Dollars and Cents

2 players

Calculating change

Purpose

This game simulates the procedure for spending and receiving change. The students are shown an amount that they have to spend and number cubes are used to generate the actual amount spent. Using these amounts, the students then calculate the change they will receive. Although the amounts involve dollars and cents, the calculations do not bridge across a whole dollar.

Materials

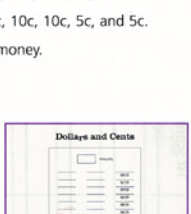
Each pair of players will need

- A 'Dollars and Cents' score sheet (page 46) as shown below.
- Three (3) money cubes. These can be made by writing the following amounts on three blank wooden cubes.

  Cube A: $1, $1, $1, $2, $2, and $2.

  Cube B: 25c, 25c, 10c, 10c, 5c, and 5c.

  Cube C: 25c, 25c, 10c, 10c, 5c, and 5c.
- A 'bank' of play money.



How to Play

The aim is to have the greater amount of change after each round.

- The first player reads aloud the amount he or she has saved for the first round and collects that amount from the 'bank'. This is shown on the score sheet.
- The player rolls the three money cubes, adds the three amounts, and writes the total in the 'Amount Spent' column on his or her score sheet.
- The player then takes the total money spent from his or her play money, puts it back in the 'bank', and records the leftover money (change) in the space provided.
- The other player has a turn.
- The player with the most change (leftover money) at the end of the round scores one point. This can be indicated with a ✓.
- The player with the greater number of points after seven rounds is the winner. Notice that although the starting amounts for each player differ from round to round, the total of all the starting amounts is the same for both players.

Reading the Research

Research shows that manipulatives can significantly improve understanding of multidigit computation. However, efforts to make instruction meaningful are more important than the particular materials that are used (Suydam & Weaver, 1975).

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Before the Game

Give the students practice using the play money to show different amounts. Have them show three amounts at the same time, for example, $3.65, $3.80 and $3.75. Roll the number cubes and say the total amount. Tell the students to take the total away from each of the starting amounts. Repeat the activity two or three times.

During the Game

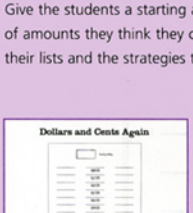
Ask the players how they add the values shown on the three money cubes. Do they combine the cents then add the dollars? Do they use the same strategy each time they add?

Ask the players how they mentally subtract the amount from the starting number. Do they subtract the dollars first or the cents first? Do they understand that the order in which they subtract the parts does not affect the final amount?

After the Game

Play a game against the class. Use the game to discuss the strategies used by the students and to raise questions, such as, ***How can you know at a glance that $1 and 25c and 10c doe not add to $1.40? How can you know at a glance that $3.85 – $2.15 is not equal to $2.70 or $1.75?***

Give the students a starting amount, such as $3.75. Challenge them to write a list of amounts they think they can subtract mentally. Call upon volunteers to share their lists and the strategies they would use to calculate the answers.



Beyond the Game

- Have the students play the same game using the 'Dollars and Cents Again' score sheet on page 47 (illustrated). For this game, the students roll the money cubes to determine how much money they have saved. The cost of the purchase is provided. The students are required to calculate how much more they need.
- The students can use the money cubes to play a game involving addition. In pairs, each player rolls the cubes twice, records the two amounts, adds the numbers, and records the result. The player with the greater amount wins the round. The player with the greater number of wins after seven rounds is the overall winner. Afterwards ask, ***What is the greatest amount you can roll? What is the least amount? How do you know?***

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Dollars and Cents

Player One

Amount Saved	Amount Spent	Amount Left Over
$3.85		
$3.65		
$3.90		
$3.70		
$3.95		
$3.75		
$3.80		

Total Points

Player Two

Amount Saved	Amount Spent	Amount Left Over
$3.85		
$3.70		
$3.65		
$3.95		
$3.80		
$3.90		
$3.75		

Total Points

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Dollars and Cents Again

Player One

Amount Saved	Price	Amount Needed
	$3.70	
	$3.95	
	$3.80	
	$3.65	
	$3.75	
	$3.90	
	$3.85	

Total Points

Player Two

Amount Saved	Price	Amount Needed
	$3.85	
	$3.65	
	$3.90	
	$3.70	
	$3.95	
	$3.75	
	$3.80	

Total Points

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