



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 STRAIGHT LINES: Solving problems (lesson 6)**

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

**By the end of the lesson learners should know and be able to** solve geometric problems using the relationships between pairs of angles formed by parallel lines cut by a transversal.

<b>3. RESOURCES:</b>	Textbooks, DBE Workbook 1, Sasol-Inzalo Book 1
<b>4. PRIOR KNOWLEDGE:</b>	<ul style="list-style-type: none"> <li>perpendicular lines, intersecting lines and parallel lines cut by a transversal</li> <li>solving of equations</li> <li>substitution</li> </ul>
<b>5. REVIEW AND CORRECTION OF HOMEWORK (suggested time: 10 minutes)</b>	
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.	
<b>6. INTRODUCTION (Suggested time: 10 Minutes)</b>	

### Activity 1

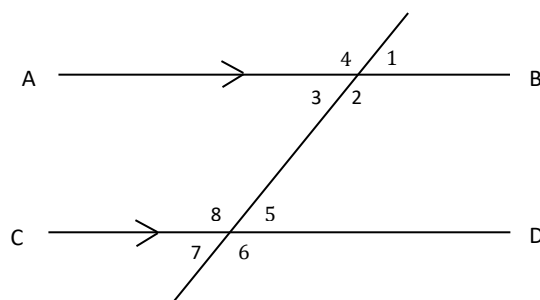
Ask probing questions to revise the relationship between angles form by parallel lines. The questions should get the following information from learners:

- if parallel lines are cut by a transversal, then corresponding angles are equal.
- if parallel lines cut by a transversal, then alternate angles are equal.
- if parallel lines cut by a transversal, then co-interior angles are supplementary.

### Activity 2

Allow learners to engage in the following activity that will assess their understanding of intersecting lines and parallel lines cut by a transversal. Give learners an opportunity to work individually on the activity that follows and through a class discussion to disclose the solutions to the problem.

- In the diagram,  $AB \parallel CD$ .
  - What does the signs on the lines mean?
  - Which angles are equal to each other? Give a reason for each of your answers.



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

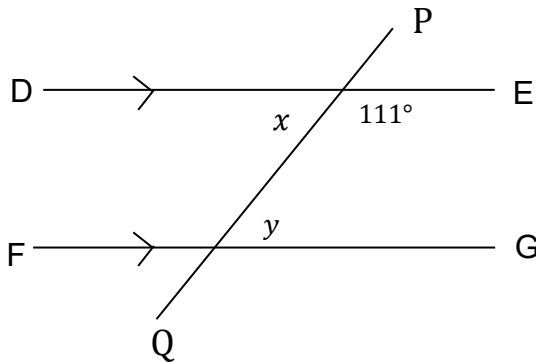
**Teaching activities**

**Learning activities  
(Learners are expected to:)**

**Activity 1**

1. Demonstrate to learners how to solve a problem using knowledge of intersecting lines and parallel lines cut by a transversal.

DE and FG are straight lines, find the value of  $x$ ,  $y$  and  $z$  in the following with reasons.



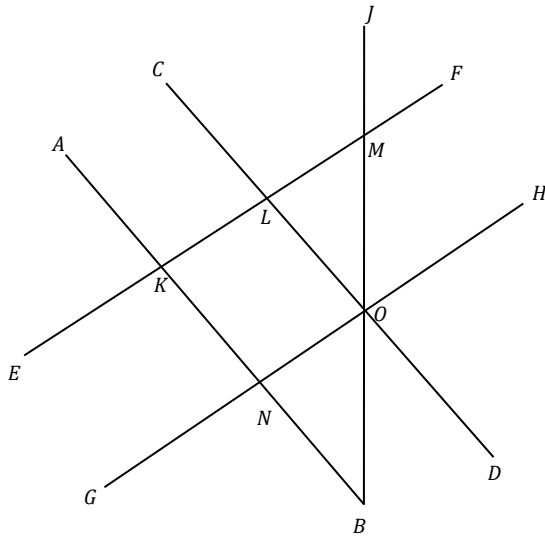
- follow the demonstration and take part in the discussion.
- copy the example in their notebooks.

Solution

Statement	Reason
$x + 111^\circ = 180^\circ$	(Supplementary adjacent angles is $180^\circ$ )
$x = 180^\circ - 111^\circ$	
$x = 69^\circ$	
$y = 69^\circ$	(Alternate $\angle$ 's; $DE \parallel FG$ )
OR	
$y + 111^\circ = 180^\circ$	(Co-interior $\angle$ 's; $DE \parallel FG$ )
$y = 180^\circ - 111^\circ$	
$y = 69^\circ$	
$z = 111^\circ$	(Corresponding $\angle$ 's; $DE \parallel FG$ )

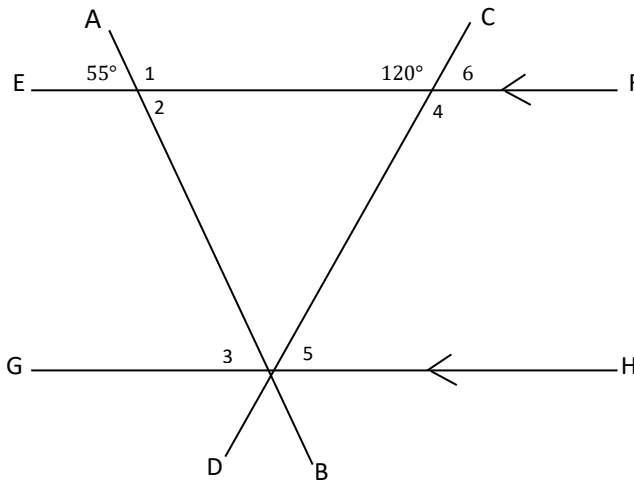


2.  $AB$  and  $CD$  in the figure below are parallel.  $EF$  and  $GH$  are also parallel.  $\widehat{JMF} = 80^\circ$  and  $\widehat{DOB} = 40^\circ$ . Find the sizes of as many angles in the figure as you can and provide reasons.



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

1. Calculate the value of angles 1-6 in that order. Give reasons for your answers.



2. Sasol-Inzalo page 232 no 1 and 234 no 3.



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

### a) Emphasise that:

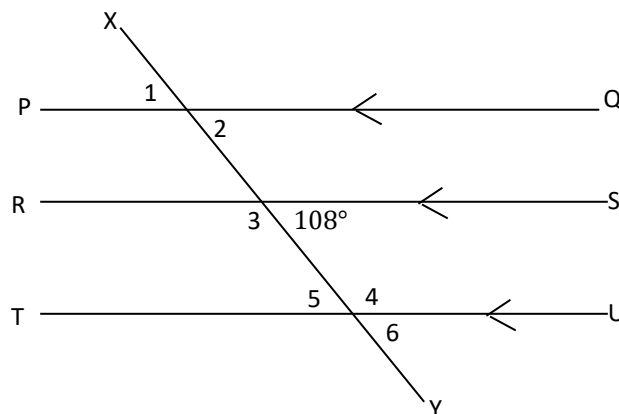
- the sum of the angles on a straight line is  $180^\circ$ .
- when the sum of angles is  $180^\circ$ , the angles are **supplementary**.
- when two straight lines intersect, the vertically opposite angles are equal.
- when two parallel lines are cut by a transversal, corresponding angles are equal.
- when parallel lines are cut by a transversal, alternate angles are equal.
- when two parallel lines are cut by a transversal, the sum of two co-interior angles is  $180^\circ$ . i.e. co-interior angles are **supplementary**.

- 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, workbooks and/or textbooks for learners' homework. The selected activities should address different cognitive levels.

### Homework

1. Calculate the value of angles 1-6 in that order. Give reasons for your answers.



2. DBE Workbook 1: Page148, No. 4 – 6

