

STEM from Home

Symmetry

Have you ever wondered how many symmetrical objects do you encounter from the moment you wake up to the moment you go back to sleep? From the screen of a television to a tubelight, from toothbrush to bucket, from a plate to drinking glass, even animals to humans, almost everything is symmetrical.

Symmetry means that when we flip, turn, or slide one shape, it becomes exactly like the other. Have you ever pondered what a flower would look like if certain petals on one side were longer or shorter than others? Or how would insects appear if they had some longer legs or one antenna that was longer than the other?

Yes, symmetry enhances the beauty of nature, ourselves, and our surroundings. Symmetry is found in nature, in art, in common objects, in letters and more but many people often do not recognise it. Examples of symmetry in the world would be butterflies, flowers, feathers, some insects, animals, buildings. Art and Math go hand-in-hand.

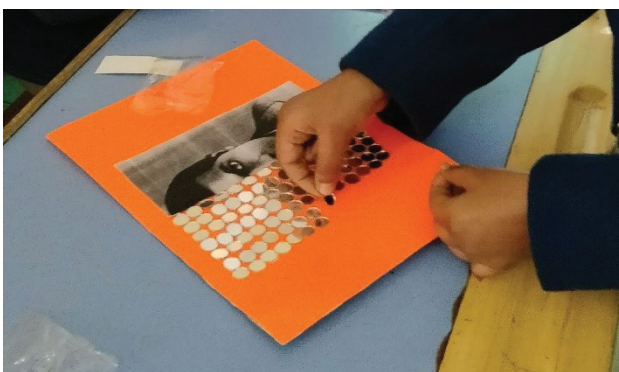


In this STEM card, you will learn how to create a book on symmetrical things using bookcreator, you will integrate Mathematics with EVS in the bonus activity, and in the challenge activity, you will explore Art in Mathematics by designing a stained glass symmetrical pattern.

Main Activity: **Mirror-Mirror in the Card**

Introduction

Anything with two opposing halves is symmetrical. In other words, [symmetrical](#) shapes have one side that is the same as the other along a specific axis. The axis or line of symmetry can be horizontal, vertical, or oblique. As a result, symmetrical shapes appear identical when reflected. This is also known as reflective symmetry.



What Will You Need

- Small mirrors (30 - 40) of any shape – round or diamond
- Sketch pens
- One A4 size sheet
- Fevicol
- Picture of your favourite personality
- A pair of Scissors

What Will You Learn?

- You will discover how symmetry affects our lives and how an object or image appears beautiful as a result of symmetry.

- In everyday language, symmetry refers to a sense of harmonious and beautiful proportion and balance. [Refer to the activity](#) and get started.

Try It

It's time to hunt and capture symmetrical things around yourself and create a [picture book](#) of the same in [bookcreator](#).

Bonus Activities

Activity 1: Leaf Symmetry

If you explore nature, you will be able to see many examples of symmetry like flowers, leaves, butterflies, beetle, pine cone, etc. In this activity, you will observe and understand the symmetry in leaves and also learn about different parts of leaves.

What You Will Need:

- Leaves of different shapes
- Drawing sheets
- Scale
- Pencil
- Scissor
- Cellotape

How Will You Do

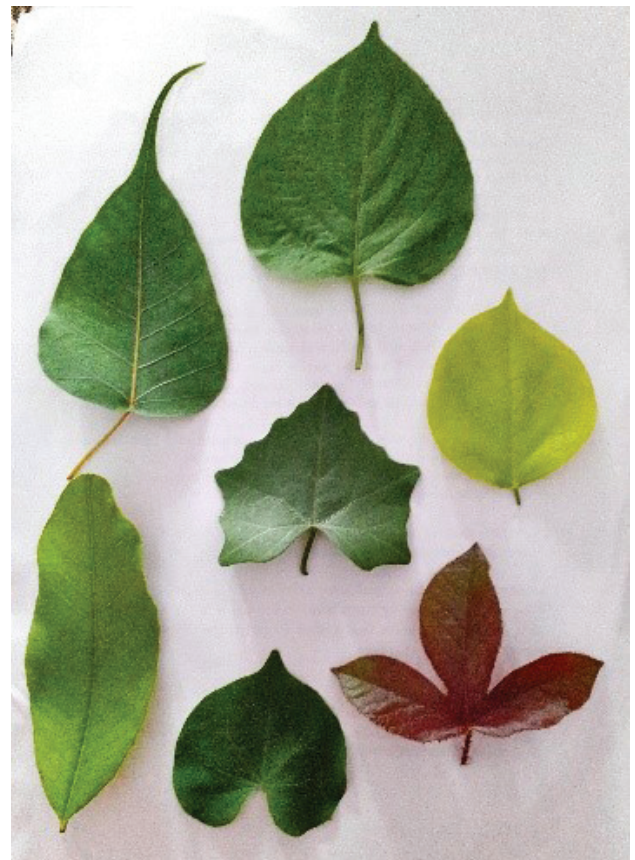
- Have you ever tried to recreate the other half of a symmetrical object by drawing ? If your answer is no , get ready to do it now.

Refer [here](#) for the activity steps.

Try It

Once you have explored symmetry in different leaves, try to identify different parts of the leaf.

Take any leaf and label different parts of it like main vein, lamina, leaf margins, petiole. Refer to this [image](#).



Challenge Activity: Stained Glass Symmetry

Have you ever been to any archaeological sites, monuments, or places of worship? You've most likely seen stained glass windows with lovely symmetrical designs. In the challenge exercise, you will use a range of geometric shapes and lines to create a symmetrical design for your study room window.

What You Will Need:

- Glass
- Glass colours
- Drawing sheet
- Pencil
- Glass Pencil
- Glass outliner (black)
- Masking tape



How Will You Do:

Read [here](#) for cautions.

Follow these steps to create a symmetrical design glass.

Step 1: Think of a design or a symmetrical pattern. Draw your design on paper first. Be creative. Give wings to your imagination.

Step 2: Keep the glass over the paper and with the help of a glass pencil, trace your pattern on glass / transparency sheet.

Step 3: Draw the outline using glass outliner. After it gets dried, make your design colourful using glass colours.

Step 4: After completing your activity, remove masking tape, click the photograph and upload it on [google docs](#).

Your symmetrical design glass is ready.