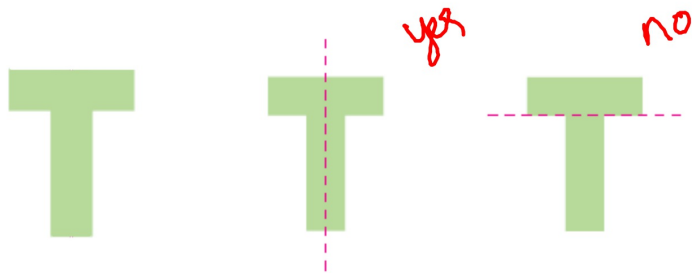


# LAUNCH

What is symmetry?

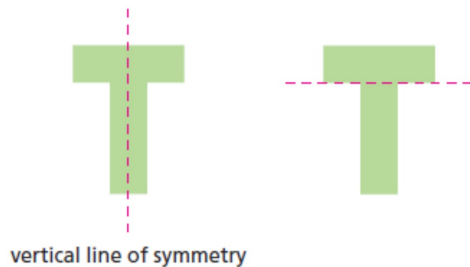
Does the capital letter T have symmetry?



## Definition

When you can fold a figure in half so that the two halves fit exactly on top of each other, the shape is **symmetric**. The line that contains the fold is a **line of symmetry**.

For example, the vertical line through the first letter T below is a line of symmetry. The horizontal line through the second T is not a line of symmetry even though it divides the T into two identical parts. If you fold the T along the horizontal line, the two halves will not fit exactly on top of each other.



## 1.1

### Getting Started

Objectives:

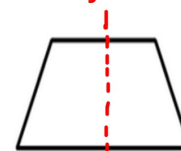
- Warm up to the ideas of the investigation.
- Use a visual approach to develop mathematical habits of mind.



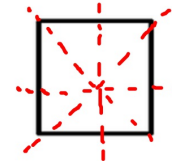
Do these quadrilaterals have symmetry?  
Cut out the shapes and check for lines of symmetry.



How many lines does each have? (draw them):



This trapezoid - 1 line of symmetry



Square - 4 lines of symmetry



This Parallelogram - No symmetry

## Wrap Up:

Draw one figure to fit each description

1. Has no lines of symmetry
2. Has only one line of symmetry
3. Has exactly two lines of symmetry

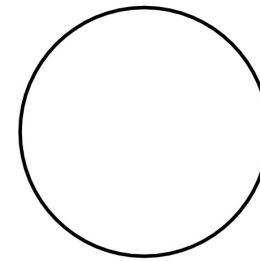
## Homework: p.9 (3,4, & 6)

3. Which other letters are symmetric? Which letters are both horizontally symmetric and vertically symmetric?

**A B C D E F G H I J K L M**  
**N O P Q R S T U V W X Y Z**

Challenge: What is the longest word you can create that is symmetric?

4. Describe the lines of symmetry of a circle.



6. Classify each quadrilateral below by the number of lines of symmetry it has. Draw the lines of symmetry of each quadrilateral. Look for various kinds of lines of symmetry.



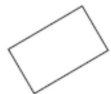
arbitrary quadrilateral



square



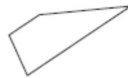
kite



rectangle



parallelogram



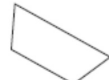
trapezoid



rhombus



concave kite



isosceles trapezoid