

Ratios and Rates

A SUMMER JOB

Write your answers on notebook paper. Show your work.

Wendy has a summer job. She will paint houses Monday through Friday, 8 hours each day. She is surprised by the many decisions she has to make as part of this job.

- She has to choose from two different pay options.
- She must decide how much paint to purchase.
- She must mix paints to get the right colors.

Help her make these important decisions.

1. The two different pay options she may choose from are: either \$62 per day or \$304 per week. Which is the better deal for Wendy? Use unit rates to explain your decision.
2. Using the option you chose in Question 1, determine how much money Wendy will earn by working 4 weeks.
3. To get the right color to paint the house, Wendy must mix 1 gallon of green paint with 3 gallons of white paint.
 - a. Write a ratio in 3 different ways to show the relationship between green paint and white paint.
 - b. How many gallons of paint will her mixture make?
4. Wendy is told ahead of time that she will need to purchase about 12 gallons of paint in order to cover the entire house. Write a proportion to determine the amount of green and white paint she will need to purchase.
5. How many gallons of green paint would be needed if Wendy had 10 gallons of white paint? Explain your reasoning.
6. How many gallons of white paint would Wendy need to mix with 0.5 gallon of green paint? Explain your answer.
7. Suppose that Wendy accidentally mixed 2 gallons of green paint with 3 gallons of white paint.
 - a. How would her color change? Would it be darker or lighter? Explain.
 - b. Without starting over, how could she fix her mistake to get the right color to paint the house?

Embedded Assessment 1

Use after Activity 4.2.

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	Exemplary	Proficient	Emerging
Math Knowledge #2–6	Student accurately calculates pay (2) and finds the amounts of paint (3–6).	Student attempts at least 4 calculations and accurately determines at least 3 of these calculations.	Student attempts at least 3 calculations and accurately determines 2 of these calculations.
Problem Solving #1, 7a, 7b	Student correctly selects the better deal for pay using unit rates (1), determines how the paint color will change (7a), and finds a way to correct the mistake (7b).	Student correctly solves two of the three problems.	Student correctly solves at least one of the three problems.
Representation #3a, 4	Student writes three correct ratios (3a) and gives a correct proportion to determine paint quantities (4).	Student writes at least 2 correct ratios and sets up a proportion.	Student provides at least one correct ratio and sets up a proportion.
Communication #1, 5, 6, 7a	Student clearly communicates the better pay option (1), gives clear explanations of the methods used to find the amount of green paint (5) and white paint needed (6), and gives clear reasoning for whether the paint would be darker or lighter (7a).	Student clearly communicates logical reasoning for three of the items.	Student clearly communicates logical reasoning for two of the items.