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Math Merchants

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

About the Authors:

Louise Vandling is a credentialed teacher with a master's degree in education. She has more than 35 years of experience as an elementary teacher, administrator, district math mentor, staff developer, and university math instructor. She is recently retired from the Vista Unified School District where she was the mathematics specialist at Casita Center, a math magnet school in the district. Since retirement she has been consulting for school districts in mathematics and has presented at the National Council of Teachers of Mathematics, Texas Council of Teachers of Mathematics, California Mathematics Council, Greater San Diego Mathematics Council, and California Association for the Gifted annual conferences.

Judy Bippert is a credentialed teacher with a master's degree. She has more than 35 years of experience teaching junior high and college level students, coordinating Gifted Education programs, and supervising student teachers. She is recently retired as a faculty member at San Diego State University where she taught mathematics methods to preservice teachers and coordinated Field Experience. She has made presentations at the National Council of Teachers of Mathematics, Texas Council of Teachers of Mathematics, California Mathematics Council, Greater San Diego Mathematics Council, and California Association for the Gifted annual conferences.

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10200 Jefferson Blvd. • P.O. Box 802 • Culver City, CA 90232-0802
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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.

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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.

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 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?

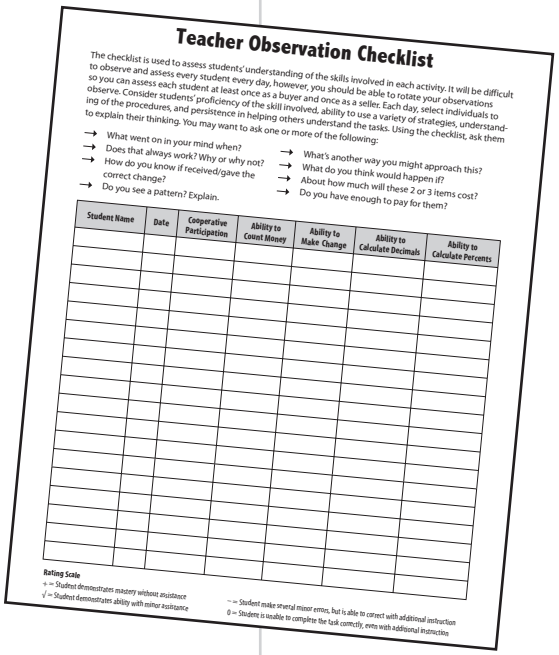
Math Merchants requires 10–15 days of instruction. Each lesson is approximately 50 minutes. The daily lesson plans follow a 15-day plan. The unit can be completed in less time by assigning stores to student pairs, pre-making or reusing storefronts and catalogs, and limiting your culmination to one or 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 make several minor errors, but is able to correct with additional instruction
0 = Student is unable to complete the task correctly, even with additional instruction

Rubrics: We have included three standard rubrics. The Journal Entry Rubric is used to grade students' written responses to the journal prompts. A Final Assessment Rubric is provided for evaluating students' mathematical reasoning, understanding of concepts and strategies, cooperative teamwork, and presentation of work. The Presentation Rubric is used in conjunction with the culminating event, should you choose to use the oral presentation option.

What do Rubric Scores Mean?

4 **Exceeds Expectations**—This rating describes work that exceeds the standard for the activity. The descriptors include words such as "careful," "complete," "excellent," "effective," "involvement," and "enthusiasm." Students who earn a "4" demonstrate leadership and knowledge during participation in contract activities. Their performance and/or product are significantly better than what was required or expected.

3 **Meets Expectations**—This rating describes work that meets the standard with quality. The descriptors lack some of the positive adjectives of a "4," but these students have mastered the content or skills and can demonstrate their understanding in application settings.

2 **Nearly There**—This rating describes work that almost meets the standard. Inconsistent effort, evidence of little involvement, or a misconception of content will result in a "2" rating. These students need to try harder or revise their work in order to meet the standards.

1 **Incomplete**—This rating describes work that has not met the standard in content and/or skill. It is incomplete and ineffective. These students will need more instruction and another opportunity to demonstrate knowledge or skill, or will require alternative instruction and assessment.

Final Assessment: The final assessment allows for a comparison with student responses in the pre-assessment.

Why use *Math Merchants?*

Math Merchants provides teachers and students a motivating setting for the practice of using money and making choices. The unit is flexible and easy to use.

Differentiation

Differentiated instruction is offered through a broad range of activities and assessment options. Students are given opportunities to interact with each other and with real world experiences as they build on their knowledge of mathematical ideas.

Specific ways to differentiate:

- Limit use of tax and percent.
- Vary money amounts and discounts.
- Limit use of debit cards based.
- Pair students to support slower learners and encourage faster learners.
- Include daily challenges.
- Use journal prompts for oral or written communication.

Motivation

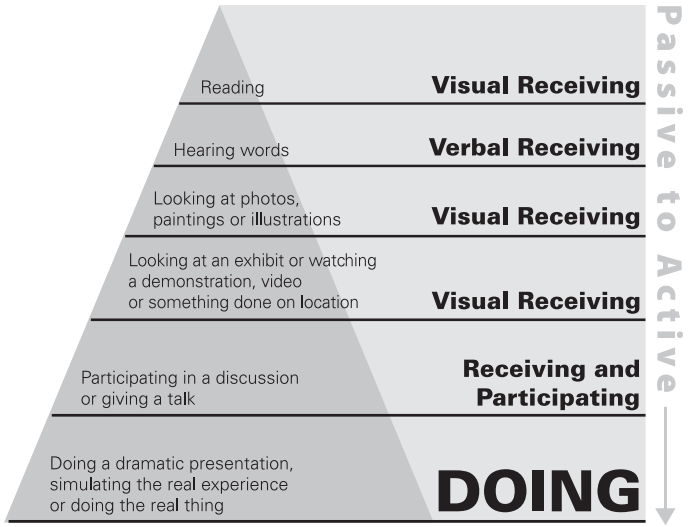
Students thoroughly enjoy the idea of working with money. By the time they are in school they have learned the importance of money in their daily lives. They are motivated to learn how to use and take care of their money because they can see the real-world application. This unit allows students to use money to practice buying and selling without the consequences of losing "real" money should they make a mistake.

Flexibility

- The activities can be used on a daily basis or can be spread out over a period of time, such as 2–3 times a week.
- The number of buying and selling days can be extended depending on the needs of the teacher and students.
- Situation cards and challenges can be used at the discretion of the teacher.
- Several suggestions for a culminating activity are provided. All, some, or none may be used based on time and teacher judgment.

Ease of Use

- Once stores are constructed and students understand their roles, teachers can focus on assessment and monitoring students.
- The Teacher Observation Checklist and the Journal Entry Rubric help manage assessment.
- Samples of recording sheets are included in the Student Guide for quick reference.



Adapted from Edgar Dale's "Cone of Experience"

Components

The *Math Merchants* Package

The *Math Merchants* complete package includes this Teacher Guide, two sets of Student Guides, a Check Writing poster, two Sample Catalog posters, and a set of Money Masters.

Teacher Guide

This Teacher Guide contains the information you need to run a successful unit. Daily directions, helpful teaching tips, reproducible forms (Masters), lists of classroom materials, assessment tools, and answer keys are included.

Student Guides

There are two Student Guides, a buyer guide and a seller guide. On shopping days, students use the appropriate guide to help them with their daily tasks. The buyer guide provides instructions for shopping, including how many stores to visit and how to record purchases. The seller guide details the transactions to be made when selling goods or services. Both guides also include samples of the forms that students must fill out.

Check Writing Poster

The Check Writing poster can be used throughout the unit as students learn how to write checks, practice writing checks, and make purchases with checks as they shop in the city. The poster clearly defines the parts of a check and provides a visual reference for the proper way to fill out a check. The coordinating Masters on pages 102–103 can be used as overhead transparencies to model check writing for students.

Sample Catalog Posters

The two Sample Catalog posters give students an idea of what their store catalog might look like. The "We Sell Everything" catalog features different kinds of images—from computer clip art to authentic photos—that students can use to spark their imaginations when designing their own catalogs. The products featured on the posters offer a wide range of prices so students can use them for various activities, such as making change practice on Day 2.

Money Masters

The set of Money Masters contains reproducibles for each of the following denominations: $100.00, $50.00, $20.00, $10.00, $5.00, and $1.00 bills, and half dollars, quarters, dimes, nickels, and pennies. These can be used to make a classroom set of money to be used with this unit. Play money (sold separately) can be used as an alternative.

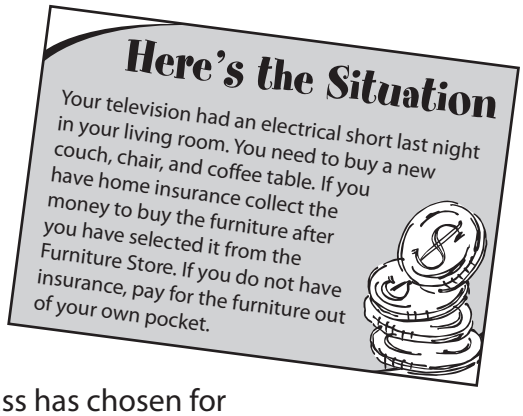
In addition to the package components, there are several elements featured in *Math Merchants.* Each of these elements can be used how and when you wish to incorporate them.

Journals

Students respond to writing prompts in a personal journal. These prompts appear at the beginning of the Daily Directions. Writing in their journals gives students an opportunity to synthesize and express their new knowledge and understanding.

The journal prompts should be given after the lesson to help students consider the process and reinforce their learning. They can be done in class if time allows or assigned as homework.

Situation Cards



Buyers receive one Situation Card each shopping day. These cards are intended to give buyers real-life meaning to their shopping and to add the unexpected. There are 50 cards, each of which relates to a specific business or item to purchase. Review the cards ahead of time to choose those that correlate with the stores your class has chosen for their city. Custom cards can also be added to accommodate any businesses that your students add to the original list provided.

Hand out Situation Cards to buyers at the beginning of the shopping day. Students should follow the directions on the card on the day they receive it.

Challenges

Twenty challenges are included to support and extend daily learning. Each challenge is an independent activity or investigation. Some challenges are games that are designed to help students learn and retain mathematical concepts by connecting math to positive real-life experiences and de-emphasizing rote work with procedural skills. They are motivating and provide practice of specific skills while maximizing problem-solving and reasoning competence. Games also require active participation giving students opportunities to reason and communicate mathematically as they apply math to new situations.

Suggested Challenge titles are listed in Daily Directions. We recommend using them daily, but use is optional based on student needs. Set up the Challenges in learning centers and allow students to work on them as they have time or assign them as homework.

Getting Started

Read this Teacher Guide and the Student Guide to get an understanding of how the unit works and how to prepare.

Decisions to Make

1. **How will you introduce the unit?**

   Do something fun to build excitement for this unit. Here are some options:

   - Have a local entrepreneur or city leader as a guest speaker who can link the classroom to life outside the school.
   - Arrange a field trip to a store.
   - Have students interview a businessperson in the community to find out the basic costs of running a business, such as labor, merchandise, marketing, and rent.
   - Make a literature connection by reading a book in class or as homework. Suggested titles include *How the Second Grade Got $8,205.50 to Visit the Statue of Liberty* by Nathan Zimelman (Albert Whitman & Company), *The Monster Money Book* by Loren Leedy (Holiday House, 1992), and *Alexander, Who Used to Be Rich Last Sunday* by Judith Viorst (Aladdin).

2. **How will you choose the businesses that will make up the city?**

   Allowing students to choose the businesses that will make up their classroom city gives them ownership in this unit. You might allow students to brainstorm types of businesses, then use the list of businesses provided to guide their final selections. To save class time, have students select businesses from the provided list, or choose the businesses yourself prior to beginning the unit.

3. **Will you include work with percentages?**

   If you feel your class is not ready for percents you may chose not to include taxes and percent discount coupons. You may want students to work with whole-dollar coupons.

4. **How will you use Challenges?**

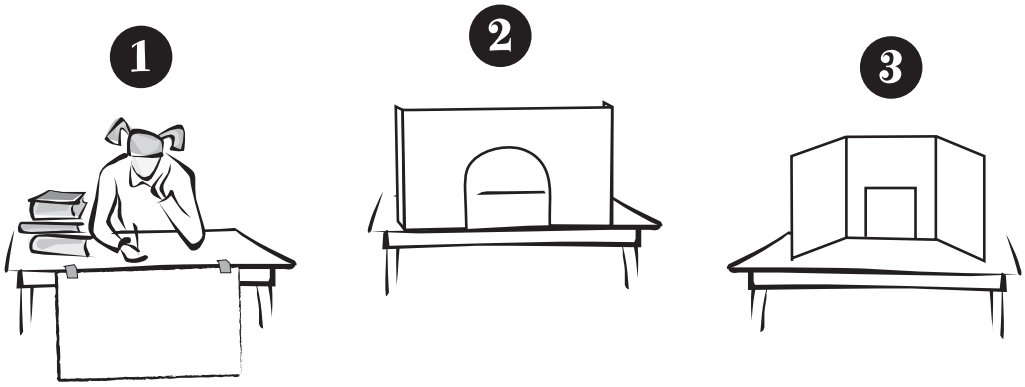
   Select the Challenges you want to use and how you want to use them. Will you hand them out as needed to some or all students? Will you set them up as centers? Will you use them as fill work or assign them as homework? Will they be required or optional? If they are optional, will you grade them or give additional money for those who complete them?

5. How will your stores be constructed?

Storefronts can be constructed in a number of ways. Decide which way will work best for your class and adjust your materials list accordingly. Student pairs can include the name of their business, their business logo, and otherwise decorate any of the options below.

Storefront options:

1. **Tagboard**—Attach to the front of desks or post on the wall behind desks and leave up during the unit.
2. **Cardboard Boxes**—Cut box so it has two sides and a back (in a "U" shape). Set in front of or on top of desks, depending on the size of the box.
3. **Presentation Boards** (available from office supply stores)—Cut a window in board so that the seller can see the buyer through it during transactions.



6. What kind of culminating event will you have?

There are several options for culminating this unit. Any or a combination can be used as appropriate. See the Day 15 Daily Directions for more details.

- Shopping Event: Invite another class or parents to shop in the city. This could be an evening Open House where students can show what they've learned to their families. If you choose to have an evening event for families, be sure to make arrangements ahead of time and include the invitation in your Parent Letter.
- Oral Presentations: Have pairs give a presentation about their stores, to include the products they chose, how much money they made, and what they would do differently if they were to start another store.
- Letters to the Mayor: Have each student write a letter to the mayor analyzing their performance as buyers and sellers.

Preparation and Setup

1. Gather Materials

In addition to the materials included in this package, you will also need the following items. A list of materials is provided at the beginning of each day's directions.

- Coins and Currency—Use play money (sold separately) or use the Money Masters included in this unit (see Make Copies below)
- Calculators—one per student
- Envelopes—one for each store for starting cash (could also use one per student as an alternative for creating wallets)
- 12 x 18" construction paper—one per student for student folders
- 9 x 12" construction paper—four pieces per pair for catalogs and one piece per student for wallets
- 8 x 9" construction paper—one piece per student for checkbooks
- Scrap construction paper—several per pair to make coupons
- Craft materials, including different colors of markers and glue for decorating storefronts
- Staplers—a few for students to share
- 0–9 Die OPTIONAL (a reproducible spinner is provided as an alternative)

The following materials are listed in the Parent Letter to be brought in by students. Alternatively, you can choose to bring these materials in yourself.

- 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 OPTIONAL (a reproducible master is also provided as an alternative to using actual receipts)

2. Make Copies

- Currency and Coins OPTIONAL (play money can be used)

  The quantities provided are for a class of 36 (18 pairs). Adjust accordingly to fit your class size.

Money	Copies
$100.00	18
$50.00	24
$20.00	30
$10.00	60
$5.00	60
$1.00	60
Coins*	9 of each

* Half dollars are used only for Challenges 3 and 10.

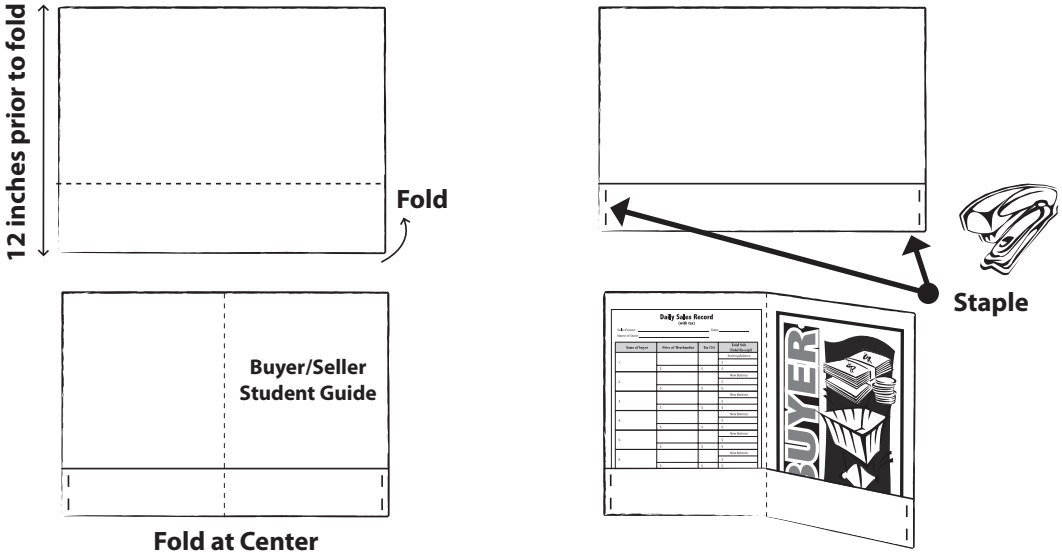
- **Parent Letter**—one per student
- **My Journal Cover**—one per student
- **Job Postings**—one set and a few blanks
- **Job Application**—one per student
- **Spinner** OPTIONAL—a 0–9 die can be used as an alternative
- **Sample Discount Coupons**—one set
- **Sample Receipts** OPTIONAL (real store receipts can be used)—one per pair
- **Situation Cards**—one set
  ↳ *Copy on heavy stock and laminate for durability.*
- **Teacher Observation Checklist**—three or four for teacher use
- **Final Assessment**—one per student
- **Final Assessment Rubric**—one per student and one to post
- **Journal Entry Rubric**—one per student and one to post
- **Presentation Rubric** OPTIONAL—one per student and one to post
- **Customer Receipts**—at least 10 per pair
- **Daily Shopping Record**—four per student
  ↳ *Choose with or without tax version.*
- **Shopping Summary**—one per student
- **Daily Sales Record**—four per student
- **Sales Summary**—one per pair
- **Instructions for Banker**—two (one per banker)
- **Checks**—six (18 checks) per student for checkbooks
- **Checkbook Registers**—one (3 registers) per student, plus one additional register per student for practice
- **Debit Cards**—one card per student
  ↳ *Copy on heavy stock and laminate for durability.*
- **Debit Card Receipts**—five
- **Bank Transactions**—two or three
- Business-Specific Masters

  If your city includes an Insurance Agency, Medical Center, Real Estate Office, Restaurant and/or Utilities Company, see list on page 89 and make copies as needed.
- Challenges 1–20—as needed based on your use

3. Create and Prepare Student Folders

Each student will need a folder to store all Math Merchants paperwork, including the Student Guides, Recording Sheets, receipts, wallet, checkbook, debit card, and journal.

Buy pocket folders or create your own with construction paper.



To create the Student Folder:

- Fold up the long side 1–1½ inches. Staple the sides to form a pocket along the bottom. Make sure the staples are very near the edge. Then fold the paper in half to form a folder.

- Put the following in each folder:
  - One Student Guide (Buyer or Seller)
  - Sales Record—3
  - Shopping Record—3

4. Create Journals

Staple the **My Journal Cover** to 10 pages of lined paper.

5. Prepare Money Envelopes

Prepare an envelope of money for each pair of students to use on Day 2 when they practice making change. These envelopes are the same as the envelopes sellers will get to open their stores each day. Money envelopes must include 10 each of $10.00, $5.00, and $1.00 bills, and 10 of each coin (quarters, dimes, nickels, and pennies), for a total of $164.10.

Teaching tip
To save prep time, have students create their own folders on Day 1 and hand out forms as they are needed.

Unit Time Chart

Math Merchants requires 10–15 days of instruction. Each lesson is approximately 50 minutes. Follow the suggested time frame for 15 days, or compress the time to 10 days by assigning stores to student pairs, pre-making or reusing storefronts and catalogs, and limiting your culmination to one or two activities. Extend the unit by adding shopping days or using more challenge activities.

Week 1				
• Pre-assessment • Name city and choose businesses • Complete job applications	• "Hire" store managers • Model and practice making change	• Design and assemble storefronts • Create catalogs or items needed to sell services	• Design and assemble storefronts • Create catalogs or items needed to sell services	• Learn to use the calculator • Practice calculating tax
Week 2				
• Review buying and selling instructions • Shop with cash	• Shop with cash	• Model and practice writing and recording checks and debit transactions	• Shop with cash, checks, and debit cards	• Shop with cash, checks, and debit cards
Week 3				
• Model and practice calculating discounts	• Use discount coupons to shop with cash, checks, and debit cards	• Use discount coupons to shop with cash, checks, and debit cards	• Final Assessment and Reflection	• Culminating Event

Daily Lesson Plan

Before Day 1

Approximately one week prior to Day 1, start preparing students for *Math Merchants.*

1. **Introduce the Unit**

   Generate excitement about your upcoming math unit. Whether you have chosen to take a field trip, invite a local entrepreneur to speak to your class, have students read a book, or introduce the unit in your own way, get students thinking about communities, businesses, and money.

2. **Send Parent Letter**

   Send the **Parent Letter** home with students. This letter will let parents know about the upcoming unit and its culminating event, and get you needed support in collecting materials. A materials list is included in the letter.

3. **Begin Collecting Materials**

   Students will start bringing in materials. Keep a running list of what you have so you can request missing items or bring them in yourself before.

4. **Create a Bulletin Board**

   Decorate a bulletin board that can be used throughout *Math Merchants.* This board will function as a job board that students will access to read **Job Postings.** The board can later be used to post the Check Writing and Sample Catalog posters and to show exemplary student work.

Day 1

Materials Needed

- Journals
- Journal Entry Rubric
- **Job Postings**
- **Job Application**

Challenge 12 My Money Monster

Directions

1. Pre-assess Students

Hand out **Journals** and the **Journal Entry Rubric.** Explain that students will be writing in these journals throughout their upcoming math unit, *Math Merchants.* Discuss the rubric so students understand how they will be assessed on their journal writing. Write today's journal prompts on the board or overhead. Explain how and when journal prompts will be given to students.

Read or say

Today's journal prompts are designed to see how much you already know about money operations. At the end of our math unit, we will look back at these questions and see how much we have learned.

Allow time for students to work on the journal prompts.

2. Introduce Math Merchants

Read or say

Have you ever wondered what it would be like to run a business? Be your own boss? Have money to spend any way you want?

Today we are going to begin creating our own classroom city. In our city we are going to learn more about managing money and how money is used in a community. You are each going to have an opportunity to be a buyer (shopper) and a seller (merchant) in our city. You will work with another person to design and build a storefront for your business. If your business is a

retail store, you will create a catalog of what your store will sell. If you have another kind of business, such as a doctor's office or restaurant, you will create and practice using the items you need to sell your service.

You and your partner will take turns buying and selling. Some days you will work at your business, and other days you will shop. You will have days to shop and days to work in the store. As a seller, you will be a manager of your store and will make decisions about what merchandise to sell and will determine what should be discounted. As a shopper, you will have a chance to make decisions about how to spend your money.

3. Make a List of Businesses

Read or say

We are going to start by deciding what businesses we want in our city. What stores or businesses would you find in most small cities?

As students name types of businesses, list them on the board or overhead. Students are likely to list stores by name. Guide them to describe more general types of businesses. Use the **Job Postings** to help guide the discussion. Generate enough of a list so that you can choose a business for every two students in your class. Consider having a good mix of retail stores and other businesses. Make sure that your city has a bank. If you have an odd number of students, decide whether you will have one business managed by three students, or allow one student to run his or her own business.

4. Select Businesses

Discuss each business on the list. Ask the following questions:

What kind of business is this?

What kinds of goods and services are sold there?

What do the employees here do? What kinds of jobs are there?

What kind of person can do this job successfully? What kind of skills do the employees need?

Again you can use the **Job Postings** to guide discussion. If your students have chosen a business that does not have a correlating Job Posting, create one during the class discussion. Take a vote to select the final businesses that will make up your classroom city. As each business is chosen, pull the Job Posting for that business and post it on the job board.

5. Name Your City

Read or say

Now that we've chosen all the businesses that will make up our classroom city, we can give the city a name!

Brainstorm ideas as a class, record the ideas on the board or overhead, and take a vote to determine the favorite. Suggest using a name that relates to your school or town. Make a connection to the history of your area!

A Name Fit for *Math Merchants*

The authors of *Math Merchants* chose the city name Casitaville for piloting the unit. Author Louise Vandling was the Math Specialist at Casita Center for Technology, Science and Math for 13 years, so the name had a special meaning for her. The authors also found the name fitting because the word "casita" literally means "a small house or other building," which students build to create their city.

6. Explain the Job Board and Job Applications

Teaching tip
Show students the kind of writing you're looking for. Use Job Applications from previous years or show other examples of good persuasive writing.

Distribute the **Job Application** and review it. Explain that students will go to the job board and find a job that interests them. They will then fill out the application for their chosen job. Make sure students understand that everyone will not get their first choice. This is their chance to practice writing persuasively to get the job they want! Tell students they must convince the mayor of the city (you, or your school principal) that they would be the best person to manage their selected store.

You will need to assign students to businesses and partners by Day 2. If you have several students applying for the same job or business, you might choose to interview students, or simply choose based on their application. Once you've hired a pair for each business, post the names on the job board next to each **Job Posting.**

7. Request Catalogs and Flyers

Although you may have already collected sales flyers, commercial catalogs, and other advertisements for creating store catalogs, you now know more specifically what you need. Ask students to look at home for more catalogs and flyers that relate to the specific businesses they have chosen for their city. The Sunday newspaper ads are a good resource. The computer can also be helpful as there are online catalogs, and several sources for clip art.

Journal Prompts

Pre-assessment

- If a customer gave you a $20.00 bill and bought an item that costs $13.79, what coins and bills could you give to them as change? What are the fewest number of bills and coins the buyer could receive in change?
- How many different amounts of money can you make by using two of these coins? (1 quarter, 2 nickels, 2 dimes, 2 pennies)

Use the observation checklist or final assessment rubric to record and assess students' performance.

Day 2

Materials Needed

- Journals
- Student folders
- Money Envelopes (for Sellers)
- $60.00 in $20.00 bills per pair (for Buyers)
- Sample Catalog posters
- Calculators
- **Sales Record**
- **Shopping Record**

Challenge

5 **How Much Change?**
14 **Rolling for $1.00**

Directions

Teaching tip

Students should store the following materials in their folders. Once these materials have been distributed and stored in the folders, they will no longer appear on the daily materials lists.

- Journal
- Journal Entry
- Rubric
- Student Guide
- Checkbook
- Wallet
- Debit Card
- Receipts
- Sales Records
- Shopping Records

1. Hand out Student Folders

At the beginning of the *Math Merchants* class period, hand out student folders. Make sure you give one student in each pair a folder containing the Seller Student Guide and give the other student the folder containing the Buyer Student Guide. The prepared folders contain a Student Guide and copies of the Sales and Shopping Records. Explain that these folders are to be used to store these papers as well as all other *Math Merchants* paperwork as it is received, including the journals started on the first day.

2. Announce Store Managers

Direct students to the Job Board to see what they've been hired to do and who they are partnered with. Discuss salaries and bonuses and how they are earned. Explain that salaries will be paid for each day of work, so each student is paid three times. They get paid the following day so the money they earn can be used for their shopping day. On the first shopping day, students are paid in cash. On the second and third shopping days, half of the salary is paid in cash and the other half is deposited into students' checking accounts.

Suggested Salaries

Grade	Salary	Denominations Used to Pay
3	$300.00	2–$50.00, 7–$20.00, 5–$10.00, 2–$5.00
4	$400.00	2–$100.00, 2–$50.00, 5–$20.00
5	$500.00	3–$100.00, 2–$50.00, 5–$20.00
6	$600.00	3–$100.00, 4–$50.00, 5–$20.00

Bonuses of $5.00–$10.00 might also be paid for completed Challenges, completed homework, good attendance, good behavior, or cooperative teamwork.

3. Ask Students What They Know About U.S. Currency

Highlight the following points:

- Our money system contains coins and bills.
- There are a variety of denominations of both coins and bills.
- There are equivalencies in our money system (e.g., 10 pennies = 1 dime, 2 nickels = 1 dime, 4 quarters = one dollar).

Name the most common coins and bills and their value. Ask students if they can think of any other bills or coins that are less common (e.g., $2.00 bill, dollar coins).

Discussion questions:

- How many $1.00 bills does it take to make $10.00?
- How many $10.00 bills does it take to make $100.00?
- How many quarters does it take to make $5.00?

4. Model Making Change

Have students join their business partner for this exercise. Hand each pair a money envelope ($164.10—ten each of 10's, 5's, 1's, quarters, dimes, nickels, and pennies) and $60.00 in $20.00 bills. Each pair also needs a calculator. Explain that the money envelope is just like the one they will get when they open their business. Review the denomination for each type of currency. Be sure students understand that 5 pennies make a nickel, 10 pennies make a dime, etc.

Model with a student how to count back change. Select the toy plane from the Sample Catalog poster. Have the student pay for the item with a $20.00 bill. Show how to start with the price of the item ($16.25) and count on to $20.00. Your students need to understand that you are

keeping $16.25 from the $20.00. Count on as follows "sixteen fifty, sixteen seventy five, seventeen (3 quarters), eighteen, nineteen, and twenty (3 one dollar bills)." Be sure students understand that when giving change, you want to give the fewest number of coins and bills possible. This way, you do not get rid of all the change in your cash register and your customer doesn't have to carry a large handful of money.

Teaching tip

It may be helpful to have two students come to the front of the class and role-play buying another item.

5. Practice Making Change

Give a **Shopping Record** and a **Sales Record** to each pair of students. Go over each form and explain how it will be used. Refer to the samples in the Student Guide (found in the student folders) to show how the page should be completed. Copies of these forms are in the student folders for buyers and sellers to use on shopping days.

Begin by having students record their starting balance on the **Sales Record.** The starting balance is the amount of money (cash on hand) the store has to begin. Have students practice in pairs using the Sample Catalog poster**.** Have them take turns purchasing from the other person. Each time a selection is made the buyer will give the seller money from the $60.00 in cash and record the purchase on the **Shopping Record.** The seller will then give the buyer change and record the sale on the **Sales Record.** Both students need to then count their money to be sure they have the correct amounts. You may want to have students use their calculators to check their current balance after each transaction. After the buyer and seller record three sales, have them change roles and record three more sales.

Teaching tip

To pre-assess your students' ability to make change, have them complete the challenge "Making Correct Change." This challenge is listed on Day 4 to give students additional practice before they begin selling.

6. Restore Money Envelopes

Have students restore the money envelopes to include $164.10—10 each of $10.00, $5.00, $1.00, quarters, dimes, nickels, and pennies. This will give students practice counting money and preparing the envelopes for shopping days.

Have students return the $60.00 used for practice buying to the bank.

Day 3

Materials Needed

- Student folders
- Tagboard, cardboard boxes, or presentation boards
- 9 x 12" construction paper
- Advertisements, sales flyers, and commercial catalogs
- Craft supplies such as various colors of markers and glue
- Staplers

Challenge 4 How Much Are You Worth?

Directions

1. Introduce Today's Projects

Today we will design and build storefronts for our businesses and begin creating the tools we need to sell our products and services. Those of you who are running retail stores will create a catalog of merchandise that you will sell. Those of you offering services instead of merchandise will have other pieces to create and forms to practice using.

Read or say

2. Discuss Building Storefronts

Give each pair of students the materials they will use to create their storefronts (tagboard, cardboard boxes, or presentation boards), and explain how they will be set up (e.g., hung on wall, set up on desks). If you are using presentation boards, show students how to cut out the window.

Explain what each storefront must include.

Storefronts must include

- **The name of the business:** Be creative and clever; make sure the nature of your business is clear.

  EXAMPLES: Rods N Reels (a fishing supply store), Bookworms (a bookstore)

Teaching tip
If you have younger students, ask a parent or other volunteer to help cut the presentation boards.

- **A logo:** Come up with a simple symbol to represent your business. You must be able to draw it easily for each person who buys something from you.

  EXAMPLES: Use a dollar sign for a bank, a hammer for a hardware store, or a diamond ring for a jewelry store.

- **Other embellishments:** Color and otherwise decorate your store in a style consistent with your type of business.

  EXAMPLES: Draw a marquee and a "Now Showing" board on a movie theater. Use bright colors and whimsical shapes on an ice cream parlor.

3. Discuss Creating Catalogs

Give each pair of students running a retail store 4 sheets of 9 x 12" construction paper. Explain that they will staple these pages together like a book to create their catalog.

Show the Sample Catalog poster and explain what each catalog must include.

Catalogs must include

- **Pictures or listings of the products you are selling:** Draw, use clip art, or cut out images from sales flyers and catalogs for each item. Glue images to the catalog pages.
- **Name and logo:** Include the store name and logo you created on the front page.
- **Prices:** Determine a realistic price for each item and write it near the picture. Prices found in catalogs and flyers can be used. Prices for most items in the stores should be less than $50.00. If prices are higher, write a down payment amount next to the price.

  EXAMPLES: A couch or computer listed for $1,000.00 might require a down payment of 10%. An apartment or other rental property might require a security deposit that is 25% of the monthly rent.

For each business that is not a retail store, explain what tasks are to be done and hand out any paperwork needed (Master reproducibles include the name of the business on the top of the page). The bankers are to assemble checkbooks and wallets and prepare money envelopes for the businesses ($164.10). If you have medical experts, they can review their forms, assemble the measuring tape, and practice doing eye exams. Insurance agents, and utilities workers can review forms. These businesses may also need to create price lists for their services.

Suggested Costs Based on Salaries

Real Estate Costs

Grade	Rent
3	$75.00
4	$100.00
5	$125.00
6	$150.00

Insurance Rates

Grade	House	Car
3	$32.50	$27.75
4	$44.27	$31.22
5	$51.33	$34.76
6	$57.29	$37.41

Utilities

Grade	Gas & Electric	Telephone	Water
3	$30.00	$15.00	$20.00
4	$35.00	$20.00	$25.00
5	$45.00	$27.50	$30.22
6	$50.77	$30.32	$34.59

4. Work on Storefronts and Catalogs

Have student pairs work on their storefronts and catalogs. Once the students not creating catalogs have had ample time to prepare and practice using their business forms, have them to help the bankers assemble checkbooks and wallets.

Teaching tip
Consider saving some or all of the catalogs for future use. You might reuse them in future classes or show them as samples. Laminate saved catalogs for durability.

Day 4

Materials Needed *(Same as Day 3)*

- Student folders
- Tagboard, cardboard boxes, or presentation boards
- 9 x 12" construction paper
- Advertisements, sales flyers, and commercial catalogs
- Craft supplies such as various colors of markers and glue
- Staplers

Challenge 11 Making Correct Change

Directions

1. Finish Storefronts and Catalogs

Have students finish their storefronts and catalogs. Those who finish early should first assist the bankers with assembly of checkbooks and wallets (if needed), and then practice buying and selling out of their own catalog or work on Challenges.

Day 5

Materials Needed

- Calculators
- 0–9 Spinner (or die)
- Scratch paper
- Sample Catalog poster
- Store receipts or **Sample Store Receipts**

Challenge 15 Round Up–Round Down

Directions

1. Play Wipeout

Today students will learn how to use the calculator and how to calculate tax. To build excitement for the topic and to give students practice using calculators, play a game of Wipeout. Wipeout can be played with or without decimals.

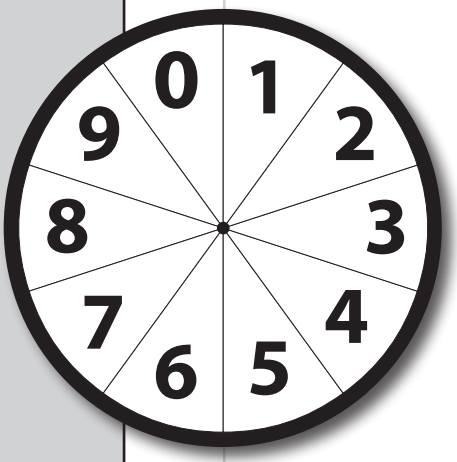
Wipeout

- **Purpose:** To review and reinforce the place value of digits and practice using the calculator.
- **Materials needed:** one calculator for each student, 0–9 spinner (or die), scratch paper

  Object of the game: To be the first person to wipe out a number entered on a calculator without using the on/clear button
- **Teaching the game:**

  Have each student enter any three-digit number into his or her calculator. The number can contain any digits except zero. The digits can all be the same.

  Have the students write their number on a piece of scratch paper. This will enable you to know if the student actually had the digits you called in their number. It is also helpful to record the digits as you call them so you can check student work.
  (continued on page 32 . . .)



Wipeout continued . . .

Tell students to consider the "on/clear" button on their calculator broken so they cannot use it to wipe out their number and reenter the number with a zero in its place.

Explain that you will call a number based on the roll of the die or the spin of the spinner. Students with that number in their digit can "wipe it out" to zero using subtraction.

A student who wipes out his or her entire number, should call "Wipeout!" so everyone knows the game is over.

Discuss the place value of each digit then model the game with a number such as 123. When a 2 is rolled or spun, the 2 can be wiped out by subtracting 20 from 123 with the result being 103. If a digit is called that is not part of the student's number, the student can't do anything.

Only *one* digit can be wiped out with each spin. Therefore if a student has the number 222 and a 2 is rolled or spun that student can only subtract one of the 2s. A 2 would have to be rolled or spun three times before that student has wiped out the number.

Playing the game:

Round 1—Wipe out a three-digit number
Round 2—Wipe out a four-digit number
Round 3—Wipe out a four-digit number with decimals (e.g., 12.34)
Round 4—Wipe out a five-digit number with decimals (e.g., 123.45)

Do each round as many times as you wish. If you are not introducing percentages and tax in this unit, skip rounds 3 and 4.

2. Introduce Today's Lesson

Read or say

Today, we will learn how to calculate tax. Almost all goods and services are taxed by the government. We are going to charge 7 percent for tax.

Explain that 7 percent is the same as .07. Model how to calculate tax on a $10.00 purchase on the board or overhead.

Read or say

In order to find 7% of a number you will need to multiply the number by .07. When you are multiplying with decimals, be sure there is the same number of decimal places in the product as there are in the numbers you are multiplying. In this case, .07 x 10.00 = .7000 since there are four digits to the right of the decimal place in the problem, there must be four digits to the right of the decimal in the answer.

Teaching tip

Change the tax to match your local tax rate. Or use an easier number to calculate (e.g., 5%) or a more difficult percentage (e.g., 7.75%) for a greater challenge.

If your students do not have a lot of experience with decimals, remind them that when dealing with money, there are only 2 decimal places to the right of the decimal point. They will often see a string of decimal places to the right. For instance, if you buy pants for $7.95, you multiply that by .07 to find the tax, which is .5565. In a case like this they will have to look at the third-place digit. If it is 5 or greater, they will round up the second digit. If it is less than 5, the second digit stays the same.

Explain what students are seeing when using a calculator to determine tax. If they multiply $10.00 x .07 the answer will show 0.7. Many will want to write this as 7 cents. Be sure they understand that the calculator does not know they are doing a money problem so it leaves off the extra zero (.70), which it doesn't think it needs.

Teaching tip
Write a reminder of the rounding rule on the board or overhead: "Five or above, round it up. Four or below, down you go."

3. Practice Calculating Tax

Have students work in pairs to practice finding the tax on the items in the Sample Catalog poster. After they have found the tax on each item, ask pairs to share their findings. When there are differences in amounts for an item, challenge all pairs to calculate the tax again. This is a good lesson in the need to double-check calculations when dealing with money.

After they have calculated the tax for each item, have the pairs find the total cost of each item, including tax. If you feel your students need additional practice, you can then have them find the change they would receive from $10.00, $20.00, or $30.00 for the purchase of an item.

Using the store receipts or **Sample Store Receipts**, have students practice adding up the prices with the calculator. This will give them additional practice adding decimals. It also frequently shows that the calculator can make "mistakes". They need to realize that a calculator can only do what it is told. Encourage students to estimate their answers before using the calculators to make sure the total makes sense. They must always check their answers to see if they make sense. A misplaced decimal point can make a big difference!

Journal Prompts

Mr. Jones just found a doll that costs $12.75. The 7% tax was calculated to be $8.92. Is this reasonable? Why or why not?

Day 6

Materials Needed

- Student folders
- Money Envelopes
- **Situation Cards**

Challenge **10 Ways to Make $1.00**

Directions

1. Introduce the First Shopping Day

Read or say

Today our city is going to come to life. Everyone is open for business! Half of you will be sellers, or merchants, and the other half will be buyers, or shoppers. On our next shopping day, you will switch roles with your partner. Let's go over the instructions for each role. Be sure to listen carefully to both sets of instructions because you will switch roles every other shopping day.

2. Review Seller Instructions

Have students pull their Seller Student Guides from their folders. Only one student per pair will have the Seller Student Guide; have them share with his or her partner while you review the contents. Read through the instructions as a class. Review the Sample Sales Record. Students should remember using this form when they practiced making change. If you are not including tax in this unit, have students cross out any instructions relating to calculating tax.

3. Review Buyer Instructions

Have students pull their Buyer Student Guides from their folders. Only one student per pair will have the Buyer Student Guide; have them share with his or her partner while you review the contents. Read through the instructions as a class. Review the Sample Shopping Record. Students should remember using this form when they practiced making change. If you are not including tax in this unit, have students cross out any instructions relating to calculating tax. Describe the **Situation Cards** and read one as a sample so students understand how they are to be used.

4. Determine Buyers and Sellers

Have students choose (or you can assign) who will begin as the seller and the buyer for each business. Have the banker help you give a money envelope to each seller and a wallet to each student. Pay each student their salary for all the hard work they did getting their businesses ready to open. Today's sellers should store their wallets in their folders, as they do not need them until the next shopping day.

5. Conduct Shopping Day

As students begin buying and selling, distribute **Situation Cards** to buyers. Collect all the cards at the end of the day.

Assist students with their shopping and sales records if needed. It's okay if they make a mistake. They need to learn where the mistake was made and how to fix it.

Remind sellers to draw their business logo on the front of each visitor's journal.

Teaching tip
Students tend to flock to their favorite kind of store or to a store where their friends are working or shopping. It's a good idea to make a rule that there can only be one person in line at any store.

6. Complete Closing Paperwork

At the end of the shopping "day," both buyers and sellers must reconcile their money and complete their paperwork. All paperwork can then be stored in student folders.

Buyers are to add the total amount of money they spent plus any cash they have left in their wallets. This number should equal the amount of money they started the day with. If the numbers do not agree, the buyer must look back at his or her **Shopping Record** to determine where a mistake was made. Whether or not the buyer can find the mistake, he or she must write an explanation about the discrepancy (e.g., incorrect change, incomplete or incorrect record keeping, error in calculating tax) in his or her journal. The buyers should keep the balance of their cash in their wallets.

Sellers are to reconcile their sales record with their cash on hand. They must add their total receipts to their starting balance. This number should equal the amount of cash they have. If the numbers do not agree, the seller must look back at his or her **Sales Record** to determine where a mistake was made. Whether or not the seller can find the mistake, he or she must write an explanation about the discrepancy (e.g., poor record keeping, incorrect change) in his or her journal. The sellers should then restore their money envelopes to the original denominations and total amount of $164.10. The remainder of the money is to be deposited in the bank. The money envelope should be left in the cash box at each business.

Journal Prompts

Buyers: Describe your shopping experience. Were you able to balance your money and your purchases? Explain how it worked. What was difficult? What was easy? Were you able to make correct change? How do you know if your money was correct? Where would you like to shop next?

Sellers: As a seller, were you able to make correct change? If your receipts and your starting balance didn't match your total receipts, explain why this happened. Give an example of how you counted back change.

Day 7

Materials Needed

- Student folders
- **Situation Cards**

Challenge

7 Let's Go Grocery Shopping
17 What are the Coins?

Directions

1. Switch Roles and Conduct Shopping Day

Students switch roles with their partner and begin the second shopping day. Allow pairs to work together to get started, sharing with one another what they experienced on the first shopping day.

2. Complete Closing Paperwork

Have students complete paperwork as they did on the last shopping day, allowing pairs to assist one another in reconciling their numbers.

Journal Prompts

Buyers: Describe your shopping experience. What was difficult? What was easy? Were you able to make correct change? How do you know if your money was correct? Where would you like to shop next?

Sellers: As a seller, were you able to make correct change? Give an example of how you counted back change.

Day 8

Materials Needed

- Student folders
- Checkbooks
- **Debit Cards**
- Check Writing poster
- Practice checks
- Practice check registers

Challenge **16 Wanted: One Dollar Words**
6 How Much Does It Cost?

Directions

1. Discuss Checks and Debit Cards

Have the banker help you hand out a checkbook and debit card to each student.

Read or say

For the first two shopping days, you bought and sold using only cash. Today you are going to learn how to write checks, how to use a debit card, and how to use a checkbook.

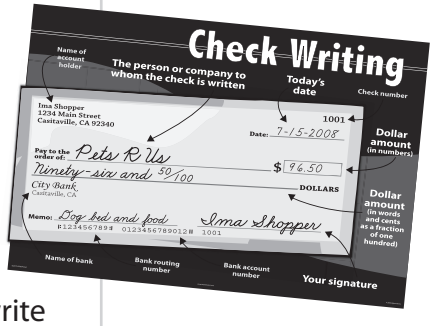
A check is a printed piece of paper that tells a bank to pay money from an account held by the writer of the check. The details of the owner's bank account, such as the account number and the check writer's name, are printed on the check. Checks can be used to pay for goods or services.

Another way to access the money in a checking account is by using a debit card, sometimes called an ATM (automated teller machine) card. This card will allow you to get money out of your checking account to spend in stores that do not accept checks.

A check register is used to keep track of all checks written, all of the debit transactions made, and the amount of money held by the bank.

Beginning with the next shopping day, half your salary will be deposited directly into your checking account. You will also need to have some cash on hand because there are some stores that will not take checks. You will need your debit card to withdraw cash. Keep your checkbook and debit card in your folder.

2. Model Writing a Check



Display the Check Writing poster on the bulletin board and hand out one sheet of checks and a check register to each student to use for practice. Use the **Check Sample** transparency to show the different parts of a check, paying special attention to the parts that need to be filled in when writing out a check—the date blank, the payee section, figure and written amount sections, and the signature line. Use the **Blank Check** transparency to model how to write out the amount in numerals and words. Show a proper signature.

3. Practice Check Writing and Recording

Have students practice writing checks and recording the transactions on the practice checks and register, buying items from the Sample Catalog poster. They must enter the date, the check number, who the check was written to in the description line, and the dollar amount. They can then subtract the purchase amount from their beginning balance to find a new balance.

Teaching tip
To make sure students continue to practice using cash and making change, choose a handful of stores that will not take checks. Suggestions: Ice Cream Parlor, Restaurant, Post Office, Theater, Pet Store. Post a list of these stores on the bulletin board for students.

4. Practice Recording Debit Transactions

Have students practice recording a debit card withdrawal on their practice registers. They must enter the date, "ATM" or "debit" in the description line, and the withdrawal amount. For this unit, students can use their debit cards to withdraw multiples of $20.00 from the bank. They can then subtract the withdrawal amount from their beginning balance to get a new balance.

If students need more practice, have them use the Sample Catalog poster to buy more items using their debit card and/or checks and recording the transactions in their practice check register.

5. Prepare Checkbooks

Have students prepare their checkbooks for the next shopping day by printing their name in the upper left corner of each check, and numbering the checks beginning with number 101. They will also need to add the last digits to their account number—these could be the last four digits of their phone number, their class number, or any other number you choose. Have them write half of their salary in as the beginning balance.

Day 9

Materials Needed

- Student folders
- **Situation Cards**

Challenge

3 How Many Ways to Make $1.00?
20 What is a Credit Card?

Directions

1. Switch Roles and Conduct Shopping Day

Switch roles so that the student buyers from the first shopping day are buyers again today, the third shopping day. Pay each student half of his or her salary in cash.


Read or say

Today and the next shopping day we will be using cash and checks to make purchases and using our debit cards. All of you should have recorded half of your salary in your checkbook. The other half you just received in cash. You should now have a checkbook with a balance, cash from your paycheck, and cash left over from your first shopping day.

Remind buyers that some stores only accept cash, and refer to the list you posted on the bulletin board. If buyers need additional cash they must go to the bank and withdraw money using their debit card. Debit transactions must be in multiples of $20.00.

Hand out **Situation Cards** to buyers. Allow students to trade if they receive the same card as the previous shopping day.

Remind sellers to count their money envelope to make sure their starting balance is correct.

2. Complete Closing Paperwork

At the end of the shopping period, both buyers and sellers must reconcile their money and complete their paperwork. All paperwork can then be stored in student folders.

Journal Prompts

Buyers: When I was getting change and keeping my records, I was/was not able to balance my money spent with my ending balance because …

Sellers: When I was making change and keeping records, I was/was not able to balance my total cash plus checks with the total receipts plus starting balance because …

Day 10

Materials Needed

- Student folders
- **Situation Cards**

Challenge 8 Magic Decimal Squares

Directions

1. **Switch Roles and Conduct Shopping Day**

   Students switch roles with their partner and begin the fourth shopping day. Allow pairs to work together to get started, sharing with one another what they learned now that checks and debit cards have been added to their shopping experience.

2. **Complete Closing Paperwork**

   Have students complete paperwork as they did on the previous shopping day, allowing pairs to assist one another in reconciling their numbers.

Journal Prompts

Buyers: When I was getting change and keeping my records, I was/was not able to balance my money spent with my ending balance because …

Sellers: When I was making change and keeping records, I was/was not able to balance my total cash plus checks with the total receipts plus starting balance because …

Day 11

Materials Needed

- Student folders
- Calculators
- **Sample Discount Coupons**
- Construction paper
- Craft supplies

Challenge

2 Decimal Digit Place
19 What are the Possibilities?

Directions

1. Introduce Coupons and Discounts

Have you ever gone to a store and seen signs that say "Sale! 25% Off!" or "Discount ½ Off"? Perhaps you have seen ads in newspapers or magazines that say they are offering a sale or coupons with ⅓ off or a 50% discount. For the final two shopping days we are going to have a sale. You and your partner will decide what items in your store should go on sale. You will be making your own coupons and deciding the amount of the sale prices.

Read or say

2. Model and Practice Calculating Percentage Discounts

Display the **Sample Discount Coupons** on the bulletin board. Select an item from the Sample Catalog poster and model how to determine the sale price if a 10% discount is given. For example, using the shoes, have students calculate 10% of the price by multiplying it by .10. In this example, 10% is 1.275. Remind students that the amount will need to be rounded up to the nearest whole cent because the third decimal place is 5 or greater. The discount amount, $1.28, then needs to be subtracted from the riginal price, leaving $11.47. Choose an item and have students individually calculate a 10% discount on that item.

Ask: *Does anyone see a pattern in finding 10% of an item? What happens to the decimal point?*

Students should recognize that to get 10% of any amount, you simply move the decimal point one place to the left.

Have students continue practicing, this time using 25% discount. For the dog, costing $45.00, they would multiply the original price by .25. This would be an $11.25 discount. Subtracting the discount from the original price leaves $33.75. On their own, have them calculate the sale price of the doghouse.

Continue practice, applying the other percent off discount coupons.

3. Model and Practice Calculating Fraction Discounts

Explain how to calculate a fraction discount by dividing the item price by the denominator. For example, if you take the toy plane at a price of $6.25 and you want to find ⅓ of that, you would divide $6.25 by 3 resulting in 2.08333 … which rounds to $2.08. This is essentially multiplying by ⅓. The discount then needs to be subtracted from the original price. The cost after the ⅓ discount is $4.17.

Have students calculate the sale price of two other items using the other fraction discount coupons.

4. Set Discounts and Create Coupons

Teaching tip
This is a great opportunity to make the connection between fractions, decimals, and percents. For example, 25% = .25 = ¼

Have students work with their partners to decide what merchandise or services will go on sale for the last two days of shopping. Using the Sample Discount Coupons as reference, have them determine the discounts they will offer and create their own coupons using construction paper and craft supplies. Have pairs calculate sale prices for at least 3 to 5 of the more popular items in their store. Have them write the names of the items that are on sale on their discount coupons.

You may need to assist the non-retail businesses in deciding what items to put on sale. Suggest that the Medical Center offer a discount on eye exams; the Insurance Company a discount on car insurance; the Real Estate Office a percent off next month's rent.

Journal Prompts

We decided to put the following items on sale because …
If I have an item that is 25% off, I can find the sale price by …
If I have an item that is ⅓ off I can find the sale price by …

Day 12

Materials Needed

- Student folders
- Discount coupons created by students

Challenge **18 What Coins Could I Have?**
1 Coin Placement

Directions

1. Switch Roles and Conduct Shopping Day

Switch roles so that the student buyers from the first shopping day are buyers again today, the fifth shopping day. Pay each student half of his or her salary in cash.


Read or say

> Today and the next shopping day we will again be using cash and checks to make purchases and using our debit cards. Half of your salary from your last workday has been deposited in your checking account. Write the deposit into your checkbook. The other half you just received in cash. You should now have a checkbook with a balance, cash from your paycheck, and cash left over from your last shopping day.

Remind buyers that today they are shopping for items on sale. At each business, they can pick a coupon to use that applies to what they want to buy. Buyers should try to visit the remainder of the businesses in the city today. If they have visited every business already, allow them to shop at any store, but do not allow any waiting in line.

Hand out **Situation Cards** to buyers. Allow students to trade if they receive the same card as the previous shopping day.

Remind sellers to count their money envelope to make sure their starting balance is correct.

2. Complete Closing Paperwork

At the end of the shopping period, both buyers and sellers must reconcile their money and complete their paperwork. All paperwork can then be stored in student folders.

Journal Prompts

Buyers: When I'm shopping I prefer using either my checkbook or cash because … I was/was not able to balance my checkbook because …

Sellers: How did using coupons affect your sales? Using coupons was hard/easy because …

Day 13

Materials Needed

- Student folders
- **Situation Cards**
- **Sales Summary**
- **Shopping Summary**

Challenge 13 **Pocket Full of Money**
9 **Making Change**

Directions

1. Switch Roles and Conduct Shopping Day

Students switch roles with their partner and begin the final (sixth) shopping day. Allow pairs to work together to get started, sharing with one another what they learned now that discounts have been added to their shopping experience.

2. Complete Closing Paperwork

Have students complete paperwork as they did on the last shopping day, allowing pairs to assist one another in reconciling their numbers.

3. Prepare Shopping and Sales Summaries

Hand out a **Shopping Summary** to each student. Have students individually prepare their Shopping Summaries using their Daily Shopping Records from all three days they were buyers.

Hand out a **Sales Summary** to each pair. Have pairs work together to complete their Sales Summaries using their Daily Sales Records from all six shopping days.

Teaching tip
Students can prepare the Shopping and Sales Summaries as homework if time is short on this last shopping day.

Day 14

Materials Needed

- **Final Assessment**
- Student folders

Directions

1. Give Final Assessment

Hand out the Final Assessment (choose no tax or with tax option). Use the Final Assessment Rubric to evaluate student work.

2. Write Reflection

In their journals, have students reflect on everything they've learned during *Math Merchants*. Their writing should include the following:

- A financial summary of the amount of money spent as a shopper and the amount of money taken in as a seller (total amount the business took in). Students may use their Sales Summaries and Shopping Records and work with their partners on this summary.
- An explanation of how well they managed their money, as both a buyer and a seller. There may have been days that they did not reconcile their records. Have them think about why this happened and then explain why. Remind students that it is okay if they made mistakes! Because this is an imaginary city the money is not real. Any mistakes they made can be learned from and they will be less likely to make the same mistakes when dealing with their own (real!) money.

Students may use their Sales Summaries and Shopping Records, but should work independently to complete this.

- Write 2 to 3 paragraphs about your experience. Include answers to the following questions:

  What did you learn by running your own business?

  What did you like about running a business? Why?

  What was your biggest challenge in running your business?

  Do you think your business was successful? Why or why not?

  What would you do differently if you started another business?

  What did you learn as you shopped at other businesses?

  What did you like about the shopping experience? Why?

  What was the biggest challenge you faced as a shopper?

Day 15

The Culminating Event

Whether you have chosen just one or all of the culminating activities suggested for *Math Merchants*, your students will take pride in showing what they've accomplished over the past few weeks. Following are details on each of the culminating event options.

- **Shopping Event**

  Invite another class to shop in your classroom city. Or hold an evening open house and invite families to shop.

  Give each customer a money envelope and a **Shopping Record**. Have them visit a variety of stores in the city, recording what they purchased and how much they paid. Have student pairs work as sellers, showing customers what their business has to offer and selling them goods and services at regular and discount prices. The sellers can also work with customers to make sure the amount of money spent plus the amount they have left in their wallets after their purchase is equal to the money they started with.

- **Oral Presentations**

  Have each pair give a presentation about their business. The presentation should include the following information and could include any type of visual aids.

  - what products they chose to sell and why they chose them
  - how they determined the price of their products or services
  - how much money they made
  - what products they decided to put on sale and why
  - what they would do differently if they were to start another store

- **Letters to the Mayor**

  Have each student write a letter to the city's mayor analyzing his or her performance as a buyer and a seller. The mayor can be you (teacher) or your school principal. The letter should include facts as well as personal feelings. It should also give a personal analysis of why the student's store was successful and how shoppers are treated in the city.

Whole-Unit Master and Assessment Tools

Whole-Unit Masters

Assessment Tools

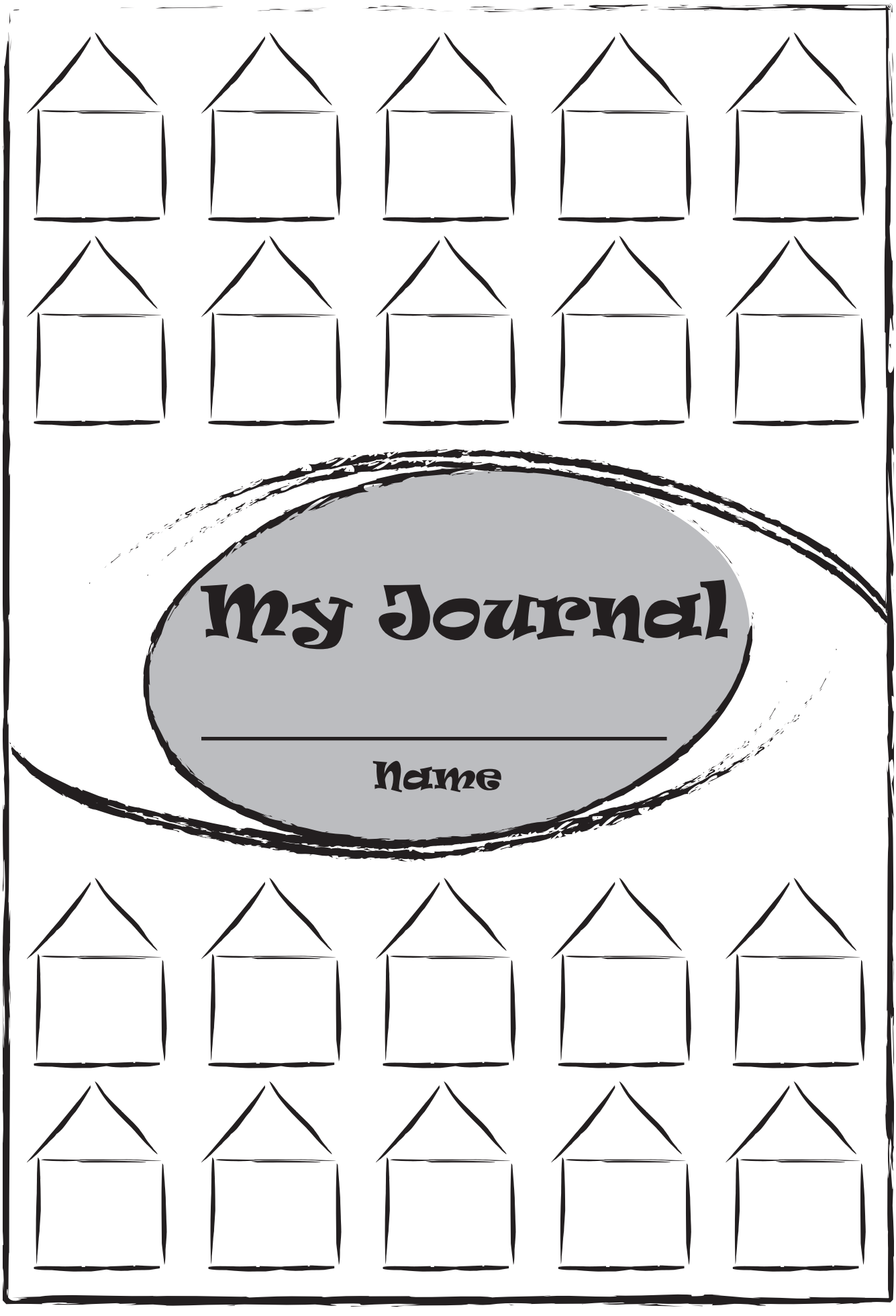
Dear Parents,

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,


My Journal
Name

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.

Book Store

Job Description

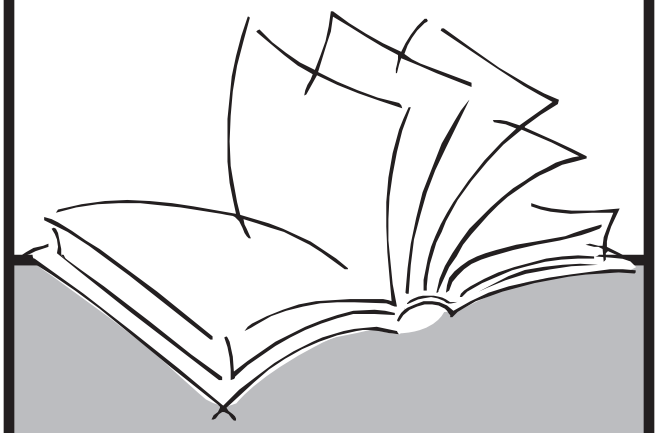
You will help customers find the books they are interested in buying.

Qualifications

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 books and other items 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.



Computer Store

Job Description

You will help customers find the computer or computer-related equipment that they need.

Qualifications

You must understand the different equipment that can be purchased for a computer. 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 computers and computer equipment 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.

Department Store

Job Description

You will help customers find the clothing, linens, household items, such as dishes and glasses, and other products they need in your store.

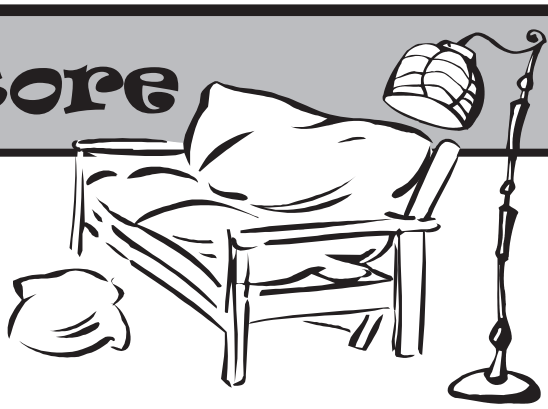
Qualifications

You must know about the kinds of items that would be sold in a department store. 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 books and other items to be sold in the department 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.

Furniture Store



Job Description

You will help customers find the kind of furniture that is right for their home.

Qualifications

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 different kinds of furniture to be sold in the store.
Because furniture is expensive, you may want to allow customers to make a down payment—put this information in your catalog. 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.

Grocery Market

Job Description

You will help customers find the grocery items they want to buy in your store.

Qualifications

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 grocery "ad" to show what items are sold in the market. Create "cents off" coupons for food items. 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.

Hardware Store

Job Description

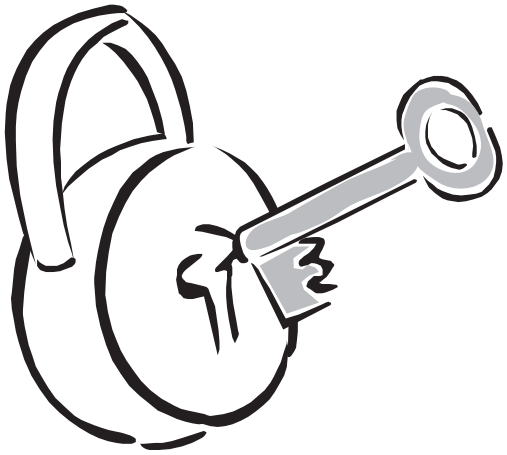
You will help customers choose the items they need from your store.

Qualifications

You must understand the different items kinds of tools, materials, and other hardware that are sold in your store. 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.



Ice Cream Store

Job Description

You will help customers by showing them the different flavors of ice cream and toppings you offer, and the different ways you serve it.

Qualifications

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 the different kinds of ice cream treats 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.

Insurance Company

Job Description

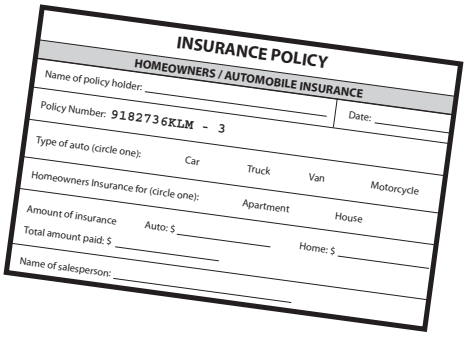
Everyone needs insurance in case of an accident. You will help customers purchase car and homeowners insurance.

Qualifications

You must be able to fill out an insurance form. You must be able to calculate tax. If you offer any discounts, you must also be to calculate those discounts.

Duties

Create a price list for the different insurance policies you offer. Write an insurance policy for each customer. Give correct change to customers paying cash. Count money at the end of each business day and make a bank deposit. Keep accurate records of all insurance payments.


INSURANCE POLICY
HOMEOWNERS / AUTOMOBILE INSURANCE
Name of policy holder:
Date:
Policy Number: 9182736KLM - 3
Type of auto (circle one): Car Truck Van Motorcycle
Homeowners Insurance for (circle one): Apartment House
Amount of insurance
Auto: $
Home: $
Total amount paid: $
Name of salesperson:

Jewelry Store

Job Description

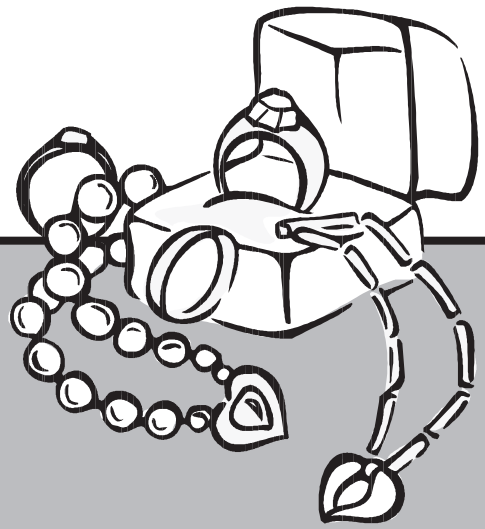
You will help customers find the type of jewelry they are interested in buying.

Qualifications

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 the different kinds of jewelry 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.



Medical Center

Job Description

You will perform medical exams that include measuring height, checking vision, and testing physical dexterity.

Qualifications

You must be able to use a ruler and an eye chart. You must be able to fill out a medical form. You will charge a percent (for example, 10%) of a customer's income, so you must be able to calculate discounts.

Duties

Set up the height and eye charts and learn how to use them. Give correct change to customers paying cash. Count money at the end of each business day and make a bank deposit. Keep accurate records of all medical payments.

Pet Store

Job Description

You will help customers find the pet that is right for their family. Please remember, wild animals such as lions and deer do not make good pets!

Qualifications

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 the different kinds of pets, pet food, and other pet-related items (for example, a birdcage for a bird) 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.

Post Office

Job Description

You will create and design the stamps that will be used for the city. You will then sell these stamps to your customers.

Qualifications

You must be able to calculate tax on items sold. You must also be able to calculate discounts, which you can offer to customers purchasing sets of stamps.

Duties

Create a catalog showing the stamps you designed and how much each stamp costs. 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.

Job Description

You will be responsible for collecting rent and mortgage payments. Customers will identify which property is theirs when they come to your office.

Qualifications

You must be able to fill out a real estate payment form. You must be able to calculate tax. If you offer any discounts, you must also be to calculate those discounts.

Duties

Create a catalog showing the properties you manage. Write a payment receipt for each customer. Give correct change to customers paying cash. Count money at the end of each business day and make a bank deposit. Keep accurate records of all real estate payments.

Restaurant

Job Description

You will decide what food will be served at your restaurant and determine the price for each food item. Then help your customers decide what they'd like for lunch!

Qualifications

You must be able to calculate tax. If you have lunch specials, you must also be able to calculate discounts.

Duties

Create a lunch menu of food that will appeal to your customers. Write receipts for customers 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.

Shoe Store

Job Description

You will help customers find the type of shoes they need.

Qualifications

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 the different kinds of shoes 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.

Sporting Goods

Job Description

You will help customers find the sporting equipment they need. You might also sell tickets to local sporting events.

Qualifications

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 the different kinds of sports equipment and other items 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.

Theater

Job Description

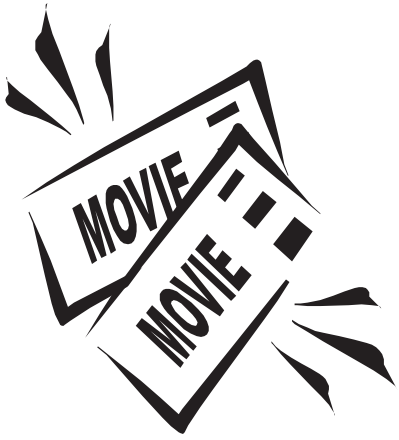
You will help movie-goers choose a show that matches their interests and is appropriate for their age.

Qualifications

You must be able to calculate tax. You must also be able to calculate discounts, as you may want to offer special prices for some shows.

Duties

Create a movie listing of current films, and design and create the tickets you will sell. Write receipts and give correct change to customers paying cash. Count money at the end of each business day and make a bank deposit. Keep accurate records of all tickets sold.



Toy Store

Job Description

You will help customers choose toys to purchase in your store.

Qualifications

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 the toys 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.

Utilities Company

Job Description

Everyone must pay their utilities bills! You will be responsible for collecting payments for water, phone, gas, and electricity bills.

Qualifications

You must be able to fill out a utilities bill. You must be able to calculate tax. If you offer any discounts, you must also be to calculate those discounts.

Duties

Create a price list for the various services. Fill out a utilities bill for each customer. Give correct change to customers paying cash. Count money at the end of each business day and make a bank deposit. Keep accurate records of all utilities payments.

Video Store

Job Description

You will help customers choose movies to buy or rent, making sure the movies are appropriate for the customers' age.

Qualifications

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 the videos and DVDs 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.

Job Description

Qualifications

Duties

Job Description

Qualifications

Duties

Job Application

Name: _____ Date: _____

Title of job for which you are applying: _____

My second choice: _____

Qualifications *(What knowledge and skills do you have that would help you do this job?)*:

_____

_____

_____

_____

_____

_____

_____

_____

_____

Tell why you would be the best person for this job:

_____

_____

_____

_____

_____

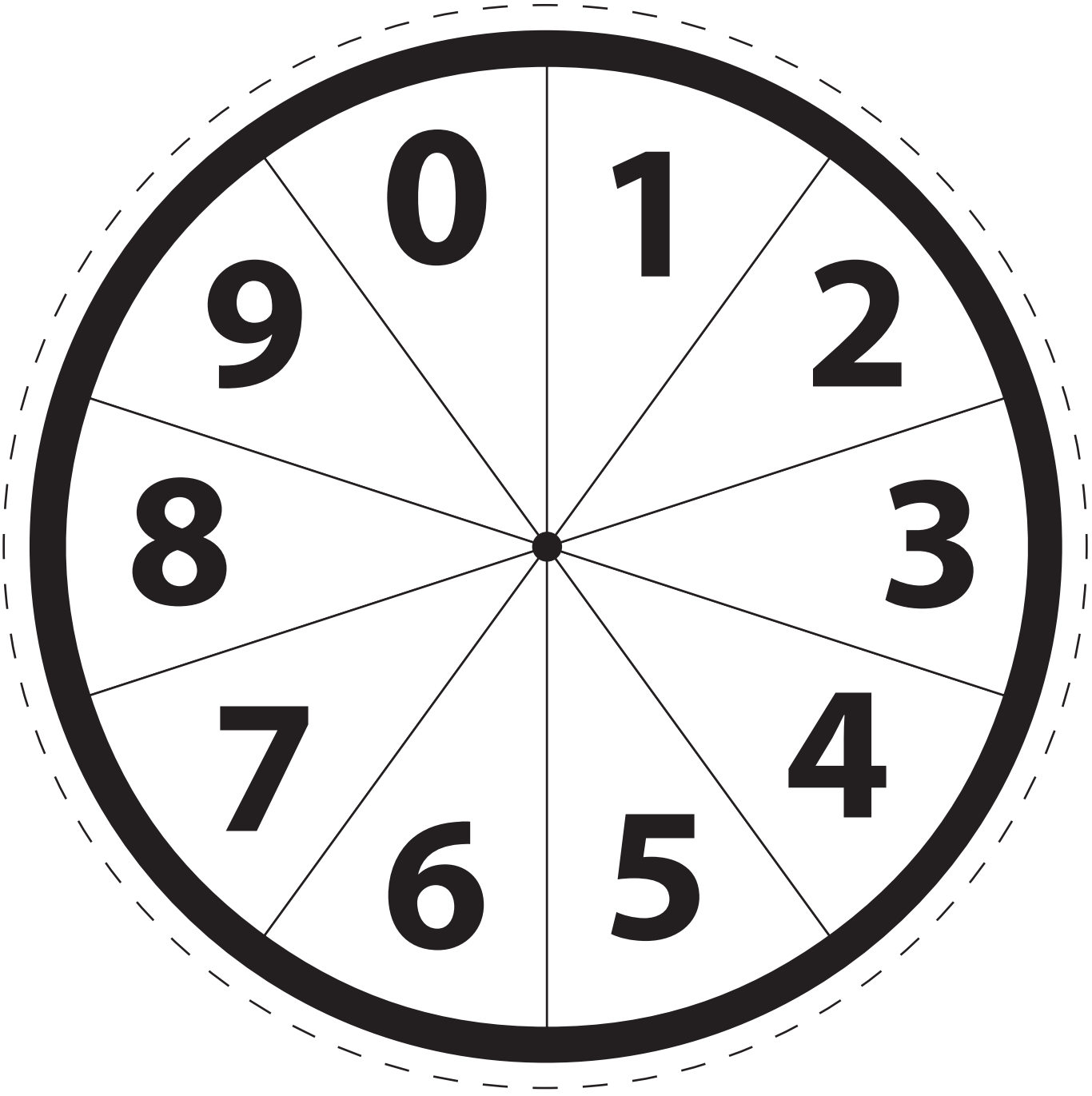
_____

_____

_____

_____

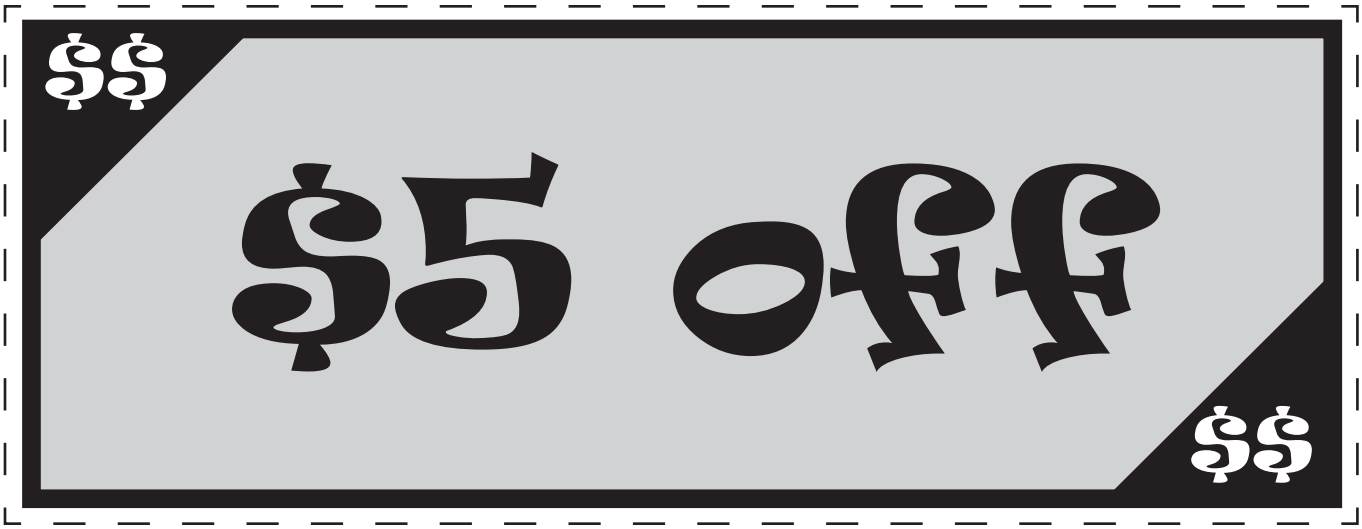
Spinner

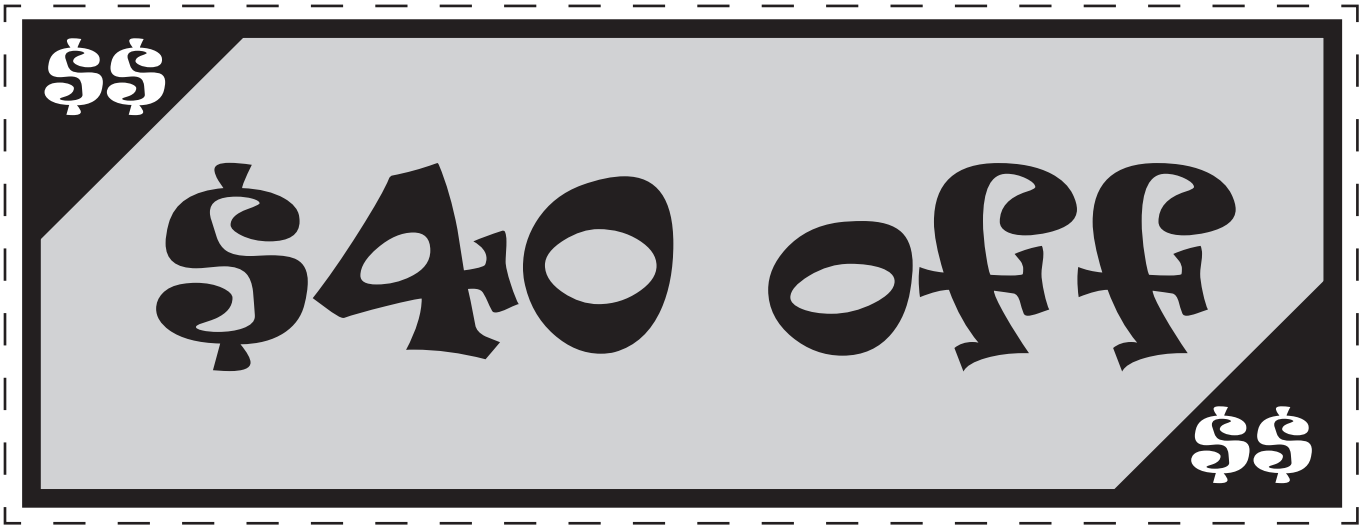


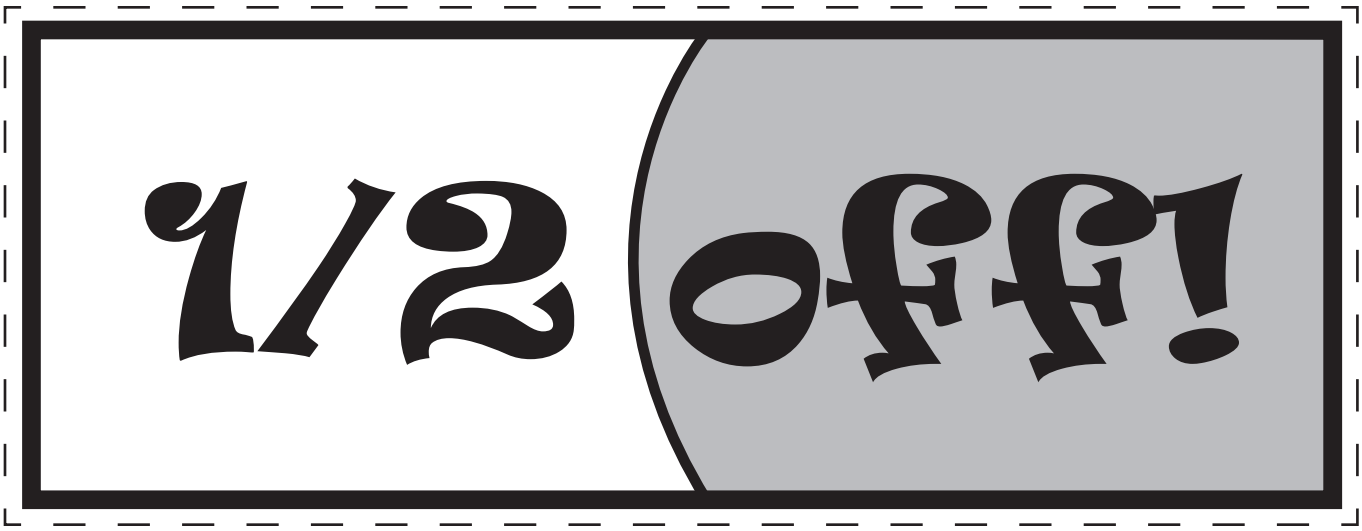
Sample Discount Coupons

Sample Discount Coupons

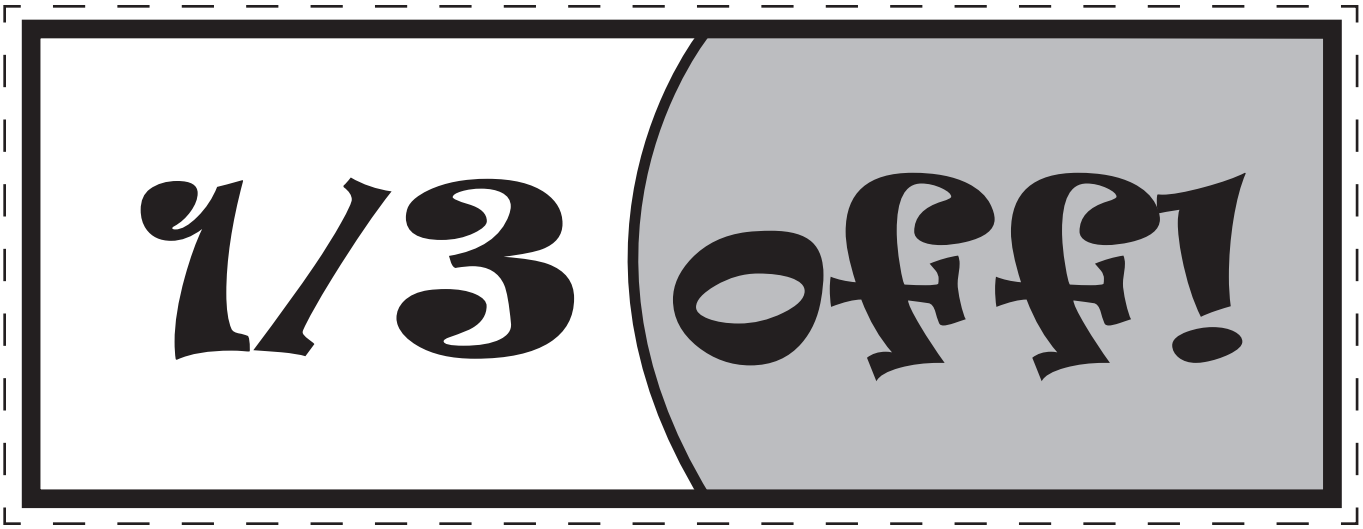
Sample Discount Coupons

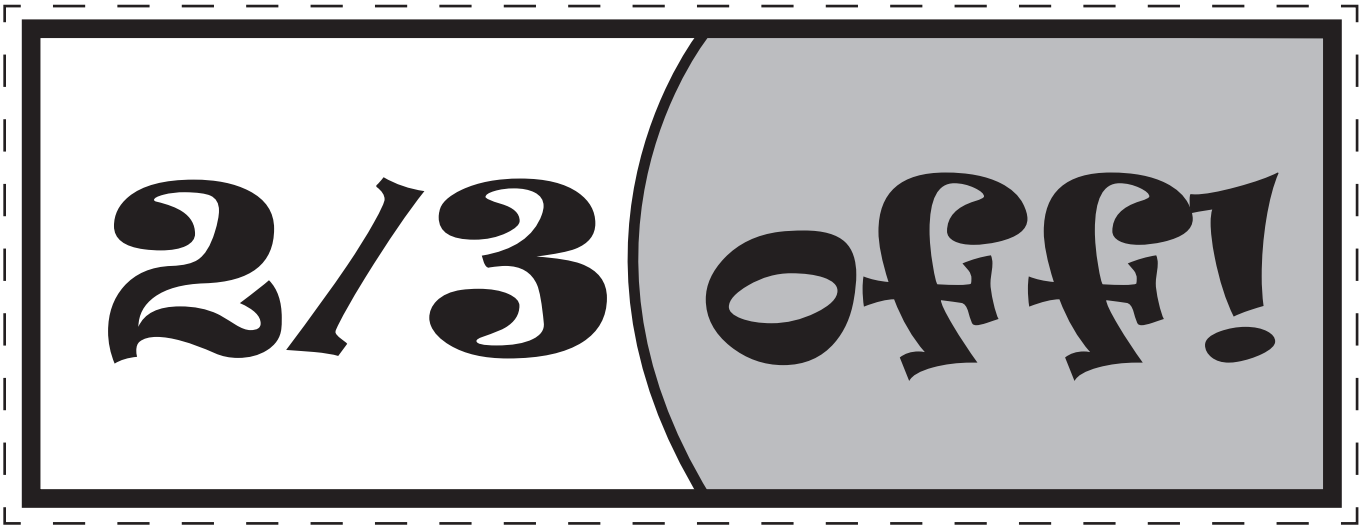


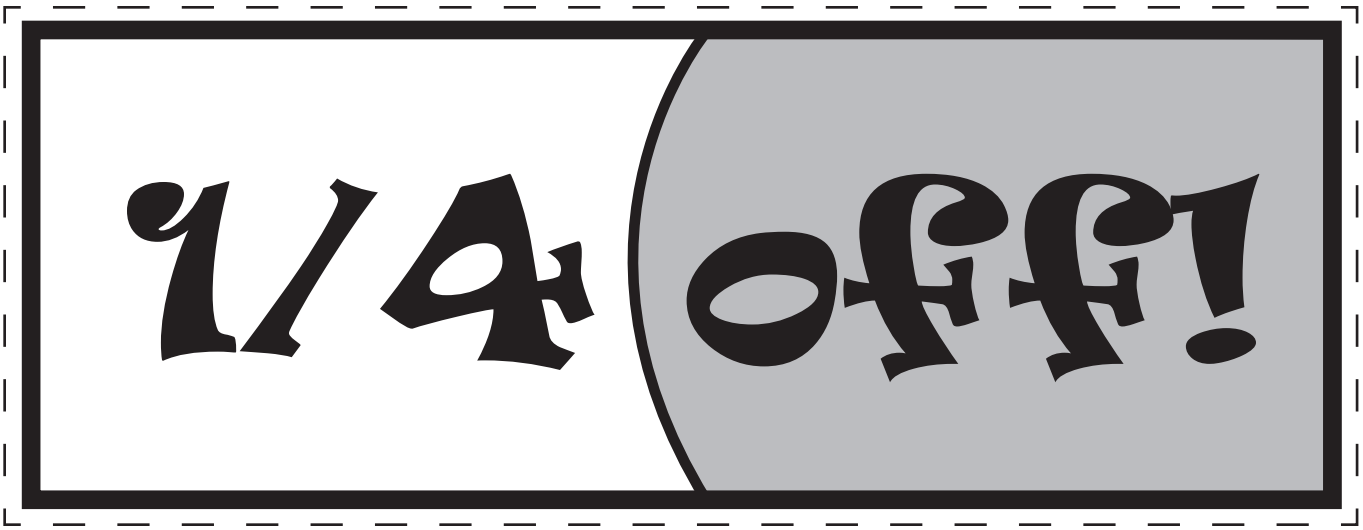




Sample Discount Coupons







Sample Receipts

The Everything Store

05/05/2006 11:30 AM
RECEIPT EXPIRES ON 08/05/2006

A receipt dated within 90 days is required for ALL returns & exchanges

123455	Deodorant	2.50
678901	Newspaper	.99
234567	Sunglasses	12.00
	SUBTOTAL	15.49
T = 7.000% ON 15.49		1.10
	TOTAL	16.59
*1234 DEBIT		16.59

Jane Smith
Signature

Ted's Tires

Ted's Tires of Carville
1234 Marigold Lane, Hwy 15
Carville, CA 92345 (555)123-4567

Register:012 Cashier: 1111

50 Mile Tires
123456 2@ 50.00
Truck Tire Repair
789101 1@ 9.99

SUBTOTAL	59.99
SALES TAX = 7%	4.20
TOTAL	64.19

AMOUNT TENDERED
CASH 65.00
CHANGE 0.81

Transaction: 12345 9/4/2006 5:15 PM

Thank you for shopping at Ted's Tires

Date 2-25-06

RECEIPT 001

Debit Card Information

1234 5678 9012 3456
Exp. Date: 01/08

Signature Jane Smith

Items	Price
Book	$9.95
Candle	$2.50
Movie	$9.99
Tax → 7%	$1.57
TOTAL	$24.01

1234567890

Sample Receipts

Gretchen's Grocery

1505 Park Place Rd Sedell, MA 12345
(123)555-5555
07/07/2006 6:30 PM

GROCERY

2@3.50	JUICE BOX 8CT	7.00 T
KLNX		1.95 T
PAPER PLATES	150CT	4.50 T

FROZEN

FROZEN PEAS		1.50 T
5@2.00	FRZ PIZZA	10.00 T

DAIRY

2@2.50	MILK	5.00 T
MOZZ SHRD CHEESE		2.50 T

TOTAL ITEMS SOLD	=	13
****	**SUBTOTAL**	**32.45**
****	**TAX @ 7%**	**2.27**
****	**TOTAL**	**34.72**
	CASH	**35.00**
	CHANGE	**.28**

THANK YOU FOR SHOPPING AT GRETCHEN'S!

Movie Central

Movie Central Drake County

Movie: **Comedian**

Fri 7:30 PM

02/15/2006 $7.50 Adult

1234567890

JUKEBOX CAFE

JUKEBOX CAFE
112 W. 1ST ST
WATERLILLY, PN 12345
(123)555-5555

COPY
05/05/2006 12:30P

SALE:

Transaction #	5
Card Type:	DEBIT
Acc:	**********1234
Entry:	Swiped
Srvr #	2
Base Amt:	7.12
Tip Amount	$ 2.00
Total Amt:	$ 9.12
Reference No.	111111111
Auth. Code:	34567
Response APPROVAL	89012
Sequence Number:	3456

Thank you and come again!

225

Date: 10-15-06

M _____

Address: _____

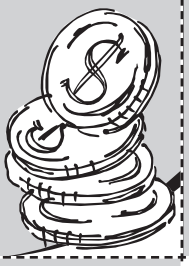
Quantity	Items	Price	
	FrenchFries	1	50
	Med. Coke	1	45
	Hamburger	4	95
	w/cheese		50
	TAX @ 7%		59
	TOTAL	8	99

Thank You!

PROPS PAPER 1234590

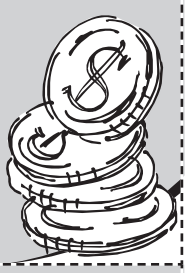
Here's the Situation

Your television had an electrical short last night in your living room. You need to buy a new couch, chair, and coffee table. If you have home insurance collect the money to buy the furniture after you have selected it from the Furniture Store. If you do not have insurance, pay for the furniture out of your own pocket.



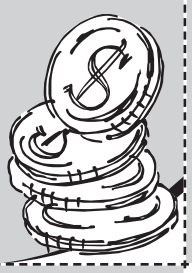
Here's the Situation

You have moved into a new apartment. You left your last apartment so clean that you get your cleaning deposit back. Go to the Real Estate Office and collect one month's rent. You will need to pay your rent on your new apartment today when you are shopping.



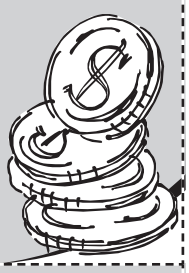
Here's the Situation

You have received a notice that your utility bills are overdue! Go to the Utility Company and pay your bills before they turn off your utilities. If you have paid them, have the utilities manager write today's date on the paid bill and sign that the notice was a mistake.



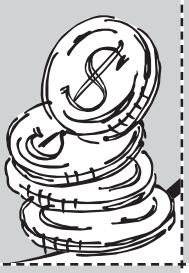
Here's the Situation

The battery is dead in the family car. Go to the Auto Parts Store and purchase a new battery. Some new floor mats would also be nice for the car since your dog chewed up the ones that are there now.



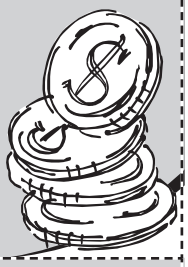
Here's the Situation

You and your family would like to have a pet. Go to the Pet Store and buy a pet. Don't forget to get food and anything else your pet may need such as a birdcage for a bird or a fish bowl for a fish.



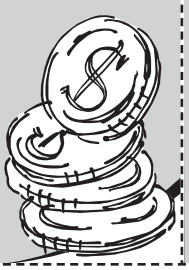
Here's the Situation

I scream, you scream, we all scream for ice cream! Go to the Ice Cream Parlor and buy a double cone of your favorite flavor.



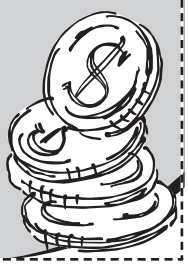
Here's the Situation

The stock market is heating up and you want to get into some good stocks. Go to the Stock Broker and select a stock to buy. Be sure to find out if there is any commission you will have to pay.



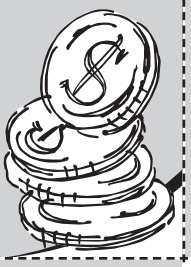
Here's the Situation

You found a wallet and turned it in to the office. The owner was so happy she gave you a $10.00 reward. Collect your money from the Bank.



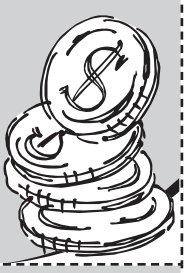
Here's the Situation

You get an extra $10.00 this week for your allowance because you got a good report card. Collect the money from the Bank.



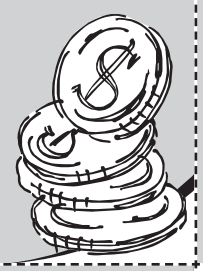
Here's the Situation

Let's go see a movie. Go to the Theater and buy tickets for you and 2 friends. You will need to decide if you are going to a matinee or evening show as the costs will be different.



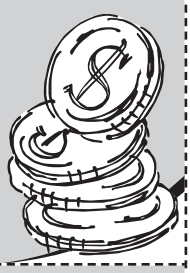
Here's the Situation

You have been invited to go swimming with some friends. You need to buy a new bathing suit. Go to the Department Store to make your purchase.



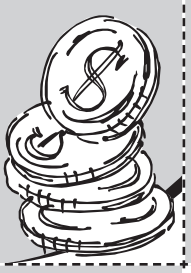
Here's the Situation

You have a letter to send to a friend across the country. Go to the Post Office to buy some stamps to mail your letter. You will need more than one because you will be writing more letters later in the week.



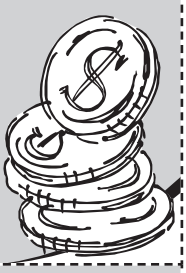
Here's the Situation

Your dog dug up your neighbor's flowers. You must pay your neighbor $20.00 to replace the flowers. Give the money to the Bank.



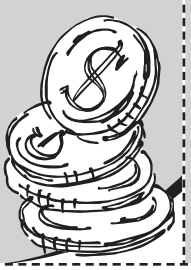
Here's the Situation

You have several friends and family coming to dinner. You need to buy pots and pans, dishes, and silverware for your home. Go buy them at the Department Store.



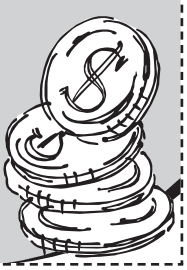
Here's the Situation

You won first prize in the chili cook off. Collect $25.00 from the Bank.



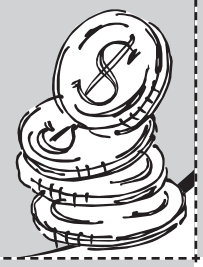
Here's the Situation

It is your nephew's birthday. Go to the Toy Store to buy him a present.



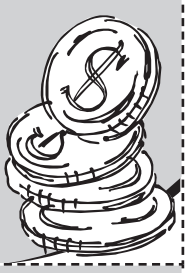
Here's the Situation

You need to buy a toy for your little brother. Get one at the Toy Store.



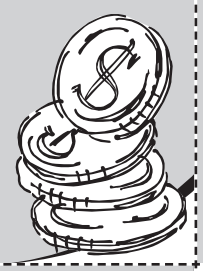
Here's the Situation

You have not been feeling well lately. Go to the Medical Center for a check-up.



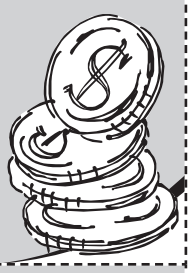
Here's the Situation

It's your little cousin's birthday. She wants a doll. Go to the Toy Store and buy her one.



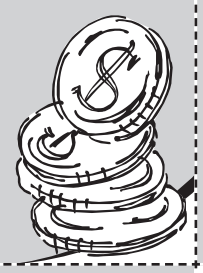
Here's the Situation

Time for a treat! Go buy some ice cream at the Ice Cream Parlor.



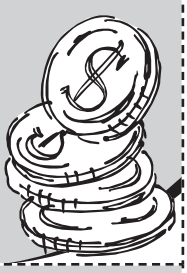
Here's the Situation

It's your mother's birthday. Go to the Jewelry Store and pick out a gift.



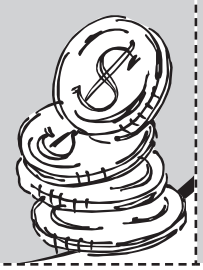
Here's the Situation

Your car's headlight is out. Go to the Auto Parts Store and buy a new one.



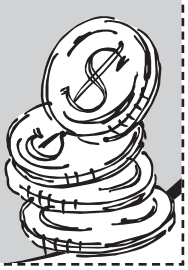
Here's the Situation

You want to go to the movies. Go to the Theater and buy tickets for you and three of your friends.



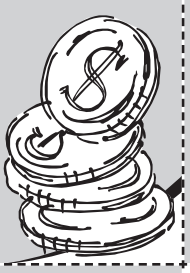
Here's the Situation

You are eager to have a pet. Go to the Pet Store and buy a dog.



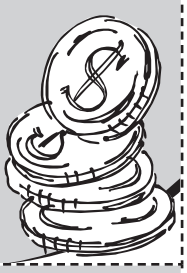
Here's the Situation

Your couch is an ouch! Go buy a new one at the Furniture Store.



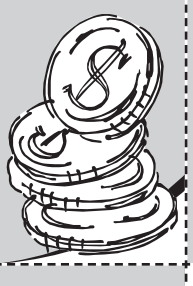
Here's the Situation

You need a new bedroom set. Shop for one at the Furniture Store.



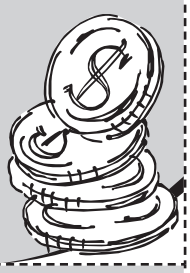
Here's the Situation

You are paying for dinner tonight. Invite three of your friends and pay for their meals at the restaurant.



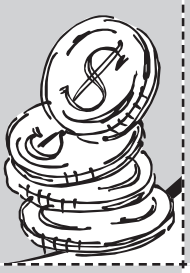
Here's the Situation

You are starving! Go get some food at the Restaurant.



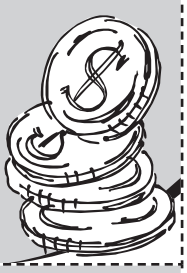
Here's the Situation

You are on a soccer team. Go buy a ball at the Sports Store.



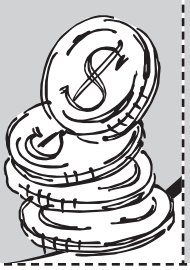
Here's the Situation

Brrrrr, it's getting cold! Go to the Sports Store and buy a jacket to keep warm.



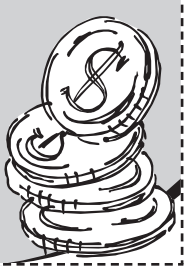
Here's the Situation

You have a new job. Your employer wants you to go get a physical. Go to the Medical Center.



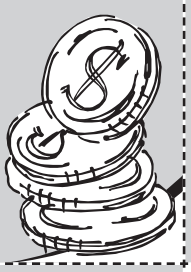
Here's the Situation

You are not feeling well. Go to the Medical Center for a checkup.



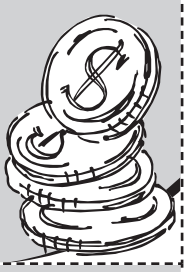
Here's the Situation

Company is coming. Buy two new sets of towels for the bathroom. Visit the Department Store to make your purchase.



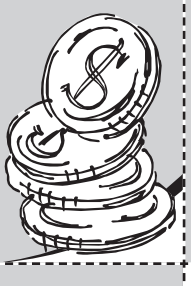
Here's the Situation

Your very best friend is having a birthday. Go to the Toy Store and spend up to $25.00 on a gift.



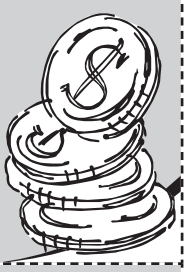
Here's the Situation

The weekend is coming, and you are going to have a friend spend the night. Go to the Video Store and get some CDs and videos for your entertainment.



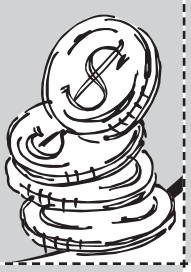
Here's the Situation

Your cat knocked your TV off the table and it is ruined! Go to the Technology Store and buy a new TV.



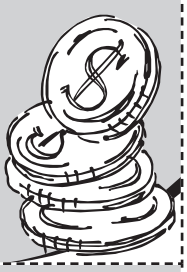
Here's the Situation

You are going to be moving soon to an apartment. Go to the Real Estate Office and rent a new apartment. If you have a pet you will have to pay a pet fee of $50.00.



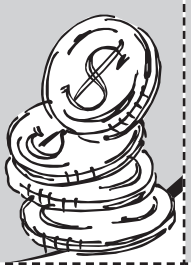
Here's the Situation

You are going to take a friend out to lunch but you want to try the new Restaurant first. Go to the Restaurant and order a full lunch.



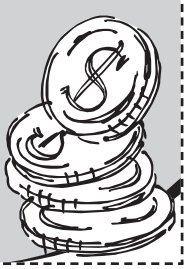
Here's the Situation

It is time to get into shape! You need some exercise equipment. Go to the Sports Store and buy some equipment.



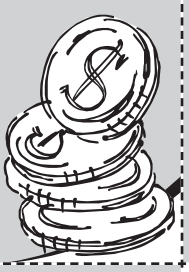
Here's the Situation

It is time to do your weekly grocery shopping. Go to the Market and purchase some meat and vegetables for dinner. Don't forget something for dessert!



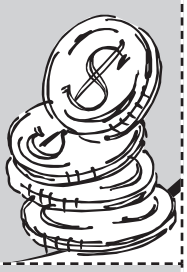
Here's the Situation

You need some new discs for your computer. Go to the Technology Store and purchase some.



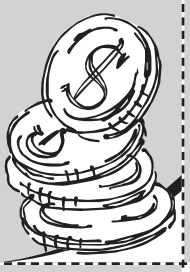
Here's the Situation

It is time for some home repairs. Go to the Hardware Store and purchase some tools to help you fix up your home.



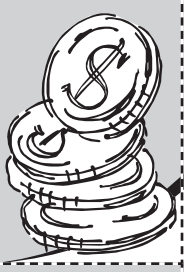
Here's the Situation

There is a big hole in your shoe and you need to have shoes for school. Go to the Shoe Store and buy some new shoes that will be good for school.



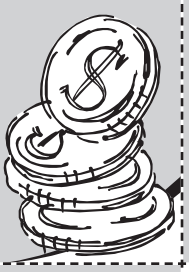
Here's the Situation

Your car and house insurance are way over due. You need to go to the Insurance Company and pay your bill before they cancel your insurance policy.



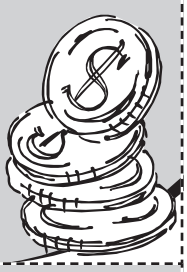
Here's the Situation

You need to open a safe deposit box. Pay the Bank $20.00.



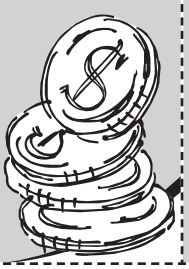
Here's the Situation

You over paid your car insurance. Go to the Insurance Company and get a refund of $20.00.



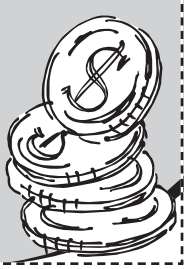
Here's the Situation

You have inherited $25.00 from great aunt Matilda. Collect your inheritance from the Bank, which is handling the estate.



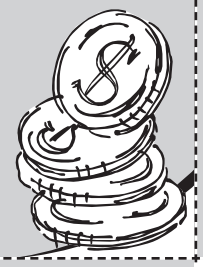
Here's the Situation

You have a rebate coming on an item you purchased at the Technology Store. Go and collect the rebate of $30.00.



Here's the Situation

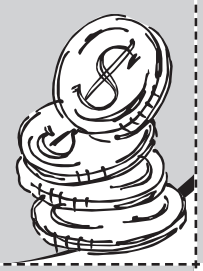
The bank has made an error in your favor. Go to the Bank and collect $10.00.



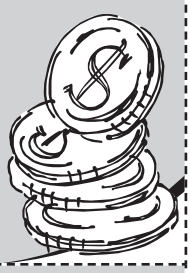
Here's the Situation

You need to pay back the $20.00 you borrowed from the Bank. Go to the Bank and pay the $20.00. Be sure to get the banker to write PAID on this note.

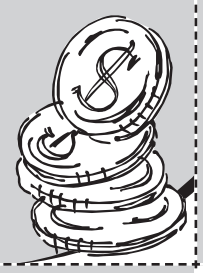
Here's the Situation



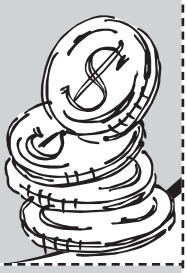
Here's the Situation



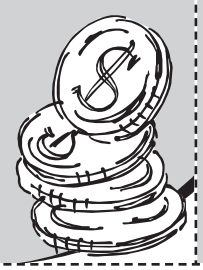
Here's the Situation



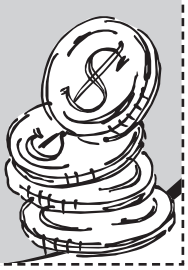
Here's the Situation



Here's the Situation



Here's the Situation



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 make several minor errors, but is able to correct with additional instruction

0 = Student is unable to complete the task correctly, even with additional instruction

Final Assessment
(with tax)

Name: _____

1. You went shopping at the grocery store. You bought 2 pounds of apples at $.99 per pound and a box of cereal for $3.89. There was no tax on these items. You paid for the food with $10.00 and received $4.10 in change. Did you receive the correct change? Show how you know.

2. You have $25.00 to buy a birthday present for your best friend. You found a shirt for $14.95 on sale for 25% off. What was the sale price? Do you have enough money to buy 2 shirts plus 7% tax? Show how you know.

3. Tax is 7% on pants. You want to buy two pairs of pants at $16.99. You have $35.00. Do you have enough money? Show how you know.

4. A customer has given you $20.00 to buy a game for $6.75 and a book for $7.95 plus 7% tax. How much change will you give back to the customer? What is the fewest number of coins and bills you can give in change? Show how you know.

5. You have a starting balance of $50.00 and have written check number 305 to the department store today for $36.79. Show how you would enter it into your register. What is your new balance? You have a deposit of $56.25. Enter it into your register and find the balance.

Check Register

Check #	*Date*	*Description of Transaction*	*Payment/ Debit (-)*		*Deposit/ Credit (+)*		*Balance* **$50.00**	

Final Assessment
(without tax)

Name: _____

1. You went to the market. You bought bananas for $1.98 and a box of cereal for $3.49. You paid for the food with $10.00. How much change did you receive? Show how you know.

2. You have $25.00 to spend for a birthday present. If you buy a shirt for $17.95, will you have enough change to buy yourself lunch for $6.25? Show how you know.

3. You have $13.50. Is this enough money to buy a game that costs $6.75 and one that costs $7.00? If it is enough, how much change will you get back? If not, how much more do you need?

4. A customer has given you $20.00 for a shirt that costs $14.75. How much change will you give back to the customer? What is the fewest number of coins and bills you can give in change?

5. You have a starting balance of $50.00 and have written check number 305 to the department store today for $36.79. Show how you would enter it into your register. What is your new balance? You have a deposit of $56.25. Enter it into your register and find the balance.

Check Register

Check #	*Date*	*Description of Transaction*	*Payment/ Debit (-)*		*Deposit/ Credit (+)*		*Balance* **$50.00**	

Final Assessment Answer Key (with tax)

1. No. 1.98 + 3.89 = 5.87 spent, should have $4.13 in change

2. Yes, Two shirts would be $22.42 plus 7% tax = $23.99

3. No, you do not have enough money.
$16.99 + $16.99 = $33.98; $33.98 x 7% = $2.378; $33.98 + $2.38 (rounded) = $36.36

4. $6.75 + $7.95 = $14.70; $14.70 x 7% = 1.029; $14.70 + 1.03 (rounded) = $15.73;
$20.00 - $15.73 = $4.27 in change

   The fewest coins/bills you could give is 4–$1.00, 1–$.25, and 2–$.01

5.

Check #	Date	Description of Transaction	Payment/ Debit (-)		Deposit/ Credit (+)		Balance	
							$50	00
305	today	Dept. Store	$35	79			$13	21
	today	Deposit			$56	25	$69	46

Final Assessment Answer Key (without tax)

1. $10.00 – ($1.98 + $3.49) = $4.53

2. Yes; $17.95 + $6.25 = $24.20

3. No, you need $.25 more. $6.75 + $7.00 = $13.75

4. $20.00 - $14.75 = $5.25 in change. Fewest bills/coins = 1 $5.00 and 1 $.25

5.

Check #	Date	Description of Transaction	Payment/ Debit (-)		Deposit/ Credit (+)		Balance	
							$50	00
305	today	Dept. Store	$35	79			$13	21
	today	Deposit			$56	25	$69	46

Final Assessment Rubric

	4 Exceeds Expectations	3 Meets Expectations	2 Nearly There	1 Ineffective
Mathematical Reasoning	Uses complex and refined mathematical reasoning.	Uses effective mathematical reasoning.	Some evidence of mathematical reasoning.	Little evidence of mathematical reasoning.
Mathematical Concepts	Explanation shows complete understanding of the mathematical concepts used to solve the problem(s).	Explanation shows substantial understanding of the mathematical concepts used to solve the problem(s).	Explanation shows some understanding of the mathematical concepts used to solve the problem(s).	Explanation shows very limited or no understanding of the mathematical concepts used to solve the problem(s) or was not included.
Explanation	Explanation is detailed and clear.	Explanation is clear.	Explanation is difficult to understand, but includes critical components.	Explanation is difficult to understand and is missing several components or was not included.
Strategy/ Procedures	Typically, uses an efficient and effective strategy to solve the problem(s).	Typically, uses an effective strategy to solve the problem(s).	Sometimes uses as effective strategy to solve the problem(s).	Rarely uses an effective strategy to solve problem(s).
Working with Others	Student was an engaged partner, listening to ideas of others and working cooperatively.	Student was an engaged partner, but had trouble listening to others and/or working cooperatively.	Student cooperated with others, but needed prompting to stay on-task.	Student did not work effectively with others.
Neatness and Organization	The work is presented in a neat, clear organized fashion that is easy to read.	The work is presented in a neat, clear organized fashion that is usually easy to read.	The work is presented in an organized fashion but may be difficult to read at times.	The work appears sloppy and unorganized. It is difficult to know what information goes together.

Journal Entry Rubric

	4 Exceeds Expectations	3 Meets Expectations	2 Nearly There	1 Ineffective
Journal questions	I answered all questions completely.	I answered most of the questions completely.	I answered some of the questions.	My answers were incomplete.
Communication	I communicated my thoughts clearly and supported them with examples.	I communicated most of my thoughts clearly and gave some examples.	I was able to express some thoughts about what went on.	My responses have little relationship to the activity.
Mathematical understandings	I demonstrated a clear understanding of the mathematics in the activity and an ability to analyze any problems that occurred.	I demonstrated understanding of the mathematics in the activity.	I explained the activity with inconsistency or misconception of the content.	I demonstrated little or no understanding of the mathematics in the activity.

Presentation Rubric

	4 Exceeds Expectations	3 Meets Expectations	2 Nearly There	1 Ineffective
Organization	My presentation was very well organized.	My presentation was organized.	My presentation was somewhat organized.	My presentation was disorganized and very difficult to follow.
Understanding	I clearly explained what I did and why.	I explained my work so others could understand the most important points.	I explained my work so others could understand a few of the most important points. My explanation was difficult to follow at times.	My audience could not understand my presentation.
Speaking Voice	My voice was loud and very clear.	My voice was loud and clear.	My voice was sometimes difficult to hear or understand.	My voice was difficult to hear.
Eye Contact	I maintained eye contact with my audience.	I made eye contact with my audience from time to time.	I made eye contact with my audience a few times.	I made little or no eye contact with my audience.
Visual Aids	Any visual aids I used added interest and clarity to my presentation.	Any visual aids I used added clarity to my presentation.	Any visual aids I used added some clarity to my presentation.	Any visual aids I used were ineffective or were distracting.

Buyer and Seller Masters

Customer Receipts

Customer Receipt

Date _____

Qty	Item	Price	
	Subtotal		
	Tax		
	Total		

Thank You!

Customer Receipt

Date _____

Qty	Item	Price	
	Subtotal		
	Tax		
	Total		

Thank You!

Customer Receipt

Date _____

Qty	Item	Price	
	Subtotal		
	Tax		
	Total		

Thank You!

Customer Receipt

Date _____

Qty	Item	Price	
	Subtotal		
	Tax		
	Total		

Thank You!

Daily Shopping Record
(with tax)

Name: _____ Date: _____

Store Name	Items Bought	Money Spent	
1.		Starting Balance	$
		+tax:	
2.		New Balance	$
		+tax:	
3.		New Balance	$
		+tax:	
4.		New Balance	$
		+tax:	
5.		New Balance	$
		+tax:	
6.		New Balance	$
		+tax:	
		New Balance	$
Total amount of money left		ENDING BALANCE	$
Total amount of money spent			+
Starting Balance			$

Daily Shopping Record
(without tax)

Name: _____ Date: _____

Store Name	Items Bought	Money Spent	
1.		Starting Balance	$
2.		New Balance	$
3.		New Balance	$
4.		New Balance	$
5.		New Balance	$
6.		New Balance	$
		New Balance	$
Total amount of money left		ENDING BALANCE	$
Total amount of money spent			+
Starting Balance			$

Shopping Summary

Name: _____ Date: _____

First Shopping Day	
Starting cash (salary)	$
Total money spent	$
Amount left (cash plus checking)	$



Second Shopping Day	
Amount left from first day (cash on hand)	$
New salary (in checking account)	$
Total money available to spend	$
Total money spent	$
Amount left (cash plus checking)	$



Third Shopping Day	
Amount left from first day (cash on hand)	$
New salary (in checking account)	$
Total money available to spend	$
Total money spent	$
Amount left (cash plus checking)	$

Daily Sales Record
(with tax)

Sales Person: _____ Date: _____

Name of Store: _____

Name of buyer	Price of Merchandise	Tax (7%)	Total Sale (Total Receipt)
1.			*Starting Balance*
			$
	$	$	$
2.			*New Balance*
			$
	$	$	$
3.			*New Balance*
			$
	$	$	$
4.			*New Balance*
			$
	$	$	$
5.			*New Balance*
			$
	$	$	$
6.			*New Balance*
			$
	$	$	$
			New Balance
			$
Total Receipts			$
Starting Balance			$
Ending Balance			$

Daily Sales Record
(without tax)

Sales Person: _____ Date: _____

Name of Store: _____

Name of buyer	Price of Merchandise	Total Sale (Total Receipt)
1.		*Starting Balance*
		$
	$	$
2.		*New Balance*
		$
	$	$
3.		*New Balance*
		$
	$	$
4.		*New Balance*
		$
	$	$
5.		*New Balance*
		$
	$	$
		New Balance
		$
Total Receipts		$
Starting Balance		$
Ending Balance = Bank Deposit		$

Sales Summary

Name: _____ Date: _____

Day	Total Price of Merchandise	Taxes
1	$	$
2	$	$
3	$	$
4	$	$
5	$	$
6	$	$
	Total	$

What were your total sales of merchandise? _____

How much tax did you collect? _____

Instructions for the Banker

Before the bank can be open for business:

- Assemble a checkbook for each citizen.
- Assemble a wallet for each citizen.
- Prepare a money envelope for each business.

At the beginning of the first shopping day:

- Help distribute a money envelope to each business.

During the shopping day:

- Sellers will come in to get change for their stores. They will give you larger bills in exchange for smaller bills and coins.
- Buyers will come in to get money from their account using their debit card.

At the end of the shopping day:

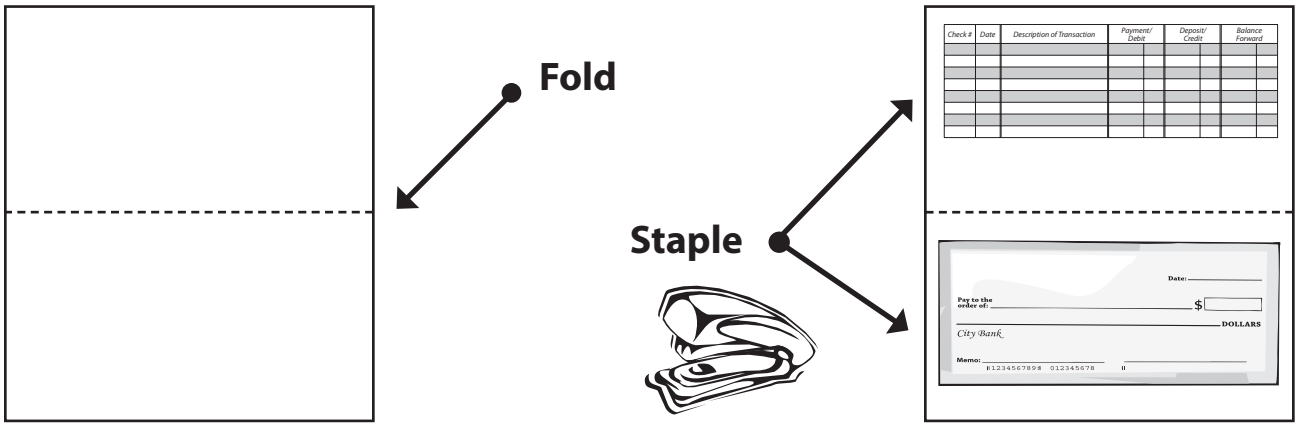
- Sellers will deposit their earnings from the day.

How to Assemble Checkbooks

Materials needed:

- 8 x 9" construction paper
- **Checks** (15 per checkbook)
- **Checkbook Registers** (3 per checkbook)
- Stapler

Procedure: Fold the construction paper in half so that each side is 4 inches. Staple 3 checkbook registers to the top of the inside of one fold. Staple 15 checks on the left hand inside of the paper. This way when you open the folded checkbook, the register will be on the top and the checks will be on the bottom.

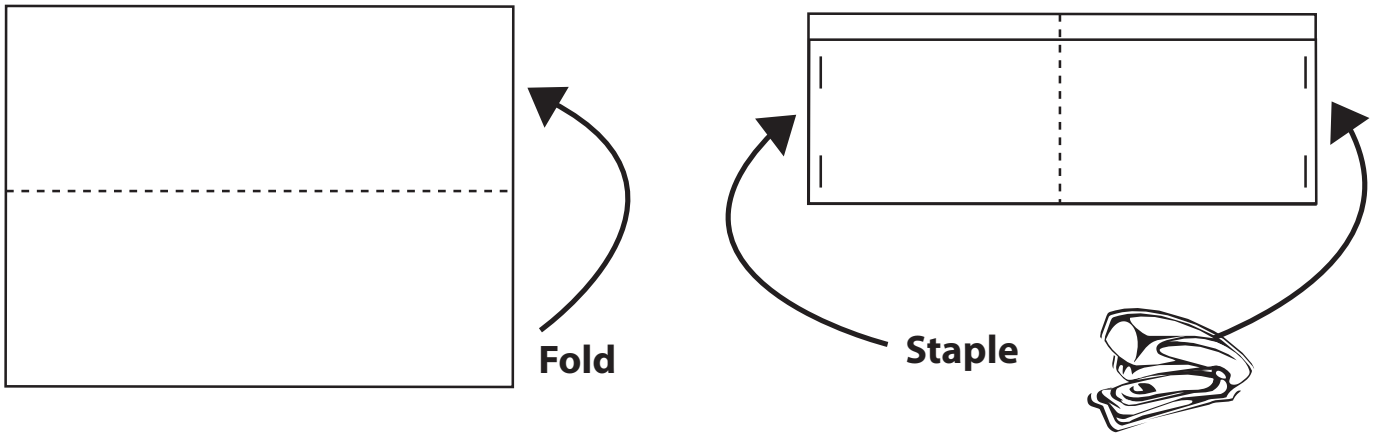


How to Assemble Wallets

Materials needed:

- 9 x 12" construction paper
- Stapler

Directions: Fold the construction paper in half, leaving one side longer than the other (see diagram below). Staple the sides so the long opening becomes a pocket.



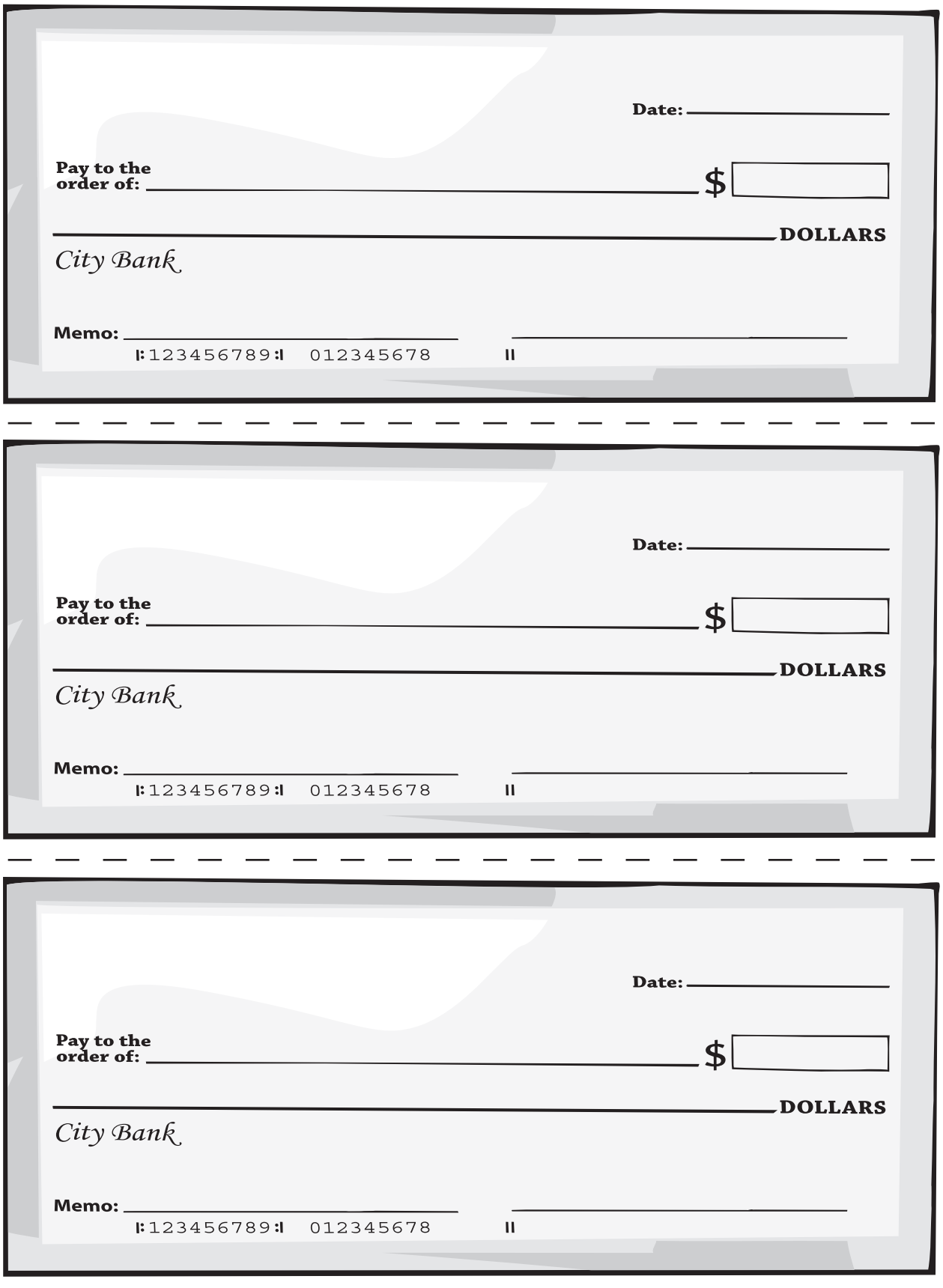
How to Prepare Money Envelopes for Businesses

Money envelopes must include 10 each of the following denominations:

- $10.00 bills
- $5.00 bills
- $1.00 bills
- quarters (25¢)
- dimes (10¢)
- nickels (5¢)
- pennies (1¢)

The total amount in each envelope must equal $164.10.

Checks



Check Registers

Check Register *Name:*___________________________________

Check #	*Date*	*Description of Transaction*	*Payment/ Debit*		*Deposit/ Credit*		*Balance Forward*	

Check Register *Name:*___________________________________

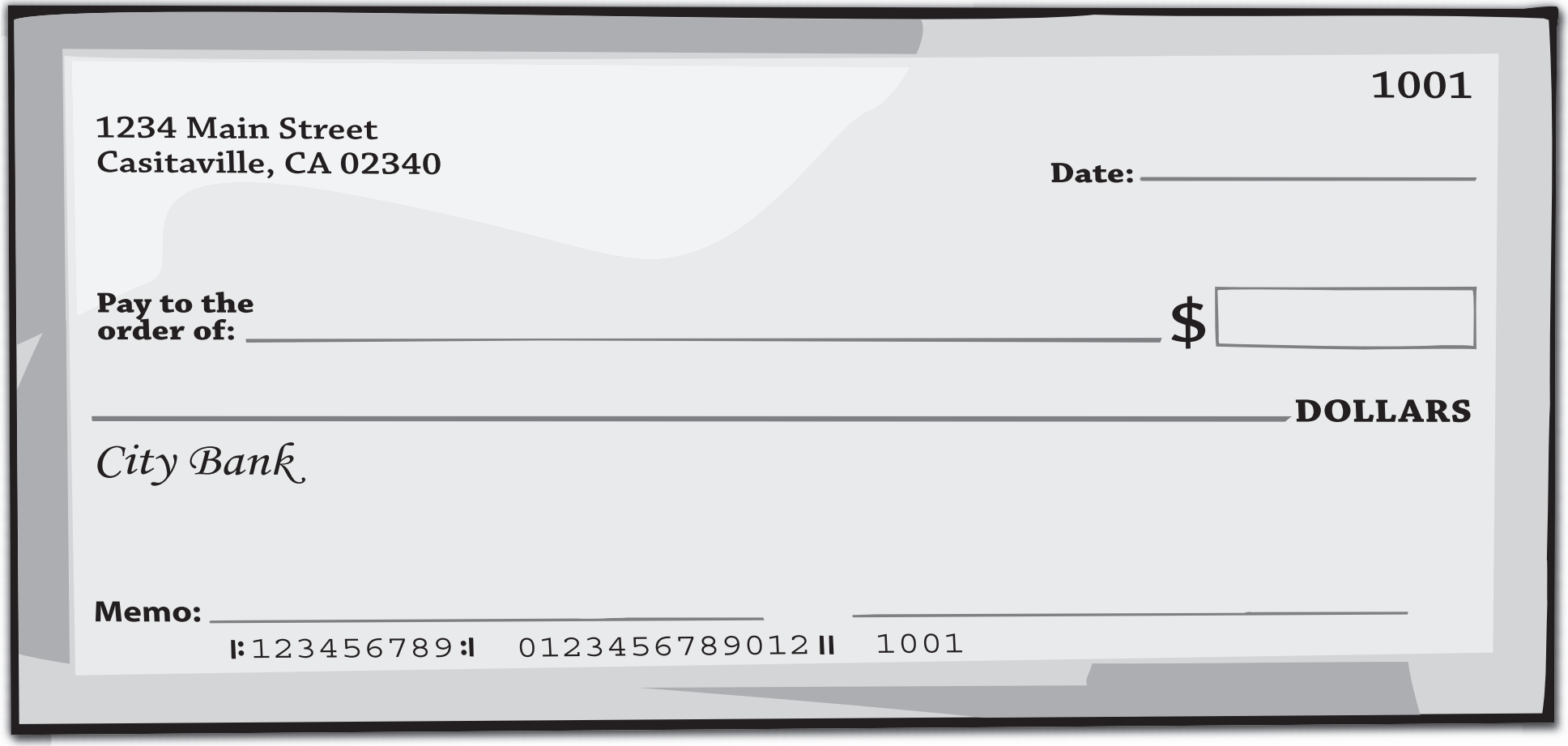
Check #	*Date*	*Description of Transaction*	*Payment/ Debit*		*Deposit/ Credit*		*Balance Forward*	

Check Register *Name:*___________________________________

Check #	*Date*	*Description of Transaction*	*Payment/ Debit*		*Deposit/ Credit*		*Balance Forward*	

Check Sample

Blank Check


1001
1234 Main Street
Casitaville, CA 02340
Date:
Pay to the order of:
$
DOLLARS
City Bank
Memo:
⑆123456789⑆ 012345678901⑈ 1001

Debit Cards

Debit Card Receipts

Debit Card Receipt

Name: ______________________

Date: ____________

Cash Received: $______________

Teller: ______________________

Debit Card Receipt

Name: ______________________

Date: ____________

Cash Received: $______________

Teller: ______________________

Debit Card Receipt

Name: ______________________

Date: ____________

Cash Received: $______________

Teller: ______________________

Debit Card Receipt

Name: ______________________

Date: ____________

Cash Received: $______________

Teller: ______________________

Debit Card Receipt

Name: ______________________

Date: ____________

Cash Received: $______________

Teller: ______________________

Debit Card Receipt

Name: ______________________

Date: ____________

Cash Received: $______________

Teller: ______________________

Debit Card Receipt

Name: ______________________

Date: ____________

Cash Received: $______________

Teller: ______________________

Debit Card Receipt

Name: ______________________

Date: ____________

Cash Received: $______________

Teller: ______________________

Bank Transactions

Name: _____ Date: _____

Name	Date	Deposit (+)	Withdrawal (-)	Balance
				$
				$
				$
				$
				$
				$
				$
				$
				$
				$
				$
				$
				$
				$
				$
				$
				$
				$
				$
				$

Insurance Policy

INSURANCE POLICY

HOMEOWNERS / AUTOMOBILE INSURANCE

Name of policy holder: _____ Date: _____

Policy Number: **9182736KLM - 3**

Type of auto (circle one): Car Truck Van Motorcycle

Homeowners Insurance for (circle one): Apartment House

Amount of insurance Auto: $ _____ Home: $ _____

Total amount paid: $ _____

Name of salesperson: _____

INSURANCE POLICY

HOMEOWNERS / AUTOMOBILE INSURANCE

Name of policy holder: _____ Date: _____

Policy Number: **9182736KLM - 3**

Type of auto (circle one): Car Truck Van Motorcycle

Homeowners Insurance for (circle one): Apartment House

Amount of insurance Auto: $ _____ Home: $ _____

Total amount paid: $ _____

Name of salesperson: _____

Eye Chart

1 W J

2 U N E

3 P M W Z

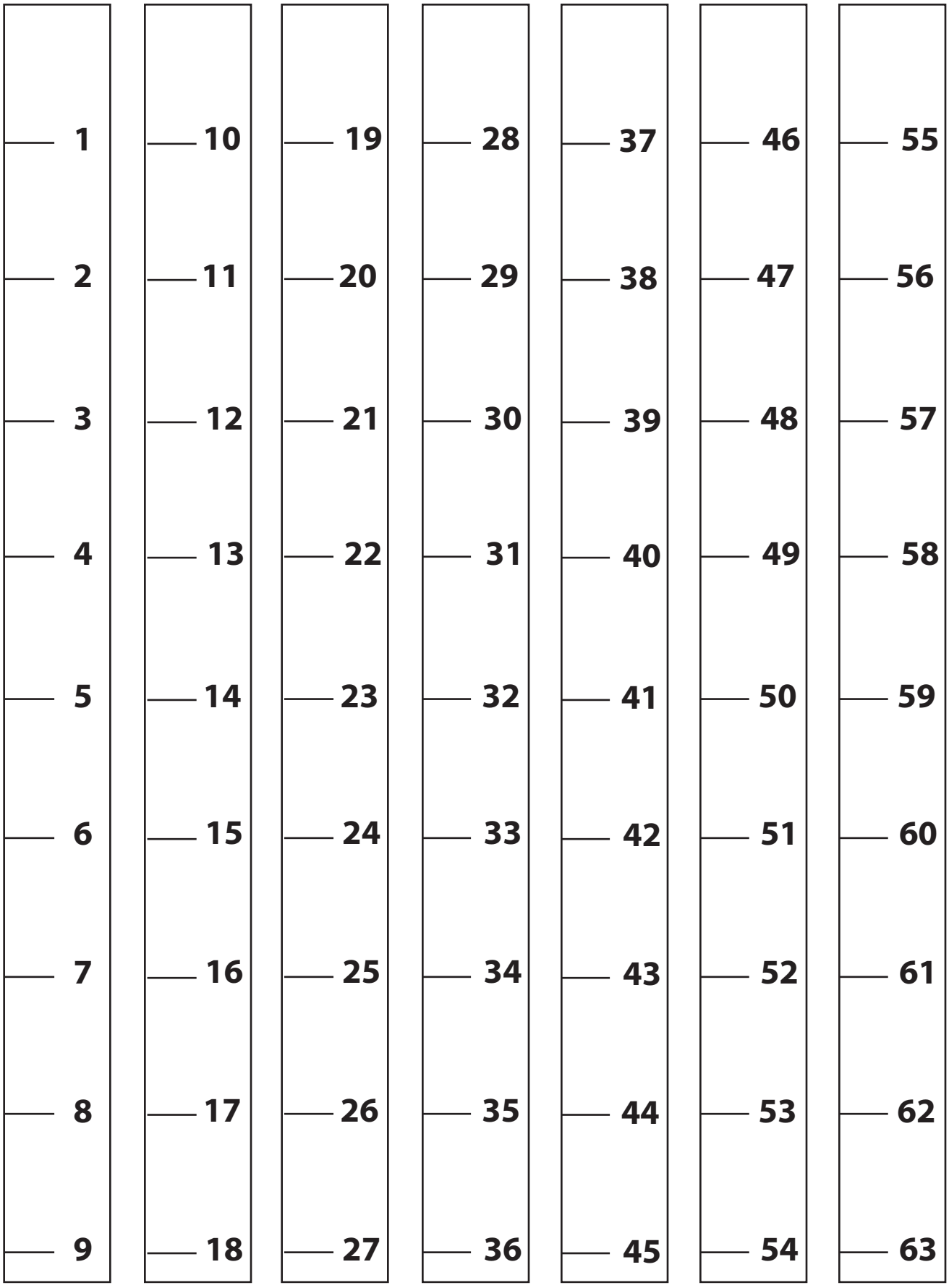
4 O J G W Q

5 L P N T C V

6 Z E W V N M Y

7 U E M P T W Q X

Height Ruler



Exam Form

MEDICAL CENTER EXAMINATION FORM

PATIENT'S NAME: _____ DATE: _____

Height: _____

Vision (number of row read): _____

Throat (clear or red): _____ Toe Touch (yes / no): _____

Examiner's Name: _____

AMOUNT PAID: $ _____

MEDICAL CENTER EXAMINATION FORM

PATIENT'S NAME: _____ DATE: _____

Height: _____

Vision (number of row read): _____

Throat (clear or red): _____ Toe Touch (yes / no): _____

Examiner's Name: _____

AMOUNT PAID: $ _____

MEDICAL CENTER EXAMINATION FORM

PATIENT'S NAME: _____ DATE: _____

Height: _____

Vision (number of row read): _____

Throat (clear or red): _____ Toe Touch (yes / no): _____

Examiner's Name: _____

AMOUNT PAID: $ _____

Real Estate Payments

REAL ESTATE PAYMENTS

Name of buyer: _____ Date: _____

Address of property: _____

_____

Description of property: _____

Monthly Payment: $ _____

Tax: $ _____

Total Paid: $ _____

Real Estate Agent: _____

REAL ESTATE PAYMENTS

Name of buyer: _____ Date: _____

Address of property: _____

_____

Description of property: _____

Monthly Payment: $ _____

Tax: $ _____

Total Paid: $ _____

Real Estate Agent: _____

Sample Menu

The Restaurant Lunch Menu

Hot Dog $3.95

Hamburger $4.95
(with cheese add $.50)

Spaghetti $4.50

Pizza / slice $1.95

Pizza / medium $9.50

Two Tacos $3.95
(with rice & beans) $5.95

Side Orders

Salad $2.95

Fruit $2.50

French Fries $1.50

Dessert $2.95

Drinks

Small ..... $ .95

Medium $1.45

Large $1.95

Utilities Bill

UTILITIES BILL

NAME: _____ DATE: _____

For (circle one): House Apartment

Amount Paid: $ _____

For (circle one): water phone gas electricity

Signed: _____
Utilities Manager

UTILITIES BILL

NAME: _____ DATE: _____

For (circle one): House Apartment

Amount Paid: $ _____

For (circle one): water phone gas electricity

Signed: _____
Utilities Manager

UTILITIES BILL

NAME: _____ DATE: _____

For (circle one): House Apartment

Amount Paid: $ _____

For (circle one): water phone gas electricity

Signed: _____
Utilities Manager

Challenges

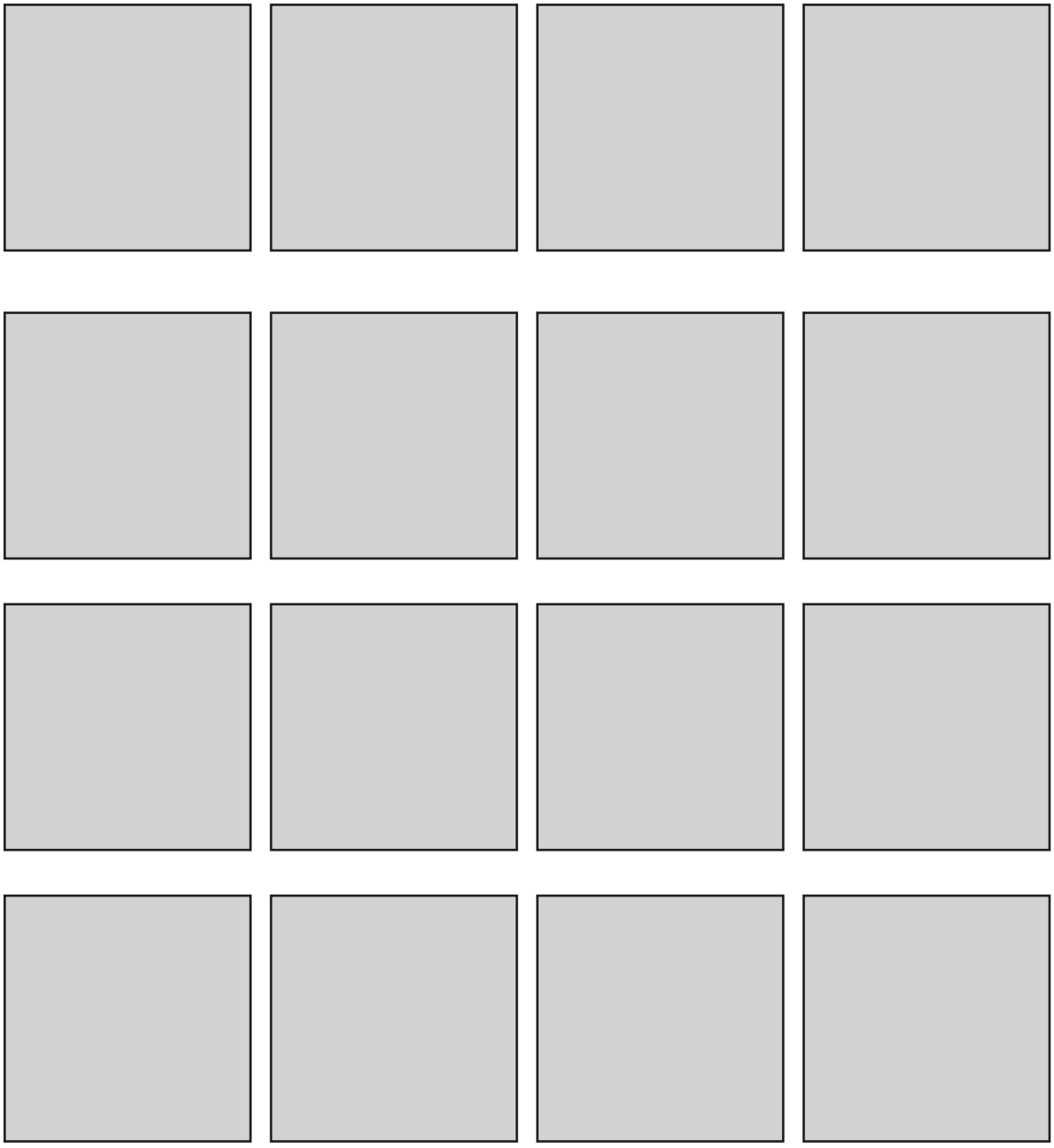
Challenge Activity Worksheets

Coin Placement

Mathematical content: Number sense, estimation, mental math

Materials needed: Recording grid, four of each coin: pennies, nickels, dimes, and quarters

Directions Use four pennies, four nickels, four dimes, and four quarters. Place the coins in the boxes so that each row, column, and diagonal has a total value of 41 cents. Once you know the answer, write down which coin goes in each square.



CHALLENGE ACTIVITY .2

Decimal Digit Place

Mathematical content: Number sense, adding decimals, place value, estimation, mental math

Number of players: small group–whole class

Objective: To be the player with the lowest score after 6 rounds

Materials needed: Decimal Digit Place Recording Sheet, 0–9 die or spinner, or deck of cards (A–10; A=1 and 10 = 0, other cards face value), one calculator for each player for checking results

Directions

1. Each player is given a Decimal Digit Place Recording Sheet. One person is designated the leader, or the teacher can be the leader.
2. The leader sets a target number between 10 and 25. The number can include a decimal or can be whole number. All players must write the target number on their recording sheet at the beginning of each round. The same number can be used for more than one round, or can be changed by the leader for each round.
3. Players try to make three three-digit numbers that when added together come as close to the target number as they can—the sum can be more or less than the target number. The goal is to come closest to the target number. The score for each round is the difference between the player's sum and the target number.
4. The leader rolls the die, draws a card, or spins the spinner and calls out the numbers one at a time. Players must write the number called in one of the 11 boxes as soon as it is read. If a player doesn't want to use the called number in his or her equation, the number can be placed in one of the two "discard" boxes.

   If a student erases a number to change its place, or holds the number in his or her head instead of writing it down until the next number is read, a score of 10.50 will be given for that round.

   If a student has an empty box at the end of a round, a score of 5.25 will be given for that round, even if the empty box is a discard.
5. At the end of each round, players may check their arithmetic and find their score with a calculator.
6. At the end of each game (6 rounds), players add up all their scores. The player with the lowest overall sum is the winner.

	Your Sum	Target Number	Score
7 . 9 1 + 5 . 8 5 + 6 . 6 2 =	20.38	21.00	.62

Discard 3 2

	Your Sum	Target Number	Score
9 . 4 4 + 7 . 1 9 + 2 . 3 4 =	18.97	20.50	1.53

Discard 6 9

Decimal Digit Place

Recording Sheet

	Your Sum	*Target Number*	*Your Score*
□.□□ + □.□□ + □.□□ =			
Discard □ □			
□.□□ + □.□□ + □.□□ =			
Discard □ □			
□.□□ + □.□□ + □.□□ =			
Discard □ □			
□.□□ + □.□□ + □.□□ =			
Discard □ □			
□.□□ + □.□□ + □.□□ =			
Discard □ □			
□.□□ + □.□□ + □.□□ =			
Discard □ □			

CHALLENGE ACTIVITY • 2

CHALLENGE ACTIVITY • 3

How Many Ways to Make $1.00?

Mathematical content: Number sense, mental math

Materials needed: Paper, pencil, and an assortment of coins

Directions How many ways can you make change for $1.00 using pennies, nickels, dimes, quarters, and half dollars?

	half dollars	quarters	dimes	nickels	pennies
Example:	1	1	1	2	5

How Much are You Worth?

Mathematical content: Number sense, estimation, mental math

Materials needed: 100 pennies, and an assortment of coins

Directions Find the weight of one dollar worth of pennies. Find your weight. How many nickels weigh as much as you? Dimes? Quarters?

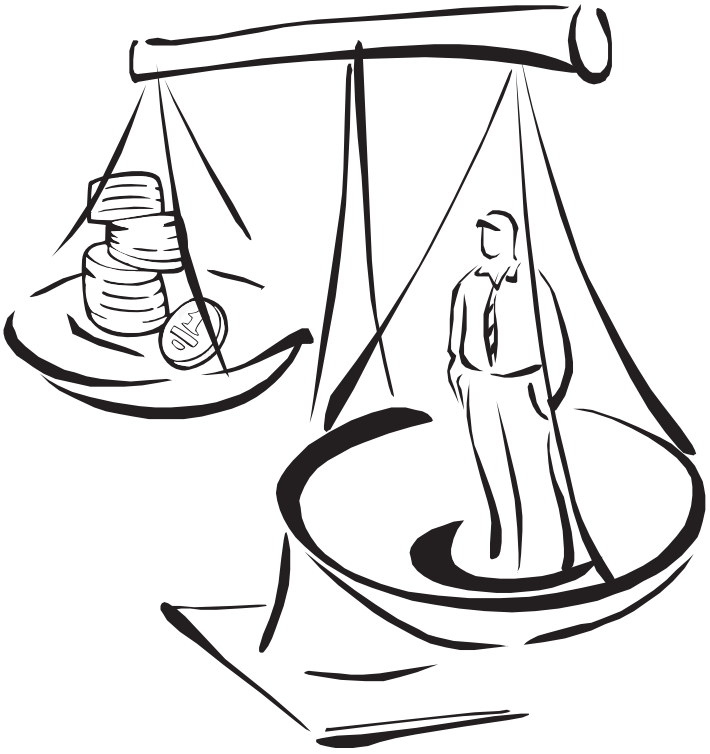
Weight of one dollar of pennies _____

Your weight _____

Your weight in nickels _____

Your weight in dimes _____

Your weight in quarters _____



How Much Change?

CHALLENGE ACTIVITY • 5

Mr. Brown needed to buy some food for the animals in the science lab. The food cost $3.75. He paid for the food with a $5.00 bill. How much change did he get back?

$ _____ . _____

There are several different ways that the clerk could have given Mr. Brown the change. Show as many different ways as you can to make the correct amount of change for Mr. Brown. Which way would you choose if you wanted to use the fewest coins and bills possible?

How Much Does It Cost?

Is a discount of 30% off the original price, followed by a discount of 50% off the sale price, the same as a discount of 80% from the original price? How do you know?

Example:

Original price	$16.99
30% off original price	$11.89
50% off sale price	$5.95
Original price	$16.99
80% off original price	$3.40

Original price	_____
30% off original price	_____
50% off sale price	_____
Original price	_____
80% off original price	_____

CHALLENGE ACTIVITY • 6

Let's Go Grocery Shopping

CHALLENGE ACTIVITY • 7

1. Your grocery cart contains the following items:

   2 pounds of tomatoes

   1 pound of green beans

   1 bag of chips

   What is the total cost of the items? _____If you pay for the items with $10.00, will you receive change? _____ How much (if any)? _____

2. Donuts are $.50 each or $5.25 for a dozen. Is it better to buy them one at a time or by the dozen? _____ Explain how you know.

3. You are going to buy 1½ pounds of bananas. How much will they cost? Show how you know.

4. You have $10.00 to spend, how many different items can you buy? List them and determine if you will get change from your $10.00.

5. You are going to have company for dinner. You need to buy ketchup, 2 pounds of cheese, 2 pounds of asparagus and a dozen donuts for dessert. What is the total cost for these items? If you pay for them with $20.00, how much change will you get back? If the storekeeper wants to give you the fewest coins possible, what coins should the storekeeper give you?

6. You see an ad in another store that is advertising green beans 3 pounds for $5.00. Which store has the better buy? Explain how you know.

Asparagus **$1.99/lb**	
Green Beans **$1.79/lb**	
Cheese **$2.49/lb**	
Donuts **$5.25/dozen**	
Muffins **$.75 each**	
Chips **$1.29**	
Tomatoes **$2.89/lb**	
Bananas **$1.50/lb**	
Catsup **$1.29**	
Mustard **$1.49**	

Magic Decimal Squares

Mathematical content: Number sense, estimation, mental math

Materials needed: Paper and pencil

Directions In each magic square, the sum of each row, column, and diagonal will be the same. In each magic square below, find the magic sum and fill in the missing numbers.

	$.13	$.27
$.25		$.17
		$.19

Magic Sum: _____

		$2.74
$4.11	$6.85	
$10.96		

Magic Sum: _____

$.87	$.57		$.96
	$.78	$.81	
$.84	$.66		$.75
	$.93		

Magic Sum: _____

$4.31		$4.41	$4.28
$4.36		$4.33	
	$4.38		
$4.43	$4.29		$4.40

Magic Sum: _____

CHALLENGE ACTIVITY • 8

CHALLENGE ACTIVITY • 9

Making Change

How much change would you get for each item in the department store if you paid with a $100.00 bill? Write the amount of change, then show the fewest number of bills and coins that you should receive in change.

	Amount of Change	*Quantities Needed*							
ITEM	**$100.00**	**$50.00**	**$20.00**	**$10.00**	**$5.00**	**$1.00**	**$.50**	**$.25**	**$.10**
Two Shirts **$42.50**	$100.00 - $42.50 $ 57.50	1			1	2	1		
Set of Sheets **$65.75**									
Silverware **$74.30**									
Dress **$55.25**									
Jewelry **$83.50**									
Pants **$35.80**									
Cologne **$24.00**									
Shoes **$38.75**									
Baking Pans **$62.40**									
Pajamas **$27.00**									
Toaster **$55.55**									

Ways to Make $1.00

Mathematical content: Number sense, estimation, mental math

Materials needed: Paper, pencil, and assortment of coins

Directions In how many ways could you make change for $1.00 using exactly seven U.S. coins (pennies, nickels, dimes, quarters, and half dollars)? What if you could use 21 coins? Make a table showing all possibilities. Explain why you think your table contains all possible solutions.

Solution:

Total number of coins	Number of each coin needed				
	50¢	25¢	10¢	5¢	1¢
7 coins	1		4	2	
21 coins	1		2	3	15

CHALLENGE ACTIVITY • 11

Making Correct Change

It is very important to give the correct change when you are a storekeeper. It is also important as a customer to be sure you receive the correct change. Write the correct change that would be given in the following situations. Record the bills and coins needed for the change. Keep in mind that people want larger bills and as few coins as possible.

1. Customer gives $5.00 for a $3.88 purchase
2. Customer gives $2.50 for a $1.47 purchase
3. Customer gives $6.00 for a $5.44 purchase
4. Customer gives $10.00 for a $7.36 purchase
5. Customer gives $20.00 for a $13.21 purchase
6. Customer gives $2.00 for a $1.26 purchase
7. Customer gives $40.00 for a $23.88 purchase
8. Customer gives $4.02 for a $3.36 purchase
9. Customer gives $25.50 for a $23.28 purchase
10. Customer gives $56.00 for a $45.50 purchase
11. Customer gives $3.02 for a $2.92 purchase

My Money Monster

Draw, name, and describe a monster that is worth exactly $25.00. You must use each shape below at least one time to make your monster. Draw the monster in the box below.

Describe your monster. Show how you know it is worth exactly $25.00.

CHALLENGE ACTIVITY • 13

Pocket Full of Money

Each of the following riddles tells you exactly how much money is in the mystery pocket. In each of the pockets there may be quarters, dimes, nickels or pennies. Your task is to discover exactly what coins are in each pocket and answer the final question.

- There are 6 coins in the pocket.
- There are twice as many dimes as nickels.
- The value of the coins is 50¢.

How many nickels are there in the pocket?

- There are 10 coins in the pocket.
- The value of the coins is 70¢.
- There are no nickels in the pocket.

What coins are in the pocket?

- There are 9 coins in the pocket.
- The value of all the coins is 75¢.
- There are the same number of dimes as quarters.
- There are no nickels in the pocket.

How many pennies are in the pocket?

- The total value of the coins in the pocket is 37¢.
- The total number of coins is three times the number of pennies.

How many dimes are in the pocket?

- The are 7 coins in the pocket.
- The coins in the pocket total 95¢.
- There are no pennies in the pocket.

What coins are in the pocket?

- There are 9 coins in the pocket.
- There are the same number of nickels as pennies.
- The value of the coins is 93¢.

How many quarters are in the pocket?

Rolling for $1.00

Mathematical content: Number sense, estimation, mental math

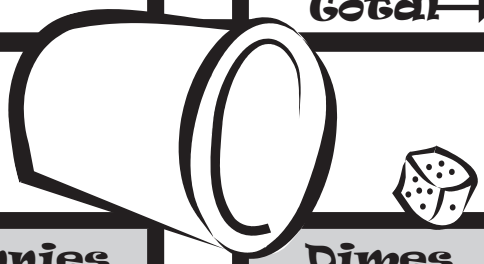
Materials needed: Die

Directions Roll your die 7 times and write the number in either the dimes or pennies column each time. Your goal is to be able to add the value in both columns to get as close to $1.00 as possible.

Variation: Get as close to $1.00 as possible without going over.

Dimes	Pennies
Total→	

Dimes	Pennies
Total→	



Dimes	Pennies
Total→	

Dimes	Pennies
Total→	

CHALLENGE ACTIVITY • 14

CHALLENGE ACTIVITY • 15

Round Up–Round Down

Mathematical content: place value, mental addition, estimation, practice rounding to ten

Number of players: 2–4

Materials needed: one pair of dice (1–6) or a deck of cards A–6 (7–K removed), and Round Up–Round Down Recording Sheet.

Objective: to have the sum of five two-digit numbers, rounded to the nearest ten, come closest to the target number.

Directions

1. Players agree on a target number for the round between 100 and 300.
2. Players roll one die or pick a card. Highest number goes first.
3. The first player rolls the pair of dice or draws two cards from a face-down shuffled deck.
4. The player looks at the two numbers rolled (cards drawn) and decides which should be in the ones place and which in the tens place of a two digit number. The number is then entered into the first column of the recording sheet under Actual #. The player then rounds the number to the nearest ten and writes the rounded number in the second column under Rounded #.
5. The dice are then passed to the next player who repeats the steps and records on his or her paper. If cards are used they should be set aside after each round. If players run out of cards the used cards should be shuffled and placed face down to continue the game.
6. Each player rolls the dice or draws two cards for five rounds. The player whose sum of rounded numbers comes closest to the target number receives one point. After four games, the person with the most points wins.

Variations:

- Play "Close to 1,000" by drawing 3 cards to make a three-digit number and rounding the number to the nearest 10 or 100. The winner is the one who gets the closest to 1,000.
- Insert a decimal point and have students draw two cards and round to the nearest ten.
- Insert a decimal point and have students draw three cards and round to the nearest hundred.

SAMPLE: Target number: 150

Player A	Actual #	Rounded #
Round 1: A/1 & 4 rolled/drawn (41 or 14)	14	10
Round 2: 2 & 5 rolled/drawn (25 or 52)	25	30
Round 3: 2 & 4 rolled/drawn (42 or 24)	24	20
Round 4: 4 & 6 rolled/drawn (46 or 64)	64	60
Round 5: A & 2 rolled/drawn (12 or 21)	21	20
TOTAL		**140**

Adapted from Math Marvels

Round Up–Round Down Record

Game #1

Target Number _____

Round	Actual#	Rounded#
1		
2		
3		
4		
5		

Total: _____

Points Earned: _____

Game #2

Target Number _____

Round	Actual#	Rounded#
1		
2		
3		
4		
5		

Total: _____

Points Earned: _____

Game #3

Target Number _____

Round	Actual#	Rounded#
1		
2		
3		
4		
5		

Total: _____

Points Earned: _____

Game #4

Target Number _____

Round	Actual#	Rounded#
1		
2		
3		
4		
5		

Total: _____

Points Earned: _____

CHALLENGE ACTIVITY • 16

Wanted: $1.00 Words

A	26¢
B	25¢
C	24¢
D	23¢
E	22¢
F	21¢
G	20¢
H	19¢
I	18¢
J	17¢
K	16¢
L	15¢
M	14¢

N	13¢
O	12¢
P	11¢
Q	10¢
R	9¢
S	8¢
T	7¢
U	6¢
V	5¢
W	4¢
X	3¢
Y	2¢
Z	1¢

Each letter of the alphabet has an assigned value. Your challenge is to find words that are worth exactly $1.00, not a penny more, and not a penny less. Use the chart to determine the value of your chosen words.

Example

zoo: 1 + 12 + 12 = 25 cents

apple: 26 + 11 + 11 + 15 + 22 = 85 cents

Can you find a bonus word—a mathematical term worth exactly $1.00?

Example

square: 8 + 10 + 6 + 26 + 9 + 22 = 81 cents

volume: 5 + 12 + 15 + 6 + 14 + 22 = 74 cents

Words	Values
Bonus	

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What are the Coins?

Directions List the coins that will equal the amount.

Example: What 3 coins equal 25 cents? 10¢ 10¢ 5¢

What 5 coins equal 25 cents? ____ ____ ____ ____ ____

What 7 coins equal 25 cents? ____ ____ ____ ____ ____ ____ ____

What 9 coins equal 25 cents? ____ ____ ____ ____ ____ ____ ____ ____ ____

What 6 coins equal 30 cents? ____ ____ ____ ____ ____ ____

What 7 coins equal 60 cents? ____ ____ ____ ____ ____ ____ ____

What 2 coins equal 10 cents? ____ ____

What 3 coins equal $1.00? ____ ____ ____

What 5 coins equal 31 cents? ____ ____ ____ ____ ____

What 3 coins equal 31 cents? ____ ____ ____

What 4 coins equal 50 cents? ____ ____ ____ ____

What 6 coins equal $1.15? ____ ____ ____ ____ ____ ____

BONUS

You have more than a dollar in change but you are unable to give change for a dollar. What is the greatest number of coins you could have? Name the coins.

CHALLENGE ACTIVITY • 17

CHALLENGE ACTIVITY • 18

What Coins Could I Have?

You have 37 cents. Create a chart showing all the different combinations of coins you could have.

Quarters	Dimes	Nickels	Pennies
Example: **1**	**1**		**2**

What are the Possibilities?

You have a bunch of dimes, nickels, and pennies in your pocket. If you pull out three coins, how much could you have? List all the possible combinations.

What if you pulled out 4 coins?

Dimes	Nickels	Pennies	Total
Example: **2**	**1**	**0**	**25¢**

CHALLENGE ACTIVITY • 20

What is a Credit Card?

Find out about credit cards by interviewing a person who uses a credit card, or by doing research at the library or on the Internet.

- What is a credit card?
- What can it be used for?
- How is it like a debit card?
- How is it different?
- When a credit card is used, where does the money come from to pay for an item?
- How does a credit card company make money?
- What are some advantages of using a credit card?
- Disadvantages?

Challenges

Answer Key

❶ Coin Placement

One Possible Solution:

1¢	10¢	5¢	25¢
5¢	25¢	1¢	10¢
25¢	5¢	10¢	1¢
10¢	1¢	25¢	5¢

❸ How Many Ways to Make $1.00?

Solution: 292

❺ How Much Change?

Answers:

1. $1.25
2. Fewest number of coins and bills = 1–$1.00 bill, 1 quarter

❼ Let's Go Grocery Shopping

Answers:

1. $8.86; yes; $1.14
2. By the dozen; individually they would be $6.00
3. $2.25
4. Answers will vary
5. $15.50; $4.50; 2 quarters or one 50 cent piece
6. The other store would be the better buy; at $1.99 a pound, 3 pounds would be $5.97

CHALLENGE ACTIVITY

Answer Key

Answer Key

CHALLENGE ACTIVITY

8 Magic Decimal Squares

Solutions:

$.23	$.13	$.27
$.25	**$.21**	$.17
$.15	**$.29**	$.19

Magic Sum: **$.63**

$5.48	**$12.33**	$2.74
$4.11	$6.85	**$9.59**
$10.96	**$1.37**	**$8.22**

Magic Sum: **$20.55**

$.87	$.57	**$.54**	$.96
$.72	$.78	$.81	**$.63**
$.84	$.66	**$.69**	$.75
$.51	$.93	**$.90**	**$.60**

Magic Sum: **$2.94**

$4.31	**$4.42**	$4.41	$4.28
$4.36	**$4.33**	$4.33	**$4.40**
$4.32	$4.38	**$4.38**	**$4.34**
$4.43	$4.29	**$4.30**	$4.40

Magic Sum: **$17.42**

9 Making Change

Solution:

ITEM	$100.00	$50.00	$20.00	$10.00	$5.00	$1.00	$.50	$.25	$.10
Two Shirts $42.50	$57.50	1			1	2	1		
Set of Sheets $65.75	34.25		1	1		4		1	
Silverware $74.30	25.70		1		1		1		2
Dress $55.25	44.75		2			4	1	1	
Jewelry $83.50	16.50			1	1	1	1		
Pants $35.80	64.20	1		1		4			2
Cologne $24.00	76.00	1	1		1	1			
Shoes $38.75	61.25	1		1		1		1	
Baking Pans $62.40	37.60		1	1	1	2	1		1
Pajamas $27.00	73.00	1	1			3			
Toaster $55.55	44.45		2			4		1	2

10 Ways to Make a $1.00?

Answers:

Total number of coins	Number of each coin needed				
	50¢	25¢	10¢	5¢	1¢
7 coins	1		4	2	
	1	1		5	
		3	1	3	
		2	5		
21 coins	1		2	3	15
		2	3	1	15
		1	3	7	10
			7	4	10
			3	13	5

11 Making Correct Change

Answers:

1. Change = $1.12 1–$1.00, 1–10¢, 2–1¢
2. Change = $1.03 1–$1.00, 3–1¢
3. Change = $ .56 1–50¢, 1–5¢, 1–1¢
4. Change = $2.64 2–$1.00, 1–50¢, 1–10¢, 4–1¢
5. Change = $6.79 1–$5.00, 1–$1.00, 1–50¢, 1–25¢, 4–1¢
6. Change = $ .74 1–50¢, 2–10¢, 4–1¢
7. Change = $16.12 1–$10.00, 1–$5.00, 1–$1.00, 1–10¢, 2–1¢
8. Change = $ .66 1–50¢, 1–10¢, 1–5¢, 1–1¢
9. Change = $2.22 2–$1.00, 2–10¢, 2–1¢
10. Change = $10.50 1–$10.00, 1–50¢
11. Change = $ .10 1–10¢

Answer Key

CHALLENGE ACTIVITY

13 Pocket Full of Money

Solutions:

1. 4 dimes 2 nickels
2. 5 pennies, 2 dimes, 2 quarters
3. 1 nickel, 4 dimes, 2 quarters
4. 5 pennies, 4 dimes, 1 quarter
5. 2 pennies, 1 nickel, 3 dimes
6. 3 pennies, 3 nickels, 3 quarters

14 Rolling for $1.00

Sample solutions:

Dimes	Pennies	Roll
4	0	**4**
	5	**5**
	5	**5**
	4	**4**
2	0	**2**
2	0	**2**
	6	**6**

Dimes	Pennies	Roll
4	0	**4**
1	0	**1**
3	0	**3**
	5	**5**
	4	**4**
	3	**3**
	5	**5**

17 What are the Coins?

Answers:

What 5 coins equal 25 cents?	5¢	5¢	5¢	5¢	5¢				
What 7 coins equal 25 cents?	10¢	10¢	1¢	1¢	1¢	1¢	1¢		
What 9 coins equal 25 cents?	5¢	5¢	5¢	5¢	1¢	1¢	1¢	1¢	1¢
What 6 coins equal 30 cents?	5¢	5¢	5¢	5¢	5¢	5¢			
What 7 coins equal 60 cents?	10¢	10¢	10¢	10¢	10¢	5¢	5¢		
What 2 coins equal 10 cents?	5¢	5¢							
What 3 coins equal $1.00?	50¢	25¢	25¢						
What 5 coins equal 31 cents?	10¢	10¢	5¢	5¢	1¢				
What 3 coins equal 31 cents?	25¢	5¢	1¢						
What 4 coins equal 50 cents?	25¢	10¢	10¢	5¢					
What 6 coins equal $1.15?	50¢	25¢	25¢	5¢	5¢	5¢			

Bonus Question: 1–50¢, 1–25¢, 4–10¢, 4–1¢

18 What Coins Could I Have?

Solution: 24 possibilities

Quarters	Dimes	Nickels	Pennies
1	1		2
1		2	2
1		1	7
1			12
	3	1	2
	3		7
	2	3	2
	2	2	7
	2	1	12
	2		17
	1	5	2
	1	4	7

Quarters	Dimes	Nickels	Pennies
	1	3	12
	1	2	17
	1	1	22
	1		27
		7	2
		6	7
		5	12
		4	17
		3	22
		2	27
		1	32
			37

19 What are the Possibilities?

Dimes	Nickels	Pennies	Total
		3	3¢
	1	2	7¢
1		2	12¢
	2	1	11¢
1	1	1	16¢
2		1	21¢
	3		15¢
1	2		20¢
2	1		25¢
3			30¢

There are 15 combinations for 4 coins

Answer Key

CHALLENGE ACTIVITY

Teacher Feedback Form

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Interact
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310-839-2436

• Sample Customer Receipts •

Town Grocery
Customer Receipt

Date 6-10-06

Qty	Item	Price	
1	gallon milk	2	53
2	bread	1	25
1	butter	1	79
	Subtotal	6	82
	~~Tax~~		
	Total	6	82

Thank You!

Electronics Supercenter
Customer Receipt

Date 6-10-06

Qty	Item	Price	
1	CD player	79	99
1	set of speakers	105	00
	Subtotal	184	99
	7% Tax	12	95
	Total	197	94

Thank You!

Bejeweled
Customer Receipt

Date 6-10-06

Qty	Item	Price	
1	earrings	9	99
1	necklace	15	00
	Subtotal	24	99
	-10% discount	2	50
	Subtotal	22	49
	7% Tax	1	57
	Total	24	06

Thank You!

Furniture Gallery
Customer Receipt

Date 6-10-06

Qty	Item	Price	
1	couch	600	00
2	chairs	55	00
	subtotal	710	00
	7% tax	49	70
	total	759	70
	20% down payment		
	Subtotal		
	Tax		
	Total	151	94

Thank You!

SELLER

978-1-56004-432-1

9 781560 044321

Product Code: INT903SG1

Math Merchants Seller Guide

Seller Instructions

You are a seller, or "merchant." Your role is to sell your goods or services to the shoppers who visit your business. You will then record the details of each transaction.

- Count your money at the beginning of the day. This is your starting balance.
- Fill in your name, the date, and the name of your business on your Sales Record. Write in your starting balance.
- As buyers visit your business, write their name, the price you charged them for their purchase, the tax on the purchase, and the total amount of the sale on your Sales Record.
- Give each customer a receipt for their purchase and draw your business logo on the front of his or her journal.
- As the shopping day continues, you may need additional bills or coins to make change. When this happens, take a large bill to the bank and "buy" the bills or coins you need (e.g., exchange a $10.00 bill for 10 $1.00 bills).
- When shopping is done for the day, add up your total receipts for all purchases and record the amount.
- Add your total receipts to your starting balance to get an ending balance.
- Then count your money to make sure that the amount you have on hand (cash and checks) is equal to the sum of the receipts and the starting balance (your ending balance).
- Prepare for the next day by counting out the money needed for start-up (starting balance). Include 10 each of $10.00, $5.00, and $1.00 bills, and 10 each of quarters, dimes, nickels, and pennies in your money envelope. Keep the money envelope in your cash box for the next day. Deposit the extra cash and checks at the bank.

Seller Student Guide

Sample Sales Record

Sales Person: Your Name Date: 6/10/06

Name of Store: Pet Store

Name of Buyer	Price of Merchandise	Tax	Total Sale/ Total Receipt
			Starting Balance $164.10
Andrea	$45.00	$3.15	$48.15
			New Balance $115.95
Jose	$16.75	$1.17	$17.92
			New Balance $98.03

TOTAL RECEIPTS *from purchases* $66.07

STARTING BALANCE *Cash on hand in the store at the start of shopping* $164.10

ENDING BALANCE *Total of cash and checks in the store at the end of shopping* $230.17

Number Names for Writing Checks

One	Eleven	Thirty
Two	Twelve	Forty
Three	Thirteen	Fifty
Four	Fourteen	Sixty
Five	Fifteen	Seventy
Six	Sixteen	Eighty
Seven	Seventeen	Ninety
Eight	Eighteen	Hundred
Nine	Nineteen	Thousand
Ten	Twenty	

BUYER

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Product Code: INT903SG2

Math Merchants Buyer Guide

Buyer Instructions

You are a buyer, or "shopper." Your role is to visit the businesses in our city and buy their merchandise or services. Visit at least five businesses each day you shop, trying to buy from each one if possible. You will record the details of each visit. You will also be given a Situation Card each day. These cards will give you the name of an item you must purchase or a business you must visit on that shopping day.

- Count your money including the money in your checkbook. This is your starting balance.
- Fill in your name, date, and starting balance on your Shopping Record.
- Choose a business to visit (pick one with no waiting!) and write the name of the business on your Shopping Record.
- At each business you visit, record what you purchased, what price you paid, and the amount of tax you paid.
- Subtract the total amount you spent including the tax from your starting balance. This is your new balance.
- Count your money to see that the amount is the same as the new balance.
- Make sure you get receipts for your purchases. Retail stores will give you a Customer Receipt, while other businesses might give you another kind of receipt or form. Make sure the seller at each business draws his or her logo on the front of your journal.
- When you finish shopping for the day, count the money (cash and checkbook) that you have left. Add that to the total amount of money spent at all the stores. This should equal your starting balance.

Buyer Student Guide

Sample Shopping Record

Name: Your Name Date: 6/10/06

Store Name	Items Bought	Money Spent	
	Total cash + checkbook balance	Starting Balance	$200.00
Pet Store	Dog Food		$45.00
		Tax (7%)	$3.15
		New Balance	$151.85
Restaurant	Lunch		$7.75
		Tax(7%)	$.54
		New Balance	$143.56

TOTAL AMOUNT OF MONEY LEFT	Cash left + last balance in check book	**ENDING BALANCE**	$143.56
TOTAL AMOUNT OF MONEY SPENT	Sum of money spent at each store plus tax		+ $56.44
STARTING BALANCE	Total cash + check book balance from the start of the day		$200.00