



basic education

Department:  
Basic Education  
REPUBLIC OF SOUTH AFRICA

## MATHEMATICS LESSON PLAN

### GRADE 9

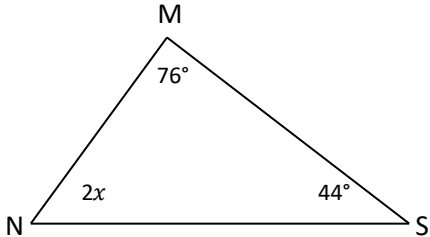
TERM 2: April – June

|                 |        |
|-----------------|--------|
| PROVINCE:       |        |
| DISTRICT:       |        |
| SCHOOL:         |        |
| TEACHER'S NAME: |        |
| DATE:           |        |
| DURATION:       | 1 hour |

**1. TOPIC: GEOMETRY OF 2D SHAPES: Solving problems (Lesson 5)**

#### **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.

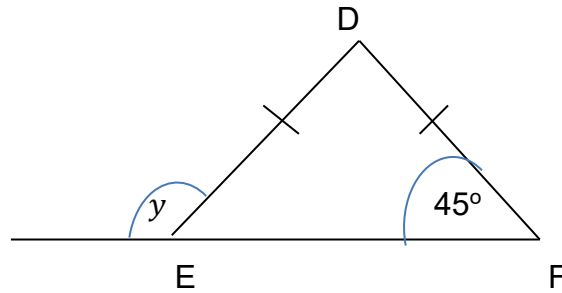
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|---|--|--|
| <b>3. RESOURCES:</b>  | DBE workbook 1, Sasol-Inzalo Book 1, textbooks   |  |
| <b>4. PRIOR KNOWLEDGE:</b>  | <ul style="list-style-type: none"> <li>• solve for unknown in simple equations</li> <li>• properties of triangles</li> <li>• types of triangles</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>                            |  |  |
| <p><b>6. INTRODUCTION</b> (Suggested time: 5 Minutes)</p> <p>Give learners a few simple equations to solve for unknowns such as:</p> <p>a) <math>4x + 5x = 180^\circ</math><br/> b) <math>a + 30^\circ = 90^\circ</math></p>  |  |  |
| <p><b>7. LESSON PRESENTATION/DEVELOPMENT</b> (Suggested time: 20 minutes)</p>   |  |  |
| <b>Teaching activities</b>  | <b>Learning activities</b><br>(Learners are expected to:)  |  |
| <p><b>Activity 1</b><br/> Guide learners in calculating the value of <math>x</math> with reasons.</p> <div style="text-align: center;">  </div> <p>(Expected answer)</p> $\hat{M} + \hat{N} + \hat{S} = 180^\circ \quad (\text{Interior angles of triangle})$ $2x + 76^\circ + 44^\circ = 180^\circ$ $2x + 120^\circ = 180^\circ$ $2x = 60^\circ$ $x = 30^\circ$ | <ul style="list-style-type: none"> <li>• complete the activities given by the teacher.</li> </ul>  |  |



**NB:** give learners the opportunity to verify their solutions by substituting the value of  $x$  into the original equation.

### Activity 2

a. Let learners calculate the value of  $y$  with reasons:



(Expected answer)

$$\widehat{D\hat{E}F} = 45^\circ \quad (\text{angles opposite equal sides in an isosceles } \Delta)$$

$$\widehat{D\hat{E}F} + \widehat{D\hat{F}E} + \widehat{E\hat{D}F} = 180^\circ \quad (\text{sum angles of a triangle})$$

$$45^\circ + 45^\circ + \widehat{E\hat{D}F} = 180^\circ$$

$$\widehat{E\hat{D}F} = 180^\circ - 90^\circ$$

$$\widehat{E\hat{D}F} = 90^\circ$$

$$y = \widehat{D} + \widehat{F} \quad (\text{exterior angle of a } \Delta = \text{sum of 2 opp. Int. angles})$$

$$y = 45^\circ + 90^\circ$$

$$y = 135^\circ$$

**NB:** give learners the opportunity to verify their solutions by substituting the value of  $y$  into the equation  $y = \widehat{D} + \widehat{F}$ .

- complete the activities given by the teacher.



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## 8. CLASSWORK ACTIVITIES (Suggested time: 15 minutes)

Sasol – Inzalo Book 1 page 201 - 202 no. 1 - 3

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

(a) **Emphasise that:**

- Learners should know what is given, how to use the information given.

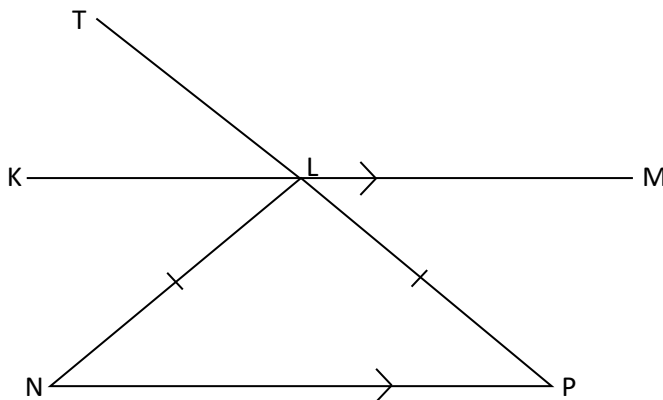
(b) The primary purpose of Homework is to give each learner an opportunity to demonstrate mastery of mathematics skills taught in class. Therefore Homework should be purposeful and the principle of 'Less is more' is recommended, i.e. give learners few high quality activities that address variety of skills 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

#### Activity

In the figure below  $KM \parallel NP$ ,  $LN = LP$  and  $\widehat{NLP} = 120^\circ$ . Determine, with reasons, the size of  $\widehat{TLM}$



DBE Workbook 1 page 126 no. 9

