



# 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 triangles (Lesson 11)**

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

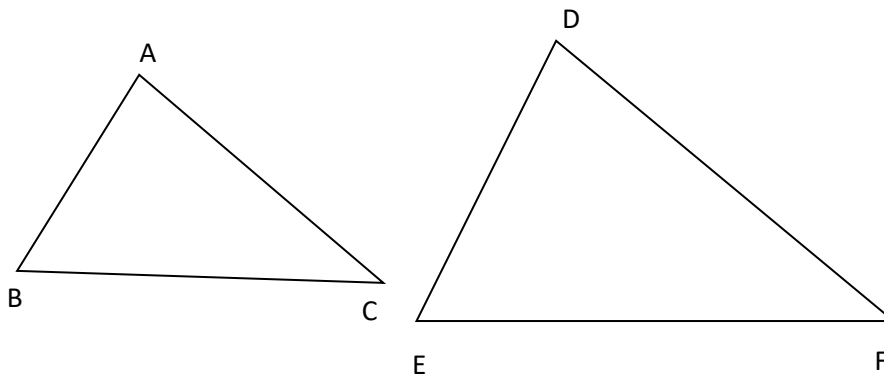
**By the end of the lesson learners should know and be able to establish through investigation the minimum conditions for similar triangles**

<b>3. RESOURCES:</b>	DBE workbook, Sasol-Inzalo Book 1, textbooks, ruler, protractor
<b>4. PRIOR KNOWLEDGE:</b>	<ul style="list-style-type: none"> <li>• measuring of angles</li> <li>• measuring of lines segments</li> <li>• ratio</li> </ul>
<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)	
Ask learners to give their understanding of the concept similarity. Use various objects (e.g. leaves from a tree,) to illustrate the meaning of similarity. Present learners with different objects and ask them to identify similar figures.	
<p><b>Note:</b> Two triangles are <b>similar</b> if they have exactly the <b>same shape</b> but not necessarily the <b>same size</b> i.e. the one is normally an enlargement of the other.</p>	

<b>7. LESSON PRESENTATION/DEVELOPMENT</b> (Suggested time: 20 minutes)	
<b>Teaching activities</b>	<b>Learning activities (Learners are expected to:)</b>
<p>Divide class in small groups. Allow learners to investigate the minimum conditions for two triangles to be similar.</p> <p><b>Note:</b> Draw one triangle and make numerous different enlargements on a photocopy machine. This will ensure that the triangles investigated by the learners will be similar. Hand drawn sketches or computer generated triangles may not always be perfectly drawn. <i>(The use of grid paper to generate enlarged triangles may be considered if photocopying is a challenge)</i></p>	<ul style="list-style-type: none"> <li>• complete the instructions on the worksheet</li> </ul>



Example of two triangles that can be investigated.



**Make sure that the triangles that are used in this activity are similar.**

1. Use a protractor to measure the angles in each triangle above.

a) Complete the table below:

Angle	Angle	What do you notice?
$\hat{B}$	$\hat{D}$	
$\hat{A}$	$\hat{E}$	
$\hat{C}$	$\hat{F}$	

b) What is the relationship between the sizes of the angles in the triangles?

2. Use a ruler to measure the lengths of the sides in each triangle in question 1.

a) Complete the table below.

Length (cm)	Length (cm)	Ratio
BA	DE	BA:DE =
BC	DF	BC:DF =
CA	FE	CA:FE =

b) Discuss the relationship between the sides in similar triangles?

3. From your observations in no 1 and 2, two triangles are similar if:

- (a) \_\_\_\_\_  
 (b) \_\_\_\_\_

**Note:**

When proving that triangles are similar, you either need to show that the:

- corresponding angles are equal or,
- corresponding sides are proportional.

- measure angles

- make the necessary conclusions

- measure the lengths of the sides of triangles

- make the necessary conclusions



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

Sasol-Inzalo Book 1 page 213, no. 1 (a) to (d)

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



**a) Emphasise that:**

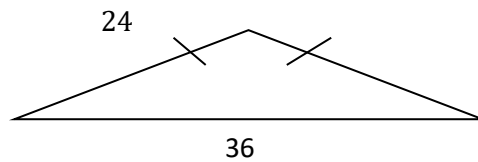
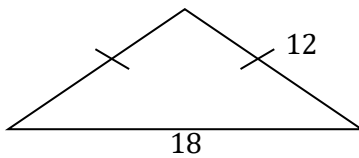
- two triangles are similar if corresponding angles are equal or the corresponding sides are proportional (in the same ratio).
- we use the symbol ( $\sim$ ) to show similarity between triangles e.g.  $\triangle ABC \sim \triangle DEF$

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.

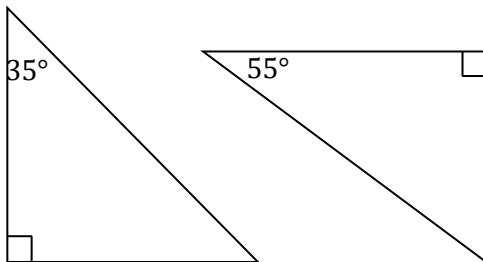
**Homework**

1. Decide whether the following set of triangles are similar. Give reasons for your decision.

(a)



(b)



(c)

