# What's on Sale?

**Grades:** 3-5

**Lesson Length:** Approximately 2 days

## NCTM Standard and Expectations

Number and Operations Standard

## Learning Objectives

1. The student will calculate sale prices based on 10%, 25%, 50%, and 75% price reductions.
2. The student will demonstrate proficiency using a calculator to calculate new sale prices.
3. The student will recognize that percentages can also be stated as decimals and fractions.

## Connection to Bloom's Taxonomy

- ✓ Analysis
- ✓ Application
- ✓ Comprehension

## RG's Literary Connection

*Math Man* by Teri Daniels is a humorous children's book that provides a story line with real world math applications. "Math Man" is actually Garth, a stock boy at the Mighty Mart supermarket. Math Man takes Mrs. Gourd's class on a tour of the supermarket and provides them with real world math scenario's that use addition, subtraction, multiplication and other math concepts. Recommended audience is grades K-5.

## Word Origin's by Hannie

*Percent* is from the Latin word *per centum* which was used as an abbreviation and means "by the hundred". It was later abbreviated *per cent.* Using the period punctuation, but eventually the two words came together as one and the period was dropped. Have students create sentences using the word percent.

*Hannie saved a percent of her allowance each week.*

## Sniffer's Vocabulary List

1. Merchandise – item offered for sale in a store
2. Retail price – price an item is sold for in a store (same as selling price)
3. Selling price – price an item is sold for in a store (same as retail price)
4. Discount – the amount the retail price or selling price is reduced
5. Customer – someone who pays for goods and/or services
6. Cost – the amount a store pays to purchase an item for inventory

## Learning Model

- ✓ Making Connections
- ✓ Exploring and Learning
- ✓ Extended Learning and Practice
- ✓ Assessment
- ✓ Closure

## Teaching Strategies

- ✓ Brainstorming
- ✓ Cooperative Learning
- ✓ Guided Practice
- ✓ Paired Learning

## Materials List

- ✓ Newspaper
- ✓ Discount Samples
- ✓ Raymond Geddes and Company School Supply Catalog
- ✓ Raymond Geddes website: www.raymondgeddes.com
- ✓ Geddes Lesson Plan Kit – which includes the following items:
  - Retro Pencils
  - Pet Silhouettes Pencil
  - Astral Wonders Pencils
  - Munchin' Mike Sharpener
  - Pirahna Sharpener
  - Mouse Sharpener
  - Happy Cap Erasers
  - Dessert Erasers
  - Twister Eraser
  - Mini Fish Erasers
  - G Mechanical Pencil
  - Traction Mechanical Pencil
  - Cushion Click Mechanical Pencil
  - .7mm Value Lead
  - Study Buddy Inferno
  - 6 Color Pen
  - Bracelet Pen
  - Twister Pen
  - Erasing Grip
  - Criss Cross Critters
- ✓ *School Store: An Operating Manual*
- ✓ Calculators
- ✓ Calculate Sale Price Guided Practice
- ✓ Items on Sale Worksheet
- ✓ Items on Sale Key
- ✓ Assessment of Student Progress
- ✓ Index Cards
- ✓ Crayons or colored pencils

# What's on Sale?

## Making Connections

When you enter a department store or supermarket, what do you notice? Have students brainstorm what they see when they enter a store. The list could include the following: aisles, merchandise, shopping carts, shelves, and cash registers. Explain to the students that one of the most important components of a store is a price tag. The price tag lists the retail or selling price of the item. Every item that is to be sold has a retail or selling price. Ask students "Is the price tag always the final price the customer will pay?"

Explain to students that there are many items for sale in a store and often there are items "on sale". Sometimes a store may offer a discount to buyers. When an item is on sale, the retail or selling price is lowered by a certain percentage or by a fixed dollar amount. For example, during a sale, a book's selling price might be lowered by 25% or be reduced by a fixed dollar amount such as $2.00 off.

Discuss the following questions:

1. Have you ever purchased something on sale?
2. What does it mean to buy something on sale?

## Exploring and Learning

1. Explain to students that price reductions can occur not only on items found in a department store or supermarket, but also on any item a customer might purchase. Cars, houses, and even services (for example, lawn care, a hair cut, house painting, etc.) can be offered at a reduced price.

2. Divide the class into groups (each containing 3-4 students). Assign the following roles to each group:
    - Liaison – act as liaison between group and teacher. Responsible for asking questions the team may have during this activity.
    - Recorder – responsible for circling sale advertisements, clipping ads, and/or recording sale information
    - Speaker – present group information at the end of the activity

3. Provide each group with a newspaper. Have each group search through the newspaper to identify various ways merchandise and services are discounted. For example, some advertisements may state a specific percent off the retail price, a dollar amount off the retail price, a quantity discount, a coupon savings, or some other special offer. Refer to Discount Samples for examples that can be viewed as a transparency.

4. Gather the class together and ask each group speaker to share one or two price reduction examples from the newspaper.

5. Explain to students that store merchandise on sale may be discounted commonly by 10%, 25%, 50%, or even 75%. These percentages can also be represented as decimals and fractions. For example, 10% is the same as .10 or 1/10; 25% is the same as .25 or ¼; 50% is the same as .50 or ½; and 75% is the same as .75 or ¾.

6. Ask students to think about how the sale price is calculated when you know the original retail or selling price and the % discount. Guide students through the process of problem solving by using <u>Calculate Sale Price – Guided Practice</u> as a transparency.

7. Although most students are not making significant purchases on their own without the assistance of an adult, they might be allowed to shop in the school store. Present students with the following scenario:

***RG and Hannie are working at the Raymond Geddes Elementary School Store. Today they are going to learn how to calculate sale prices based on 10, 25, 50, and 75% discounts. Sniffer, their dog, already knows how to calculate the new prices.***

***Can you help RG and Hannie calculate the new sale prices?***

8. Divide students into pairs to complete the <u>Items on Sale</u> worksheet. Provide each pair with a hardcopy of the Raymond Geddes and Company School Supply Catalog, or on-line access to the Raymond Geddes website at www.raymondgeddes.com. You may want to divide the class up into sections and assign each group with 2-4 of the 20 items listed on the worksheet. This will save time and still allows students to have the experience of looking up product items in a catalog or on-line.

9. Provide students with the following instructions:
   - Using the hardcopy catalog or on-line catalog, locate each item's retail price and fill in the retail column of the worksheet
   - If using the on-line catalog, simply enter the item number to locate the item and retail price.
   - Using calculators and the discount percentage provided, calculate each item's new sale price. Convert the percentage to a decimal (or fraction) to complete the calculations. Round where needed.

## Extended Learning and Practice

1. Open up your own school store using the Geddes Lesson Plans Kit and a copy of the *School Store: An Operating Manual*. Operating a school store is an excellent opportunity for inquiry based/hands-on learning that is both fun and rewarding. Create an instant real life business in your classroom by using the merchandise in the Geddes Kit and following operations manual. A school store will allow opportunity for raising money, provides a service to students, and creates an atmosphere of responsibility while building valuable team working skills.

2. Visit *Figure This! Math Challenges for Families* (National Council of Teachers of Mathematics) at http://www.figurethis.org/challenges/c17/challenge.htm for additional percentage related activities and problems.

3. Have students look up the cost (provided in parentheses in the Raymond Geddes catalog) of several items. Explain that the cost is the amount the school store pays to purchase the items to be sold at the school store. This is not the retail price. Would the item still make a profit using the new sale price? For example, the Retro Pencil has a retail price of 20¢ and a cost of 12¢. The profit is 8¢. However, with a 10% discount, the retail price is reduced by 2¢ to 18¢. A profit still exists, but is also reduced by 2¢ from the original 8¢ to 6¢.

## Assessment

The lesson objectives can be assessed by evaluating students' abilities to:

1. Use the Items on Sale Key to assess each team's ability to calculate sale prices using 10%, 25%, 50%, and 75% price reductions.

2. Use the Assessment of Student Progress to assess students' overall abilities to meet the lesson's learning objectives which include, calculating sale prices based on specific price reductions, using a calculator to compute the sale prices, and recognizing that percentages can be represented also as decimals and fractions.

## Closure

Provide each student with an index card and have them answer the following questions on one side of the card:

1. Describe two new things that you have learned.
2. What else would you like to learn about this topic?

On the back side of the index card, instruct the students to draw a picture of something they learned about during this lesson. The index cards can be hole punched and held together with a simple shower curtain ring.

# What's on Sale?

## Discount Sample

Example 1: A special offer:

Spend $250 receive a $25 gift card
Spend $500 receive a $50 gift card
Spend $750 receive $75 gift card

Example 2: Reduced prices

Regular price $250.00
Special price $109.99
Morning special between 9 a.m. and noon: $99.99

Example 3: Special extra 20% off

Example 4: Extra 40% off already reduced home clearance prices

Example 5: Spend your $10.00 savings pass on purchases of $25.00 or more

# What’s on Sale?

## Calculated Sale Price
## Guided Practice

Two formulas to calculate the new sale price

A. Price – (Price x Discount) = Sale Price
B. (1 – Discount) x Price = Sale Price

### Example 1

A notebook costs $2.00. The school store is offering a 25% discount. What is the new sale price of the notebook?

A. $2.00 – ($2.00 x .25) = $2.00 - $.50 = $1.50

B. (1 - .25) x $2.00 = .75 x $2.00 = 1.50

### Example 2:

A backpack cost $10.75. The item is now on sale for 10% off. What is the new sale price of the backpack?

A. $10.75 – ($10.75 x .10) = $10.75 - $1.075* = $10.75-$1.08 = $9.67
(* round $1.075 to $1.08)

B. (1 - .10) x $10.75 = .90 x $10.75 = $9.675 or $9.68*

Due to rounding your answers may vary by a penny using one method versus the other.

### Example 3:

A can of tennis balls costs $1.98. The sporting goods store has them on sale for 50% off. What is the new sale price of a can of tennis balls?

A. $1.98 – ($1.98 x .50) = $1.98 - $.99 = $.99

B. (1 - .50) x $1.98 = $.99

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# What's on Sale?

## Items on Sale

***Can you help RG and Hannie calculate the new sale prices?***

Student Name:____________________________

|  | RG Item# | Page# | Item Name | Retail Price | Sale % | New Sale Price |
|---|---|---|---|---|---|---|
| 1 | 67176 | 3 | Retro Pencils |  | 10% |  |
| 2 | 67175 | 3 | Pet Sillouettes Pencils |  | 25% |  |
| 3 | 67124 | 3 | Astral Wonders Pencils |  | 50% |  |
| 4 | 67183 | 13 | Munchin Mike Sharpener |  | 10% |  |
| 5 | 67037 | 13 | Pirahna Sharpener |  | 25% |  |
| 6 | 65627 | 17 | Mouse Sharpener |  | 75% |  |
| 7 | 67137 | 19 | Erasing Grip |  | 50% |  |
| 8 | 67306 | 21 | Criss Cross Critters |  | 75% |  |
| 9 | 64259 | 22 | Happy Cap Erasers |  | 25% |  |
| 10 | 66993 | 29 | Dessert Erasers |  | 10% |  |
| 11 | 67027 | 28 | Twister Eraser |  | 10% |  |
| 12 | 67099 | 31 | Mini Fish Erasers |  | 25% |  |
| 13 | 67039 | 36 | G Mechanical Pencil |  | 10% |  |
| 14 | 67013 | 37 | Traction Mechanical Pencil |  | 50% |  |
| 15 | 66315 | 37 | Cushion Click Mechanical Pencil |  | 25% |  |
| 16 | 61152 | 39 | .7mm Value Lead |  | 75% |  |
| 17 | 66967 | 44 | Study Buddy Inferno |  | 10% |  |
| 18 | 66685 | 45 | 6 Color Pen |  | 50% |  |
| 19 | 65581 | 52 | Bracelet Pen |  | 25% |  |
| 20 | 66921 | 61 | Twister Pen |  | 10% |  |

Price is subject to change and based on current Raymond Geddes catalog retail price.

# What's on Sale?

## Items on Sale Key

| | RG Item# | Page# | Item Name | Retail Price | Sale % | New Sale Price |
|---|---|---|---|---|---|---|
| 1 | 67176 | 3 | Retro Pencils | $0.20 | 10% | $0.18 |
| 2 | 67175 | 3 | Pet Sillouettes Pencils | $0.20 | 25% | $0.15 |
| 3 | 67124 | 3 | Astral Wonders Pencils | $0.20 | 50% | $0.10 |
| 4 | 67183 | 13 | Munchin Mike Sharpener | $0.50 | 10% | $0.45 |
| 5 | 67037 | 13 | Pirahna Sharpener | $0.50 | 25% | $0.38 |
| 6 | 65627 | 17 | Mouse Sharpener | $0.50 | 75% | $0.13 |
| 7 | 67137 | 19 | Erasing Grip | $0.35 | 50% | $0.18 |
| 8 | 67306 | 21 | Criss Cross Critters | $0.15 | 75% | $0.04 |
| 9 | 64259 | 22 | Happy Cap Erasers | $0.05 | 25% | $0.04 |
| 10 | 66993 | 29 | Dessert Erasers | $0.15 | 10% | $0.14 |
| 11 | 67027 | 28 | Twister Eraser | $0.35 | 10% | $0.32 |
| 12 | 67099 | 31 | Mini Fish Erasers | $0.50 | 25% | $0.38 |
| 13 | 67039 | 36 | G Mechanical Pencil | $0.35 | 10% | $0.32 |
| 14 | 67013 | 37 | Traction Mechanical Pencil | $0.35 | 50% | $0.18 |
| 15 | 66315 | 37 | Cushion Click Mechanical Pencil | $0.35 | 25% | $0.26 |
| 16 | 61152 | 39 | .7mm Value Lead | $0.40 | 75% | $0.10 |
| 17 | 66967 | 44 | Study Buddy Inferno | $0.50 | 10% | $0.45 |
| 18 | 66685 | 45 | 6 Color Pen | $0.75 | 50% | $0.38 |
| 19 | 65581 | 52 | Bracelet Pen | $0.40 | 25% | $0.30 |
| 20 | 66921 | 61 | Twister Pen | $0.35 | 10% | $0.32 |

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# What's on Sale?

## Assessment of Student Progress

Use the following summary to assess a student's abilities and performance throughout the lesson. Share this assessment with students at the start of the lesson so that they have an understanding of how they will be assessed prior to beginning the Exploring and Learning section. The tool can be used as a basis for providing feedback to students. Use the scale below to score each of the following items:

### Making Connections:

____ Student participates in discussion by offering answers to one or more of the questions asked by the teacher.

### Exploring and Learning

____ Student understands assigned role within cooperative learning group and completes the tasks accordingly.

____ Student identifies one or more sale advertisements in newspaper.

____ Student works with partner to locate retail prices, calculate new sale price and complete worksheet.

____ The student uses calculator to compute sale prices by converting the percentage provided into a decimal or fraction.

____ The worksheet contains accurate sale prices.

### SCALE

4 – Excellent
Student completes the activity, task or assignment with no errors and demonstrates mastery of concepts and/or lesson objectives.

3 – Good
Student completes the activity, task, or assignment with few major errors and demonstrates an understanding of the concepts and/or lesson objectives.

2 – Fair
Student completes the activity, task, or assignment with some major errors and demonstrates difficulty with the concepts and lesson objectives.

1 – Poor
Student does not complete the activity, task, or assignment and demonstrates no understanding of the concepts and/or lesson objectives.