



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:** Similar and congruent triangles (**Lesson 9**)

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

**By the end of the lesson learners should know and be able to establish through investigation the conditions for congruent triangles**

|                            |   |
|----------------------------|---|
| <b>3. RESOURCES:</b>       | Textbooks, DBE workbook, Sasol-Inzalo Book 1, ruler, compass, protractor    |
| <b>4. PRIOR KNOWLEDGE:</b> | <ul style="list-style-type: none"> <li>construction of triangles</li> </ul> |

**5. REVIEW AND CORRECTION OF HOMEWORK (suggested time: 10 minutes)**

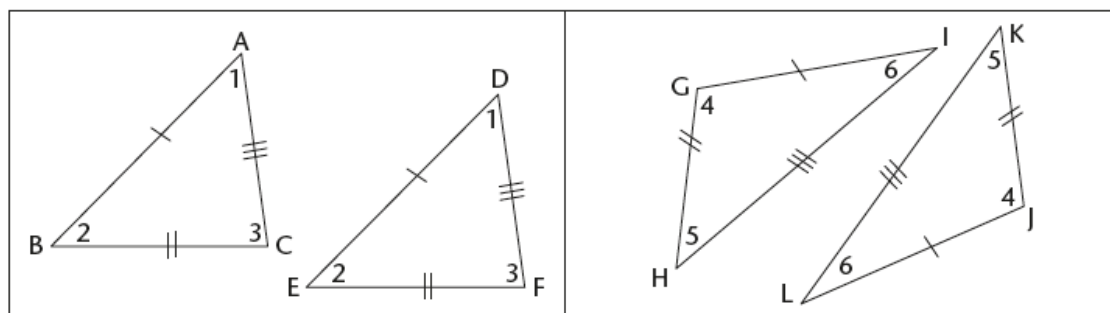
Homework provides an opportunity for teachers to track learners' progress in the mastery of mathematics concepts and to identify the problematic areas which require immediate attention. Therefore it is recommended that you place more focus on addressing errors from learner responses that may later become misconceptions.

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

Ask learners to give their understanding of the concept congruency. Use various objects (e.g. leaves from a tree,) to illustrate the meaning of congruency. Present learners with different objects and ask them to identify congruent figures.

**Note:**

Two triangles are **congruent** if they have exactly the **same shape and size** i.e. they are able to fit exactly on top of each other. This means that all three corresponding sides and three corresponding angles are equal, as shown in the following two pairs.



$\triangle ABC \cong \triangle DEF$  and  $\triangle GHI \cong \triangle JKL$ . In each pair, the corresponding sides and angles are equal.

( $\cong$ ) is the sign to indicate that figures are congruent

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

| Teaching activities   | Learning activities<br>(Learners are expected to:) |                          |               |  |                |  |                           |  |  |  |  |  |  |  |              |  |  |
|---|--|--------------------------|---------------|--|----------------|--|---------------------------|--|--|--|--|--|--|--|--------------|--|--|
| <p><b>Activity</b><br/>Divide class into groups. Ask learners to construct the triangle below.</p> <ol style="list-style-type: none"><li>Use a ruler, compass and protractor to construct the following triangle.<br/><br/><math>\Delta TRS</math> with <math>TR \perp RS</math>, <math>RS = 7</math> cm and <math>TS = 8</math> cm.</li><li>Compare your triangle with those of three group mates. Is your triangle congruent to theirs?</li><li>Hence complete the table.</li></ol> <table border="1" data-bbox="167 761 1082 1332"><thead><tr><th>Conditions</th><th>Congruent<br/>(Yes or No)</th></tr></thead><tbody><tr><td>3 sides (SSS)</td><td></td></tr><tr><td>3 angles (AAA)</td><td></td></tr><tr><td>2 angles and a side (SAA)</td><td></td></tr><tr><td>2 sides and an angle not between the sides (SSA)</td><td></td></tr><tr><td>2 sides and an angle between the sides (SAS)</td><td></td></tr><tr><td>Right angle with hypotenuse and a side (RHS)</td><td></td></tr><tr><td>2 sides (SS)</td><td></td></tr></tbody></table> | Conditions   | Congruent<br>(Yes or No) | 3 sides (SSS) |  | 3 angles (AAA) |  | 2 angles and a side (SAA) |  | 2 sides and an angle not between the sides (SSA) |  | 2 sides and an angle between the sides (SAS) |  | Right angle with hypotenuse and a side (RHS) |  | 2 sides (SS) |  | <ul style="list-style-type: none"><li>follow the instructions and use the provided material to construct the triangle and make the necessary conclusions.</li><li>discuss findings with group members.</li></ul> |
| Conditions  | Congruent<br>(Yes or No)                           |                          |               |  |                |  |                           |  |  |  |  |  |  |  |              |  |  |
| 3 sides (SSS)   |  |                          |               |  |                |  |                           |  |  |  |  |  |  |  |              |  |  |
| 3 angles (AAA)  |  |                          |               |  |                |  |                           |  |  |  |  |  |  |  |              |  |  |
| 2 angles and a side (SAA)   |  |                          |               |  |                |  |                           |  |  |  |  |  |  |  |              |  |  |
| 2 sides and an angle not between the sides (SSA)  |  |                          |               |  |                |  |                           |  |  |  |  |  |  |  |              |  |  |
| 2 sides and an angle between the sides (SAS)  |  |                          |               |  |                |  |                           |  |  |  |  |  |  |  |              |  |  |
| Right angle with hypotenuse and a side (RHS)  |  |                          |               |  |                |  |                           |  |  |  |  |  |  |  |              |  |  |
| 2 sides (SS)  |  |                          |               |  |                |  |                           |  |  |  |  |  |  |  |              |  |  |

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

DBE workbook 1 Grade 9 page 140 – 141 No. 1 (e), No. 2 and 3



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

### a) Emphasise that:

Triangles are congruent if:

- three sides of one triangle are equal to the three corresponding sides of the other triangle. (S,S,S)
- two sides and the included angle of one triangle are equal to the corresponding sides and included angle of another triangle. (S,A,S)
- two angles and a side of the one triangle are equal to two corresponding angles and a side of the other triangle. (AAS)

The corresponding sides of two triangles are the sides that are in the same position relative to the angles of the triangles.

- right-angle, hypotenuse and a side of one triangle are equal to the corresponding right-angle, hypotenuse and a side of the other triangle (R,H,S)

Hypotenuse – The side opposite the right angle in a right-angled triangle

- 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 Book 1, DBE workbooks and/or textbooks for learners' homework. The selected activities should address different cognitive levels.

**Homework:** Sasol-Inzalo Book 1 Grade 9 page 208 – 209 no. 1-6

