

This task was developed by secondary mathematics and CTE teachers across Washington State from urban and rural areas. These teachers have incorporated financial literacy in their classroom and have received training on the Common Core State Standards and the Jump\$tart Financial Literacy standards. The task was validated by content experts in the Common Core State Standards in mathematics. The purpose of this task is to demonstrate how financial literacy standards can be incorporated within mathematics classrooms that are implementing the Common Core State Standards.

TASK: Bedroom Remodel

TARGET COMMON CORE STATE STANDARD(S) IN MATHEMATICS:

7.G.B: Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

7.G.B.6: Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes and right prisms.

TARGET STANDARDS FOR MATHEMATICAL PRACTICES:

MP.1: Make sense of problems and persevere in solving them.

MP.3: Construct viable arguments and critique the reasoning of others.

MP.5: Use appropriate tools strategically.

MP.6: Attend to precision.

TARGET FINANCIAL LITERACY STANDARDS:

Financial Responsibility and Decision Making-Make financial decisions by systematically considering alternatives and consequences.

Planning and Money Management-Develop a plan for spending and saving.

Planning and Money Management-Apply consumer skills to purchase decisions.

RECOMMENDED COURSE(S):

Grade 7

ADDITIONAL INSTRUCTIONS:

Completion of the task will take multiple class periods.

Have resources available for students to draw their design if they find this helpful.

About the Common Core State Standards in Mathematics

The Common Core State Standards (CCSS) is a state developed set of standards that represent a coherent progression of learning expectations in English language arts and mathematics. These standards are designed to establish a set of shared goals and expectations for what students should understand and be able to do in grades K–12 in order to be prepared for success in college and the workplace. Forty-six states have now adopted these shared standards. The CCSS for mathematics highlight three major shifts around Focus, Coherence and Rigor. For more information:

<http://www.k12.wa.us/CoreStandards/Mathematics/default.aspx>

About the Jump \$tart Financial Literacy Standards

The National Standards in K–12 Personal Finance Education, created and maintained by the Jump\$tart Coalition® for Personal Financial Literacy, delineate the personal finance knowledge and skills that K–12 students should possess. The Jump\$tart Coalition intends the National Standards in K–12 Personal Finance Education to serve as a model. As such, the National Standards represent the framework of an ideal personal finance curriculum, portions of which might not be appropriate for individual instructors and students. The Coalition leaves it up to various stakeholders to decide how to address the topics in the National Standards. <http://jumpstart.org/national-standards.html>

Key Terms

The Task

Your parents are allowing you to remodel your bedroom and have set a total budget of \$2500 for this project. You and your parents decide on two flooring choices and two paint colors to give you some options and to help you stay within the budget. Determine which flooring and which color paint you will use to meet your budget parameters. You may have to use a combination of the two paints and two flooring choices.

New Flooring

The bedroom floor is in the shape of a rectangle. It is 15 feet long and 12 feet wide. You want to have liquid floor tiles installed. Your parent's choice is oak flooring. The oak flooring costs \$4.25 per square foot for materials. The liquid floor tiles cost \$245 per tile—each tile is 2' x 2' (4 square feet each). The cost for labor will be the same for either flooring option and is \$1.70 per square foot.

Paint the Walls

The height of the bedroom is 9 feet. There are 4 rectangular windows in the room that are each 30 inches wide and 36 inches high. You will not paint the windows, the floor, or the ceiling. You will paint the rest of the room, including the door. Your choice for paint is Glow in the Dark paint. Your parent's choice is regular paint (any color). Both colors are only available in 1-gallon cans. The price for a 1-gallon can of regular paint is \$24, but it is on sale for 25% off the regular price. This type of paint requires 2 coats. Glow in the Dark paint: The price of a 1-gallon can is \$125. This type of paint only requires 1 coat. Each gallon of paint will cover an area of about 250 square feet. Labor will cost \$0.50 per square foot.

Work with a partner to design your new room and calculate the total cost. Justify how your room design remains within the budget by considering the cost and time constraints of your choices. Explain or show your reasoning. You may use diagrams, drawings, or equations as well as words.

Possible Solutions

Flooring: The total area of the floor is $15' \times 12' = 180$ square feet.

The cost of the oak flooring is 180 square feet \times $\$4.24 = \765 . Labor costs are 180 square feet \times $\$1.70$ and adds $\$306$. Students can choose to add a few liquid floor tiles but the most they can use are 4 tiles at $\$245$ each (covering 16 square feet). The rest of the floor will need to be oak flooring. This gives students some options to work with. If students choose this option, they will have to determine the square footage of the room for the oak flooring after using the liquid floor tiles.

Painting:

The total wall area to be painted is:

Total wall surface area:	$(2 \times 15 \times 9 + 2 \times 12 \times 9)$
Window surface area:	less $(4 \times 2.5 \times 3)$
Total surface area to be painted:	456 square feet

Regular Paint: 456 square feet \times $2 = 912$ square feet to paint (2 coats); 250 square feet/gallon. Total needed is about 3.6 gallons, requiring 4 gallons total. Price is $\$24$ /gallon less 25% , leaving total price of $\$18$. Time to paint is double.

Glow in the Dark Paint: Depending on the cost of the flooring, students could choose to paint their entire room in Glow in the Dark Paint— 456 sq ft/ 250 sq ft = 1.8 or 2 gallons. The price is $\$125$ /gallon for a total price of $\$250$. Only 1 coat is needed. Or students may choose only 1 gallon to cover two of the walls and paint the other two walls with regular paint.

Students can play around with various options yet having to make choices that will keep them within their budget. Students should be given an opportunity to engage in MP3 by working with a partner and, once they design their room and calculate their budget, have opportunities to explain how they arrived at their choices and using mathematical reasoning to show they remained within the given budget.

Possible Extensions

- Extend decision making to include other factors such as value, quality, etc.
- Include time for installation of flooring and painting to estimate the number of hours and/or days of the project.
- Extend the parameters of the room remodel to include other jobs such as window, door, or lighting upgrades.
- Draw scale drawing of their bedroom.
- Include furnishings as part of remodel, drawing scale drawing of room and possible furnishings.