



PAINTING MARCO'S ROOM

Strategies for Constructing an Engaging Application

A good math program, such as *MathLinks*, will provide opportunities for students to engage in meaningful mathematics with rich class discussions. But it is up to the teacher to facilitate the lesson.

In *MathLinks: Grade 6 Packet 16*, Marco and Rocky solve math problems as they figure out how to paint their rooms. Here are some strategies for delivering that lesson.

- Remove some assumptions. Allow the students to generate questions and take ownership of the problem. (This was modeled at the NCTM *MathLinks* exhibit talk.)
- Strip away some details. Students explore the problem given simple words or pictures.
- Follow up with structured workspace to guide exploration or for practice.

PAINTING MARCO'S ROOM 1

Marco wants to paint his room. Create three good math questions for the facts below, and then answer your questions. You may add facts if you like.

WITH WORDS	WITH PICTURES
<p>Facts about Marco's room:</p> <ul style="list-style-type: none"> • The room is 12 feet by 14 feet. • The walls are 10 feet high. • A window is 4.5 ft. by 3 ft. • The door is 36 inches by 80 inches. 	
<p>Facts about the paint:</p> <ul style="list-style-type: none"> • Paint costs \$8.99 per quart. • Paint costs \$25.99 per gallon. 	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>1 quart \$8.99</p> </div> <div style="text-align: center;"> <p>1 gallon \$25.99</p> </div> </div>

PAINTING MARCO'S ROOM 2

Marco wants to paint his room. The floor of Marco's room is 12 feet by 14 feet. His walls are 10 feet high. He plans to paint the walls, but not the ceiling or floor.

1. Make a sketch to represent the area he needs to paint. You can draw a picture of the inside of his room or simply draw separate walls.

2. Circle all of the expressions that Marco could use to compute the number of square feet he will paint.

$12 \cdot 14 \cdot 10$

$(12 + 14) \cdot 2 \cdot 10$

$10 \cdot 12 + 10 \cdot 14 + 10 \cdot 12 + 10 \cdot 14$

$(12 + 14) \cdot 10$

$10 \cdot 12 \cdot 2 + 10 \cdot 14 \cdot 2$

$(12 + 14) \cdot 10 + (12 + 14) \cdot 10$

$2(10 \cdot 12 + 10 \cdot 14)$

$2(12 + 14) \cdot 10$

3. Find the number of square feet Marco will paint.

4. A gallon of paint will cover about _____ of wall space. Marco wants to paint his walls with two coats of paint. About how many gallons of paint will he need? Explain.

5. A quart of paint costs \$8.99. A gallon of paint costs \$25.99. What should Marco buy? Why?