

MAKER EXCHANGE

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activity

SYMMETRY CHALLENGE

THE CHALLENGE:

Complete a drawing or create your own by using different types of symmetry.



RECOMMENDED AGE

Ages 8 and up

TIME NEEDED

30 minutes-1 hour

TOOLS & MATERIALS

- Symmetry Challenge Handouts
- Pencil
- Coloring materials (optional)

QUESTIONS TO CONSIDER

- How is symmetry in art and math similar?

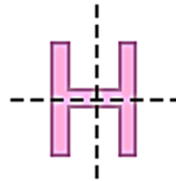
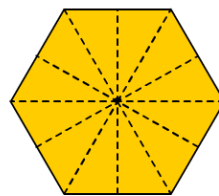
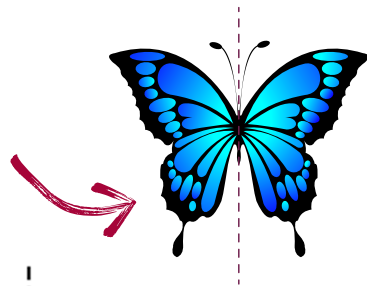


GETTING STARTED - INSTRUCTIONS

STEP 1: UNDERSTANDING SYMMETRY

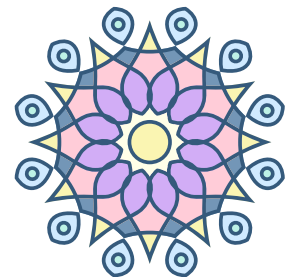
Symmetry means that one side matches or mirrors the other side.

This line of symmetry divides a symmetrical shape in half.



An object may have more than one line of symmetry.

Radial symmetry means the same design radiates from a center point just like a mandala.



Symmetrical balance in art is when each half of the artwork is identical or very similar. Artists can use symmetry to provide a pleasing and balanced image.



Cutout of Animals
American 19th Century (artist)



Flower Day (Día de Flores)
Diego Rivera (Mexico, 1886-1957)

To redeem your secret code, or to sign up for the Summer Reading Challenge, visit Corona.Bookpoints.org

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SYMMETRY CHALLENGE

KEY TERMS 🔍

- Symmetry
- Radial Symmetry
- Assymetrical balance

SIMPLIFY ⚖️

To better understand symmetry, fold a paper in half and write your name along the folded edge. Cut around the name along the non-folded edge. Unfold and observe the symmetrical shape you created.



EXTRA CHALLENGE ➕

Try creating a mandala without a grid.

RELATED RESOURCES 🔍

- Online Symmetry Tool: <https://www.mathsisfun.com/geometry/symmetry-artist.html>
- Symmetry Practice: <https://pbskids.org/peg/games/symmetry-painter>

INSTRUCTIONS CONTINUED...

Asymmetrical balance is when two sides are not identical. However, the elements are arranged so that there is still a sense of balance.

Strong bright moon on the top right



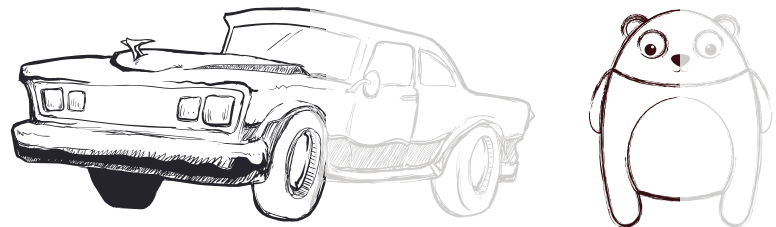
Tall dark structure on the left

STEP 2: SYMMETRY PRACTICE

We have created three different symmetry challenge handouts for you to try. Work your way through them starting with Handout 1 or simply choose which one you would like to try. If unable to print, we suggest visiting the related resources links for digital practice, trying the simplified activity or moving onto Step 3.

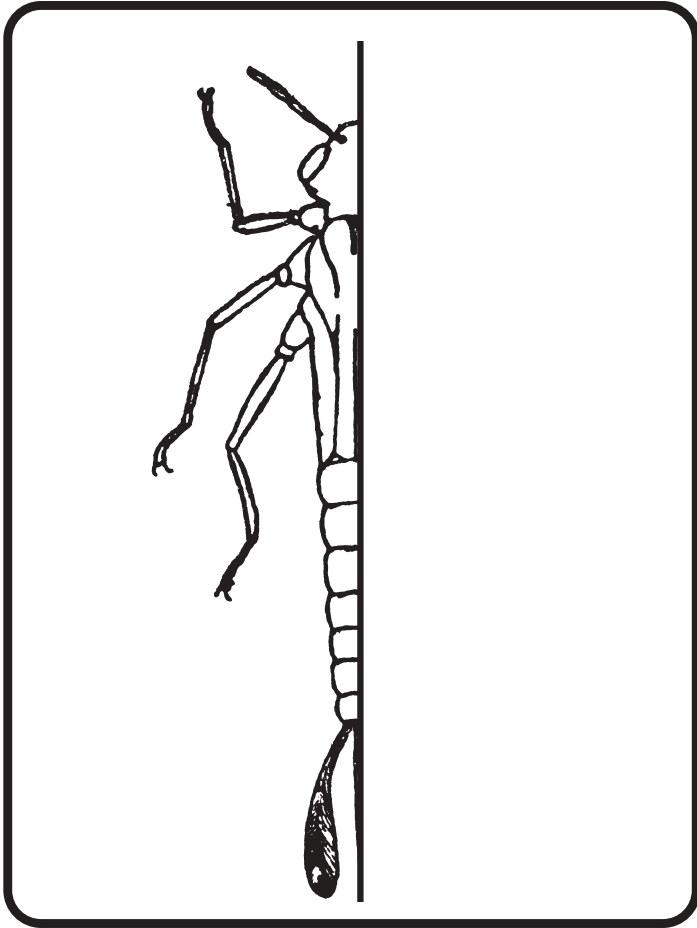
STEP 3: CREATE YOUR OWN

Create your own challenge by drawing only a portion of a drawing. Challenge others to complete it.



Symmetry Challenge: Handout 1

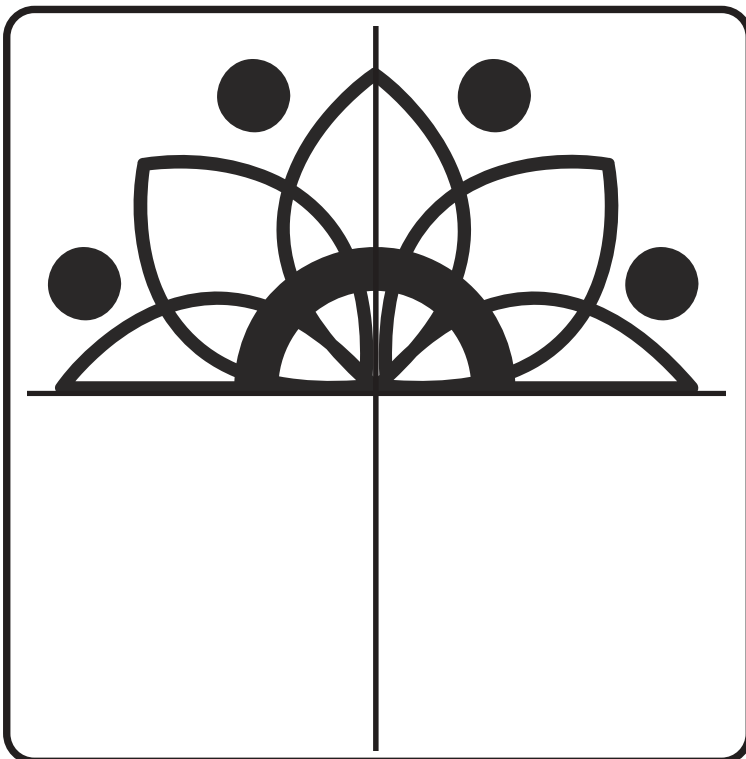
SYMMETRY



Complete the drawing by reflecting the image on the left of the line to the right of the line.



Create an asymmetrical leaf by completing the drawing. Remember to balance the left and right side without mirroring the image.



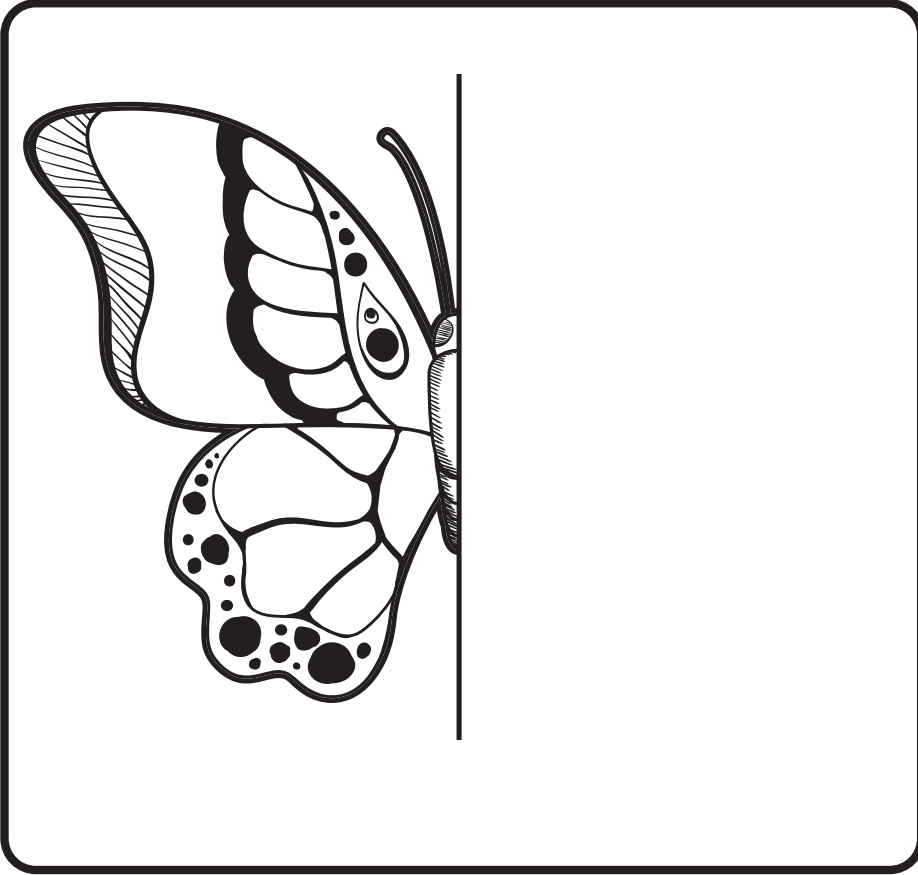
RADIAL SYMMETRY

This drawing has been divided into four parts. The top two parts are done for you. Copy the design to the bottom parts (left and right).

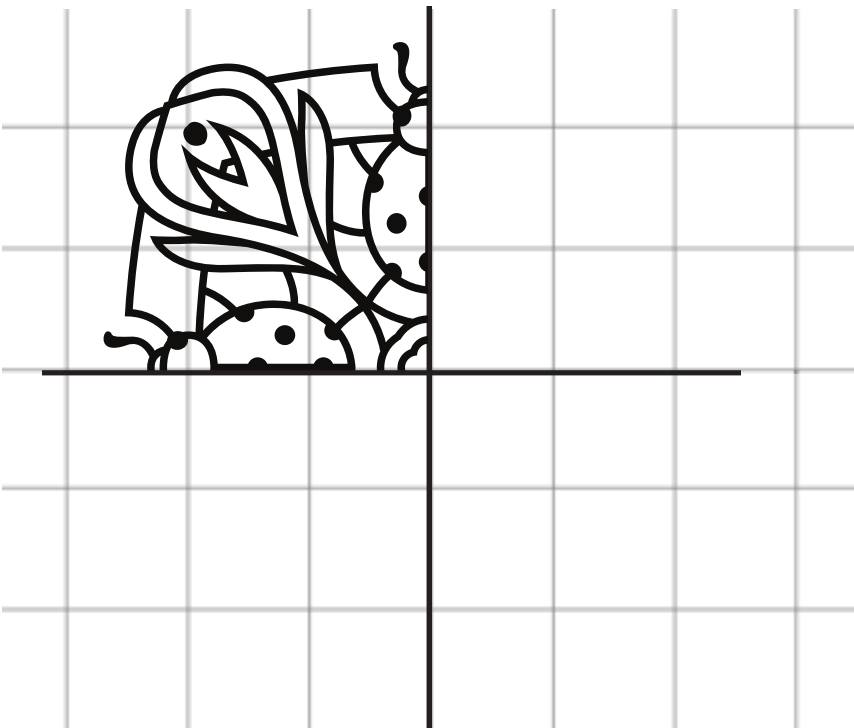
Hint: Start by focusing on one shape at a time.

Symmetry Challenge: Handout 2

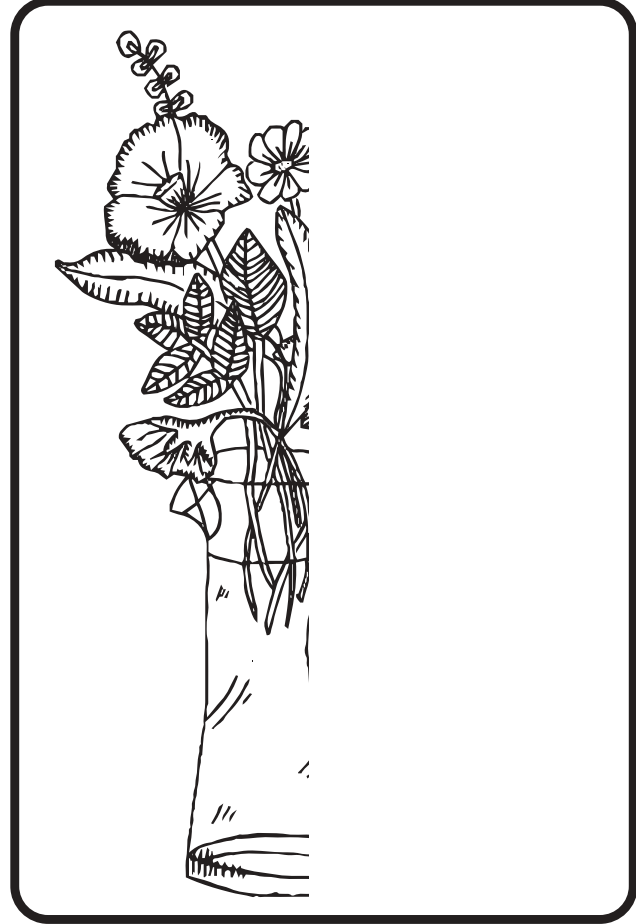
SYMMETRY



Complete the drawing by reflecting the image on the left of the line to the right of the line.



ASYMMETRY



Create a vase by completing the drawing. Remember to balance the left and right side without mirroring the image. Try adding a handle to the vase and different shaped flowers.

RADIAL SYMMETRY

This drawing has been divided into four parts. The top left part is done for you. Copy the design onto the other three parts to create a mandala. The grid is there to be used as a guide.

Hint: A ladybug should face up, down, left, and right.

Symmetry Challenge: Handout 3

RADIAL SYMMETRY: CREATE YOUR OWN MANDALA

Mandalas are made of repeated patterns. Use the guidelines to add shapes around the circle. Start with basic geometrical shapes and then add more organic complex shapes. Remember that the same design has to radiate from a center point.

