

Tiling a Patio

Research has shown that one difference in novices and expert problem solvers is the amount of time each spends “understanding the problem.” Novices tend to read through tasks quickly and begin trying to get an answer. Experts, however, are much more likely to spend time understanding the task and discussing all aspects of the problem with colleagues. As you assign this task to students, encourage your class to become more “expert” in their approach to problems in mathematics.

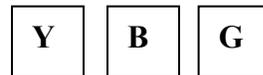
Notice the large number of the objectives in the grade 4 and grade 5 SCS that related to this task. While this task focuses primarily on area, students call upon their understanding of patterns, geometric shapes, fractions, multiplication, multi-step computations, and measurement to carry out the assignment. The task also includes a persuasive writing assignment and numerous opportunities for decision-making.

To begin: Pairs of students need a copy of the task and access to graph paper, crayons or colored pencils, and color tiles or scrap paper squares preferably in green, blue, and yellow.

Encourage students to talk about the assignment first with a partner and then discuss with the class what Mrs. Horn wants. As students share their ideas, ask questions about what the task requires, but do not be directive in how to solve the problem.

Sample discussion questions as you begin:

1. How might you communicate your design idea to Mrs. Horn? (coloring, a scale drawing, labeling tiles etc.)



2. What details about the tiles do you need to pay attention to?
3. What will a strong proposal to Mrs. Horn include?

Sample discussion questions after students complete the task:

1. How did your design team begin working on the task?
2. What problems did you encounter?
3. What mathematics did you use as you completed the task?
4. What design did you create for Mrs. Horn’s recreation room floor?
5. What did you learn as you completed the assignment?

