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: GEOMETRY OF 2D SHAPES: Classifying 2D shapes (Lesson 15)

2. CONCEPTS & SKILLS TO BE ACHIEVED:

By the end of the lesson learners should know and be able to:

- write clear definitions of quadrilaterals in terms of their sides, angles and diagonals distinguishing between:
  - parallelogram.
  - rectangle.
  - square
  - rhombus
  - trapezium
  - kite

3. RESOURCES:	DBE workbook 1, Sasol-Inzalo Book 1, textbooks, protractor, ruler, pencil.
4. PRIOR KNOWLEDGE:	• types of quadrilaterals • constructions

5. REVIEW AND CORRECTION OF HOMEWORK (suggested time: 10 minutes)

Homework provides an opportunity for teachers to track learner's 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)

Activity:

Give learners the worksheet to define the given quadrilaterals in terms of sides, angles and diagonals:

Type of quadrilateral	Sides	Angles	Diagonals equal in length (yes/no)	Diagonals bisect each other (yes/no)	Diagonals are perpendicular to each other (90°) (yes/no)
Parallelogram					
Rectangle					
Square					
Rhombus					
Trapezium					
Kite					

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

Teaching activities	Learning activities (Learners are expected to:)
Learners are expected to complete the table:	• complete activities

Properties	True for the following quadrilaterals					
	Square	Rhombus	Rectangle	Parallelogram	Kite	Trapezium
At least one pair of opposite angles is equal.	yes	yes	yes	yes	yes	no
Both pairs of opposite angles are equal.						
At least one pair of adjacent angles is equal.						
All four angles are equal.						
Any two opposite sides are equal.						
Two adjacent sides are equal, and the other two adjacent sides are also equal.						
All four sides are equal.						
At least one pair of opposite sides is parallel.						
Any two opposite sides are parallel.						
The two diagonals are perpendicular.						
At least one diagonal bisects the other one.						
The two diagonals bisect each other.						
The two diagonals are equal.						
At least one diagonal bisects a pair of opposite angles.						
Both diagonals bisect a pair of opposite angles.						
The sum of the interior angles is 360°.						

8. CLASSWORK ACTIVITIES (Suggested time: 15 minutes)

Learners are expected to:

Activity

1) Look at the properties of a square and a rhombus:

   (a) Are all the properties of a square also the properties of a rhombus? Explain.
   (b) Are all the properties of a rhombus also the properties of a square? Explain.
   (c) Which statement is true?
      i. A square is a special kind of rhombus.
      ii. A rhombus is a special kind of square.

2) Look at the properties of rectangles and squares.

   (a) Are all the properties of a square also the properties of a rectangle? Explain.
   (b) Are all the properties of a rectangle also the properties of a square? Explain.
   (c) Which statement is true?
      i. A square is a special kind of rectangle.
      ii. A rectangle is a special kind of square.

3) Look at the properties of parallelograms and rectangles.

   (a) Are all the properties of a parallelogram also the properties of a rectangle? Explain.
   (b) Are all the properties of a rectangle also the properties of a parallelogram? Explain.
   (c) Which statement is true?
      i. A rectangle is a special parallelogram.
      ii. A parallelogram is a special rectangle.

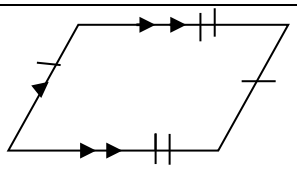
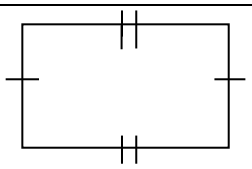
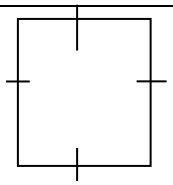
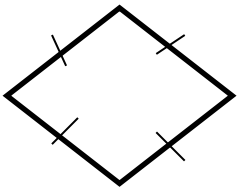
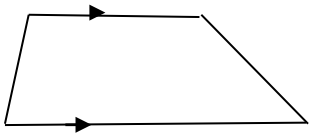
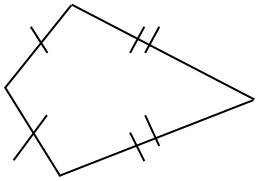
4) Look at the properties of a rhombus and a parallelogram. Is a rhombus a special kind of parallelogram? Explain.

5) Compare the properties of a kite and a parallelogram. Why is a kite not a special kind of parallelogram?

6) Compare the properties of a trapezium and a parallelogram. Why is a trapezium not a special kind of parallelogram?

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

Summary:

Type of quadrilateral	Definition	Example of quadrilateral
1. A parallelogram	Has both pairs of opposite sides parallel and equal	
2. A rectangle	Has all four angles equal to 90° Has opposite sides equal Diagonal bisect each other	
3. A square	Has all four sides equal in length and angles equal to 90°	
4. A rhombus	Has all four sides equal in length Opposite sides are parallel Diagonals bisect each other at 90°	
5. A trapezium	Has at least one pair of opposite sides parallel	
6. A kite	Has two pairs of adjacent sides of equal length	

a) 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 Book 1, DBE workbooks and/or textbooks for learners' homework. The selected activities should address different cognitive levels.

Homework

DBE Workbook 1, page 128 No. 1