



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: Solving problems (Lesson 16)**

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

**By the end of the lesson learners should know and be able to,** solve geometric problems involving unknown sides and angles in triangles and quadrilaterals, using known properties of triangles and quadrilaterals, as well as properties of congruent and similar triangles.

<b>3. RESOURCES:</b>	Textbooks, DBE workbook 1, Sasol-Inzalo Book 1
<b>4. PRIOR KNOWLEDGE:</b>	<ul style="list-style-type: none"> <li>• solve simple equations</li> <li>• properties of quadrilaterals</li> </ul>
<p><b>5. REVIEW AND CORRECTION OF HOMEWORK</b> (suggested time: 10 minutes)</p> <p>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.</p>	

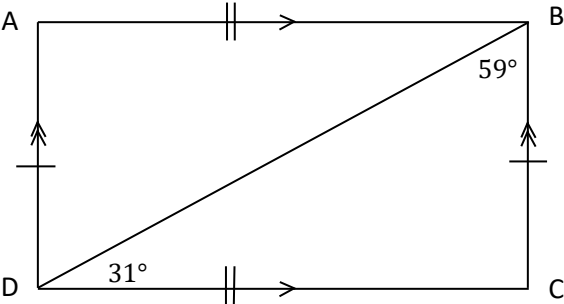
**6. INTRODUCTION** (Suggested time: 10 Minutes)

**Activity**

Teacher works with learners to:

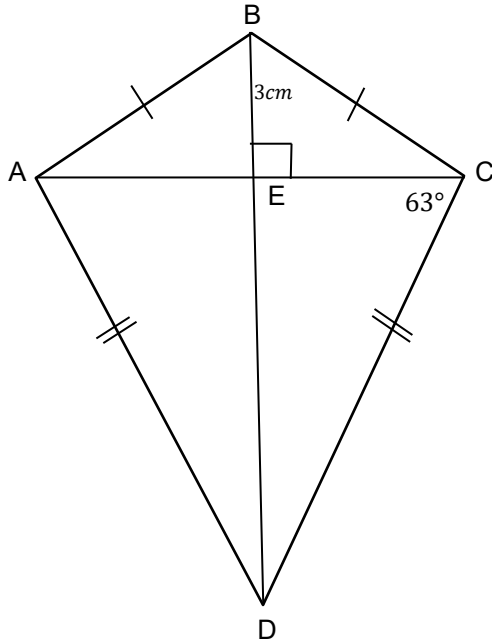
1. Determine the sizes of angles  $a$  to  $e$  in the quadrilaterals below. Give reasons for your answers.

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

Teaching activities	Learning activities (Learners are expected to: )
<p>Present this activity to learners</p> <p><b>Activity 1</b></p> <p>In the figure, DC is parallel and equal to AB, AD is parallel and equal to BC, <math>\widehat{BDC} = 31^\circ</math>, and <math>\widehat{DBC} = 59^\circ</math>.</p>  <ol style="list-style-type: none"> <li>1) Prove that <math>\triangle ABD \cong \triangle BCD</math> with reasons</li> <li>2) Write down with reasons the sizes of:             <ol style="list-style-type: none"> <li>a) <math>\widehat{ABD}</math></li> <li>b) <math>\widehat{ADB}</math></li> <li>c) <math>\widehat{DAB}</math></li> <li>d) <math>\widehat{BCD}</math></li> <li>e) <math>\widehat{DAB} + \widehat{ABC} + \widehat{BCD} + \widehat{ADC}</math></li> </ol> </li> </ol>	<ul style="list-style-type: none"> <li>• learners complete the activity on their exercise books with the teacher.</li> </ul>

## Activity 2

- 1) Given the quadrilateral below.  $BE = 3\text{cm}$ ,  $AC = 6\text{cm}$ ,  $BC = AB$ ,  $AD = CD$ ,  $\widehat{ACD} = 63^\circ$ .
- Name the quadrilateral given below.
  - Calculate the sizes of  $BC$ ,  $CE$  and  $\widehat{ADB}$ . Give reasons for your answers:



- complete the activity on their exercise books with the teacher.



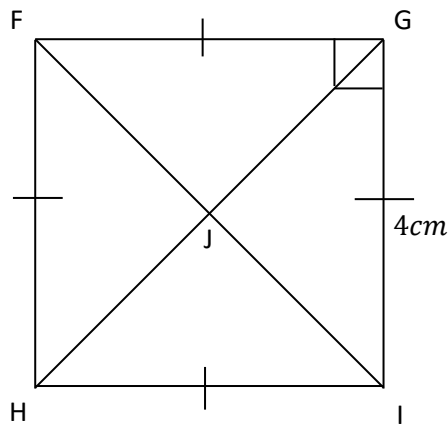
**8. CLASSWORK** (Suggested time: 15 minutes)

**Activity 1**

1) Given the quadrilateral below.  $IG = 4\text{ cm}$ .

a) Name the quadrilateral.

b) Calculate the sizes of  $\widehat{GFJ}$ ,  $\widehat{FJ}$ ,  $\widehat{FJI}$ , and  $\widehat{IJ}$ . Give reasons for your answers:

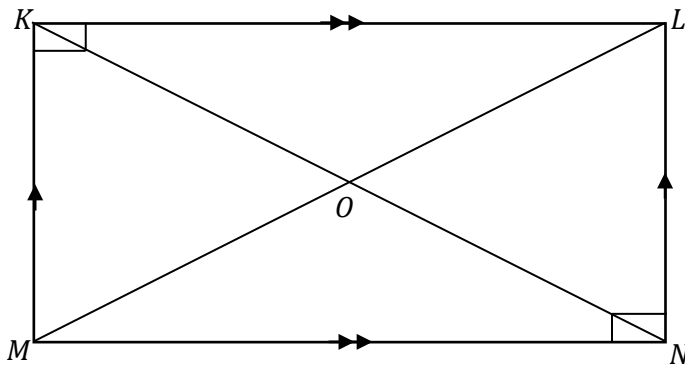


**Activity 2**

1) Given the quadrilateral below.  $\widehat{MKN} = 34^\circ$ ,  $ON = 43\text{ mm}$ .  $KN \parallel LM$ ,  $KL \parallel NM$ .

a) Name the quadrilateral.

b) Calculate the sizes of  $\widehat{KMN}$ ,  $\widehat{LO}$ ,  $\widehat{M\hat{O}N}$ ,  $\widehat{K\hat{O}L}$ . Give reasons for your answers:



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

### a) Emphasise that:

- explore different methods of solving for unknowns
- colour equal angles
- analyse the given information and the sketch, applying learnt properties before answering the questions, e.g. mark off equal quantities and do simple calculations by inspection.

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

KMNO is a parallelogram. Study the diagram below and calculate the values of  $x$  and  $y$

