

# Shopping for Thanksgiving Lunch: Computation

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<b>Strand:</b>	Computation and Estimation
<b>Topic:</b>	Solving single-step and multistep addition and subtraction problems and single-step division problems with whole numbers.
<b>Primary SOL:</b>	4.4 The student will d) solve single-step and multistep addition, subtraction, and multiplication problems with whole numbers.
<b>Related SOL:</b>	4.3b, 4.4a, 4.4b, 4.4c

## Materials

- Empty cans, cartons, and other food containers for basic food items that may be part of a Thanksgiving meal (e.g., cans for yams, corn, or green beans; boxes for stuffing mixes, instant mashed potatoes, or prepared desserts, such as frozen pies; bread and drink containers).
- Grocery store circulars from a newspaper or stores with food prices
- Shopping for Thanksgiving Lunch activity sheet (attached)
- Calculators (optional)

## Vocabulary

*add, difference, per, round, subtract, sum*

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

*Note: Before using this activity, decide whether to use empty priced food containers placed around the room so students can “shop” and make purchases or use pictures with prices on the pictures. You also may use circulars from a grocery story. If you use this format, organize shopping so that all students are not in one area at the same time.*

1. Present the following word problem: “We are planning a Thanksgiving lunch for a family of five. We all love turkey, mashed potatoes, gravy—the works! Don’t forget the pumpkin pie! Mom just got paid and is ready to go grocery shopping. It would be nice to help her plan so that she can shop at one store and get the best buy for her money. She does not want to spend more than \$50 for all of the food without tax. How can we help Mom plan for exactly the amount of food she needs to purchase to feed this family of five and stay within her budget?” Lead a discussion to gather students’ ideas.
2. Explore with students how to find the total cost of a purchase when buying more than one of the same item. For example, write the following problem on the board: “If I went to the store and purchased three boxes of tissues and the cost is \$1.50 per box, how much would I spend on the three boxes?” Ask a volunteer to read the problem. Then ask volunteers to explain what information is provided in the problem. Ask a volunteer to explain what question the problem is asking you to solve. Clarify what *per* means when shopping and write the explanation on the board. Direct student partners to find the exact cost. Listen in and make note of different strategies that students use to find the total cost and which students you want to share. You may also want to make calculators

available for students to use. Students may use repeated addition, or some students may mentally know that \$1.50 and \$1.50 is \$3.00 so another \$1.50 would be \$4.50. Call on the students you noted to share their work on the board, and facilitate a discussion about the different strategies.

3. Let students know that costs will be rounded to the nearest dollar unless the cost is exactly halfway between dollars (e.g., \$1.50 is halfway between \$2 and \$3). If it is halfway, use the exact cost. For example, if hamburger is \$3.85 per pound, what would you do? (Round to \$4.00) If soup is \$2.35 per can what would you do? (Round to \$2.00) If butter is \$2.50 what would you do? (Use \$2.50) You may want to have a conversation about rounding to the nearest dollar makes it easy to add the cost and mentally gives a good approximation of the cost. Many people do this when shopping. You may want to put these directions on the board.
4. Students will work in pairs or groups of three. Distribute the Shopping for Thanksgiving Lunch activity sheet so that each student can keep a record of the group's decisions. The first item on the sheet has been partially completed, so students need only to determine the cost of the turkey based on the cost per pound. Make sure they understand that the cost is for each pound of turkey, but do not direct them in finding the solution. Allow students to use their own strategies. Ask groups to complete the first line on the handout for the cost of the turkey, to make sure everyone understands the directions.
5. Encourage the group to work together and discuss their work so they can reach consensus on what to buy, even though each person is completing their own recording sheet. If groups have access to circulars from different grocery stores, the group must make all purchases from the same store, so they will also need to determine which store has the best prices overall.
6. Have students shop for the other items on the list, choosing the items and the number or quantity of each that they want to buy. They must list each item purchased (e.g., the number of cans of green beans), the cost of each can (e.g., \$0.85), the total number or quantity purchased (e.g., three), round the cost per can to \$1.00, and then calculate the cost for the number of cans. They should show all of their work on notebook paper and submit it with their completed handout.
7. Have each group exchange their handouts and work with another group, or you may want to collect all the papers and then redistribute. Each group will review the work they received from another group and calculate to determine whether the work was done correctly. If not done correctly, students are to write a note to the other group to explain why they think the work is incorrect and suggestions for how it can be corrected.
8. Return papers to the original group to review comments and make corrections. Instruct each group to add a new calculation to their handout: What is the cost per person for the Thanksgiving meal for five people? Let the class know that this is one way to determine the value of a meal. On the board, list each group's per-person cost of each meal to determine which group has the most economic meal.
9. Students are to write an exit ticket based on responding to the prompt: "What did you learn about shopping for food? What do you think was the most challenging part of planning the meal?"

## Assessment

### ● Questions

- If you were feeding eight people instead of five, how would that change your plan? Would you still be able to feed everyone with only \$50, or would you need to spend more?
- If the turkey weighs 25 pounds, how many pounds of turkey would each person get to eat at dinner if there were eight people?
- If your mother bought two 12-packs of small bottles of water, how many bottles of water could each person get to drink if there were eight people?
- How close to \$50 is the cost your group came up with, whether you are over budget or under budget? Explain how you determined your response.

### ● Journal/writing prompts

- Your mother invited the neighbors to join the family for Thanksgiving lunch, so now there will be 10 people for lunch. How will you plan for extra food, including turkey? Explain your change in plans. There is one rectangular table in your dining room and a round table in the kitchen. Illustrate seating for all 10 people, using both tables.
- Often shoppers use estimates to keep track of the cost of what they are purchasing to make sure they have enough money. Do you think this is a good idea? Why or why not?
- Explain that your mother made a mistake and only bought two cans of green beans for the five people coming for dinner. Explain what would be the best means to make sure that everyone invited got an equal amount of green beans.

### ● Other Assessments

- Change the budget to \$100. Ask students to explain how this would change what they buy.
- Change the number of people coming to dinner, but do not change the budget. Ask students to explain what they would do to accommodate this change.

## Extensions and Connections

- Have students work in small groups to plan for a good attendance party for the class, working within a budget of \$100. Instead of bringing in empty containers, have students draw pictures of items they will purchase. Have them record their purchases, using the same format as they used in the main activity.
- Have students collect funds for a local food pantry. Challenge them to make a plan to buy as much food as possible for the money that they collect.

## Strategies for Differentiation

- Have students calculate what the tax would be on their totals. Then, have them explain how the tax would affect their purchases.
- Provide a list of costs in whole-dollar amounts.
- Provide play money.

*Mathematics Instructional Plan – Grade 4*

- Adapt the Shopping for Thanksgiving Lunch activity sheet to meet the needs of students, such as reducing the number of items.
- Find the cost of the meal without rounding the costs per item or pound.

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

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## Shopping for Thanksgiving Lunch

Name \_\_\_\_\_ Date \_\_\_\_\_

### Directions

Shop for the items listed below. Remember, you are feeding a family of five, and one can of green beans will not feed the whole family. The group must reach consensus on what to buy. Plan and shop for a reasonable amount to feed the family. For each item you purchase, list the item, the cost of one unit, and the number or quantity of units. Round the cost per item or per pound to the nearest whole dollar, unless the cost is something like \$2.50. At the end, find the total of your purchases and find how close the cost is to your budget. If you go over the budgeted amount, you will need to decide how to change your plan to meet your budget. Show your work by attaching your worksheet to this sheet.

Food category	Item purchased	Cost of per unit	Round the cost to the nearest whole dollar when needed	Number of items or quantity purchased	Find the cost of purchase
Meat	12-pound turkey	\$1.25 per pound		1	
Vegetable No. 1					
Vegetable No. 2					
Another side dish of your choice					
Bread/ Rolls					
Drink(s)					
Dessert					

<b>Total cost of meal</b>	
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