

MA.2.GR.1.1

Overarching Standard: MA.2.GR.1 *Identify and analyze two-dimensional figures and identify lines of symmetry.*

Benchmark of Focus

MA.2.GR.1.1: Identify and draw two-dimensional figures based on their defining attributes. Figures are limited to triangles, rectangles, squares, pentagons, hexagons and octagons.

Benchmark Clarifications

Clarification 1: Within this benchmark, the expectation includes the use of rulers and straight edges.

Related Benchmark/Horizontal Alignment

- MA.2.FR.1.1

Vertical Alignment

Previous Benchmarks

MA.1.GR.1.1
MA.1.GR.1.2

Next Benchmarks

MA.3.GR.1.2

Terms from the K-12 Glossary

- Hexagon
- Octagon
- Pentagon
- Polygon
- Rectangle
- Square
- Triangle

Purpose and Instructional Strategies

The purpose of this benchmark to build on the work of grade 1 by including the task of drawing specific two-dimensional figures based on a defined attribute. At this grade level, five- and eight-sided figures have been included and a ruler would be used to create straight edges.

- Instruction includes exposure to a variety of examples and non-examples that lack a defining attribute.
- Instruction includes defining attributes such as numbers of sides, sides of equal length or number of vertices, whether they are closed or not and whether the edges are curved or straight

Common Misconceptions or Errors

- Students may misidentify a figure based on a non-defining attribute.
- Students may not recognize figures that have been rotated or that are irregular.

Strategies to Support Tiered Instruction

- Teacher provides a geoboard for students to make a series of closed shapes, following instructions like make a closed shape with three straight sides and three corners or a closed shaped with 5 straight sides and 5 corners. Students use the geoboard and draw a picture of the shape. Teacher asks questions like, “How did you know to make this shape?” to draw attention to the defining attributes. It may be helpful to have students compare their shapes with other students.

- Example:



- Teacher provides a geoboard to make a series of closed shapes (i.e., a closed shape with three straight sides and three corners, a closed shaped with 5 straight sides and 5 corners).
 - For example, students draw a picture of the shape. Teacher asks questions like, “How did you know to make this shape?” to draw attention to the defining attributes. Teachers may limit the type of shapes students work with at this level.
- Instruction includes opportunities to build shapes on a geoboard as the teacher calls out defining attributes (i.e., “make a two-dimensional figure with three vertices”). After creating a correct figure, the teacher has students rotate the geoboard 90 degrees to see that it is still the same figure.

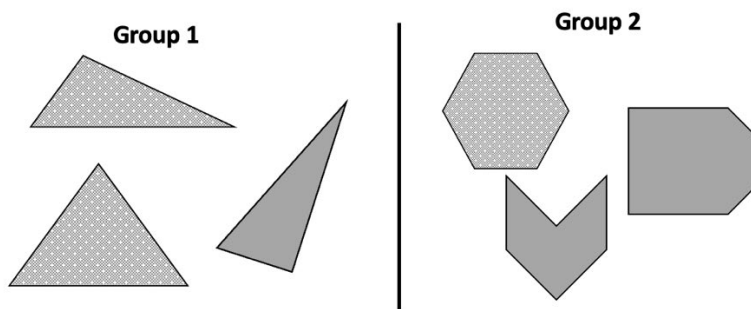
- Example:



- Teacher provides similar instruction from above but limits the amount and types of shapes students build on a geoboard (i.e., only build a square or triangle).

Questions to ask students:

- **Give the student a set of 2-d shapes, including triangles, rectangles, squares, pentagons, hexagons, and octagons, and ask them to group the shapes by their number of sides and vertices. Then have them name each group of shapes.**
 - Sample answer that indicates understanding: *The student to correctly groups shapes based on their sides and vertices. The student correctly names each group of shapes.*
 - Sample answer that indicates an incomplete understanding or a misconception: *The student may be able to sort the shapes correctly but struggles naming each set of shapes according to the number of sides and vertices.*
- **Ask the student to draw or build a pentagon. Have them explain why it is a pentagon.**
 - Sample answer that indicates understanding: *The student correctly draws a pentagon and then explain that it is a pentagon because it has 5 sides and 5 vertices.*
- **How are the following shapes categorized/grouped? Describe the defining attributes of each group.**




- Sample answer that indicates understanding: *All the shapes in group 1 have 3 sides and 3 vertices. Even though the lengths of the sides are different, they are all triangles. All the shapes in group 2 have 6 sides and 6 vertices. All the shapes in group 2 are hexagons.*

Instructional Tasks

Instructional Task 1

Provide pairs of students with figure cards, geoboards and rubber bands. Students will play a game of “describe and build” to support identifying figures.

- Part A: Partner A uses the figure card to describe a two-dimensional figure. As Partner A describes the figure Partner B uses the geoboard to construct the figure that is described. Neither partner should be able to see each other’s card or geoboard.
- Part B: Once Partner B has constructed the figure based on the defining attributes, the partners finish by comparing the figure on the figure card to the figure that was created. Discussion should include language about specific defining attributes.

Defining Attributes	Possible Figures
<ul style="list-style-type: none"> • Closed figure • Three sides • Three vertices 	

Enrichment Task 1

Part A: Partition a regular hexagon into two or three equal parts.

Part B: Partition a regular octagon into two, four or eight equal parts.

Instructional Items

Instructional Item 1

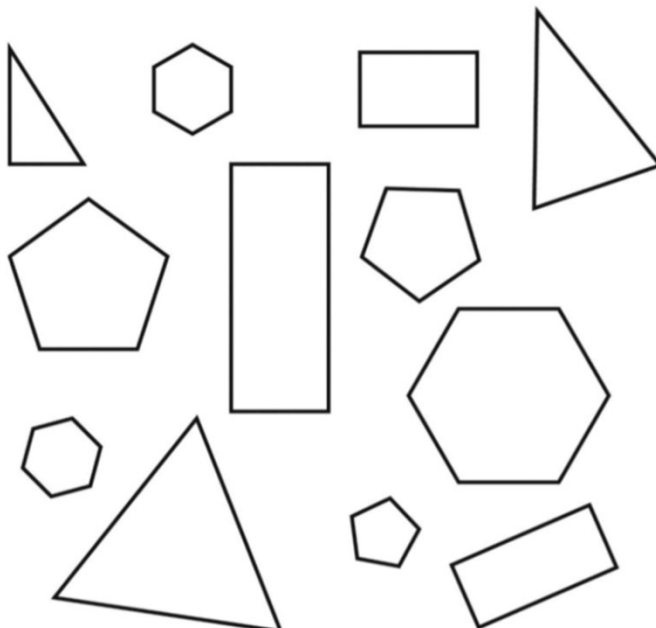
Which word best identifies the figure below?



- a. Triangle
- b. Pentagon
- c. Hexagon
- d. Square

Instructional Item 2

1. Use your red crayon to draw a circle around all the pentagons.
2. Use your green crayon to draw a circle around all the triangles.
3. Use your blue crayon to draw a circle around all the hexagons.
4. Use your orange crayon to draw a circle around all the rectangles.



Additional Resources:

[CPALMS Resources](#)

Resources/Tasks to Support Your Child at Home:

[Two Dimensional Shapes](#) uses precise vocabulary to teach students about attributes of two-dimensional shapes and their names: <http://bit.ly/2J2OWy7>

Play I-Spy with shapes in the car or at home. Try using defining attributes in your descriptions and have your child guess the shape you are describing using its name. Street signs are made up of geometrical figures, so are tile floors!

Students can use this [online Geoboard](#) to draw two-dimensional shapes. Your child can make triangles, rectangles, squares, pentagons, hexagons and octagons. To make the game challenging, turn your shape name into a riddle. Example: I'm thinking of a closed shape with 6 vertices and 6 sides. Create my shape: <http://bit.ly/2yLrSzg>