



Introduction

Math is an integral part of our everyday lives. It is crucial for students to develop the math skills necessary for solving a wide range of problems encountered in the real world.

This book includes reproducible activities that provide practice with a variety of math formats commonly used in our daily lives. The activities are divided into six units, each focusing on a different math-related topic.

Based on her years of teaching at-risk middle school students as well as GED classes to struggling adult learners, Bonnye Wier Cavazos created this program to reach and engage students who struggle with math. Each activity sheet includes clear, simple directions and short activity questions and sentences written at a low reading level. The activities feature realistic graphic representations that middle school and high school students and adults already encounter or will soon encounter.

Six Units

Each unit provides a teacher lesson plan to introduce the real-world math skills to be covered. Also included are a parent letter, ten practice pages, a list of extension activities, and an assessment. The units are:

- Food
- Health and Nutrition
- Travel
- Shopping
- School
- Home

Unit Lessons

At the beginning of each unit is a two-page lesson that introduces and teaches the real-world math topic. Each lesson includes objectives, a materials list, and a lesson plan that provides for class discussion, grouping of students, and hands-on participation.



Unit 1: Food

OBJECTIVES

- Students will recognize everyday math applications related to purchasing and preparing food.
- Students will create and solve word problems related to purchasing and preparing food.
- Students will use addition, subtraction, multiplication, and division to solve food-related problems.
- Students will solve problems involving fractions and decimals.
- Students will calculate percents.
- Students will convert units of volume measurement.

LESSON MATERIALS

measuring cups and spoons, menus, grocery receipts, empty food packages, and recipes

LESSON PLAN

Introducing the Topic

What are some ways we use math when cooking?

Have students brainstorm ways math is used in cooking. Appoint a recorder, or write down the ideas yourself. Ways mentioned should include using measuring cups, following recipes, and telling time. Pass around measuring cups and spoons to allow students to see what the different measurements look like. Bring in recipes and discuss the amounts of different ingredients used in them. Discuss comparative measurements like the size of a teaspoon compared to a tablespoon, or one-fourth cup compared to one-half cup, etc. Provide practice with elapsed time. Ask questions of the whole group, such as, "If a cake is put into the oven at 4:05, and it needs to bake for 30 minutes, what time will you need to take it out?"

What are some ways we use math when grocery shopping?

Give students slips of paper to write down ideas about how math is used in the grocery store. Walk around the room with a shopping bag to collect their ideas. Add a few ideas of your own to the bag as well. Pull slips out of the bag one at a time and discuss the ideas as a class.

How does math come in handy when eating out?

Pass around sample menus that you bring in or print from the Internet. Have individual students or groups of students write math problems using the menus. Give students paper plates or pieces of paper cut into the shape of a circle to write their problems on. Have each student set his or her menu and problem on the plate. Other students can visit the different "restaurants" and solve the problems.

Key Concepts

Review the abbreviations and common conversions on page 4 with the class. Talk with students about adjusting recipes for more or fewer servings: halving, doubling, tripling, etc.

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Parent Letter

Before beginning a new unit, a copy of the parent letter should be sent home with each student. The parent letter explains the topics being studied in the unit and offers suggestions for at-home practice.

Activity Sheets

Each reproducible activity sheet features a clear and concise introduction to the topic. After reading the brief introduction, students will review a realistic graphic representation of information pertaining to the topic. They will then read simple directions instructing them to use the chart, table, or diagram to solve math problems related to the topic. Students will use a variety of math skills to solve the problems as the skills naturally relate to the material. In many cases, students may need to use calculators to find answers and/or check their work.

Extension Activities

After completing all of the activity sheets in a unit, each student should choose one extension activity to further apply the skills that have been learned. Each unit contains a list of ten different suggestions. The activities vary in difficulty level and appeal to students with different learning styles, making this section appropriate for students of varying ability and interest levels. Some students may prefer to conduct surveys, while others might feel more comfortable writing an explanation of the math process or making a poster.

Unit 1: Food

Dear Parents/Guardians:

We are currently learning about the math involved with purchasing and cooking food. During this unit, your child will review a variety of math skills such as fractions, decimals, percents, addition, subtraction, multiplication, and division. At the end of the unit, your child will complete a project that demonstrates his or her ability to use these skills. To extend your child's learning, any at-home practice you can provide would be greatly appreciated. Below are several suggestions.

- Share recipes with your child. Discuss the amount of each ingredient used. Look at the measuring cups and spoons used in your home.
- Look at ads from the local newspaper with your child. Note similarities and differences in prices at the various stores.
- Take your child grocery shopping with you. Compare the prices of different-sized packages of the same items. Compare the prices of store-brand items with name-brand items.
- Talk with your child about your family's food budget. How much is spent on eating out? How much is spent on buying groceries?
- Look at coupons and advertised specials with your child. Discuss ways your family tries to get the most food for your money.

Thank you for your cooperation.

Sincerely,

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Name: _____ Date: _____

Doubling a Recipe

DIRECTIONS: Review the recipe for sugar cookies.

When cooking, there may be times when you need more food than one recipe will make. Instead of making the same recipe more than once, you can double the recipe to create twice as much at one time.

World Famous Sugar Cookies

Ingredients:

3/4 c. flour	1 c. butter
1/4 tsp. salt	1 1/2 c. sugar
1 tsp. baking powder	2 eggs
	2 tsp. vanilla extract

Directions:

In large bowl, stir together the flour, salt, and baking powder. Beat the butter and sugar until light and fluffy. Add the eggs and vanilla extract and beat until combined. Add the flour mixture and beat until you have smooth dough. Refrigerate the dough for about 1 hr. Preheat oven to 350°F. Remove half of the chilled dough from the refrigerator and roll it out on a lightly floured surface. Cut out shapes using a lightly floured cookie cutter and place the cookies on a baking sheet. Bake cookies for about 10 min. or until they are golden brown around the edges. Remove from oven, and let cookies cool on baking sheet for a few minutes before transferring to a wire rack to finish cooling. Makes approximately 4 doz. 2" cookies.

DIRECTIONS: Fill in the amount you would need of each ingredient to double this recipe. Then, answer the questions that follow.

World Famous Sugar Cookies (double batch)

Ingredients:

_____ flour	_____ butter
_____ salt	_____ sugar
_____ baking powder	_____ eggs
	_____ vanilla extract

About how many cookies would this double batch make? _____

Would you double the oven temperature? _____

Why or why not? _____

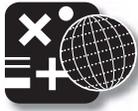
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Name: _____ Date: _____

Extension Activities

- Bring in one of your favorite family recipes. Rewrite the recipe to show the amount of ingredients you would use if you wanted to make twice as much, three times as much, and four times as much.
- Create a poster with a variety of coupons. Write five math problems about the coupons.
- Create a menu for a restaurant you would like to own and operate. Be sure to include prices for each menu item. Write a bill for the cost of one meal, including tax and tip.
- Interview five adults. Ask them how much money they estimate they spend on groceries each month and how much they spend on eating out. Record this information in a table, and display it in a graph.
- Bring in ads from one or more of your favorite grocery stores. Cut out the pictures of the items you would buy if you had \$100 to spend on groceries. Glue the pictures on paper, and write a math problem to show the exact amount, not including tax, all of the items would cost.
- Bring in a menu from a local restaurant. Write a bill for the meals ordered by an imaginary family of four people. Be sure to include sales tax. Then, write your recommendation for the amount of the tip and how it was calculated. Finally, calculate the total amount spent for that meal.
- Estimate the cost of eating out for dinner during one whole week. Write the name of the restaurant and how much you would probably spend for each meal. Write a math problem to show each day's meal, and calculate how much you might spend in a week.
- Bring in the boxes or bags for four different food items. Find out the price of each of the items. Then, calculate the price per ounce of each item. Make a price tag that shows the unit price as well as the total price for each item.
- Write a grocery list of items you would like to purchase on a weekly shopping trip. Estimate the cost of each item, and calculate the estimated total of your list.
- Visit a local grocery store. Create a table that shows the price of the store brand of ten different items, as well as the cost of a name brand of each of those same products. Make sure the items you are comparing are the same size. Write a summary of your findings.

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Introduction (Continued)

Assessments

Each unit includes an assessment with questions that focus on the math topics covered in the unit. The assessments follow the same format as the activity sheets, including simple directions, realistic sample items students must use to obtain information, and problems to solve. In many cases, students may need to use calculators to solve the problems and/or check their work.

Answer Key

For your convenience, an answer key is included at the end of the book, showing the correct answers for each activity sheet and unit assessment. In cases where several answers could be correct, "Answers will vary" is noted.

Name: _____ Date: _____

Unit 1 Assessment

Part 1: Adjusting Recipes

DIRECTIONS: Answer the questions below.

- If you doubled a recipe that calls for $1\frac{1}{2}$ c. sugar, how much sugar would you use? _____
- If you halved a recipe that calls for 5 c. chicken broth, how much broth would you use? _____
- If you tripled a recipe that calls for $1\frac{1}{4}$ c. chocolate chips, what amount of chocolate chips would you use? _____
- If you doubled a recipe that makes 2 doz. cookies, how many cookies would you expect to make? _____
- If you doubled a punch recipe that makes 2 qts., you would make _____ qts., or _____ gal.

Part 2: Using Coupons

DIRECTIONS: Answer the questions below.

- How much would a \$2.79 box of cereal cost if you used a coupon for 50¢ off? _____
- How much would you pay for two boxes of pancake mix that cost \$2.49 each, if you had a coupon to save \$1.00 on the purchase of two boxes? _____
- If HomeStyle brand soup costs \$0.89 a can and Farmland brand soup costs \$1.29 a can and you have a coupon to save \$0.15 on a can of Farmland, which brand would cost the least? _____ By how much? _____

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Answer Key

PAGE 5

- 7 c. flour
- $\frac{1}{2}$ tsp. salt
- 2 tsp. baking powder
- 2 c. butter
- 3 c. sugar
- 4 eggs
- 4 tsp. vanilla extract
- 8 dozen, or 96 cookies
no, because the cookies would burn

PAGE 6

- $\frac{1}{2}$ c. chopped onion
- $\frac{1}{2}$ tsp. minced garlic
- $\frac{1}{2}$ stalk celery
- $\frac{1}{2}$ carrot
- 1 Tbsp. butter
- 1 tsp. salt
- 1 tsp. pepper
- $\frac{1}{2}$ c. ketchup
- 1 lb. ground chuck
- 1 large egg
- $\frac{1}{2}$ c. breadcrumbs
- 1 Tbsp. chopped parsley
- 3 servings.

PAGE 7

- 6 Tbsp.
- 6 lbs.
- 32 oz. or 2 lbs.
- 3 tsp., 1 Tbsp.
- Answers will vary, but should be before 4:00 p.m.

PAGES 8-9

- \$4.58
- \$4.23
- \$4.18
- Super M Cereal
- \$1.54
- \$0.55
- \$0.55
- \$2.99
- \$2.20
- 2, peanut butter and turkey bacon

PAGE 10

- \$0.40
- carrots, celery, and oranges
- \$1.00
- potatoes
- \$0.18

PAGE 11

- the 10-lb. bag, \$0.99
- the 5-lb. bag, descriptions of how problem was solved will vary
- the 3-liter bottle, descriptions of how problem was solved will vary
- the 8-oz. can, descriptions of how problem was solved will vary
- the 24-oz. box, descriptions of how problem was solved will vary

PAGE 12

- \$14.25
- \$1.14
- \$2.85
- \$18.24
- Answers will vary.

PAGE 13

- \$12.50
- \$1.08
- \$2.70
- \$12.28
- Answers will vary.

PAGES 14-15

- \$21.13
- \$6.40
- \$4.49
- \$3.16
- \$12.75

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