

Fundamentals

Games to develop and reinforce mental computation strategies

Sample Game Yellow



Brian Tickle
James Burnett

ORIGO
EDUCATION



Nearby Numbers

Counting on/back one or two

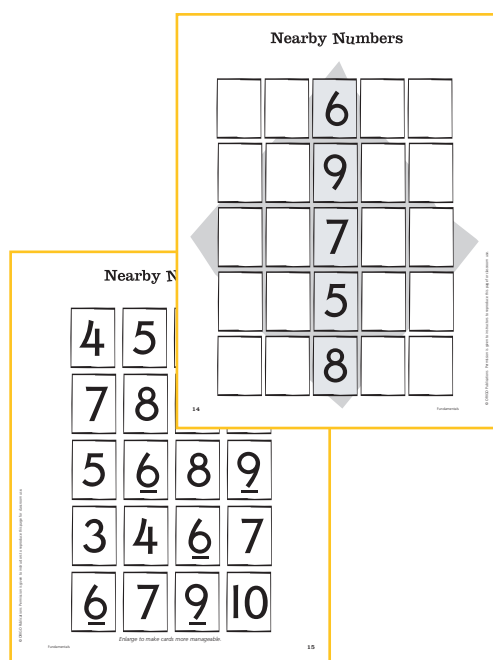
Purpose

This game reinforces mental strategies for addition and subtraction. More specifically, students are required to count on and count back 1 or 2 to given numbers.

Materials

Each pair of players will need

- A 'Nearby Numbers' game board (page 14) as shown below.
- One (1) set of numeral cards. Copy page 15 as shown below. Cut out and laminate the cards to make one set.



How to Play

The aim is to collect the greater number of cards by completing correct counting sequences.

- The cards are shuffled and dealt face down into two equal stacks.
- The first player draws the top card from his or her stack and positions it correctly in one of the incomplete counting sequences on the game board.

Example: Sam draws a card showing 6. He can place it in the third, fourth, or fifth sequence.

- The other player has a turn.
- The player who completes a correct counting sequence by placing the last card in that sequence removes all the cards in that row.
- These cards are turned over and added to the bottom of the player's stack.
- The player with the greater number of cards after a given time is the winner.
- Alternatively, a player loses the game when he or she has no cards remaining.

Reading the Research

Encourage students to share their thinking. Studies indicate that peers can help each other to progress from using simple 'count-all' strategies to more efficient strategies (Noddings, 1985).

Before the Game

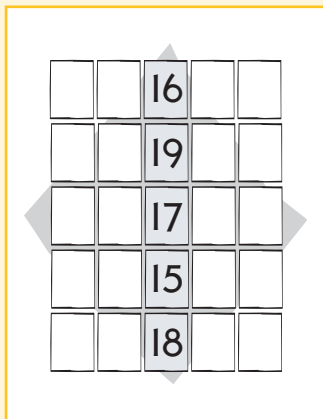
Make transparencies of the 'Nearby Numbers' game board and numeral cards. Explain and demonstrate the rules of the game on the overhead projector, then divide the class into two teams. Invite a representative from each team to play the game on the overhead projector. The representatives can call upon other members of their team to offer suggestions for where to place cards.

During the Game

Watch for students who find 'the number before...' and 'the number after...' by counting from one. These students are not using mental computation to solve the problem because they have not yet realized that the counting sequence is a chain that can be broken. You may be able to find other students to model strategies, such as using a known fact. For example, a student may say, *I can put a 7 here because 5 plus 2 equals 7*. Ask questions such as, *Where are all the spaces 9 could be placed? How do you know?*

After the Game

Invite the students to share strategies they used to win the game. For example, a student might say, *When I saw there was more than one space to place a card, I always placed it in the row that had less cards*. Also, some students may have noticed that there is only one numeral card for 3 and for 11. Although this means that there is only one space for 3 or 11, it also means that either of these could easily be the last card used to complete a sequence.



Beyond the Game

- Make a new game board as illustrated (left) to include the 'teen' numbers. One set of numeral cards (as shown below) will be needed. The rules are the same.

15	16	18	19	16
20	21	13	14	17
17	17	18	19	20
16	14	15	17	18

Nearby Numbers

		6		
		9		
		7		
		5		
		8		

Nearby Numbers

