Symmetry, Patterns and Nets

8

LESSON PLAN

SPECIFIC OBJECTIVES

The students will

- learn about symmetrical figures in detail.
- know about reflection and the mirror image.
- know how to form patterns by rotation.
- learn about the order of symmetry.
- understand the patterns with numbers.
- learn about triangular numbers and square numbers.
- read about nets of the solids like a cube, a cuboid, a cone and a cylinder.
- know how to draw a 3 D object in 2 D using the square/ isometric dot paper.

CONTENTS EXPLAINED INSIDE THE CHAPTER

- Symmetry (pages 159–162)
- Patterns With Rotation (pages 162–164)
- Patterns With Number (pages 164–165)
- Some Other Number Patterns (pages 165–167)
- Nets (pages 167–168)
- Drawing a 3-D Object in 2-D (pages 168–170)

TEACHING AIDS

Tracing paper, chart paper, square grid paper, isometric/square dot paper, a pencil, a paper cutter, glue, a geometry box, sketch pens, empty cartons or boxes, etc.

TEACHING STRATEGY

- Since students have already learnt about symmetrical shapes and line of symmetry, the teacher should first recall this concept by asking them to do 'Let Us Recall' exercise.

- Next, the teacher should discuss more about the line of symmetry to reinforce it. Then, she should develop the ideas of reflection and mirror image. For text and exercise, she should go to pages 159–162.
- Then, the teacher should introduce to them about rotational symmetry and develop an idea to form patterns using the rotation. For text and exercise, she should go to pages 162–164.
- Further, the teacher should talk about patterns with number. She should also instruct them to focus on triangular and square numbers. For text and exercise, she should go to pages 164–167.
- Thereafter, the teacher should develop the idea of nets for making a cube or cuboid. She may also use any empty carton or shoebox to get a net by opening it. She should also explain them about the nets of a cone and cylinder. To do this, she may involve them in performing Maths Lab Activity.
- Henceforth, the teacher should encourage them to sketch a solid figure on the square/ isometric dot paper. For text and exercise, she should go to pages 168–170.

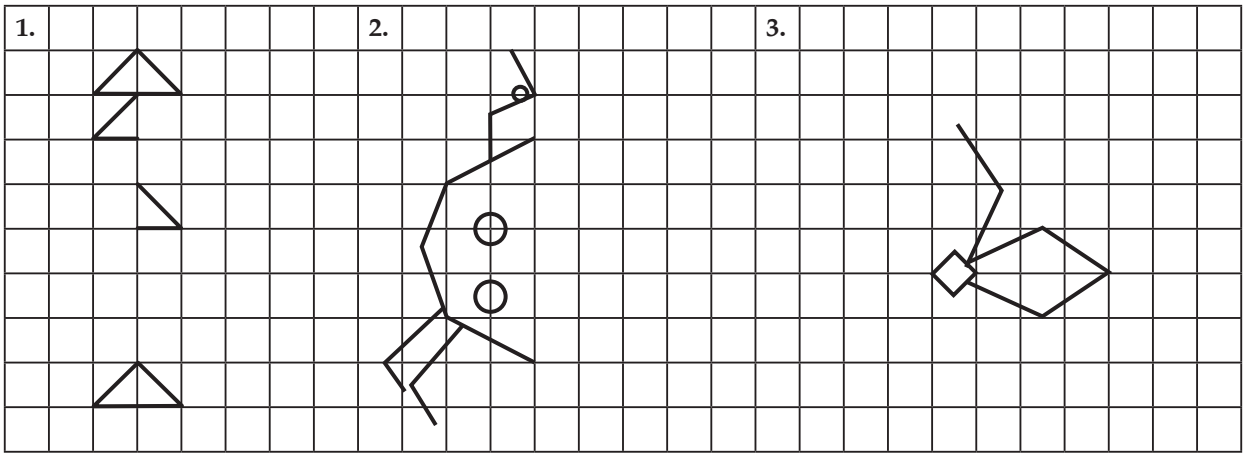
EXPECTED LEARNING OUTCOMES

Students are able to

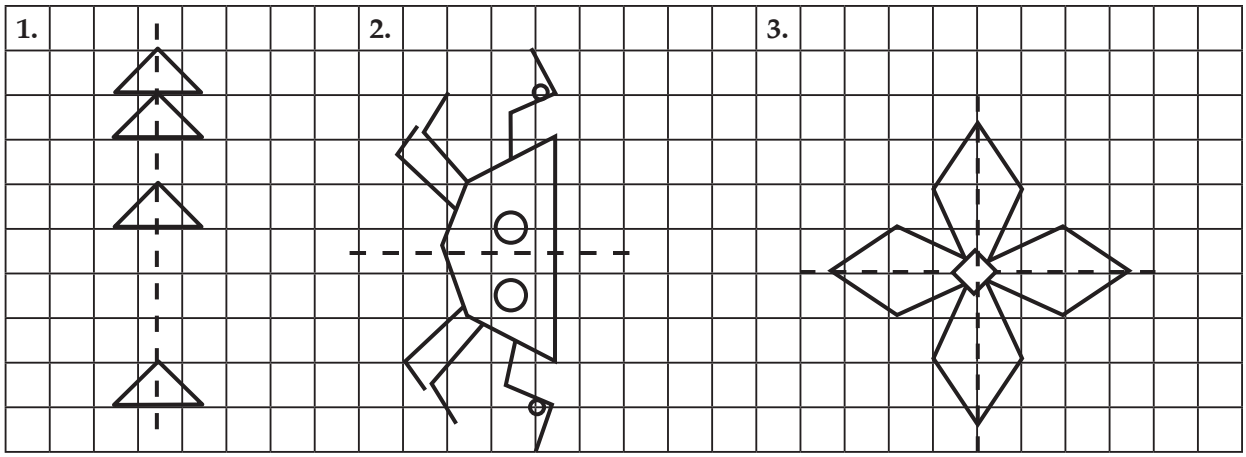
- recognise the figure with more than one lines of symmetry.
- get the mirror image of a figure using the idea of reflection.
- form patterns using the rotation.
- find out the order of rotational symmetry.
- develop the number patterns.
- understand square/triangular numbers.
- recognise the nets of some simple solids.
- form a solid shape using its nets.
- sketch a 3-D solid on the square/isometric dot paper.

SUGGESTED WORKSHEET

A. Finish these three designs which has one line of symmetry. Which has more than one lines of symmetry?

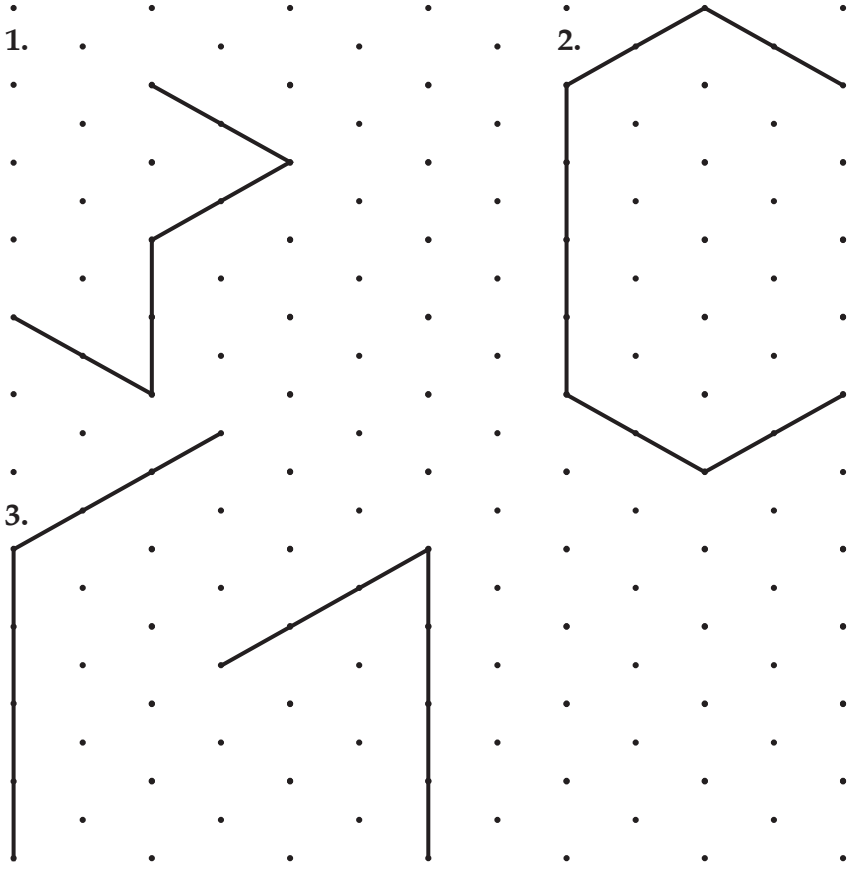


Ans.



Make some patterns using rotations symmetry.

B.



Ans. Do it yourself.