Fifteens

North Coast Region Mathematics

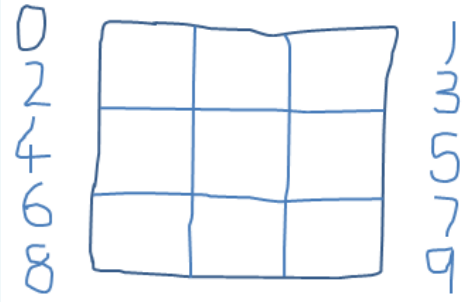
Big Idea: Operate/Calculate

Suits: Years 2-7

Materials:

Paper and pencil, whiteboards

Instructions:
Ask students to draw a 3 by 3 grid, with the digits 0-9 written to the sides of the grid, as shown.

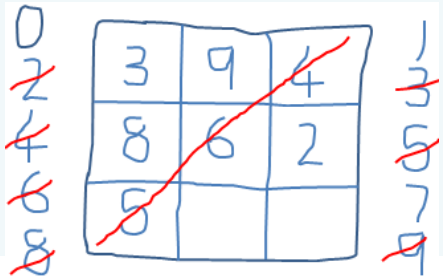


Players:

- choose to play with even or odd numbers
- take turns to write one of their numbers (odd or even) into one of the squares of the grid.

Numbers can only be used once and should be crossed out after use.
The **aim** of the game is make a line of three digits that add to 15, (horizontally, vertically, or diagonally).

The first player to complete a line of **15 WINS** the game.



Teacher Notes

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Students may have played Tic-Tac-Toe. This game is played in a similar way, using odd and even numbers.
Suggest that students take turns at starting the game.
Students who have developed personal strategies for playing may have an advantage by starting first. Allow students to share their personal strategies for playing.

Be aware that:

- Students may not understand that there are ways of thinking that increase a player's chance of winning this game
- Students may not have developed fluency with number facts. These students may need the support of materials or appropriate visual models.
- Students may not use efficient methods for adding addends
- Students may be over-reliant on inefficient counting methods to calculate the sum of each row

Differentiate the task by:

- Changing the target number, eg. from 15 to 13
- Changing the numbers to the side of the grid, eg. using the numbers between10 and 19 (Note: the target total will need to be adjusted accordingly. This would be a good discussion to have with the class.)

Guiding Questions:

- *What was your personal strategy for playing the game?*
- *Will you always win?*
- *How would you teach your strategy to others?*