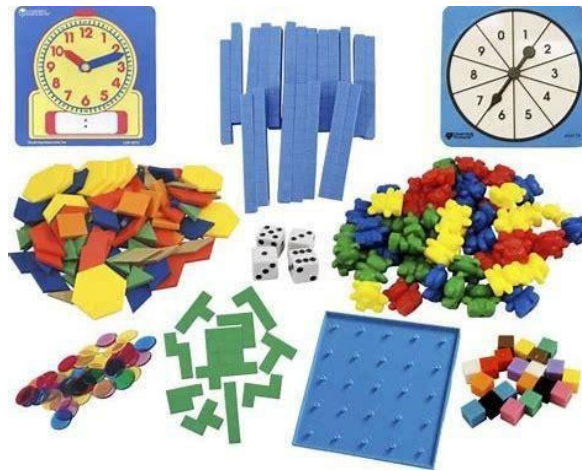![Mississippi Department of Education logo — Ensuring a bright *future* for every child]

Mississippi Mathematics Manipulatives Manual
Featured Activity

"Polygons: Who Am I?"

5.G.3

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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).

Polygons: Who Am I?

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

Prior to the lesson:

- Using cardstock, print, laminate, and cutout the "Who am I?" cards front and back. Place each set of cards in a separate envelope or clip them together.
- In a separate envelope, include one of each quadrilateral polygon.
- 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 of no more than 3.***

1. In a whole group, review with students the different quadrilaterals and their attributes.
2. Next, divide the class into small groups of a maximum of three students.
3. Distribute a set of "Who am I?" cards and an envelope containing the polygons to each group.
4. Have the students evenly distribute the "Who am I?" cards among the group
   a. If students have been placed in pairs, have each student in the class select three of the six cards in the set.
   b. If students have been placed in groups of three, have each student in the class select two of the six cards in the set.
5. Begin the activity by having one student in each group start reading the "Who am I?" question from the cards they have in their hand. The student who has the correct name of the polygon will stand, identify the polygon, and read a "Who am I?" question from the back of that answer card.
6. Allow students to use the polygons in the envelope as a visual reference for the verbal descriptions.
7. Students will repeat the process in step five until all "Who am I?" questions have been answered.
8. In whole group, review the answers with students. Allow students to use the manipulatives to justify their answers.

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: "Who am I?"

FRONT	BACK
I have 3 sides. Who am I?	**RHOMBUS**
I have one pair of parallel sides. Who am I?	**TRIANGLE**
I have all sides equal and all angles equal. Who am I?	**TRAPEZOID**

I have opposite sides equal and parallel, and all angles are equal. Who am I?	**SQUARE**
I have opposite sides equal and parallel who am I?	**RECTANGLE**
I have all sides equal, but all angles are not equal who am I?	**PARALLELOGRAM**