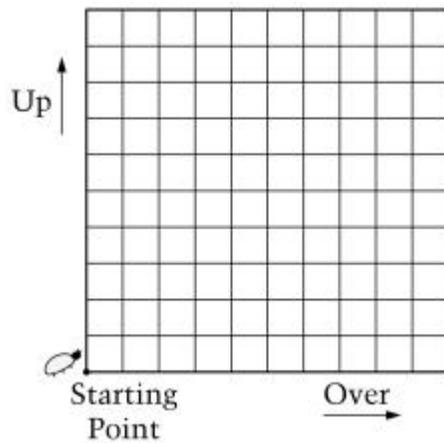
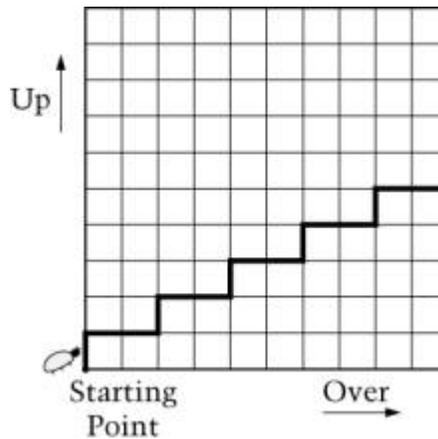


From the starting point on the grid below, a beetle moved in the following way. It moved 1 block up and then 2 blocks over, and then continued to repeat this pattern. Draw lines to show the path the beetle took to reach the right side of the grid.



Scoring Guide

Solution:



Score & Description

Correct

Correct response (Note: may continue pattern beyond endpoint. i.e.,



Partial

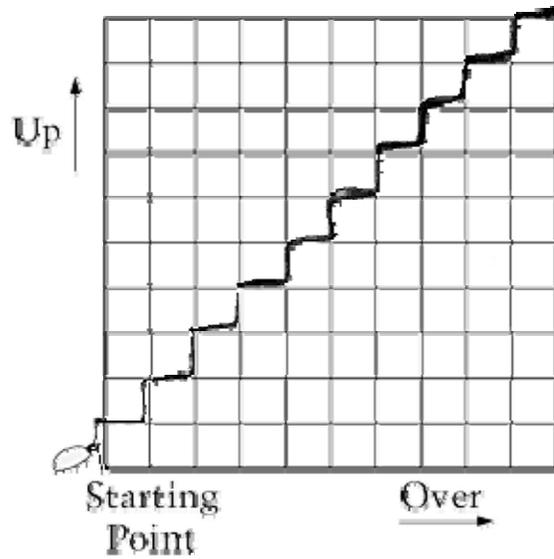
After an incorrect start, drawing picks up and completes the correct pattern. A minimum of three consecutive correct iterations must be shown.

Incorrect

Incorrect response

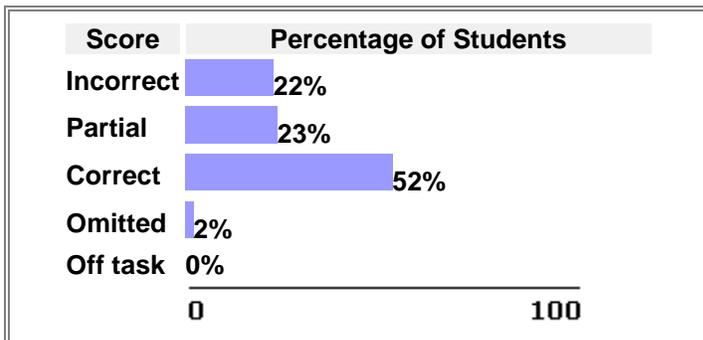
Correct - Student Response

From the starting point on the grid below, a beetle moved in the following way. It moved 1 block up and then 2 blocks over, and then continued to repeat this pattern. Draw lines to show the path the beetle took to reach the right side of the grid.



Scorer Comments:
 This response received no credit because the pattern that was followed was not the one specified in the problem.

2005 National Performance Results



Note:

- These results are for public and nonpublic school students.
- Percentages may not add to 100 due to rounding.

Mathematical Content Area: *Algebra* (Sub content classification:)
Mathematical Complexity: *Low Complexity*

Mathematical Content Area

Algebra

This content area focuses on students' understanding of patterns, relations, and functions; algebraic representation; variables, expressions, and operations; and equations and inequalities. At grade 4, students are expected to show knowledge of simple patterns and expressions; at grade 8 this knowledge extends to include linear equations; and at grade 12 it extends further to include quadratic and exponential equations and functions. Representational skills, such as students' ability to translate between different forms of representation (e.g., from a written description to an equation), the ability to graph and interpret points located on a coordinate system, and the ability to use algebraic properties to draw a conclusion, are assessed in this area. Students may be asked to express relationships algebraically as number sentences, equations, or inequalities; manipulate algebraic expressions; or solve and interpret algebraic equations and inequalities that are grade-level appropriate.

Mathematical Complexity

Low Complexity

This category relies heavily on the recall and recognition of previously learned concepts and principles. Items typically specify what the student is to do, which is often to carry out some procedure that can be performed mechanically. It is not left to the student to come up with an original method or solution.

Description	Grade	Type	Difficulty
Extend a pattern on grid	8th	Short Constructed Response	Medium