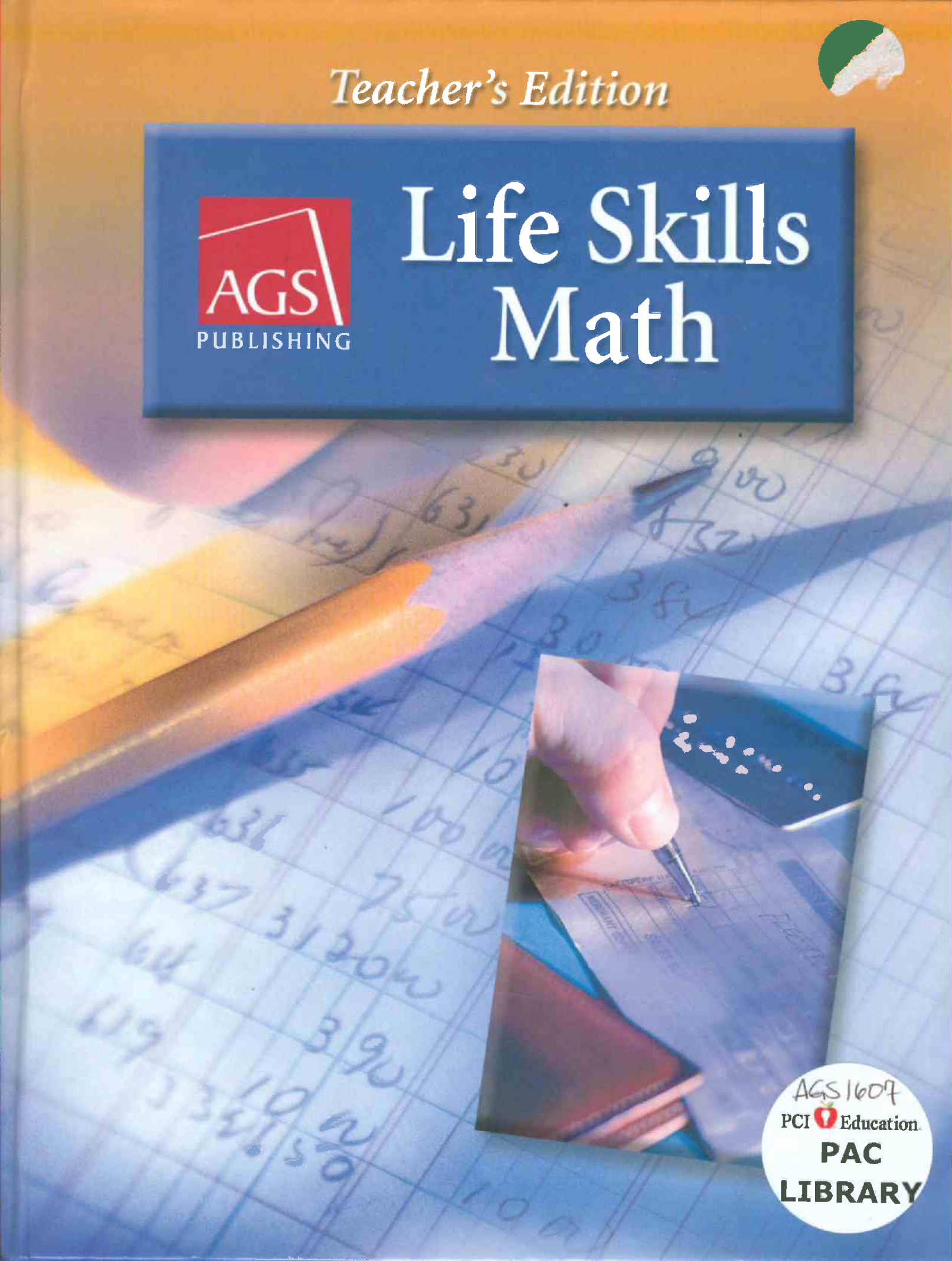
Teacher's Edition

AGS PUBLISHING

Life Skills Math



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Chapter

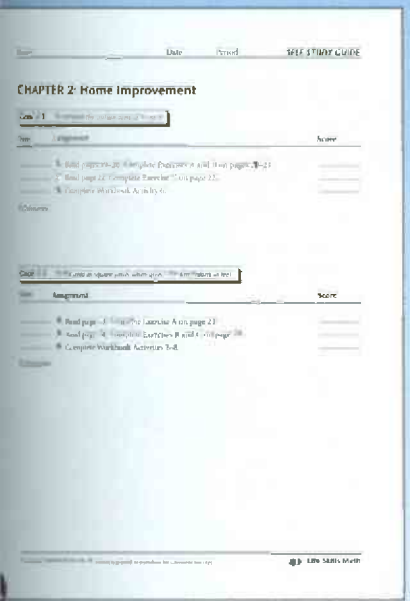
2 Home Improvement

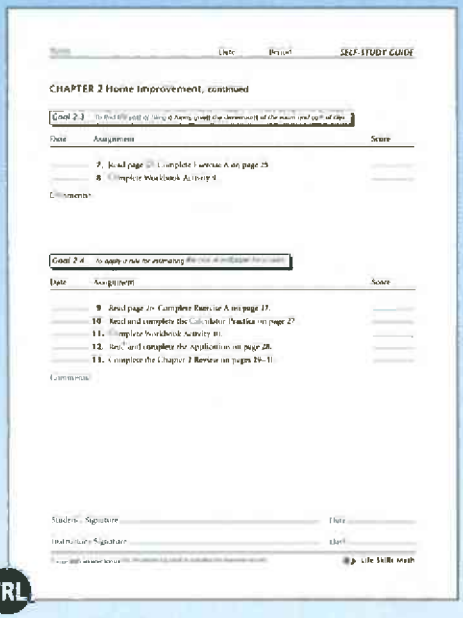
The Jung family supplements their income by buying an old house, making repairs, and then reselling the house. Typical repairs include installing new carpet, replacing old flooring, and repainting or wallpapering walls. The Jungs save money by watching for sales and by doing the work themselves. They use mathematics to determine how much carpet, how many rolls of wallpaper, or how many boxes of tiles they need to buy.

In Chapter 2, you will learn how to determine how many double rolls of wallpaper to buy for a project. You will find that there is sometimes a way to position carpet that is cheaper than another way.

Goals for Learning

- To compute the surface area of a room
- To find area in square yards when given the dimensions in feet
- To find the cost of tiling a room, given the dimensions of the room and cost of tiles
- To apply a rule for estimating the cost of wallpaper for a room


CHAPTER 2: Home Improvement


CHAPTER 2 Home Improvement, continued

TRL

Chapter 2 Self-Study Guide

Introducing the Chapter

Bring to class or ask students to bring several samples of paint chips, floor tiles, carpet scraps, and wallpaper samples. Hardware stores are often willing to part with outdated samples. Have students look over the samples and think about how they might like to redecorate a room at home or at school. Explain that to buy a sufficient amount of supplies, being able to calculate the surface area of the walls and floor is essential. Tell students that this chapter will help them apply the mathematical concepts required to make these calculations.

Chapter Project

Identify a room or wall in the school or other municipal building that needs repainting. Work with student groups to calculate the surface area to be painted. Help them research prices, determine cost, and find the best buy to complete the project. Assign groups to write a short essay describing the project.

Teacher's Resource

The AGS Teaching Strategies in Math Transparencies may be used with this chapter. The transparencies add an interactive dimension to expand and enhance the *Life Skills Math* program content.

Career Interest Inventory

The AGS Harrington-O'Shea Career Decision-Making System-Revised (CDM) may be used with this chapter. Students can use the CDM to explore their interests and identify careers. The CDM defines career areas that are indicated by students' responses on the inventory.

■ Presenting Exercise E

Students should use the Activity 11 worksheet in the Teacher's Resource Library to complete Exercise E.

Mental Math

Remind students that sums of 10 can be found by using mental math. You may wish to review addition facts that equal 10.

Common Error

Some students may not realize why a blank is left at the top in the second frame in the first example on student page 38. Explain that if a bowler knocks down all the pins on the first roll (a strike), the player does not take a second roll.

Learning Styles

LEP/ESL

Some students may need to verbalize how to account for a strike. Have students explain the first example. Ask them why no score is recorded in the second frame, but by the third frame, a score of 27 is in the second frame. Ask students to explain why extra rolls are needed in the tenth frame if a strike is bowled.

EXAMPLES

1st frame: 1st roll 3
2nd roll 5

2nd frame: 1st roll 10
2nd roll —

3rd frame: 1st roll 7
2nd roll 2

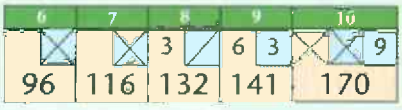
Felicia's score is 96 for the sixth frame. Her game continues as shown.

7th frame: 1st roll 10
2nd roll —

8th frame: 1st roll 3
2nd roll 7

9th frame: 1st roll 6
2nd roll 3

10th frame: 1st roll 10
2nd roll —
1st extra roll 10
2nd extra roll 9



38 *Chapter 3 Using Math in Sports*

Alternative Assessment

Alternative Assessment items correlate with student Goals for Learning at the beginning of this chapter.

- Have students rename an improper fraction to a mixed number in simplest form.

Write a paragraph explaining how to rename the improper fraction $\frac{12}{8}$ as a mixed number. Include an explanation of how to express the mixed number in simplest form.

- Have students convert units of measure to equivalent measures.

Copy the following conversions. Fill in the blank to make each statement true. Draw pictures to demonstrate each conversion.

1 cup = _____ tablespoons *(16)*

3 quarts = _____ pints *(6)*

12 quarts = _____ gallons *(3)*

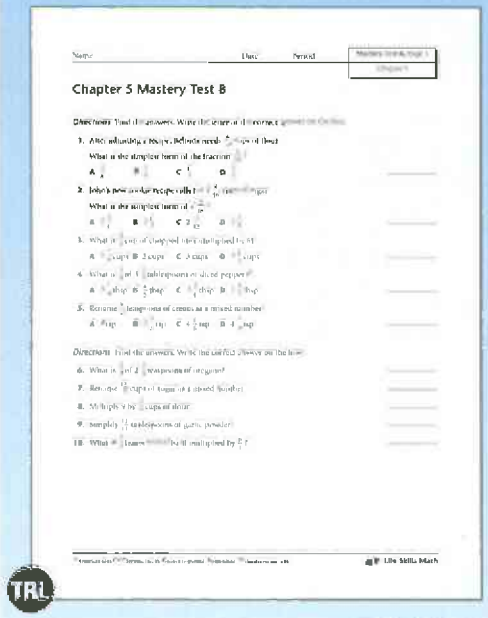
6 tablespoons = _____ ounces *(3)*

- Have students adjust recipes by multiplying and dividing fractions and mixed numbers.

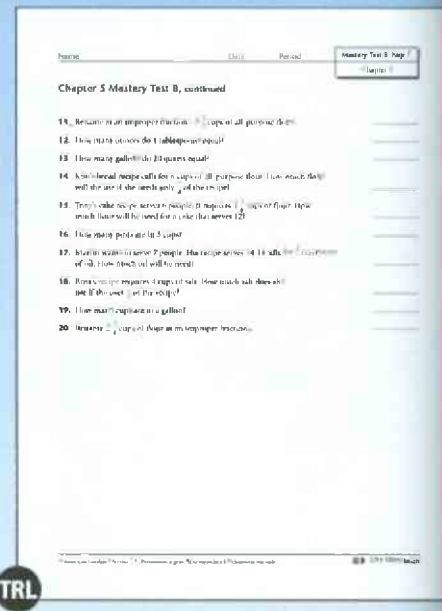
Look at problem 1 on page 80. Write a paragraph explaining how each ingredient amount was decreased to make 8 rolls instead of 40 rolls.

Find the answers.

6. What is $\frac{2}{3}$ cup chopped nuts multiplied by 6? 4 cups
7. Rename $\frac{5}{3}$ teaspoons cream as a mixed number. $1\frac{2}{3}$ tsp
8. How many cups are equal to 4 pints? 8 cups
9. Neal's banana bread recipe calls for 4 bananas and serves 6 people. How many bananas does he need to serve 48? 32 bananas
10. Rename $\frac{8}{5}$ tablespoons butter as a mixed number. $1\frac{3}{5}$ tablespoons
11. Rename $2\frac{3}{4}$ cups milk as an improper fraction. $\frac{11}{4}$ cups
12. Sandra's spaghetti sauce recipe calls for $3\frac{1}{5}$ cups tomato paste to serve 8. How much tomato paste is needed to serve 16? $6\frac{2}{5}$ cups
13. Convert 3 ounces of juice to tablespoons. 6 tablespoons
14. A recipe that serves 12 people calls for 4 cups of milk. How many cups of milk are needed for a recipe that serves 9 people? 3 cups
15. How many pints are in 1 quart? 2 pints
16. Convert 6 cups of water to pints. 3 pints
17. Wanda plans to have a party for 12 people. She found a dessert recipe that calls for $4\frac{1}{2}$ cups of milk, but the recipe serves only 8 people. How many cups of milk will Wanda need if she makes that dessert? $6\frac{3}{4}$ cups



Chapter 5 Mastery Test B



Chapter 5 Mastery Test B

Exercise A Complete the information for this chart for the lawn mower.

Month	Previous Balance	Finance Charge	Before Payment	Monthly Payment	New Balance
Jan.	$132.00	$—	$132.00	$20.00	$112.00
Feb.	$112.00	$1.96	$113.96	$20.00	$93.96
March	$93.96	$1.64	$95.60	$20.00	$75.60
April	$75.60	$1.32	$76.92	$20.00	$56.92
May	$56.92	$1.00	$57.92	$20.00	$37.92
June	$37.92	$0.66	$38.58	$20.00	$18.58
July	$18.58	$0.33	$18.91	$18.91	$0.00

When you use a credit card to make a purchase, you will receive a monthly statement. It shows the balance due and any finance charges that you owe.

Common Error

Some students may be unable to determine or describe the pattern in the chart in Exercise A. Discuss where the data in the first column will come from *(the last column)* before they begin the exercise.

3 Reinforce and Extend

Mental Math

Have students mentally subtract the monthly payment from the amount in the Before Payment column.

Learning Styles

Auditory/Verbal

Some students may benefit from hearing each step they need to follow to find the missing information in the problems in this lesson. Consider asking students to record the steps on a tape recorder and listen with headphones as they solve the problems in this lesson.

Calculator

You may wish to have students use calculators when completing the chart in Exercise A.

Fractions

Comparing Fractions

Example Compare $\frac{3}{4}$ and $\frac{5}{8}$.

Solution

Because $4 \times 5 = 20$

Because $3 \times 8 = 24$

24 is greater than 20; therefore, $\frac{3}{4}$ is greater than $\frac{5}{8}$.

Changing Fractions to Higher Terms

Example Write $\frac{5}{6}$ as a fraction with 30 as the new denominator.

Solution **Step 1** $\frac{5}{6} = \frac{\square}{30}$

Step 2 Divide 30 by 6. → $6\overline{)30}$ (5)

Step 3 Multiply $\frac{5}{6}$ by $\frac{5}{5}$. → $\frac{5 \times 5}{6 \times 5} = \frac{25}{30}$

Answer $\frac{5}{6} = \frac{25}{30}$

Exercise Express these fractions in higher terms.

1. $\frac{3}{4} = \frac{\square}{48}$ 36

2. $\frac{1}{3} = \frac{\square}{21}$ 7

3. $\frac{2}{3} = \frac{\square}{15}$ 10

4. $\frac{5}{6} = \frac{\square}{18}$ 15

5. $\frac{7}{8} = \frac{\square}{56}$ 49

6. $\frac{3}{5} = \frac{\square}{20}$ 12

7. $\frac{1}{7} = \frac{\square}{49}$ 7

8. $\frac{5}{12} = \frac{\square}{24}$ 10

9. $\frac{3}{7} = \frac{\square}{21}$ 9

10. $\frac{4}{12} = \frac{\square}{36}$ 12

11. $\frac{4}{9} = \frac{\square}{45}$ 20

12. $\frac{3}{3} = \frac{\square}{18}$ 18

13. $\frac{2}{11} = \frac{\square}{121}$ 22

14. $\frac{15}{16} = \frac{\square}{48}$ 45

15. $\frac{3}{10} = \frac{\square}{30}$ 9

16. $\frac{12}{14} = \frac{\square}{70}$ 60

17. $\frac{9}{12} = \frac{\square}{144}$ 108

18. $\frac{5}{15} = \frac{\square}{45}$ 15

19. $\frac{2}{8} = \frac{\square}{96}$ 24

20. $\frac{1}{6} = \frac{\square}{72}$ 12

21. $\frac{17}{24} = \frac{\square}{120}$ 85