

Have You Got It? is an adding game for two players. It is a version of a well known game called Nim.

Start with a target of 23.

The first player chooses a whole number from 1 to 4.

Players take turns to add a whole number from 1 to 4 to the running total.

The player who hits the target of 1 to 4 wins the game.

Play the game several times.

Can you find a winning strategy?

Can you always win?

Does your strategy depend on whether or not you go first?

To change the game, choose a new target or a new range of numbers to add.

Test out the strategy you found earlier. Does it need adapting?

Can you work out a winning strategy for any target?

Can you work out a winning strategy for any range of numbers?

Is it best to start the game? Always?

Extension:

Consider playing the game where a player CANNOT add the same number as that used previously by their opponent.