



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: AREA AND PERIMETER OF 2D SHAPES:** Area and perimeter (**Lesson 3**)

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

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

- use appropriate formulae and conversions between SI units, to solve problems and calculate perimeter and area of polygons (trapezium).

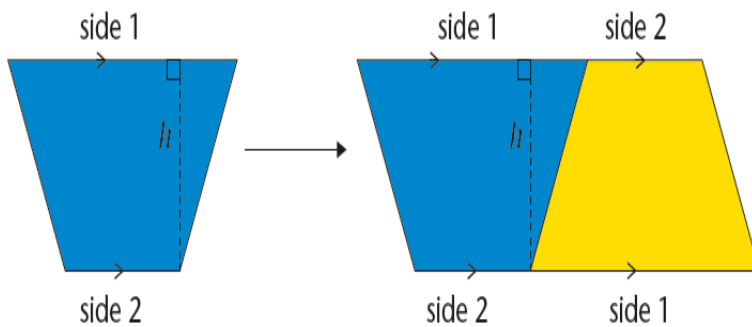
<b>3. RESOURCES:</b>	DBE workbook, Sasol-Inzalo book 1, textbook, ruler
<b>4. PRIOR KNOWLEDGE:</b>	<ul style="list-style-type: none"> <li>• calculation with whole numbers</li> <li>• properties of 2D shapes</li> <li>• formula for area of a parallelogram</li> <li>• solving by substitution</li> </ul>

**5. REVIEW AND CORRECTION OF HOMEWORK** (suggested time: 10 minutes)  
 Homework offers an opportunity for teachers to track learners' progress in the mastery of mathematics concepts and 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)

Do the following with the learners practically to show how the formula to find an area of a trapezium is established.

A trapezium has two parallel sides. If tessellate (tile) two trapeziums as shown in the diagram below, we form a parallelogram. The yellow (Light) trapezium is the size of the blue (dark) one.



Use the formula for the area of a parallelogram to work out the formula for the area of a trapezium as follows:

$$\begin{aligned} \text{Area of parallelogram} &= \text{base} \times \text{height} \\ &= (\text{side 1} + \text{side 2}) \times \text{height} \end{aligned}$$

$$\text{Area of a trapezium} = \frac{1}{2} \text{ area of parallelogram} = \frac{1}{2} (\text{side 1} + \text{side 2}) \times \text{height}$$

$$\text{Area of a trapezium} = \frac{1}{2} (\text{sum of parallel sides}) \times \text{height}$$

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

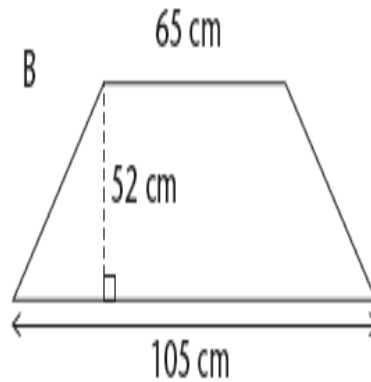
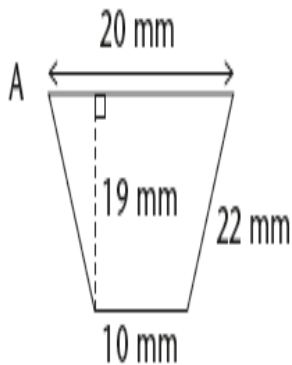
Teaching activities

Learning activities  
(Learners are expected to:)

Do activity on figure A as an example (convert  $mm^2$  to  $cm^2$ ) and let learners do the activity on figure B (convert  $cm^2$  to  $mm^2$ ).

be actively involved during lesson presentation by answering questions

**Activity:** Calculate the area of the following trapeziums:



Solution: Figure A

$$\begin{aligned} \text{Area} &= \frac{1}{2}(\text{sum of parallel sides}) \times \text{height} \\ &= \frac{1}{2}(10 \text{ mm} + 20 \text{ mm}) \times 19 \text{ mm} \\ &= \frac{1}{2}(30 \text{ mm} \times 19 \text{ mm}) \\ &= 285 \text{ mm}^2 \\ &= 2,85 \text{ cm}^2 \end{aligned}$$

Figure B

$$\begin{aligned} \text{Area} &= \frac{1}{2}(\text{sum of parallel sides}) \times \text{height} \\ &= \frac{1}{2}(105 \text{ cm} + 65 \text{ cm}) \times 52 \text{ cm} \\ &= \frac{1}{2}(170 \text{ cm} \times 52 \text{ cm}) \\ &= 4420 \text{ cm}^2 \\ &= 442\,000 \text{ mm}^2 \end{aligned}$$

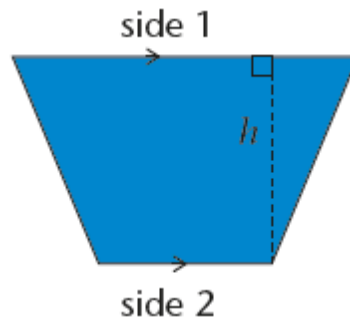
do activity on figure B

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

Sasol-Inzalo workbook 1 page 263 no. (a)

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

- a) **Emphasise that** the height of a trapezium is the line segment drawn from any vertex perpendicular to the opposite parallel side.



$h$  is the height onto base which is *side 1* of the trapezium.

- b) **Homework:**

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.

Sasol-Inzalo book 1 page 263 no. (b) and (d)