

Sales Tax, Tip and Discount

Strand:	Computation and Estimation
Topic:	Using proportional reasoning to solve problems involving percents
Primary SOL:	7.3 The student will solve single-step and multistep practical problems, using proportional reasoning.
Related SOL:	7.2

Materials

- Menus
- Scientific calculators
- Customer Sales Receipt activity sheet (attached)

Vocabulary

percent (earlier grade)

sales tax, tip, discount (7.3)

Student/Teacher Actions: What should students be doing? What should teachers be doing?

1. Review how to calculate the percent of a number.
2. Discuss how to estimate 10 percent of a total bill without the use of a calculator. Use 10 percent as a benchmark and calculate 5 percent, 15 percent or 20 percent of a given amount.
3. Discuss how to set up a proportion to find a given percentage of a total bill.
4. Place students in pairs, and give each pair a copy of the menu. The menus can be student-made, gathered from local restaurants, or printed from the internet. Distribute the Customer Sales Receipt activity sheet to each group.
5. Have students take turns being the waiter/waitress and the customer. Direct the customer to order a meal including at least three items from the menu.
6. Direct the waiter/waitress to record the order on a Customer Sales Receipt activity sheet. The waiter/waitress will compute the amount of the meal, including sales tax and tip, and give it to the customer. The tax and tip percentage rates will be provided by the teacher and can be changed in between rounds. Students should fill in the percentage blank before starting a new round.
7. Direct the customer to review the bill for accuracy. If there are no errors, the customer will sign the bill. If the customer believes there is an error, he/she must work with the waiter/waitress to reconcile the bill.
8. Once the group agrees on the total of the bill, ask them to determine which coupon would provide a better discount.
9. Have students reverse roles and repeat the process of ordering a meal.

Assessment

- **Questions**
 - How do you calculate a tip?
 - How do you calculate sales tax?
 - How is calculating a tip and a discount similar? How do these two concepts differ?
 - How do you estimate a discount of 5 percent, 10 percent, or 15 percent without the use of a calculator?
- **Journal/writing prompts**
 - Explain how you would estimate a 4 percent sales tax on a purchase.
 - Explain how you would find a 15 percent tip on a bill of \$25 without using a calculator.
 - What is your opinion: Should a tip be based on the subtotal or the total after tax has been added?
 - Provide numerous real-world situations where tax, tip, and discount would be used.
- **Other Assessments (include informal assessment ideas)**
 - Using your original meal order, calculate the total, using various percentage rates. How does this total compare to the original total?
 - Provide students with a total amount and ask them to calculate a given tax, tip, or discount.

Extensions and Connections (for all students)

- Coordinate with the language arts or art teacher to have students create their own menu to use for this activity (optional).
- Create a sales flyer for a store having a sale. Ask a friend to buy three items. Calculate the total amount of the purchase including a 5 percent sales tax.

Strategies for Differentiation

- Have students highlight key words and amounts in a problem.
- Have each student make a list of information needed to solve a problem. The list could be used to create a chart.
- Provide examples of calculating sales tax and tip amounts for students to use as a reference for steps 4–9.
- Adapt journal/writing prompts to allow students to orally share answer(s) with a peer.

Note: The following pages are intended for classroom use for students as a visual aid to learning.

Customer Sales Receipt

Customer's name: _____

Waiter's/Waitress's name: _____

Quantity	Item	Price	Total

Signature _____

Subtotal:	_____
___ % Tax:	_____
Subtotal:	_____
___ % Tip:	_____
Total:	_____

