



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

MATHEMATICS LESSON PLAN

GRADE 9

TERM 2: April – June



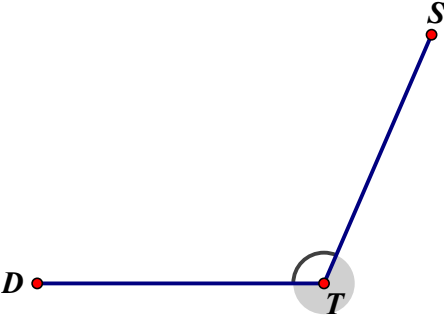
PROVINCE:	
DISTRICT:	
SCHOOL:	
TEACHER'S NAME:	
DATE:	
DURATION:	1 Hour

1. TOPIC: CONSTRUCTION OF GEOMETRIC FIGURES: Constructions (Lesson 1)

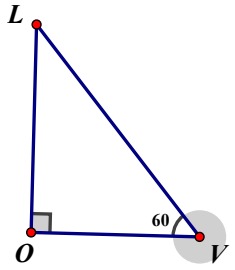
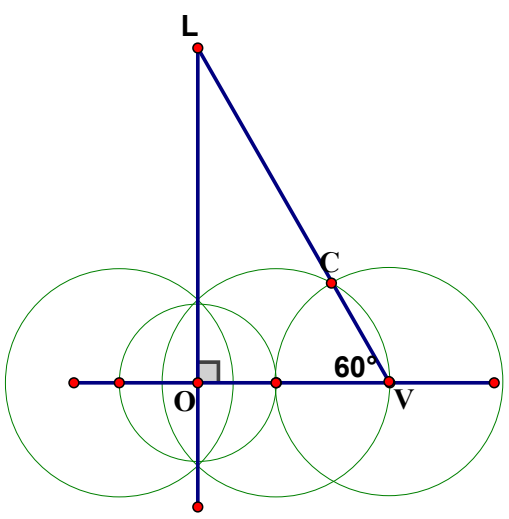
2. CONCEPTS & SKILLS TO BE ACHIEVED:

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

- accurately construct geometric figures appropriately using a compass, ruler and protractor, including bisecting angles of a triangle.
- construct angles of 45° , 30° , 60° and their multiples without using a protractor.

3. RESOURCES:	DBE workbook 1, Sasol-Inzalo Book 1, textbook, ruler, protractor, pair of compasses, pencil, eraser.
4. PRIOR KNOWLEDGE:	<ul style="list-style-type: none"> • triangles • angles
5. REVIEW AND CORRECTION OF HOMEWORK (suggested time: 10 minutes)	
<p>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.</p>	
6. INTRODUCTION (Suggested time: 10 Minutes)	
<p>Baseline Assessment</p> <p>Note: Refer to Sasol-Inzalo Book 1, page 178 and page 182 for the construction steps. Ask learners to:</p> <ul style="list-style-type: none"> • Construct line segment DP that is perpendicular to OR. Use Figure 1. <div style="text-align: center;">  </div> <p style="text-align: right;">Figure 1</p> <ul style="list-style-type: none"> • Construct $\widehat{RDP} = 60^\circ$ in Figure 2. <div style="text-align: center;">  </div> <p style="text-align: right;">Figure 2</p> <ul style="list-style-type: none"> • Bisect \widehat{STD} in Figure 3. <div style="text-align: center;">  </div> <p style="text-align: right;">Figure 3</p>	

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

Teaching activities	Learning activities (Learners are expected to:)
<p>Note: The following activity should be done through guided instruction.</p> <p>Activity Construct $\triangle LOV$ with $\widehat{LOV} = 90^\circ$ and $\widehat{LVO} = 60^\circ$ using a ruler and a pair of compasses.</p> <ul style="list-style-type: none"> Draw a rough sketch of the triangle you should construct <p>Rough Sketch</p>  <p style="text-align: center;">Figure 4</p> <ul style="list-style-type: none"> Draw line segment OV. (It is advisable that O should not be the endpoint of the line segment) Construct a perpendicular at O Construct an angle of 60° at V such that both angles constructed are inside the triangle <p>Construction should look like this:</p>  <p style="text-align: center;">Figure 5</p> <p>A reflection or rotation of this Figure is also acceptable</p>	<ul style="list-style-type: none"> do the activities following teacher instructions

8. CLASSWORK (Suggested time: 15 minutes)

Activity

Construct $\triangle BSC$ with $\widehat{BCS} = 30^\circ$ and $\widehat{BSC} = 45^\circ$.

Steps to be followed:

- Make a rough sketch.
- Draw line segment SC .
- At C construct an angle of 60° .
- Bisect this angle (angle drawn at $C = 60^\circ$) to get an angle of 30° .
- At S construct a perpendicular.
- Bisect the Right angle to get an angle of 45° .

Final construction should look as follows:

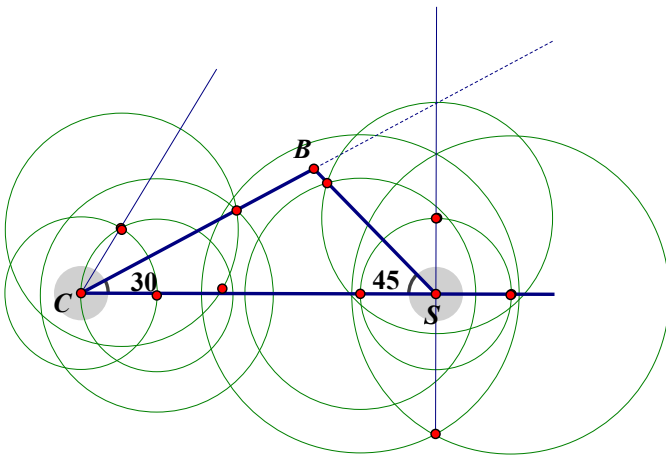


Figure 1

OR

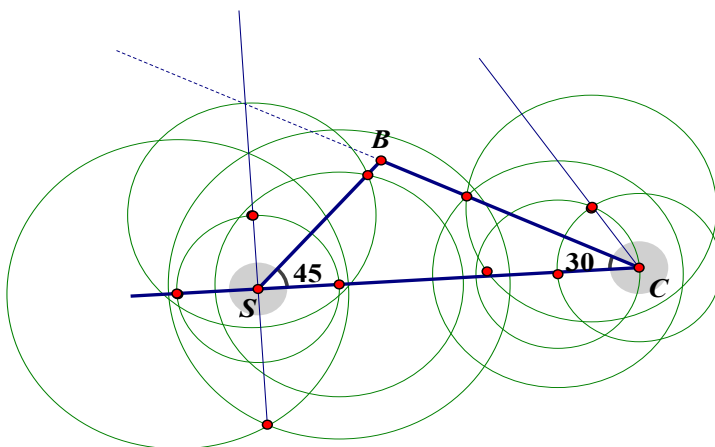


Figure 2

Note: Rotations or reflections of the constructions are also acceptable.

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

a) **Emphasise that:**

- Constructing angles of 90° and 60° is essential for the construction of other special angles.
- Special angles of 45° and 30° are drawn by bisecting these two angles.

Notes for the teacher:

- Construction of perpendiculars and special angles is done in Grade 8.
- In this lesson, learners are refreshed on the techniques; and then apply the techniques to construct triangles.
- Learners should be made aware that triangles constructed from angles only are often similar because length of sides is generally an individual decision.
- Full circles may be used, but encourage use of arcs.
- Learners should do each construction more than once to perfect their construction skills.

- 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:

1. Construct without using a protractor triangles with the following angles. Use a pair of compasses to construct angles where possible:
 - a) 90° and 30°
 - b) 75° and 75°
 - c) 120° and 30°
2. Sasol- Inzalo Book 1 pages 182 – 183 no. 1 - 8
3. DBE Workbook 1, no. 4, page 105

