## Grocery Shopping

**Unit 1: Place Value, Numeration, & Rounding**

**Grade Level**

4th Grade

**Overview**

The purpose of this task is to provide students with the opportunity to apply estimation strategies. Students will also gain an understanding of how estimation can be used as a real life application. For this activity, it is expected that students have been introduced to rounding as a process for estimating. Students will build on their understanding of this concept by completing the “Grocery Shopping” task.

**Key Standards**

**M4N2. Students will understand and apply the concept of rounding numbers.**

- a. Round numbers to the nearest ten, hundred, or thousand.
- b. Describe situations in which rounding numbers would be appropriate and determine whether to round to the nearest ten, hundred, or thousand.
- c. Understand the meaning of rounding a decimal fraction to the nearest whole number.
- d. Represent the results of computation as a rounded number when appropriate and estimate a sum or difference by rounding numbers.

**Possible Materials**

- task card
- grocery store flyers (one for each student)
- pencil
- paper
Task

Use the following task card:

**Grocery Shopping**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
<th>Estimated Amount</th>
<th>Estimated Amount for 3 of the same item</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$3.29 per 5 lb bag</td>
<td>$3.00</td>
<td>$9.00</td>
</tr>
</tbody>
</table>

**Total**

- Obtain a grocery store flyer from your teacher.
- Select 5 items that you would like to purchase if you were shopping for your family’s groceries.
- Write the cost of each item.
- Determine the estimated cost of the item and the estimated cost of 3 of the same item. Find the total estimated amount.

Teacher(s) should guide students through the initial example on the card following the format below:

**Part 1:**
- Identify key words and their meaning that are important to solving the problem such as *estimate* and *pounds*.
- Apply rounding rules to solve the problem.
- Solve the problem, discuss answer.

*Repeat this activity giving students a selected item from the grocery flyer. Follow the same process to solve the problem.*

**Part 2:**
- Allow students to choose an item of choice.
- Estimate the cost of the item.
- Determine the estimated amount of three of the same items.
- Discuss the answer using the “Pair – Share” or “Reflections” model.

*Repeat this part of the activity as needed allowing students to select a larger amount of items in quantity or select items that are more expensive to differentiate based on level of understanding.*
Sample Questions

From the example given on the task card:

1. How did you approach rounding this number? (Differentiated option – What are the rules for rounding? Can you give me the first step that you should take when deciding to round a number?)
2. When rounded to the nearest dollar, what is $3.29?
3. Why was this amount rounded to $3.00? (Differentiated option- How do you know your answer is correct?)
4. What strategy did you apply? (Differentiated option – Show me how you came up with your answer.)

From the task:

1. Examine the cost of the item you have selected. What strategy did you apply when rounding this number? (Differentiated option-Show me what steps you took to round this number.)
2. Show how you would solve this problem.
3. Identify other strategies that you could apply to solve this problem. (Differentiated option-Can you show me or demonstrate another way to solve this problem?)
4. Distinguish how the estimation differs from finding the actual amount. (Differentiated option-What is the estimated answer? What is the actual answer? How are these numbers different?)
5. Predict what would happen if you decided not to estimate the total cost of the item(s) you selected.
6. Calculate the difference between the estimated cost and the actual cost. (Differentiated option-Write the estimated cost of your item. Write the actual cost of your item.
7. What is the difference between these amounts?
8. Explain why it may have been or may not have been a good idea to estimate the total cost. (Differentiate option – Look at your estimated cost. Look at your actual cost. Do you think your estimate is a good estimate?)
Sample Question Solutions

From the example given on the task a card:
1. Answers will vary; however, students should give basic rules for rounding
2. $3.00
3. The number 2 is less than 5, therefore the 3 should remain as part of the estimated answer.
   (Apply rule - 5 or greater, increase number to the left by 1; 4 or less, keep the number to the left the same)
4. Answers will vary. (Apply rule -5 or greater, increase number to the left by 1; 4 or less, keep the number to the left the same)

From the task:
1. Answers will vary; however students should identify the rules for rounding when answering this question
2. Answers will vary; however, using repeated addition or adding on to the total is a possible solution.
3. Repeated addition is one strategy that can be used. Another strategy that could be used is adding on to the total.
4. Answers will vary. The estimated amount is easier to calculate. The estimation is not as precise as the exact amount.
5. Answers may vary. You may not be sure if you have enough money.
6. Answers will vary. Students will add the items for the actual cost and round each amount for the estimated cost.
7. The students will report the difference of the two amounts.
8. Estimating the cost is a good idea because it will help you determine if you have enough money. If you do not estimate the amount, you have the actual amount which is more precise.

Some of the questions for this activity are intended for students to apply critical thinking skills. There are not necessarily right or wrong answers, but a reflection of how students process, analyze, and report information.

Assessment Ideas

This activity lends itself to ongoing assessment and evaluation on students’ understanding of this concept throughout the learning activity.

Homework Activity: Using the flyer, select 5 items and find their estimated cost.