



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

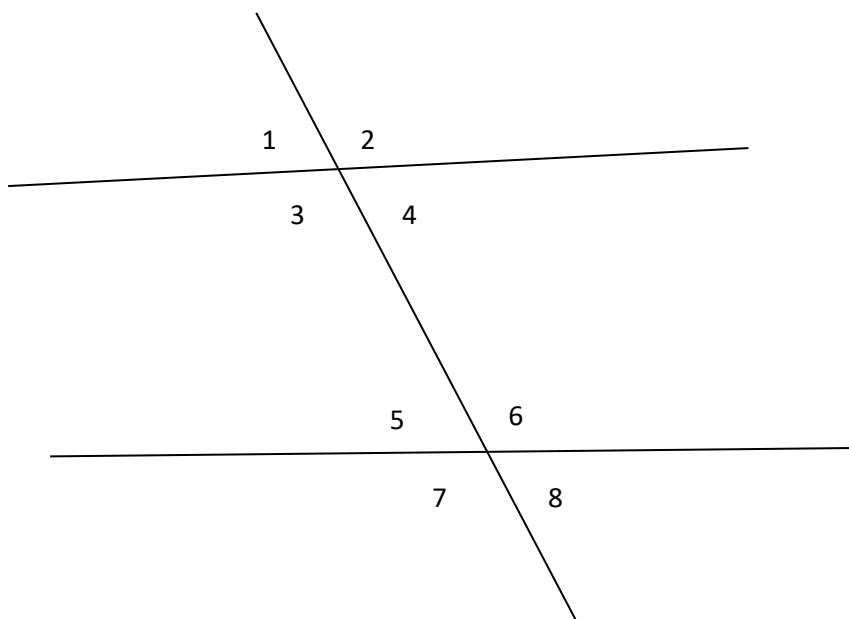
1. **TOPIC: GEOMETRY OF STRAIGHT LINE:** Angle relationship (**Lesson 3**)

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

**By the end of the lesson, learners should know and be able to** write clear descriptions of the relationship between angles formed by parallel lines cut by a transversal.

<b>3. RESOURCES:</b>	DBE Workbook 1, Textbooks, Sasol-Inzalo Book 1
<b>4. PRIOR KNOWLEDGE:</b>	• angles
<b>5. REVIEW AND CORRECTION OF HOMEWORK</b> (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.	
<b>6. INTRODUCTION</b> (Suggested time: 10 Minutes)	

Present the following activity. Let learners indicate the inside and outside angles.



**Solution**

Inside angles	Outside angle
$\hat{3}, \hat{4}, \hat{5}$ and $\hat{6}$	$\hat{1}, \hat{2}, \hat{7}$ and $\hat{8}$

**NB:**

$\hat{3}, \hat{4}, \hat{5}$  and  $\hat{6}$  in figure 1 are inside angles and called alternate interior angles.

$\hat{1}, \hat{2}, \hat{7}$  and  $\hat{8}$  are outside angles and called alternate exterior angles.

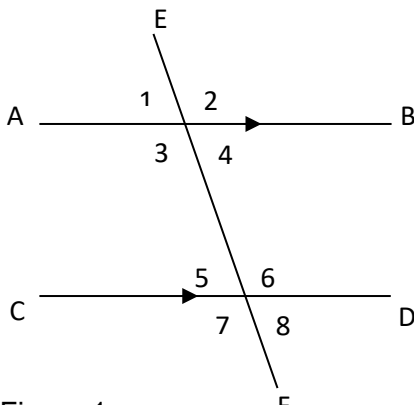
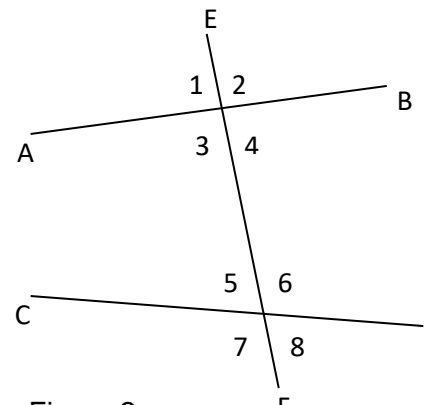


**7. LESSON PRESENTATION/DEVELOPMENT**(Suggested time: 20 minutes)

<b>Teaching activities</b>	<b>Learning activities (Learners are expected to:)</b>
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**Activity 1**

Let learners measure the sizes of all inside angles in each figures 1 and 2 in pairs and complete the table below.

When two lines are parallel	When two lines not parallel
 <p>Figure 1</p>	 <p>Figure 2</p>

- work in pairs, measure and complete the table

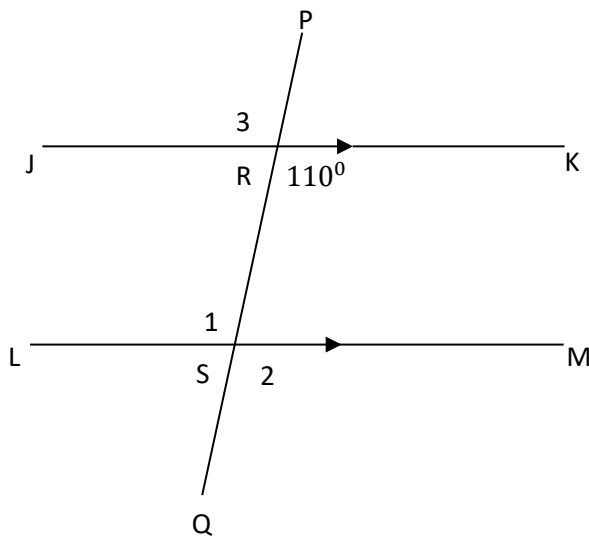
Angles	When two lines are parallel	When two lines not are parallel
<b>Alternate angles</b>	$\hat{3} = \text{ \_\_\_\_\_\_ } ; \hat{6} = \text{ \_\_\_\_\_\_ }$	$\hat{3} = \text{ \_\_\_\_\_\_ } ; \hat{6} = \text{ \_\_\_\_\_\_ }$
	$\hat{4} = \text{ \_\_\_\_\_\_ } ; \hat{5} = \text{ \_\_\_\_\_\_ }$	$\hat{4} = \text{ \_\_\_\_\_\_ } ; \hat{5} = \text{ \_\_\_\_\_\_ }$



## Activity 2

Let learners do the activity below and determine the sizes of angles with reasons.

In the figure below,  $JK \parallel LM$  and  $\widehat{KRS} = 110^\circ$ . Determine the size of  $\widehat{LSR}$ ,  $\widehat{QSM}$  and  $\widehat{PRJ}$  in the order (1 – 3) with reasons.



- work individually determining the size of angles with reason

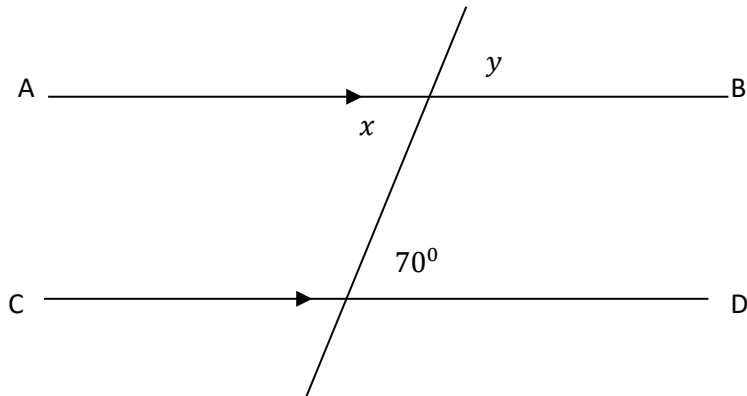
Solution

Statement	Reason
$\widehat{LSR} = 110^\circ$	alternate interior angles, $JK \parallel LM$
$\widehat{QSM} = 110^\circ$	vertically opposite angles
$\widehat{PRJ} = 110^\circ$	alternate exterior angles, $JK \parallel LM$

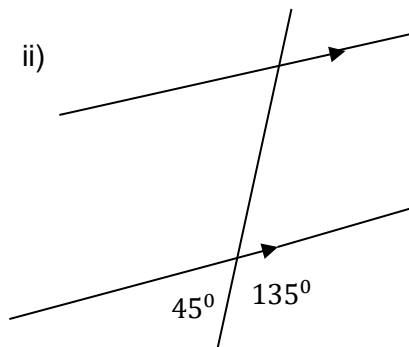
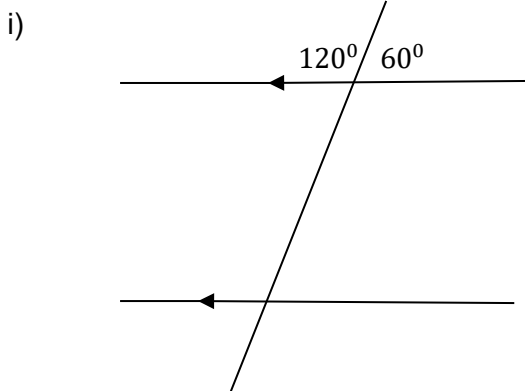


**8. CLASSWORK**(Suggested time: 15 minutes)

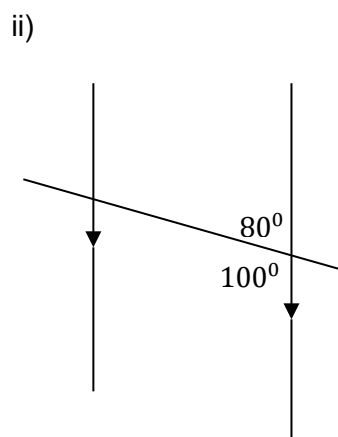
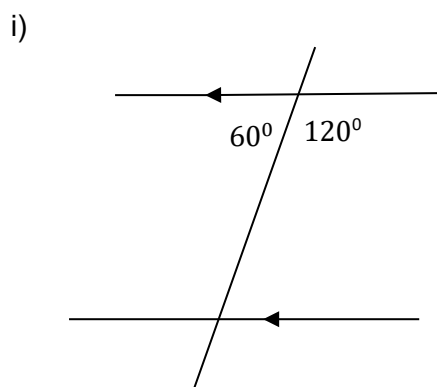
1. Calculate the value of  $x$  and  $y$ .(give reasons for all your answers)



2. Fill in the alternate interior angles and reasons.



3. Fill in the alternate exterior angles and give reasons



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

### a) **Emphasise that:**

- transversal is line that intersects other lines
- parallel lines are lines that have the same distance apart and will never meet each other.
- alternate interior angles are angles on different sides of a transversal and between two other lines
- alternate exterior angles are angles lie outside of the two lines.
- when a transversal intersects two lines, we can compare the set of angles on the two lines by comparing at their positions

### 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**

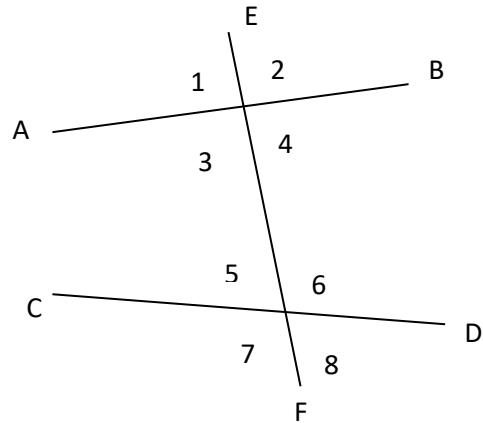
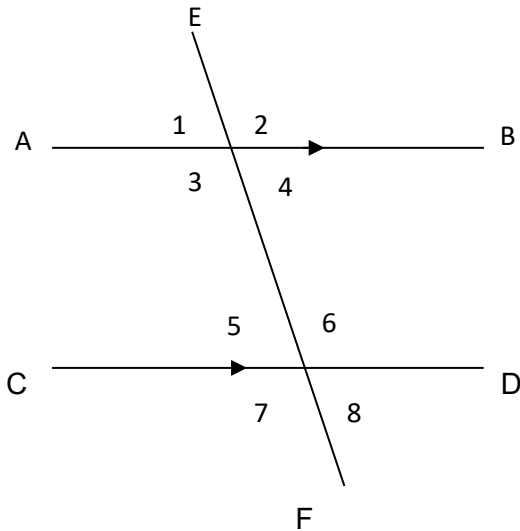
- Sasol-Inzalo Book 1: Page 228, No. 7
- DBE Workbook 1: Page 148, No. 4



## Worksheet 2

Name: \_\_\_\_\_

Extend the lines to measure correctly.



Angles	When two lines are parallel	When two lines not are parallel
<b>Alternate angles</b>	$\hat{3} = \text{ \_\_\_\_ } ; \hat{6} = \text{ \_\_\_\_ }$	$\hat{3} = \text{ \_\_\_\_ } ; \hat{6} = \text{ \_\_\_\_ }$
	$\hat{4} = \text{ \_\_\_\_ } ; \hat{5} = \text{ \_\_\_\_ }$	$\hat{4} = \text{ \_\_\_\_ } ; \hat{5} = \text{ \_\_\_\_ }$

