CHAPTER: Shapes and Designs

Grade: **3**
Board: **CBSE**
Book: **NCERT**

1.

Chapter Summary and Placement

<Read through the following to understand how this chapter is connected with the previous and next grades and also the important concepts covered in it.>

1. Knowledge of this chapter is very important for shape and spatial understanding
2. This chapter encourages students to observe shapes in the environment and get a qualitative feel for their geometrical attributes.
3. Students create patterns using tangram pieces and tiles

2.

LEARNING OUTCOMES

<On completion of the chapter, students will be able to:>

1. Identify and describe the various 2-D shapes by counting their sides and corners.
2. Create shapes using tangram pieces.
3. Create tiling patterns
4. Read simple maps

3. TEACHING PLAN

Follow this section for getting ideas on teaching the content covered in the chapter. The subtopic given in the first column with the matching learning outcome can be explained using instructions and resources listed subsequently

Subtopic and Learning Objective #1

Subtopic: Fun with shapes

LO:
Identify and describe the various 2-D shapes by counting their sides and corners.

1.To make the student Identify the basic 2-D shapes by colouring and folding.

Teacher Activity

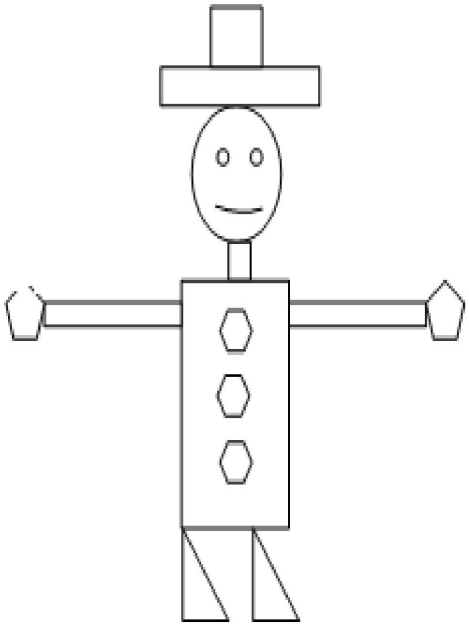
Activity 1 can be performed to make the class create shapes through paper folding, paper cutting.

1. Ask the students to open page 61 of the text book.
2. Read out the instructions given,
3. Discuss each shape to be coloured.
4. Ask the students to colour the clown.
5. Ask the students to go to page 62 of the textbook.
6. Explain the two questions given.
7. Help them to count the number of triangles.
8. Then help them trace the biggest rectangles in each given shape.

Teacher Activity

Check for understanding:
Look at the figure and fill in the blanks:

1. His head is a _____
2. His neck is a _____
3. His arms are _____
4. His hands are _____.
5. His body is a _____
6. His legs are _____
7. His hat is made up of a _____ and a _____
8. His buttons are _____



Resources Suggested

Text book, crayons, chalk and blackboard

Activity 1

Name of the activity- Make a Clapper
Type of activity – Individual
Use it for – Creating shapes through paper folding, paper cutting.
Materials – A sheet of paper
Procedure:
Instructions to the teacher

1. Each child should keep a sheet of paper on the desk.
2. Ask the students to open the text book to page 60
3. Ask them to follow the instructions given.
4. Help the students in case of any doubts.
5. The children can try their clappers to see whose clapper is the loudest.

Subtopic and Learning Objective #3

Subtopic: Edges and corners

LO:
Identify and describe the various 2-D shapes by counting their sides and corners.

1.To make the student learn about edges and corners in 2-D shapes.

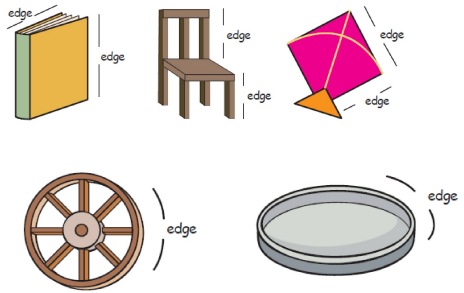
Teacher Activity

Activity 2 can be performed to make the class learn about corners and edges in 2-D shapes.

1. Tell the class that many things around us have **straight** edges and many things around us have **curved** edges
2. Explain that

Edges are lines that represent the boundary

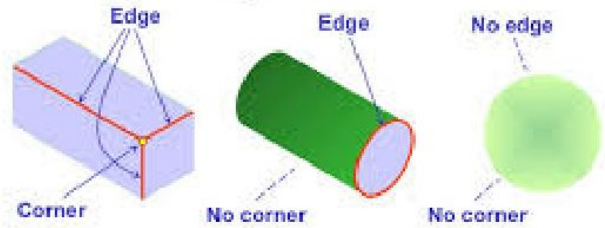
3. Explain further using objects in the classroom like books, duster, table, chair, chalk, round water bottle etc



4 .Explain that **corners** represent the intersection of two or more edges

.

Teacher Activity



Check for understanding:

How many edges can you see? Discuss and circle the objects with curved edges.



Resources Suggested

Text book, crayons, chalk and blackboard

Activity 2

Name of the activity- How many corners
Type of activity – Group
Use it for – Learning about corners and edges in 2-D shapes.
Materials –A rectangular and a square piece of paper
Procedure:
Instructions to the teacher:

1. Divide the students in groups of 6.
2. 3 children in the group should have square sheets and the other 3 children should have rectangular sheets.
3. Open the text book to page no. 64
4. Read out the instructions loudly and ask the children to follow them.
5. Discuss each fold and the new shapes formed.
6. Ask the groups to discuss the shapes formed by rectangular and square papers.

Subtopic and Learning Objective #4

Sub topic: Tangram

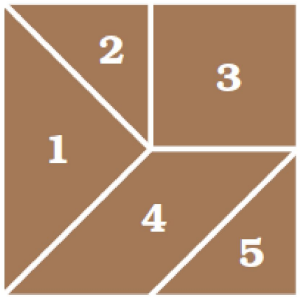
LO:
Create shapes using tangram pieces.

1. To make student create new shapes using tangram pieces

Teacher Activity

1. Explain to the class that a tangram is a shape (often a square) which is split into several different pieces. These can then be fitted together to make new shapes.
2. Tangrams were first invented in China.
3. Ask the students to cut out the 5-piece tangram given at the back of the textbook.
4. Ask them to use the the 5-piece tangram to create the shapes given on page 66 of the textbook.

Check for understanding:



Teacher Activity

Given above is the picture of your 5-piece tangram. Answer the following based on the above picture:

1. Which two pieces of the tangram set are exactly same?
2. Take pieces 4 and 5 from the set and find out on which side of the triangle you can join the other piece.
3. Find matching sides among the following pairs of pieces.

A. Pieces 1 and 2
B. Pieces 2 and 4
C. Pieces 1 and 5
D. Pieces 2 and 5

Resources Suggested

Text book, crayons, chalk and blackboard

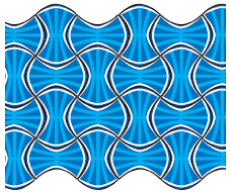
Subtopic and Learning Objective #5

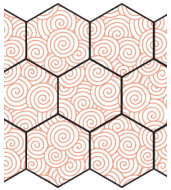
Sub topic: Patterns

LO:
Create tiling patterns

1. To make student identify geometrical patterns around them.

Teacher Activity



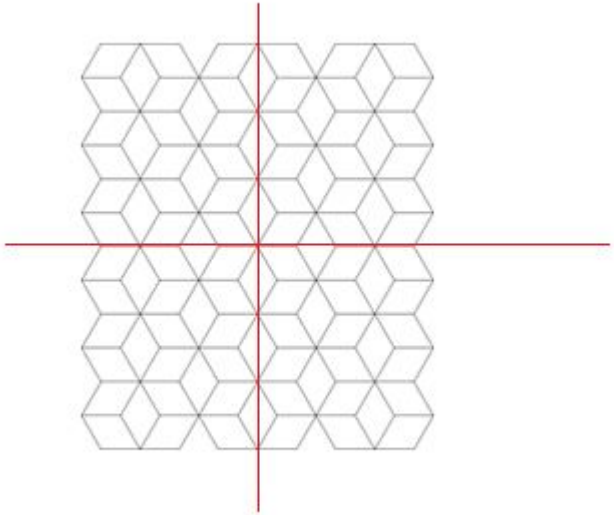


1. Ask the students to look at the tile patterns given above.
2. Ask them to identify the geometrical shapes in the patterns.
3. Explain that these patterns are made by covering the walls and the floor completely with small tiles that fit into each other without any gaps.
4. Discuss and ask the students to identify more such patterns in clothes, curtains and mats around you.
5. Ask them to list them in their notebook with drawings.

Teacher Activity

Check for understanding:

On the given pattern, create four new designs using different colour combinations



Resources Suggested

Text book, crayons, chalk and blackboard

Subtopic and Learning Objective #6

Sub topic: Reading Maps

LO:
Read simple maps

1. To make student read simple maps.

Teacher Activity

1. Ask the students to open page 75.
2. Introduce the class to the concept of maps.
3. Ask them if they have seen simple maps on invitation cards and shop pamphlets. The teacher can carry a wedding card or a pamphlet of a store to show a map

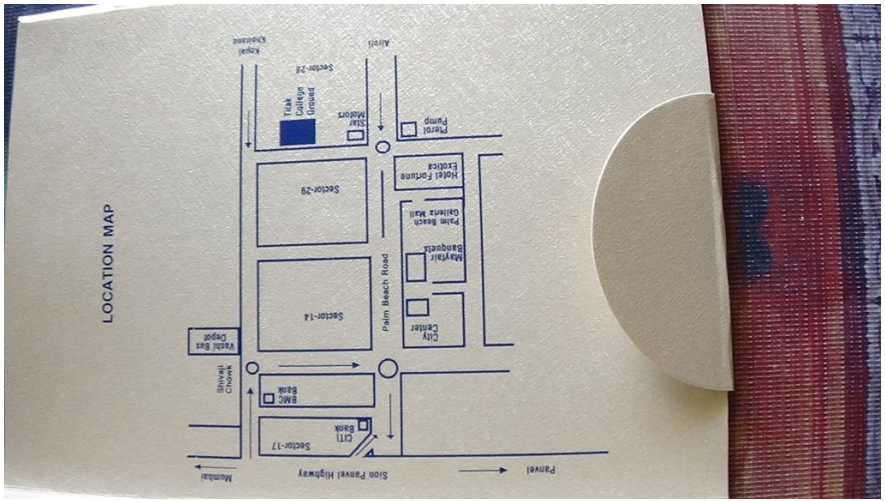
Check for understanding:

Read the instructions given on page 74 loudly and help the students follow them step by step.

Resources Suggested

Text book, crayons, chalk and blackboard

Resource 1


LOCATION MAP
Sion Panvel Highway
Mumbai
Panvel
Sector-17
CIDCO Bank
BMC Barrier
Shivaji Chowk
Kasturi Bus Depot
Sector-14
Palm Beach Road
City Center
Maryfair Banquets
Palm Beach Gallaria Mall
Hotel Fortune Exotica
Sector-28
Petrol Pump
Star Motors
Tata Cricket Ground
Sector-29
Airoli
Kopar Khairane

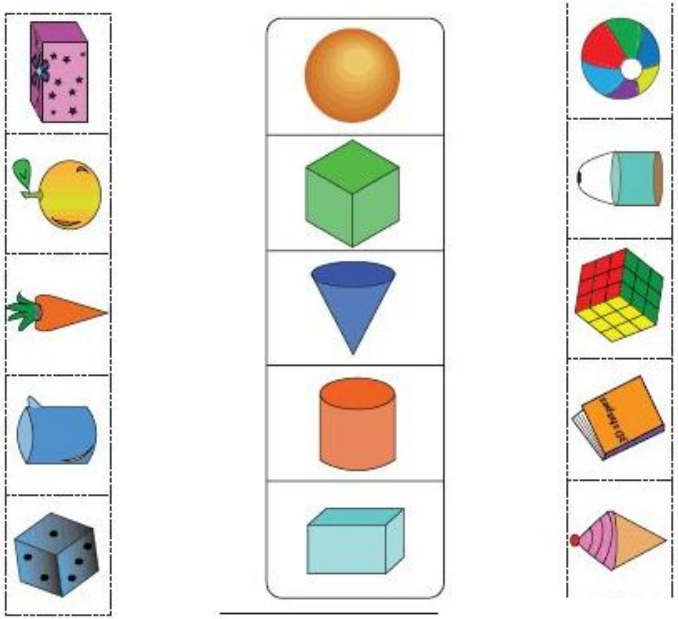
4. WORKSHEETS

Print or copy the worksheet questions on the blackboard and ask the students to attempt them. They can be given as homework or a class test as well.

Worksheet 1

Use it like: test after the chapter is complete, homework

Circle the shapes with curved lines and cross the shapes with straight lines.



Worksheet 2

Use it like: test after the chapter is complete, homework

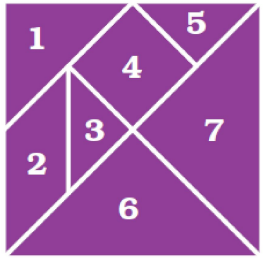
In the given table, mark the things that have corners (Yes/No). Count the number of edges and corners in each of them.

Name of thing	It has corners	Number of edges	Number of corners
Coin			
Duster			
Apple			
Bench			
Football			
Calendar			

Worksheet 3

Use it like: test after the chapter is complete, classwork

Here is the picture of a seven–piece tangram. You can cut out these pieces and put them together as directed below:



Make the following shapes using only the pieces written here:

i) Use only triangles



ii) Use pieces 1, 2, 3 and 5



iii) Use only two triangles



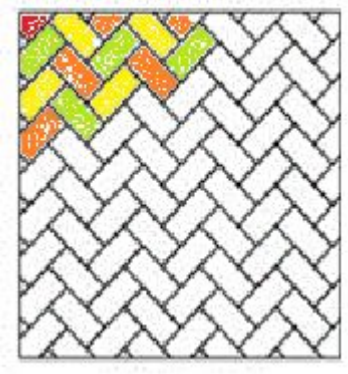
iv) Use pieces 1, 2, 3, 4 and 5

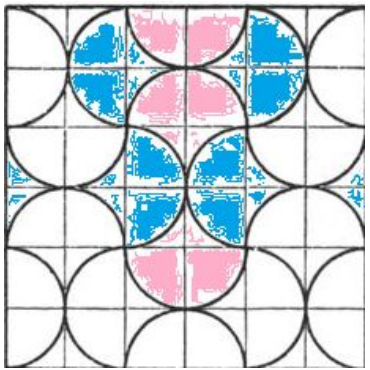


Worksheet 4

Use it like: test after the chapter is complete, homework

Complete the following tiling patterns:

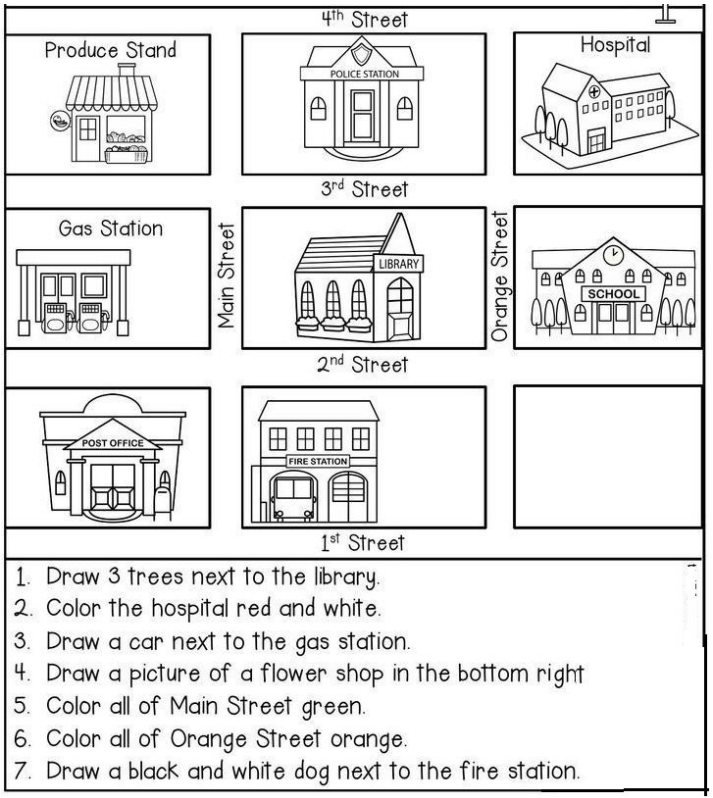




Worksheet 5

Use it like: test after the chapter is complete, classwork

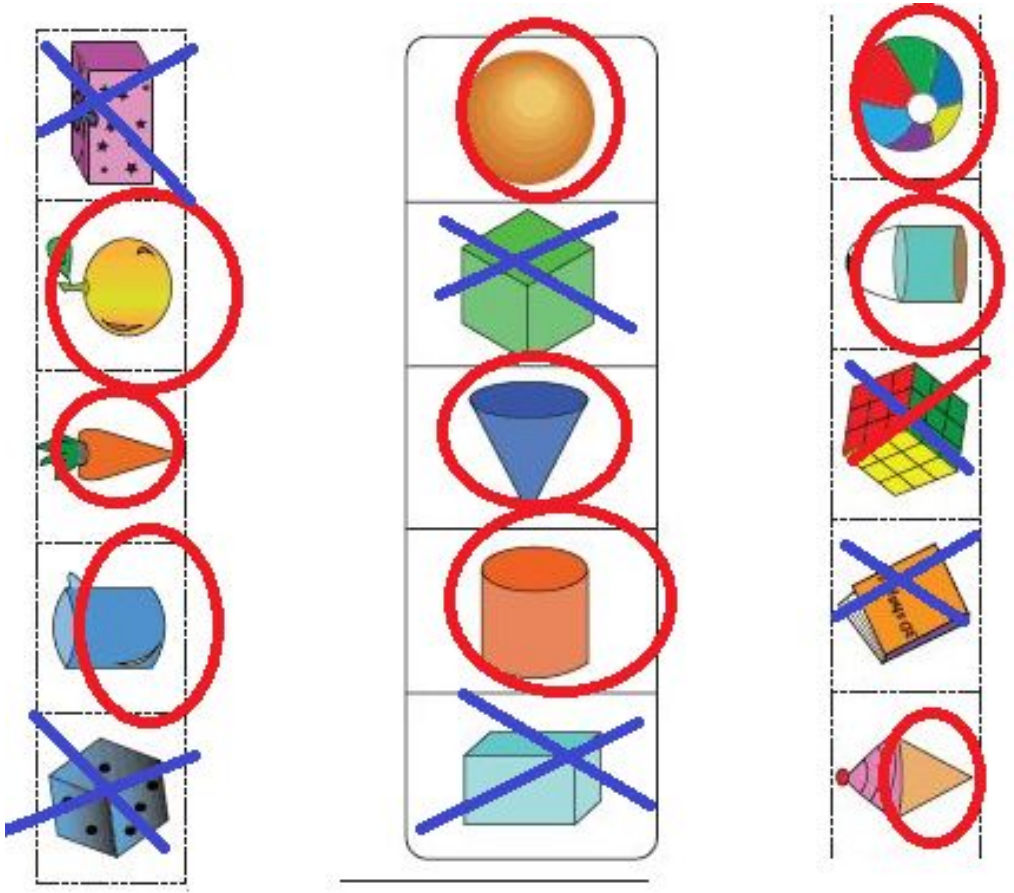
Read the directions below and add the details to the map.



5. SOLUTIONS

This section gives you sample answers for activities and questions listed above.

Worksheet 1



Worksheet 2

Name of thing	It has corners		Number of edges	Number of corners
Coin	no	yes	-	
Duster		yes	yes	8
Apple		no	no	-
Bench		yes	yes	4
Football	no	no	-	
Calendar	yes	yes	4	

6. EXTRA RESOURCES

Carry out the following suggested activities/ tasks if you have the time and resources to do them

Teacher can use these videos if time and facilities permit:

1. https://www.youtube.com/watch?v=aRCt9Ch7oR0 2D shapes
2. https://www.youtube.com/watch?v=9OlcnbZ3uO8 Edges and corners
3. https://www.youtube.com/watch?v=2bLI6JWp4TE Tangram puzzle