

Next Steps and Instructional Moves

The intended purpose of this document is to provide teachers with a tool to determine student understanding and suggest instructional moves that may help guide a student forward in their learning of a concept or standard. This guide is not an exhaustive list of strategies.

Third Grade: Cluster 5 Geometry Shapes and Attributes

NC.3.G.1 Reason with two-dimensional shapes and their attributes.

- Investigate, describe, and reason about composing triangles and quadrilaterals and decomposing quadrilaterals.
- Recognize and draw examples and non-examples of types of quadrilaterals including rhombuses, rectangles, squares, parallelograms, and trapezoids.

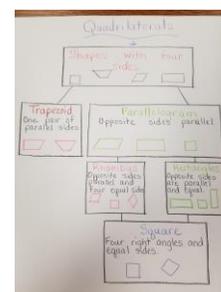
Not Yet

Students that are consistently scoring “Not Yet” on geometry tasks could have a variety of errors. Students may have difficulty naming the attributes of different shapes due to lack of knowing vocabulary. Students may have difficulty composing and decomposing triangles and quadrilaterals. In addition, they may struggle with manipulating shapes to create composite shapes. Students may have difficulty recognizing and drawing examples or non-examples of types of quadrilaterals.

Next Steps:

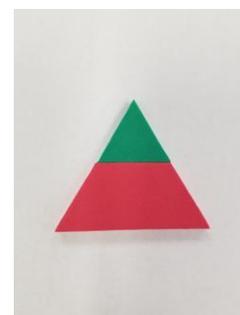
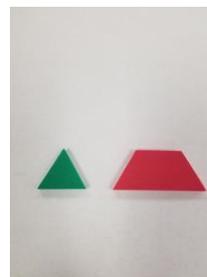
For students having trouble with understanding and using correct vocabulary:

- Provide opportunities for students to explore shapes and facilitate discussions about vocabulary such as polygon, the names of shapes, sides, and vertices.
- Create a word bank or anchor chart of attributes with students that they can refer to during tasks.
- Provide students with tasks and physical shapes to identify attributes and sort shapes based on attributes.
- Creating and sorting triangles [lesson](#)
- Introduction to sorting quadrilaterals [lesson](#)

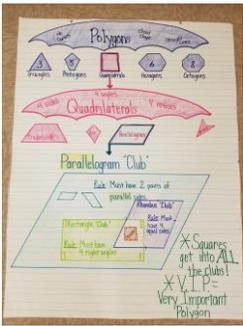


For students having difficulty composing and decomposing triangles and quadrilaterals and manipulating shapes to create composite shapes:

- Provide students the opportunity to compose and decompose physical shapes and talk about what these two terms mean in depth.
- As students are exploring tasks and during discussions of tasks, pose questions that support students’ analysis and comparison of the attributes of individual shapes.
- Allow students to use simple shapes to construct composite shapes. Ex: Picture 1 shows two shapes given to students. Discuss the attributes of each individual shape. Picture 2 shows one way how to compose a larger triangle from the two shapes.
- Have students explore creating more composite shapes and describe the attributes of the individual shapes and the composite shapes.



Next Steps and Instructional Moves

<p>Not Yet (continued)</p>	<p>For students with errors related to recognizing and drawing examples and non-examples of types of quadrilaterals:</p> <ul style="list-style-type: none"> Describe the Quadrilateral Activity: Teacher can place bags of manipulatives to share between two students. Students will take turns pulling a shape out of the bag and describing their attributes. Have students draw the shapes discussed and record the attributes describing the shapes. Students can also reach into a bag and guess what the shape is without looking at it for a Mystery Quadrilateral Activity. As students work with quadrilaterals discuss with students the concept that shapes may have more than one name. A rectangle may also be called a quadrilateral. A square may also be called a rectangle and a quadrilateral. Have students find shapes in the environment. They can take pictures or bring in the objects to be placed into categories. Students need to describe why the shapes fit each category (focusing on the properties of the quadrilaterals). If there are only a few students that need additional work, they may need small group instruction and additional time building shapes with AngLegs or different sized sticks. They can sort and draw shapes. They may need to create posters or notecards with each shape and their properties listed. They may also benefit from exploring examples and non-examples of each shape in detail. 
-----------------------------------	---

<p>Progressing</p>	<p>Students that are consistently scoring “Progressing” have a strategy to use for composing and decomposing triangles and quadrilaterals and clearly communicating their reasoning and justification. Students also may not understand how to recognize and draw examples of quadrilaterals.</p> <p>Next Steps:</p> <p>For students having trouble identifying the difference between attributes of quadrilaterals, including squares and rectangles:</p> <ul style="list-style-type: none"> While students are exploring tasks and during discussions after tasks provide opportunities for students to use and describe shapes using vocabulary related to shapes and their attributes. Play Guess My Rule. The teacher thinks of a shape and the students guess by selecting a shape and asking if it fits the rule. They can try to guess in the fewest number of guesses. Be sure to discuss what information each guess gives them about which shapes it could be and which shapes it cannot be! Students can list the attributes for both quadrilaterals with a focus on side lengths and the presence or absence of square corners (right angles). Students should have ample opportunities to analyze and discuss likenesses and differences between the attributes of quadrilaterals. Introduction to Sorting Quadrilaterals lesson Link the book, <i>The Greedy Triangle</i> by Marilyn Burns, to discussions about shapes and their characteristics. Read the book and create an anchor chart where students categorize the shapes and justify their thinking.
---------------------------	---

Next Steps and Instructional Moves

For students with errors related to composing quadrilaterals:

- Allow students to look at and sort quadrilaterals and discuss defining attributes of polygons and quadrilaterals (4-sided polygons).
- Allow students to create different quadrilaterals using materials such as popsicle sticks, toothpicks, or AngLegs.
- Teacher can discuss with students the process of sorting and classifying using dogs as an example. Teacher may pose the discussion about dogs and show a picture of various breeds. Students will discuss how there are many different types of dogs, but they are still all classified as dogs. Extend this analogy to the concept of quadrilaterals.
- Use graphic organizers such as Venn diagrams to help students classify different quadrilaterals. At first, provide students with the categories to support their sorting of shapes, and then allow them to determine their own categories.
- Draw quadrilaterals using pattern blocks on a paper and allow students to cover the shape with different pattern blocks to decompose the shape. Students can explore various combinations within the same shape.
- Introduction to sorting quadrilaterals [lesson](#)
- Quadrilaterals riddles and fun [lesson](#)



Meets Expectation

Students that are consistently scoring “Meets Expectation” on composing and decomposing triangles and quadrilaterals and clearly communicating their reasoning and justification. Students also consistently understand how to recognize and draw examples of quadrilaterals.

Next Steps:

- Provide students with quadrilaterals and allow them to sort the shapes based on the categories that they describe.
- In fourth grade, students learn about various types of angles. The work of a square corner (right angle) in Grade 3 can then be extended to include opportunities for students to explore and discuss the other angle types they find in quadrilaterals. The intent is not to teach angle types that will be taught in the next grade, but rather to allow students opportunities to explore the other types of angles they will encounter within the context of studying quadrilaterals.
- Students can explore drawing various examples of quadrilaterals in which pairs of sides move in the same direction and will never cross (parallel). Extend this work to look at shapes that are both quadrilaterals and parallelograms (squares and rectangles).