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### CHAPTER 3 Addition and Subtraction of Two- and Three-Digit Numbers

Transparency of Appendix N

Transparency of Appendix O

**Overhead projector** 

Base-ten blocks (1 flat, 9 rods, and 9 units per student)

**KEY WORDS** 

Rounding

Estimate

Difference

### **LESSON 2 Estimating Sums and Differences**

NCTM Standard: Understanding Numbers To understand place-value structure of the base-ten system by adding two- and three-digit numbers.

#### GOAL

Students will make estimates of sums and differences in order to help them to better understand a problem. Students will use estimating to decide whether the sum or difference of a number is probable.

#### DEVELOPMENTAL INSTRUCTION

- 1. Create a classroom working definition of the word *estimate* by brainstorming as a group words that define its meaning. Look for students to incorporate words such as: reasonable, probable, practical, predict, and rounding. Use the words students brainstormed to create a web (Appendix N). On the edge of the web write some reasons why someone would choose to estimate rather than get the exact answer. Look for students to give examples such as: estimating the grocery bill, estimating the time it will take to get ready for school, estimating how much cereal can be eaten in the morning, estimating the sum of two numbers, and estimating if there is enough money in the bank to buy a new toy.
- 2. Model how rounding and estimating work together to give an approximate answer, by displaying the page from the estimating store (Appendix O). Tell the student that you have \$1.00 to spend. On the transparency price the items from \$.05-\$.99.
- **3.** Select one item to buy. Round that number to the nearest ten and take that many base-ten blocks to represent the rounded number. Estimate aloud to the students how much money you have left to spend. For example: If an item is priced at \$.47, take five rods aside, showing that you have spent approximately \$.50 and have a remaining \$.50. Use the words "rounding", "estimate" and "difference" aloud.
- **4.** Model again by selecting two or three different items. Find the sum of the estimated total as well as the difference from \$1.00. This time, have students mimic by using their own blocks.

# ACTIVITY 14

# **Estimating Store**

- **1.** Continue the developmental lesson by challenging the students with new prices for the items on the Estimating Store page.
- **2.** Distribute materials to students. Have them record their purchases and estimates in their math journal. You may give students a new amount to spend accordingly.
- **3.** Each child should "visit the Estimating Store" for ten different shopping trips to provide repeated practice of rounding and estimating.
- 4. Proceed to Activity 15 Estimation Market.

### Extension

**Journal Question:** Pretend it is a family member's birthday. You have \$10.00 to spend. What would you purchase? Where would you shop?

#### MATERIALS

Appendix O, one copy for each student

Base-ten blocks (5 flats, 9 rods, and 9 units per student)

Math journal for each student



Suppose you have \$1.25. Estimate if you have enough money to buy the following items from the market. Write your estimate in the space provided.

	Estimate	Do you have enough money? (Yes or No)
1.	Two apples, one watermelon	
2.	Two potted plants and one pansy	
3.	Three eggplants	
4.	Five bananas	
5.	One pumpkin, one bunch of grapes	
6.	Six bunches of grapes	
W	nat would you buy with your money?	

**Journal Question:** What did you need to do to the prices to understand which numbers to round up and which numbers to keep the same? How will rounding numbers help when you are adding and subtracting prices?