
INTRODUCTION

Coupon Math is a series of reproducible activities designed to help students master basic math concepts through real-world applications. Some students can find math difficult when their reading abilities impair their understanding of math concepts. *Coupon Math* provides these students a tool for developing their math skills and applying them in real-world situations without requiring on-level reading skills.

This book addresses skills in a variety of formats with multiple activities so that individual learning styles are accommodated. *Coupon Math* contains over 100 worksheets organized into a developmental progression. The skills and activities included in *Coupon Math* are age-appropriate and presented at a low-readability level to ensure success for students who struggle with reading. Additionally, the worksheets contain simplified directions and explanations of each activity to further promote success and understanding of math concepts. The *Coupon Math* book addresses the skills of reading comprehension, problem solving, adding with and without regrouping, subtracting with and without regrouping, and finding solutions to two- and three-step problems.

Coupon Math teaches real-world mathematics through the presentation of engaging problems. Students learn how to incorporate new ideas, techniques, and mathematical relationships to solve problems. The questions on the worksheets require students to use coupons and prices to solve problems and reinforce the need to understand and use various strategies, mathematical properties, and relationships. The worksheets contain many practical applications, and students become familiar with a process to set up mathematical problems and solve them.

The goal of the *Coupon Math* book is to introduce students to the purpose and use of coupons. Students will use coupons to solve math problems throughout the book. Other real-world skills addressed include: shopping within a budget, comparing prices and products, and understanding the reward of saving money with coupons. Before students complete any activity, they need to be able to add and subtract with and without regrouping, convert cents to dollars with decimals, and line up numbers with decimals to add and subtract.

In order to simplify the steps to solve the real-world problems, sales tax will not be included in these activities. Teachers can discuss how a sales tax works and the purpose of a sales tax separately. However, none of the problems included in this book require students to figure the sales tax.

What Is a Coupon?

A coupon is a valuable tool to help people save money when shopping and to help companies sell goods. A coupon is a paper certificate that represents an amount of money that will reduce an item's price upon purchase. A coupon provides the following information: brand name of an item, bar code for easy tracking, expiration date, and amount saved off of the original price. Each coupon states specific requirements that must be met so it can be used, for instance "two for the price of one" or a size limit like "12 oz. size or larger." People can find coupons in weekly flyers in newspapers, at the store, or even online. Sometimes, a coupon can reduce the price of an item so that it is lower than a competitor's price for a similar item. Both the people who use them and the companies that make them benefit from coupons.

History of the Coupon

Coupons have been in use for over a hundred years. The first coupon was created in 1894. A man named Asa Candler, who had recently purchased the secret recipe for Coca-Cola®, made handwritten tickets for a free glass of the new fountain drink. He distributed them to people to get them to try his new drink. Soon afterwards, in 1895, C.W. Post made and distributed the first printed coupon. The coupon was for one cent off of his new cereal, Grape-Nuts®. Other companies soon began to create their own coupons. People looked for the coupons and used them to save money on food and household products. During the Great Depression, people did not have much money to spend, so companies had to compete for their business. People made decisions about purchases based on how much they could save on the products by using coupons. By the 1950s, more and more grocery store chains were built, and the smaller grocery stores had to stay competitive. The smaller stores issued coupons to encourage people to come to their stores. As a result, shoppers were able to shop around for the better price. Because of the increased use of coupons, the Neilson Coupon Clearing House was developed in 1957 to manage the money owed to the grocery stores from the companies issuing the coupons. By 1975, over half of the population of the United States used coupons on a regular basis. Today, coupons are still distributed by companies to encourage people to buy their products.

How Coupons Work

Coupons are designed by companies to encourage people to buy their products, to compete with other companies for people's business, or to introduce consumers to new products. The companies decide the value of their coupons, and then print the coupons in the newspaper or online. People clip the coupons and use them when purchasing items in a store. At check-out, the store reduces the price of the items based on the amount indicated on the coupon. The store takes the coupon and sends it back to the coupon clearing house for the company. In return, the coupon clearing house will send the store a monetary amount equal to the value of the coupon to cover the amount the store lost when the coupon was used. When people use coupons, companies sell more products, stores get more business and repeat customers, and people save money.

FIVE UNITS

Teacher instructions, unit worksheets, and assessments are presented in the following units:

- UNIT 1: What Is a Coupon?
- UNIT 2: Coupon Subtraction
- UNIT 3: Find the Total Amount
- UNIT 4: Shopping List
- UNIT 5: Coupon Flyer

This order is the suggested sequence for teaching the skills included in this book. The first unit introduces students to the purpose, characteristics, and use of coupons. The Coupon Subtraction unit shows students how to set up two- and three-step problems. The Find the Total Amount unit builds on the three-step process for solving problems. The fourth and fifth units have the students apply the skills, procedures, and processes used in the first three units to real-world situations.

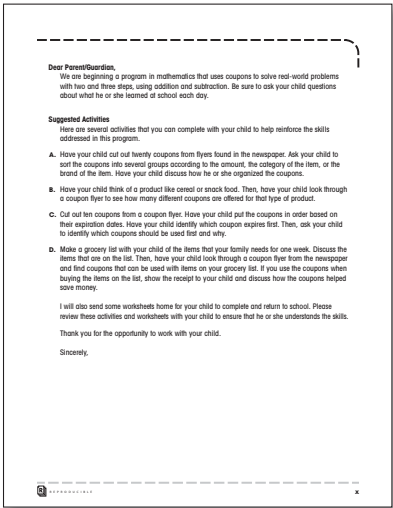
FEATURES

Research and Standards

Coupon Math is a research-based product and is based on the standards of the National Council of Teachers of Mathematics (NCTM). Applicable quotes from research articles and a list of the standards met by this book are found on page ix.

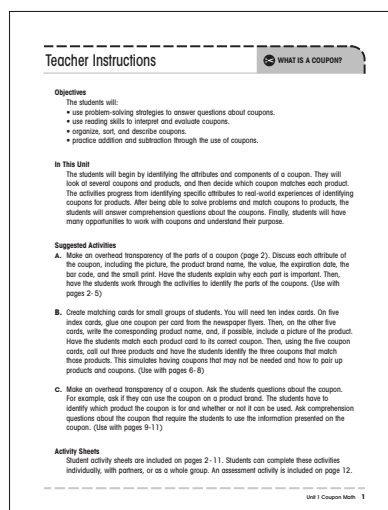
Parent/Guardian Letter

The introduction contains a letter that should be sent home with each child prior to the start of the program. This letter provides parents/guardians with information about the skills their children will learn in this program. It also suggests a variety of activities that parents/guardians can complete with their children to reinforce and extend the skills taught in the units. Many of the activities are hands-on and apply the skills to real-world situations. Most importantly, the letter encourages parents/guardians to ask their children what they have learned in school, thus fostering better communication at home. The parent/guardian letter is found on page x.



Teacher Instructions

Teacher instructions begin each unit and provide the objectives, an explanation of what is addressed in the unit, and suggested activities to introduce the skills and concepts covered. The suggested activities include hands-on ideas for how to model and teach the skills of finding coupons, adding items' prices, adding the value of coupons, subtracting to find the total amounts owed, and applying these skills to other real-world mathematic situations.



Unit Worksheets

Each unit provides a variety of worksheets that address each skill covered. The teacher has the option to choose only particular activities to use as review and reinforcement, or to work through all activities to ensure students have numerous opportunities to comprehend and apply each skill. The worksheets in each unit are arranged so that skills build on and reinforce each other. The worksheets ask students to identify information from the items' prices and the value of coupons, use provided information to answer questions, and gather information to complete the activities.

The coupons in the units and flyers have expiration dates; however, the dates are not complete. The month and day are provided, but the year is blank. The teacher should fill in the year before making copies of the worksheets. Because the expiration date is an integral part of a coupon, this feature allows the coupons to stay current for years of use in the classroom.

Each worksheet is a complete assignment that is meant to stand alone. Additionally, each worksheet is designed so that the teacher has the option of using it either as an independent or group activity. If the worksheet is completed by groups of students, then be sure each student understands the skill and is able to explain the skill in his or her own words. After skills have been taught, unit worksheets can be sent home for review or reinforcement of skills.



Unit Assessments

Each unit contains an assessment for the skills addressed in that unit. The assessments are designed like standardized tests so that the students become familiar with this format. While reviewing the skills, teachers can also address the skills needed for taking standardized tests.

Most assessments in *Coupon Math* require students to eliminate incorrect options and choose the correct answer, while some ask students to identify the correct application of the skill. While these assessments are designed to measure students' knowledge of the skills taught, these assessments can also be used as pretests to measure students' prior knowledge of the skills.

Reproducible Coupons

Reproducible coupon sheets are included in Unit 4, immediately following the teacher instructions. The purpose of these coupons is to provide students with the real-life experience of identifying coupons that can be used when purchasing items, finding the value of the coupons to be subtracted from the total of the products, and calculating the total amount owed. Students will practice finding coupons to use with specific items. This replicates the real-world experience of searching through newspaper flyers to find coupons for specific products. Teachers can reproduce the four pages of coupons for each student. Students should cut up the coupons and store them in a container or resealable plastic bag. The worksheets require students to look for coupons from these sheets to solve the problems and to use the coupons to stay within a specific budget.

Coupon Flyer

The coupon flyer is a sixteen-page, colorful, glossy ad. Students will use this realistic flyer to complete the worksheets and activities in Unit 5. The flyer includes advertisements like the ones found in real newspaper coupon flyers.

Students will apply the real-world skills of locating the total amounts for items, finding coupons to use with items, and comparing different stores' prices with and without coupons. Teachers can also use the coupon flyers and worksheets with small groups.

The flyer is also designed for use with the provided list of additional activities on page 127 to extend student's understanding of the real-world uses of coupons. Many hands-on activities, such as setting up a mock store, are included.

Answer Key

An answer key for the worksheets and assessments is included at the end of the book.

RESEARCH AND STANDARDS

The methodology of using coupons to teach mathematics and problem-solving skills in *Coupon Math* is firmly based in the research regarding teaching mathematics to students with special needs. Research shows that students with learning disabilities need relevant and meaningful practice to acquire mathematical skills. Sousa states that “Students are more comfortable with mathematics when they perceive it as a practical tool and not as an end unto itself” (2001). Therefore, life skills and concepts are best learned through the use of hands-on manipulatives and realistic scenarios. Research further suggests that students with learning disabilities work best with concrete models that enable them to link abstract mathematical skills to real-world applications. According to Bellonio, “a review of activity-based mathematics learning indicates that mathematics achievement increased when manipulatives were used” (2001). In particular, the research on teaching mathematics to students with special needs reinforces the importance of using methodological steps to solving problems. Providing steps for students to follow makes abstract concepts more concrete. *Coupon Math* provides a two- and three-step strategy to solve addition and subtraction problems. Students are then asked to further analyze or compare outcomes of those multi-step problems.

The Principles and Standards for School Mathematics by the NCTM state that “students need to learn a new set of mathematics basics that enable them to compute fluently and to solve problems creatively and resourcefully” (2003). The problems in *Coupon Math* focus on real-world situations in which students must work within a budget, compare prices of items, determine if using a coupon is beneficial, and compare which item is the better value. Most mathematical concepts can be best introduced through problems based on familiar experiences. The activities in *Coupon Math* provide problems that follow the NCTM suggestion to “give students the chance to solidify and extend their knowledge and to stimulate new learning” (2003).

Coupon Math meets both state and national standards (including the National Council of Teachers of Mathematics Standards 2000 Project) regarding numbers, operations, problem solving, connections, and representations. As students use the coupons and the steps to solve the problems presented in this program, they will:

- identify and analyze information needed to solve mathematical problems.
- use manipulatives to build new mathematical knowledge.
- apply and adapt a multi-step strategy to solve real-world problems and scenarios.
- recognize and understand how mathematical ideas interconnect and build on one another to solve problems.
- reflect upon and verbalize the process of mathematical problem solving.

Bellonio, J. L. (2001). “Multi-Sensory Manipulatives in Mathematics: Linking the Abstract to the Concrete.” *Human Intelligence: Theories and Developmental Origins*, VI. Retrieved June 23, 2004, from <http://www.yale.edu/ynhti/curriculum/units/2001/6/01.06.12.x.html>

National Council of Teachers of Mathematics. (2003). Principles and Standards for School Mathematics. [Electronic version] Retrieved on June 23, 2004, from <http://standards.nctm.org/document/chapter8/index.htm>

Sousa, D.A. (2001). *How the Special Needs Brain Learns*. Thousand Oaks, CA: Corwin Press, Inc.