ꯃꯤꯇꯩꯂꯣꯟ ꯑꯁꯤ ꯃꯍꯩ ꯁꯤꯡ (ꯑꯦꯁ)
DEPARTMENT OF EDUCATION (S)
Government of Manipur

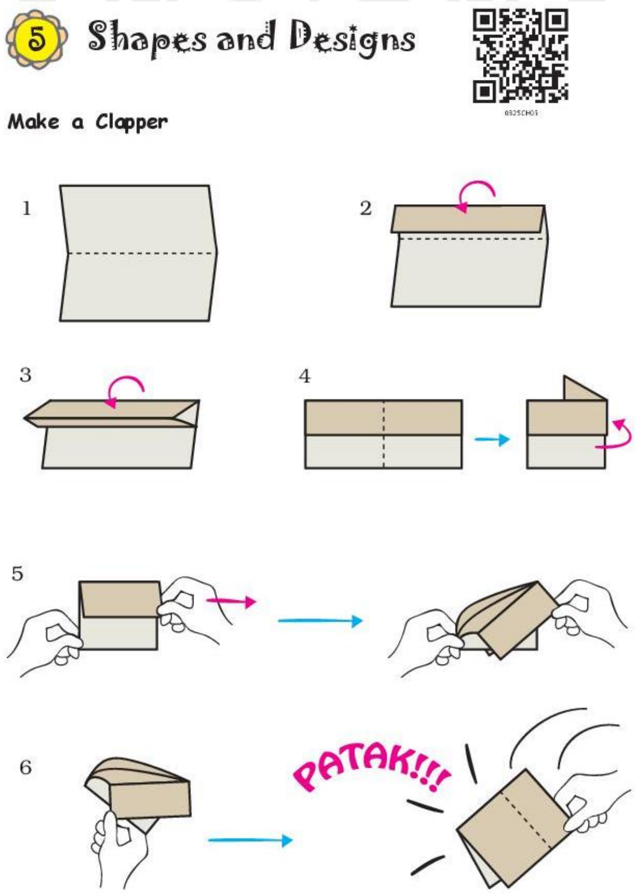
MATHEMATICS
CLASS-III
CHAPTER-5
SHAPES AND DESIGNS

TEXTUAL QUESTIONS AND ANSWER:

NOTES:

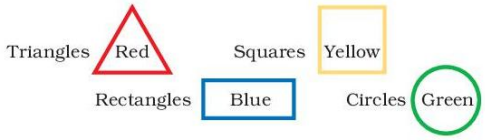
In mathematics, a shape can be defined as the form of an object or its outline, outer boundary or outer surface. Everything we see in the world around us has a shape. We can find different basic shapes such as the two-dimensional square, rectangle, and oval or the three-dimensional rectangular prism, cylinder, and sphere in the objects we see around us. These geometric shapes appear in objects we see as credit cards, coins, finger rings, photo frames, windows, tall buildings, flower pots, and balloons.

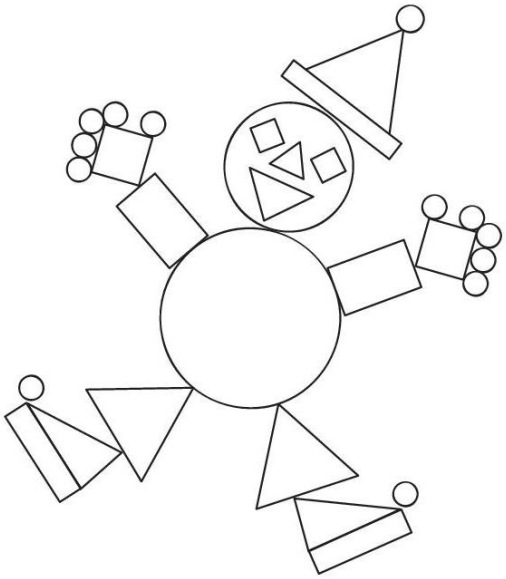
The basic geometric plane shapes are circle, triangle, rectangle, rhombus, square and trapezoid.



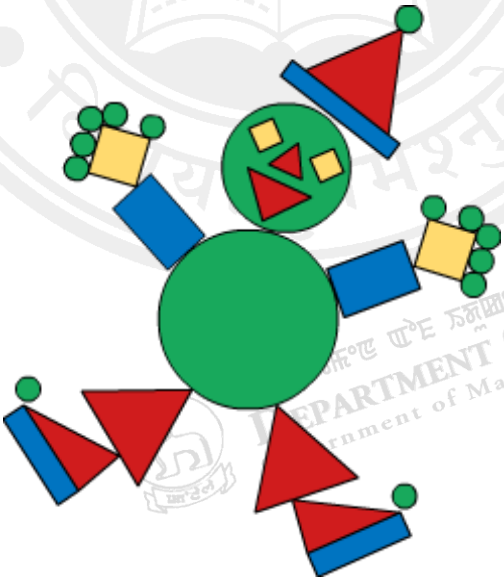
Q1. Have a fun with shapes.

Colour the clown following the directions given below:

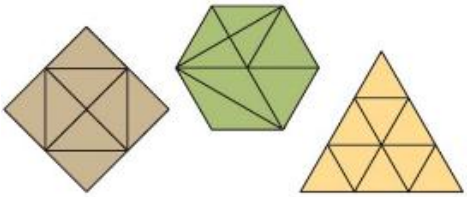




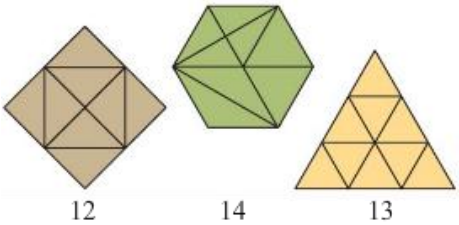
Ans:



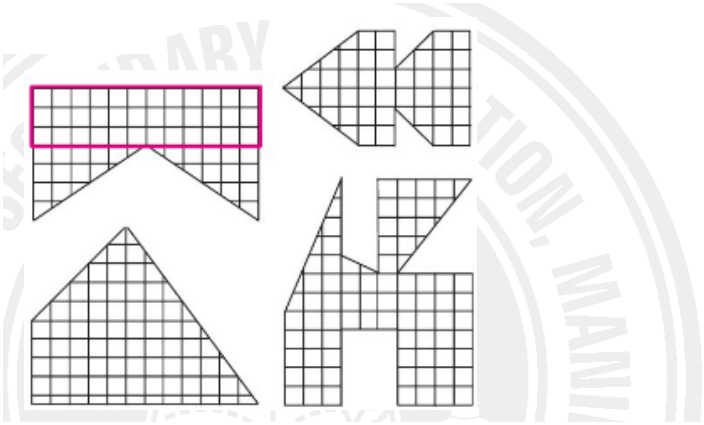
Q2. How many triangles are there in the following figures?



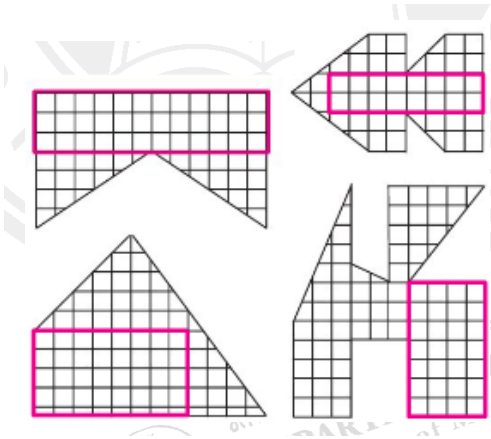
Ans:



Q3. Find the biggest rectangle in the figures given below.



Ans:



Q4. Edges and Corners Meeta and her 5 friends were playing a game. Tinku was blindfolded and asked to keep clapping as long as he wished while the others would move round a table. The moment Tinku stopped clapping, everybody would stop wherever they were. The child who was not at a corner would be out. Then she would be blindfolded.

(a) Looking at the picture given above, can you tell who is out? (b) Where is Guddu standing? (c) Can this game be played around a round table? Why?

Ans:(a) Guddu is out because he is not standing at any of the corners of the table.

(b) Guddu is standing in the middle of one of the sides of the table.

(c) No, this game cannot be played around a round table because a round table has no corners.

Q5. (a) Look around you and identify things with straight and curved edges. (b) Do the things with straight edges have corners? (c) Do the things with curved edges have corners? (d) Try to find things which have both straight and curved edges.

Ans: (a) A book, an eraser and a page have straight edges and a cylinder, a pen and a bowl have curved edges.

(b) Yes, things with straight edges have corners.

(c) No, things with curved edges do not have corners.

(d) A pencil, a capsule and a knife have straight and curved edges.

Q6. Look at the following table and tick (✓) the names of things that have corners. Also count the number of edges and corners in each of them.

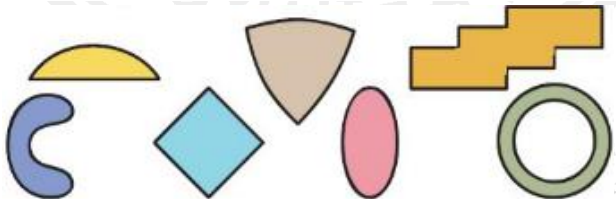
Name of thing	*Whether it has corners*	*Number of edges*	*Number of corners*
Die 	Yes		8

Ball			
Eraser			
Egg			
Sheet of paper			

Ans:

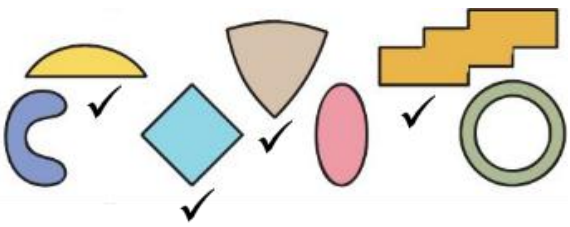
Name of thing		*Whether it has corners*	*Number of edges*	*Number of corners*
Die 	✓	Yes	12	8
Ball		No		
Eraser	✓	Yes	12	8
Egg		No		
Sheet of paper	✓	Yes	4	4

Q7. In the following figures, tick (✓) those which have corners. Do these figures have curved lines?



Using only straight lines, can you draw a figure which has no corners?

Ans:



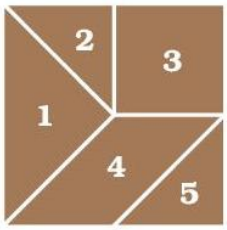
Yes, two of the given figures have curved lines.

Q8. How many triangles do you have in your set? Are all of them equal in size? Find out.

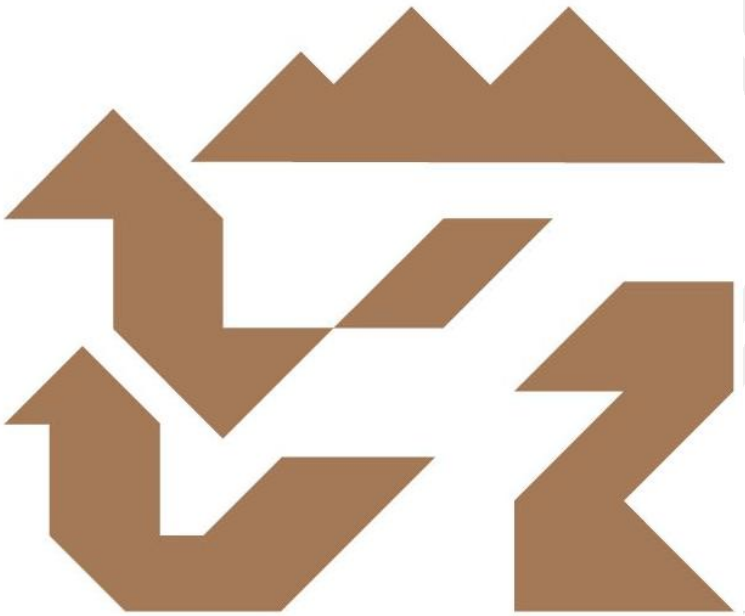
Tangram

The tangram is an old Chinese puzzle. From the pieces of the tangram, we can make many shapes of animals, people and things.

At the back of the book you will find a square like the one in this figure. Cut it out carefully and cut the pieces. This set of five pieces is called the 5-piece tangram.



Use these five pieces to make the following figures:



Ans: There are three triangles in a set. Only two out of the three are equal in size. We can check that by measuring the sides of the triangles.

Q9. Use the two small triangles in the tangram set to get the following shapes:

(1) **(2)** **(3)**

Ans:

(1) Use triangles 2 and 5 to get the figure of a square. 

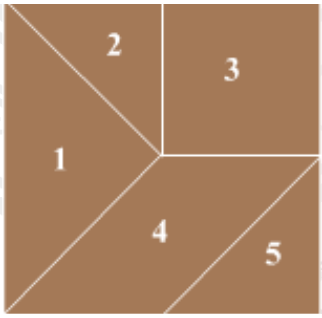
(2) Use triangles 2 and 5 to get the figure of a triangle. 

(3) Use triangles 2 and 5 to get the figure of a parallelogram. 

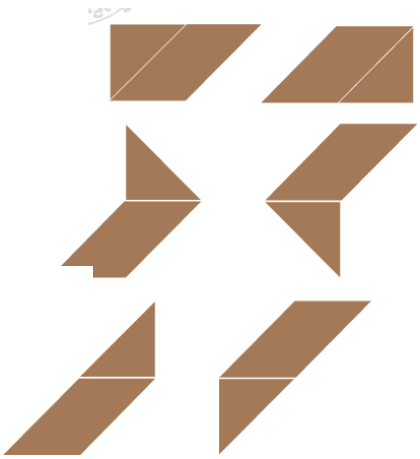
Q10.Which two pieces of the tangram set are exactly same? Find out.

Ans: Pieces 2 and 5 are exactly the same. We can check that by measuring them with a scale.

Q11. Take pieces 4 and 5 from the set and find out on which side of the triangle you can join the other piece.



Ans:



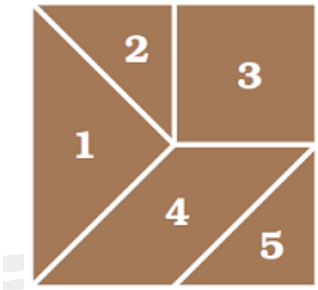
Q12. Find matching sides among the following pairs of pieces.

(a) Pieces 1 and 2

(b) Pieces 2 and 4

(c) Pieces 1 and 5

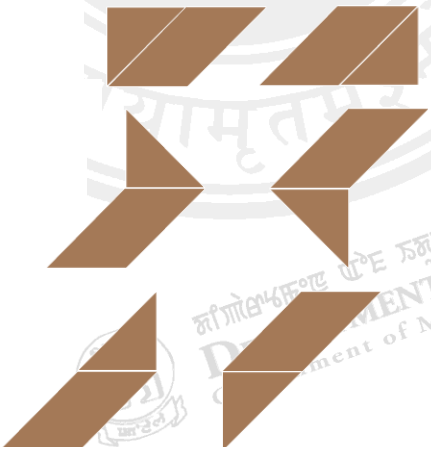
(d) Pieces 2 and 5



Ans:

(a)

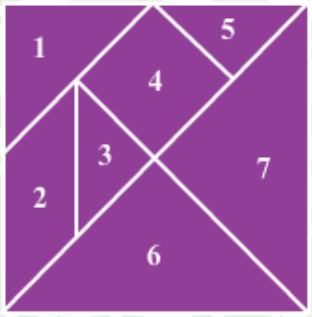
(b)



(c)

(d)

Q13. Use only triangles



Ans:

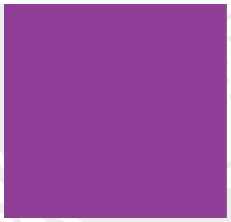
Q14.Use pieces 1, 2, 3 and 5

Ans:

Q15. Use only two triangles

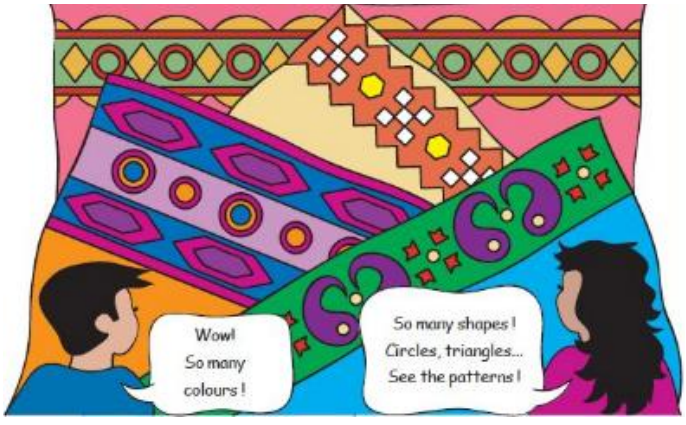
Ans:

Q16. Use pieces 1, 2, 3, 4 and 5

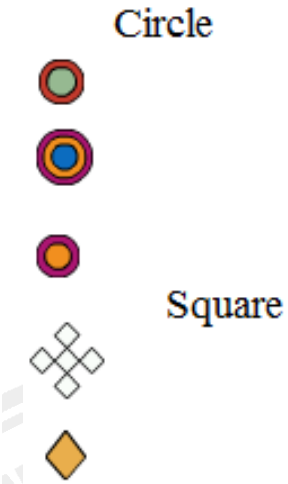


Ans:

Q17. Which geometrical shapes can you identify in these borders? Draw them in your notebook.



Ans:



Q18. Is any shape repeating in a particular pattern? Which ones?

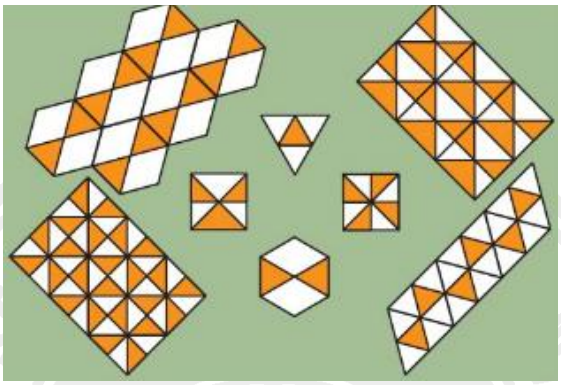
Ans:

Q19.Are the shapes made of (i) Curved lines (ii) Straight lines (iii) Both curved and straight lines.

Ans: The shapes are made of both curved and straight lines.

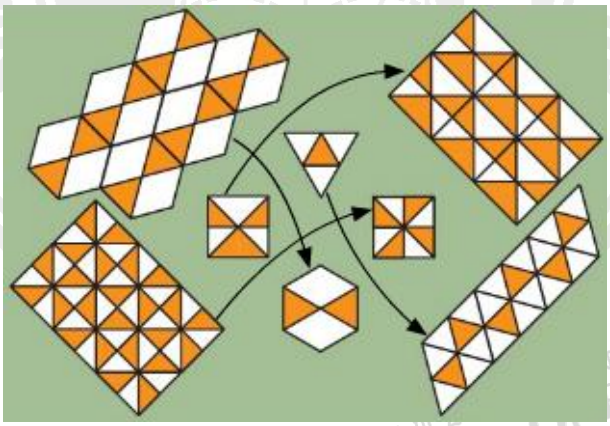
Q20.Look at your clothes, your mother's saris/shawls, rugs and mats. Can you identify some patterns? Draw them in your notebook.
Ans: *The students prepare the answer on their own.*

Q21.Among the following, can you match the tiles with the designs that they will make on the floor? Draw lines to match.

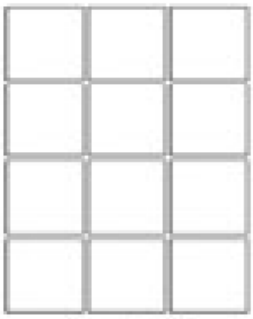


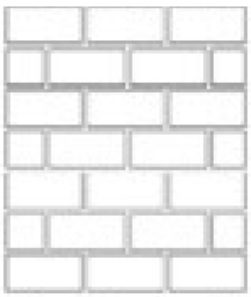
You can also make your own tiles and use them to make your own tiling patterns. You will find some such tiles at the end of the book that you can cut out, trace and colour.

Ans:

- 

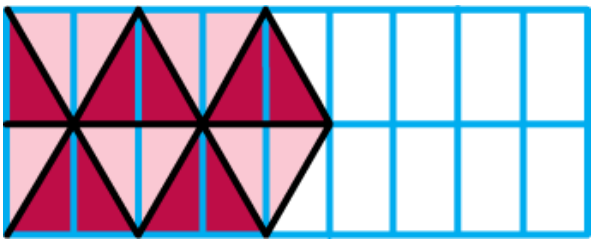
Some tile patterns are given below for reference.



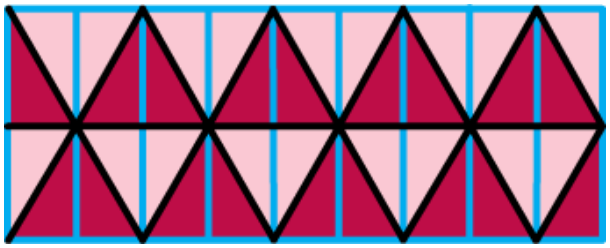


Hint: **The students prepare the answer on their own.**

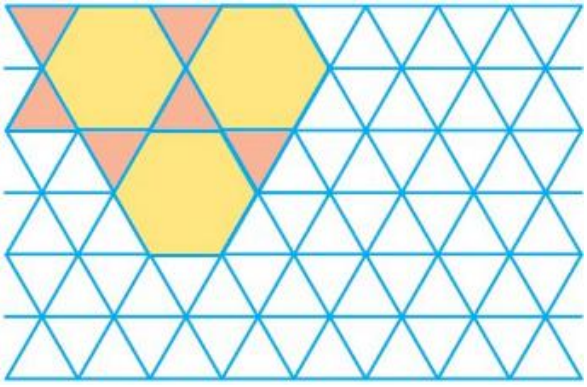
Q22. Complete the following tiling pattern.



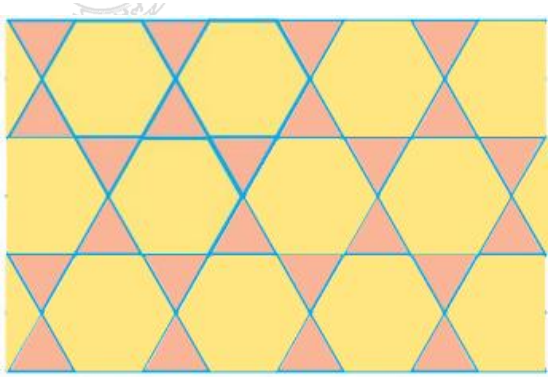
Ans:



Q23. Complete this pattern. Compare it with the pattern on page 70 which also uses six sided shapes. What is the difference between the two?

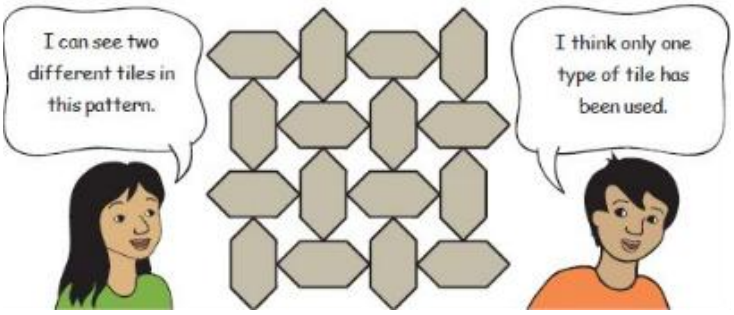


Ans:



Both the shapes are regular hexagons. The only difference is that on rotating any one of the shapes by 90°, another shape appears.

Q24. Khushboo and Hariz live in Agra. One day they went to see the Taj Mahal. The floor had the pattern shown below:



Q25. What do you think? Discuss with your friends.

Ans: I think the same type of tile is used in the floor pattern in two directions: horizontal and vertical.