Tic-Tac-Toe

Tic-Tac-Toe is a classic game that focuses on strategic thinking, problem-solving and spatial reasoning. It is also known as Noughts and Crosses or Xs and Os.

Materials needed:
1) paper, whiteboard, cement to write on
2) pencils, markers, crayons, chalk or playing pieces for Xs and Os

Classic Instructions:

Played with two people.
1) Decide who goes first by playing rock, paper, scissors. That player can choose to be Xs or Os.
2) Draw a 3x3 grid on paper or use the gameboard page included here.
3) The first player chooses which square to place their X or O.
4) The second player then uses the other symbol and chooses where to place it.
5) The players continue taking turns until one player gets three in a row or "tic-tac-toe" across a row, column or diagonally.
6) Create a table or chart and use tally marks to keep track of how many games each player wins.

Reverse Tic-Tac-Toe Instructions:

Played with two people.

Begin and play the classic tic-tac-toe game in the same way, but instead, the goal is not to get three in a row. Players try to avoid getting three in a row and a player loses the game if they do get three in a row.

BC Mathematics Curricular Content and Competencies:
- represent quantities (tallies)
- one-to-one correspondence with tables, charts
- use reasoning to explore and make connections
- visualize to explore mathematical concepts
- develop, demonstrate and apply mathematical understanding through play
- develop and use multiple strategies to engage in problem-solving
- explain and justify mathematical ideas and decisions

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Different ways to play:

On her blog, math educator Marilyn Burns suggests five different ways to play tic-tac-toe, here are two suggestions:

1) As each players takes their turn, they can choose to either place an X or an O. The winner is the first one to get three Xs or three Os in a row (row, column or diagonal) and it doesn't matter whether they placed all three of them or not.

2) As each player takes their turn, they choose one of the numbers from 1-9 to place. The numbers can only be used once. The winner is the first one to get three numbers with a total sum of 15 in a row, column or diagonal and it doesn't matter whether they placed all three of the numbers or not.

The complete blog post can be found here:

http://www.marilynburnsmathblog.com/five-twists-on-tic-tac-toe/

Tic Tac Toe can be played outside with sidewalk chalk on cement surfaces or by finding sticks to create the gameboard and rocks, shells or cones to use as playing pieces.

An online version of tic-tac-toe can be found here:

https://www.google.com/search?q=tic+tac+toe

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