1 - 2 Nim

Math Concepts: Counting, Add / Subtract numbers 1 - 9
Materials: Paper & Pencil - or - Small pile of little objects
Players: 2

Set up: Write the starting "current" number, 10, on your shared piece of paper. One player, usually the less experienced, is given the choice of going first or second.

Play: Players take turns subtracting one or two from the current number and updating the number on the paper.

Goal: The player who makes the current number 0 wins.

Example: The weaker player, cleverly, elects to go first. The players make the following moves:

(1) 10 - 1 = 9.   (2) 9 - 2 = 7,
(1) 7 - 1 = 6,   (2) 6 - 1 = 5,
(1) 5 - 2 = 3,   (2) 3 - 1 = 2,
(1) wins with 2 - 2 = 0!

– DISCUSSION AND TIPS –

This is an ideal activity for practicing the problem solving technique of "Learn from simpler versions of a problem." Lead a discussion where you keep track of who wins if you start at 1, at 2, at 3, at 4, at 5, at 6. What is the pattern that emerges?

– VARIATIONS –

Piles of objects: If your players are not comfortable with numerals yet, use a pile of objects. Remove objects from the pile with each move until no objects are left and you have a winner.

Number line: Use a marker on a number line. Start the marker at 10 and slide it one or two places to the left with each move.

Adding: Practice adding by starting with 0 and adding 1 or 2 for each turn. The player who reaches the target number wins.

Target loses: You can play that the player who is forced to 0 (or the target number) is the loser.

Target number: Use smaller target numbers for beginning players and larger target numbers for more experienced players.

Different step sizes: For the upper grades in this range, Instead of adding or subtracting 1 and 2, use other groups of numbers. Use 1, 2, and 3; or even 1, 2, and 4.