

# Math Merchants

---

Student pairs role-play buyers and sellers  
in a classroom mini-city

## Welcome to *Math Merchants!*

You and your students are about to transform your classroom into a mini-city. As buyers and sellers in the city, your students will develop number skills and mathematical reasoning as they use money in real-life situations.

As a class, students name their city and choose what businesses will be built there. They apply for jobs in the stores and offices then work with partners to design storefronts and store catalogs.

While one student works as store manager—calculating prices, making change, and tracking daily sales—the other shops, making purchasing decisions and tracking spending.

*Math Merchants* is designed for students in grades 3 through 6. Those in higher grades and with more ability will experience more work with fractions and percents as they figure taxes and discounts.



# ● Table of Contents ●

## **Purpose and Overview**

What is <i>Math Merchants</i> ? .....	5
What do students learn? .....	6
How are students organized? .....	7
How much time is required? .....	7
How is learning assessed? .....	7
Why use <i>Math Merchants</i> ? .....	9

## **Components** ..... 11

## **Getting Started**

Decisions to Make .....	13
Preparation and Set Up .....	15

## **Unit Time Chart**..... 18

## **Daily Lesson Plan**..... 19

## **Masters**

Whole-Unit Masters .....	53
Assessment Tools .....	82
Buyer Masters .....	91
Seller Masters .....	95
Business-Specific Masters .....	98
Challenges .....	117

## **Teacher Feedback Form**..... 144

## Purpose and Overview

### What is *Math Merchants*?

*Math Merchants* is a role-play in which third through sixth graders learn real-life money management skills by buying and selling goods and services in a classroom city that they create.

As a class, students take ownership of their city by naming their city and determining the types of businesses they will build there. Using their writing skills, individuals then apply for a job at the store or office they'd like to manage. Students are hired to work with a partner to build a storefront, determine the goods or services they will sell, and establish prices and discounts. Store managers create a catalog of goods and office managers prepare the tools they will use to perform their service.

Once the businesses are created, students take turns being buyers and sellers. Salaries are earned through work in the stores as well as class work (e.g., homework). Sellers track and calculate daily sales, apply taxes, calculate discounts, and make change. Buyers make purchasing decisions, use cash, checks, and debit cards to make purchases, and track their daily spending. Buyers are also subject to "situation cards" that add unexpected events to their shopping experience.

Daily challenges are intended to extend and enrich the knowledge gained in the daily lessons. Options for a culminating event include presentations of financial statements, personal reflections, and inviting guests to shop in the classroom city.



## Purpose and Overview

### What do students learn?

The activities within this unit are correlated to national and state education standards. To obtain specific standards information for this title, go to [www.teachinteract.com](http://www.teachinteract.com) or contact us at 1-800-359-0961.

By using *Math Merchants*, your students will gain and experience the following:

#### **Knowledge**

- Connecting math to real-world applications
- Understanding and applying decimals and percents
- Understanding how checks and ATM cards are used in our monetary system
- Communicating mathematically orally and in writing

#### **Skills**

- Adding and subtracting decimals
- Counting money
- Making correct change
- Writing checks and maintaining a check register
- Keeping financial records
- Calculating percentages

#### **Attitudes**

- Building positive attitudes toward math
- Coping with consequences of decision-making
- Recognizing the need to keep track of money to the penny
- Realizing the value of working with others toward a common goal

## How are students organized?

Students work individually, in pairs, and as a whole class, depending on the activity they are working on. As a class, students choose businesses for the city and interact during buying and selling days. Students work in pairs to plan and develop their businesses. As they work through the unit, student pairs support each other in checking their work. Individual activities include applying for jobs and buying and selling in the stores.

## How much time is required?

*Math Merchants* requires 10–15 days of instruction. Each lesson is approximately 50 minutes. The daily lesson plans follow a 15-day plan. The unit can be completed in less time by assigning stores to student pairs, pre-making or reusing storefronts and catalogs, and limiting your culmination to one or two activities. The unit can also be extended by adding more shopping days or using more of the challenge activities.

## How is learning assessed?

Assessment opportunities are embedded throughout the unit, in the performance of each activity in the form of writing, observation, and discussion. Students are assessed individually and in pairs or groups on their ability to keep track of their money, make correct change, balance their checkbooks, and keep business records. They write about their learning in journals. They also write answers to mathematical questions, as well as how they arrived at their answers.

**Pre-assessment:** Pre-assessment is used to find out what your students understand about dealing with money and if they are able to organize their thinking to find all possible solutions. Pre-assessment is on Day 1 when students write in their journals about different ways to give specific change and demonstrate their understanding of how various coins can be combined.

**Observation Checklist:** The checklist is used to evaluate students' understanding of the skill involved through personal observation and having students orally explain their thinking.

**Teacher Observation Checklist**

The checklist is used to assess students' understanding of the skills involved in each activity. It will be difficult to observe and assess every student every day, however, you should be able to rotate your observations so you can assess each student at least once as a buyer and once as a seller. Each day, select individuals to observe. Consider students' proficiency of the skill involved, ability to use a variety of strategies, understanding of the procedures, and persistence in helping others understand the tasks. Using the checklist, ask them to explain their thinking. You may want to ask one or more of the following:

- What went on in your mind when?
- Does that always work? Why or why not?
- How do you know if received/gave the correct change?
- Do you see a pattern? Explain.
- What's another way you might approach this?
- What do you think would happen if?
- About how much will these 2 or 3 items cost?
- Do you have enough to pay for them?

Student Name	Date	Cooperative Participation	Ability to Count Money	Ability to Make Change	Ability to Calculate Decimals	Ability to Calculate Percents

**Rating Scale**

- ✓ = Student demonstrates mastery without assistance
- ✓ = Student demonstrates ability with minor assistance
- = Student makes several minor errors, but is able to correct with additional instruction
- = Student is unable to complete the task correctly, even with additional instruction

---

Dear Parents,

Within the next few weeks your child will participate in a math simulation called *Math Merchants*. The purpose of this unit is to provide a motivating setting for students to learn and practice real-life money skills. Working together, students plan and develop businesses that make up a mini-city. As they buy and sell goods and services in the city, they must keep careful records of income and expenses and make sure they give and receive the correct change. Students handle money in the form of cash, checks and debit cards, and also learn how to work with decimals and percents by computing discounts.

Your help in collecting the following materials for use in this simulation is greatly appreciated. These materials will not be returned.

- **Tagboard, cardboard boxes, or presentation boards** to create storefronts
- A variety of **newspaper advertisements, commercial catalogs, and sale flyers** to create store catalogs
- **Shoe boxes** for storing money
- **Egg cartons** for separating coins
- **Store receipts with listed prices** to practice calculating real-life money values

Sincerely,

---



## • Auto Parts Store •

### Job Description

You will help customers choose the items that are right for their automobile.

### Qualifications

You must understand the different items that can be purchased for an automobile. You must be able to calculate tax on items sold. If you have items on sale, you must also be able to calculate discounts.

### Duties

Create a catalog of products to be sold in the store. Write receipts for items sold and give correct change. Count money at the end of each business day and make a bank deposit. Keep accurate records of all items sold in your store.



## • Bank •



### Job Description

You will keep track of the deposits and withdrawals, including ATM/debit and check transactions, of all bank customers.

### Qualifications

You must be able to use a calculator.

### Duties

Create money envelopes for stores. Give customers cash and receipts for ATM/debit withdrawals. Keep accurate bank records.

