

Assessment: Rectangles

PROBLEM 1

Benchmark addressed:

Benchmark 1. Identify defining attributes of 2-D and 3-D shapes (number and shape of faces, number of length of sides, number of angles and/or vertices) and draw shapes with those attributes

Because students are also explaining their thinking about why a shape is/is not a rectangle, this question also provides information about student's progress with MP3:

In order to meet the benchmark, students' work should show that they can:

- Correctly identify which shapes are rectangles and which are not;
- Explain that rectangles are shapes with four sides and four right angles.

Meeting the Benchmark

Students in this category correctly identify which shapes are and are not rectangles. Their explanations also refer to the fact that rectangles have four sides and four right angles. Many of these students also use this information about what a rectangle *is* to explain why a shape is *not* a rectangle.


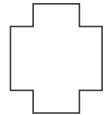
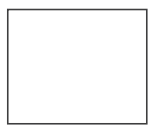
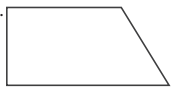
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ASSESSMENT (PAGE 1 OF 3)

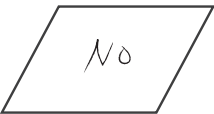
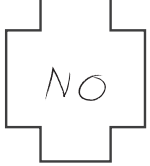


NAME _____ DATE _____

Rectangles Answers will vary.

Problem 1

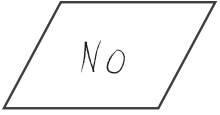
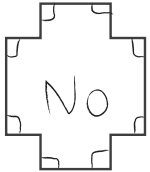
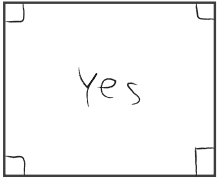
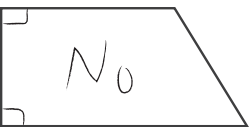
Is it a rectangle?	Why or why not?
a. 	
b. 	
c. 	
d. 	

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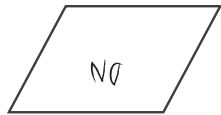
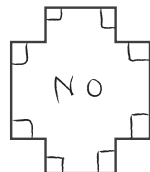
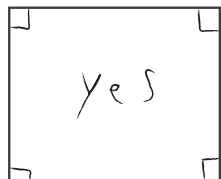
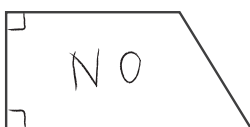
a. 	because a rectangle has 4 right angles
b. 	because a rectangle has 4 sides and 4 corners, this has 12
c. 	because a rectangle is a 4 sided shape with 4 right angles.
d. 	a rectangle has no slanty sides

[Henry's Work]


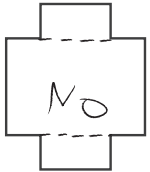
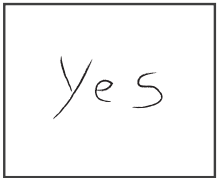
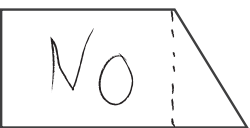
Some students, like Tia identify which shapes are and are not rectangles, using right angles to explain her answer.

<p>a.</p> 	<p>Because, the sides are slanted sides and it is not a right angle.</p>
<p>b.</p> 	<p>Because, 12 sides and 8 right an</p>
<p>c.</p> 	<p>Because, it has 4 right angles and 4 sides and, it is a polygon and it is a shape.</p>
<p>d.</p> 	<p>Because, it has 1 slanted side and only 2 right angles.</p>

[Nadia's Work]

<p>a.</p> 	<p>Because a rectangle has 4 right angles and this shape has no right angle</p>
<p>b.</p> 	<p>Because rectangles has 4 right angles and this shape 8 right angles</p>
<p>c.</p> 	<p>Because a rectangle has 4 right angles and this shape has 4 right angles</p>
<p>d.</p> 	<p>Because a rectangle has 4 right angles but this shape has only 2</p>

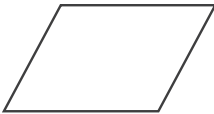
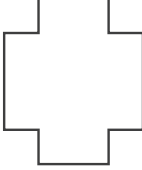


[Tia's Work]

<p>a.</p> 	<p>Because it has slanted sides If you slanted it, it would be</p>
<p>b.</p> 	<p>Because it has too many sides It has too many right angles. And it has stick out parts</p>
<p>c.</p> 	<p>Because it has four right angles. It has four sides, that are straight</p>
<p>d.</p> 	<p>Because it has a triangle right there</p>

[Lonzell's Work]

Partially Meeting the Benchmark

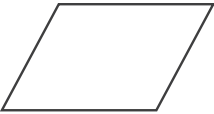
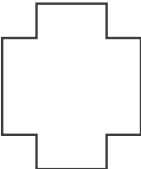
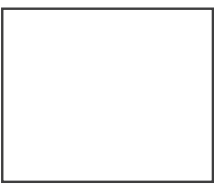

While Rochelle correctly identifies the shapes and gives explanations that are accurate, she says that a rectangle has four corners without specifying the size or type of those corners. Many second graders use the word *corner* to describe angles. Ask students who respond like Rochelle to explain what they mean. Listen for evidence that they are distinguishing between the types of corners in the third shape and the first shape.

a.		No. Because Rectangles are straight on every side Two of it's sides are slanted.
b.		No. Because rectangles have four <u>straight</u> sides!
c.		Yes, Because rectangles have two long sides and a short sides. It has straight sides and four corners.
d.		No Because Rectangle have 4 straight sides This has a slanted side!

[Rochelle's Work]

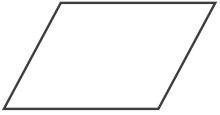
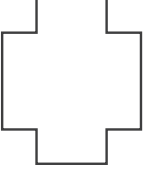


Not Meeting the Benchmark

Students in this group do not have a coherent understanding of what a rectangle is. For example, Luis correctly rules out shapes 2 and 4 based on the number and length of the sides, but incorrectly identifies the first shape as a rectangle. While he has noticed something important about shapes that are rectangles (the opposite sides are equal), he appears to think that any shape with opposite sides that are equal are rectangles. The size or shape of the angles does not factor into his explanations. In addition, his writing about the rectangle suggests that he is basing his response on an overall visual image—or what the shape looks like. While this student has, and can articulate, some important beginning ideas about rectangles, he does not mention the defining attribute of right angles.

a.		This is a ractagle because the to ends are the same and the top and the botum are the same.
b.		This is not a ractagle because there is to many side
c.		This is a ractagle because it is shaped like a ractagle,
d.		This is not a ractagle because the sides are not even.

[Luis's Work]

Many students who do not meet the benchmark base their responses on what the shapes look like, attending to one or two features of the shapes that resemble rectangles.

a.		<u>Yes</u> because It's at least part of a rectangle.
b.		<u>No</u> because it is not a part of a rectangle.
c.		<u>Yes</u> because longer than a square.
d.		<u>Yes</u> because It is a part of a rectangle

[Nate's Work]

Other students offer little or no explanation.

Students who do not meet the benchmark need continued experience working with rectangles and other shapes. The focus of this work should be on attending to features of shapes—specifically the number of sides and what the angles look like. Describing shapes in terms of how they are the same and different can help highlight what makes a rectangle a rectangle, distinguished from other polygons.