

Applications of Percent: Sales Tax

Lesson Overview

In this lesson, students will use graphic organizers to apply prior knowledge about fractions, decimals, and percents to determine the amount of sales tax for a given item and the total cost, including tax, for the item.

Standards Addressed

7.RP.3 Use proportional relationships to solve multi-step ratio and percent problems.

Disciplinary Literacy Best Practices

Graphic Organizers
Shoulder Partners
Exit Ticket
Muddiest Point

Lesson Plan

Time Required – One 50-minute class period

Disciplinary Vocabulary: sales tax, markdown (discount), sale price, total price

Materials Needed:

- Applications of Percent Foldable (Source: <http://mrsfaulksaysmathmatters.wikispaces.com/>)
- Scissors
- Glue
- Paper (3" x 4")

Assessment: Questioning, Exit Ticket, Muddiest Point

Engage

- Students will complete two problems as a review of previously learned skills needed for today's lesson.
 1. Change 7.25% to a decimal.
 2. Multiply:
$$\begin{array}{r} 10.25 \\ \times 0.05 \\ \hline \end{array}$$
- After these two problems have been solved and questions answered, the teacher will explain that over the past week they have been converting fractions to decimals to percents and vice versa.
- Group Dialogue: How do I change a fraction to a decimal? How do I change a decimal to a percent? How might I change a fraction to a decimal? What are some key things to remember when doing these types of conversions?

Explore

- Students will be given a small rectangle of paper (3" x 4" is sufficient) to create a pocket in their math notebook. (Line 3 sides of the rectangle with glue, then glue to a page in the notebook to make a pocket.)
- The teacher will model how to cut and fold the foldable worksheet to make a small booklet. Students will create booklets with their foldable worksheet. (This may take a few minutes.)
- Teacher will pose this problem to students: *What is the total cost of a \$15.00 CD with sales tax of 6%?* Allow time for students to think and then to discuss their answer with their shoulder partner.
 - Question: How might we use the skills we reviewed at the beginning of class to solve this?

Explain

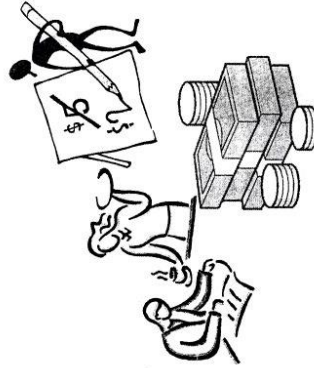
- Teacher will then guide students in completion of the foldable.
- Teacher will model steps for how to convert % to a decimal for the amount of sales tax, and how to multiply the cost of the item by the decimal to find the amount of sales tax (steps 1 & 2 in foldable) Suggestion: Have additional examples for use during lesson.

- Next, teacher will model step 3 in foldable using the first example. Review the three steps asking questions to check for understanding, and then do an internal summary of the three steps.
- Complete the problem used in your first model to total cost. Students will use the notes from the foldable complete additional examples.
- Practice with shoulder partner: *You wish to purchase a \$30.00 sweater that has a 7 ½% sales tax. Find the sales tax amount and the total price of the sweater.* Additional partner practice for remainder of class.
- Exit Ticket:
 - Calculate the sales tax and total price on a \$3.50 purchase if the sales tax rate is 7%.
 - What is the “muddiest point” of today’s lesson for you?

Teacher Reflections and Biographical Information

This set of skills took several days to master due to the number of subskills required. Many of my students have so many skill gaps that I had to segment the lesson with several reviews. All classes may not need this type of segmenting. In the days that followed, we used sales papers and calculated sales tax and total prices from them. I will continue to look for other ways to make this real for our students in preparation for teaching this next year.

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Applications of Percents

Name _____

- Calculating Sales Tax**
1. Change percent to a _____ by moving the decimal _____ places to the _____.
 2. _____ dollar amount by the sales tax decimal.
 3. **ADD** sales tax to calculate total.

2

1

Answer _____

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Calculating Percent Change

Use the formula:

$$\frac{\text{change}}{\text{original}}$$

⇒ Then change to a percent.

Example: Last year, your math average was 80. This year, it is 100. Find the percent change.

Example:
Calculate 8.75% sales tax and total cost for a \$48 purchase.

Sales tax _____
Total _____

3



Answer _____

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Calculating Interest

Use the formula $I = prt$, where

I = interest

p = principal

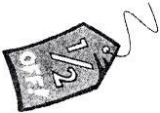
r = rate

t = time

Example: Calculate interest earned on a \$400 investment at 2.5% interest for 3 years.

- Calculating Discount and Sale Price**
1. Change percent to a _____.
 2. _____ dollar amount by the discount decimal.
 3. **SUBTRACT** discount price from original to calculate total.

4



Answer _____

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Calculating Commission

1. Change percent to a

amount by the discount decimal.

Example: Calculate 3% commission on a \$1600 sale.

Example:
Calculate discount and sale price for a \$64 item marked 35% off.

Discount _____
Sale Price _____

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