

Discipline: Mathematics

Standard Category: Computation and Estimation

Lesson Focus: To use shopping to practice estimation strategies and adding and subtracting money

Suggested

Level:

Intermediate

PA Standard(s):	Related TESOL Standard(s):
2.2.5G: Apply estimation strategies to a variety of problems including time and money.	<p>Goal 1: To use English to communicate in social settings.</p> <p>Standard 3: Students will use learning strategies to extend their communicative competence.</p> <p>Goal 2: To use English to achieve academically in all content areas.</p> <p>Standard 2: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form.</p>

Lesson Focus:

To use shopping to practice estimation strategies and adding and subtracting money

Teaching

Strategies:

Application of concepts

Cooperative learning

Literature connection

Use of realia

Writing to display thinking

Peer coaching

Use of calculators

Assessment

Strategies:

Multiple-choice response

Open-ended response

Math journal response

Performance task

Key Objectives in Accordance with TESOL Level:

Pre-Conversational/ Beginning	Intermediate	Advanced
<p>Students will be able to:</p> <ul style="list-style-type: none"> •Use mental math to add rounded sums of money. •Work with a group to locate items from a sale circular and a menu, estimating costs to the nearest dollar. •Correctly represent a math problem using the appropriate symbols by recording it in a Math journal. ($5 + 5 + 10 + 10 > 10$) 	<p>Students will be able to:</p> <ul style="list-style-type: none"> •Use mental math to add rounded sums of money. •Work with a partner to locate items from a sale circular and a menu, to estimate and determine which costs less, eating the same dinner at a restaurant or buying the items to prepare a meal. •Discuss the process of solving the problem with a partner and write the explanation in a math journal. •Explain in the math journals how Moosey (book character) did not save money after all. Include the math computations 	<p>Students will be able to:</p> <ul style="list-style-type: none"> •Use mental math to add round sums of money. •Work with a partner to locate items from a sale circular and a menu, estimating the cost to the nearest dollar to determine which costs less eating the same meal at a restaurant or buying the items at the grocery store. •Independently write in math journals explaining the process. •Write in Math journals how Moosey (book character) did not save money. Describe ways in which Moosey could have saved

	with the explanation. (5 + 5 + 10 + 10 > 10)	money. Include the math computations with the explanation. (5 + 5 + 10 + 10 > 10)
--	---	--

Materials:

1. Book, “Moosey Saves Money” by Michael J. Pellowski
2. Sale flyer from a large, local grocery store
3. Menu from a local, diner-type restaurant
4. Food list (see below)
5. Paper
6. Pencils
7. Calculators

<p>Food List</p> <p>Hamburger (1 pound)</p> <p>Rolls (at least 4)</p> <p>Fries (1 bag)</p> <p>1 bottle of ketchup</p> <p>1 head lettuce</p> <p>1 cucumber</p> <p>1 tomato</p> <p>1 bottle salad dressing</p> <p>1 gallon milk</p>

Procedures: (ELL Suggestions are in italics)

1. Introduce the book, Moosey Saves Money,” by Michael J. Pellowski to the class. As students listen to the story instruct them to use mental math to determine if Moosey saved money.
2. Read the book to the class. *Introduce the new vocabulary prior to reading. Discuss sound words such as drip and drippy; new action words such as tap, hammered, fixing, slipped, and dropped; charaters’ names Moosey, Doctor Duck, and Fix-It-Fox; Explain the concepts of spending and saving money. Use visual displays to support understanding*
3. Discuss as a whole group whether Moosey saved money. Record responses in Math journals. *Beginners may work together in a group to write one response, intermediates may work with a partner to write a response, and advanced students should work independently.*
4. Divide the class into flexible groups. Distribute store flyers and restaurant menus to each group. Organize flexible groups to determine the least costly way to have a meal, going to a restaurant or buying the items at the grocery store.
Group beginners with a helping partner to assist with the language or keep them together as a whole group and work with the teacher. Intermediate students work in a small group assisting one another with the written response. Advance students can discuss within the small group but are able to complete the written response independently.
5. Instruct students to determine if they can save money better than Moosey. Students use estimation skills to determine whether it

- would cost more to make dinner, or to go out to dinner.
6. Instruct students to plan dinner for four people. Dinner would include hamburgers, fries, salad, milk, and desert. (*Provide the shopping list*).
 7. Predict which way will cost less. Students record predictions in mathematics journals.
 8. The students make two totals, using the menu and the shopping list. Instruct students to use approximate amounts by estimating to the nearest dollar.
 9. Calculate answers and check results against their predictions recorded earlier in their math journals.
 10. To complete the task students use pencil and paper to add up the actual amounts instead of the estimated amounts. Compare estimations to the real totals.
 11. Students use the calculators to check for accuracy.

Assessment: (All Levels)

Multiple-Choice Option:

1. Add the following: \$15, \$30, \$20, and \$5. The total is:
 - a. More than \$70
 - b. Equal to \$75
 - c. Less than \$70
 - d. Less than \$75
2. Estimate the following to the nearest dollar and give the sum of the total:

\$4.25	\$ 3.76	\$ 3.39
--------	---------	---------

 - a. \$10.44
 - b. \$11.00
 - c. \$13.00
 - d. \$11.40

Open-ended Option: Check students' math journals to determine whether the predictions were correct. Check students' responses as to whether or not Moosey saved money to evaluate their comprehension of the story. (Moosey did not save money. He spent 30 dollars in medical bills plus ten dollars to fix the faucet instead of spending the original ten dollars to fix the faucet). Instruct students explain in writing what Moosey could have done to save money.

For the open-ended assessment, assess the student based on his or her language level, as well as his math level:

Beginning:

Do the problem as a group. Respond in math journals with a numerical answer. Written response will not be extensive.

Intermediate:

Do the problem with a partner, and respond in writing as well as with numbers.

Advanced:

Display the problem numerically with a complete written explanation in their Math journals.

Extension: Students create a performance task on their own using

estimation and money. Possibilities include:

- Shopping for an outfit at a brand name store versus the outlet store.
- Buying shoes for the family at a discount store versus the outlet store.
- Going on vacation at the Jersey shore vs. a large resort at a Carribean island.

