, contact information, educational progress and modifications, attendance, discipline, and medical concerns. You should have a progress record to capture learner performances. An attendance register is a critical document you should have as a teacher to track and record your learner's class or lesson attendance.

#### 5.2 OBJECTIVES

By the end of this unit, you should be able to:

- identify the various records you are expected to keep
- prepare accurate records
- Interpret information from records to promote learning
- Maintain and keep records safely
- Appreciate the need to update records regularly

#### 5.3 Records to be kept

Records are critical documents about the teaching – learning process which you must keep as a teacher.

They include:

- Syllabuses (National and School)
- Examination documents (list of candidates, , exam analysis)
- Mark lists (mark schedules)
- Stock control registers
- Records of staff details (teacher professional standard documents)
- Records of learner details (register, social, progress, remedial)
- Supervision records (crits)
- Files, circulars, handouts, past exam papers
- Minutes of meetings (staff developments, staff meetings)
- Inventory of resource materials
- Stock control registers

#### 5.4 Conclusion

You should not that the above information has defined a guide and its importances. Some of the vital things mentioned are the critical documents, curriculum for primary and secondary school, syllabus interpretation, national and school based syllabuses, schemes of work and lesson plans as well as record keeping. The onus is now on the teacher to implement the documented componets of the syllabus as provided in this guide.

### **3.0 PART B: CURRICULUM DELIVERY**

#### **INTRODUCTION**

This section comprises of the content, Objectives, Methodology, Teaching-learning materials, Class management, Evaluation and Assessment. These helps you as a teacher to deliver the critical documents dealt with in Part A above.

#### **3.1 OBJECTIVES**

By the end of this unit, you should be able to:

- select appropriate teaching methods and learning materials for your lessons to enhance effective evaluation and assessment
- use a variety of learner-centred approaches
- plan and organise study tours
- help pupils carry-out projects or experiments
- apply class management skills that will promote unhu/ubuntu/vumunhu in learners

#### **3.2 Content**

The Mathematics and Science ECD- Grade 2 syllabus covers the following content:

- Matching and ordering objects
- Properties of different shapes
- Objects in the environment
- Balancing objects
- Fastening
- Different body parts
- Water
- Plants
- Animals
- Soil
- Health, Nutrition and Safety
- Whether changes
- Air
- Simple machines

- Light
- Fire
- Electricity
- Addition and subtraction games
- Money
- Time
- Mass
- Volume
- Relationships
- Competencies to be developed

## **METHODOLOGIES**

- As a teacher it is important for you to use problem-solving and learner-centred approaches:
- You are the facilitator
- The learner is the doer

The following are examples of methods that you can use in the teaching and learning process:

- Question and answer (Q/A)
- Lecture
- Demonstration
- Observation
- Simulation
- Role play
- Experimentation
- Project
- Field trips

### **Choice of method is influenced by:**

- Your personality
- Learner`s level of development (cognitive, affective and psychomotor)
- Content to be covered
- Competencies to be developed

- Time of the year
- Place
- Society/community
- Size of class
- resources

## **LEARNERS PROFILES**

Profile assessment is a quality assessment tool designed for a variety of learners to determine their strengths and identify areas of improvement. As a teacher, you should carry out profiling to track learner behaviour, knowledge, attitudes, aptitudes, skills, values and performances on an on-going basis. This assessment informs teaching and learning process and contributes to learner profile.

### **3.4 INSTRUCTIONAL (TEACHING-LEARNING) AIDS**

- **help learners to learn better and faster**
- **capture learners` interest**
- **create virtual reality**

### **Objectives**

- select appropriate instructional aids
- make good quality aids from available resources
- use instructional aids effectively
- Design meaningful and effective instructional aids

### **Types:**

The lists below are examples of teaching/learning materials you can use:

- Charts
- Chalkboard
- Whiteboard
- computers
- slides
- films
- videos
- flannel graph
- textbooks

- local environment

### **3.5 ASSESSMENT AND EVALUATION**

Assessment/evaluation is an interactive process between learner and the teacher that informs school how well their learners are learning what they are teaching. The information is used by the school to make changes in the learning process. Assessment of teaching means taking a measure of its effectiveness. “Formative” assessment is measurement for the purpose of improving it.

#### **SUPERVISION**

- Check learners` work in order to guide and correct them
- Areas that require supervision include practical work, written work, discussions, group work and field trips

#### **EVALUATION**

- Measuring the success of teaching in terms of teacher and learner performance and soft skills (collaboration, leadership, discipline)
- Provides feedback on the acquisition of knowledge, skills and attitudes by learners

#### **Objectives**

By the end of this unit, you should be able to:

- evaluate both your work and that of the learners
- identify the essential assessment and evaluation methods that you can use
- prepare marking schemes for the various assessment and evaluation activities or projects

#### **Methods of Evaluation**

- Tests and exercises
- Projects
- Examinations
- Assignments
- observations

### **3.6 CLASS MANAGEMENT**

Classroom management refers to the wide variety of skills and techniques that teachers use to keep learners organized, orderly, focused, attentive, on task, and academically productive during a class. It is the process of planning, organising, leading and controlling class activities to facilitate learning

## Objectives

**By the end of this unit, you should be able to:**

- create an effective learning environment
- motivate the learners
- maintain discipline
- supervise class activities

## ORGANISATIONAL SKILLS FOR EFFECTIVE LEARNING

Classroom organisation which covers:

- physical environment
- emotional environment
- grouping the learners
- class control and discipline
- supervision

## PHYSICAL ENVIRONMENT

- Classroom to be clean, tidy and airy
- Safety considerations when arranging furniture
- Teaching aids to be visible to learners

## EMOTIONAL ENVIRONMENT

- Be firm, warm and pleasant
- Set the right tone
- Tell learners what behaviour you expect
- Rewarding good behaviour

## GROUPING

- Learners may be grouped according to needs, abilities
- Promote sharing of ideas among learners

## CLASS CONTROL AND DISCIPLINE

- Know the school's policy on discipline
- Be firm and fair

- Punishment should be corrective
- Acknowledge good behaviour
- Make use of prefects and class monitors
- Create an atmosphere of trust and honesty
- Aim for intrinsic discipline

## **MOTIVATION**

- Make learners feel important
- Recognise and reward excellence
- Be a role model in terms of your demeanour

## UNIT 6

### SCOPE OF THE TEACHERS` GUIDE

#### SYLLABUS TOPICS

It is important for you as a teacher to know the topics that are covered and how they are listed according to levels as shall be revealed below. You should also be able to state the objectives, methods, teaching and learning materials, records and evaluation techniques for each topic.

Infant Mathematics and Science learning area has seven broad topics as stipulated below:  
measurement for the purpose of improving it.

ECDA	ECDB	GRADE 1	GRADE 2
Mathematical play	Mathematical play	Mathematical play	
Manupulative and block play	Manupulative and block play	Manupulative and block play	Manupulative and block play
Science, mathematics and discovery play	Science, mathematics and discovery play	Science, mathematics and discovery play	Science, mathematics and discovery play
Number and science concepts	Number and science concepts	Number and science concepts	Number and science concepts
Number operations	Number operations	Number operations	Number operations
Measures	Measures	Measures	Measures
		Relationships in science and mathematics	Relationships in science and mathematics

- **mathematical play**
  - Matching objects and pictures to colour and size
  - Ordering objects and pictures to colour and size
  - Objects of different shapes
  
- **Manipulative and block play**
  - Objects in the environment
  - Moving objects
  - Balancing objects
  - Fastening



- **Science, mathematics and discovery play**

- Human body
- Water
- Plants
- Animals
- Soil
- Health, Nutrition and Safety
- Weather changes
- Air
- Simple machines
- Light
- Fire
- Electricity

- **Number and science concepts**

- Counting objects
- Sets sequencing

- **Number operations**

- Addition games
- Subtraction games

- **Measures**

- Money
- Time
- Mass
- Volume

- **Relationships in science and mathematics.**

- Simple statistical operations, such as working with data and depicting data using pictures and diagrams

## INTRODUCTION TO MATHEMATICS AND SCIENCE

### Objectives (learner – behaviour)

Learners should be able to:

- recall, recognise and use mathematical and scientific terms;
- carry out calculations accurately;
- estimate, approximate and use appropriate degrees of accuracy;
- read, interpret and analyse tables, charts and graphs and use them in conducting simple investigations;
- interpret and apply Mathematics and Science in life situations;
- explore scientific and mathematical ideas and come up with conclusions and innovations;
- apply scientific and mathematical concepts and skills for environmental sustainability;
- demonstrate problem solving abilities in mathematical and scientific skills;
- use local materials to design and modify simple technological devices;
- investigate how people influence and are influenced by science, mathematics and technology.

### Content

#### Activities

The following are some of the activities the learners and the teacher will be carrying out:

- Educational touring to industrial sites to observe some mathematical and scientific activities
- Discussing the benefits of mathematics and science activities done in their community and the nation
- Matching the objects according to colour and shapes
- Balancing objects in the environment
- Discussing the safe use of tools found in the environment

#### Methodology (learner - centredness)

It is of interest for the Maths and Science teachers and learners to employ the following methods during teaching and learning:

- Project based learning
- Educational tours
- Group work
- Imitation

- Discovery
- Experimentation
- E-learning
- Collections
- Demonstrations
- Resource person(s)
- Questions and Answers

### **Teaching-learning aids**

There is need for the teacher to use the following as some of the teaching aids which can be used in the teaching and learning:

- ICT Tools
- Print Media
- Tools from the environment
- Audio and Visual Materials
- Realia

**The following is a guide on some of the topics:**

### **MATHEMATICAL PLAY**

#### **Objectives**

**Learners should be able to:**

- Matching objects and pictures to colour
- Ordering objects and pictures to colour
- identify different plane and solid shapes

#### **Content:**

- Objects matching
- Picture matching
- Objects of different shapes
- plane and solid shapes

#### **Methodology:**

- Comparing similar objects to colour

- Pairing objects to colour
- Matching blocks to colour
- Handling objects of different shapes
- Observing and classifying objects of different shapes

**Teaching-Learning Aids**

- Mathematical play area
- Manipulative and block play area
- Science and discovery play area.
- Blocks, coloured pictures, coloured shapes, seeds, cups, hats, satchels, lunch boxes

**Activities (Learner-centredness)**

- Educational touring to observe some industrial sites
- Matching tools and objects to colour and uses
- Ordering objects and pictures to colour
- identify different plane and solid shapes

**Competencies**

Knowledge	Skills	Attitudes
<ul style="list-style-type: none"> <li>• Matching objects and pictures to colour</li> </ul>	<ul style="list-style-type: none"> <li>• Handling objects and tools</li> </ul>	<ul style="list-style-type: none"> <li>• Resolving differences of opinions</li> </ul>

**Assessment**

Learners will be assessed on:

- The ability to match objects to colour and size
- Collection and grouping of objects appropriately

**NB You should follow the guide above as you deliver your lessons**

**Conclusion**

The information above (curriculum delivery, scope of the guide and syllabus scope and sequence) guides you as a teacher to provide the learner with informed and up-to-date ways of teaching, how much to teach and the sequence. The sequence aids you to identify the spiral nature of the learning component. The obligation is now on the teacher to implement the documented components of the syllabus as provided in this guide.

## ANNEXTURE 1

### 1.0 SCOPE AND SEQUENCE

TOPIC	ECD 'A'	ECD 'B'	GRADE 1'	GRADE 2
MATHEMATICAL PLAY	<ul style="list-style-type: none"> <li>• Match objects and pictures to colour</li> </ul>	<ul style="list-style-type: none"> <li>• Match objects and pictures to:                             <ul style="list-style-type: none"> <li>- Colour</li> <li>- size</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Match objects and pictures to                             <ul style="list-style-type: none"> <li>- shape</li> </ul> </li> </ul>	
	<ul style="list-style-type: none"> <li>• Order objects and pictures to colour</li> </ul>	<ul style="list-style-type: none"> <li>• Order objects and pictures to:                             <ul style="list-style-type: none"> <li>- Size</li> <li>- type</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Order objects and pictures in                             <ul style="list-style-type: none"> <li>- sequence of size and type</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Order objects and pictures to                             <ul style="list-style-type: none"> <li>- events</li> </ul> </li> </ul>
MANIPULATIVE AND BLOCK PLAY	<ul style="list-style-type: none"> <li>• Shapes of different objects</li> </ul>	<ul style="list-style-type: none"> <li>• Shapes and names of different objects</li> </ul>	<ul style="list-style-type: none"> <li>• Shapes and uses of different objects</li> </ul>	<ul style="list-style-type: none"> <li>• Properties of different shapes</li> </ul>
	<ul style="list-style-type: none"> <li>• Objects in the environment</li> <li>• Construction-Bundles</li> <li>• Object matching</li> </ul>	<ul style="list-style-type: none"> <li>• Objects can be joined, fitted and bonded.</li> <li>• Objects can be matched to complete patterns.</li> </ul>	<ul style="list-style-type: none"> <li>• Construction of different objects using similar materials</li> <li>• Construction of different objects using different materials</li> <li>• Complete jigsaw puzzles.</li> </ul>	<ul style="list-style-type: none"> <li>• Structures can be dismantled and reconstructed</li> </ul>

TOPIC	ECD 'A'	ECD 'B'	GRADE 1	GRADE 2
	<p>Moving Objects</p> <ul style="list-style-type: none"> <li>• Objects move when pushed, pulled, lifted or thrown</li> <li>• Different body parts can move objects</li> </ul>	<ul style="list-style-type: none"> <li>• Tools can assist motion of objects</li> </ul>	<ul style="list-style-type: none"> <li>• Electricity, batteries and solar energy can assist motion of objects.</li> </ul>	<ul style="list-style-type: none"> <li>• Objects make different sounds when moved.</li> </ul>
	<p>Balancing</p> <ul style="list-style-type: none"> <li>• Some objects can balance on top of each other</li> </ul>	<ul style="list-style-type: none"> <li>• Some objects can balance on body parts.</li> </ul>	<ul style="list-style-type: none"> <li>• Objects can be balanced using tools</li> </ul>	<ul style="list-style-type: none"> <li>• Objects can balance on a scale.</li> </ul>
	<p>Fastening</p> <ul style="list-style-type: none"> <li>• Textiles can be fastened</li> </ul>	<ul style="list-style-type: none"> <li>• Some objects have different fastenings</li> </ul>		

TOPIC	ECD 'A'	ECD 'B'	GRADE 1	GRADE 2
SCIENCE, MATHEMATICS AND DISCOVERY PLAY	<p>Human body</p> <ul style="list-style-type: none"> <li>• The body parts</li> <li>• Human beings are of different sexes</li> </ul>	<ul style="list-style-type: none"> <li>• Different body parts have different functions.</li> </ul>	<ul style="list-style-type: none"> <li>• The body parts need care</li> <li>• The human body is made up of different parts.</li> </ul>	<ul style="list-style-type: none"> <li>• People use their senses of sight, hearing, touch, taste and smell to interact with the environment.</li> <li>• Other animals use their senses to survive in the environment.</li> </ul>
	<p>Water</p> <ul style="list-style-type: none"> <li>• Sources of water</li> <li>• Sources of water can be dangerous</li> <li>• Water makes things wet</li> <li>• Water has different uses</li> </ul>	<ul style="list-style-type: none"> <li>• Some plants and animals live in water</li> <li>• Some objects sink in water</li> <li>• Water flows.</li> </ul>	<ul style="list-style-type: none"> <li>• Some objects float in water</li> <li>• Water is used in many ways by people, animals and plants.</li> <li>• Water can be dangerous</li> <li>• Water is colourless, odourless and tasteless</li> </ul>	<ul style="list-style-type: none"> <li>• Water takes the shape of a container</li> <li>• Water takes different forms</li> <li>• Water is found in other environments</li> <li>• Water can be conserved.</li> </ul>

TOPIC	ECD 'A'	ECD 'B'	GRADE 1	GRADE 2
	<p>Plants</p> <ul style="list-style-type: none"> <li>• There are different types of plants</li> <li>• Plants have different uses</li> </ul>	<ul style="list-style-type: none"> <li>• Plants have different colours</li> <li>• Plants have different heights.</li> </ul>	<ul style="list-style-type: none"> <li>• Plants have different parts</li> <li>• Some plants have flowers and bear fruits.</li> <li>• Some plants have thorns and prickles.</li> </ul>	<ul style="list-style-type: none"> <li>• Different types of plants have similar parts</li> <li>• Some plants are cultivated while others grow naturally</li> <li>• Some plants are dangerous and poisonous</li> <li>• Different plants grow in different climatic conditions.</li> </ul>
	<p>Animals</p> <ul style="list-style-type: none"> <li>• Names of animals</li> <li>• Animals make different sounds</li> </ul>	<ul style="list-style-type: none"> <li>• Domestic and wild animals</li> <li>• Animals move differently.</li> </ul>	<ul style="list-style-type: none"> <li>• Different domestic animals found in the local environment.</li> <li>• Animals have different habitats.</li> </ul>	<ul style="list-style-type: none"> <li>• Animals have different uses.</li> <li>• Animals have different features.</li> <li>• Animals have similar features.</li> </ul>
	<p>Soil</p> <ul style="list-style-type: none"> <li>• Soil has different colours</li> </ul> <p>Soil</p> <ul style="list-style-type: none"> <li>• Soil has different colours</li> </ul>	<ul style="list-style-type: none"> <li>• Soil has different uses</li> <li>• Soil is the main medium in which plants grow.</li> </ul>	<ul style="list-style-type: none"> <li>• Soil is a habitat for some animals.</li> <li>• Soil needs to be cared for.</li> </ul>	<ul style="list-style-type: none"> <li>• Soil has different texture.</li> <li>• Soil has different density</li> <li>• Loose soil can take the shape of the container</li> <li>• Most plants need soil and water to grow.</li> </ul>

TOPIC	ECD 'A'	ECD 'B'	GRADE 1	GRADE 2
	<p>Health, Nutrition and Safety</p> <ul style="list-style-type: none"> <li>• Personal hygiene</li> <li>• Good eating habits are important for health</li> </ul>	<ul style="list-style-type: none"> <li>• Diseases can be identified</li> <li>• Diseases can be prevented and cured.</li> </ul>	<ul style="list-style-type: none"> <li>• Personal and good hygiene promote good health.</li> <li>• A balanced diet promotes good health</li> <li>• Causes of accidents</li> <li>• Care of the environment</li> </ul>	<ul style="list-style-type: none"> <li>• Accidents can be prevented.</li> <li>• Safety rules should be observed.</li> <li>• Forms of child abuse</li> <li>• Child abuse can be prevented.</li> <li>• Good relationships contribute to good health.</li> </ul>
	<ul style="list-style-type: none"> <li>• Weather changes from time to time</li> </ul>	<ul style="list-style-type: none"> <li>• Weather influences dressing</li> </ul>	<ul style="list-style-type: none"> <li>• Weather influences human activities</li> <li>• Elements of weather can be measured</li> </ul>	<ul style="list-style-type: none"> <li>• Weather causes changes in vegetation</li> <li>• Weather changes form a pattern over a period of time</li> </ul>
	<ul style="list-style-type: none"> <li>• Air is everywhere</li> </ul>	<ul style="list-style-type: none"> <li>• Air makes objects move.</li> </ul>	<ul style="list-style-type: none"> <li>• Air takes up space.</li> </ul>	<ul style="list-style-type: none"> <li>• Air is necessary for things to live.</li> </ul>
	<p>Simple Machines</p> <ul style="list-style-type: none"> <li>• There are different types tools</li> <li>• Tools make work easier</li> <li>• Tools are simple machines</li> </ul>	<ul style="list-style-type: none"> <li>• There are different types of machines</li> <li>• Machines are made by people.</li> </ul>	<ul style="list-style-type: none"> <li>• Machines make work easier.</li> <li>• Machines can be repaired.</li> </ul>	<ul style="list-style-type: none"> <li>• Some machines produce heat and sound</li> <li>• Magnets can pull and repel some materials</li> <li>• A magnet can be used to make another magnet by induction.</li> </ul>



TOPIC	ECD 'A'	ECD 'B'	GRADE 1	GRADE 2
	<p>Light</p> <ul style="list-style-type: none"> <li>• There are different sources of light</li> </ul>	<ul style="list-style-type: none"> <li>• The sun appears to be in different positions at different times of the day.</li> </ul>	<ul style="list-style-type: none"> <li>• The sun gives out heat and light.</li> <li>• Light travels in a straight line.</li> </ul>	<ul style="list-style-type: none"> <li>• Some objects in the environment give out heat and light.</li> <li>• Light and heat have effects on the environment.</li> <li>• Light can be reflected.</li> </ul>
	<p>Fire</p> <ul style="list-style-type: none"> <li>• Properties of fire</li> <li>• Safety measures</li> </ul>	<ul style="list-style-type: none"> <li>• Fire has many uses</li> </ul>	<ul style="list-style-type: none"> <li>• Fire can be put out in different ways.</li> </ul>	<ul style="list-style-type: none"> <li>• Fire can destroy the environment.</li> </ul>
	<p>Electricity</p> <ul style="list-style-type: none"> <li>• Appliances that use electricity</li> <li>• Safety measures</li> </ul>	<ul style="list-style-type: none"> <li>• Electricity has different uses in the home</li> </ul>	<ul style="list-style-type: none"> <li>• There are different forms of electricity.</li> <li>• Ways of saving electricity</li> </ul>	<ul style="list-style-type: none"> <li>• There are different electrical appliances.</li> <li>• There are different sources of electricity.</li> <li>• Electricity can destroy the environment.</li> </ul>
<b>NUMBER AND SCIENCE CONCEPTS</b>	<ul style="list-style-type: none"> <li>• Count objects from 1 to 5.</li> </ul>	<ul style="list-style-type: none"> <li>• Count objects from 1 to 10.</li> <li>• Objects and animals can be counted.</li> <li>• Ordinal numbers from 1st to 5th.</li> </ul>	<ul style="list-style-type: none"> <li>• Count objects from 1 to 50.</li> <li>• Objects can be grouped into sets.</li> <li>• Ordinal numbers from 1st to 10th.</li> <li>• Number line 0 to 50</li> <li>• Numerical order</li> <li>• Approximations and estimations.</li> </ul>	<ul style="list-style-type: none"> <li>• Count from 1 to 100.</li> <li>• Count in pairs.</li> <li>• Numbers can be used for such purposes as indicating home addresses, ages, telephone numbers and birth dates.</li> <li>• Sets can be sequenced, compared and matched.</li> <li>• Ordinal numbers from 1st to 20th.</li> <li>• Fractions – proper fractions (denominators 2 and 4).</li> </ul>

TOPIC	ECD 'A'	ECD 'B'	GRADE 1	GRADE 2
	<p>Light</p> <ul style="list-style-type: none"> <li>• There are different sources of light</li> </ul>	<ul style="list-style-type: none"> <li>• The sun appears to be in different positions at different times of the day.</li> </ul>	<ul style="list-style-type: none"> <li>• The sun gives out heat and light.</li> <li>• Light travels in a straight line.</li> </ul>	<ul style="list-style-type: none"> <li>• Some objects in the environment give out heat and light.</li> <li>• Light and heat have effects on the environment.</li> <li>• Light can be reflected.</li> </ul>
	<p>Fire</p> <ul style="list-style-type: none"> <li>• Properties of fire</li> <li>• Safety measures</li> </ul>	<ul style="list-style-type: none"> <li>• Fire has many uses</li> </ul>	<ul style="list-style-type: none"> <li>• Fire can be put out in different ways.</li> </ul>	<ul style="list-style-type: none"> <li>• Fire can destroy the environment.</li> </ul>
	<p>Electricity</p> <ul style="list-style-type: none"> <li>• Appliances that use electricity</li> <li>• Safety measures</li> </ul>	<ul style="list-style-type: none"> <li>• Electricity has different uses in the home</li> </ul>	<ul style="list-style-type: none"> <li>• There are different forms of electricity.</li> <li>• Ways of saving electricity</li> </ul>	<ul style="list-style-type: none"> <li>• There are different electrical appliances.</li> <li>• There are different sources of electricity.</li> <li>• Electricity can destroy the environment.</li> </ul>
<b>NUMBER OPERATIONS</b>	<ul style="list-style-type: none"> <li>• Addition games</li> <li>• Subtraction games</li> </ul>	<ul style="list-style-type: none"> <li>• Addition games and rhymes</li> <li>• Subtraction games and rhymes</li> </ul>	<ul style="list-style-type: none"> <li>• Addition of whole Numbers with the sum of up to 50.</li> <li>• Subtraction of whole numbers within the range 0 to 50.</li> </ul>	<ul style="list-style-type: none"> <li>• Addition of whole numbers with sum of up to 100.</li> <li>• Subtraction of whole numbers within the range 0 to 100.</li> <li>• Multiplication (with products less than or equal to 100)</li> <li>• Division where the dividend is 50 or less.</li> </ul>
<b>MEASURES</b>	<p>Money</p> <ul style="list-style-type: none"> <li>• Identify coins (1c to 9c)</li> </ul>	<p>Money</p> <ul style="list-style-type: none"> <li>• Buying and selling using 1c to 9c</li> </ul>	<ul style="list-style-type: none"> <li>• Money (up to 50c)</li> </ul>	<ul style="list-style-type: none"> <li>• Money (up to \$1,00)</li> </ul>

TOPIC	ECD 'A'	ECD 'B'	GRADE 1	GRADE 2
	Time • Sequence of events	Time • Different times of the day	Time • days of the week  • today, yesterday tomorrow	Time • Months of the year  • Time on hour and on ½ hour
	Mass • Using 'heavy 'and 'light'	Mass • Order by mass/weight through lifting objects.	Mass • Compare masses using, 'heavier', 'lighter'	Mass • Weigh using non-standard units
			• Length , width and heights can be compared using non-standard units	• Use of standard measures of length  • Perimeter
			• Rates of movements can be compared	• Rate of moving objects and performing tasks differ
				Area • Compare and measure area using non-standard units and by counting squares.
	Volume • Compare objects using bigger than and smaller than	• Capacity of different containers	• Compare capacity using non-standard units.	• Measure capacity using non-standard units and litres.
				Shapes • Recognise differences and similarities of shapes
RELATIONSHIPS IN SCIENCE AND MATHEMATICS			• Work with data  • Depict data using objects.	• Work with data  • Depict data using pictures and diagrams.