Post-Assessment Tasks

A Lesson for Grades 6–8

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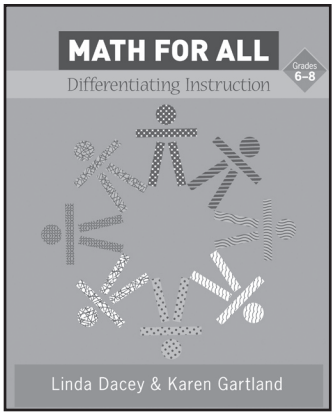


Open-ended problems can make for excellent post-assessment. Wondering how you can design effective post-assessment tasks for your students? This lesson gives a four-step plan, including a 6–8 sample task and corresponding authentic student responses. The lesson is adapted from Math Solutions' forthcoming book Math for All: Differentiating Instruction, Grades 6–8, *by Linda Dacey and Karen Gartland. Visit* www.mathsolutions.com *to learn more.*

Step I: Design a Task That Will Capture a Broad Range of Responses

Open-ended tasks allow students to control some of the difficulty level themselves. In the example task below, students may limit their consideration to only a few concepts or by focusing exclusively on two right triangles. Similarly, students may choose to use drawings, charts, or diagrams to communicate their ideas, or they may rely more on prose.

Sample 6–8 Task

What do you know about similar triangles? Write and draw to communicate your ideas.

Step II: Talk with Students About Task Expectations

As a whole class, create a list to guide students' work on the task.

Sample 6–8 List

- Focus on similar triangles.
- Use words and drawings to explain what you know.
- Use correct vocabulary.
- Organize your ideas.
- Give several samples.
- Think about real-world connections.

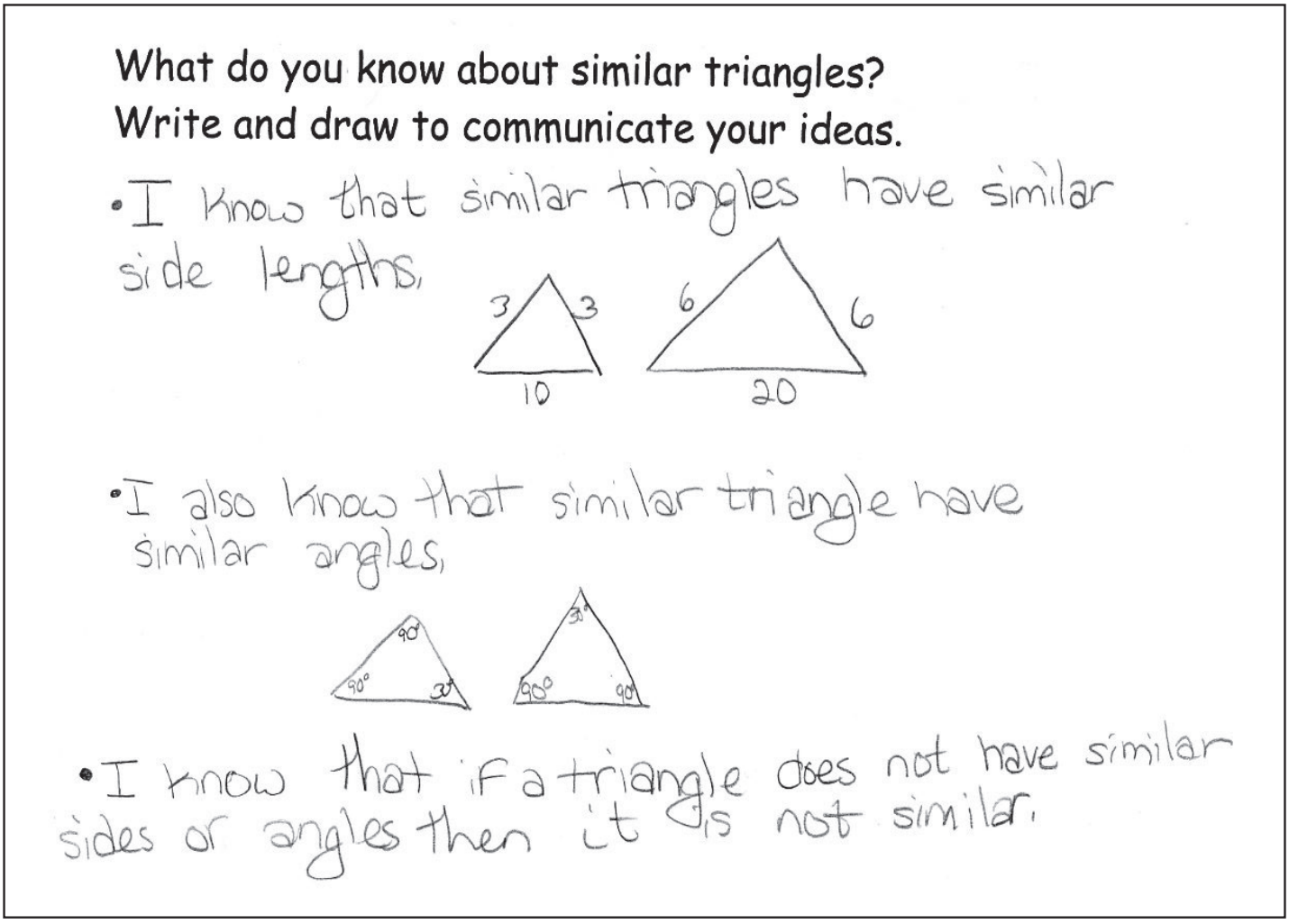
Step III: Have Students Respond to the Task

After a brief discussion about the task expectations, students are normally eager to begin their task. Some students might think for a minute or so before beginning to record their ideas, but most begin immediately. Following are examples, including authentic student work, of how students responded to the above task.

Sample 6–8 Responses

Response Sample 1: Minimal Evidence

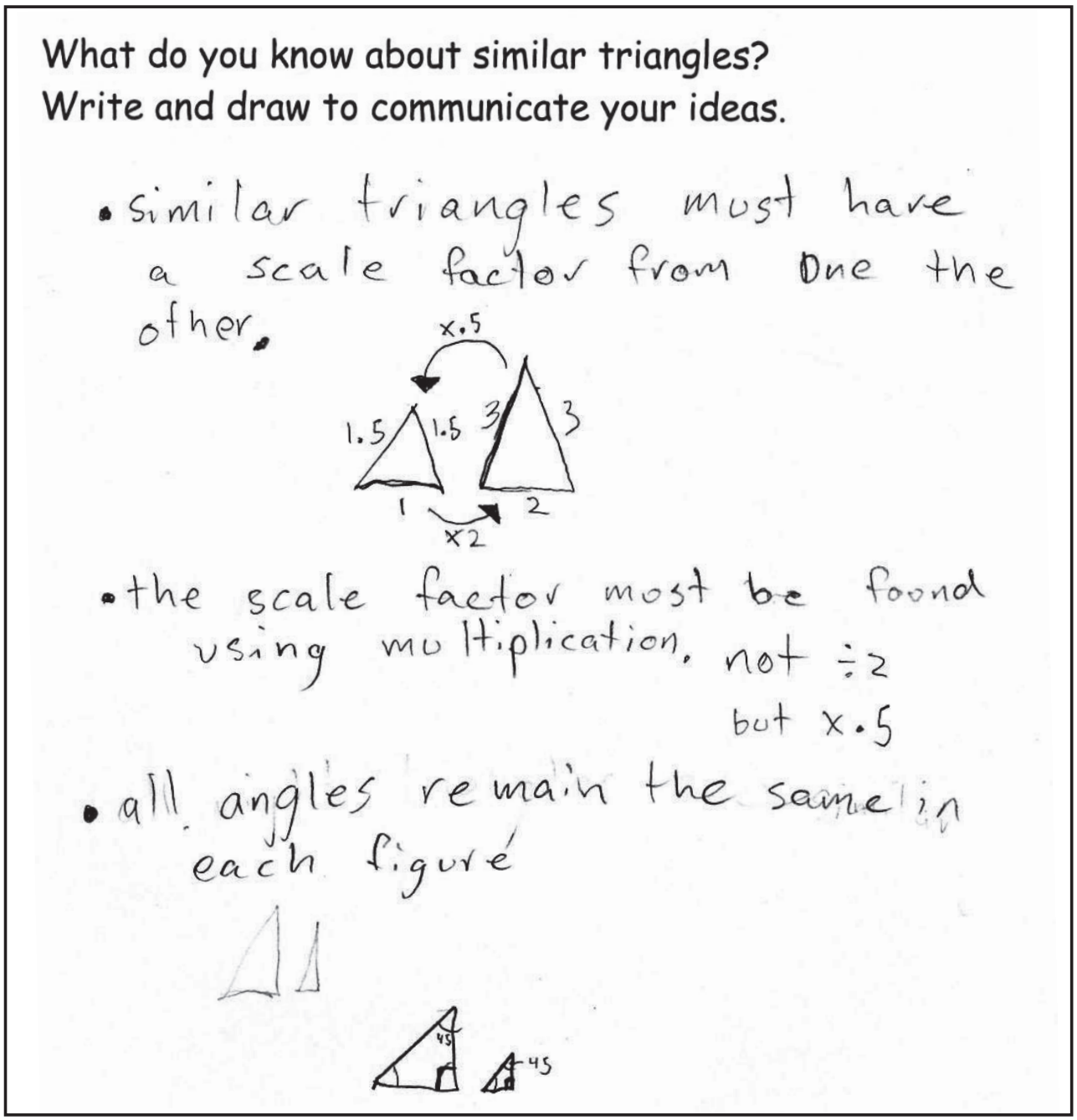
Janelle provided relatively minimal evidence of learning. She did recognize that side lengths and angle measures were relevant to the topic, but didn't demonstrate an explicit understanding of these ideas. In her opening statement she noted that similar triangles have similar side lengths, without describing what this means. She did draw an example of two triangles and identified lengths that were proportional. She also stated that the angles of these figures were "similar." Her illustration suggests angle measures that are the same but that have been rotated in the second figure. This could indicate an understanding that similar triangles can be in different orientations from one another. The teacher noted that the angle measures Janelle chose suggest a misconception or lack of knowledge, as the sum of their degrees is 210.



Seventh grader Janelle's response

Response Sample 2: The Scale Factor

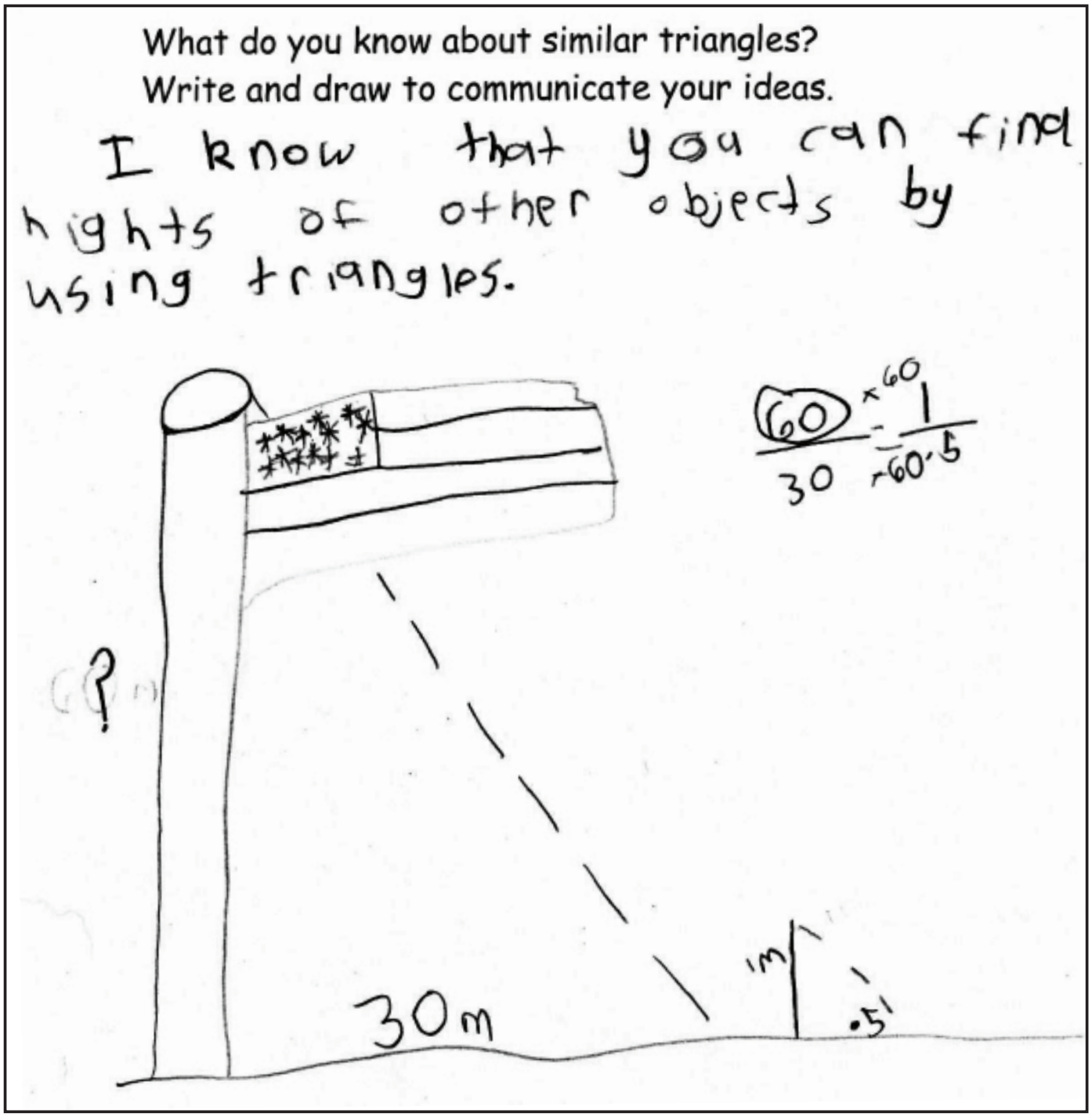
Jay's first statement focused on the importance of a scale factor. The teacher noticed that Jay was one of the few students who included lengths that involved decimals. Jay also identified the scale factor in both directions, 2 for scaling up, and 0.5 when scaling down. The unit gave attention to the fact that the scale factor was found by multiplying each side by the same number. This becomes quite complicated for some students who struggle to understand that dividing by 2 is the same as multiplying by ½. Jay's next comment solidified the importance of multiplication, stating that the scale factor must be found by multiplication. Jay concluded by stating that angles in similar figures are the same.



Seventh grader Jay's response

Response Sample 3: A Real-World Application

Max's work is noteworthy as he was the only student who included a real-life application, even though this was a goal identified before the task began. His example of finding the height of the flagpole was considered at the end of the unit. Max set up the proportional relationship correctly and found the correct missing number.



Seventh grader Max's response

Step IV: Review Students' Responses and Plan Next Steps

Discover what each student chose to include; perhaps it is what she knows best, or what he believes is most important, or what she finds most interesting. Also note what concepts students did not provide evidence for, or for which the evidence is incomplete or inaccurate. Share your findings with other teachers. Look at the similarities and differences across grade levels. Following are observations and plans that one teacher made upon reviewing responses to the sample task.

Sample Teacher Reviews and Plans

The teacher was generally pleased with the responses to this task. Many different ideas and skills surfaced. The teacher also noted two concerns that he believed reflected on his teaching. Too many students suggested a misconception about a rule of 2*x,* 2*y* having importance. The teacher wondered if he had overemphasized that example. He knew students could sometimes grab onto a simple rule and he wanted to avoid this in the future. He also noticed that none of the students indicated a unit of measure when they referred to lengths, perimeters, or areas. He knew that when he was showing multiple examples on the board, he did not always include a unit, and he decided to attend more closely to this.