Addition and Subtraction

Reporting Category   Computation and Estimation

Topic   Adding and subtracting whole numbers

Primary SOL   3.4   The student will estimate solutions to and solve single-step and multistep problems involving the sum or difference of two whole numbers, each 9,999 or less, with or without regrouping.

Related SOL   3.1a

Materials
- Dominoes
- Domino-Addition Recording Sheet (attached)
- Domino-Subtraction Recording Sheet (attached)

Vocabulary
add, subtract, sum, difference, estimate, regroup, addend

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)
1. Briefly review the concept of place value. Explain that students will play a game whose object is to add numbers shown on dominoes and get a total that is as close to 1,000 as possible without going over.
2. Distribute copies of the Domino-Addition Recording Sheet. Divide the class into groups, and give each group a set of dominoes. Have groups place their dominoes dot-side down on the playing areas. Decide how many turns each player will take.
3. Have each player take a domino from the set and place it on his/her recording sheet under the "DOMINO" heading. Each player selects a domino at random and places it on his or her recording sheet. The player decides which side of the domino to place in the tens column and which side to place in the ones column on the recording sheet and records their value.
4. Each player keeps a running record of his or her own domino total on the recording sheet. The player who gets closest to 1,000 without going over is the winner. A player who gets a total of exactly 1,000 earns a bonus point.
5. Distribute copies of the Domino-Subtraction Recording Sheet. Change the game to reinforce subtraction skills by starting with a target number and subtracting the numbers on the dominoes until the total is close to 5 or 0 without going below.

Assessment
- **Questions**
  - What strategy did you use for selecting the numbers to be added?

- **Journal/Writing Prompts**
  - Explain how you know when you need to regroup when adding.
  - Explain how you know when you need to regroup when subtracting.

- **Other**
    - Circulate to watch and listen as the groups play. Watch for incorrect recording. Answer any questions. Discuss the mathematics involved in the game. Have students share their strategies.
    - Have students solve word problems in which they must determine whether or not to add or subtract within the problem.
    - Have students create word problems for classmates to solve. Instruct students to identify important information in the problem and show all work.

Extensions and Connections (for all students)
- Have students practice basic addition and subtraction facts.
- If you are using a double-nine set of dominoes, increase the total used as a target. The game can be played using a double-twelve or double-fifteen set of dominoes.

Strategies for Differentiation
- Have students use grid paper to assist them in lining up columns of numbers vertically when adding and subtracting.
- Allow students with designated accommodation to use calculators.

Domino-Addition Recording Sheet

Name: _____   **Date:** _____

DOMINO		PLACE			
Tens	Ones	Hundreds	Tens	Ones	
					Domino Value or Previous Value
		+			Domino Value
					TOTAL
		+			Domino Value
					TOTAL
		+			Domino Value
					TOTAL
		+			Domino Value
					TOTAL
		+			Domino Value
					TOTAL
		+			Domino Value
					TOTAL

Domino-Subtraction Recording Sheet

Name: _____ **Date:** _____

DOMINO		PLACE			
Tens	Ones	Hundreds	Tens	Ones	
					Domino Value or Previous Value
		−			Domino Value
					TOTAL
		−			Domino Value
					TOTAL
		−			Domino Value
					TOTAL
		−			Domino Value
					TOTAL
		−			Domino Value
					TOTAL
		−			Domino Value
					TOTAL