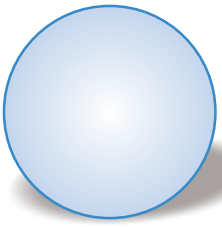


8

Shapes and Patterns

Look at the following shapes.



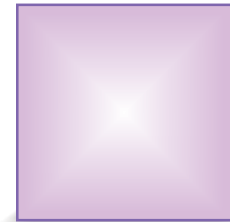
Circle



Triangle



Rectangle



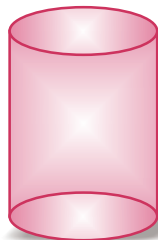
Square

These above shapes are well-known to you.

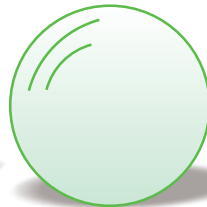
Now, look up these shapes.



Cone



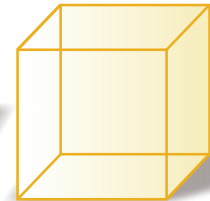
Cylinder



Sphere



Cuboid



Cube

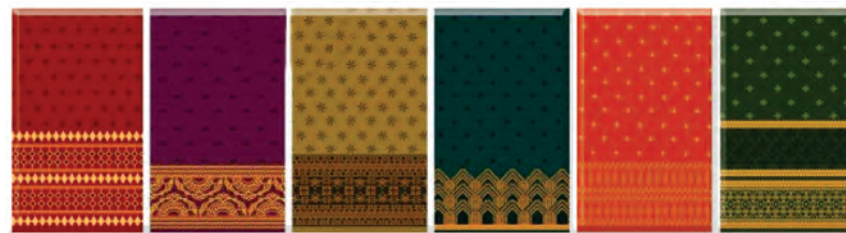


Patterns Around Us

In our day to day life, we observe many patterns.

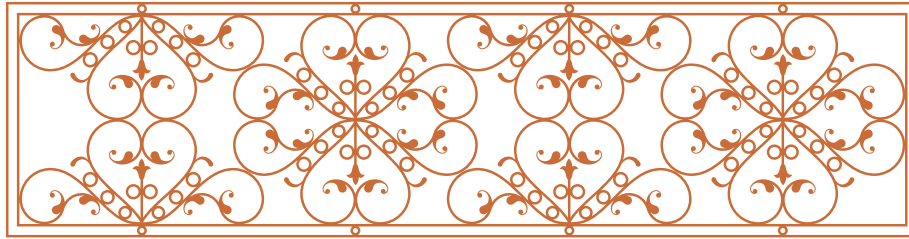
For Example : We see :

Saris' Borders

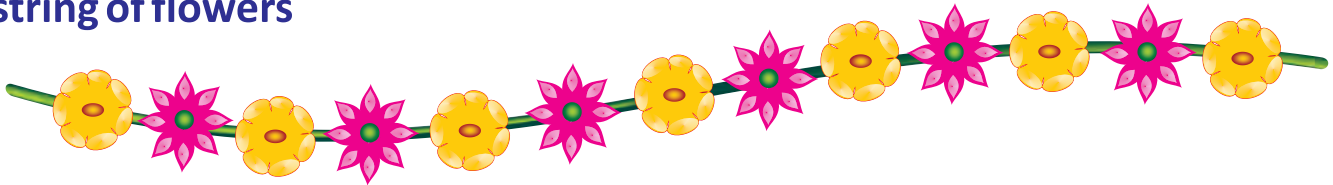




Iron Grill



A string of flowers



Do you know that every pattern follows a rule ?

Yes, every pattern follows a rule. Sometimes, same blocks of pictures are repeated and sometimes not.

For Example :

a.



I have made some patterns. I have used a rule for each pattern.



The rule for this pattern is - there are two cats before every one dog. Then, this is repeated.

b.



In this pattern, there is one leaf up and one down. Then, this is repeated.





Exercise 8.1

1. Write the names of the shapes.

a.



b.



c.



d.



.....

2. Look at around you and find 4 things which are having patterns. Also list them.

a.

b.

c.

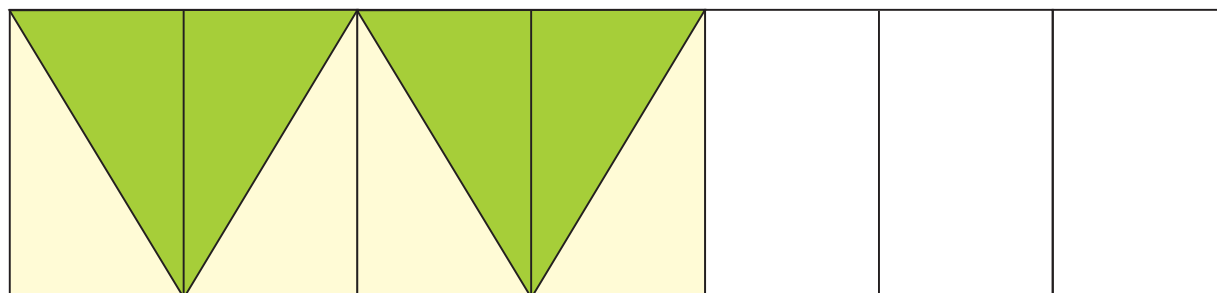
d.

3. Given below are some patterns. Figure out the rule for each to continue the pattern.

a.



b.



c. January, February, March, January,,



Growing Patterns

a.

I have made a new pattern.



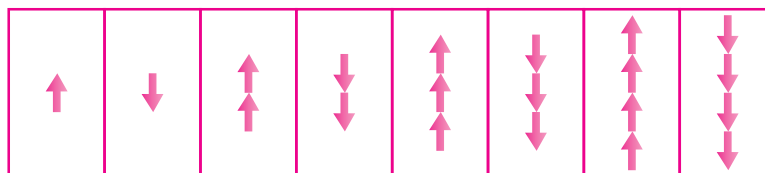
b.

But this pattern keeps on growing. It does not repeat.



c.

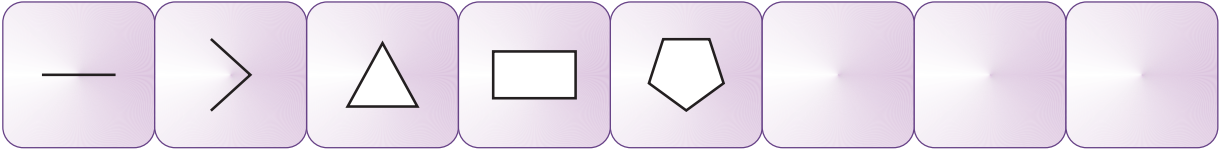
No problem. It has a rule that you can find in this pattern.

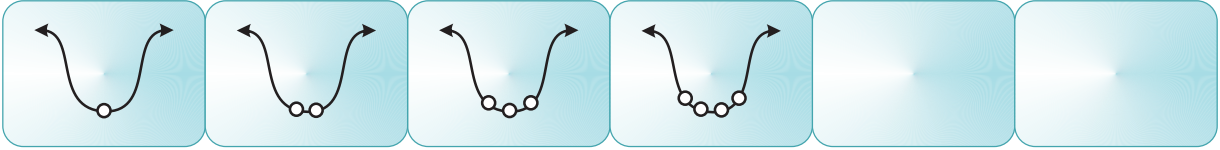





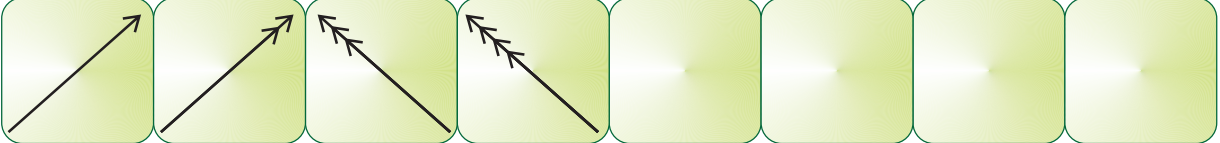
Exercise 8.2

1. See the rule of the following patterns and continue the pattern.

a. 

b. 

c. 

d. 



Facts

- ❖ Everything which looks very beautiful have a particular patterns.



Lines

There are two types of lines.

a. **Curved line**

Curved line :

b. **Straight line**

Straight line :



This is a curved line.



This is a straight line.

Straight line are mainly three types.

a. Sleeping lines :



This is a sleeping line.

b. Standing lines :



This is a standing line.

c. Slanting lines :



This is a slanting line.





Number Patterns

As we have made patterns with pictures, similarly we can make pattern with numbers.

Example I : 0, 1, 2, 3, 4, 5

Solution : 1+0, 1+1, 1+2, 1+3, 1+4

Example II : 6, 5, 4, 3, 2, 1

Solution : 6-0, 6-1, 6-2, 6-3, 6-4, 6-5

Example III : 3, 6, 9, 12, 15, 18

Solution : 3+0, 3+3, 3+6, 3+9, 3+12, 3+15

Example IV : 4, 6, 8, 10, 12, 14, 16

Solution : 2+2, 3+3, 4+4, 5+5, 6+6, 7+7, 8+8



Exercise 8.3

1. Find out the rules and continue these growing patterns.

a. 10, 9, 8, 7, 6, 5,,,,

b. 5, 10, 15, 20,,,,

c. 0, 1, 2, 3, 4, 5,,,,

d. 5A, 6B, 7C, 8D,,,,

e. 3, 6, 9, 12, 15,,,,

2. Look for the rules in above question and find out what to add or subtract to each number to get the next one.

a.

b.





- c.
- d.
- e.

3. Make your own patterns.

a.

b.

c.

Points to Remember



- ❖ Every solid has a particular shape.
- ❖ A rope, a grill, a sari's border and rangoli have patterns.
- ❖ We can see the patterns in numbers.

For Example : 400, 405, 410, 415
 110, 220, 330, 440



EXERCISE

1. Multiple Choice Questions (MCQs)

Tick (✓) the correct option.

a. A glass has the shape of a







- | | | | |
|--------------------------|--------------------------|--------------------|--------------------------|
| (i) cylinder | <input type="checkbox"/> | (ii) cone | <input type="checkbox"/> |
| (iii) cylinder plus cone | <input type="checkbox"/> | (iv) none of these | <input type="checkbox"/> |





- b. Next symbol of the pattern $\uparrow \rightarrow \downarrow$ is
- (i) \rightarrow (ii) \leftarrow (iii) \downarrow (iv) \uparrow
- c. Next alphabet of the pattern ZYX is
- (i) U (ii) V (iii) W (iv) X
- d. What is the next one in pattern A1, B2, C3.....?
- (i) B4 (ii) C4 (iii) A4 (iv) D4

2. Find the name of the following shapes.

- a. 
 b. 
 c. 
 d. 
 e. 
 f. 

3. Look for the pattern and write the next groups to continue the sequence.

- a. AZ BY CX
 b. A C E
 c. AB AC AD
 d. ABA BCB CDC

4. Draw the next three shapes to continue the sequence and colour them.

- a.    
 b.    
 c.    
 d.    



5. Look for the pattern and continue the sequence.

- a. 045 050 055 060
- b. 111 212 313 414
- c. 71 70 69 68
- d. 410 420 430 440
- e. 33 43 53 63



Write five things in which you have seen the use of patterns.



Objective

: Discovering plane shapes.

Materials Required

: Coloured glazed paper, scissors, glue sticks and a thick sheet of paper

Process :

- ❖ Take a piece of glazed paper 6 cm by 4 cm. Paste it on the thick sheet of paper.
 What shape is it ?
 How many sides ?
 Are all sides the same in size ?
 How many corners ?
- ❖ Take another piece of glazed paper 6 cm by 4 cm.
- ❖ Fold by lifting point 2 to point 1.
- ❖ Cut the extra part.
 What shape have you got ?
 What shape is the extra part ?
 What shapes are formed by the folding ?
- Take more strips of paper.
 Fold, cut and paste the rectangles, square and triangles and make a collage.

