

Polygons and Circles

LESSON PLAN

SPECIFIC OBJECTIVES

The students will

- learn about polygons.
- know about a triangle and its parts.
- know about different types of triangles.
- understand the properties of a triangle.
- learn about a quadrilateral and its main parts.
- know the types of quadrilaterals.
- conceptualise a circle and learn its related terms.
- learn to construct a circle using a pair of compasses.
- know about the circumference of a circle.
- know how to calculate approximate circumference.

CONTENTS EXPLAINED INSIDE THE CHAPTER

- Polygons (page 85)
- Triangles (pages 85–86)
- Types of Triangles (pages 86–88)
- Properties of Triangles (pages 88–90)
- Quadrilaterals (pages 90–93)
- Circles (pages 93–96)
- Construction of a Circle (pages 96–97)
- Circumference of a Circle (pages 97–99)

TEACHING AIDS

Tracing paper, plain paper, bangle/coin/disc/any circular object, string, a geometry box, a marker, sketch pens, a pencil, etc.

TEACHING STRATEGY

- At first, she should introduce to them polygon as a rectilinear figure. She should, also talk to them about regular and irregular polygons with their figures.
- Further, the teacher should instruct them to focus on a triangle and its parts. She should also make its interior/ exterior regions clear. Hence, she should motivate them to classify the triangles on the basis of their sides as well as their angles. For text and exercise, she should go to pages 85–88.
- After that, the teacher should involve them in an activity to reinforce them with the properties of a triangle. For text and exercise, she should go to pages 88–90.
- Next, the teacher should talk to them about quadrilateral and explain its features. She should also discuss with them on different types of quadrilaterals. Moreover, she should introduce to them about a few other polygons which have more than 4 sides. For text and exercise, she should go to pages 90–93.
- Further, the teacher should discuss with them about circles and its associated terms as explained on pages 93–95. She should also talk to them about interior/ exterior part of a circle and concentric circles. Then, she should ask them to do exercise 4.4.
- Thereafter, the teacher should develop the idea to construct circles using a pair of compasses and a pencil for a certain radius/ diameter.
- Moreover, she should explain to them the circumference of a circle and establish the relationship between diameter and circumference of a circle through an activity as discussed on pages 97–98. Then, she should go through the examples and instruct them to do exercise 4.5.
- Finally, the teacher should encourage them to solve the questions given in the puzzle.

EXPECTED LEARNING OUTCOMES

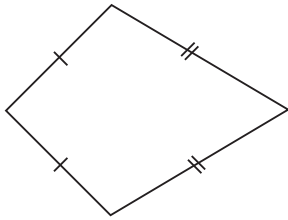
Students are able to

- recognise different types of polygons.
- understand the terms associated with triangles.
- classify the given triangles on the basis of sides/ angles.
- know the features of triangles.
- discuss about quadrilaterals.
- categorise different types of quadrilaterals according to their features.
- explain a circle and its related terms.
- construct a circle.
- calculate the circumference of a circle.

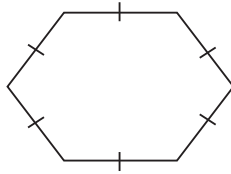
SUGGESTED WORKSHEET

A. Identify the polygons:

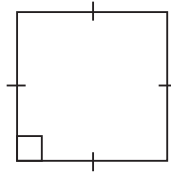
1.



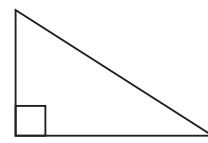
2.



3.



4.



Ans. 1. Kite

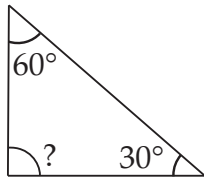
2. Hexagon

3. Square

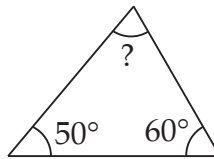
4. Right-angled triangle

B. Find the missing angles and name the triangles.

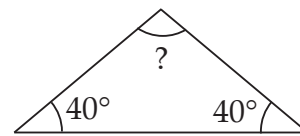
1.



2.



3.



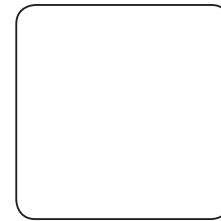
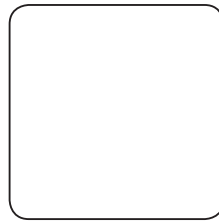
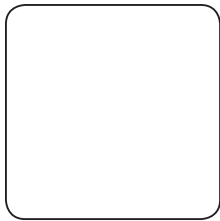
Ans. 1. 90° , Right-angled triangle 2. 70° , Acute-angled triangle 3. 100° , Obtuse-angled triangle

C. Draw the rough sketch of the following figures.

1. A pentagon

2. A trapezium

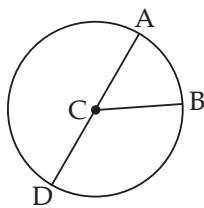
3. A rectangle



Ans. Do it yourself.

D. Observe the following figure and identify the given parts.

1.

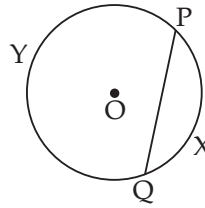


(a) Diameter = AD

(b) Radius = CA, CB or CD

(c) Centre = C

2.



(a) Chord = PQ

(b) Arcs = \widehat{PXQ} and \widehat{PYQ}

(c) Segment = PQXP