What's Your Function?

Object: to use inputs and outputs to guess the rule of a function
Materials needed: *What's Your Function?* cards
Number of players: two teams of 2 or more players

Teacher Preparation

Print out a set of cards for each group or give each group a standard deck of cards.

Game Play

• Playing the game

One member of team 1 draws a function card from the deck. Team 2 gives an input value to team 1, and team 1 must supply the corresponding output value. Team 2 can then either make 1 guess or give Team 1 another input value. This is repeated until team 2 can correctly guess the rule.

Points are awarded based on the type of function and the number of inputs required to guess the function:

Linear functions	Nonlinear function
1 input = 7 points	1 input = 9 points
2 inputs = 5 points	2 inputs = 7 points
3 inputs = 2 points	3 inputs = 5 points
4 inputs = 1 points	4 inputs = 4 points
	5 inputs = 3 points
	6 inputs = 2 points
	7 inputs = 1 point

• Winning the game

The first team to reach 20 points wins.

$f(x) = 2x + 3$

$f(x) = x + 1$

$f(x) = x + 6$

$f(x) = 2x - 4$

$f(x) = 4x + 5$

$f(x) = -8x + 2$

$f(x) = 7x$

$f(x) = 6x + 1$

$f(x) = \frac{1}{2}x + 4$

$f(x) = x$

$f(x) = 4.7x - 1.8$

$f(x) = x - 9$

$f(x) = 12x - 16$

$f(x) = \frac{1}{2}x + \frac{1}{3}$

$f(x) = 3$

$f(x) = 9x + 4$

$f(x) = 4x - 6$

$f(x) = 2x + \frac{1}{4}$

$f(x) = 0.3x + 5.2$

$f(x) = x + 23$

$f(x) = 6x - 5$

$f(x) = -x + 9$

$f(x) = -\frac{1}{4}x + 1$

$f(x) = 11x + 3$

$f(x) = x^2$

$f(x) = 3 \cdot 2^x$

$f(x) = x^2 + 4$

$f(x) = 3^x$

$f(x) = x^2 + 1$

$f(x) = 5\left(\frac{1}{2}\right)^x$

$f(x) = 10 \cdot 0.01^x$

$f(x) = -\frac{1}{x}$

$f(x) = \frac{1}{x}$

$f(x) = \frac{2}{x}$