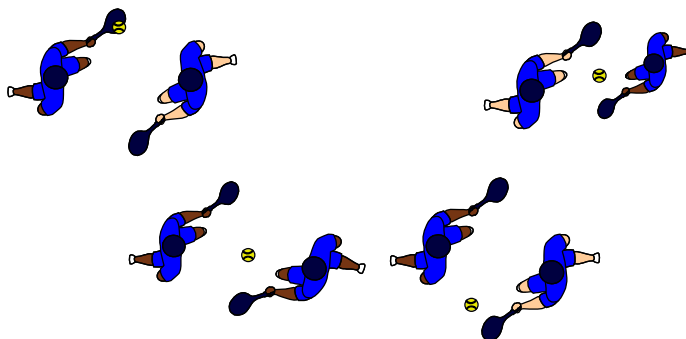


## Tennis Tournament

There are eight players in a tennis tournament.



In every round the winners of each game progress to the next round, the losers are out.

How many games of tennis will be played in order to find the winner?

- Investigate how many games will be needed starting with different numbers of players
  - Describe any patterns you notice
- Can you write a general rule to work out the number of games played for any number of players starting a tournament?

## Learning and Teaching Objectives

- Decide on the information you need to describe and continue the pattern
- Describe a rule of a pattern or relationship in words or symbols
- Predict the next few terms in a sequence to test the rule

## Tennis Tournament Solution

An interesting part of this problem is to discuss the number of players needed to start a tournament like this. Only certain numbers will work, otherwise a player is left with no-one to play against. Also to consider how many matches the winner has to play.

Number of players	2	4	8	16	32	64
Matches played in the tournament	1	3	7	15	31	63
Matches played in each round	1	1 + 2	1 + 2 + 4	1 + 2 + 4 + 8	1 + 2 + 4 + 8 + 16	1 + 2 + 4 + 8 + 16 + 32

Could also investigate the number of matches played in a 'round-robin' tournament, where every player plays every other player.