



basic education

Department:  
Basic Education  
REPUBLIC OF SOUTH AFRICA

# MATHEMATICS LESSON PLAN

## GRADE 9

### TERM 2: APRIL – JUNE

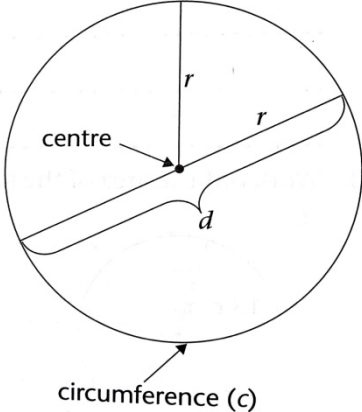
PROVINCE:	
DISTRICT:	
SCHOOL:	
TEACHER'S NAME:	
DATE:	
DURATION:	1 Hour

**1. TOPIC: AREA AND PERIMETER OF 2D SHAPES:** Area and perimeter (**Lesson 4**)

#### **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 (Circles and Complex figures).

3. <b>RESOURCES:</b>	DBE workbook, Sasol-Inzalo-book, textbook, ruler
4. <b>PRIOR KNOWLEDGE:</b>	<ul style="list-style-type: none"> <li>• perimeter and area of polygons done in Grade 8</li> <li>• properties of 2D shapes</li> <li>• substitution</li> <li>• formula for area of polygons</li> <li>• pythagoras theorem</li> </ul>
<p>5. <b>REVIEW AND CORRECTION OF HOMEWORK</b> (suggested time: 10 minutes)</p> <p>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.</p>	
<p>6. <b>INTRODUCTION</b> (Suggested time: 10 Minutes)</p> <p>Revise the work done in Grade 8 and let learners explain the meaning of the words in bold below:</p> <ul style="list-style-type: none"> <li>• The perimeter of a circle is called the <b>circumference</b> of a circle.</li> <li>• <b>Radius</b> (r) : distance from the centre</li> <li>• <b>Diameter</b> (d) distance across the circle through the centre</li> </ul> <p>Ask learners to name parts of the circle.</p> <div style="text-align: center;">  <p>The diagram shows a circle with a central point labeled 'centre'. Two line segments, each labeled 'r', extend from the centre to the circumference, representing radii. A line segment labeled 'd' passes through the centre from one side of the circle to the other, representing the diameter. An arrow labeled 'circumference (c)' points to the outer edge of the circle.</p> </div> <p><b>Note:</b> Emphasise the following:</p> <ul style="list-style-type: none"> <li>▪ <math>d = 2r</math> and <math>r = \frac{1}{2}d</math></li> <li>▪ Circumference of a circle (c) = <math>2\pi r</math></li> <li>▪ Area of a circle (A) = <math>\pi r^2</math></li> <li>▪ <math>\pi \approx 3,14</math> or <math>\frac{22}{7}</math></li> </ul>	

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

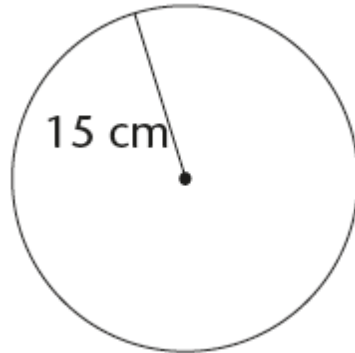
Teaching activities

Learning activities  
(Learners are expected to:)

Present the following examples and let learners do 3(b) as an activity.  
(Use  $\pi = 3,14$ )

be actively engaged during the lesson presentation by answering questions.

1. Calculate:



- a) the perimeter (circumference) of the circle.
- b) area of the circle below:

Solutions:

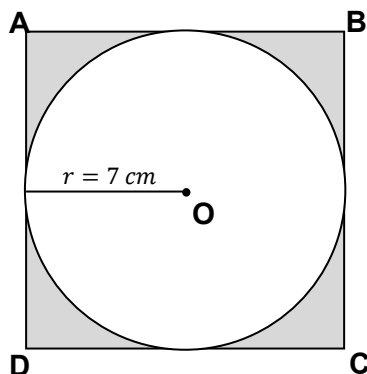
$$\begin{aligned} \text{a) } P &= 2\pi r \\ &= 2 \times 3,14 \times 15 \text{ cm} \\ &= 94,2 \text{ cm} \end{aligned}$$

$$\begin{aligned} \text{b) } A &= \pi r^2 \\ &= \pi (3,14 \text{ cm})^2 \\ &= 3,14 \times 225 \text{ cm}^2 \\ &= 706,5 \text{ cm}^2 \end{aligned}$$

2. Calculate the radius of the circle with a circumference of 206 mm. (round off answer to one decimal place)

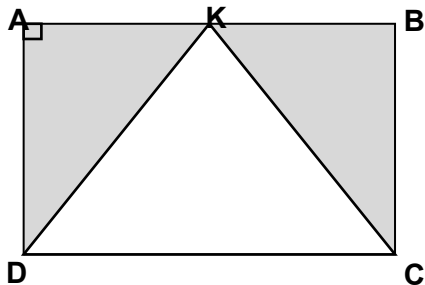
$$\begin{aligned} \text{Solution: } 2\pi r &= P \\ 2 \times 3,14 \times r &= 206 \text{ mm} \\ 6,28r &= 206 \text{ mm} \\ r &= 32,8 \text{ mm} \end{aligned}$$

3. Calculate the area of the shaded part if ABCD below is a square and circle O has a radius of 7 cm. Use  $\pi = \frac{22}{7}$ .



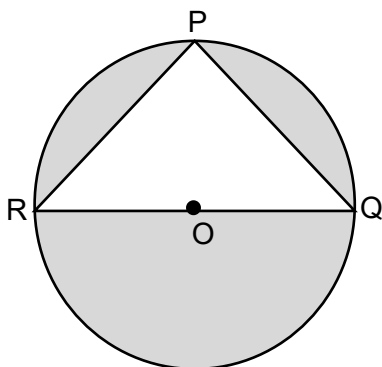
Do activity 3(b) in groups and then discuss solutions with the whole class.

In the figure below, ABCD is a rectangle and KDC is an isosceles triangle.  $KD = KC = 5$  cm and  $AD = 4$  cm. Calculate the area of the shaded part.



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

In the figure below,  $RQ = 14$  cm, calculate the area of the shaded part. Use  $\pi = \frac{22}{7}$ .



Sasol-Inzalo book 1 page 256 no. 5

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

### a) Emphasise that :

- Learners should know the formulae and know how to use them.
- when using the formula, they should substitute correctly and understand the exponent on  $r$ .

### 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.

DBE workbook page 167 no. 4 and

Sasol-Inzalo workbook 1 page 265 no. 2(a)

