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SECTION 1



## HOW THE ATAR IS CALCULATED



The ATAR is a rank between 0 and 99.95 that describes a student's academic performance relative to all the students who started high school (Year 7) with them.

An ATAR of 96.00, for example, indicates that you performed as well as, or better, than $96 \%$ of the students who started high school (Year 7) in the same year as you, regardless of whether they moved interstate, or left school before completing Year 12.

ATAR's are reported in increments of 0.05 .
The ATAR was developed for the sole purpose of tertiary selection, and is calculated by VTAC using the scaled study scores for:

- a student's best score in any one of the English studies, plus
- the scores of their next best three permissible studies (which together with the English study make the 'Primary Four'), plus
- 10 per cent of the scores for any fifth and sixth study which they may have completed (these are called increments).

A maximum of six results is used to calculate the ATAR. If a student has more than six results, the six permissible scores that give the highest ATAR are used.


## GRADED ASSESSMENTS \& STUDY SCORES

All VCE studies have three graded assessments for each Unit 3 and 4 sequence. One graded assessment will be for Unit 3 coursework, which is assessed by your teachers at school. The second graded assessment is for Unit 4 coursework (also assessed by your teachers) whereas the third graded assessment is the external examination.

Scored VCE VET studies have two graded assessments for each Unit 3 and 4 sequence. VCAL units do not have graded assessments.

The graded assessments in a subject are added together by VCAA in a defined ratio to produce a raw study score.

A study score indicates how a student performed in relation to all others who took the same study.


The raw study score is a number between 0 and 50 with mean 30 and standard deviation 7 and is distributed according to the properties of a normal distribution curve.

| Study score | 45 | 40 | $\mathbf{3 5}$ | $\mathbf{3 0}$ | $\mathbf{2 5}$ | $\mathbf{2 0}$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Approximate percentage of students on or above this position | $2 \%$ | $9 \%$ | $26 \%$ | $53 \%$ | $78 \%$ | $93 \%$ |



Note that a 45 study score is not equal to a mark of $90 \%$. A 45 study score indicates that you are in the top $2 \%$ of the state.

## SCALING OF STUDY SCORES

$$
\text { Study Scores } \rightarrow \text { Scaling } \rightarrow \text { Scaled Marks } \rightarrow \text { Add } \rightarrow \text { Aggregate \& ATAR }
$$

Before study scores can be used to calculate an ATAR, they are scaled by VTAC to adjust for the fact that it's harder to obtain high marks in some studies than others. Fair comparisons can then be made about students' achievements, regardless of which courses they decided to study.

The scaled study scores for the Primary 4 subjects and any available increments are added together to produce an aggregate score.

Students are then ranked in order of their aggregate, and a percentage rank is assigned to distribute students as evenly as possible over a 100-point scale. The top $0.05 \%$ scorers are awarded a 99.95 ATAR, the next 0.05\% highest scoring students are awarded a 99.90 ATAR and so on.

| Subject | Description | RAW Score | Scaled Score | ATAR Contribution |
| :--- | :--- | :---: | :---: | :---: |
| English | English Requirement | 35 | 34 | 34 |
| Maths Methods (CAS) | Primary 4 | 34 | 40 | 40 |
| Physics | Primary 4 | 36 | 39 | 39 |
| Biology | Primary 4 | 37 | 38 | 38 |
| Art | $10 \%$ Increment | 39 | 37 | 3.7 |
| History Revolutions | $10 \%$ Increment | 32 | 32 | 3.2 |
| AGGREGATE |  |  |  | 157.9 |

## USING SCALING TO YOUR ADVANTAGE

"If you are not good at a subject then scaling won't save you. But if you have any capability for more challenging subjects then please stick with them because the scaling will benefit you."
Statement made by an undisclosed private school to their students
Scaling is only relevant if you receive the same mark in every subject and you dedicate the same amount of time to each subject OR you find all subjects equally easy/difficult.

If you're good at multiple subjects and enjoy studying them, choose the subjects that scale best. Otherwise, choose the subjects that you're good at or are of interest to you.

## METHODS USED TO ADJUST MARKS

As there are differences in exam difficulty from year to year, examination marks are modified to a predefined distribution (standardisation).

As there are differences between subject difficulty, study scores are scaled (scaling).
As there are differences in school marking and assessment difficulty, school marks are adjusted to be on the same scale as the exam marks (moderation).

## MODERATION OF ASSESSMENT MARKS

Your SAC marks are used to determine your relative position or rank in each subject at your school.

Depending on which school you attend, the SACs you complete may be easier or harder than those set by other schools.

In a school where SACs are easier, students would receive higher marks than they would in a school where the SACs are more difficult. If a teacher is a hard marker, students would get lower marks for the same standard of work than they would in a school with generous markers.

If these differences in marking and SAC difficulty aren't taken into account, many students wouldn't receive fair study scores. VCAA therefore effectively calculates what each student's school-based assessment mark (the sum of your SAC marks in a Unit 3/4 study) would be if every student had the same marker, and the same SACs were used across the state. This is done by comparing each school's assessment marks with a common scale, which is the external VCE exam(s) that every student sits at the end of the year. This process is called moderation.


Statistical moderation realigns the level and spread of each students' assessments in a study at a school, to match the level and spread of the same students' scores on the common external VCE exam. This is done without changing the rank order of students within that course group.

The moderated assessment mark is then added to your examination mark to produce the study scores that are used to calculate your ATAR.

## A CLOSER LOOK AT THE MODERATION PROCESS

## Step 1:

Your teacher in each subject submits the final assessment mark for each student as well as the rank order of students with the relative gaps between them to VCAA.

Step 2:
After each VCE exam, an external score is calculated for each student at a school.

## Step 3:

The assessment marks submitted by a school in each subject are moderated to that school's total VCE examination marks.


- The total of the moderated assessment marks obtained at a school in a particular course is adjusted to equal the total of the examination marks obtained by that same school, except where some students may have been initially excluded from the moderation process.

For example, if you added every students' exam mark in a subject together and you obtain a score of 890 , then all of the moderated school assessment marks in that same subject will be assigned in such a way that they also add up to equal 890.

- The median of the moderated scores (the middle score when results are organised from highest to lowest) is made equal to the median of the external scores.
- The quartiles of the moderated scores are made equal to the quartiles of the external scores. ( $25 \%$ and $75 \%$ positions).
- The highest assessment mark is adjusted to equal the highest examination mark, regardless of what mark that student received in the external exam.


## For example:

You obtain an average of $90 \%$ for your SACs but your rank in the subject is 1 .
You obtain 82\% for your examination mark.
Another student at your school obtains the highest examination mark of $97 \%$ in that subject.

You will receive a score of $97 \%$ for your moderated assessment mark.
Your examination mark will be what you actually scored $=82 \%$.

## For example:

You obtain an average of $90 \%$ for your SACs but your rank in the subject is 1 . You obtain 82\% for your examination mark.
Another student at your school obtains the highest examination mark of $80 \%$ in that subject.

You will receive a score of $80 \%$ for your moderated assessment mark.
Your examination mark will be what you actually scored $=82 \%$.
This example clearly shows how important it is for the high achieving students to get the highest possible examination marks.

- The lowest assessment mark is usually adjusted to equal the lowest examination mark, regardless of what mark that student received in the external exam.


## For example:

You obtain an average of 50\% for your SACs and you have the lowest rank in that subject. You obtain 78\% for your examination mark.
The lowest examination mark obtained in that subject at your school is $70 \%$
You will receive a score of $70 \%$ for your moderated assessment mark.
Your examination mark will be what you actually scored $=78 \%$.
This example clearly shows how important it is for the weakest students to get the highest possible examination marks.

- The remaining students obtain a moderated assessment mark in accordance with their rank and the relative gaps that exist between assessment marks. This means that the student who obtained the third highest assessment mark will receive the third highest moderated assessment mark and so on.

| Raw Score (0-100) | Examination (0-120) | External Score (0-100) | Moderated Score |  |
| :---: | :---: | :---: | :---: | :---: |
| 100 | 95 | 89 | 89 | MAXIMUM |
| 99 | 92 | 87 | 88 |  |
| 92 | 86 | 84 | 85 |  |
| 86 | 83 | 82 | 79 |  |
| 85 | 77 | 78 | 78 | UPPER QT. |
| 83 | 72 | 75 | 75 |  |
| 83 | 69 | 74 | 75 |  |
| 81 | 69 | 74 | 73 |  |
| 68 | 59 | 68 | 67 |  |
| 65 | 56 | 66 | 66 | MEDIAN |
| 62 | 52 | 63 | 60 |  |
| 61 | 49 | 61 | 57 |  |
| 60 | 43 | 58 | 55 |  |
| 59 | 35 | 53 | 54 |  |
| 57 | 32 | 51 | 51 | LOWER QT |
| 47 | 31 | 51 | 48 |  |
| 40 | 30 | 50 | 45 |  |
| 35 | 29 | 49 | 41 |  |

## Step 4:

The moderated assessment mark is then added to your examination mark to produce the study scores that are scaled, and then used to calculate your ATAR.

## Example:



## Example:

## Standardised exam marks



## Note:

- Statistical moderation realigns the level and spread of each students' assessments in a study at a particular school, to match the level and spread of the same students' scores on the common external VCE exam.
- Although the moderation process may change a student's school based assessment mark, it has no effect on that student's rank order given by the school. This means that the student who initially obtained the highest school based assessment mark will receive the highest moderated score.
- Any adjustment to a student's score is determined by the external scores for the whole group, not by the student's own external score.
- Statistical moderation can result in the internal school SAC grades either increasing or decreasing.

The determining factor is how the whole group, for instance, all Chemistry students, perform in the VCE Chemistry exam, as compared to the same group's raw schoolbased assessment marks.

- The moderation procedure is not influenced by students with anomalously low external performance, or by students who did very poorly on the school assessment but very well on the external assessment.
- In general, the standard deviation of the moderated assessments is not equal to the standard deviation of the examination marks.
- As long as the shapes of the distributions of the school assessments and the examination marks are roughly the same, the relative differences (or gaps) between the students' moderated assessments will be approximately the same as between their school assessments.


## IMPLICATIONS OF MODERATION



- Your school course group's performance in the external exam will determine your moderated assessment mark for that course.
- In most cases, another student's examination mark will become your moderated school based assessment mark. Therefore, the Year 12 students at your school should be working together to make sure that everyone performs to the highest possible standard in the exams.
- The moderation process will work in more students' favour when the difference between the highest and lowest examination mark is as small as possible. Students should therefore be helping the weaker students achieve the best possible marks in their exams.
- The students who are awarded the highest VCE marks are those who achieve examination marks that are close to, or better than, their school-based assessment marks.


## SECTION 2: MODERATION GRAPHS

## MODERATION GRAPHS

## THE NORMAL CURVE

The normal curve is a bell shaped curve that is symmetrical about its midpoint or mean.
Differences in normal curves are a direct result of differences in values for the mean, $\mu$, and standard deviation, $\sigma$.

The standard deviation determines the spread of results. The larger the value of $\sigma$, the greater the spread of results, and the flatter the curve becomes.

Changes in the mean without changes in the standard deviation result in moving the curve to the right or left, depending upon whether the new mean is larger or smaller than the previous value. There is no change to the shape of the curve.


Changes in the standard deviation without changes in the mean result in changes to the shape of the curve, keeping the midpoint at the same value.


## EXAMPLE 3:

Mark distributions (a) before moderation and (b) after moderation. The broken lines show the location of the mean or average values. SBA = School-based assessments.


## Note:

- Before moderation (a), the crimson curve appears to have the same shape, height and spread as the purple curve. This means that the spread of results or standard deviation is the same.
- As the crimson curve is positioned about 20 units to the right of the purple curve, the mean values are different. However, if we move the crimson curve 20 units to the left, we will have aligned the distribution of the school assessments with the distribution of the examination marks (b). All of the assessment marks are moderated down.


- The green curve is not symmetrical about the broken green vertical line (the average/mean), so it won't be possible to align it exactly with the curve representing the distribution of examination marks (purple). Regardless of this fact, all of the assessment marks in this example are moderated down.


## EXAMPLE 4 - AVERAGES ARE THE SAME



## External Exam Marks <br> School Assessment Marks

The average of the school assessment marks is similar to the average exam marks.
The standard deviation (spread of results or width of curve) of the school assessment marks is similar to the a standard deviation of the exam marks.

There will be little/no changes to the assessment marks.

## MODERATION

Table detailing the change in the students' assessment mark


## School Assessment Marks External Exam Marks

|  |  |  | Notes ecole brutes |  |  |  | Notes min. conv. |  |  |  | Pourcentage lors du calcul |  |  |  |  | Facteur |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Groupe | Nb. eleves |  | Moyenne |  | Ecart type |  | Moyenn* |  | Ecart type |  | Ecole |  | Ministere |  |  | R |  | 0 |  |
|  | 2 | 30 |  | 54,1 |  | \$8,71 |  | 52.38 |  | 19,4 |  | 10 | 0 |  | 100 |  | .44 |  | 2.68 |
| $\xrightarrow{54}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Tables de moderation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM |
| 1 | 0 | 11 | 8 | 21 | 18 | 31 | 28 | 41 | 39 | 51 | 49 | 61 | 60 | 71 | 70 | 81 | 80 | 91 | 91 |
| 2 | 0 | 12 | 9 | 22 | 19 | 32 | 29 | 42 | 40 | 52 | 50 | 62 | 61 | 72 | 71 | 82 | 81 | 92 | 92 |
| 3 | 0 | 13 | 10 | 23 | 20 | 33 | 30 | 43 | 41 |  |  | 63 | 62 | 73 | 72 | 83 | 82 | 93 | 93 |
| 4 | 0 | 14 | 11 | 24 | 21 | 34 | 31 | 44 | 42 | 54 | 52 | 64 | 63 | 74 | 73 | 84 | 83 | 94 | 94 |
| 5 | 1 | 15 | 12 | 25 | 22 | 35 | 33 | 45 | 43 |  |  | 65 | 64 | 75 | 74 | 85 | 84 | 95 | 95 |
| 6 | 2 | 16 | 13 | 26 | 23 | 36 | 34 | 46 | 44 | 56 | 54 | 66 | 65 | 76 | 75 | 86 | 86 | 96 | 96 |
| 7 | 3 | 17 | 14 | 27 | 24 | 37 | 35 | 47 | 45 | 57 | 55 | 67 | 68 | 77 | 76 | 87 | 87 | 97 | 97 |
| 8 | 4 | 18 | 15 | 28 | 25 | 38 | 36 | 48 | 46 | 58 | 56 | 68 | 67 | 78 | 77 | 83 | 88 | 98 | 98 |
| 9 | 6 | 19 | 16 | 29 | 28 | 39 | 37 | 49 | 47 | 69 | 57 | 69 | 68 | 79 | 78 | 89 | 89 | 99 | 90 |
| 10 | 7 | 20 | 17 | 30 | 27 | 40 | 38 | 50 | 48 | 60 | 59 | 70 | 69 | 80 | 79 | 90 | 90 | 100 | 100 |

The mean of the school assessment marks is made equal to the mean of the exam marks.
Moderation had very little effect on this group.

Mean: School assessment marks = External exam marks
Standard deviation: School assessment marks = External exam marks
Result: Minor assessment mark changes, if any

## EXAMPLE 5 - AVERAGES ARE THE SAME



## External Exam Marks

School Assessment Marks
The standard deviation of the school assessment marks is smaller than the standard deviation of the exam marks.

## MODERATION

|  |  | Notes ecole brutes |  | Notes min. conv. |  | Pourcentage lors dua calcul |  | Facteur |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Groupe | Nb. eleves | Moyenne | Ecart type | Moyenne | Ecart type | Ecole | Ministere | R | 0 |
| 1 | 30 | 752,17 | 16,32 | (53,72 | 25.26 | 100 | 100 | 1.82 | 2,12 |


| Tables de moderation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM |
| 1 | 0 | 11 | 0 | 21 | 5 | 31 | 21 | 41 | 36 |  | 42 | 61 | 67 | 71 | 83 | 81 | 98 | 91 | 100 |
| 2 | 0 | 12 | 0 | 22 | 7 | 32 | 23 | 42 | 38 | 52 | 53 | 62 | 69 | 72 | 84 | 82 | 100 | 92 | 100 |
| 3 | 0 | 13 | 0 | 23 | 9 | 33 | 24 | 43 | 40 |  |  | 63 | 70 | 73 | 86 | 83 | 100 | 93 | 100 |
| 4 | 0 | 14 | 0 | 24 | 10 | 34 | 26 | 44 | 41 | 54 | 57 | 64 | 72 | 74 | 88 | 84 | 100 | 94 | 100 |
| 5 | 0 | 15 | 0 | 25 | 12 | 35 | 27 | 45 | 43 | 55 | 58 | 65 | 74 | 75 | 89 | 85 | 100 | 95 | 100 |
| 6 | 0 | 16 | 0 | 26 | 13 | 36 | 29 | 46 | 44 | 56 | 60 | 66 | 75 | 76 | 91 | 86 | 100 | 96 | 100 |
| 7 | 0 | 17 | 0 | 27 | 15 | 37 | 30 | 47 | 46 | 57 | 61 | 67 | 77 | 77 | 92 | 87 | 100 | 97 | 100 |
| 8 | 0 | 18 | 1 | 28 | 16 | 38 | 32 | 48 | 47 | 58 | 63 | 68 | 78 | 78 | 94 | 88 | 100 | 98 | 100 |
| 9 | 0 | 19 | 2 | 29 | 18 | 39 | 33 | 49 | 49 | 59 | 64 | 69 | 80 | 79 | 95 | 89 | 100 | 99 | 100 |
| 10 | 0 | 20 | 4 | 30 | 19 | 40 | 35 | 50 | 50 | 60 | 68 | 70 | 81 | 80 | 97 | 90 | 100 | 100 | 100 |

Mean: School assessment marks = External exam marks
Standard deviation: School assessment marks < External exam marks
Result: Low marks decrease, high marks increase, middle marks stay the same.

## EXAMPLE 6 - AVERAGES ARE THE SAME



## External Exam Marks

School Assessment Marks
The average of school assessment marks is similar to the average exam marks.
The standard deviation of the school assessment marks is greater than the a standard deviation of the exam marks.

## MODERATION

If the school marks are more widely distributed around the mean than the marks on the exam, moderation will more greatly compress the marks around the average, so that the two standard deviations are identical.

|  |  | Notes ecole brutes |  | Notes min. conv. |  | Pourcentage lors du calcul |  | Facteur |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Groupe | Nb. eleves | Moyenne | Ecart type | Moyenne | Ecart type | Ecole | Ministere | R | Q |
| 1 | 27 | 771,63 | 12.27 | 71,67] | 10,18 | 100 | 100 | 2,3 | 5,83 |


| Tables de moderation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NBE | U159 | NEB | NEM | NEB | NEM |
| 1 | 13 | 11 | 21 | 21 | 30 | 31 | 38 | 41 | 46 | 51 | 55 | 61 | 63 | 71 | 71 | 81 | 79 | 91 | 88 |
| 2 | 14 | 12 | 22 | 22 | 30 | 32 | 39 | 42 | 47 | 52 | 55 | 62 | 64 |  |  | 82 | 80 | 92 | 89 |
| 3 | 15 | 13 | 23 | 23 | 31 | 33 | 40 | 43 | 48 | 53 | 56 | 63 | 65 | 73 | 73 | 83 | 81 | 93 | 89 |
| 4 | 16 | 14 | 24 | 24 | 32 | 34 | 40 | 44 | 49 | 54 | 57 | 64 | 65 | 74 | 74 | 84 | 82 | 94 | 90 |
| 5 | 16 | 15 | 25 | 25 | 33 | 35 | 41 | 45 | 50 | 55 | 58 | 65 | 68 | 75 | 74 | 85 | 83 | 95 | 91 |
| 6 | 17 | 16 | 26 | 28 | 34 | 36 | 42 | 46 | 50 | 56 | 59 | 66 | 67 | 76 | 75 | 86 | 84 | 96 | 92 |
| 7 | 18 | 17 | 26 | 27 | 35 | 37 | 43 | 47 | 51 | 57 | 60 | 67 | 68 | 77 | 76 | 87 | 84 | 97 | 93 |
| 8 | 19 | 18 | 27 | 28 | 35 | 38 | 44 | 48 | 52 | 58 | 60 | 68 | 69 | 78 | 77 | 88 | 85 | 98 | 94 |
| 9 | 20 | 19 | 28 | 29 | 36 | 39 | 45 | 49 | 53 | 59 | 61 | 69 | 69 | 79 | 78 | 89 | 86 | 99 | 94 |
| 10 | 21 | 20 | 29 | 30 | 37 | 40 | 45 | 60 | 54 | 60 | 62 | 70 | 70 | 80 | 79 | 90 | 87 | 100 | 100 |

Mean: School assessment marks = External exam marks
Standard deviation: School assessment marks > External exam marks
Result: Low marks increase, high marks decrease, middle marks stay the same

## EXAMPLE 7 - STANDARD DEVIATIONS ARE THE SAME



## External Exam Marks

School Assessment Marks
The standard deviation of the school assessment marks is similar to the a standard deviation of the exam marks.

The average of the school assessment marks is lower than the average exam marks.

## MODERATION

All of the assessment marks will increase.

|  |  | Notes ecole brutes |  | Notes min. conv. |  | Pourcentage lors du calcul |  | Facteur |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Groupe | Nb. Clleves | Moyenne | Eeart type | Moyenne | Eeart type | Ecole | Ministere | R | Q |
| 4 | 24 | 7753 | 10,03 | 78.58 | 9,51 | 100 | 100 | 2.24 | 7.5 |


| Tables de moderation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM |
| 1 | 8 | 11 | 18 | 21 | 27 | 31 | 37 | 41 | 46 | 51 | 56 | 61 | 65 | 71 | 74 | 81 | 84 | 91 | 93 |
| 2 | 9 | 12 | 19 | 22 | 28 | 32 | 37 | 42 | 47 | 52 | 56 | 62 | 66 | 72 | 75 | 82 | 85 | 92 | 94 |
| 3 | 10 | 13 | 19 | 23 | 29 | 33 | 38 | 43 | 48 | 53 | 57 | 63 | 67 | 73 | 76 | 83 | 86 | 93 | 96 |
| 4 | 11 | 14 | 20 | 24 | 30 | 34 | 39 | 44 | 49 | 54 | 58 | 64 | 68 |  | 17 | 84 | 87 | 94 | 96 |
| 5 | 12 | 15 | 21 | 25 | 31 | 35 | 40 | 45 | 50 | 55 | 59 | 65 | 69 | 75 | 78 | 85 | 88 | 95 | 97 |
| 6 | 13 | 16 | 22 | 26 | 32 | 38 | 41 | 46 | 51 | 56 | 60 | 66 | 70 |  |  | 86 | 89 | 96 | 93 |
| 7 | 14 | 17 | 23 | 27 | 33 | 37 | 42 | 47 | 52 | 57 | 61 | 67 | 71 | 77 | 80 | 87 | 90 | 97 | 99 |
| 8 | 15 | 18 | 24 | 28 | 34 | 38 | 43 | 48 | 53 | 58 | 62 | 68 | 72 | 78 | 81 | 88 | 91 | 98 | 100 |
| 9 | 16 | 19 | 25 | 29 | 35 | 39 | 44 | 49 | 54 | 59 | 63 | 69 | 73 | 79 | 82 | 89 | 92 | 99 | 100 |
| 10 | 17 | 20 | 26 | 30 | 38 | 40 | 45 | 50 | 55 | 60 | 64 | 70 | 74 | 80 | 83 | 90 | 92 | 100 | 100 |

Mean: School assessment marks < External exam marks
Standard deviation: School assessment marks = External exam marks
Result: All assessment marks increase

## EXAMPLE 8 - STANDARD DEVIATIONS ARE THE SAME



## External Exam Marks

School Assessment Marks
The standard deviation of the school assessment marks is similar to the a standard deviation of the exam marks.

The average of the school assessment marks is higher than the average exam marks.

## MODERATION

All of the assessment marks will drop.


| Tables de moderation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM |
| 1 | 0 | 11 | 0 | 21 | 0 | 31 | 3 | 41 | 14 | 51 | 26 | 61 | 37 | 71 | 43 | 81 | 60 | 91 | 71 |
| 2 | 0 | 12 | 0 | 22 | 0 | 32 | 4 | 42 | 15 | 52 | 27 | 62 | 38 | 72 | 50 | 82 | 61 | 92 | 72 |
| 3 | 0 | 13 | 0 | 23 | 0 | 33 | 5 | 43 | 17 | 53 | 28 | 63 | 39 | 73 | 51 | 83 | 62 | 93 | 74 |
| 4 | 0 | 14 | 0 | 24 | 0 | 34 | 6 | 44 | 18 | 54 | 29 | 64 | 40 | 74 | 52 | 84 | 63 | 94 | 75 |
| 5 | 0 | 15 | 0 | 25 | 0 | 35 | 7 | 45 | 19 | 55 | 30 | 65 | 42 | 75 | 53 | 85 | 64 | 95 | 76 |
| 6 | 0 | 16 | 0 | 26 | 0 | 36 | 9 | 46 | 20 | 56 | 31 | 66 | 43 | 76 | 54 | 86 | 66 | 96 | $n$ |
| 7 | 0 | 17 | 0 | 27 | 0 | 37 | 10 | 47 | 21 | 57 | 33 | 67 | 44 | 7 | 55 | 87 | 67 | 97 | 78 |
| 8 | 0 | 18 | 0 | 28 | 0 | 38 | 11 | 48 | 22 | 58 | 34 | 68 | 45 | 78 | 56 | 88 | 68 | 98 | 79 |
| 9 | 0 | 19 | 0 | 29 | 1 | 39 | 12 |  |  | 59 | 35 | 69 | 40 | 70 | 68 | 89 | 69 | 90 | 80 |
| 10 | 0 | 20 | 0 | 30 | 2 | 40 | 13 |  |  | 60 | 30 | 70 | 47 | 80 | 69 | 90 | 70 | 100 | 160 |

Mean: School assessment marks > External exam marks
Standard deviation: School assessment marks = External exam marks
Result: All assessment marks decrease

## EXAMPLE 9 - BOTH $\mu$ AND $\sigma$ ARE DIFFERENT



## External Exam Marks

School Assessment Marks
The average of the school assessment marks is higher than the average exam marks.
The standard deviation of the school assessment marks is lower than the standard deviation of the exam marks.

## MODERATION

Most assessment marks decrease.


| Tables de moderation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NE8 | WEM | NEB | NEM | NEB | NEM | NEB | NEM |
| 1 | 0 | 11 | 0 | 21 | 0 | 31 | 0 | 41 | 0 | 51 | 19 | 61 | 49 | 71 | 61 | 81 | 82 | 91 | 100 |
| 2 | 0 | 12 | 0 | 22 | 0 | 32 | 0 | 42 | 1 | 52 | 22 |  |  | 72 | 63 | 82 | 84 | 92 | 100 |
| 3 | 0 | 13 | 0 | 23 | 0 | 33 | 0 | 43 | 3 | 53 | 24 | 63 | 44 | 73 | 65 | 83 | 86 | 93 | 100 |
| 4 | 0 | 14 | 0 | 24 | 0 | 34 | 0 | 44 | 5 | 54 | 26 | 64 | 46 |  |  | 84 | 88 | 94 | 100 |
| 5 | 0 | 15 | 0 | 25 | 0 | 35 | 0 | 45 | 7 | 55 | 28 | 65 | 48 | 75 | 69 | 85 | 90 | 95 | 100 |
| 6 | 0 | 16 | 0 | 26 | 0 | 36 | 0 | 46 | 9 | 56 | 30 | 66 | 51 | 76 | 71 | 86 | 92 | 96 | 100 |
| 7 | 0 | 17 | 0 | 27 | 0 | 37 | 0 | 47 | 11 | 57 | 32 | 67 | 53 | 77 | 73 | 87 | 94 | 97 | 100 |
| 8 | 0 | 18 | 0 | 20 | 0 | 38 | 0 |  | 13 | 58 | 34 | 68 | 55 | 78 | 75 | 88 | 96 | 98 | 100 |
| 0 | 0 | 19 | 0 | 29 | 0 | 39 | 0 | 49 | 15 | 59 | 36 | 69 | 57 | 79 | 77 | 89 | 98 | 90 | 100 |
| 10 | 0 | 20 | 0 | 30 | 0 | 40 | 0 |  |  | 60 | 38 | 70 | 59 | 80 | 79 | 90 | 100 | 100 | 100 |

Mean: School assessment marks > External exam marks
Standard deviation: School assessment marks < External exam marks
Result: Most assessment marks decrease

## EXAMPLE 10 - BOTH $\mu$ AND $\sigma$ ARE DIFFERENT



## External Exam Marks

School Assessment Marks
The average of the school assessment marks is lower than the average exam marks.
The standard deviation of the school assessment marks is higher than the standard deviation of the exam marks.

## MODERATION

All of the assessment marks increase but the lower marks increase more.

|  |  | Notes ecole brutes |  | Notes min. conv. |  | Pourcentage lors du calcul |  | Facteur |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Groupe | Nb. eleves | Moyenne | Ecart type | Moyenne | Eeart type | Ecole | Ministere | R | Q |
| 3 | 26 | 759,03 | 12,35 | 71,12 | 9,4 | 100 | 100 | 3,06 | 4,77 |


| Tables de moderation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NEB | NEM | NE8 | NEM | NEB | NEM | NEB | NEM | NEB | NEM |
| 1 | 27 | 11 | 35 | 21 | 42 | 31 | 50 | 41 | 57 | 51 | 65 | 61 | 73 | 71 | 80 | 81 | 88 | 91 | 95 |
| 2 | 28 | 12 | 35 | 22 | 43 | 32 | 51 | 42 | 58 | 52 | 66 | 62 | 73 | 72 | 81 | 82 | 89 | 92 | 96 |
| 3 | 28 | 13 | 36 | 23 | 44 | 33 | 51 | 43 | 59 | 53 | 66 | 63 | 74 | 73 | 82 | 83 | 89 | 93 | 97 |
| 4 | 29 | 14 | 37 | 24 | 44 | 34 | 52 | 44 | 60 | 54 | 67 | 64 | 75 | 74 | 82 | 84 | 90 | 94 | 98 |
| 5 | 30 | 15 | 38 | 25 | 45 | 35 | 53 | 45 | 60 | 55 | 68 | 65 | 76 | 75 | 83 | 85 | 91 | 95 | 98 |
| 6 | 31 | 16 | 38 | 26 | 46 | 36 | 54 | 46 | 61 | 56 | 69 | 68 | 76 | 76 | 84 | 86 | 92 | 96 | 99 |
| 7 | 31 | 17 | 39 | 27 | 47 | 37 | 54 | 47 | 62 | 57 | 70 | 67 | 77 | 77 | 85 | 87 | 92 | 97 | 100 |
| 8 | 32 | 18 | 40 | 28 | 47 | 38 | 55 | 48 | 63 |  | 70 | 68 | 78 | 78 | 86 | 88 | 93 | 98 | 100 |
| 9 | 33 | 19 | 41 | 29 | 48 | 39 | 56 | 49 | 63 | 59 | 71 | 69 | 79 | 79 | 86 | 89 | 94 | 99 | 100 |
| 10 | 34 | 20 | 41 | 30 | 49 | 40 | 57 | 50 | 64 |  |  | 70 | 79 | 80 | 87 | 90 | 05 | 100 | 100 |

Mean: School assessment marks < External exam marks
Standard deviation: School assessment marks > External exam marks
Result: All assessment marks increase

## SECTION 3: STRATEGIES TO MAXIMISE YOUR ATAR

## STRATEGIES TO MAXIMISE YOUR SUBJECT RANKINGS



The demands on VCE students rise and fall like a rollercoaster, and are quite inconsistent in terms of intensity across the year. When you add the fact that many students display poor study habits and leave most tasks to the last minute - you get the following stress/workload profile across Year 12:


Students who apply themselves in this manner spend more time on their studies, and obtain lower marks than otherwise possible.

If you're serious about maximising your VCE marks, you need to start putting strategies in place that will smooth out the intense peaks, and create an even, consistent, but lower level of stress and study across the year. You should therefore put aside as much time as possible over the holidays to:

- Revise concepts from previous terms.
- Compile thorough summary notes for the next test or exam.
- Read (or re-read) your assigned English texts.
and most importantly:
- Work through the next term's materials before it is are covered at school.

This will allow you to develop a strong grasp of the examinable concepts and applications when the same topics are covered at school. You will then find it easier to complete homework, increasing confidence levels, decreasing the time spent studying, while greatly improving your marks.

Furthermore, showing your peers that you've established a strong lead at such an early stage of the year sends a clear message, and gives you a strong psychological advantage in the VCE game.

We therefore recommend you consider attending a quality head start programs, such as our Summer School and Winter School.


- If your school's running half yearly exams, use the Term 1 school holidays to thoroughly revise, and then extend on the topics you covered in Term 1. Don't forget to work through as many past VCE examination questions as possible, as most assessments are designed to test a student's ability to apply their learnings, rather than simply stating facts.
- Do everything you can to make sure that your marks are in the top half of each course group at your school. Seek different perspectives (revision lectures are great for this), research widely, and read through copies of past student A/A+ assessments. This will help you appreciate what is required to secure the higher marks.

It's also worth considering using high achieving ex-students as tutors, especially those who had the same teachers that you currently do.

- Aim to continually improve your ranking. Immediately after each assessment, complete a PMI form (Plus, Minus, Interesting), and review your comments before starting on the next assessment task. Sample PMI forms can be found in Appendix 1.

- Never leave your assessment tasks to the last minute, and don't submit incomplete pieces, or hand them in late. The marks you'll lose are so easy to avoid, and are often the reason why students miss out on the ATAR they wanted or needed.
- Submit as many drafts to your teachers as possible. Keep in mind that the earlier you start your assessment tasks, the more drafts you'll be able to submit.
- Take advantage of quiet periods, such as school holidays. As the majority of students spend little or no time studying across the summer holidays, a great opportunity exists for you to get ahead, and to make a significant difference to your stress levels and study loads later in the year.
- The majority of students find that they're exhausted after their mid-year assessments exams, and engage in little or no study until well into Term 3. This creates a golden opportunity (not to mention your last chance) to get a huge edge over your state-wide peers. To maximise the benefits, start your exam preparations as early as possible and work at a consistent pace across the year, so you can avoid the exhaustion and apathy that's common during Term 3.
- Don't waste time writing notes.

Not only is the notes writing process time-consuming, it's also the most ineffective way to memorise information. Learn directly from your text books and invest the time saved for those activities that have the biggest impact on examination marks:

Note: Every student who attends our lectures receives a detailed set of notes that covers all relevant theory in easy to follow, student friendly language. Our notes also include worked examples with step-by-step instructions, as well as a huge selection of exam-style questions - everything you need to prepare for your exams!

- Study smarter, not harder.

There are many skills and techniques that have been proven to save time and improve marks, but are not known, or used, by the majority of students. So to help you through this challenging year (or two), we'll be sending you anything we believe will help to decrease stress levels, save you time, and of course, maximise your VCE marks.

## STRATEGIES TO MAXIMISE YOUR EXTERNAL EXAMINATION MARK

Your examination marks depend on how well you perform in comparison to the other students sitting that same exam. Your actual mark doesn't matter so much, you just need to outperform as many students as possible. As an example, if an examination was difficult and your $63 \%$ score was the best in the state, the standardisation process applied by VCAA will adjust your examination mark to $100 \%$.

Strategies you can use to maximise your examination marks will be covered in detail at another fundraising lecture called "Maximising Examination Marks." We'll also cover valuable strategies in our monthly e-books that you'll receive throughout the year.

## ONE PIECE OF ADVICE

If you've been getting high marks across the year, you can't assume that you'll perform as well, if not better in the VCE exams.

The marks you receive for a particular subject at school are based on how well you perform in comparison to the other students studying that same subject at your school.

Your Examination mark, however, depends on how well you perform in comparison to every other student studying that subject in VIC - of which there can be upwards of 47,000 students each year! The competition for grade score therefore increases significantly, making it harder to achieve the same marks that you received in your mid-year and/or trial exams.

## Therefore:

- Focus your efforts on outperforming as many students across the state as possible.
- Take advantage of every opportunity that could improve your examination marks.


## ANOTHER PIECE OF ADVICE

- Putting diplomacy aside, students who are lucky enough to be taught by VCE exam markers do have an advantage over their state-wide peers. VCE exam markers have access to important information that many classroom teachers aren't aware of, and which can make a significant difference to your examination marks.

Therefore:
Seek advice and instruction from official VCE exam markers eg. At TSFX exam revision lectures.

Read through the marking guidelines and notes from the marking centre, which are freely available on the VCAA website.

## STRATEGIES TO MAXIMISE YOUR SCHOOL'S EXTERNAL EXAMINATION MARISS

- Unless you hold the highest rank in a study, your school group can and will affect your VCE marks.

How your marks are affected depends on how the course group at your school performs in the VCE exams, relative to the internal assessments.

- To safeguard your VCE marks, your entire course group at school needs to perform to the highest possible standard in the VCE exams. Therefore, your whole class should work hard together to gain as many marks as possible in the final assessments.
- If there are two (or more) students tied on the top assessment mark, then the top moderated assessment mark will become equal to the average of the top two (or more) examination marks. A similar process is applied if multiple students are tied on the bottom assessment mark. This means that the students likely to obtain the highest or lowest examination results should work together to maximise their examination marks.
- As the spread of the moderated assessment marks is matched to the spread of the same students' examination marks, the moderation process will work in more students' favour when the difference between the highest and lowest examination marks is as small as possible. Students should therefore be helping the weaker students maximise their performance in the VCE exams. Some suggestions include:

Share your notes with the weaker students so they have more time to spend learning and working through examination-style questions.

Organise a collection at school, and use the monies raised to enrol the weaker students into quality VCE Exam Revision lectures, such as those being prepared and delivered by experienced VCE markers (eg. TSFX). Study skills programs and exam strategy lectures are also highly recommended.

When you are revising a topic, record the session, and then encourage the weaker students to listen to these recordings as often as they can.

Set up study groups and conduct revision classes for the students who are likely to struggle in the VCE exams.

- Although you may not need to use your marks for a particular course to calculate your ATAR, your peers may need to, so try your very best in every exam.

