Math Background

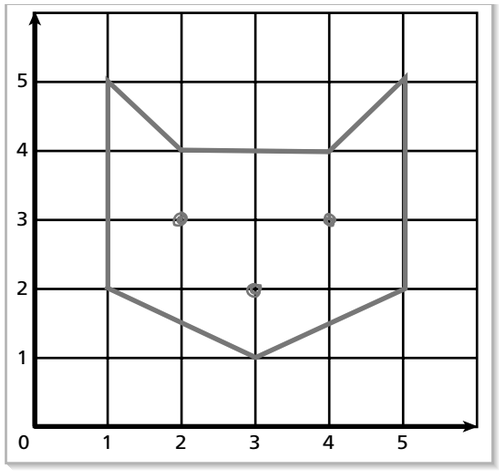
Directions and Solving Equations In Unit G, students follow directions up, down, right, and left to locate features on grids. They also describe routes on grids. These activities help prepare students for later work with coordinate geometry as they use a starting point (input), a coordinate number, and an ending point.

Coordinate Geometry In this unit, students are introduced to ordered pairs. They first learn how to use ordered pairs to identify features on a coordinate grid and then they write ordered pairs naming points on coordinate grids. These skills provide the foundation for later work in coordinate geometry and algebra when students do transformations and plot equations on coordinate grids.

Algebraic Reasoning In the final activity of this unit, students draw rectangles on grids. To do so, they follow instructions that involve a mathematical relationship between the lengths of two sides of a rectangle: for instance, they are asked to draw a rectangle with a length that is 2 units longer than its width. These exercises help to build students' algebraic reasoning: they must reason that they can choose the width (variable) and then add 2 to the width to find the length (equation).

Measurement In Lesson 3 of this unit, students use the grid lines to measure the length of line segments on coordinate grids. These activities reinforce the concept of linear measurement as counting adjacent, non-overlapping units, and prepare students for work with maps and scales in subsequent grades, in Social Studies, and in real-world applications. Using grids for linear measurement also prepares students for the area measurement work they will do in subsequent grades.

Spatial Sense In this unit, students develop their spatial sense by exploring coordinate grids. Activities include creating maps, identifying points on maps, and navigating between places on maps. They also plot ordered pairs to make a picture on a grid.



In the final lesson of the unit, students use spatial sense to visualize how to complete geometric figures by plotting missing points on coordinate grids.