Four-in-a-Row Addition

Reporting Category	Computation and Estimation
Topic	Estimating and finding the difference of whole numbers
Primary SOL	2.5 The student will recall addition facts with sums to 20 or less and the corresponding subtraction facts.

Materials
- Addition Strategies Chart (attached)
- Four-in-a-Row Addition Game Boards A and B (attached)
- Digit Cards (attached)
- Counters

Vocabulary
addend, addition, adding, difference, minus, subtract, subtracting, sum

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Display the Addition Strategies Chart. Review each strategy with the class, and record examples of addition problems for each one. When all students can demonstrate understanding of each strategy, proceed to the activity.

2. Put students into pairs, and give each pair two copies of Game Board A, several sets of digit cards, and a group of counters. Players take turns drawing two digit cards at a time to create an addition problem using the cards as the addends (e.g., drawing a 5 card and a 4 card means that the addition problem is 5 + 4 = ＿＿). The player finds the sum and then uses a counter to cover the sum on his/her game board. The second player then takes a turn, drawing two cards, finding the sum, and covering the sum on his/her game board. If a player draws a sum that is already covered on his/her board, he/she loses the turn. The first player to cover five sums in a row, either horizontally or vertically, wins. While the students are playing the game, encourage them to use the addition strategies discussed at the beginning of the activity.

3. Regroup the students into different pairs, and have the new pairs play the game again, using Game Board B.

4. Review and summarize with the class what students did and learned in the activity.

Assessment
- **Questions**
  - Which addition strategy is the most difficult? Why?
  - Which addition strategy is the easiest? Why?
  - Was there a sum that came up more often than others? If so, why?
  - Was there a sum that was difficult to get? If so, why?

- **Journal/Writing Prompts**
  - ○ Graham has four digit cards: 3, 5, 8, and 0. What are the possible addition problems Graham can make with his cards? Create a list of these addition facts and their sums.
  - ○ "Doubles" is an addition strategy that some students use. List some doubles facts, and explain how knowing doubles facts can help with solving addition problems.
- **Other**
  - ○ Circulate as students are creating and recording their addition facts, and observe the strategies and rationale they use. Ask questions to determine whether they are absorbing the key points noted above. Note who is having difficulty, and give help, as needed.
  - ○ Have students complete the following statements: "Today I learned_____. Tomorrow I need_____."

Extensions and Connections (for all students)
- Have students play the game again, but this time, have them create subtraction facts with the pairs of cards. (Note: This will require a different game board with smaller numbers.)

Strategies for Differentiation
- Allow students to use a calculator to check their sums.
- To generate two-digit numbers, have students use 10-sided number cubes instead of digit cards.

Addition Strategies Chart

One-More-Than	One-Less-Than
Doubles	**Near Doubles**
Make Ten	**Related Facts**

Four-in-a-Row Addition Game Board A

16	4	5	14
18	9	10	11
3	6	15	7
12	13	2	8

Four-in-a-Row Addition Game Board B

14	15	3	7
9	6	11	2
4	18	16	5
13	12	8	10

Digit Cards

Reproduce cards on card stock, and cut them apart on the dotted line.

0	**1**	**2**	**3**
4	**5**	**6**	**7**
8	**9**	**0**	**1**
2	**3**	**4**	**5**
6	**7**	**8**	**9**