

UNIVERSITY OF FORT HARE

FOUNDATION PHASE STUDIES  
MATHEMATICS: FPS 122E

NOVEMBER MAIN EXAMINATION

**Subject:** Mathematics

**Time:** 3 hours

**Date:** November 2019

**Marks:** 100

This paper consists of 6 pages including the  
cover page

Internal Examiner

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Internal Moderator

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INSTRUCTIONS

1. Please read the instructions carefully.
2. You need to answer all the questions in your examination book.
3. You can use the last page for your working out but please mark it rough work

## QUESTION 1

[15 Marks]

1.1. As a Foundation Phase teacher, you have to understand mathematics concepts and terms to be able to teach mathematics effectively. Some concepts are listed below. Answer the following questions:

1.1.1. List 5 Foundation Phase Mathematics content areas as appear in CAPS document. (5)

1.1.2. (a). What is a 2D shape? (3)

(b) Name any four 2D shapes that are used as concrete objects when teaching dealing with some content areas in the Foundation Phase. (4)

1.1.1. Among the 3D shapes taught in Foundation Phase, cube is one of them. Briefly define a cube. (3)

## QUESTION 2

[15 Marks]

2.1. During your lectures, you did a research on factors that contribute in learners' poor performance in mathematics, in South Africa. Among your findings, the following factors were identified:

- Teacher related factors, and
- Environmental factors.

2.1.1. Briefly explain each factor. (10)

2.1.2. What do you recommend to improve the situation? (5)

## QUESTION 3

[20 Marks]

3.1. Name and explain any five Gardner's Multiple Intelligences (10)

3.2. *Recently, constructivism is viewed as one of the focused issue in educational context, as it illustrate learner progress (Shumaila & Imran, 2013).*

Referring to the statement above, briefly discuss what you understand about social constructivism in education. Your discussion should include the following:

3.2.1. Constructivism (What is constructivism?). (5)

3.1.2. Social constructivism (in education). (5)

**QUESTION 3**

**[18 Marks]**

3.1. The learners were given the mathematics problems and one of the learners wrote the following answers:

1.  $2/4 + 5/4 = 7/8$

2.  $3/5 \quad 1/2 = 2/3$

3.  $543 - 237 = 314$

3.1.1. Find the correct answers to the above calculations. What do you think learners did wrong? (6)

3.1.2. In a table as indicated below, write the following numbers **in words**, and also the **value** and **place value** for each.

2.1. 6 587 (3)

2.2 10 002 (3)

**Structure your answer as indicated below:**

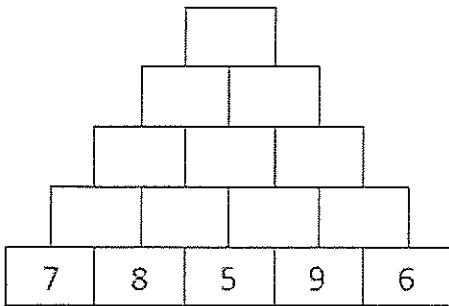
| Number | In words | Value | Place Value |
|--------|----------|-------|-------------|
| 6 587  |          |       |             |
| 10 002 |          |       |             |

**QUESTION 4**

**20 Marks]**

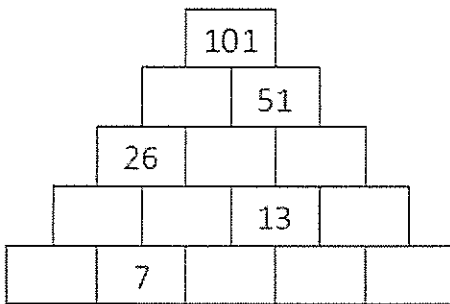
4.1. What would be your memorandum to mark the following?

4.1.1.



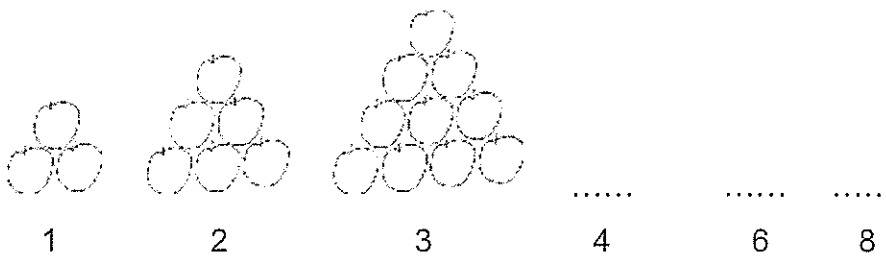
(4)

4.1.2.



(4)

4.1.3.



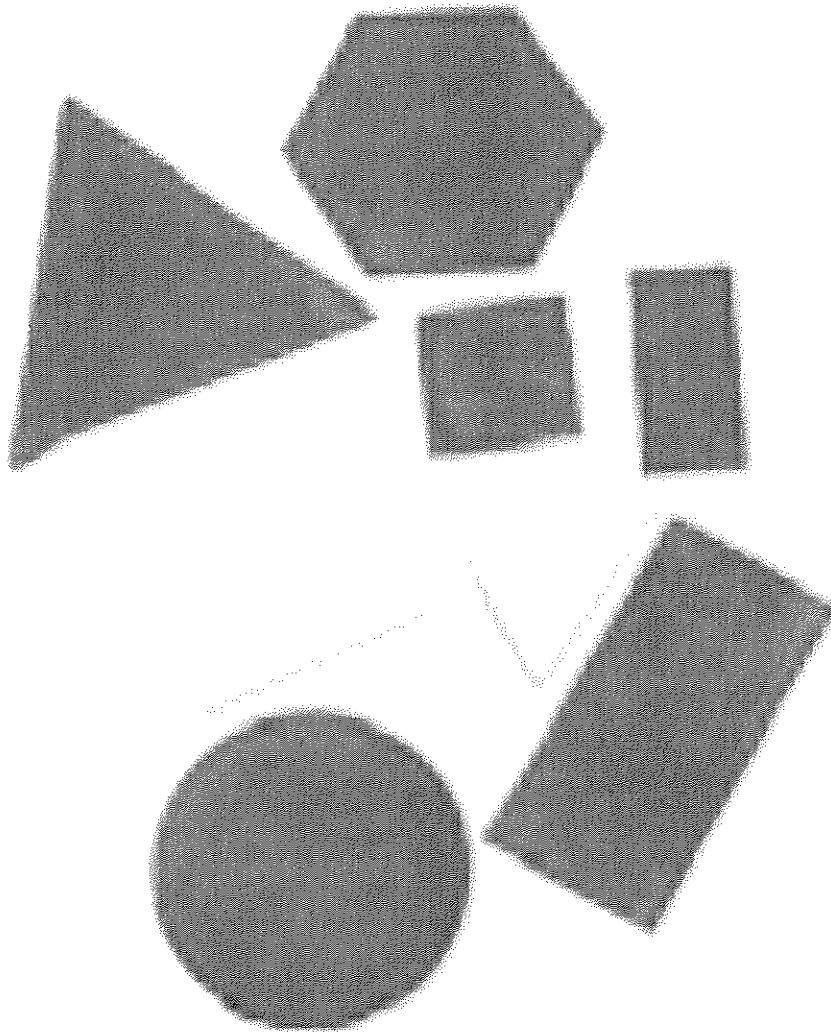
(3)

4.2. Which content areas are addressed in the above activities

(2)

4.3. As a grade R teacher, you gave your learners shapes that are shown below, to do sorting activity. Answer questions that follows:

**Fig 1: Different kinds of shapes**



4.3.1. Name three different ways in which your learners can sort the shapes. (3)

4.3.2. Name the content area on which this activity is based? (1)

4.4. *Pierre van Hiele observed children developing geometric reasoning and provided a description of the levels through which they evolve, from recognising figures to being able to develop formal proofs. He identified five levels (Department of Basic Education, 2009).*

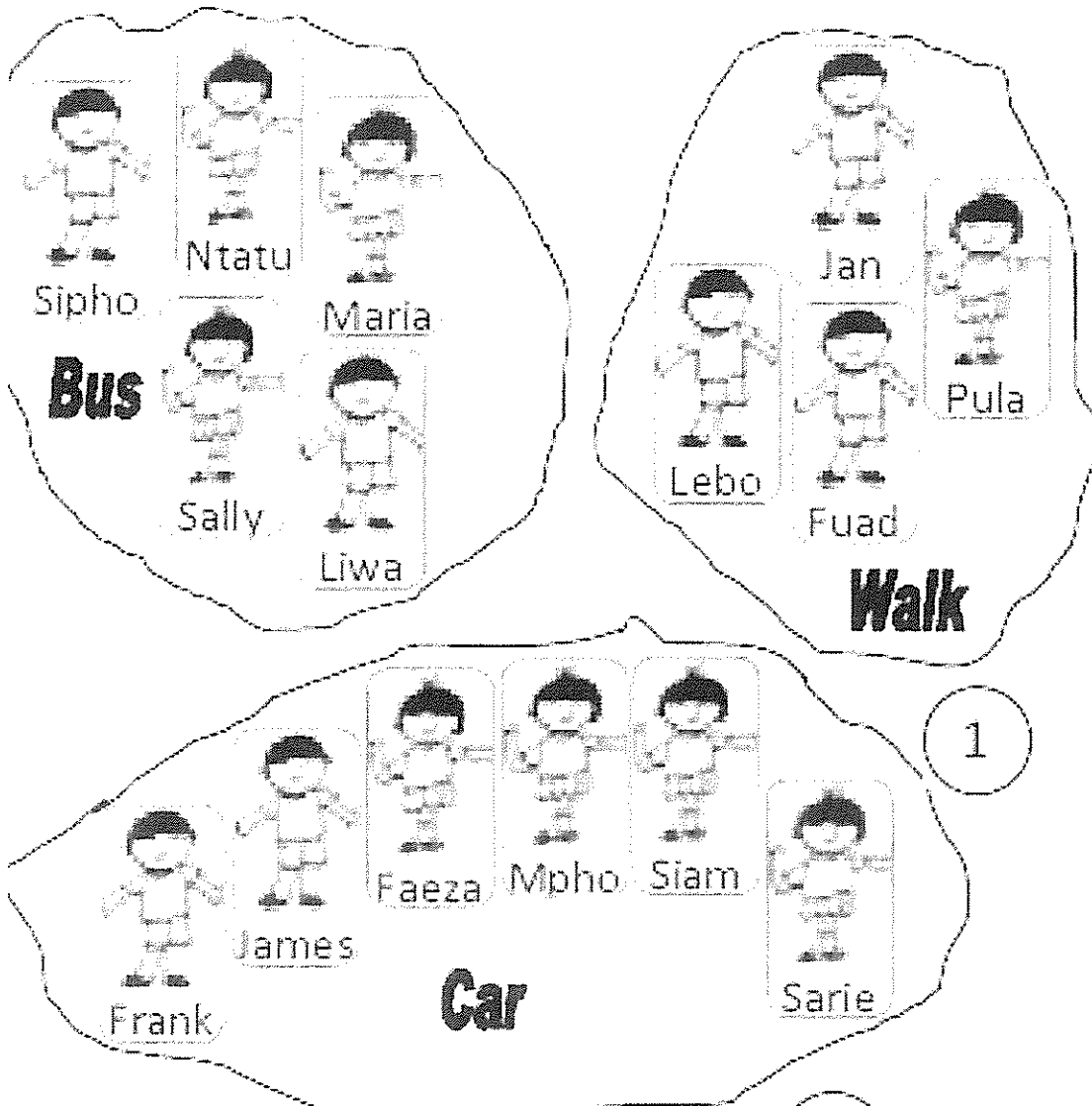
4.4.1. Name and briefly discuss each level. (10)

4.4.2. Complete the sentence written below:

There is little expectation that children in the Foundation Phase will reach the ..... and .....levels. (2)

4.4. Information collected in response to question: How do you travel to school?

**Fig 2: Organizing and representing data.**



4.4.1. How many learners took part in the collection of this data? (1)

4.4.2. Represent the data in a tally table. (4)

**TOTAL = 100 Marks**