

OPEN AND PARALLEL TASKS FOR GRADE 4

In *Great Questions: Great Ways to Differentiate Mathematics Instruction*, (2009) NCTM, Marion Small proposes big ideas for each strand of mathematics and then presents the strategy of using Open and Parallel tasks related to the same big mathematical ideas as a way to better meet the needs of all students in a classroom.

Grade 4

These differentiated tasks are based on task titled “Number Detective” on page 20 of *Making Sense of Problem Solving: Targeting NCTM Curriculum Focal Points, Level E/Grade 4* (2008) Teacher to Teacher Publications, Inc.

Open Task:

A pattern starts with a 1, and the fifth term is 9. What could the in-between numbers be? What other patterns could be possible?

Parallel Task

Option 1:

The sum of the first five terms of a pattern is 20. What are three or more possible solutions? Challenge: find as many possible solutions as you can!

Option 2:

The sum of the first five terms of a pattern is 10. What might the pattern be?

Notes about the Grade 4 tasks:

For the Open Task, many students may discover that the pattern of odd numbers fits all the requirements. With the encouragement of continuing to explore and share other possible patterns that would fit the criteria of the problem, students will discover that there are many possibilities that could meet the conditions of the task. Other solutions may include a repeating pattern such as 1, 9, 1, 1, 9, 1 (etc.); a pattern of increase and decrease such as 1, 2, 4, 7, 9, 10, 12 (+1, +2, +3, +2, +1, +2 . . .); or many other possibilities.

Option 1 of the Parallel Tasks targets proficient students who need additional challenge. Solutions may include many types of patterns, including patterns of increase or decrease such as 0, 2, 4, 6, 8 (etc.); 2, 3, 4, 5, 6 (etc.); -4, 0, +4, +8, +12; or 8, 6, 4, 2, 0; repeating patterns such as 2, 7, 2, 7, 2, 7 (etc.); and other patterns.

Option 2 allows struggling students to explore the relationships between terms in a number pattern just as the other tasks do, but the context is simplified. (One solution is 0, 1, 2, 3, 4.)