

This is a game for two players.

Each bag above has unlimited 1s, 3s, 5s or 7s in it.

Aim of the game:

To be the player to add the final number to the 'running' total to make 37.

How to play:

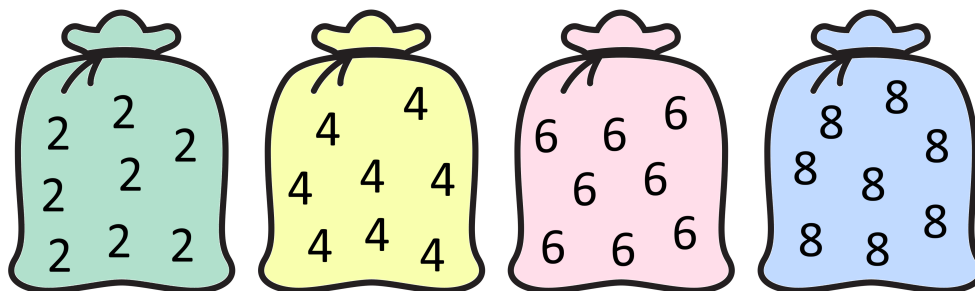
1. Decide who is going first.
2. Player 1 chooses one of the numbers from the bags above (1, 3, 5 or 7).
3. Player 2 then chooses a number from one of the bags and adds this onto Player 1's number to make a running total.
4. Player 1 then has another turn and again, chooses a number from one of the bags, and adds it to the running total.
5. Play continues like this with each player choosing a number and adding it onto the running total, until one player reaches the target of 37.

Play the game a few times. What do you notice?

Is this a fair game? Do both players have an equal chance of winning? Why, or why not?



Here's a slightly different version of the game...



This time, each bag above has unlimited 2s, 4s, 6s or 8s in it.

The aim is to be the player who reaches 30.

Play the game a few times. What do you notice?

Is this a fair game? Do both players have an equal chance of winning?
Why, or why not?

Would having a target of 34 make any difference?

If you have bags of 2s, 4s, 6s and 8s, and you are given a target number, how will you decide whether it is better to go first or second?