



basic education

Department:  
Basic Education  
REPUBLIC OF SOUTH AFRICA

## MATHEMATICS LESSON PLAN

### GRADE 9

TERM 2: April – June

PROVINCE:	
DISTRICT:	
SCHOOL:	
TEACHER'S NAME:	
DATE:	
DURATION:	1 Hour

**1. TOPIC: CONSTRUCTION OF GEOMETRIC FIGURES:** Investigating properties of geometric figures (**Lesson 14**)

#### **2. CONCEPTS & SKILLS TO BE ACHIEVED:**

**By the end of the lesson learners should know and be able to**, by construction, investigate sides, angles and diagonals in quadrilaterals, focusing on the diagonals of rectangles, squares, parallelograms, rhombi and kites

<b>3. RESOURCES:</b>	DBE workbook 1, Sasol-Inzalo Book 1, textbook, ruler, protractor, a pair of compasses, pencil, eraser.
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<b>4. PRIOR KNOWLEDGE:</b>	quadrilaterals
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**5. REVIEW AND CORRECTION OF HOMEWORK** (suggested time: 10 minutes)

Homework provides an opportunity for teachers to track learners' progress in the mastery of mathematics concepts and to identify the problematic areas which require immediate attention. Therefore, it is recommended that you place more focus on addressing errors from learner responses that may later become misconceptions.

**6. INTRODUCTION** (Suggested time: 10 Minutes)

**Baseline Assessment:**

Ask the learners to:

- Carefully study the figures drawn below.

Use the figures to answer the following questions:

- which of the quadrilateral is a square? Give a reason for your answer.
- which of the quadrilateral is a rectangle? Give a reason for your answer.
- which of the quadrilateral is a parallelogram? Give a reason for your answer.

**Note:** Learners are expected to know that:

- a square is a quadrilateral with all sides equal and the interior angles that are each equal to  $90^\circ$ .
- a rectangle is a quadrilateral with both pairs of opposite sides equal and the interior angles that are each equal to  $90^\circ$ .
- a parallelogram is quadrilateral with both pairs of opposite sides parallel.



**7. LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 20 minutes)

<b>Teaching activities</b>	<b>Learning activities</b> (Learners are expected to: )
<p>Through guided-instruction, do the following constructions with learners :</p> <p><b>Activity</b> Construct:</p> <ul style="list-style-type: none"><li>• a square PQRS with diagonals PR and QS intersecting at T</li><li>• a rectangle VBMN with diagonal VM and BN intersecting at G.</li><li>• a parallelogram MNST with diagonals MS and NT intersecting at Z.</li></ul> <p><b>Note:</b> For quick and simple constructions, a squared paper may be used. Refer to Sasol-Inzalo Book 1 teacher's guide page 194 No 1.</p> <p>Ask learners the questions below to consolidate the activity:</p> <ul style="list-style-type: none"><li>• which of the quadrilateral(s) you have constructed have diagonals that bisect each other?</li><li>• which of the quadrilateral(s) you have constructed have equal diagonals?</li><li>• which of the quadrilateral(s) you have constructed have diagonals that are perpendicular to each other?</li></ul> <p>Possible responses:</p> <ul style="list-style-type: none"><li>• all quadrilaterals diagonals bisect each other</li><li>• square and rectangle diagonals are equal</li><li>• square diagonals are perpendicular</li></ul>	<ul style="list-style-type: none"><li>• construct diagrams</li><li>• measure diagonals</li><li>• respond to discussion questions</li><li>• write a summary of their observations</li></ul>

**8. CLASSWORK** (Suggested time: 15 minutes)

Sasol-Inzalo Book 1, page 194 No. 1, 2, 3 and 4

**9. CONSOLIDATION/CONCLUSION & HOMEWORK** (Suggested time: 5 minutes)

a) **Emphasise that:**

- diagonals of a square are equal; they bisect each other; and are perpendicular to each other.
- diagonals of a rectangle bisect each other, and are equal in length. They are **not** perpendicular.
- diagonals of a parallelogram bisect each other. They are **neither** equal **nor** perpendicular.

**Notes for the teacher:**

- measurements for each construction are purposefully not given. Learners are expected to notice that their observations are the same although their figures are not necessarily the same.
- relate today's observations with those of the previous lesson.



- b) The primary purpose of Homework is to give each learner an opportunity to demonstrate mastery of mathematics skills taught in class. Therefore Homework should be purposeful and the principle of 'Less is more' is recommended, i.e. give learners few high quality activities that address variety of skills than many activities that do not enhance learners' conceptual understanding. Carefully select appropriate activities from the Sasol-Inzalo books, DBE workbooks and/or textbooks for learners' homework. The selected activities should address different cognitive levels.

### **Homework**

Practicing the skills learnt in the lesson and previous lessons

DBE workbook 1, page 111 No. 2, page 112 No. 4, page 113 No. 6

