

Tic-Tac-Toe

Overview: The first folks to play this game lived in the Roman Empire, but it was called *Terni Lapilli* and instead of having any number of pieces (X or O), each player only had three, so they had to move them around to keep playing. Historians have found the hatch grid marks all over Rome. They have also found them in Egypt!

In 1864, the British called it “noughts and crosses,” and it was considered a “children’s game,” since they would play it on their slates. In recent times (1952), OXO was one of the first known video games, as the computer played games against a person.

Tic-tac-toe can be fun, but when you get a “cat’s game” (no winner), it can get a little boring pretty quickly, right? I’ll show you some cool ways to change the game to make it more interesting by changing one or two of the basic rules. It’s much more engaging and strategic that way! Currently there are more than 100 variations of tic-tac-toe, and I’m going to show you my favorite ones. In fact, last time I taught a live science workshop, all 120 kids played this at the same time with squeals of delight!

Materials

- Pencil
- Paper

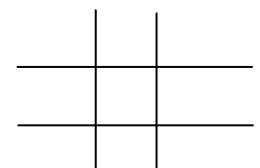
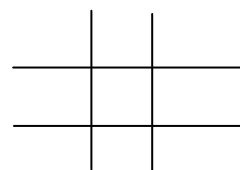
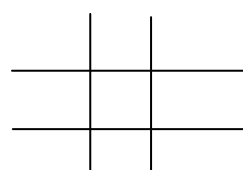
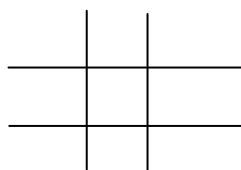
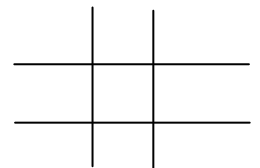
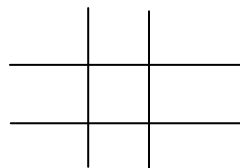
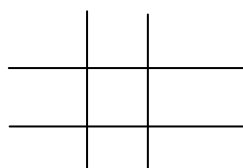
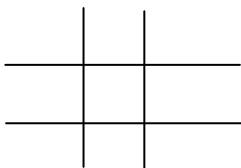
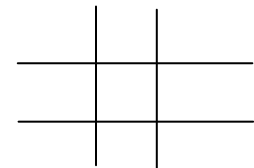
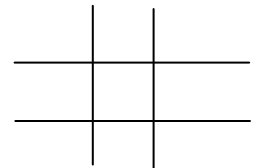
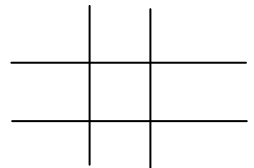
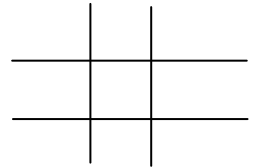
Activity: What happens in most tic-tac-toe games? Let’s find out.

Step 1: Play one right now in one of the grids on the right, and then come back for step 2. Go ahead!

Did you find that there wasn’t a winner? A tie game?

Okay, so let’s change it a little to make it more interesting.

Step 2: Play another game, but this time on your turn, you can place an X or an O, and you can change your mind from turn to turn. And so can your opponent. The winner is the one who finishes any row, column, or diagonal with all X’s or all O’s. Go ahead and play a few games now!



Step 3: Did you like that last version? If so, then you might like this one! Instead of X and O, use numbers 1-9, and each number can only be used once. Take turns writing down the number in the grid. The first person to get to 15 wins!

		9			9		5	9			5	9
			8		6	8		6	8	3	6	
8				7		4	7		4	7		

The first round The second round The third round Fourth round

In the fourth round, the first player can place a 3 in the cell at the center to win the game.

You can add an extra rule that says you have to start with 9 and work your way sequentially down to 1, so it is easier to keep track of the numbers.

Step 4: “Last one wins.” Start a new game, and on your turn, you can mark as many spaces as you want in the same row or column (no diagonals in this version). The person who marks the last space on the board is the winner.

Step 5: If you have lots of people who want to play, then this larger version of 4-in-a-row is perfect. (It’s best with 3 to 6 players.)

					R	R			
		B					A		
			C	C					
						B			
		X		O					

First draw a grid that is 10 by 10. In this example game, we have 5 players (B, R, A, X, C, O). On their turn, they mark their box with a letter (you can also use shapes or simple pictures like a happy face). First person to get four in a row wins!

Which variation of tic-tac-toe did you like best? Do you think it changes the game a lot to let each player choose either X or O during their turn? The number tic-tac-toe game is pretty neat – I’ve found it’s easier to keep track by starting with 9 and going down to 1, alternating turns and numbers as you go. Last One Wins is great, too, but 4-In-A-Row Tic-Tac-Toe may be my favorite. It’s really fun for the whole family to play!