Mathematics: Operations and Algebraic Thinking

3.OA.3	**Cluster Heading:** Represent and solve problems involving multiplication and division. **Content Standard:** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. **Practice Standards: MP7** Look for and make use of structure, **MP1** Make sense of problems and persevere in solving them.

Problem/Task Suggestions	Formative Assessment Suggestions
Terrific Tiles Mrs. McKegney wants to tile her kitchen floor. The square tiles are 1 ft. x 1 ft. The kitchen floor is a 10 ft. x 9 ft. area. How many tiles does she need? Tiles are sold in bundles of 10. Each bundle costs $3.00. How many bundles are needed? How much will she need to pay for the tiles? Pretend you are her contractor and write a letter to Mrs. McKegney clearly explaining your solution to her tile problem and how you went about solving the problem. Be sure to include a visual representation of your solution and observations that you made. **Differentiation** **Support** • Have students use a room with smaller dimensions. • Let students solve a problem based on measurements of a room in a dollhouse • Have students use color tiles or graph paper. **Extensions** • Have students create a rubric for grading this problem. • Have students create their own dimensions for various rooms and then solve. • Ask students to measure rooms in their houses and write a problem involving square tiles. • Use smaller tiles and challenge students to show how they would determine the number of tiles in a square foot before they solve a larger problem. **Solution:** 90 tiles are needed; 9 bundles are needed. She will need 9 bundles x $3.00 per bundle for the tiles, or $27.00.	**Student Journal Prompt** Write a letter to explain to your parents what you learned today. Draw out a sample solution and explain the strategies you used. Show how you organized your work to keep track of each question. **Questions to Guide Student Thinking** • How could you organize your work for this problem? • How could you represent the room and the tiles? • What do the numbers in the problem and in your solution represent? • What different types of computation will you be using? Explain your thinking. **Misconceptions** • Some students may manipulate the numbers presented, but not comprehend the situation. • Some students may neglect to find the number of bundles needed and the total cost. • Some students may have trouble writing a letter to Mrs. McKegney and communicating a solution clearly. • Some students may not include a visual representation or their observations.

Adapted from: http://www.rda.aps.edu/mathtaskbank/pdfs/tasks/3-5/t35tiles.pdf

Source for Similar Problems and Teacher Pages: http://www.rda.aps.edu/mathtaskbank/pdfs/instruct/3-5/i35tiles.pdf