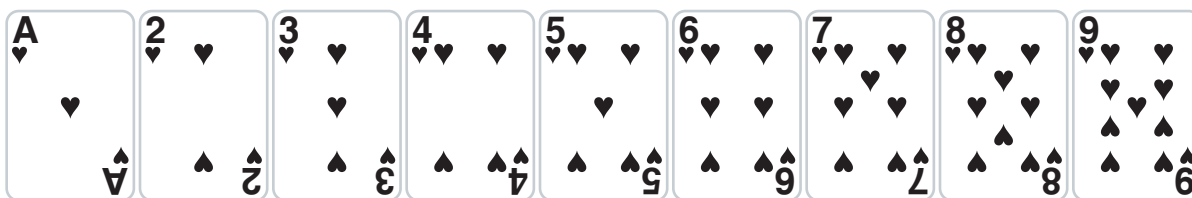


Fifteen is a two-player card game. The goal is to pick cards so that three cards in your hand add up to 15.

Setup

You'll need cards numbered 1 through 9. You can use the Ace through 9 from a deck of cards. Aces count as 1's.

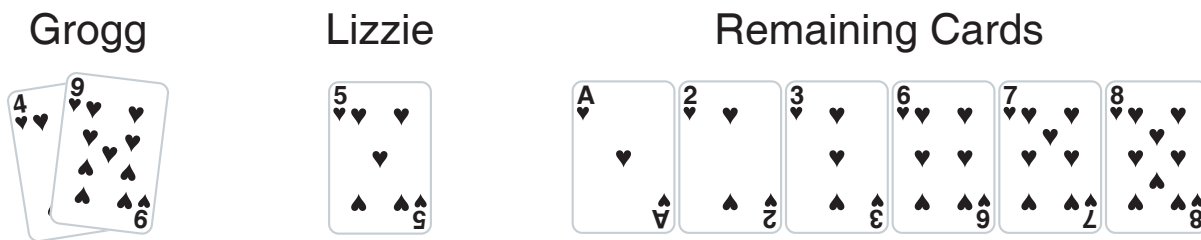
Lay all nine cards face up on a table.



Players take turns picking cards and placing them face-up in front of them. The winner is the first player with three cards that add up to 15.

Example:

Grogg picks the 4, then Lizzie picks the 5, then Grogg picks the 9. Which card should Lizzie pick next?



Since Grogg has $4 + 9 = 13$, he needs a 2 to make 15. So, Lizzie should pick the 2 to stop Grogg from winning.

You can win using **any three** cards in your hand and you must use **exactly** three cards to make 15. You cannot win using $8 + 7$ or $2 + 3 + 4 + 6$. Sometimes, no one will win.

Strategies

The game of fifteen is actually Tic-Tac-Toe in disguise!

There are exactly 8 different ways to pick three cards that sum to 15:

$$1+5+9$$

$$2+6+7$$

$$1+6+8$$

$$3+4+8$$

$$2+4+9$$

$$3+5+7$$

$$2+5+8$$

$$4+5+6$$

We can arrange our 9 cards into what is called a Magic Square, where every row, column, and diagonal has three cards that add up to 15.

See if you can find all 8 sums above in the rows, columns, and diagonals of the board below.



To win a game of 15, you must choose three cards that complete a row, column, or diagonal of the board above. That's how you win at Tic-Tac-Toe!

So, the strategy in a game of 15 is the same as the strategy of Tic-Tac-Toe.

Learn more about this cool relationship at beastacademy.com/playground/fifteen.

Fifteen Tic-Tac-Toe

Instead of choosing a card, take turns placing different markers (like red and black checkers) on cards to claim them. First to get three checkers in a row horizontally, vertically, or diagonally wins.

This will help you see how Fifteen and Tic-Tac-Toe are related.

