Vision Empower & XRCVC

Teacher Instruction KIT

CIRCLES

Syllabus: Karnataka State Board
Subject: Maths
Grade: 4
Textbook Name: Mathematics Text cum Workbook
Chapter Number & Name: 7. Circles

1. OVERVIEW

1.1 OBJECTIVE & PREREQUISITES

Objective

Students will be able to

- understand the meaning/concept of a circle and construct circles with the help of compass.
- identify the center, radius and diameter of the circle.

Prerequisite Concept

- Circle
  TIK_MATH_G3_CH1_Shapes

Content Index

*Kindly Note: Activities marked with * are mandatory*

Circle construction with compass

Activity 5: Circle construction with compass

Features of a circle

Activity 6: Features of a circle

3.2 LET'S DISCUSS: RELATE TO DAILY LIFE*

4. EXERCISES & REINFORCEMENT

4.1 EXERCISES & REINFORCEMENT

Practice and Recall

Activity 7: Practice and Recall

4.2 IMPORTANT GUIDELINES*

Exercise Reading

Perform Textbook Activity

Provide Homework

2. LEARN

2.1 KEY POINTS

- All the points on the circle are equidistant from the centre.
- A circle is a round shape figure that has no corners and edges.
- In geometry, a circle can be defined as a closed, two-dimensional curved shape.

2.2 LEARN MORE

3. ENGAGE

3.1 INTEREST GENERATION ACTIVITY

Circle

Activity 1: Circle

Materials Required: Round shape objects, square shape objects and rectangle shape objects.

Prerequisites: Shapes

Activity Flow

- *Ask the students to give examples for round shaped objects which they use in their daily life.*
    a. *Example, plates, water bottle cap, bangles*
- *Give a few round shape objects to the students.*
- *Ask the following questions:*
    a. *What shape is that?*

b. *Does it have an edge?*
c. *Does it have corners?*

- *Give a few more different shape objects (square, rectangle) to the students. Ask them to compare the round shape objects with other shapes.*
- *Ask the similarities and differences between the objects.*
- *Explain the concept of a circle and its properties.*

3.2 CONCEPT INTRODUCTION ACTIVITIES

Introduction to circles

Activity 2: Introduction to circles.
Materials Required: Objects of different shapes.
Prerequisites: Shapes

Activity Flow

- *Start with giving them bangles/round buttons/round coins/round shape objects and then define the circle as a round shape.*
- *Give them different figures/shapes and ask them to identify circles from it.*
- *Tell them where we commonly use circles. For example, the wheel of vehicles, bangles, round buttons, etc.*

Making circles

Activity 3: Making circles
Materials Required: Round shaped bangles, cap of a round bottle, parchment sheet, stylus.
Prerequisites: None

Activity Flow

- *Distribute them as circular objects such as bangles, cap of a round bottle, etc.*
- *Ask them to place it on a parchment sheet and draw a circle by outlining the border of the objects.*
- *Let them feel the circle on the parchment sheet and ask them if it is similar to the shape of a bangle/button.*

Circle construction with stylus and thread

Activity 4: Circle construction with stylus and thread
Materials Required: Stylus, foam board, parchment sheet/transparent sheet, thread and pins.
Prerequisites: Measurements

Activity Flow

- *First tie one side of the thread to a paper pin and other side to the stylus, keep thread length around 5 to 6cm.*
- *Fix the pin in the middle of the transparent sheet, stretch the thread to its maximum and then try making a circle with the help of a stylus.*
- *After completing it, ask the students where the centre of their circle is.*
- *Then tell them that where the pin is fixed is the centre. And thread distance between the centre of the circle and a point on the circle is radius which is always the same from the centre to any point on the circle.*
- *Mark 2 to 3 points on the circle and then ask them to measure the radius with the help of a scale.*

Circle construction with compass

Activity 5: Circle construction with compass

Materials Required: Compass, foam board, transparent sheet.
Prerequisites: The concept of radius and diameter.

Activity Flow

- *Fix the pencil on one side of the compass.*
- *Adjust the distance by using a scale, keep one side/pointed side on the scale, measure the distance. Example: for radius 4 cm, one end of the compass would be on one edge of the scale and the other end would be at 4 cm on the scale.*
- *Keep and fix the pointed end on the compass which would be the centre of the circle and move the other end to draw the circle.*
- *Draw a line joining the centre and any point on the circle with the help of scale and this line is the radius of that circle which would be of the same measurement 4 cm.*
- *After this, give them different radii and ask them to draw circles of that radius on their own.*
- *Ask them to make a straight line using a scale passing through the centre and joining two points on the circle. Then tell them that this is the longest cord and is called the diameter.*
- *Ask them to measure half of the diameter first (radius) then the other half (radius), which shows that diameter is made up of two radii which are in a straight line.*

Features of a circle

Activity 6: Features of a circle

Materials Required: Tactile diagram of circles with radius (centre and a point on the circle) and diameter.
Prerequisites: Concept of radius and diameter

Activity Flow

- *Give circles/tactile diagrams of circles of different sizes and ask them to measure their radius with the help of scale.*
- *Mark different points on a circle and let them measure the radius from the centre to those points on the circle.*
- *Ask them, are the radii of a circle the same or not?*
- *Let them identify the diameter and measure its length. Now they know that diameter is made up of two radii, ask them to verify this in their tactile diagrams.*
- *Let's sing the circle song:*

  The tires of an old yellow car.
  The round lid of a candy jar.
  The clock hanging on the wall.
  A cat playing with the red ball.
  The sweet chocolate donut I ate,
  And a whole apple pie on my plate.
  The shiny buttons on my dress.
  What's the shape? Take a guess.
  They are all round like a C-I-R-C-L-E.

3.2 LET'S DISCUSS: RELATE TO DAILY LIFE*

- Ask the following questions to the students:
    1. Why is the car wheel round in shape?
    2. Why is the bicycle wheel round in shape?
    3. Why is the ball rolling?
    4. What will happen, if we change the shape of the car wheel to square shape?

- Explain, all the tires are round in shape because they will roll easily.
- Circles are simply closed curves equidistant from a fixed center. All circles do not have edges.

4. EXERCISES & REINFORCEMENT

4.1 EXERCISES & REINFORCEMENT

Practice and Recall

Activity 7: Practice and Recall

Materials Required: Geometry kit with rubber board and parchment paper.
Prerequisites: Construction of circles.

Activity Flow

1. *By considering 'A' as the centre of the circle, draw a circle.*
2. *Draw 2 circles with centres 'C' and 'D' such that they do not intersect each other.*
3. *Give different sizes of sheets. Ask the students to draw circles with different radii in the sheets. And ask them to measure the radius of the circles.*

4.2 IMPORTANT GUIDELINES*

Exercise Reading

It is very important that the children practice their learnings as well as their reading. Hence have the children read out the newly learned concepts from their textbooks or other available resources.

Perform Textbook Activity

It is good practice to have the children perform the textbook activities. Your textbook activities might not be accessible hence go through this resource to learn how to make textbook content accessible

Provide Homework

To evaluate their understanding and to help the student revise and implement the new learnt concept ensure to provide them with homework. Students should perform one or two of the questions mentioned above or from the textbook exercises with the teacher in
Class and the remaining may be given for homework. Also, ensure that the student knows their special skills linked to independently using their accessible books as it will be critical to doing homework independently

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