

Determining additional admission ranks for International Baccalaureate students

When International Baccalaureate (IB) students are awarded the IB diploma, they receive an overall score which indicates their academic performance on this qualification. The score is an integer (whole number) ranging from 24 to 45. In order for institutions to compare these students with ATAR students, the IB score is converted into an admission rank, which is comparable with the ATAR.

Currently, the IB conversion table gives an admission rank for each IB score from 24 to 45. The determination of these equivalences is through research studies carried out by QTAC, UAC, VTAC and SATAC. Details of these studies and their methodologies can be found in the document: [Determining ATAR Equivalents for International Baccalaureate Students](#).

On the current IB conversion table, it can be seen that there are 22 possible ranks to differentiate between IB students. This compares with a possible 2,000 different ranks (from 0.00 to 99.95 at 0.05 intervals) for ATAR students. In this way, we can say that the scale on which IB results are reported is much coarser than that for the ATAR. Because of this, we can see large gaps between the equivalences on the IB conversion table. For example, on the 2018 conversion table, an IB score of 36 maps to 94.50, with the next score, 37 mapping to 95.75. There are a further 24 possible ranks in between.

Potentially, if we could distinguish the performance of all the students on the IB score of 36, we could give higher ranks to those who have done better than others, and lower ranks to those who have done less well than others. In other words, we could add further equivalences between the gaps on the conversion table. Recently, the IB has provided UAC with data relating to the marks achieved by IB students in each of their subjects, making it possible to differentiate students' performance even if they all achieved the same overall IB score.

The overall IB diploma score is derived by summing the grade level achieved in three SL and three HL subjects, and a score out of 3 in the Extended Essay and Theory of Knowledge components. The grade has a value from 1 (lowest) to 7 (highest). For each SL or HL subject, the IB sets the boundaries to translate the underlying scaled total mark (STM), which is usually out of 100, to a grade. For example, the boundaries for a Grade 6 in SL Biology might be 65 to 75. In which case, an SL Biology student with a STM of anything between 65 and 75 inclusive would receive a Grade 6 for this subject. In this way, knowing the underlying STM would allow us to determine the quality of this Grade 6. A student scoring near 75 has achieved a "better" Grade 6 than one who scored near 65.

The quality of a grade can be measured by the **grade-decimal**, given by this formula:

$$\frac{(\text{STM} - \text{lower boundary})}{(\text{upper boundary} - \text{lower boundary} + 1)}$$

To calculate the grade-decimal for Grade 7 results, the upper boundary would be the maximum mark achieved by an Australian IB student who has studied that subject. In subjects where the total number of Australian IB students achieving a Grade 7 is fewer than 10, the maximum mark would be imputed. This imputation would be based on data from the most recent three years showing the relationship between the lower boundary and the maximum mark of Grade 7s from all subjects.

The average-grade-decimal (AGD) is calculated by averaging the grade-decimals across the three SL and three HL subjects from each student. This average is further adjusted so that it lies in the range from 0.00 to 0.99.

The AGD could therefore be used to distinguish between students who received the same overall IB score. For example, comparing between two students on the same overall IB score, the student with the higher AGD would, on average, have marks closer to the upper boundary of each grade, whereas the student with the lower AGD would, on average, have marks nearer to the lower boundary of each grade. It follows then that the student with the higher AGD should receive a higher admission rank than the student with the lower AGD.

For 2022 admissions, IB students will receive a "fine-grained" IB score, which is their overall IB diploma score plus their AGD. For example, an IB diploma score of 36 and an AGD of 0.50 will be reported as 36.50. The equivalences on the IB conversion table will be developed using the same methodology as before, but these equivalences will be mapped to the AGDs at 0.50, which will serve as "anchor points" on the conversion table. Using our current example based on the 2018 conversion table, a student with a fine-grained IB score of 36.50 would receive a rank of 94.50 (the equivalent rank for an integer IB score of 36). Between 24.00 and 42.75, further ranks are added for fine-grained IB scores at 0.25 intervals (ie, 36.75, 37.00, 37.25 and so on), with their equivalences being linearly interpolated between anchor points.

For IB scores 43 and above, the existing equivalences are too close for further ranks to be added for fine-grained IB scores at 0.25 intervals. Instead, additional ranks will be established for fine-grained IB scores at 43.00, 43.50, 44.00, 44.50, 45.00 and 45.50, with 45.50 mapping to the maximum rank of 99.95. Note, the interval at which additional ranks are interleaved (either 0.25 or 0.50) will depend on the gap between the equivalences corresponding to the anchor points. Where possible, ranks will be added at 0.25 rather than 0.50 intervals.

Using this methodology, our research suggests that roughly 60% of students would receive the same rank on the new conversion table, 25% would see an increase in their rank and 15% would see a decrease in their rank.

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