

THE PROPORTIONAL REPRESENTATION VOTING SYSTEM



The voting system used for the Legislative Council (Upper House) of the Victorian Parliament is called proportional representation.

You have a choice about how to vote. You can either: Vote '1' above the line for your preferred party or group of candidates. In this case your preferences go according to a voting ticket that the party or group has lodged with the Victorian Electoral Commission. OR

Vote below the line for individual candidates. Candidates have their party affiliation (if any) and the locality where they are enrolled printed just below their names. You have to vote at least '1' to '5' for your vote to count, and you can continue numbering as many squares as you want. To maximise the use of your preferences, you should consider numbering as many squares below the line as possible.

The system

The principle of proportional representation is that candidates and parties are elected in proportion to their level of support among voters.

Under the proportional representation voting system, a candidate must receive a quota of votes.

A quota is calculated in this way:

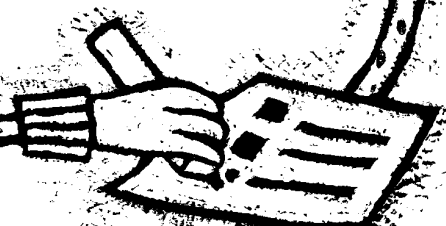
$$\frac{\text{Number of formal votes}}{\text{Number of vacancies} + 1} + 1$$

With five members to be elected, the quota for a region will be $\frac{1}{6}$ of the formal votes plus 1.

Candidates can reach a quota either through first-preference votes directly for them, or through preferences being transferred to them from other candidates. Preferences are very important in deciding the result – which is why you need to consider carefully where you allocate your preferences.

Steps in counting the votes

1. The first-preference votes are counted.
2. Candidates who have gained more than a quota are elected.
3. Elected candidates' surplus votes are transferred to other candidates according to the preferences on them. The surplus is the number of votes more than the quota. Because it is not possible to tell which votes elected the candidate and which are surplus, all the candidate's votes are transferred, but at a value of less than 1. The value of the transferred votes is worked out by dividing the surplus by the total number of ballot papers for the candidate. Each ballot paper transferred to another candidate has this value.



- Any candidate who has reached the quota once the surplus votes are transferred is elected.
- If there are still vacancies to fill once the surplus votes have been transferred, the candidate with the lowest number of votes is excluded. The excluded candidate's ballot papers are then distributed to the remaining candidates (at the value they were received) according to the preferences on them.
- This process of transferring surpluses from elected candidates and distributing preferences from excluded candidates continues until all positions have been filled.

Proportional Representation: How to do it

Let us say your class is going to vote for two class representatives, and there are 24 students voting in your class. This is the formula:

$$\frac{24}{2 + 1} + 1 = 9$$

The quota is nine so the candidates each need nine votes to be elected.

There were four candidates in our example and this is how the voting turned out:

Maria	3
Anton	7
Hien	12
Jemima	2
	<hr/>
	24

Hien got 12 votes, so she has been elected, but no-one else reached the quota. We have to go to preferences to find our second representative.

First we look at the **surplus votes**:

Hien only needed 9 votes to win, so she has got 3 surplus votes which will be transferred to the other candidates. But they will have a lesser value which

is calculated by dividing the number of surplus votes by the number of ballot papers received by the elected candidate:

$$\frac{3}{12} = 0.25 \quad \text{The transfer value is } 0.25$$

On Hien's ballot papers, the second preferences were listed as follows:

Maria	8
Anton	4
Jemima	0
	<hr/>
	12 votes

These votes are multiplied by their transfer value which was 0.25 and added to the first preference votes:

		Transfer votes	+1st Preference votes	New Total
Maria	8×0.25	2	3	5
Anton	4×0.25	1	7	8
Jemima	0×0.25	0	2	2

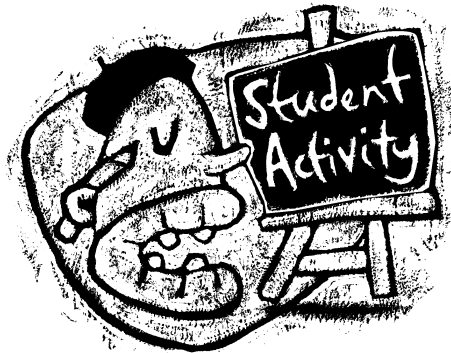
The surplus votes have been distributed, but no-one has reached the quota yet.

The next step will be to **exclude the lowest scoring candidate** and distribute their votes.

Jemima has the lowest number of votes, so her preferences will now be distributed. Of the two who voted for Jemima, 1 gave their preference to Maria and 1 gave it to Anton.

		New transfer votes	New Total
Maria	5	1	6
Anton	8	1	9

Anton has now reached the quota of 9 so he is the second candidate to be elected.



Refer to the class voting exercises 1, 3 and 4 using preferential voting as described on pages 69 – 71.

Complete any or all of the exercises below using the proportional representation voting and vote counting system.

- a. For the Battle of Sounds exercise conduct the poll for the TWO most popular bands.
- b. For the favourite football team exercise conduct a poll for the THREE most popular teams.
- c. For the travel destination exercise conduct a poll for the FOUR most popular destinations.



Class debate:

Conduct a class debate on the topic:

'The proportional representation voting system is the fairest way to measure the will of all voters.'