LESSON PLAN: Foundation Phase- Numeracy

Grade: 1 **Focus Learning Area/s:** Mathematics **Weekly lesson plan**
Integrated Learning Area/s: Life Orientation, Technology

CONTENT FOCUS/TOPIC/CONCEPT: People Who Help Us
LEARNING OUTCOMES & ASSESSMENT STANDARDS Focus LAs LOs ASs: LO1: Number Operations and Relationships AS: 1.1.1, 1.1.6, 1.1.10, 1.1.12. Integrated LAs LOs ASs: Life Orientation LO2: Social Development AS: 1.2.3
KNOWLEDGE/CONCEPTS • Counting • Ordering and comparing whole numbers • Calculating • Doubling and halving
Resources: • Objects for counting • 120 chart • Abacus • Bond flash cards • Counting cards • Work cards • 2Simple software

LEARNING ACTIVITIES
Week : 1& 2

Mat Work in groups (20 min. per group):

- Counting objects up to 34.
- learners count varying numbers of objects
- Compare.
- Learners order and compare the whole group's answers.
- Skip counting in 2's and 10's, forwards and backwards.
- Rote, objects, 120 chart, counting cards*
- Calculating bonds up to 10.
- Concrete apparatus.
- Doubling and halving.
- Concrete apparatus.

Possible Applications**:

- Counting worksheet: groups of pictures, which the learners must count and represent with number symbols and names using 2Calculate.
- Comparing worksheet: cut blocks, sort into categories and order each category from least to most.
- Using the 120 chart, colour the blocks (e.g. if the learners are counting in 2's, they will colour in 2, 4, 6, etc in the same colour) using 2Calculate
- Work cards with bonds up to 8 using Maths games
- Work cards with doubling and halving up to 20 (learners may use concrete apparatus where needed).

* Counting cards reflect the number to be counted in, in pictures or dots (e.g. a series of cards each with 10 stars).

**An application would be the written work which is reinforcing and supporting the mat work.

Mat work is where learners work in a group/s informally on a mat under the teacher's guidance.

MATHEMATICS ASSESSMENT		
FORMS OF ASSESSMENT: Written Work ☐ One-on-one talks (1 to 1) Tests ☐ Simulations Aural/Oral questions	☐ Projects: *individual and group* ☐ Investigations ☐ Self-report assessment Practical exercises / demonstrations	ASSESSMENT ACTIVITY/ACTIVITIES: • Counting: mat work and worksheet. • Comparing: mat work and worksheet. • Skip counting: mat work and worksheet. • Calculating bonds up to 8: work card and test. • Doubling and halving up to 20: mat work and work card. • 2Calculate • Maths games 1
WHAT ASSESSOR WILL DO: Observe Listen Read *e.g. learners observations* ☐ Interpret Question ☐ Confer ☐ One-on-one talk	WHO WILL ASSESS: Teacher ☐ Self ☐ Peer ☐ Another teacher ☐ Outside expert ☐ Class panel	INSTRUMENT TO BE USED: Checklist Assessment scale ☐ Computer Memorandum
LEARNING STYLES Visual Auditory ☐ Kinaesthetic Tactile	**BARRIERS TO LEARNING** • Use more concrete apparatus. • Lower number range. • Ability groups. • Spend more time if necessary.	**ENRICHMENT** • More abstract. • Increase number range. • Skip counting in 5's and 3's. • Work cards according to their ability.
TEACHER REFLECTION		

LESSON PLAN: Foundation Phase- Numeracy
Grade: 1 **Focus Learning Area/s:** Mathematics **weekly lesson plan**
Integrated Learning Area/s: Technology, Arts and Culture and Natural Science

CONTENT FOCUS/TOPIC/CONCEPT:
People Who Help Us

LEARNING OUTCOMES & ASSESSMENT STANDARDS

Focus LAs LOs ASs:
LO3: Space and Shape
AS: 1.3.1, 1.3.3

Integrated LAs LOs ASs:
Technology
LO1: Technological Processes and Skills
AS: 1.1.3.1

Arts and Culture
LO1: Creating, Interpreting and Presenting
AS: 1.1.4.1

Natural Sciences
LO1: Scientific Investigations
AS: 1.1.2

KNOWLEDGE/CONCEPTS

- Recognise, identify and name:
- 2D shapes; squares, rectangles, triangles, circles.
- 3D shapes; prisms (cubes, cuboids, pyramids), spheres.
- Build 3D objects using concrete apparatus.

LEARNING ACTIVITIES

Week : 3

Mat Work in groups (20 min. per group):

- 2D and 3D shape quiz (e.g. Name the shape that has four sides which are all the same length; or What is the shape that you can roll along the floor?).Using 2Caculate, Maths City 1.
- After a discussion on the mat about the properties of different shapes, the learners are asked to make the shapes using geoboards and elastic bands.
- Using the attribute shapes and wooden blocks, the learners are asked to find a shape corresponding to the given information (e.g. Find the 2D shape with two short sides and two long sides).
- Use 3D shapes to build given 3D structures represented on the block cards.

Possible Applications:

- Worksheet with the learnt 2D and 3D shapes, the labels are on the top of the page which the learners must place under the correct shape.
- Book work: The learners are given the names of the 2D shapes which they must draw.
- A picture made up of shapes: The learners must count and colour the different shapes (e.g. all the squares are blue).
- The learners cut out shapes on a page and use these to create their own shape picture.
- Technology: The learners will be given the net of a cube. Once they have cut it out, they are to draw pictures of people who help us on each side. They then build the cube.
- Investigation: Sort shapes according to movement (rolling or sliding).
- Use 2 Calculate to sort shapes and make shape object using the blocks.
- Use Maths City 1 to explore with different shapes and explore with shape and space.

Resources:

- Attribute shapes
- Geometric solids
- Wooden blocks
- Lego
- Block cards
- Tangrams
- Geoboards
- Elastic bands
- 2Simple software

<table>
<tr><td colspan="3">MATHEMATICS ASSESSMENT</td></tr>
<tr><td>FORMS OF ASSESSMENT:
Written Work
One-on-one talks (1 to 1)
☐ Tests
☐ Simulations
Aural/Oral questions</td><td>☐ Projects: individual and group
☐ Investigations
☐ Self-report assessment
Practical exercises / demonstrations</td><td>ASSESSMENT ACTIVITY/ACTIVITIES:
• Recognition of shapes: worksheets.
• Builds 3D shapes: block cards on mat and building a cube using a net.
• Individual testing on shape recognition.</td></tr>
<tr><td>WHAT ASSESSOR WILL DO:
Observe
Listen
Read e.g. learners observations
☐ Interpret
Question
☐ Confer
One-on-one talk</td><td>WHO WILL ASSESS:
Teacher
☐ Self
☐ Peer
☐ Another teacher
☐ Outside expert
☐ Class panel</td><td>INSTRUMENT TO BE USED:
Checklist
Assessment scale
☐ Rubric
Memorandum</td></tr>
<tr><td>LEARNING STYLES
Visual
Auditory
☐ Kinaesthetic
Tactile</td><td>BARRIERS TO LEARNING
• More individual assistance.
• Practical shape games.</td><td>ENRICHMENT
• Learners build a 3D shape using cardboard (build a net).
• Tangrams</td></tr>
<tr><td colspan="3">TEACHER REFLECTION</td></tr>
</table>

LESSON PLAN: Foundation Phase- Numeracy
Grade: 1 **Focus Learning Area/s:** Mathematics **Weekly lesson plan**
Integrated Learning Area/s: Arts and Culture

CONTENT FOCUS/TOPIC/CONCEPT:
People Who Help Us

LEARNING OUTCOMES & ASSESSMENT STANDARDS

Focus LAs LOs ASs:
LO2: Patterns, Functions and Algebra
AS: 1.2.1, 1.2.2, 1.2.3

Integrated LAs LOs ASs:
LO3: Shape and Space
AS: 1.3.1

Arts and Culture
LO1: Creating, Interpreting and Presenting
AS: 1.1.4.2

KNOWLEDGE/CONCEPTS

- Copying and extending simple patterns using physical objects.
- Copying and extending simple number patterns.
- Create own patterns.

LEARNING ACTIVITIES

Week : _4_____

Mat Work in groups (20 min. per group):

- The learner places shapes according to verbal instructions from the teacher. Using 2Calculate or Maths City1
- Using physical objects, the learner must extend the teacher's pattern.
- Create their own patterns using the same objects.
- Extend and create patterns using a pegboard, using 2Draw
- Extend and create patterns using 3D shape beads.
- Using the 120 chart, count in 2's and 10's, using 2 Calculate
- Using their mat books, the learners would complete the given number pattern (may use the 120 chart if necessary).

Possible Applications:

- Work book and computer: Complete geometric patterns by filling in the missing shapes.
  Extend geometric patterns. (2Draw)
  Create own geometric patterns.
- Work book: Complete number patterns by filling in the missing numbers.
  Extend number patterns.
  Create own number patterns.
- Art: Create geometric patterns using a variety of materials.
- Use 2Paint a picture to create different patterns.
- Use 2Calculate to count in 2's and 10's.
- Complete number patterns in 2Calculate and Maths games 1.

Resources:

- Counters
- Cuisenaire rods
- Attribute shapes
- 120 chart
- Pegboards and cards
- Art materials
- Beads and cards
- 2Simple software

MATHEMATICS ASSESSMENT		
FORMS OF ASSESSMENT: Written Work ☐ One-on-one talks (1 to 1) Tests ☐ Simulations Aural/Oral questions	☐ Projects: *individual and group* ☐ Investigations ☐ Self-report assessment Practical exercises / demonstrations	ASSESSMENT ACTIVITY/ACTIVITIES: • Mat work: creating and extending geometric patterns. • Workbook: creating and extending geometric and number patterns.
WHAT ASSESSOR WILL DO: Observe ☐ Listen Read *e.g. learners observations* ☐ Interpret Question ☐ Confer ☐ One-on-one talk	WHO WILL ASSESS: Teacher ☐ Self ☐ Peer ☐ Another teacher ☐ Outside expert ☐ Class panel	INSTRUMENT TO BE USED: Checklist Assessment scale ☐ Rubric ☐ Memorandum
LEARNING STYLES Visual Auditory ☐ Kinaesthetic Tactile	**BARRIERS TO LEARNING**	**ENRICHMENT** • Increase complexity of geometric patterns. • Skip counting in odd numbers. • Skip counting in a variety of numbers. • Increase range of skip counting.
TEACHER REFLECTION		

LESSON PLAN: Foundation Phase- Numeracy
Grade: 2 **Focus Learning Area/s:** Mathematics **Weekly lesson plan**
Integrated Learning Area/s: Natural Sciences

Week : __1_____ Date:_____

Mat Work in groups (20 min. per group):

- Counting objects up to 100.
- learners are given varying numbers of objects to count.
- Counting
- in 1's from any number between 0 and 200, 10's from any number between 0 and 200, 5's any multiple between 0 and 200, 2's from any multiple of 2 between 0 and 200.
- rote counting, counting cards*, number lines, 120 chart, abacus.
- Using the weather chart, count the number of sunny days, number of rainy days etc.
- Knows and reads number symbols
- using the 120 chart or number line, the teacher points to a number and the learner must say it.
- the teacher says a number to which the learner must point. (This can be extended into a counting on or counting back activity e.g. point to 37, show me 2 more – what is that number?)
- Recognises place value
- using flard cards (only tens and units) build up e.g making 14 would be using a 10 and a 4.
- using flard cards and a 120 chart, point to a number and the learners must show the teacher how the number is made up.
- Show them a number e.g. 56 – point to the 5 and ask the learners what the number represents (50).

Possible Applications

- Draw up a graph representing weather using 2Investigate or 2Calculate
- Written work: speed games - count in a specified number for a set period of time e.g. in 2's starting at 22 for 30 seconds. The teacher counts with them to check their counting.
- Worksheet: counting and skip counting e.g. a number of jackets with 5 buttons – learners must count the jackets and then the buttons. (2Calculate)
- Written work: fill in the missing numbers e.g. 3, 13, 23, ___, ___ etc. in the form of worms, trains etc.
- Written work: fill in the missing numbers in words e.g. five, ten, ___, ___, etc. 2 Type can be used to learn the spelling of numbers.
- Written work: number names and breaking up
  e.g. 34 = 30 + 4 or thirty-four = 30 + 4 or
  34 = thirty-four = 30 + 4. Teacher writes the first number and the learner completes the equation.

MATHEMATICS ASSESSMENT		
FORMS OF ASSESSMENT: Written Work ☐ One-on-one talks (1 to 1) ☐ Tests ☐ Simulations Aural/Oral questions	☐ Projects: *individual and group* ☐ Investigations ☐ Self-report assessment Practical exercises / demonstrations	ASSESSMENT ACTIVITY/ACTIVITIES: • Counting: Mat work, orally, book work. • Number names and symbols: mat work, orally, book work. • Place value: mat work, book work. • Problem solving: Mat work, book work.
WHAT ASSESSOR WILL DO: Observe Listen Read *e.g. learners observations* ☐ Interpret Question ☐ Confer ☐ One-on-one talk	WHO WILL ASSESS: Teacher ☐ Self ☐ Peer ☐ Another teacher ☐ Outside expert ☐ Class panel	INSTRUMENT TO BE USED: Checklist Assessment scale ☐ Rubric Memorandum
LEARNING STYLES Visual Auditory ☐ Kinaesthetic Tactile	**ASSISTANCE FOR LEARNERS WITH BARRIERS TO LEARNING** • Use more concrete apparatus. • Lower number range. • Ability groups. • Spend more time if necessary.	**ENRICHMENT** • Increase number range. • More abstract. • Work cards according to their ability. • More complex word problems.

LESSON PLAN: Foundation Phase- Numeracy
Grade: 2 **Focus Learning Area/s:** Mathematics **Hours:** 7 **No. of Periods:** 14
Integrated Learning Area/s: N/A

CONTENT FOCUS/TOPIC/CONCEPT:
Winter

LEARNING OUTCOMES & ASSESSMENT STANDARDS

Focus LAs LOs ASs:
LO2: Patterns, Functions and Algebra
ASs: 2.2.2, 2.2.4

Integrated LAs LOs ASs:
LO1: Number, Operations and Relationships
ASs: 2.1.3

KNOWLEDGE/CONCEPTS

- Copying and extending number sequences.
- Create own patterns.
- Describe and observe patterns.

LEARNING ACTIVITIES (and resources)
Mat Work in groups (20 min. per group):

- The teacher gives the learners the first three numbers in a pattern, which they must then complete in their mat books. Play Maths games-sequence the number.
- Speed game: The learners are given the first three numbers in a pattern.
- as a group, they observe and discuss what the rule is.
- they then have 30 seconds to see how far they can extend it.
- Each learner creates his/her own pattern, they then swap with a partner who has to work out the rules. As a pair they extend the patterns.

Create their own pattern of at least ten numbers. They then explain the rule to the group. As a group, they can check to see whether it has been extended correctly.2Calculate

Possible Applications:

- Work book: Complete number patterns by filling in the missing numbers.
  Extend number patterns.
  Create own number patterns.
- The learner must create and extend a pattern from a given number, showing their rule.

Resources:

- 120 chart

number line
2Simple sofware

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□ Practical exercises / demonstrations</td><td>ASSESSMENT ACTIVITY/ACTIVITIES:
• Copying and extending patterns: mat work, worksheets and book work.
• Creates own patterns: mat work, worksheet, book work.
• Describes and observes patterns: mat work</td></tr>
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☐ Tactile</td><td>ASSISTANCE FOR LEARNERS WITH BARRIERS TO LEARNING
• Spend more time.
• More skip counting work.
• Concrete apparatus.
• Simplify pattern rule.
• Lower number range of patterns.
• Start at multiples.</td><td>ENRICHMENT
• More complex patterns.
• Increase number range of patterns.</td></tr>
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LESSON PLAN: Foundation Phase- Numeracy
Grade: 3 **Focus Learning Area/s:** Mathematics **Hours:** 8hr 45min **No. of Periods:** 17
Integrated Learning Area/s: N/A

CONTENT FOCUS/TOPIC/CONCEPT: Space
LEARNING OUTCOMES & ASSESSMENT STANDARDS Focus LAs LOs ASs: LO4: Measurement ASs: 3.4.8 Integrated LAs LOs ASs: LO5: Data Handling ASs: 3.5.4, 3.5.6
KNOWLEDGE/CONCEPTS • Estimates • Measures • Compares and orders

LEARNING ACTIVITIES
Week :__1_____

Mat Work in groups (20 min. per group):

- Introduce:
- the standard measurements grams and kilograms.
- discuss how many grams in a kilogram (conversions).
- show the abbreviations
- Estimates and compares:
- Learners use a 1 kg object as a constant in order to estimate whether other objects are heavier or lighter than 1kg.
- Learners use a 1 kg object as a constant in order to estimate the mass of other objects.
- Measure and compare:
- use the balance scale compare weights of objects to the 1kg constant. Then use kitchen scale to check answers.
- use the kitchen scale to weigh a given group of objects and record the information into mat books.
- Order the above objects according to their mass.

Possible Applications:

- Learners fill in missing words in a paragraph about mass using words such as grams, kilograms, heavier than, lighter than.
- Draw up 3 columns: In left hand column estimate how many of object “a” will equal the same mass as object ”b”. In the middle column write down the actual number of object “a” and in the right hand column write down the difference between the two answers.
- Graph: Learners use the information from their mat book to draw up a graph and answer questions.

Resources:

- balance scale
- kitchen scale
- 1 kg object
- objects to weigh – heavier, lighter and equal to 1kg
- 2Simple Software

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☐ Investigations
☐ Self-report assessment
☑ Practical exercises / demonstrations</td><td>ASSESSMENT ACTIVITY/ACTIVITIES:
• Written paragraph: Book work.
• Measuring mass: Mat work
• Graph</td></tr>
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☐ Kinaesthetic
☑ Tactile</td><td>ASSISTANCE FOR LEARNERS WITH BARRIERS TO LEARNING
• Spend more time.
• Peer assistance.
• More use of non-standard measurement.</td><td>ENRICHMENT
• Introduce conversions e.g. how many grams in 2kg?
• Doubling recipes.</td></tr>
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</table>