

How does the proportional representation voting system work?



For the federal elections, Australia uses proportional representation voting to choose a senate.

When voting for the Senate, you need to use the white ballot paper and number candidates in your order of preference or number the political parties.

This means a candidate needs to get a certain number of votes, also known as a quota, to be elected. The quota is worked out using the following formula:

$$\frac{\text{Number of votes}}{(\text{Number of seats up for election} + 1) + 1}$$

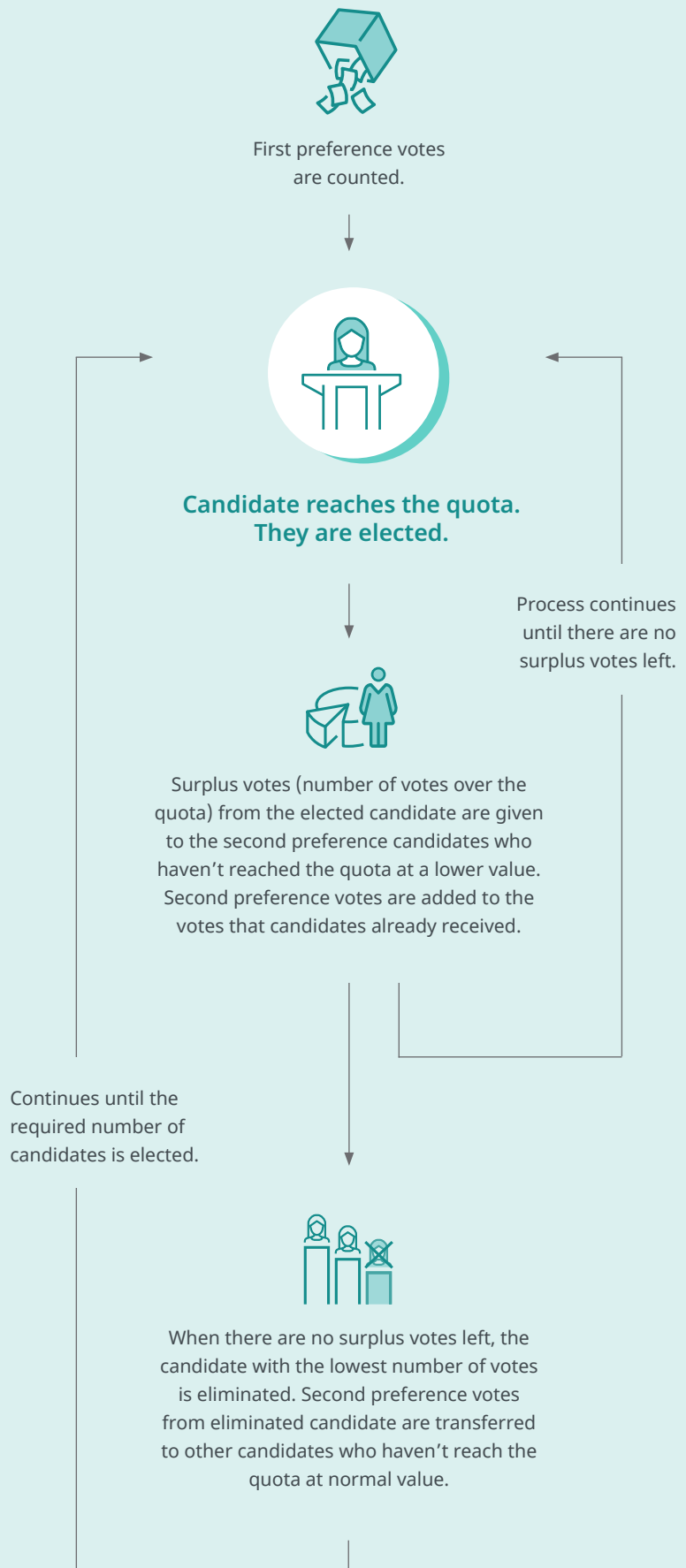
There are two ways people can vote, but you can only choose one of them.

1. Number the political parties listed above the vertical line in order of your preference. This is called voting above the line.
2. Number the candidates in order of your preference. This is called voting below the line.

The candidate/party you write number 1 next to, is your first preference vote. The candidate/party you write number 2 next to, is your second preference vote.

Remember that if you choose to number the political parties, you can't number the candidates from that party in your order of preference.

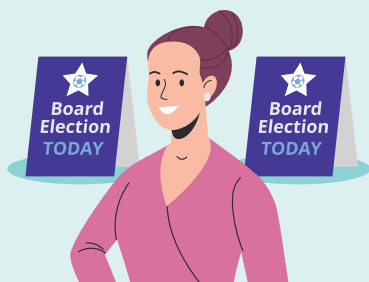
How are votes counted in the Senate?



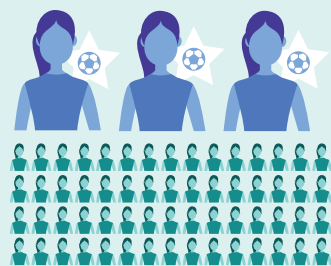
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Example

Grace's sport's association is electing a new board using proportional representation voting system.

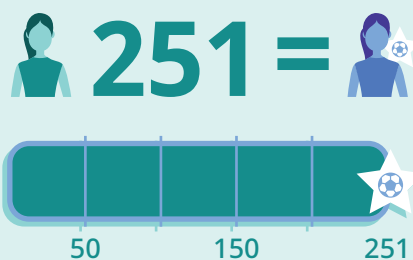


There are 3 positions on the board and 1000 people are voting in the election.



This means that the quota candidates need to win is 251 votes.

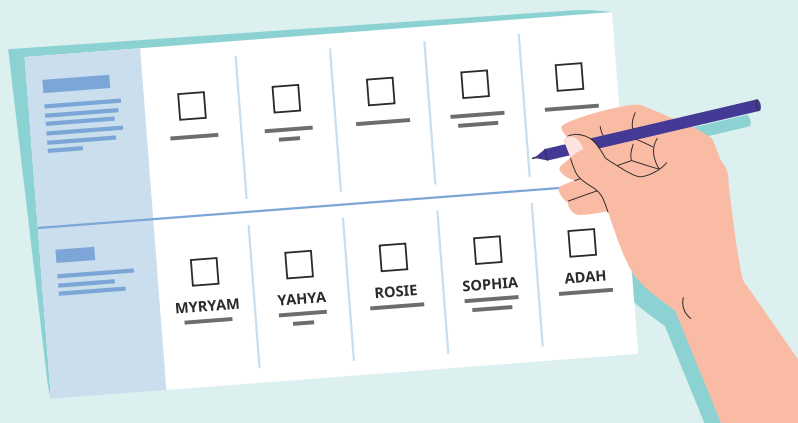
$$\{1000/(3+1) + 1 = 251\}$$



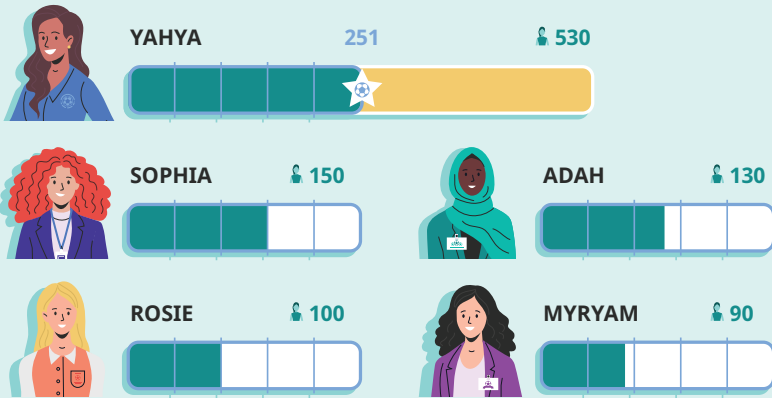
There are 5 candidates from different sport clubs.



On election day, Grace receives a ballot paper with a line in the middle. All sports clubs are listed above the line with their candidates in a specific order. Below the line, she can read the names of the candidates, Myryam, Yahya, Rosie, Sophia and Adah and their sports club.



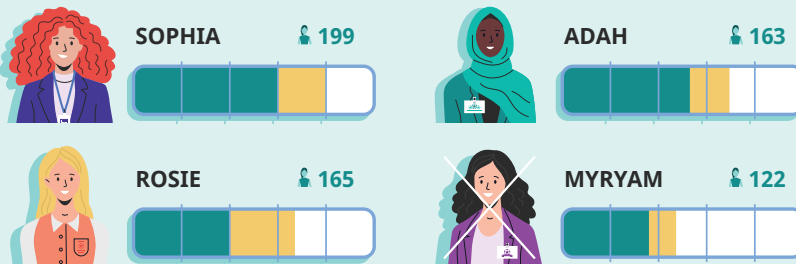
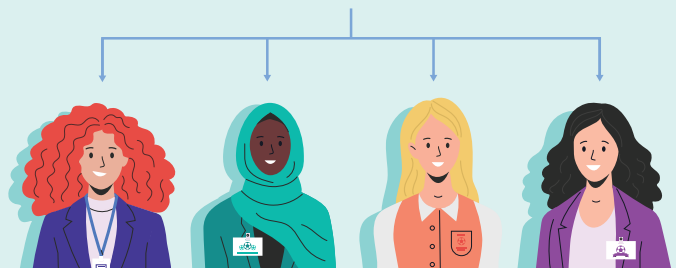
After the first count, Yahya has 530 votes, Sophia 150, Myryam 90, Rosie 100 and Adah 130.



Yahya is elected to be a member of the board because she got the number of required votes (quota).



She received 279 votes more than the 251 needed to be elected. These votes are called surplus votes. Now the second preference of the people who voted for Yahya will be counted and added to the other candidates' number of votes at a lower value, called a transfer value.



After the votes are transferred, Sophie has 199 votes, Rosie 165, Adah 163 and Myryam 122. As no other candidate has any surplus votes, the candidate with the least number of votes, Myryam, gets eliminated.

All second preference votes of the people who voted for Myryam will go to the remaining candidates at their normal value.

This process continues until all board positions are filled.

