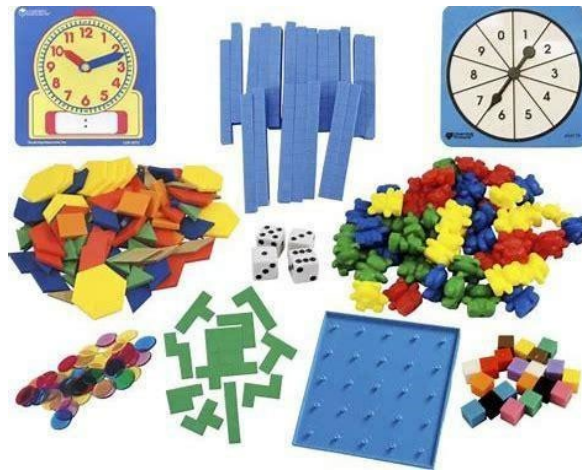




MISSISSIPPI
DEPARTMENT OF
EDUCATION

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Mississippi Mathematics Manipulatives Manual Featured Activity



“Identifying Polygons”

5.G.3

Spring 2021

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As we continue our efforts to develop high-quality instructional materials (HQIM) and resources, the Mississippi Department of Education (MDE), through the Academic Education Office, would like to showcase instructional practices and activities that foster conceptual understanding through the use of manipulatives in the mathematics classroom.

The **Mississippi Mathematics Manipulatives Manual** features activities meant to serve as short, hands-on procedures that may be implemented before, during, or after a lesson to support the teaching and learning process of the Mississippi College- and Career-Readiness Standards (MCCRS) for Mathematics. Alignment with the MCCRS Scaffolding Document has been included for additional support. Teachers may contact staff at the MDE if they would like to borrow manipulatives for classroom use.

Teachers may modify these activities to meet the needs of the students they serve and their instructional delivery model (virtual, in-person, or hybrid).

Special Thanks:
Rebecca A. Victor, MS,
Holmes County Consolidated School District

Identifying Polygons

MANIPULATIVE(S):

- Polygons
- Cardstock



GRADE LEVEL OR COURSE

TITLE:

CCR Mathematics Grade 5

DOMAIN AND CLUSTER HEADING:

Geometry (G):

Classify two-dimensional figures into categories based on their properties

STANDARD(S):

5.G.3: Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.*

PREREQUISITE SKILLS:

- Know basic geometric concepts such as points, lines, line segments, rays, and angles.
- Know special types of lines including parallel and perpendicular lines.
- Know angles are obtuse, acute, or right.
- Know polygons are closed figures with straight sides. There are many different types of polygons, and each is named based its number of sides and angles.
- Know polygons can be classified based on attributes. There can also be a hierarchy for certain polygons.
- Know the attributes of these quadrilaterals: square, rectangle, trapezoid, and rhombus. *For example, a trapezoid is a quadrilateral with at least 1 pair of parallel sides.*

ACTIVITY:

Note: Activity Sheets Attached

1. **Prior to the lesson:** Using cardstock, print, laminate, and cutout the polygons and name labels from the Activity Sheet: Identifying Polygons activity. Place each set of polygons and labels in an envelope. Be sure to prepare enough for all students in the class to participate. **Note:** *This activity will require students to be partnered or placed in small groups.*
Alternative: Prepare to provide students with a copy of the Activity Sheet: Identifying Polygons, construction paper, glue, and scissors.
2. In a whole group, review with students the different polygons and their attributes.
3. Next, divide the class into small groups of a maximum of three students and distribute the “Identifying Polygons” envelopes to each group.
4. Allow students discuss the attributes of each polygon to match the correct quadrilateral with its name.
5. While students are working on matching, circulate the room to ensure students are matching correctly. If students appear not to be on the right track, pose purposeful questions to guide students to correcting their mistakes.
6. Once all students have completed the “Identifying Polygons” matching activity, review the activity whole group to ensure all groups have identified the polygons correctly.
7. Following the review, distribute the worksheet on polygons to each student. Allow students to use the correct “Identifying Polygons” match to complete the “Polygons” activity.

QUESTIONS TO CONSIDER:

- What is a polygon?
- What are attributes?
- What are the attributes of a quadrilateral?
- What are the different types of quadrilaterals?

RESOURCES:

- [Mississippi Mathematics Scaffolding Document](#) (Grade 5, Pages 62-63)
- [2016 MCCRS for Mathematics](#)
- [Polypad](#)- Mathigon
- [Paper Magic: Folding Polygons](#)- STEM Learning

Optional: The University of Mississippi's Center for Mathematics and Science Education has an extensive inventory of math (and science and technology) tools and manipulatives that

teachers may borrow for classroom use at no charge. Click the link below to access the inventory list and complete a check-out request.

- [CMSE Manipulatives](#)

BEYOND THE ACTIVITY:

- **Accommodation(s):** For lower performing students, the teacher may provide a reference sheet or other type of visual aide.
- **Extension(s):** Have students to create an original piece of artwork using the different polygon shapes given in the activity. *(See Resources section for sample lesson entitled “Paper Magic: Folding Polygons” by STEM Learning)* **Note:** Free registration required.

Activity Sheet: Identifying Polygons

Triangle

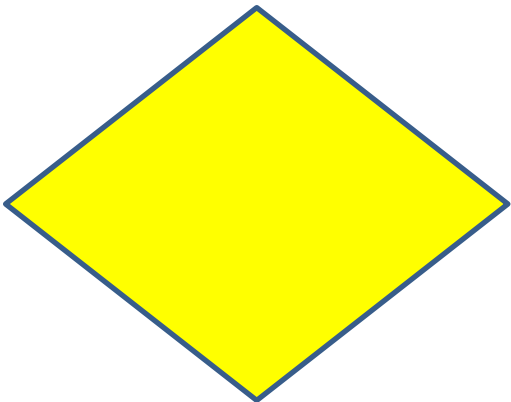
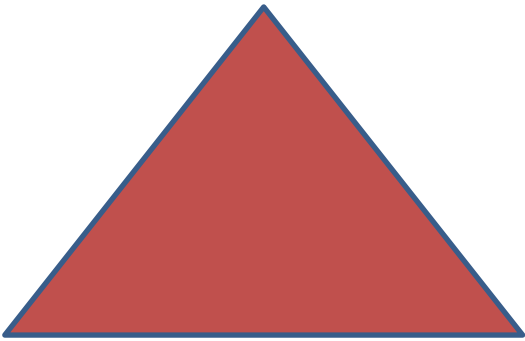
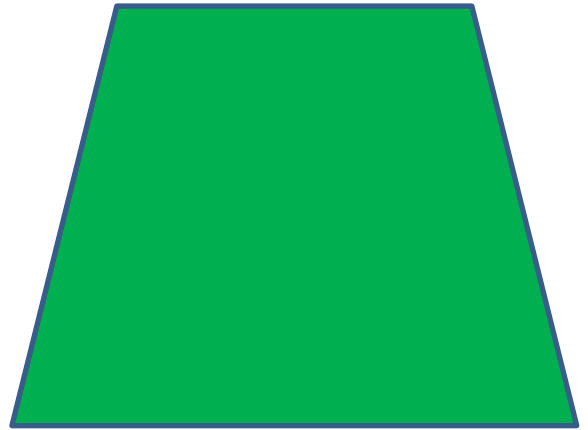
Trapezoid

Parallelogram

Rhombus

Rectangle

Square



Activity Sheet: Polygons

Name:
.....

Date.....
Grade.....

Use the polygons sorted on your white board to answer the following questions.

1. Which polygon doesn't seem to belong to the group? Support your answer with attributes of the polygon.

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2. How many pairs of parallel lines does a rhombus have?

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3. How many pairs of parallel lines does a trapezoid have?

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4. How did you identify the rectangle?

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5. What are the attributes of a square?

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6. What is the difference between a square and a rectangle?

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7. What do you see in common between a square and a rhombus?

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8. What is the difference between a parallelogram and a square?

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9. When does a rhombus become a square?

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10. Can all squares be categorized as rectangles? Explain.

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