

Four-Point Scoring Rubric to be Used with Pages 34-36

SPATIAL SENSE AND GEOMETRY

Apply Principles of Congruence, Similarity, and Transformations

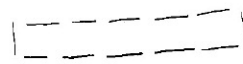
Below is a rubric that will enable you to determine a score of 3, 2, 1, or 0 for a student response. Remove this rubric from the book and use it to score the samples of student work in **You Be the Teacher**.

Score Response Descriptions and Examples

3

The student draws Figure 5 correctly, determines the number of toothpicks in the 10th and *N*th figures, determines the area in the 5th and *N*th figure, and explains why the area of the 20th figure is incorrect.

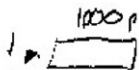
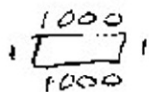
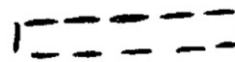
Shirley's Response: Figure 10 is made up of 22 toothpicks. Figure *n* would have $2n + 2$ toothpicks because the top and bottom each have *n* toothpicks and the two extra toothpicks on the sides. Figure 5 would have an area of 5. So this means Figure *n* would also have an area of *n*. It is not reasonable for the 20th figure to have both 42 toothpicks and 22 square units. The number of toothpicks is correct because there will be 20 on the top and bottom and 2 on the sides, but the area should only be 20.



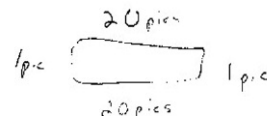
2

The student understands most of the concepts involved. The student draws Figure 5 correctly and calculates the number of toothpicks in Figure 10 and the area of Figure 5 correctly, but has difficulty representing the number of toothpicks and area of the *N*th figure, and only partially describes why Figure 20 is not described correctly.

Kyu Sang's Response: 22 toothpicks. If $n = 1000$ it would take 2002, add two to increase it. Since there is *n* on top the *n* is on the bottom. 5 square units. 1000 square units. Unreasonable Contains 42 pics; but $A = 20$ square pics.



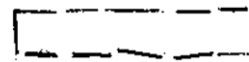
$L \times W = A$



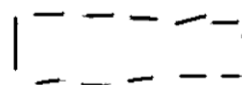
1

The student shows some understanding of the concept. The student draws Figure 5 correctly, but makes errors in either determining the number of toothpicks in Figure 10 or in determining the area of Figure 5, and has difficulty representing the number of toothpicks and/or area of the *N*th figure. In addition, the student has difficulty describing why the 20th figure is not described correctly or gives an incomplete explanation.

Allan's Response: 12 toothpicks. You just add 1 toothpick to the top and bottom like if you wanted to draw the 16h figure. You would make shore you had 16 on the top and bottom and one on the other sides. 5 square units. As many squares you can make by putting them together. No because there would be 22 toothpicks and 20 squares.



Belinda's Response: 12 toothpicks. At least 4 because its always 1 high and also has 4 sides wo there are 3 others. 5 squares. At least 1 s.u.. No because 42 toothpicks would only allow 20 s.u.



0

The student draws or attempts to draw only Figure 5. The student has difficulty determining the number of toothpicks and the area of various figures.

Basilio's Response: The figure 10 would have 10 toothpicks.

