

MA.3.GR.1.3

Overarching Standard: *MA.3.GR.1 Describe and identify relationship between lines and classify quadrilaterals.*

Benchmark of Focus

MA.3.GR.1.3: Draw line(s) of symmetry in a two-dimensional figure and identify line- symmetric two-dimensional figures.

Benchmark Clarifications

Clarification 1: Instruction develops the understanding that there could be no line of symmetry, exactly one line of symmetry or more than one line of symmetry.

Clarification 2: Instruction includes folding paper along a line of symmetry so that both halves match exactly to confirm line-symmetric figures.

Related Benchmark/Horizontal Alignment

- MA.3.FR.1.1
- MA.3.AR.3.1

Vertical Alignment

Previous Benchmarks	Next Benchmarks
MA.2.GR.1.3	MA.6.GR.1.1 MA.8.GR.2.1

Terms from the K-12 Glossary

- Line of Symmetry

Purpose and Instructional Strategies

The purpose of this benchmark is for students to draw lines of symmetry and identify line- symmetric figures. In Grade 2, students identify lines of symmetry in a two-dimensional figure by partitioning (e.g., folding) it and matching its halves. In addition, students in Grade 3 also developed the understanding that a figure can have no lines of symmetry, exactly 1 line of symmetry, or more than 1 line of symmetry.

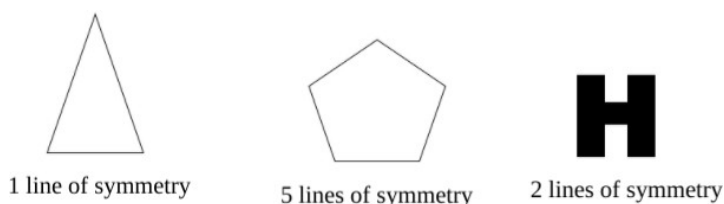
- During instruction, teachers should continue encouraging students to partition figures and match their halves to identify line(s) of symmetry (K12.MTR.2.1).
 - Instruction can also ask students to build generalizations about which two-dimensional figures are line symmetric and why. For example, students could argue that all squares share similar defining attributes and only differ in size, therefore all squares will be line- symmetric (K12.MTR.2.1, K12.MTR.4.1).
 - Instruction builds a foundation for exploring reflections in middle school.
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Common Misconceptions or Errors

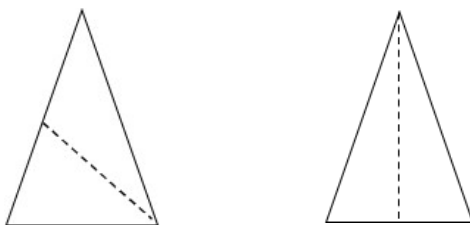
- Students can miss identifying all lines of symmetry in line-symmetric figures. Encourage classroom discussions and have students justify their arguments about lines of symmetry using their partitioned representations.

Strategies to Support Tiered Instruction

- Teacher provides figures that have at least one line of symmetry and tells how many lines of symmetry the figure has. Students draw lines to show where the lines of symmetry would be.
 - For example, the teacher provides students with images similar to those shown below and has students draw the number of lines of symmetry given and explain how they know the lines they draw are lines of symmetry.



- Teacher provides a figure partitioned in different ways with dotted lines. Students fold the image along the dotted line and determine if it is a line of symmetry (do the two sides match).
 - For example, the teacher gives a triangle like the one shown below. Students fold along the dotted lines and determine if it shows a line of symmetry or not.



Questions to ask students:

- **Point to a shape and ask the student to draw the lines of symmetry. Ask them to explain how they know they are lines of symmetry.**
 - Sample answer that indicates understanding: *Student correctly draws the number of lines of symmetry that the shape has (could be none, could be one, or could be more than one). I know these are lines of symmetry because if I fold the shape along the line I drew, both sides of the shape would match up exactly.*
- **Do all shapes have lines of symmetry?**
 - Sample answer that indicates understanding: *No, some shapes have no lines of symmetry, and some shapes have one or more line of symmetry.*
- **Can you name a shape that you know always has at least one line of symmetry?**
 - Sample answer that indicates understanding: *I know a square always has lines of symmetry because a square has equal sides, no matter what size the square is. I can fold a*

square in half multiple ways to show lines of symmetry. A square always has more than 1 line of symmetry.

- **Point to a shape and ask how many lines of symmetry the shape has?**
 - Sample answer that indicates understanding: *The student correctly draws and identifies all lines of symmetry.*
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Instructional Tasks

Instructional Task 1

Mika says that the uppercase letter H below has 1 line of symmetry. Errol says that the uppercase letter H has 2 lines of symmetry. Who is correct? Show your thinking.



Instructional Items

Instructional Item 1

Select all the figures that have at least one line of symmetry.

a. 

b. 

c. 

d. 

e. 

Instructional Item 2

How many lines of symmetry does the following figure have?



Instructional Item 3

A figure is shown. How many lines of symmetry does the figure have?



Achievement Level Descriptors

Benchmark		Context	Assessment Limits
MA.3.GR.1.3 Draw line(s) of symmetry in a two-dimensional figure and identify line-symmetric two-dimensional figures. Clarification 1: Instruction develops the understanding that there could be no line of symmetry, exactly one line of symmetry or more than one line of symmetry. Clarification 2: Instruction includes folding paper along a line of symmetry so that both halves match exactly to confirm line-symmetric figures.		Mathematical	Items may include common objects.
ALD 2	ALD 3	ALD 4	ALD 5
draws a single line of symmetry in a two-dimensional figure.	draws two or more lines of symmetry for two-dimensional figures.	draws line(s) of symmetry in a two-dimensional figure and identifies line-symmetric two-dimensional figures.	determines the number of lines of symmetry in a two-dimensional figure and completes a partial figure given a line of symmetry.

Additional Resources:

[CPALMS Resources](#)

Resources/Tasks to Support Your Child at Home:

Look for real-world objects in books, around your home, or at the store, that have lines of symmetry. Have your child trace or redraw the shapes and draw all the lines of symmetry they can find. Encourage them to fold their shapes to prove and explain how they know they shapes are line symmetric.

Khan Academy: [Symmetry Review](#)

Sheppard Software Online Game: [Lines of Symmetry](#) – your child will identify shapes with one or more lines of symmetry

IXL Math: [Line Symmetry Practice](#) – your child will identify the lines of symmetry that each shape has