

Clearance Sale Calculations

Purpose

Students will convert between two representations of numbers and recognize decimal equivalents for commonly used fractions without the use of a calculator.

Materials

For the teacher: chalk, chalkboard

For each group of 4-5 students: store catalog, sale flyer, poster board, glue, construction paper and/or blank white paper, copy of Black Line Master (BLM) *Clearance Sale Calculations*

Activity

A. Introduction/Review

1. Write the fraction " $\frac{1}{2}$ " on the chalkboard and ask students what decimal represents $\frac{1}{2}$. Have students explain how they found their answers.
2. Write the fraction " $\frac{1}{8}$ " on the chalkboard and ask students what decimal represents $\frac{1}{8}$. Have students explain how they found their answers.
3. Show students how to find the decimal representation of a fraction by dividing the numerator by the denominator.
4. Practice finding decimal representations of numbers with two to three more fractions including one that has a repeating decimal. Show students how to represent repeating decimals with a bar over the repeating portion of the decimal.
5. Ask students to represent the decimals as percents on the chalkboard and explain how they found their answers.
6. Show students how to convert from a percent to decimal to fraction. If students have learned how to reduce a fraction to simplest terms, have them do so.
7. Explain to students that they will first be learning some common fractions and their decimal and percent representations.

B. Classroom Discussion

1. Write the following fractions in a column on the chalkboard: " $\frac{1}{2}$," " $\frac{1}{3}$," " $\frac{1}{4}$," " $\frac{3}{4}$," " $\frac{1}{5}$," " $\frac{1}{6}$," " $\frac{1}{10}$," " $\frac{1}{20}$."

(continued)

EXTENDING
THE

ACTIVITY



Create a matching game with common fraction, decimal, and percent note cards. Have students match the fraction representation with the decimal and/or percent representations of a number. The student with the most matches wins.

MEETING
INDIVIDUAL

NEEDS



Have students who need a greater challenge find fractions from certain decimals, reversing the process. Ask them to identify patterns, create a rule, and write about the process in their math journal.

Standards Links
6.2.8, 6.5.10, 6.7.5

Activity (continued)

2. Have students find the decimal and percent representations for the fractions on the chalkboard and write them next to the fractions.
3. Give students the following fractions to convert to decimals and percents independently: $\frac{2}{3}$, $\frac{2}{5}$, $\frac{3}{5}$, $\frac{4}{5}$, $\frac{5}{6}$, $\frac{3}{10}$, $\frac{7}{10}$, $\frac{3}{20}$, $\frac{7}{20}$.
4. Discuss the students' findings and write them on the board. Have students describe the patterns they found for each denominator's decimal representations.
5. When students have found the patterns for tenths and twentieths, ask them to tell you the decimal and percent representations for $\frac{7}{10}$, $\frac{9}{10}$, $\frac{9}{20}$, $\frac{11}{20}$, $\frac{13}{20}$, $\frac{17}{20}$, and $\frac{19}{20}$.

C. Group Activity

1. Divide the class into groups of four or five students each. Give each group a store catalog and a sale flyer, poster board, glue, construction paper and/or blank white paper, and a copy of the BLM *Clearance Sale Calculations*.
2. Tell students that they will be pretending to be store owners who are marking down prices for a clearance sale. Instruct each group to cut out six items and their current prices to discount.
3. Have students glue the items and prices on a poster board, leaving room to glue small signs with the discounts and discounted prices next to the items.
4. Have students follow instructions on the BLM to complete the activity.
5. Discuss answers as a class.


Classroom Assessment


Basic Concepts and Processes


During the Classroom Discussion and Group Activity, ask students the following questions:


 What is the decimal representation for $\frac{7}{30}$?

 What is the percent representation for $\frac{7}{30}$?

 How did you find your answers?

 What is the fraction representation for 44%?

 How did you find your answer?

 Why did I not have the class find the decimal representation for $\frac{2}{10}$, $\frac{4}{10}$, or $\frac{10}{20}$?



Clearance Sale Calculations

- Find and cut out six items and their prices from your catalog or sale ad.
- Glue the items and their prices onto your poster board, leaving room to glue clearance sale signs with the discounts given below.
- Round discounted prices to the closest penny.
- Using construction paper or blank white paper, create clearance sale signs with the information for each item below.
- Glue the signs next to the appropriate items.

Item #1
Markdown: $\frac{1}{3}$ off current price.

Decimal for $\frac{1}{3}$: _____

Percent for $\frac{1}{3}$: _____

Create a sign with the markdown as a percent and the sale price.

Item #2
Markdown: 40% off current price.

Decimal for 40%: _____

Fraction for 40%: _____

Create a sign with the markdown as a percent and the sale price.

Item #3
Markdown: $\frac{3}{20}$ off current price.

Decimal for $\frac{3}{20}$: _____

Percent for $\frac{3}{20}$: _____

Create a sign with the markdown as a percent and the sale price.

Item #4
Markdown: 12% off current price.

Decimal for 12%: _____

Fraction for 12%: _____

Create a sign with the markdown as a percent and the sale price.

Item #5
Markdown: $\frac{5}{8}$ off current price.

Decimal for $\frac{5}{8}$: _____

Percent for $\frac{5}{8}$: _____

Create a sign with the markdown as a percent and the sale price.

Item #6
Markdown: $\frac{9}{16}$ off current price.

Decimal for $\frac{9}{16}$: _____

Percent for $\frac{9}{16}$: _____

Create a sign with the markdown as a percent and the sale price.

Clearance Sale Calculations

Teacher Directions

Distribute one copy of the BLM *Clearance Sale Calculations* to each group of students. Have students complete the BLMs during the Group Activity. Have students find and cut out six items and their prices from their catalog or sales ad. Instruct them to glue the items and their prices onto their poster boards, leaving room to glue clearance sale signs with the discounts given below. Tell students to round discounted prices to the closest penny.

Using construction paper or blank white paper, have students create clearance sale signs with the information for each item as listed. Instruct them to glue the signs next to the appropriate items.

Answer Key

Sale prices will vary.

Item #1

Markdown: $\frac{1}{3}$ off
Decimal for $\frac{1}{3}$: $.33\bar{3}$ or $.3$
Percent for $\frac{1}{3}$: $33.\bar{3}\%$

Item #2

Markdown: 40% off
Decimal for 40%: .4 or .40
Fraction for 40%: $\frac{2}{5}$ or $\frac{4}{10}$

Item #3

Markdown: $\frac{3}{20}$ off
Decimal for $\frac{3}{20}$: .15
Percent for $\frac{3}{20}$: 15%

Item #4

Markdown: 12% off
Decimal for 12%: .12
Fraction for 12%: $\frac{3}{25}$ or $\frac{12}{100}$ or $\frac{6}{50}$

Item #5

Markdown: $\frac{5}{8}$ off
Decimal for $\frac{5}{8}$: .625
Percent for $\frac{5}{8}$: 62.5%

Item #6

Markdown: $\frac{9}{16}$
Decimal for $\frac{9}{16}$: .5625
Percent for $\frac{9}{16}$: 56.25%