HSC STUDY GUIDE

MAKE YOUR TALENT COUNT

TALENT 100
HSC Success.
Simplified.










HSC success simplified for years 7 – 12 and UMAT.

The most comprehensive guide in NSW complete with secrets for acing your HSC.

2018 ENROLMENTS NOW OPEN

Talent 100 is famous for delivering exceptional HSC results, the best teaching talent, course notes and online resources. However, while results are the essence of what we do, they don't tell the whole story.

Our learning centres provide support, mentorship and a home-away-from-home for students to master their studies.

We open doors to dream careers. We believe that our students have a huge capacity for achieving a positive impact on the world.

We make learning inspiring, productive and most of all, fun.

TALENT 100 STUDENTS TOP THE HSC YEAR AFTER YEAR

At Talent 100, we help you achieve such exceptional results, **it's almost unfair.**

Numbers don't lie. Our concise, straightforward and results-focussed programs consistently help our students gain the best ATARs and outperform their peers **4 to 1**.

"Ultimately, there are more important things in life than exams. Ironically, you might just need to do well in your exams in order to do them." Richard Chua, Founder Talent 100.

More than 19% of our students scored ATARs over 99*.

More than 35% of our students scored ATARs over 98*.

X18

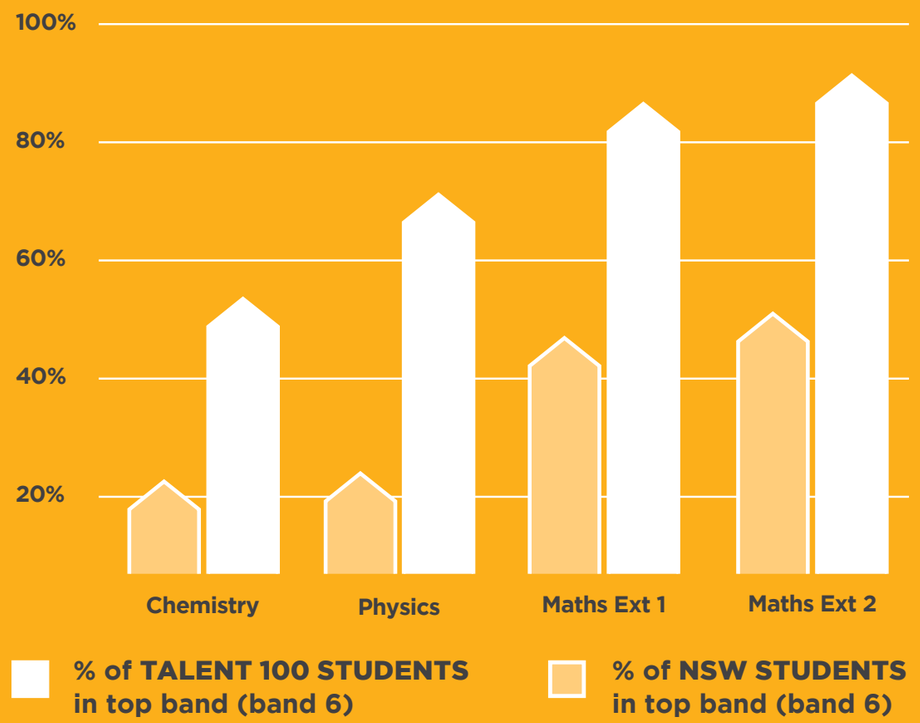
18 Talent 100 students scored a 99.95 ATAR.

1000s

We've helped thousands of students get into Australia's top universities, and ultimately, their dream careers.

*Results sourced from all surveyed students in 2016.

ACHIEVING YOUR BEST ATAR MEANS BIGGER POSSIBILITIES



When asked what motivated him to start a business in education, Richard commented:

"I think my success was built on the sacrifices that my parents made to give me the best education. This gave me opportunities that I did not think were possible, and part of what we are trying to do at Talent 100 is to provide that very same opportunity to our students."

RICHARD CHUA

- **99.95 ATAR**
- **Bachelor of Commerce (B.Com.), Finance & Actuarial Studies, Distinction & Bachelor of Laws (LLB)**
- **Associate Consultant at Bain & Company**
- **Named No.9 Smart Company's 2013 Hot 30 Under 30 Entrepreneurs Australia**
- **Business Operations and Strategy Associate at Google in Mountain View**
- **Graduated from Harvard Business School MBA (2014-2016)**

OUR FOUNDER

Dear students and parents.

The final years at high school can be tough. The HSC is ultra-competitive. To succeed, you have to strike a fine balance between studying hard and spending time doing the things you like; between enjoying the moment and sacrificing for a better future.

Ultimately, there are more important things in life than exams. Ironically, you might just need to do well in your exams in order to get there. At Talent 100, we understand the importance of scoring top ATARs. That's why we've developed excellent, personalised and results-focused courses to ensure your HSC Success. It's not about being the smartest kid in the room; **it's about understanding how the system works.**

If you have your mind on a particular degree, are looking to achieve top results, and are willing to work hard, we have a system that can develop your full potential. You will become part of a learning community that will support you every step of the way.

In this study guide, Talent 100 distils the collective wisdom of the top students of previous HSCs.

In the following pages, you'll find tips from those students with break downs on the techniques needed to score the top marks in Advanced English, Economics, Physics, Chemistry, Extension 1 & 2 Mathematics and UMAT.

We understand the importance of the final school year. That's why we're 100% committed to ensuring you get the highest ATAR. We believe your performance in high school is a stepping-stone to getting into the degree and, in due course, the profession you want.

What you do now can have an impact on the next 30 years of your life. Once you gain entry into University, the pressure is off. You have earned the right to navigate your way through tertiary studies at your own pace. The HSC is one of the most demanding times in life.

We'd love to help you make your talent count.

Best wishes and good luck.

We've got you covered

COURSE PROGRAMS FOR ALL YEARS

	Maths	English	Science	Economics	UMAT
7	✓	✓			
8	✓	✓			
9	✓	✓			
10	✓ YR11 BASICS	✓ YR11 BASICS	✓ YR11 BASICS		
11	✓ ADV. EXT. 1	✓	✓ PHYS CHEM BIO	✓	✓
12	✓ ADV. EXT. 1 EXT. 2	✓	✓ PHYS CHEM BIO	✓	✓

At Talent 100, we guarantee you:

- ✓ Small classes (max 15 students)
- ✓ Expert teachers
- ✓ Comprehensive theory booklets
- ✓ Exam style homework, marked every week
- ✓ Online learning resources
- ✓ Fun & relaxed learning environment
- ✓ Small group (max 4) tutorial support

ALL COURSES UPDATED FOR THE NEW 2018/19 HSC SYLLABUS

OUR MENTORS

We're the leaders in HSC Learning. We know exactly what it takes to score the best HSC results.

Our mentors have mastered the HSC, and have helped thousands of students succeed. Our team is both diverse and exceptional. Here, you'll find top performing undergraduates who themselves have aced the HSC (with most scoring ATARs above 99.70), teaching alongside professional teachers from Sydney's best schools, PhDs/ post-graduate academics, and leading textbook authors. That's experience you can trust during your HSC.

Nikhil Vasan
ATAR 99.95
7th in Physics (2010)
B. of Sci Adv/Med (USYD)

Terry Shang
ATAR 99.90
1st in Maths Ext 2 (2013)
B. of Sci, Adv. Maths (USYD)

Karen Gong
ATAR 99.95
1st in Maths Ext 1 (2015)
2nd in Maths Ext 2 (2015)

Hannah Lee
ATAR 99.80
1st in HSC Fin. Service Exam
B. of Actuarial Studies/ Commerce (UNSW)

Abhishek Goyal
ATAR 99.95
1st in Biology (2014)
2nd in Maths Ext 2 (2014)

Adam Kaplan
ATAR 99.95
1st in Economics (2015)
B. of Sci Adv/Med (USYD)

Craig Date
25 years experience
B. of Science, Dip. of Edu.
Masters of Edu. Admin.

Frank Liu
ATAR 99.95
10th in Chemistry (2011)
B. of Sci Adv/Med (USYD)

Andrew Chan
ATAR 99.95
3rd in Physics (2012)
B. of Sci Adv/Med (USYD)

Alice Cao
ATAR 99.95
6th in Biology (2015)
3rd in Agriculture (2015)

David Sadler
36 years experience
Head of Mathematics
Co-author of 4 Cambridge Maths Textbooks

Chris Skellern
ATAR 99.40
B. of Engineering (Honours)
B. of Sci (USYD)

Nanway Chen
ATAR 99.95
7th in IPT (2015)
B. of Mech. Eng. (UNSW)

Aolei Yu
ATAR 99.95
5th in Maths Ext 1 (2015)
B. of Sci Adv/Med (USYD)

Anita Chandanani
ATAR 99.70
B. of Medicine
Academic Achievement Award (AAA) for UNSW

Vincent Liang
ATAR 99.90
B. of Med.Studies (UNSW)
Premier's Award for All-round Excellence

Leo Li - 99.90 (2016)
David Kim - 99.90 (2016)
George Lin - 99.85 (2016)
Nikki Liang - 99.95 (2015)
Michael Liu - 99.95 (2015)
Anusan Ravichchandran - 99.95 (2015)
Keiran Pai - 99.90 (2015)

Eugene Heo - 99.85 (2015)
Sagarika Dey - 99.70 (2015)
Eric Taeyoung Son - 99.95 (2014)
Stephanie Wong - 99.90 (2014)
David Qiu - 99.90 (2014)
James Lin - 99.85 (2014)
Jordan Southi - 99.85 (2014)

David Wong - 99.85 (2014)
Dominic Mah - 99.85 (2013)
William Ma - 99.85 (2013)
Adrian Yiu - 99.95 (2012)
Daniel Altman - 99.95 (2012)
Alexander Peng - 99.95 (2011)
Anthony Liang - 99.95 (2011)

Christina Guo - 99.95 (2011)
Dennis Kim - 99.95 (2011)
Gemma Xu - 99.95 (2011)
Kendy Ding - 99.95 (2011)
Ruth Huo - 99.90 (2010)
Alice Joe - 99.85 (2010)

OUR LEARNING CENTRES

“You can’t make positive choices for the rest of your life without an environment that makes those choices easy, natural, and enjoyable.” Deepak Chopra

Our centres set the scene for 21st century learning. Acting as a third place between home and school, our centres become the centre of your learning journey. Students are always welcome to study at Talent 100, where they can find quiet zones, grab a bite at the student kitchen or study with friends.

- Our unique spaces, designed by award-winning designers, creates a learning experience like no other.
- Feel motivated to achieve your goals, and relaxed among your peers in a safe and inspirational learning environment.
- Book your own POD or space for quiet study time, or be challenged to succeed through the influence of your fellow, dedicated students.
- Success breeds success: surround yourself with the best and brightest students. It rubs off!
- Grab a coffee or tea before class in our student kitchen, or hang out with your friends in the common area.

"I am interested in the transformative power of technology and education to improve lives. I believe a strong education and a curiosity for learning are the best gifts children can receive - ones that will enable them to solve their own problems. This is particularly so with the HSC, as results often have a large bearing on the eventual career paths open to most students. Through Talent 100, I have been given the opportunity to help students achieve their best results and make their talent count."

Richard Chua, Founder Talent 100

CONTENTS

SECRETS OF SCALING

“Sometimes it falls upon a generation to be great. You can be that next generation. Let your greatness blossom.”

Mandela

THE SECRETS OF SCALING

After my HSC, a lot of people asked me if I was surprised about scoring an ATAR of 99.95.

The short is answer is No. In fact, I had been aiming for that ATAR since Year 11 when I made a blind bet with my father that I could beat my sister in the HSC. The stakes of that bet were a sports car (an r33 Skyline GTS-T) for University. My sister scored an ATAR of 99.9 and although I had previously thought I was capable of about 99, as soon as I heard my sister's mark, I knew I had to get an ATAR of 99.95.

In truth, I was not typically a good student. When I was in Year 6, I failed to get into North Sydney Boys High School, being placed on a waiting list. I started in Sydney Grammar in an ungraded class, and even in Year 12, I was in the B and C class for Maths and English.

A lot of people were surprised I scored an ATAR of 99.95.

However, I was not.

If there was a single thing that differentiated me from other students, it was my unique understanding of scaling and its implications.

If there was a single thing that differentiated me from other students, it was my unique understanding of scaling and its implications. The HSC is not a test of pure intelligence. Rather, it is a test of competitiveness, i.e. your ability to combine your natural talent with preparedness, hard work and ability to perform under pressure. It's a test of gamesmanship as much as anything else. Like any game, you can succeed much more if you know the rules.

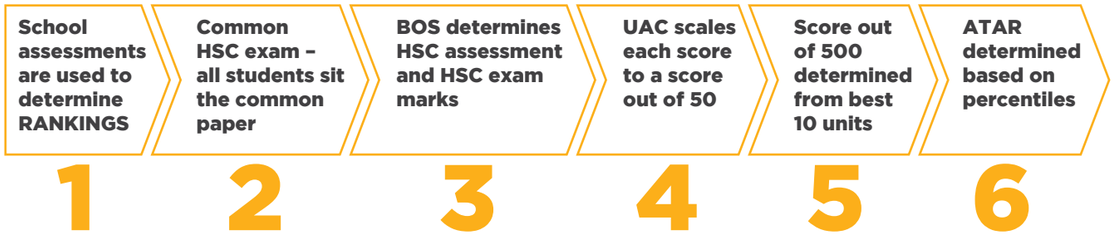
In this article, I'll examine the rules of the HSC and break down the scaling of each subject. Top HSC students (whether by research or their own good instincts) not only understand scaling, they actively use this as a tool to score the highest ATAR.

It's not just about working harder; it's about working smarter.

This was my secret; I hope it can help you too.

THE SECRETS OF SCALING

Most students know roughly that their HSC marks are calculated from 50% from their school assessments (a set of 5-6 assessment tasks including half-yearly and trial examinations) and 50% from a common HSC exam paper. To succeed in the HSC, it helps to know what comprises your ATAR. There are in fact 6 stages to calculating your ATAR that you should be familiar with:



RANK COUNTS FOR EVERYTHING

Most students fail to realise that in the HSC, your ranking in each subject is all-important. Your school assessment marks are only important insofar as they determine your ranking in the course: they have no absolute value.

The main benefit for going to a good school is that the distribution of marks is fairly high.

After the ranking of students within a school has been established, the BOS uses the school's performance in the common paper to calculate what marks should be given as HSC Assessment Marks. The HSC Assessment Mark differs from your internal school assessment mark in that it is moderated, or aligned with the school's performance in the common paper.

To take an example, let's suppose that you were coming 1st in your school assessment for Mathematics and scored 90% as a raw mark in the final HSC exam. If the highest mark from any person in your school in the HSC Common Exam was 99, then your first rank is effectively worth 99, which is what you will be given for your "HSC Assessment Mark". If the top score was only 95, then your first rank is worth 95.

Likewise, if you were ranked in the middle of the grade and the average of your school in the common paper was 85, the average HSC Assessment Mark is also worth 85. You can see here that your raw school marks do not have a direct bearing on your HSC Assessment Mark. Thus, the main benefit for going to a good school is that the distribution of marks is fairly high, so if you score well in your school assessments, you can be fairly certain that for at least half of your HSC Mark – the HSC Assessment Mark - you will score relatively well.

Since the common paper is taken under exactly the same conditions by all students, there is no need to re-adjust the marks to the school's common performance. Thus, supposing this one student, who topped his school, didn't do as well in the HSC Exam and only scored 90, he would receive the following scores:

Subject	HSC Assessment Mark	HSC Exam Mark
Mathematics Ext 1	99	90

NOT ALL SUBJECTS ARE CREATED EQUAL

Once your HSC Assessment and Exam Marks have been calculated, they get averaged and given to the UAC. The UAC scales each unit to a score out of 50. It is very important to realise that not all subjects are scaled equally.

Essentially, scaling is the process of standardising marks so that they can be compared across subjects. In scaling marks, the UAC will adjust the highest mark, median mark and standard deviation so that all subjects are directly comparable. You might be asking "Why is scaling needed?" The reason it is needed is that without scaling, it would be impossible to compare a 91 in Mathematics Extension 2 with a 91 in Legal Studies.

It's almost like converting currency. When people from China, USA and Europe come to Australia, how do we know how much their money is worth? First, we convert all their money into a single currency (the Aussie Dollar) that is universally accepted in Australia. In much the same way, the UAC converts all HSC marks into a single UAC score and aggregates the top 10 units including 2 units of English.

The most important piece of advice you will receive in your HSC year is that not all subjects are created equal. The subjects with a high level of mathematical content tend to scale the highest, or to continue our analogy, harder subjects have the highest "exchange rate".

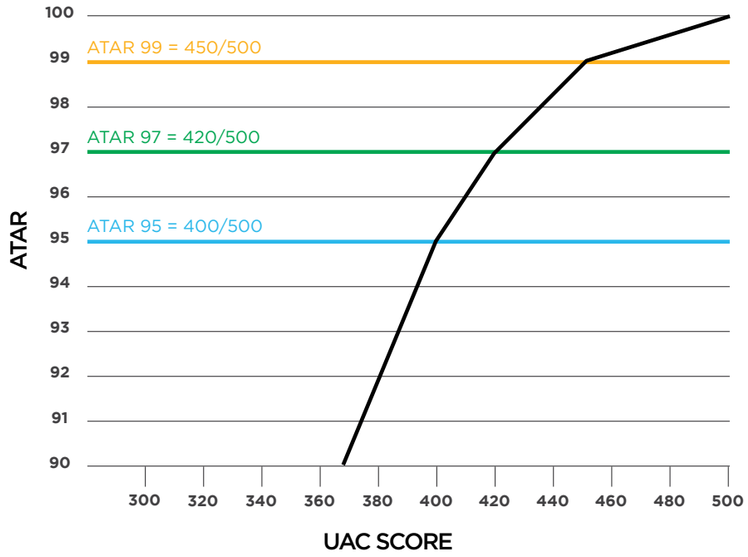
This has very important implications for your ATAR that I will discuss in greater detail.

UAC converts all HSC marks into a single UAC score and aggregates the top 10 units including at least 2 units of English.

ATAR vs. UAC

As shown on the graph below, your ATAR is actually determined from the aggregate UAC score out of 500 (which includes 2 compulsory units of English + 8 next best units). You should examine this graph carefully to determine what score out of 500 you need to score any ATAR. For instance, you can see quite clearly that if you were looking for an ATAR of 97, you would need an aggregate score of 420/500 or roughly 42/50 for each unit.

The ATAR is actually a rank not a mark. Once every student in the state has had their UAC score out of 500 calculated, the ATAR is determined on percentile ranks, rounded down to the nearest 0.05%. For instance, an ATAR of 99 means that you have performed better than 99% of the people in state. The highest ATAR you can achieve is 99.95.



ATAR est.	UAC Score
99.95	478.9
99.5	457.7
99	446.6
98	431.3
95	401.5
90	367.4
85	340

Source: Report on the Scaling of the NSW HSC

HOW CAN I MAXIMISE MY ATAR?

In order to maximise your ATAR, you should be acutely aware of how each of your subject scales and adjust your studies accordingly. Most students intuitively know that easier subjects tend to scale downwards, while harder subjects like Mathematics Extension 1 & 2 tend to scale up. In this section, I will show you how to translate any ATAR into a specific mark or rank in each of your individual subjects. We call this ATAR Targeting™.

These scaling graphs show you exactly what rank you need to score any ATAR. (For more comprehensive information of the scaling of any subject, go to www.talent-100.com.au/atar). When you examine the scaling graphs, some clear trends emerge.

The highest scaling subjects are clearly:

- **Maths Extension 1 & 2**
- **Physics and Chemistry**
- **Advanced English and higher**
- **Economics**

The following table summarises the scaling of each of the categories of subjects and provides some simple decision rules to help you decide what to take.

MATHS	ENGLISH	SCIENCE	HUMANITIES
Extension 1 and 2	**Advanced and Higher**	**Physics and Chemistry**	**Economics and Modern History**
Maths Extension 1 and 2 are by far, the highest scaling subjects in the HSC. Because of their high scaling, you should take the highest level of Mathematics that you are capable of. For instance, to be on target for an ATAR of 99+, you only need to be average in 4U Maths, whereas you would need to be in the top 3% of 2U Maths. This last proviso "that you are a capable of" is very important. There is no point doing a high scaling Maths course if you cannot do it. As a general rule, you should take the highest level of Maths that your school offers you. ***Anthony Morris's article, "Mastering Mathematics", explains exactly what level of Maths you should study and how to succeed in Maths, and gives you a question-by-question break down of the infamous Maths Ext 2 paper.***	**Where possible you should take at least Advanced English.** The Ext 1 & 2 English courses scale slightly higher than Advanced. However, the higher English Subjects as a group scale well above Standard English. For instance, students who score in the top 25% of Advanced English receive scaled scores higher than those students who score in the top 1% of Standard English. If you are genuinely passionate about English, you should consider English Extension 1 and 2. However, from a scaling perspective alone, Ext 1 and 2 only scale slightly better than Advanced English. ***Alex Borowsky's article "Excelling in English" explains what it takes to succeed in HSC English.***	**Physics and Chemistry are the highest scaling sciences and scale significantly better than Biology, mainly because they contain a significant portion of numerical calculations.** For instance, to score an ATAR of 95, you would need to score in the top 16% of Physics and 18% of Chemistry, but you would need to be in the top 8% of Biology. Students who have fair numeracy should definitely consider taking Physics and Chemistry. ***Alex Stoyanov's Article "Succeeding in the Sciences" gives a comprehensive break down of the question types in the Physics and Chemistry exams, and what it takes to succeed.***	Humanities are generally quite subjective, meaning that it is hard to ascertain what mark you will get until you do the final exam. This means that they also tend to scale lower. **Economics is the highest scaling humanity readily available, followed by Modern History which scales appreciably lower** Ancient History, Business Studies, Commerce and Legal Studies scale even lower. Aside from Economics, you must do exceptionally well in humanities to score equivalent marks to someone who is doing moderately well in Maths and Science. ***Richard Chua and Dilshan Seneviratna's Article "Getting the edge in Economics" provides insight into what it takes to excel in Economics.***

PREDICT YOUR ATAR

Students who understand scaling are rarely surprised when their ATAR comes out, and can often predict their ATAR very accurately well before they sit the HSC exams. The typical wisdom is to study your hardest for every subject, but if you look carefully at these scaling graphs, you can see that it's much better to "pick your battles".

For instance, if you were positioned in the top 10% in your school in Maths Ext 2, but only the top 50% in English, you would be better off, in terms of increasing your ATAR, by allocating time from Maths to English, as further improvement in Maths Ext 2 produces proportionately smaller gains in your ATAR.

Many students tend to study the subjects they like the most and neglect subjects they are weaker at. This is disastrous from an ATAR perspective because it leads to over-studying subjects in which you are already receiving relatively highly scaled marks and neglecting the very subject in which there is the greatest scope to boost your ATAR.

99

In order to score 99 ATAR, you need to be ranked in the top

- **~55%** of Maths Ext 2
- **~25%** of Maths Ext 1
- **~5%** of Physics, Chemistry, Adv. English and Economics

97

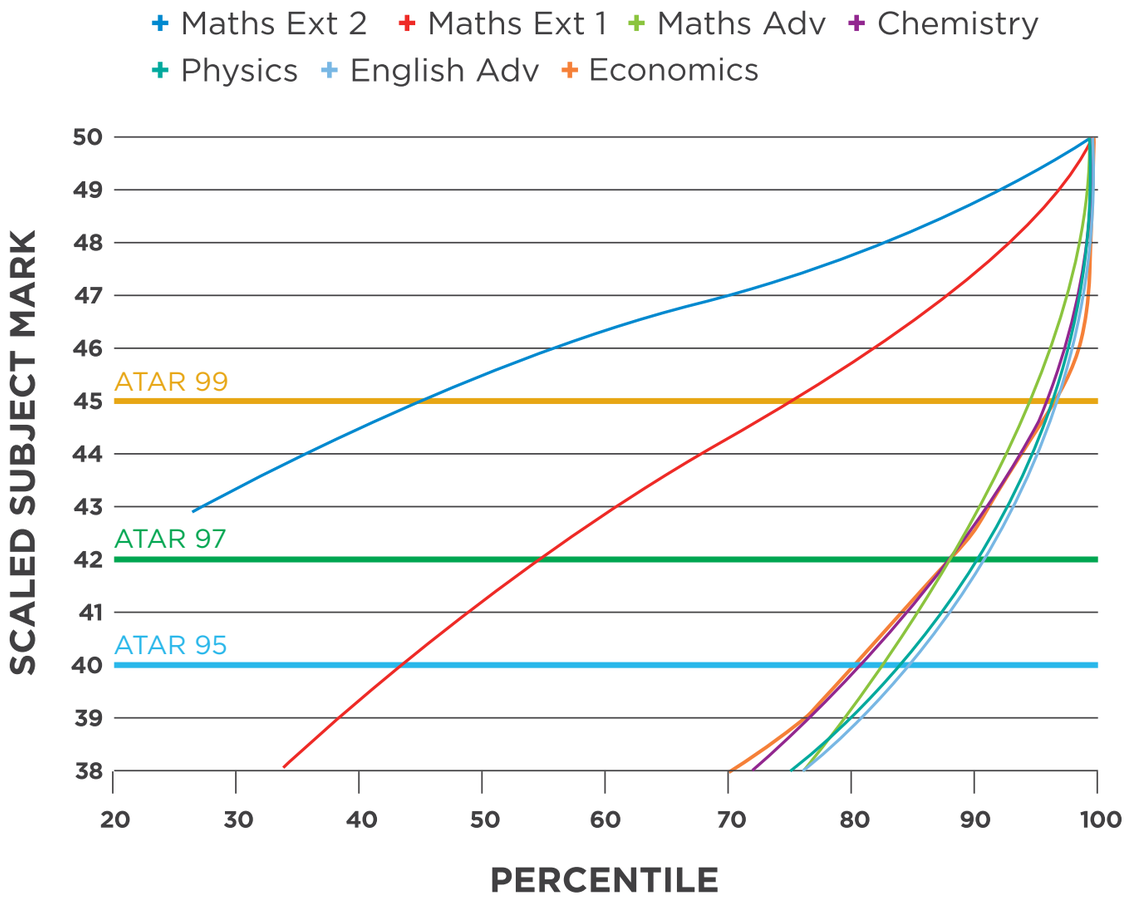
In order to score 97 ATAR, you need to be ranked in the top

- **~80%** of Maths Ext 2
- **~50%** of Maths Ext 1
- **10-12%** of Physics, Chemistry, Adv. English and Economics

95

In order to score 95 ATAR, you need to be ranked in the top

- **~90%** of Maths Ext 2
- **~60%** of Maths Ext 1
- **15-20%** of Physics, Chemistry, Adv. English and Economics



HOW SCALING HELPED ME

I used scaling strategically to score my maximum ATAR, and I have helped many students to do so too.

Understanding scaling can give you a very strong competitive advantage. For instance, at one stage I was coming 1st in the grade in Mathematics, but decided that it was taking up too much of my time. Because I knew how well Maths scaled, I tactically decided to re-allocate more time to English, History, and Economics (in which I knew I needed a top result to compensate for their less favourable scaling).

I knew I would drop several ranks in Maths, but that this would be better than losing ranks in English and the humanities. In fact, I dropped 15 places in the grade for Maths, but came 1st in History and Economics and 3rd in English. So, when my ATAR came out, I leapfrogged a lot of students who had traditionally outperformed me.

Study smarter, not harder.

Our concise, straightforward and results-focused approach has helped Talent 100 students outperform their peers 4 to 1.

In this article, we've shown you what standards of performance you need in each of your individual subjects in order to score a particular, overall ATAR. The next step is to achieve those standards of performance.

If you are in Year 11-12, and are studying either Mathematics, Physics, Chemistry, Economics or English, our courses can help you do just that.

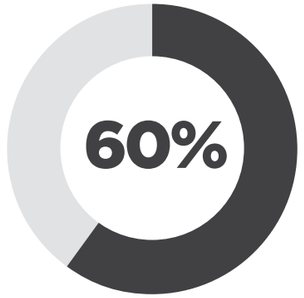
1 - We teach you every syllabus dot-point to a full marks standard.

Our aim is to help you understand the work, rather than memorise it. This will equip you with the knowledge to answer every question in an exam. Building a thorough understanding is what separates good students from average ones and that is the focus of our teaching.

2 - We also methodically perfect your examination technique so that you can maximise your performance in exams. Unfortunately, it is not just what you know in an exam that will score you good marks. It is what you can show the examiner, so it is important that you don't make careless mistakes, and that you manage your time effectively. That's why we have exam-style homework that conditions students to the rigour of examinations.

If you would like to know more information about scaling, you should attend **'The Secrets of the HSC' seminar,** or go to **www.talent-100.com.au/atar** for the most comprehensive ATAR calculator.

ATAR TARGETING™



TOP **60%** OF MATHS EXT 2 TO BE ON TRACK FOR AN ATAR OF 99+ `

Target and achieve any ATAR.

We will now show you four simple steps to help estimate – and maximise – your ATAR.

You should be able to see exactly which subjects are adding value (or ATAR points) so that you can allocate your time efficiently between subjects, or simply go to **www.talent-100.com.au/atar** to do it all online.

Step 1

Find the UAC score (out of 500) you need to score your desired ATAR

Use the UAC vs. ATAR graph on page 19 to determine the score out of 500 you need to score your desired ATAR. We have already done this for ATARs of 99, 97 and 95. Divide this score by 10, to find out what average UAC score you need in each subject. E.g. an ATAR of 99 requires ~450, so this means 45 for every subject

Step 2

Find the relative rank you need to achieve the required UAC score

Use the Percentile vs. Scaled Mark graph on page 23 to determine what rank you need to achieve the desired UAC Score. For instance, in order to get 45 in Maths Ext 2, you will need to be in the top 57%, but to get 45 in Physics, you need to be in the top 5%. You now use this as a benchmark for your performance.

Step 3

Find out what percentile or HSC mark your current performance will give you.

You now know what you need to score in each subject to achieve your desired ATAR in each subject. Hence, you need to determine what percentile you are in to see if you are above or below that benchmark. The most accurate way is to ask your school's Director of Studies what someone with your current rank scored last year. Otherwise, you may need to 'guesstimate' – for instance if you are average in 4U Maths, and your school is about the state average, then you would need to be in the top 50%. If your school is twice as good as the state, you may only need to be in the top 70%.

Step 4

Set the right goals and allocate your time accordingly

After step 3, you should know whether you are on target or not in each particular subject for your ATAR. By seeing whether you are 'over the bar' or 'under the bar', you can see where best to allocate your time in order to maximise your ATAR. For instance, suppose you are aiming for 99. If you are already in the top 20% for Maths Ext 2, but only in the top 50% for English, you should spend more time in English than Maths for the next assessment. Improving further in Maths provides decreasing marginal returns.

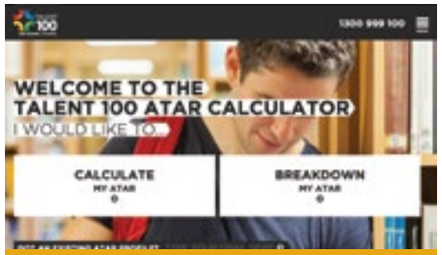
NSW'S MOST ACCURATE HSC ATAR CALCULATOR

Break down your ATAR profile by your dream ATAR, University or career.

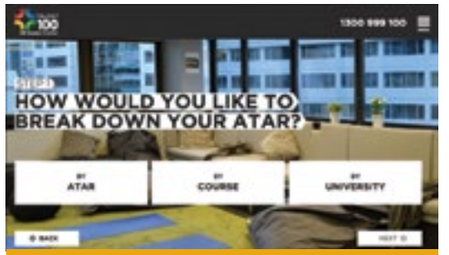
See recommendations based on your subject selection, marks and University courses chosen.

The Talent 100 ATAR profiler aggregates the last 6 years of University degree entrance criteria to provide the most accurate estimation possible.

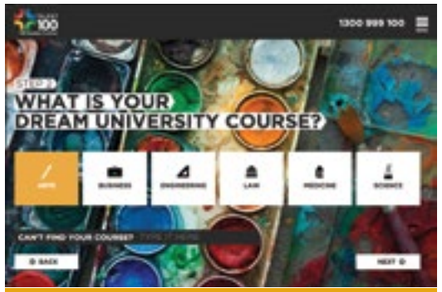
Create your own ATAR profile today and discover what marks you need to reach your dream goals via **talent-100.com.au/atar-calculator**



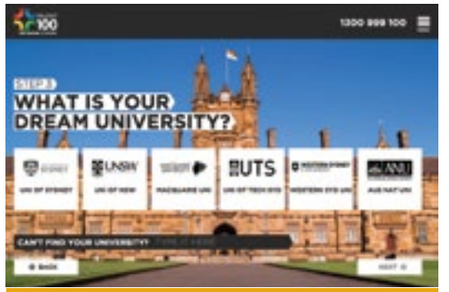
1. Select calculate or break down your ATAR Target



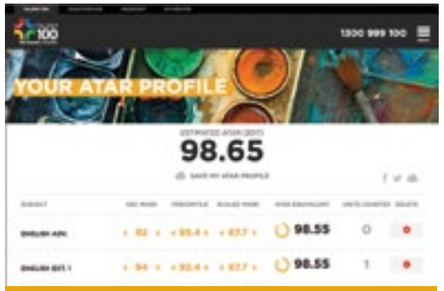
2. Select how you want to break down your ATAR



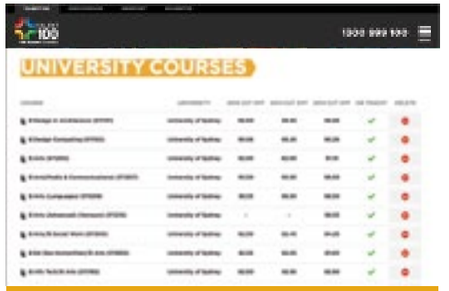
3. Select your dream course



4. Select your dream university



5. Select your subjects



6. Results: Your ATAR has been analysed and translated into subject goals

HEAR THE SUCCESS STORIES

DAVID KIM

School - Sydney Boys High School
ATAR - 99.90
Currently studying - B. Engineering Honours with Adv. Engineering (USYD)

Talent 100, for me, is a place where students are able to surround themselves with a supportive and motivated group of peers and mentors, all working together to bring the best out of everybody who comes into the centre. It is a pursuit that is deeply ingrained in the Talent culture, and is something that I have deeply appreciated during my experiences both as a student, and as a mentor.

Talent 100 provides the resources and support that offer all students a clear path to reach their academic potential. Students like myself were consistently encouraged to nurture our inherent strengths and capabilities within the structured environment of the centre, and were provided with a framework with which we could continue to work towards our own goals outside of it. The weekly materials and homework have been carefully coordinated for this purpose, enabling students to be adequately prepared to put their best foot forward come the HSC.

Beyond this, Talent 100 affords students the opportunity to develop meaningful relationships and support networks with like-minded individuals – something that is incredibly valuable during the arduous final years of high school.

MAXWELL DING

School - James Ruse Agricultural High School
ATAR - 99.40
Currently studying - B. Medicine / B. Surgery (WSU)

I started my journey with Talent 100 in Year 10, looking for a tutoring centre that could provide me with an integrative learning environment and a supportive community atmosphere. As a recipient of the Richard Chua Scholarship, I capitalised on the opportunity to work with some of the best mentors in the state to further my learning.

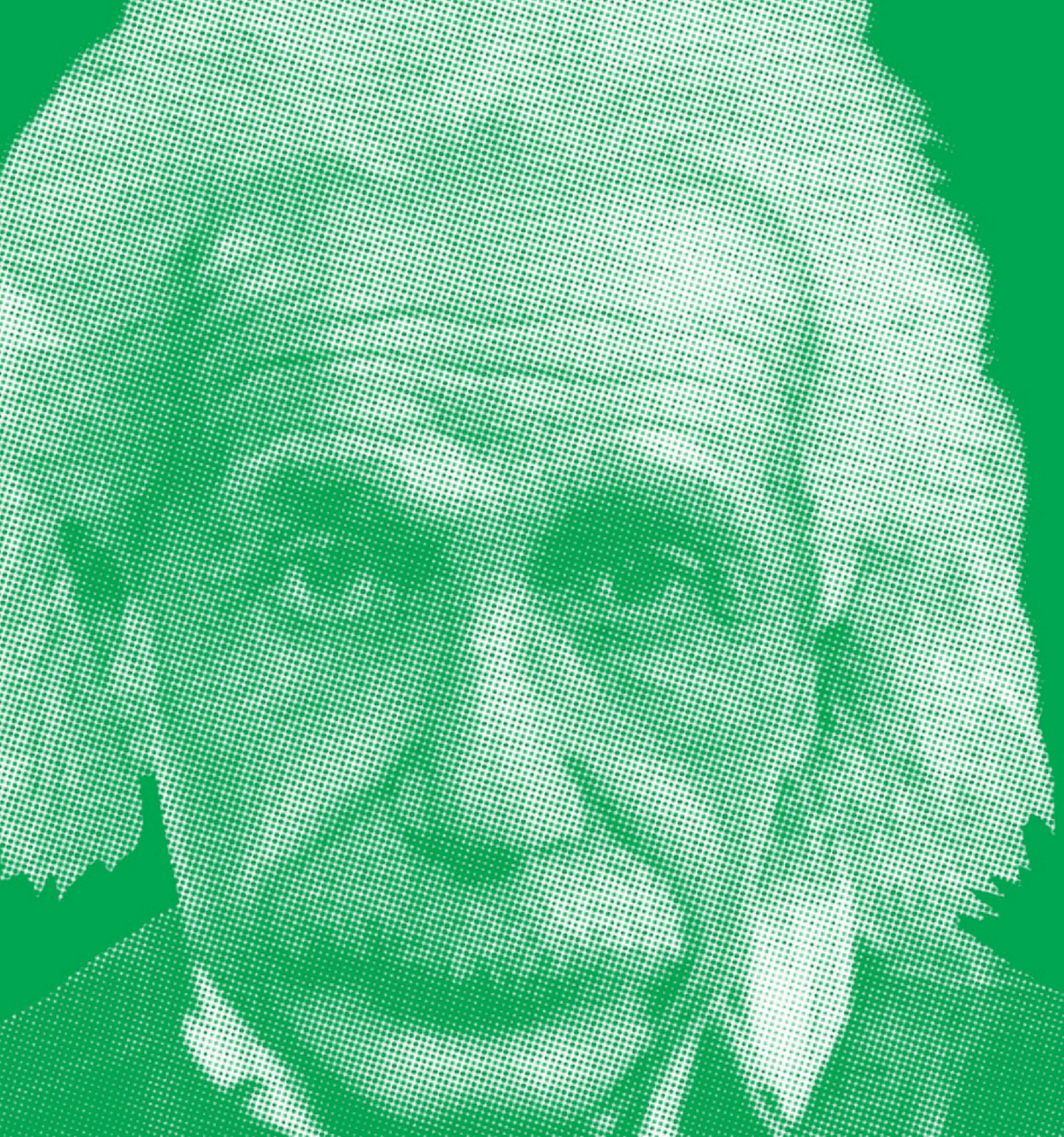
What was inspiring to me was the passion that radiated from all of my mentors - their method of teaching was refreshing and allowed me to understand some of the most challenging HSC concepts with ease. Combine this with comprehensive and interactive learning material and you have a winning formula for success in the HSC.

It was only natural then, to pass on my knowledge after I completed the HSC in 2016. After mastering the course and having a genuine interest in my subjects, I am heavily invested in helping my students make the most out of their time at Talent 100 and achieving their goals for the HSC.

With dedicated mentors, a large support network and industry-leading facilities, Talent 100 is the top option when it comes to success in the HSC.

ARE YOU GOING PLACES?

CREATE YOUR FUTURE



SUCCEEDING IN THE SCIENCES

“I never teach my pupils. I only attempt to provide the conditions to learn.”

Albert Einstein

SUCCEEDING IN THE SCIENCES

Know the difference between HSC and real science and what it takes to really do really well in HSC Science courses.

Nikhil came 7th in the state in HSC Physics with a mark of 97, and scored an ATAR of 99.95. He is a graduate of James Ruse Agricultural High School, and the University of Sydney where he completed a double degree (Advanced Science/Doctor of Medicine) on a scholarship for Outstanding Achievement. Nikhil currently works as a junior doctor at Westmead Hospital.

Succeeding in the HSC Sciences.

By Nikhil Vasan

When choosing subjects for the HSC at the end of Year 10, many students discount Mathematics and the Sciences immediately because they perceive these subjects as requiring a much higher level of academic ability than what they are capable of. This is a self-limiting belief. The vast majority of students are capable of succeeding in these subjects, in the HSC and beyond, but the key is understanding ***how***.

What does the HSC want?

To succeed in HSC sciences, it is important to understand the purpose and expectations of the HSC. The Board of Studies does not need high school students to be experts in General Relativity, nor be able to synthesise complex organic compounds in catalytic reactions. Rather, the BOS wants you to be able to understand and communicate information, interpret and manipulate data, and critically analyse information presented to you. Why is this important to know? Because these skills are not specific to science. These are the skills required for you to succeed in any field you choose to go into. Choosing a subject like Physics simply makes physics-related concepts the vehicle through which you demonstrate your mastery of these skills. The concepts themselves are reasonable for most students to grasp, but getting the top marks requires something very different. This is why it is very common that the state's top performers in HSC sciences may not end up pursuing careers in science, and those that do may have underperformed in their HSC exams.

So what is the key to doing well in the sciences?

Understanding the fundamental concepts is the key starting point but the real differentiator is exam technique.

Essentially, having good exam technique refers to how well you can communicate a concise response which directly addresses the key concerns of the question. This is an art – but it can be learnt and improved.

SUCCEEDING IN THE SCIENCES

The Board of Studies wants you to be able to understand and communicate information, interpret and manipulate data, and critically analyse information presented to you. These skills are not specific to science. They are required for you to succeed in any field. Choosing a science subject simply makes it the vehicle through which you demonstrate your mastery of these skills.

Here are my five tips to help you ace HSC sciences.

1. Understand the Syllabus

The syllabus is the medium through which you demonstrate your comprehension and communication skills. Although it may look daunting, the syllabus is relatively basic compared to how vast the realm of science really is. This means that with effective teaching and studying, the syllabus can be conquered. Whilst exam technique may be the key differentiator in the HSC, all learning starts with the syllabus. Put it this way, if you know the syllabus well, but have very poor exam technique, i.e. you know the concepts but can't really explain them well, you're likely to get 50-60% in the exam. If you don't know the syllabus at all, you aren't going to get any marks no matter how good your exam technique is.

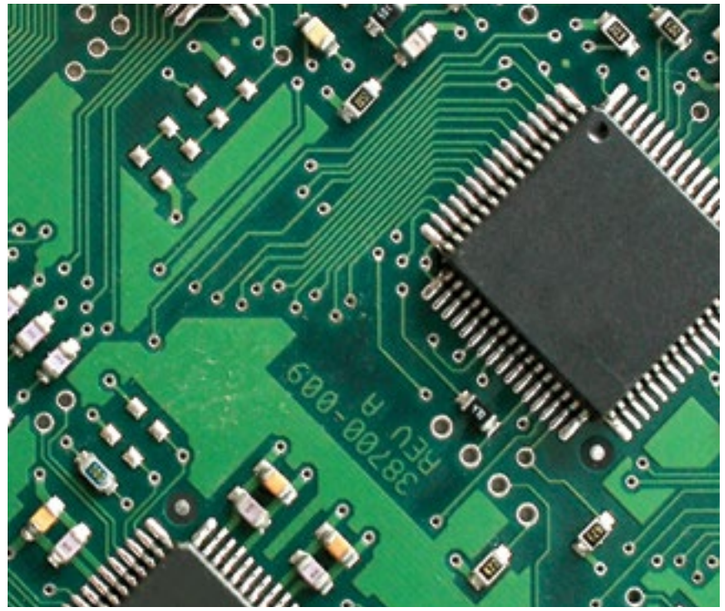
So what's the best way to learn the syllabus?

Firstly, it's about understanding the structure of the syllabus. The science courses consist of four topics in the HSC, each divided into roughly 4 sub-topics. Each sub-topic will have a set of dot points, corresponding to some theoretical points you need to understand, and some research and practical components that you may be asked to draw upon in the exam. It prescribes the outer limits of what you need to know, and hence study.

So don't worry about knowing optical birefringences of crystals, nor the synthesis of fluoroantimonic superacid, because that's not in the syllabus. Studying efficiently involves structuring your study around the syllabus.

Secondly, it's about designing your study. Each subtopic will have some points which cover the basics, e.g. how magnets interact, or how a cell is structured. You must start with these. Don't move on to the other dot points until you are certain you have a thorough understanding of the basics. **Science is like a pyramid, you need to have a strong foundation first before you attack the more complex concepts that lie on top.** You will find that when you invest that bit of extra time in understanding the fundamentals of a topic, the rest will flow much more easily.

Finally, the syllabus is a great framework for revision. Towards the end of your HSC year, as you are preparing for the final exams, it is important to perform a full audit of your course knowledge. A great way to do this is to dissect every dot point in the syllabus, and type up succinct summaries of your understanding of these dot points, and answer the common question types that relate to them.



At Talent 100, we've brought together some of the best educators and communicators in the state to do just that. Our meticulously crafted notes cover the syllabus accessibly and thoroughly.

2. Do past papers.

Once you understand the theory, repetition is the key to success. For this reason, past or sample papers are one of the best ways to develop exam technique because they force you to synthesize your knowledge into a set of cohesive and logical answers. This is no easy task. Past papers should only be attempted after you have a solid understanding of the relevant syllabus dot points; you need to know what you are communicating, before you practice how to communicate it.

SUCCEEDING IN THE SCIENCES

Doing past papers helps you sharpen your exam technique in three ways:

- **Forces you to synthesise your knowledge and respond to the question.** An annoying but important, part of answering HSC style questions is to pitch your answer according to the key verbs, e.g. Discuss, Evaluate, Explain. These have specific meanings in the HSC. For example, "discuss" requires you to provide arguments for and against, whilst "evaluate" and "assess" also require you to provide a judgement. Doing past papers forces you to shape your knowledge to what the examiner is asking.

- **Exposes you to the variety of probable question types.** If you've encountered the most common question types in your studies, you're less likely to get thrown off during your exam. There are 'common' question types as well as 'left-field' question types. By doing past papers, you should be able to master all of these common question types, and you may even see enough of the unusual or unique types that you can answer them much more proficiently than those who are seeing it for the first time.

- **Timed practice will help you deal with the stress of exams.** There is no better form of practice than doing a past paper under exam timing and conditions. This is the final stage in preparing for your exam. It not only tests your knowledge, but also your time management abilities, which can also be a key differentiator in HSC exams.

Doing past papers sharpens your exam technique, especially if you sit them under exam conditions. By doing this, you can turn a 3 or 4 out of 5 into full marks. That's ultimately what discriminates top performers in the HSC

3. Predict the marking criteria.

When your answers are marked, they are checked off against pre-determined criteria. By pre-empting that criteria, you can write much more concise answers that are likely to get full marks. For e.g., a question about electromagnetic braking in trains may be worth 5 marks. The marking guideline may stipulate that one mark is given for: a definition, a diagram, the use of Faraday's Law, the use of Lenz's Law and an advantage of this method of braking.

Although each school and the Board itself, may have slightly different marking guidelines, by pre-empting what those guidelines are, you can write better answers that maximise your chance of scoring full marks.

How you approach each question is very important. First, read the stem of the question very carefully. Look for and underline key words. Before writing your response, brainstorm how you are going to get each and every mark. This will be heavily influenced by the question verb. For example, in an 'assess' question, you know your marks will come from positives and negatives, as well as a dedicated mark for a judgment. For an 'explain' question, you know that relevant fundamental phenomena and a logical progression of your answer will draw marks. Do not start writing your answer until you have a fairly strong idea of what you need to include in your answer to get every mark, how these points fit together, and in what order you will discuss them to give your answer the best flow. If you just start writing a rapid-fire response after reading the question, you may find that you get lost in your writing, you forget to add points, or your answer loses a logical flow, which makes it harder for the examiner to interpret.

To become better at predicting marking criteria, you need exposure. Again, past papers - particularly if they have marking guides - are a great way to do this. You can start to gauge how examiners allocate marks. If you encounter a similar question type in the exam, you'll have a good idea of what you need to say. Pre-empting marking criteria is an inexact science, but with enough exposure, you'll start to get a good sense of how to pitch and structure your answer.

At Talent 100, the in-class questions, homework and exam preparation are all accompanied by well-reasoned marking criteria and sample answers, so by the end of the teaching year you will be well equipped to hit the 'full mark bullseye' in your exam questions.

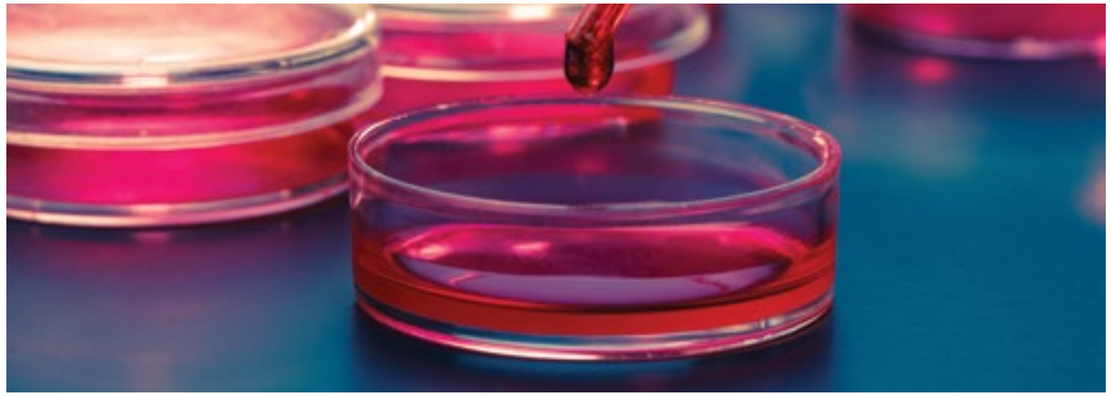
4. Teach others.

SODOTO is a common learning adage in the medical community, but the principles are useful in any type of learning. It stands for 'see one, do one, teach one'. Teaching is the best way of learning, and there is no substitute for it. By gauging how well your 'student' understands what you've explained, you can see how clearly you communicate the logical flow of your ideas, which is exactly what an exam is testing you on.

So how do you apply SODOTO?

The first step is obvious. Turn up to class, listen to your teachers explaining a concept to you for the first time. This is the 'seeing', the first exposure, or the laying of the cornerstone in the scientific pyramid. By the nature of memory, it is highly unlikely you will fully understand or retain a concept on first exposure. At the very least, you can pick up on key words and related laws that will allow you to research the concept later on. This is why it is crucial to apply yourself in class, and why the quality of your teachers is of utmost importance. If step one doesn't work out, the next two steps are compromised.

Step two involves you doing the hard yards at home. Go on the



SUCCEEDING IN THE SCIENCES

internet, open your textbook, and read up on the concept again. Try answering some practice questions and homework to get used to applying the ideas, and to get feedback on your understanding. As mentioned earlier, learn from the bottom up. Start with the most fundamental aspect of the concept, and slowly work your way up to the tip of the pyramid. You may need to fall back on step one a few times here, but by going back to your teachers or textbooks you will fine tune your understanding. At Talent 100, this is what your tutors are for – they are dedicated to answering your specific questions in a personalized way to fill in the missing stones in the pyramid.

Once your pyramid is standing, you now need to test its strength, and this is step three. Try explaining the concept to someone else. This could be your best friend, someone in a study group, a peer who may be falling behind in the subject, or simply a member of your family. Test how coherently your logic flows. See if you can answer questions thrown at you, by deepening one part of your explanation or by drawing on a related aspect of the syllabus. You will soon find out which areas you don't know too well, or if you need to work on how you convey your ideas, and this is where you fall back to step two again. Eventually, your ability to verbally communicate the concept will be so strong, that writing it down in an exam will be second nature.

5. Attitude is everything.

This may very well be the most important point, and the one which is most pertinent to your life after the HSC. Get used to embracing failure. Get used to saying "I don't know", and more than that, start enjoying saying it. Don't be scared of having a go, or of being wrong. Failure is potentially the best motivator, and the most objective way of being shown what you need to work on.

Succeeding in the HSC requires tenacity. When you are studying and encounter a dot point you don't fully understand, it is tempting to skip over it and tell

Get used to saying "I don't know", and more than that, start enjoying saying it.

yourself "I kind of get this, I should be fine". Don't. Who is this helping? It's helping every other person that is competing with you. Don't be complacent. Follow up on your mistakes and things you don't know in order to understand them better. Everyone has shortcomings, they don't disappear simply because you ignore them.

During your HSC, you are bound to encounter failure at some point. A common demotivating thought is "how can I recover from such a huge setback?" Although it may be difficult, avoid self-pity. Pitying yourself and doing less than you were before are not methods of recovery. You cannot control what has happened in the past, but you can control what you do from this point forward. Reflect on why you got a question wrong, or why you did poorly in an exam, identify the causative factors, and try to fix them in the lead up to your next try. I think this is one of the reasons why it is also important to have some extra-curricular activities and hobbies during Year 12, as they are great ways to divert your negative energy when it starts creeping up on you, allowing you to refresh your mind and preventing you from burning out.

The great stoic philosopher Epictetus is quoted as saying "it is not what happens to you, but how you react to it that matters." There may be no truer words than these ever uttered. Approach every aspect of your life, including learning and exams, with enthusiasm, or at least curiosity. Accept things that are outside your control, and capitalise on things that are within your control. Try to remember every little success, and try to view all the bad things as objectively and constructively as possible, no matter how large. Don't define yourself by the HSC, keep up your social and extra-curricular activities, otherwise you will find it difficult to reset your thoughts and focus.

And above all, always have something to look forward to.

The 2019 HSC

From 2018 onwards, the HSC science syllabuses will change after a long 18 years with relatively little modification. Here are the top four changes:

1. Concepts, not context: The new syllabus sees a return to a more rigorous teaching of science, focusing more on the core scientific concepts, rather than the historical context of the previous syllabus. In the past, a focus on the social context of science ironically meant that the top students were actually be distinguished by their ability to recall historical facts, rather than on their understanding of underlying sciences.

Consequently, there will be a stronger focus on learning scientific principles, theories and laws, with a greater emphasis on the mathematical content, particularly for Physics and Chemistry. This is actually a good thing for most students: if you understand the concepts and formulae properly, it will be easier to score top marks.

2. Depth Studies: A new component of the HSC are depth studies, which require students to investigate and research concepts

SUCCEEDING IN THE SCIENCES

in greater detail. Up to 15 hours of class time plus any additional time for independent study is provisioned for these depth studies, which will be mandatory for Year 11 and 12.

3. A greater focus on skills and understanding through practicals: Although the syllabus does not prescribe any particular practical as mandatory, there will be more practical investigations and second hand data interpretations. Students are required to understand the concepts that the investigations demonstrate, rather than simply focus on methodology.

4. Removal of Option topics: Previously, students (or schools) were free to choose one of four option topics in the final term. The new syllabus does away with this; all students will study the same course for the entirety of their final year.

Conclusion

Choosing a science in your HSC year will is a rewarding experience. It's more than understanding concepts in physics, chemistry or biology; it is about the pursuit of knowledge and the discovery of the unknown. Studying a science subject is an effective way to develop a range of skills that will aid whatever career you choose. It develops effective communication, lateral thinking, critical appraisal, and research methods. And of course, if that isn't enough, remember that the sciences are amongst the highest scaling subjects and should positively impact your ATAR.

I hope this has convinced you that the sciences are conquerable subjects, and at Talent 100, we would love to be a part of your learning journey.

BREAKING DOWN THE NEW 2019 HSC PHYSICS & CHEMISTRY EXAMS

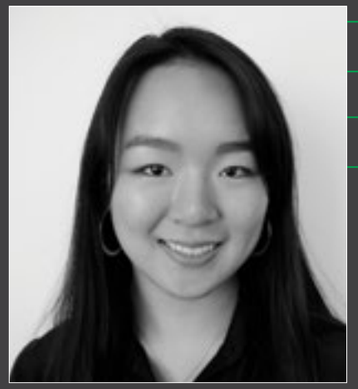
Question Type	Calculations	Practicals
What it involves	A Science exam will invariably involve some level of calculations. For example, calculate the final velocity of a ball dropped from a height of 10m under constant acceleration. The key is to hone your algebra skills in order to calculate the answer flawlessly, and even when you don't know how to, 'scab' as many marks as possible. You should really attempt to memorise all the formulae that are needed. Better students will take the further step of 'understanding' the formulae and develop a mistake-free process of performing calculations.	Above-average students have some idea of what goes on during these labs, but do not commit themselves to memorising the scientific method (Aim, Method, Results, Discussion, Conclusion). Top students understand how theory is applied in practicals and even know how to analyse their results in terms of reliability, accuracy and validity. Physics and Chemistry are experimental sciences, and as such, it is important that you are able to construct and understand experimental methods and discussion.
Level of Achievement		

In 2019, there is less of a focus on memorisation...

Concepts & Explanations	Curve Balls
Likewise, you should all know that a Science exam is going to ask you to explain, describe or apply some key theory. For instance, explain the difference between covalent and ionic bonding. Most students know the general principles, but better students will understand the finer distinctions, exceptions, and how to explain concepts clearly and concisely.	Curve-ball questions are designed to distinguish between those truly gifted (or prepared) students and those who are rote-learners. The best students understand that examiners are asking you for application of reasoning to concisely relate the theory to the demands of the question. You need a strong understanding of concepts and good writing skills to answer these questions.
	understanding of concept

...and more on understanding the concepts.

MEET THE MENTOR



KAREN WANG

School - Baulkham Hills High School
ATAR - 99.30
University Course - USYD Bachelor of Commerce/Bachelor of Laws

HSC Marks
- Advanced English 93
- Extension English 46
- Mathematics 98
- Economics 94
- Chemistry 93
- Legal Studies 93

Rank in School
- Advanced English 56th
- Extension English 31st
- Mathematics 6th
- Economics 1st
- Chemistry 16th
- Legal Studies 3rd

Textbook of choice
(For Chemistry) – Conquering Chemistry by Roland Smith.

Total hours of study per week
25 hours

Academic achievement
- 2015: Merit Awards for Academic Achievement in Chemistry, Economics, Legal Studies and Mathematics.
- 2015: Principal's Letter of Commendation
- 2015: Premier's Award for All-round Excellence
- 2015: First Place in Economics
- 2017: USYD First Place in Course – International Business Strategy

Favourite past time
Dancing

QUESTIONS

What were your secrets of success in Science?

The key to success in science subjects lies in a student's ability to truly understand the concepts, followed by rigorous practice in applying this understanding to exam-style problems. The HSC is very much a test of endurance. This means that from the beginning, students should start building and systematically testing their understanding, for example, by regularly completing their homework. By doing so, the final trials and HSC exams will prove to be much easier to prepare for as students will have internalised the content, which will improve their memory, and ability to formulate logical responses!

How did you deal with stress and challenges?

The first step is to accept that stress and challenges are a normal part of every student's academic career. This helps me frame my problems more optimistically, such that I will be motivated to identify what the causes of my stress and challenges are, and to then develop a series of steps that I can take to address these. Additionally, it is very satisfying to write all this down and tick off each of your goals as you meet them! However, sometimes the causes of your stress and challenges are not very clear. At times like this, I like to turn to the people around me – confide in them, gain inspiration from them, and collaborate with them.

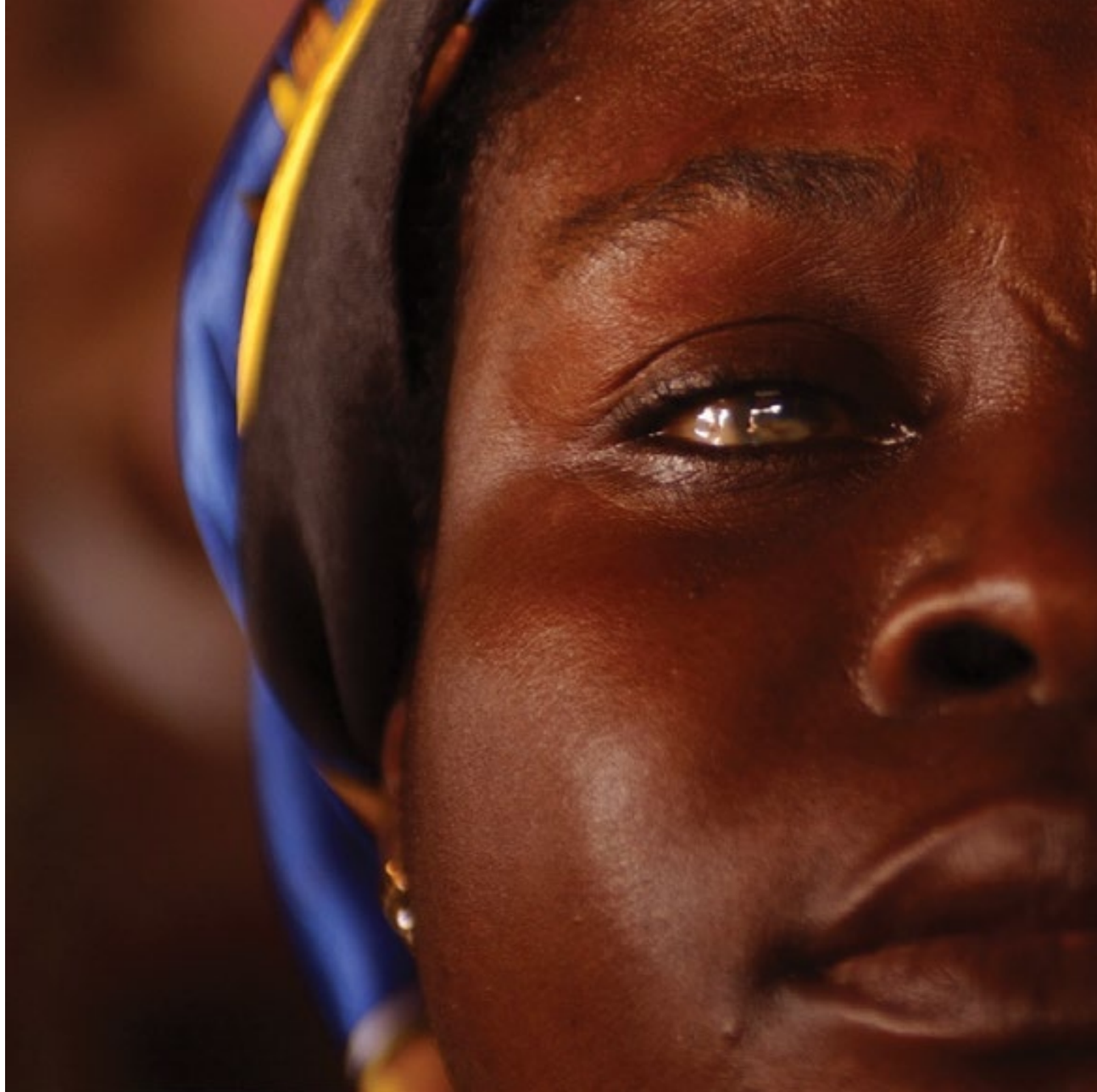
What is your advice for HSC students?

I always tell my students that even people who attain excellent results in the HSC do not necessarily have a record of stellar results throughout the HSC year. Underperforming in a singular exam is not the end of the world. The most important thing is to learn from that experience and really push yourself to overcome any setbacks. Make use of your teachers and Mentors who are always eager to help you!

Why do you like teaching at Talent 100?

The best thing about teaching at Talent 100 is definitely the high calibre of students who congregate at our learning centres. Our students' overall eagerness and commitment to learning is much higher than that of the average student, and this has always been my biggest motivation for teaching. Combined with the fun atmosphere and comprehensive class notes, Talent 100 provides students with a healthy learning environment wherein I have been able to witness significant improvement, and excellent results.

THE FIRST PERSON THEY WILL SEE IS YOU



MASTERING MATHEMATICS

“Truth is ever to be found in simplicity, and not in the multiplicity and confusion of things.”

Is. Newton

MASTERING MATHEMATICS

Extension 1 and 2 Mathematics are *the* highest scaling subjects in the HSC. Being just average in Maths Extension courses can boost your ATAR significantly.

In this article, David Sadler (co-author of the Cambridge Mathematics textbooks) provides some tips and strategies for succeeding in the demanding NSW HSC Mathematics courses – 2U Advanced, Extension 1 and Extension 2.

In this article, I examine the main issues facing HSC students studying mathematics. Like English, almost all students study some level of mathematics.

The most common questions confronting students are:

- What level of maths should I study and how do each of the different subjects scale?
- How can I improve my marks and eliminate careless mistakes?
- How difficult is Extension 2 Mathematics and what strategies can I use to tackle the course?

We address these questions in this article.

What level of Mathematics should I take?

One of the first decisions confronting HSC students is

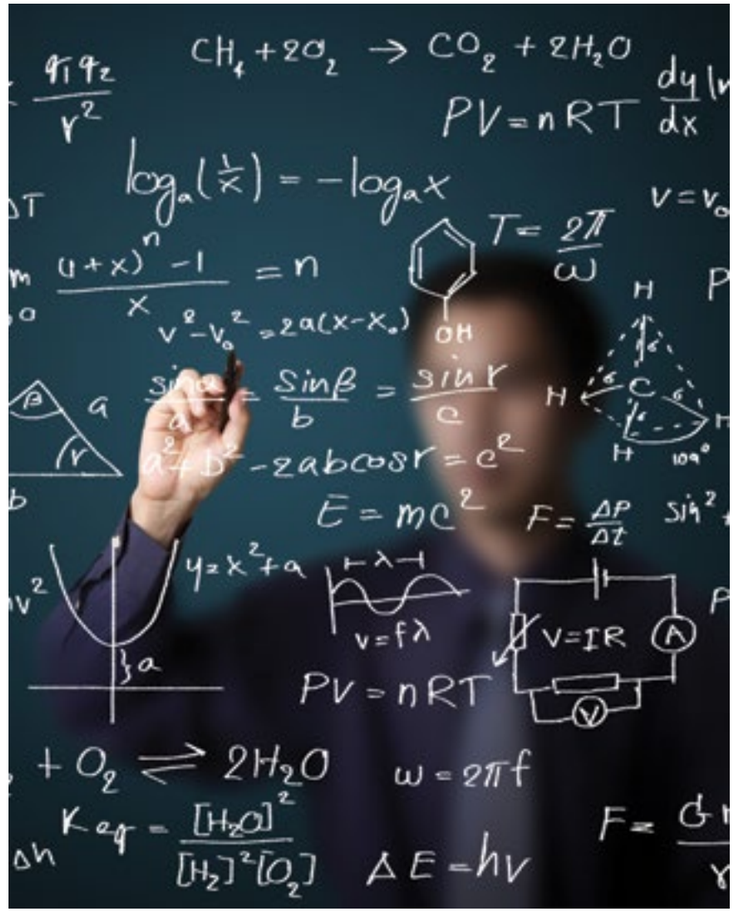
"How many units of Maths should I study?".

In deciding, you need to consider your own ability in mathematics, which subjects you are passionate about and the relative scaling of each subject.

The Mathematics Extension courses are the highest scaling subjects in the HSC, and this has significant implications for your ATAR. For instance, as Richard's article makes clear, if you wanted to score an ATAR of 99, you would only need to be about average in Maths Ext 2 and in the top quarter of Maths Ext 1. In contrast, you would need to be in the top 3% in 2U Maths to achieve an equivalent mark. What is even more astounding is that if you wanted to score over 97, you would only need to be in the top 80% of the Maths Ext 2 course, and 50% of the Maths Ext 1 Course, that is, you could be below average and still be on track for a top ATAR.

It is therefore clear that Maths Ext 1 and 2 are a must if you are good at maths. Even if you are average in the Preliminary Mathematics Extension course, Extension 2 is still worth considering simply because it scales very well.

Even if you are average in the Preliminary Mathematics Extension course, Extension 2 is still worth considering simply because it scales so highly.



HOW CAN I IMPROVE MY MARKS AND ELIMINATE CARELESS MISTAKES?

While there is undoubtedly a certain amount of natural acumen involved in mathematics, with the correct technique you can dramatically increase your marks. Here are three of the things that have worked for most students:

1. Understand your formulae

One of the most important (but also most tedious) parts of preparation for a mathematics exam is being familiar with all the formulae in the course. 'Knowing' is more than just memorising. You need to understand the formulae, know when and where to apply them, and use the formulae without making mistakes. You should build familiarity with your formulae through repeated practice.

Practice gives meaning to your formulae and will make it clear when and how to apply a formula to a given situation.

Very soon, doing questions will become second nature. However, memorisation without context and practice will not help because you won't know what formulae to use and when to use them. For this reason, at Talent 100, every time we teach a formula we apply it to a variety of HSC style questions so students know exactly what formula to use and how to apply them.

It is also useful to remember how a formula is derived. When you can see the logic behind a formula, it will be much easier to understand and to remember. Take for example, differentiation from first principles. Even if you forget the formula, you can quickly derive it once you realise it is the gradient of the line joining any point on a curve to another point that is a very small distance "h" away from it. This formula gives the gradient of the tangent, which is the limiting position of the line described above as the two points become progressively closer, that is, as $h \to 0$.

$$\frac{dy}{dx} = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$$

This same principle for remembering formulae can, and should be, applied to as many formulae in the courses as possible. You will notice that you get a much better understanding of the underlying maths and are able to memorise your formulae quickly and effectively.

2. Set your work out properly

One of the most important ways to improve your marks in mathematics is to set out your work properly. Just as an Economics or English essay requires you to structure your paragraphs in clear and logical fashion, structuring your working clearly is important in Mathematics.

Clear setting out helps you:

- Avoid making careless mistakes in the first place.
- Give your examiners a clear picture of the logic and flow of your argument.
- Provide a strong platform for "cracking" the harder questions.

If you are making a lot of careless errors, you should avoid skipping too many steps. Take the time to write a few extra lines and avoid giving away cheap marks.

Also, it is important to understand that Extension exams (especially the Extension 2 exam) require more than just a correct numerical answer for most questions – they require an explanation as to how you arrived at your answer. My most important piece of advice when taking the Extension 2 exam is to include all your working out and set out your solutions so that they are easy to follow.

Some simple tips to make your proofs clearer include:

- Write your equations down the page rather than in a single line, thereby ensuring that you have enough space for each equation.
- Explain what the variables you introduce mean by either indicating them clearly on a diagram or by writing at the top of your proof ***Let x be the ...***
- Explain the steps in your proof, that is, talk to your examiners rather than making them guess your logic. For example, in a harder permutations and combinations problem, don't just state the answer but briefly explain where the answer comes from, or in an induction proof, clearly indicate where you used your assumption for $n = k$ when proving true for $n = k + 1$.
- Draw LARGE diagrams. In geometry questions a large diagram allows you to mark in more angles and see things more clearly. In curve sketching questions, you are able to indicate the important features more accurately. Drawing a decent diagram can make the difference between seeing how to solve a problem and failing to solve it.

HOW CAN I IMPROVE MY MARKS AND ELIMINATE CARELESS MISTAKES?

Doing these things will help you maximise your marks; not only will clear and logical setting out help reduce your chances of making careless errors, but the examiner is more likely to award you partial marks if you do end up making them.

At Talent 100, we know the best way to improve your exam technique is to repeatedly put it into practice. This is why our homework each week is set in examination style, structure and graded difficulty to give you weekly feedback as to the types of mistakes you make under exam conditions.

3. Perfect practice makes perfect

Once you have revised all your theory, the most effective way to study in the final few weeks before the HSC exam is to do as many exam papers as possible under exam conditions. It is important that you aim to completely eliminate ALL your careless mistakes as you sharpen your focus and learn to concentrate more effectively. I would often lose marks in the routine sections of an exam because I would forget the constant of integration or not change the limits when making a substitution. However, after doing full exams for practice I was able to completely eradicate these annoying mistakes.

When you add up the marks lost in an exam due to careless mistakes, you may find that you have squandered up to 10 marks or even more - the difference between a good mark and a great mark and perhaps costing you a top band result. You MUST find a way to avoid careless errors.

At Talent 100, we aim to develop perfect exam practice through exam-style homework and rigorous mock-exams. Students are strongly advised to write out corrections to their homework, to ensure they never repeat those mistakes in the future. In addition, our HSC Students sit 10 weeks of mock-exam papers to discover any shortcomings before they sit their Trials and HSC Exams (which collectively account for 70% of their final result).

SNAPSHOT INTO AN HSC MATHEMATICS EXTENSION 2 EXAM

Sitting an Extension 2 paper can be a daunting prospect: it is arguably the hardest high school maths paper in Australia. While considerable mathematical ability may be required to score the very top mark, with the right approach even average students can achieve a strong result.

The three hour Extension 2 paper consists of ten multiple choice questions worth one mark each, followed by six 15-mark questions.

In this section, we break down the exam question-by-question and try to give you a realistic snapshot of how an average Extension 2 student can score 65-75/100, which corresponds to a high Band E3 or a Band E4. As Richard's article suggests, this will give you a scaled mark equivalent to the top 4% of students in Physics, Chemistry, Economics, and English and put you well on track for an ATAR of 99+.

BREAKING DOWN THE EXTENSION 2 EXAM

MATHEMATICS

Questions 1 - 10
(aim for 7-8/10)

The multiple choice questions are by no means trivial. They are graded so that the later questions are more demanding than the earlier ones. Some questions are best done by just solving the problem with pen and paper in the usual way. However, you can often see what the answer has to be without writing out the entire solution. Another useful strategy is to work backwards from each alternative to eliminate the wrong answers. Sometimes you can eliminate an alternative very quickly.

Remember that the wrong alternatives are 'distractors'. They are designed to 'distract' you from the correct alternative, so don't jump in without some careful thought.

Questions 11 - 13
(aim for 35-40/45)

These questions are relatively straightforward, but you must never underestimate them as they can still be a bit tricky in places. They usually focus on the more routine aspects of Integration, Complex Numbers, Polynomials, Conics, Graphing and Volumes. Most of these questions will be very similar to questions you have seen before; either in class or in the homework assignments or in the past papers. Although you probably found these topics challenging when you first encountered them, you should be very familiar with the standard questions by the time you do the HSC exam.

It is important not to forfeit any marks to careless errors in these routine questions as the later questions get progressively harder. You will almost certainly encounter problems you cannot solve towards the end of the paper.

Questions 14 - 16
(aim for 23-27/45)

The final three questions contain a high proportion of non-standard problems.

There are still plenty of marks that can be obtained by the average Extension 2 student, but he or she has to be prepared to fight for them. Considerable tenacity is definitely required!

Often the questions are long, multi-step problems consisting of a couple of routine parts followed by a couple of harder parts. A student should never spend too much time trying to get out the difficult bits – this is bad exam technique. If you are completely stuck with little prospect of success, you should move on. You can come back later for a second attempt if time allows.

Some of the questions here are based on Ext 1 Topics, such as Circle Geometry, Mathematical Induction, Inequalities, Motion and Probability, but with a much higher level of difficulty. The emphasis is on proof, rather than the usual 'calculating' or 'finding' or 'solving'. One of the main areas of confusion is that many schools don't actually teach 'Harder Ext 1' as an Ext 2 topic. Rather, they simply expect you to be able to apply your Ext 1 knowledge to much harder questions. This may work for the top students, but for the average student, the best way to prepare is to practice as many different questions as possible and familiarise yourself with the common question types.

The final questions of the exam are notoriously difficult, even for the top students. Rather than getting flustered, it is important to remember to stay vigilant in your approach and attempt as many questions as time permits. It is often easy to gain marks by attempting the early parts of a long question (e.g. proving the base case of an induction question even if you cannot prove for $n = k + 1$). Sometimes you can even pick off marks in the later parts of questions. For instance, a question may ask you to prove a result. Even if you cannot prove this result, later parts of the question may require you to utilise this result to deduce further results. If you cannot solve the hardest part of the question, you may be still able to gain an extra mark or two very easily. These few marks can quickly add up to something significant.

If you have done the earlier questions well, and can score around half marks in the last three questions, you are on track for a top band performance.

Final Score: Raw Score 65-75/100 Band: High E3 or E4. ATAR: 99+

MEET THE HEAD TEACHER

DAVID SADLER

Teaching Experience - 30+ years

In the world of HSC Mathematics, David Sadler hardly needs an introduction. Holding a Bachelor of Science from the University of New South Wales, as well as a Diploma of Education and a Masters of Pure Mathematics from the University of Sydney, David has co-authored 4 Cambridge University Press Mathematics Textbooks. David's teaching pedigree is second to none: He has 36 years of teaching experience under his belt at Sydney Grammar School, where he was also Head of Mathematics for 7 years. He brings his considerable talents as both an educator and a thought leader in the mathematical industry to his new role at Talent 100 as Head of Mathematics. David's top tip for HSC students? There is no substitute for hard work. There are no shortcuts to success.

Qualifications

- Bachelor of Science from UNSW (Double major in Pure Mathematics and Computer Science)
- Diploma of Education from the University of Sydney
- Master of Arts in Pure Mathematics from the University of Sydney
- Taught undergraduate Mathematics at UNSW in 1991

Achievements

- Co-author of 4 Cambridge University Press Maths Textbooks
- Mathematical industry thought leader
- 36 years Mathematics teaching experience at Sydney Grammar School
- Head of Mathematics at Sydney Grammar School for 7 years

QUESTIONS

Trust in your natural ability. If you have done the hard work you should be feeling confident.

What were your secrets of success in Mathematics?

I was passionate about mathematics and was prepared to devote a lot of time and effort to it. I enjoyed the challenges that the subject presented and always felt like I had achieved something significant when I managed to solve a difficult problem. If you don't love learning and just see your high school education as something that you have to put up with then you won't get much out of it. The all important thing is your attitude.

How did you deal with stress and challenges?

Some degree of stress is inevitable whenever there are assignment deadlines and exam blocks. We all have to deal with time pressure and the fear of failure. I always told myself that I could only do my best. I would only be critical of myself if a lack of organisation or motivation was to blame for a poor outcome. If a task was particularly stressful or challenging, I would comfort myself with the knowledge that most of my peers would probably be in a similar predicament. We should always try to view a challenge as an opportunity to learn and grow, rather than something to be scared of. Setbacks or mistakes are inevitable from time to time, but they never define you. Rather, they should motivate you.

What is your advice for HSC students?

You will be better at some subjects than you are at others. Organise your time so that you can spend more on the subjects which you are not as strong at. Ten units count towards your ATAR, so it is better to be good at all your subjects than to be excellent at some and poor at others.

This is your last year of schooling so put in your biggest effort.

Why do you like to teach at Talent 100?

The academic culture at Talent 100 is very impressive. There are lots of clever and highly motivated people working in the organisation, and the main focus is always on assisting and supporting our students so that they develop a love of learning and achieve to their full potential.

TO JOURNEY 88 MILLION KMS LAND THE MATH

EXCELLING IN ENGLISH

“It is not in the stars to hold our destiny, but in ourselves.”

William Shakspeare

EXCELLING IN ENGLISH

English counts for at least 20% of your HSC.

In this article, Brenton Boswell provides context to the new 2019 HSC English syllabus, with tips and strategies to top one of the HSC's most challenging subjects.

Brenton has taught HSC English for over 20 years and was the ex-Deputy Head of English at Kambala School and ex-Dean of English at Trinity Grammar School.

ENGLISH COUNTS FOR AT LEAST **20%** OF YOUR HSC.

Success in HSC English has long been tied to how well you write. This is very true for the outgoing syllabus (Y12 in 2018) and even more so for the incoming one (Y11 in 2018). The biggest problem you will face in Advanced English is that most of your English lesson and study time is taken up with reading and analysing works of literature and film, leaving little opportunity to explore the secrets of highly effective writing. The incoming syllabus has sought to address this problem by reducing the number of texts studied and requiring more time to be spent on writing skills. Year 11 in 2018 will feature a new module called 'Reading to Write', which in Year 12 (2019) becomes 'The Craft of Writing'. **In other words, the command of written language is about to become a more competitive field than ever.**

1. Read, listen, notice, think – and most importantly, *write*

Whether you are learning under the old syllabus or the new one, your first focus needs to be on the quality of your own prose, beginning with your essay technique.

For example, how do you feel about all those acronyms for paragraph structures you might have come across: *PEEL*, *PEEEL*, *PEAL*, *PETAL*, *TEEL*...? Agh! What do all those 'E's even stand for? Evidence? Explain? Example? Evaluate? Elaborate?...

In truth such formulae, even when they are clearly remembered, are not enough and can often encourage mediocrity, in part because they say nothing about your habits of grammar and vocabulary. For example, the well-intentioned maxim 'link back to the question' can be surprisingly dangerous: what were you doing drifting from the question anyway? Or if you were not, then does it really make strategic sense to be repeating yourself, or going 'back'?

Think about it like this. Paragraph formulae of the four-sentence 'PEAL' kind (*point*, *example*, *analysis*, *link*) are designed to remind you to make interpretive points, back these up with examples (i.e. quotations or specific references), provide some technical analysis of language or form, and link what you are saying to the question and your thread of argument. Yet they also mislead you, by implying that a paragraph can only fit four basic observations, and that you need a whole sentence for each of these.

How long should each essay paragraph be anyway? Remember that they look a lot longer handwritten than typed, so in handwritten examinations you need to be conscious of the power of indentation: markers are trying to follow your thinking at speed, and it's your paragraphing that really helps them to do that. There's rarely any good reason in HSC essays for a paragraph to be more than 100–150 words, especially given that your thinking should always be moving forward.

Speaking of which, when is a 'point' not a 'point', and how many discrete points are expected in an essay anyway? A very common mistake in senior writing is planning to make 'three big points'. This approach will likely encourage you to waste words and cover less content than is wise. You should even learn eventually to reject the false assumption that a paragraph can only make one point. Instead, plan properly by making yourself a very long list of analytical and interpretive observations and then figure out how they can be chained together so that every sentence (or even every phrase!) is adding value. While it can be sort of true that a paragraph might pursue a 'single' idea, that's quite a hard thing to define in practice, and at the very least, your idea will need to be intricate, developing, complex, rich... In other words, seek always to achieve the rapid flow of many connected observations. Never design your way out of being thorough.

Learning to write succinctly in this manner takes practice and conscious consideration of your own prose habits. Can you rewrite

Seek always to achieve the rapid flow of many connected observations. Never design your way out of being thorough.

EXCELLING IN ENGLISH

your first-draft 300-word paragraph in just sixty words without losing any content? How much do you know about English morphology (word forms) and syntax (sentence structure), and how consciously do you manipulate them in pursuit of essays that are analytical, interpretive, critical, evaluative, sequential, comparative, and so on?

How rich is your vocabulary? How nuanced are your word choices? Is your writing verbose (too wordy) and/or repetitive? Perhaps it is but you don't even know it: do you really understand how to look? Most students waste words — lots of words — and thereby frustrate their ability to demonstrate to markers even a small percentage of their real knowledge of a topic or text.

Be **interpretive** when you study texts. Response is not just 'comprehension', nor even just 'analysing techniques', even though both of those skills are crucial. It's first and foremost about noticing things in texts. Observe, collect, categorise. For example, here is a single sentence that identifies three pairs of conceptual opposites essential to the early stanzas of Tennyson's 1832 poem, 'The Lady of Shalott'. A *reclusive*, *unnoticed*, *stationary* Lady is surrounded by a *social*, *observed*, *moving* world. You cannot be interpretive about a text unless you practise the art of noticing such things.

What about imaginative writing? What have you learned about the secrets of great narrative prose, beyond the usual clichéd demands to 'show, don't tell' or to 'write what you know' (whatever that means)? For starters, you must recognise that good plotting isn't just making up a series of 'exciting' events, or even churning out a vague three-part structure of 'orientation, complication and resolution'. Instead, you must ask yourself what is at stake for your main character – i.e. what is his or her story goal, and what happens upon failure or success? The alternative potential outcomes must be stark. And don't accept your first answers to these questions; keep raising the stakes until you have a tight story that we care about.

Also, beware the bad habit of trying to be 'mysterious'. Good storytelling is NOT holding back key information from markers so that you can feel you have impressed them later with a 'surprise' or 'revelation'. Clarity is always your friend, never opacity. This means that you must learn to control a whole range of parameters that constitute effective narration, including temporal and spatial point of view, tone, mood, thematic preoccupation, action, dialogue, and goal-oriented story movement.

Studying English can help you to discover how to think, and how to articulate what you think.

Learn to be clear, insightful, inventive and thorough — qualities, let's be honest, that you will also need to demonstrate in your working career and in adult relationships of every kind. And for goodness' sake, take notes in class! Be organised, diligent, interested. Enjoy the subject. At its best, English should be stimulating, provocative and creative. Read your prescribed texts multiple times. Read academic literary criticism. Read and write for enjoyment too.

Be organised, diligent, interested. Enjoy the subject. At its best, English should be stimulating, provocative and creative. Read your prescribed texts multiple times. Read academic literary criticism. Read and write for enjoyment too.

In short, commit yourself calmly but seriously to English. Yes, it can be a lot of work and very time consuming. Yes, it feels exhausting sometimes. You must count two units of it towards your ATAR, so you can't afford for it to be your weakest subject. And given that you are competing against the largest candidature of the State, really you want it to be your **best** subject. Start by knowing the syllabus requirements. They describe what is expected of you, so really read them.

Scrutinise key words – including, of course, the wording of each and every assessment task.

Above all, answer the question – authentically, thoroughly, repeatedly, consistently.

EXCELLING IN ENGLISH

2. About the incoming HSC (for the Yr 12 class of 2019)

For students commencing Year 11 in 2018, HSC English will be a new world. The radically new syllabus will require English teachers everywhere to seriously rethink their approach to curriculum. The new courses feature not just new modules and new texts, but new approaches to assessment, and new angles on the study of English itself. The 2019 HSC Examinations will also be very different to anything that has gone before.

The implications are significant. No longer will students and teachers be able to look to last year's lessons and assessment tasks for easy learning shortcuts. Everyone will be experimenting together.

No longer will students and teachers be able to look to last year's lessons and assessment tasks for easy learning shortcuts. Everyone will be experimenting together.

Right now, across New South Wales, English teachers are scrambling to design new lesson plans and programs for courses that start very soon, often on texts they have never taught before. That's a lot of additional pressure in what is already a very demanding job. Even the strongest are going to have less time to help students individually than they had in the recent past; they will be too busy trying to figure out what the new syllabus now requires of them. If you really wish to succeed personally, you are going to have to be very proactive about your learning.

Think of this moment as presenting both risks and opportunities. To avoid the risks and embrace the opportunities, you will need regular concentration on your English texts and a disciplined, step-by-step approach to unpacking your new course. You must adopt a can-do attitude towards studying

literature and film, and you must pursue steady, incremental improvement in all core skills. It's time for you to develop real confidence in your abilities — to read, listen, interpret, analyse, speak, represent and write. By combining frequent practice of these modes with critical consideration of what is really required of you, you should be able to get ahead and to excel in your HSC examinations.

At Talent 100, our goal is to show you how to make the most of the positive challenges before you.

DICKENS

HEMINGWAY

ROWLING

JOYCE

BRONTE

TOLKIEN

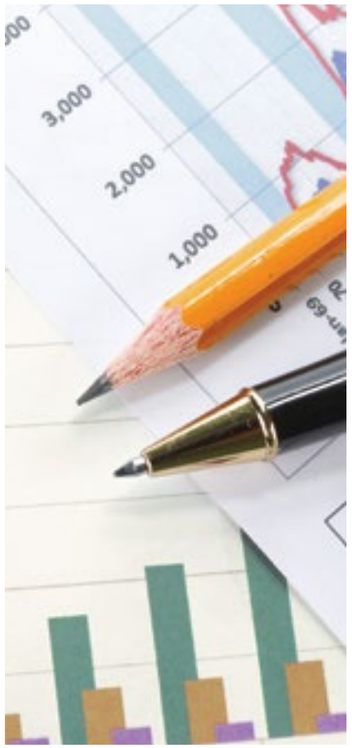
YOU?

GETTING THE EDGE IN ECONOMICS

“Equal opportunity to me, more than anything, means a great education.”

Steven Jobs

GETTING THE EDGE IN ECONOMICS



Economics is the highest scaling social science in the HSC, but scoring top marks in this subject comes with its own unique challenges.

In this article, Richard Chua and Dilshan Seneviratna explore what it takes to get the edge in Economics.

Richard won the Economics Prize at Sydney Grammar, graduated from UNSW Commerce with Distinction and as well leading the team at Talent 100, he currently works in Google's strategy team.

Dilshan ranked 5th in NSW in HSC Economics in 2008, and was awarded the coveted UNSW Finance Co-op Scholarship.

We are going to look at three important questions that any prospective Economics student should be able to answer.

1. **Why Study Economics?**
2. **What are the hidden dangers?**
3. **What does it take to ace the HSC Exam?**

Why study Economics?

One of the most practical reasons to study Economics is due to its exceptional scaling.

Of the humanities subject, Economics scales the best on par with Physics and Chemistry. To give you some perspective, scoring in the top 5% of Economics puts you on track for an ATAR of 99+, top 10% puts you on track for 97+, and top 20% on track for 94+. But aside from scaling, there are other more important reasons why you should consider studying Economics.

A basic understanding of Economics is essential knowledge for any aspiring business person, whether you are looking to enter finance, accounting, marketing or sales. It will train you in the right type of thinking needed to succeed in these professions. Before you enter the high-flying corporate career, you will need to know the basics - what motivates the behaviour of individuals, firms and governments in market economies, and how these groups seek to improve production and profit.

In fact, understanding Economics is so important in succeeding in these professions that it is a compulsory course in all Business/Commerce/Economics Degrees in Universities. This means what you study in Year 11 and 12 Economics you will also study in University Microeconomics and Macroeconomics.

And finally, even if you don't ever have the intention of entering the business world, a basic of understanding of Economics is a very useful life skill to have. Things like interest rate changes and the ups and downs of a business cycle will affect even scientists, engineers and health professionals.

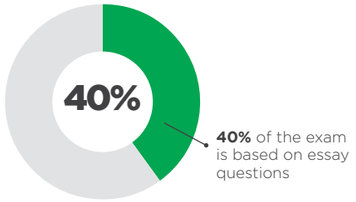
Essay questions: The hidden danger (and hidden opportunity)

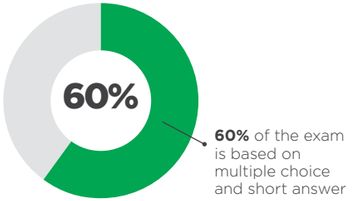
Despite the excellent scaling in Economics, there is a hidden danger or risk involved in doing this subject as there are in all humanities: Essay questions. Whilst 60% of the exam is based on multiple choice and short answer (which tend to be very predictable), 40% of your exam is based on essay questions.

Essay questions are 'risky' in the sense that they can have a significant impact on your mark and can very often catch even the most prepared students by surprise. If you are able to guess the essay question and adequately prepare for it, you will ace the exam, but if the essay question catches you off guard, you can have a massive swing in your final exam performance.

This is something that affected me personally in my HSC. I had a knack for guessing the essay questions set by my school teacher and guessed them perfectly for the school trials. I scored a raw mark of 98% and received the Economics Prize. It was my best subject for my assessments. Unfortunately, I guessed the Essay Questions incorrectly in the HSC Exam, dropping more than 30 rankings. This meant that my "best" subject did not even end up counting for my ATAR. **And that all happened in one exam.**

In contrast, in subjects like Mathematics or Science, even if one particular question may be difficult or unexpected, you may experience a swing of 2-3 marks. In Economics, the swing can be much greater, so you need to be well prepared for your essays in an Economics exam.





GETTING THE EDGE IN ECONOMICS

Breaking down the exam

To do well in the Economics exam, you need to understand exactly how the exam is structured. There are 100 marks in the Economics exam, broken down as follows.

Section	Weighting	Preparation
Multiple Choice (20 Multiple Choice Questions)	20%	Syllabus and Textbook only
Short-answer questions (4 Questions of 10 marks each)	40%	Syllabus and Textbook only
Essays (2 Essays of 20 marks each)	40%	Syllabus and Textbook - Current Research and Recent Performance of Australian economy

Acing MCQs and short answer

The multiple choice and short answer sections are very straightforward. They require an understanding of the basic Economic theory, which has remained unchanged for decades, such as how the federal budget and interest rates are used to stimulate or dampen the economy. You'll also need to be able to interpret such theory in a variety of forms, such as tables, graphs, statistics and models.

Some tips for preparing effectively for these two sections are:

1. Make notes on the syllabus dot points: Since your exam is based entirely on the syllabus, it makes sense to make notes on the syllabus dot points. These dot points also outline the extent of knowledge that you need about any topic through the use of the verbs such as "outline", "explain", "discuss" etc. so being able to answer each specific dot point to the required level of detail ensures that your study remains focused and relevant.

2. Write concise and structured answers for the short answer questions: When answering short answer questions, you need to ensure that your answers are clear, concise and structured. Many students seem to "ramble on" before answering a question half way down the page. Markers will penalise such verbosity.

3. Deconstruct the questions according to the syllabus: the best students look at questions, and ask which syllabus dot-points or concepts those questions relate to. Each question is always assessing a particular aspect of the course, and being able to recognise when and which course concept is being assessed is extremely advantageous. For example, being able to recognise when a question is looking for a student to talk about free trade agreements, or automatic stabilisers, or structural unemployment, even though these terms may not be explicitly mentioned in the question.

4. Remember your jargon: when writing short answer and essay responses, but especially for the former, it is prudent to bear in mind the key terms or 'buzzwords' that relate to each topic, and which markers are very often looking for in reading and marking your answers. For example, terms such as 'globalisation', 'progressive taxation' and 'monetary policy' are key jargon terms that markers are often looking for when they mark certain short answer questions.

Getting the edge in Economics

First, look at the number of marks and write a comprehensive answer. For a four or five mark question, you will need four or five points to get the marks. If you are only writing two or three, you can be almost certain you won't get full marks.

Alternatively, a four-mark question may require two points, but explained fully and in detail. Practising past questions is the best way to become familiar with the appropriate strategy.

Secondly, structure your answer concisely and logically.

- **1st Line:** Answer the question immediately
- **2nd Line:** Explain and elaborate on your answer
- **3rd Line:** Quote a statistic or evidence from the passage, stimulus or memory
- **4th Line:** Use this statistic to demonstrate how it proves your point.

While understanding this basic theory may seem challenging at first, once you have revised thoroughly, you'll find that these two parts are the easiest parts of the exam. For students who have revised well, it's about doing the first two sections as accurately and efficiently as possible so you have enough time to ace the final two essay questions.

Acing the essays

What you should realise is that the essays ultimately distinguish top performers from the above-average students. Writing an essay question purely from "economic theory" will only score you 15/20. To perform well in these, you must go beyond the syllabus and utilise statistics, theoretical graphs and incorporate an understanding of recent government policy and economic trends and developments.

A good rule of thumb is to remember that markers are always asking themselves "How well does this student understand the basic

When answering short answer questions, you need to ensure that your answers are clear and concise.

GETTING THE EDGE IN ECONOMICS

theory and ideas of the course?"

- Writing an essay solely incorporating theory answers this question at a basic level.
- Being able to apply the theory in graphs and through states demonstrates a higher level of understanding.
- Being able to show you understand how the theory relates to recent policy developments demonstrates the highest level of understanding

1. Define the key terms

Unlike an English or History essay, you must define the essential terms in the question in every Economics essay question. For instance, if the question asked you to 'Analyse Australia's recent economic growth', you would need to define the term 'Economic growth' immediately. This is an odd peculiarity of the Economics exam.

This can also help you frame your essay – because Economics is at heart, a very theoretical discipline, being clear about the concepts you are discussing in your essay, gives your argument a solid foundation and framework.

2. Answer the question

One of the biggest pitfalls that many students make is that they fail to answer the question at hand. Rather, they start writing pre-prepared answers to the questions they have prepared for, rather than the question that the examiner is actually asking for. Preparing for the essay question is vital. Without the right statistics, research and evidence, your essay will never reach the top band. But you need to take some time to plan a specific answer to the specific question being asked. You should look firstly at the question verb, and know exactly what that means, e.g. to '*discuss'* vs. '*assess'* vs. '*evaluate'* etc.

For example, when you are asked to '*Discuss'*, you must '*identify issues and provide points for and/or against*'. Note how this is different to *explain*, which is '*relate cause and effect; make the relationships between things evident; provide why and/or how*'.

'Discuss' requires points for and against and '*Explain'* requires an in-depth analysis of mechanisms. They are not just generic terms that have the day-to-day meanings you would expect in conversations; they have a specific meaning in the HSC and this is part of the marking criteria for the exams.

Questions that ask you to '*Assess*' or '*Evaluate*' require you to **make a judgment** – that is, express whether you think current fiscal policies, for example, are effective in achieving their aims and objectives. As a general rule, it is always good to provide a nuanced answer. Strongly agreeing or disagreeing with policy tends to be too simple. Rather, the best students can identify why policies have both positive and negative consequences, and weigh these up to draw a more sophisticated conclusion.

Unlike an English essay, you must define the essential terms in the question.

3. Support your argument with evidence from Australia's recent performance

What distinguishes the top Economics students is how well they are able to integrate economic concepts to explain recent economic trends. In contrast to the short answer questions, which test knowledge and theory that has remained unchanged for decades (for e.g. Keynesian Fiscal Policy or Adam Smith's Invisible Hand), an essay question will require you to interpret or apply that theory to the recent trends. For instance, you may discuss how the Rudd Government responded with a Keynesian approach to stimulating demand during the GFC, or how in fact the market's Invisible Hand has not worked in providing important public goods, such as a National Broadband Network.

In order to gain a proper, relevant and useful perspective of our recent performance, you should split recent performance into two categories:

- **How the economy has performed over the last decade**, for instance, how the Australian economy has grown over the last 10 years and what issues it has faced. As a general rule, statistics dating back past the 1980s are usually irrelevant.
- **Have up-to-date research**, including relevant topics being discussed in the news. This does not mean you need to find a way to cram Brexit or the US Presidential Election into your essay. What it means is you need to be aware of what is happening in the economy broadly, and good examples of those broad trends. For example, you may be aware that the last car manufacturing plant in Australia recently closed – this is very relevant to topics you will have learned about Australian trade policy, and theories relating to comparative advantage, free trade and protection. This would make an excellent example to show that you understand those basic theoretical ideas.

When you have a solid understanding of the recent performance, you must 'weave' this into your essay. Many students come unstuck trying to remember statistics and facts, such as the % of unemployment, or how much the CPI has changed. A better way to think of statistics is not so much as a "fact" – or a random morsel of truth – but rather as a piece of evidence, i.e. a useful figure, statistic or story that proves a particular point. This makes it much easier to remember, and it helps you write a good essay because it adds to the argument, becoming another way of "telling the story".

In contrast, trying to remember disparate facts can often mean that your essay seems disjointed, even if the facts and figures are correct.

In searching for the right facts and figures, there are three sources of information you should consider. The **RBA's Statements on Monetary Policy** and associated documents provide up-to-date research from some of the best economists in the country, conveniently categorised into topic headings such as Growth, Inflation, Unemployment etc. Likewise, the **Federal Budget** has very accurate data and summarises both challenges and the economic outlook forecast by Treasury.

Finally, you should be constantly scanning **newspapers**, such as the Financial Review to evaluate the most recent trends and issues

GETTING THE EDGE IN ECONOMICS

facing our Economy. A great journalist to follow here is the Sydney Morning Herald's Ross Gittins, who simplifies relevant economic issues into laymen's terms.

4. Refer to the stimulus

Finally, many essay questions have stimulus material, such as a chart or a passage or comment made by a particular person or body, and ask you to evaluate such comment in the context of the Australian Economy. With such questions, you MUST refer to all parts of the stimulus in your essay. Many students, with pre-prepared essays, give token recognition in their introduction, but fail to properly consider the stimulus as part of their answer.

Rather than doing this, understand what it says and refer to it in the body of your essay, explaining why it agrees with or is contradicted by recent trends. If you don't do this, you will lose marks for not answering the question.

5. Include (BIG) diagrams

Where relevant, you should use appropriate and relevant diagrams to explain your answer. A picture is worth a thousand words and many economic theories (e.g. Supply and Demand) are explained most eloquently through the use of a diagram. Again, when including a diagram, ensure you make reference to it, rather than just placing it on the page. It is a method of explaining a theory, rather than illustrating text.

Never utilise statistical graphs (graphs with numbers and data extracted from current research). Focus exclusively on using theoretical graphs (e.g. the supply and demand diagram), as using the former demonstrates no more than an ability to memorise a graph, and can easily be expressed more succinctly and time-efficiently in a simple statistic.

Finally, in preparing for essay questions, focus on the most relevant issues facing the Australian economy, as these have a habit of appearing as Essay questions. For instance in 2009, in the aftermath of the GFC, students were asked to –

"Analyse the impact of changes in the global economy on Australia's economic growth and external stability."

Most students would realise that this question is begging you to talk about how the global financial crises can have a massive impact on our economy, and that is the research you would need to integrate into your essays.

Excel in Economics

At Talent 100, we've created an excellent program in Economics that can help you understand the key economic theory, and more importantly, the recent performance of the Australian Economy to ensure you get the best marks in Economics. While our programs are designed to ensure you are able to ace any HSC Economics Exam, we hope to inspire a greater passion for a subject that is an essential life skill and forms the cornerstone of all business degrees and professions.

Our course:

- **Develops thorough understanding of every syllabus dot point**, including relevant economic models, theories and their applications so that you can score top marks in multiple and short answer.
- **Up-to-date research on Australia's economic performance**, with insightful analysis of relevant economic issues to help you create A-range essay responses
- **HSC-style homework and questions**, to ensure you can translate your understanding of the course into marks in a real examination
- **One-on-One help with Economics Essays**, to help you develop your own specific, structured, and logical essays to top your examinations.

We hope to inspire a greater passion for a subject that is an essential life skill and forms the cornerstone of all business degrees and professions.

VOTE FOR A FUTURE THAT MATTERS

SEATS AVAILABLE

ACING UMAT

**“We have the scientists.
We have some of the most
inquisitive minds in the world.
We clearly have the resources.
All we need is the insight and
foresight to put our resources
to good use.”**

Marlie Teo

ACING UMAT

Getting into Medicine is tough. Not only do you have to score top marks in the HSC, you need to master another test - the infamous UMAT.

In this article Dilshan Seneviratna explains the demands of each section in the UMAT exam and what it takes to master them. Dilshan graduated from Baulkham Hills High School in 2008, scoring 99.95 UAI (ATAR) and 100th percentile in the UMAT. He is currently a Junior Medical Officer (Aspiring Ophthalmologist) and studied Medicine at the University of Sydney.

In this article, we will examine the:

- structure of the UMAT
- importance of speed in the exam
- type of thinking each particular construct is aiming to test

Entering medicine and the other health professions can be extremely challenging.

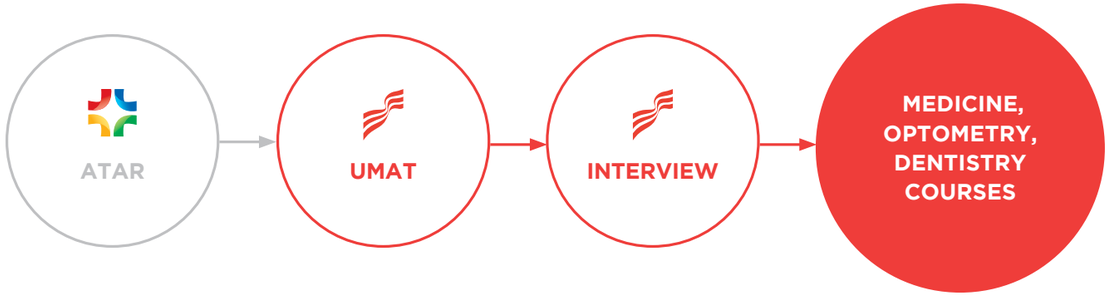
Over 20,000 students do the UMAT each year. Be one of the 1,300 students to get into medicine.

While most degrees simply require a given ATAR, admission into medicine and health degrees (dentistry and optometry) requires you to master three types of tests.

Unlike your HSC which is knowledge-based or curriculum-based, the UMAT exam is skills based. In each of its question types, the UMAT exam is testing a particular type of thinking.

Moreover, to score the top marks, you need to complete UMAT questions quickly and accurately.

THE REQUIREMENTS FOR STUDENTS WANTING TO BECOME DOCTORS, DENTISTS AND OPTOMETRISTS.



ACING UMAT

It is not surprising that ACER describes the UMAT exam as a 'high stakes tests - the results [of which] have the potential to make a major impact on the future career of the test taker'.

How the UMAT is structured

The UMAT consists of 134 multiple choice questions to be completed in 180 minutes. The questions cover three broad styles known as 'constructs'.

	Number of questions
Construct 1: Logical Reasoning and Problem Solving	48
Construct 2: Understanding People	44
Construct 3: Non-Verbal Reasoning	42
Total number of questions	134
Total amount of time	180 mins
Average time per question	81 secs

The UMAT consists of 134 multiple choice questions to be completed in 180 minutes.

To illustrate, if you were to take just 10 seconds longer than allocated on average to finish each question, you would finish the exam without attempting the last twelve questions.

Time is of the essence

Before examining each question type in greater detail, it is important to emphasise:

The UMAT is a race.

Most students could score much higher marks if they had more time. Given an extra hour, most students could finish all questions of the UMAT. However, the time pressure is one of the biggest challenges – and biggest differentiators - of the UMAT.

To illustrate, if you were to take *just 10 seconds longer* than allocated on average to finish each question, you would finish the exam without attempting the last twelve questions. This can make a huge difference in percentile scores, particularly in the high ranges.

Understanding the time pressure is one of the most important factors of success in UMAT and this pressure can catch out students who are traditionally good at knowledge-based exams like the HSC. Well-prepared HSC students rarely leave marks in Physics and Chemistry because they know they will have enough time to finish.

In contrast, **in the UMAT you must have the discipline to leave out a question if you cannot solve in it a timely manner,** or risk losing many more marks because you run out of time.

Furthermore, in HSC subjects, how you arrive at an answer is as important as the answer itself. In contrast, in multiple choice exams, the only thing that counts is getting the right answer and it is often quicker to eliminate the three wrong answer choices than trying to find the "definitively correct" answer.

Time is your biggest enemy

Knowing how to solve a question and knowing how to solve a question quickly are two entirely different skills.

For this reason, our programs at MedStart teach students systematic frameworks to break down the typical question types of each section quickly and accurately to help ensure a competitive advantage in the UMAT.

ACING UMAT

Construct 1 – Logical reasoning and problem solving

Each question construct tests a different type of thinking. Construct 1 tests your ability to reason and draw logical conclusions based on the stimulus information given. As a health professional, you will need to infer facts and draw logical conclusions from the research you read, and utilise your knowledge in conjunction with the limited information from patient signs and symptoms to reach a diagnosis and appropriate course of action.
It is therefore appropriate that this section of the UMAT tests your ability to reason given a known set of facts.

- **Problem solving** - you are placed in a scenario and given a series of clues and conditions and are required to solve a hypothetical problem (e.g. who came first in a race out five people).
- **Verbal reasoning** – you are given a passage based on scientific phenomena and asked to draw conclusions or evaluate the arguments presented in the stimulus.
- **Data interpretation** – information is presented as a set of statistics or in table or chart form, and you are required to make inferences.
- **Scientific experiments** - you are asked to make conclusions or evaluate the set-up of a controlled scientific experiment.

Students traditionally find this question type the most difficult because of the large amount of 'processing' that is required to solve these problems.

However, if you understand frameworks that can help you quickly break down, analyse and solve the questions, this question type becomes much more straightforward.

Construct 2 – Understanding people

Construct 2 tests your ability to understand and think about people. Here, the information given will be based on a passage, dialogue, comics or other texts/ images that represent a specific interpersonal situation.

As a health practitioner, your ability to understand people is an important part of your work. It is important that you are able to not only diagnose and recommend the correct treatment, but also empathise with a patient and communicate sensitive issues with understanding and care. This construct is designed to screen potential health professionals who are able to develop a patient-focused approach to their work.

In this section, a variety of questions may be asked. However, in the past, questions have often been based around:

- **Effective doctor-patient communication** - determining whether a doctor has appropriately responded to a patient's concerns
- **Emotionally intense situations** – understanding difficult situations like spouses arguing, children arguing with parents, or couples unable to have children
- **Dealing with illness** – communicating how people and their caretakers' lives may be affected as a result of dealing with serious illness

Most students do not have difficulty completing this style of question within the time, but if you are not naturally competent at this construct, it is quite difficult to improve without focussed training. This style can also be difficult because it can be hard to discriminate between two answers that both seem correct.

Construct 2 – Sample Question

Excellent health statistics - smokers are less likely to die of age related illnesses.'

The speaker is pleased that:

A. statistics confirm his research studies about old age.
B. smokers are less likely to die of sickness related to age.
C. the statistics veer the subject off age-related sickness
D. the statistics put the habit of smoking in good light.

Answer: D

This cartoon depicts what appears to be two researchers in the 'Tobacco industry research centre' commenting on the statistics that smokers are less likely to die of age related illnesses. The humour in this cartoon draws on the idea that the tobacco industry would always attempt to skew statistics in favour of tobacco consumption even though it is obvious in this case that smokers are less likely to die of age related illnesses due to early death from tobacco.

Option A is unlikely. There was no indication that the speaker was doing any study or that the study involves old age.

Option B is possible. That smokers are less likely to die of age-related sickness was indeed clearly mentioned. However, the significance of the statistics was lost in this option. Therefore, this could not be the best answer.

Option C is far-fetched. The statistics weren't about age-related sicknesses but about the health of smokers or the effects of smoking. Thus, the statistics veering the subject off age-related sickness does not make sense at all.

Option D is the best answer. Take note that the setting was in a research centre for the tobacco industry. The speaker must be under the employ of the tobacco industry as a whole, and he is pleased because that particular statistics was obviously the one working for them. Even though and because, it fails to mention that smokers are less likely to die of age-related sickness because they'd probably die from smoking, the figures put smoking in a good light.

Construct 3 – Non-verbal reasoning

While construct 1 tests your ability to process information and draw logical conclusions, construct 3 tests your abstract reasoning – your ability to reason based on incomplete and non-verbal information. Non-verbal reasoning questions are entirely visual and involve interpreting sequences and patterns in a set of shapes.

This is very much like the typical IQ test, and you may be asked to:

- **Pick the next item in the sequence** - you will be given four patterns that change according to a rule. You need to decipher the rule and determine the next in the sequence
- **Arrange the sequence and pick the middle** - given a series of five shapes/patterns in random order, you are asked to arrange the sequence and pick the middle.
- **Find the missing segment** - you are given a pattern with a missing segment and asked to pick one of five patterns that would represent this missing segment.
- **Transformations -** you are asked to infer a relationship between two objects/shapes, and apply it to other sets of objects/shapes.

The key to succeeding in construct 3 is to understand that many of these seemingly difficult patterns collapse into a range of much simpler and basic patterns. To succeed, you first need to be able to deconstruct the question i.e. recognise what pattern is being used, then continually practice to develop proficiency.

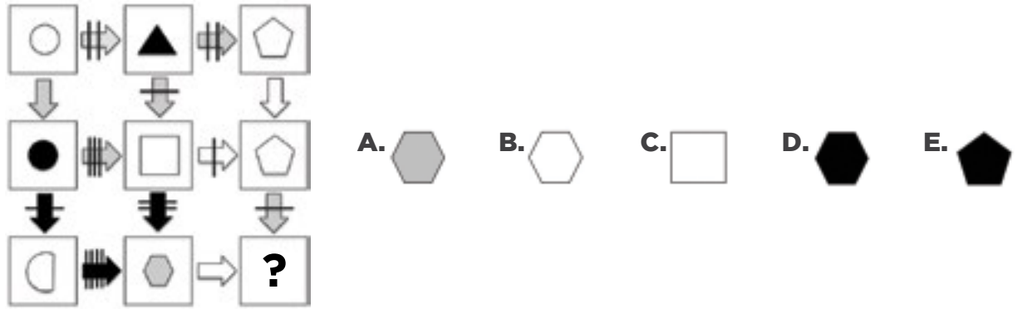
In this article, we have examined the types of questions and some general tips on the UMAT. However, to succeed in the UMAT exam, you need to know the specific frameworks – or ways of thinking – needed to answer all these question types.

Our comprehensive and personalised UMAT courses will help you do exactly that, teaching you the strategies to solve any UMAT question quickly and accurately. Our courses are taught in small classes that average 8 students, so you receive a truly personalised learning experience.

Find out more about the UMAT with our **free "Secrets of getting into Medicine" information seminar**, or test your skills with a **free online diagnostic exam**.

Visit www.medstart.com.au or call 1300 99 UMAT to find out more.

Construct 3 – Sample Question



Answer: D

For this style of missing segment question, understanding the effects of the different types of arrows will result in correctly identifying the missing segment.

In this question, the arrows are of equal length however the colour and number of lines drawn through the arrow vary.

The colour of the arrow affects the colour of the shape inside the segment that it is pointing to. The colour of the shape in the next segment will be the colour of the selection black, grey and white, that is not present in either the arrow itself or the shape the arrow is pointing from. For example, from the white circle in the top left segment, there is a grey arrow pointing downwards to the middle left segment.

Therefore as the original circle is white and the arrow is grey, the circle in the middle left segment must therefore be black as it is the colour remaining out of black, grey and white. An issue arises when both the original shape and arrow are of the same colour. In this case, the resultant shape will be white irrespective of what colour the shape and arrow were.

The number of lines drawn through the arrow indicate the number of sides added to the original shape to produce the shape in the next segment. For example, from the top middle segment, there is an arrow pointing right to the top right segment with two lines drawn through it. Therefore, two sides must be added to the original triangle in the top middle segment to produce the pentagon in the top right segment. From this top right segment, the downward arrow has no lines drawn through it and therefore the resultant shape in the middle right segment remains a pentagon.

By these two rules, the missing segment must contain a hexagon as the middle right segment contains a pentagon followed by a down arrow with 1 segment adding 1 line. The bottom middle segment also contains a hexagon with a rightward pointing arrow with zero lines. The colours of both shapes and arrows leading to the bottom right segment are already white and grey, leaving the final shape as black. Therefore, the correct answer is D.

MEET THE MENTOR

DILSHAN SENEVIRATNA

Career - Junior Medical Officer, Aspiring Ophthalmologist
School - Baulkham Hills High School
University Course (completed) - B. Medical Science / B.Medicine / B. Surgery, The University of Sydney
ATAR - 99.95
UMAT percentile - 100th Percentile

Favourite question type
Construct 1 – Logical reasoning and problem solving

Recent extra curricular activities

- Group leader (NSW) for the 2013 and 2010 Make Poverty History Road trip
- Volunteer at the Reach Foundation™ (Sydney crew) (2010 – present)
- Co-convenor of the Sydney University Annual Boxing Night (2012)
- Australian delegate at the International Student Festival in Trondheim (February 2011) held in Norway.
- Program facilitator at the International University Scholars Leadership Symposium (August 2010), held in Malacca, Malaysia

QUESTIONS

Q What were your secrets of success in UMAT?

The one magic pill secret to success in the UMAT, and indeed any academic endeavour, is motivation and belief. Let me explain what I mean.

Success in high school exams and the UMAT is overwhelmingly reflective of effective preparation rather than innate intelligence. **The hard working student will beat the lazy genius every time.**

However, there is a huge difference between 'effective preparation' and 'studying hard'. A lot of students 'study hard' for the UMAT and throughout Year 12 and think they do not achieve top results because they are not as 'smart' as those who do. Let me tell you that the only thing that the top students are doing that makes them achieve higher results is that they are undertaking more effective preparation. This does not necessarily mean they are studying for longer hours – rather, the study they are completing is efficient and results-focussed. They do not fall into the trap of just completing 'one hour of UMAT a day' and seeing little or no results.

And the two things they have that allow them to do that is belief and motivation.

Belief

Top students, for whatever reason, have the belief that they can achieve the top marks. They believe everyone is cut from the same cloth and that what one person can do they can do too. Students who do not think they are 'smart' enough to achieve top marks make this a self-fulfilling prophecy – they will subconsciously not put the effort in that would allow them to achieve top marks and hold themselves to a lower standard.

This belief is usually acquired through previous exam success – which is why it is so important to study hard in Year 10 and 11 and not just in Year 12. In much the same way that a diet becomes much easier to follow once you start seeing and feeling real results, it is much easier to complete focussed and dedicated preparation when you know that there is nothing stopping you coming first.

This is also the reason why top students in Year 10 and 11 tend to be the top of Year 12 even though the competition significantly increases from all other students in Year 12.

It is so important to study hard in Year 10 and 11 and not just in Year 12.

MEET THE MENTOR

QUESTIONS

Motivation

Belief is a prerequisite but is not enough. Motivation is essential. Most students have to push themselves to study, but the top students (while they may not enjoy study) feel compelled to study – i.e. they are pulled by their mind to study. Willpower - or simply pushing yourself - is never enough and is unpleasant. Get yourself motivated. Volunteer at hospitals, research medicine, talk to doctors, do what it takes for your brain to want to study.

Finally, be results-focused.

Always focus on the outcome of what you want to do. This might be improving your average exam marks or completing quizzes in a smaller timeframe. Don't fall into the common trap of feeling busy but being unproductive, which often happens when students try and complete 'an hour of UMAT a day'.

Belief is a prerequisite but is not enough. Motivation is essential.

Q What is your advice for UMAT students?

Get motivated, be results focussed and start early. The UMAT is a skills based exam which means that spaced repetition is essential for improvement, and also means that unlike high school exams (where you forget most of the content the week after the exam), skills and competence stay with you for the long term.

Why I like to teach at MedStart

It is the only UMAT course out there with proper theory material to supplement thousands of practice questions. When I was practising for the UMAT, it was up to the student to work out proper approaches to solving questions for themselves. The UMAT is a standardised examination, and for any standardised examination there is a standardised way of constructing and deconstructing questions – and MedStart teaches this to the students.

In addition to all that, the fun and vibrant atmosphere and genuine focus on individual students and their needs create the perfect environment for teaching – the students actually enjoy learning and know that it is a valuable investment of their time.

PERFORM MIRACLES EVERY DAY

BREATHE NEW LIFE

9 10

HEADSTART YOUR HSC

HEADSTART YOUR HSC

If you are in Year 10 right now, you may feel there is little point in studying hard this year.

After all, the HSC isn't for another two years, and you're not even sure what subjects you'll be doing in Year 11 and 12. You can always start next year, right?

This is the typical thinking of a Year 10 student. In this article, we'll answer some of the common questions that face you at this stage of high school.

HEADSTART YOUR HSC

While it's true that the real test doesn't start until Year 11, there are actions you can take this year that can significantly improve your ability to score a top ATAR.

Firstly, it is important to pick the right subjects. If you look at the scaling of subjects such as Maths Ext 1 & 2, Physics, Chemistry and Advanced English, you can see that performing decently in these subjects will give you a very good ATAR, and performing well will give you an extremely high ATAR.

Secondly, if you are considering these subjects, it is worthwhile to invest some time in Year 10 to build a strong foundation for top performance in your final years. These subjects are highly competitive - why not start learning some of them now?

As the name suggests, the Talent 100 Headstart Program aims to give students a competitive advantage by starting them early. Our courses teach a simplified version of the Year 11 syllabus for Maths Extension 1; Physics & Chemistry; and English.

The aim of the Headstart Programs is to build strong foundations in the highest scaling subjects, so that students are well equipped to score top ATARs.

As the name suggests, the Talent 100 Headstart Program aims to give students a competitive advantage by starting them early.

The philosophy behind Headstart is simple: you learn much more effectively when you are exposed to content before studying it in a school environment - through this system, both retention of information and conceptual understanding significantly improve. Headstart aims to teach students the bulk of the Preliminary HSC course in Year 10 so that they have this second time advantage in Year 11 and 12 when it really counts.

I'm in Year 10 now. Is there anything I can do to boost my ATAR?
If you are currently in Year 10, you can certainly take some actions now that will make it easier to score a higher ATAR. Perhaps the most important decision you will make is to pick the right subjects. As suggested in the scaling article, the subjects that scale the best are Maths Ext 1 & 2, Physics, Chemistry, Economics and Advanced (or higher) English. Performing moderately well in these subjects will give you a relatively high ATAR, whilst performing even exceptionally in lower scaling subjects can lead to unexpectedly low ATARs.

How do I get ahead with my HSC?
If you're serious about getting a high ATAR, a very simple strategy is to perform well in these subjects, often referred to as the 99+ subjects. The Headstart Program helps you to do that by introducing you to the core concepts of the Year 11 Maths, Physics, Chemistry and English syllabi a year earlier, so that you have strong foundations in these subjects and "a second time" advantage in Year 11.

I'm already doing well in Year 10. Is tuition useful for me?
Even though you might already be doing well in Year 9 and 10, you should realise that there is a big jump in difficulty from Year 10 to 11. For instance, in Year 11 Maths, you will learn Calculus - a topic that is much more difficult than any Maths you have encountered so far, and in Year 11 Science, you will focus on particular branches such as Physics and Chemistry, rather than doing general Science topics such as Geology. This is compounded by the fact that competition gets much tougher in the later years, as students who typically procrastinate start to put in more effort closer to the HSC.

Because of this greater focus, the difficulty of the subject increases steeply in Year 11 and steeply again in Year 12, and many students who are typically used to doing well throughout high school suddenly find they are scoring relatively low marks. The result is that they lose confidence and their marks start to drop in the very years that are most important, leading to sub-optimal ATARs.

Can Headstart really help me?
The Headstart Program is an effective program because of its relevant, concise and results-focused approach. In Headstart, we only teach those topic areas that students will study in Year 11, so you can be certain that the effort you put in now will pay dividends in the near future. That means we do not teach topics that you may learn in Year 10 at school if they are not in the Year 11 syllabus such as Statistics or Geology.

By having such a strong results focus, Headstart effectively allows a smooth and successful transition into Year 11. The aim is to put you 70% of the way there so that the workload and course content in Year 11 feels familiar and easy, making it easier to score top marks in assessments.

In fact, our Headstart students out-performed their non-Headstart graduates in our standardised exams by an average of 6.5% in Mathematics and 5% in the Sciences! While this may seem negligible, it could (and often is) the difference between a Band 5 and a Band 6.

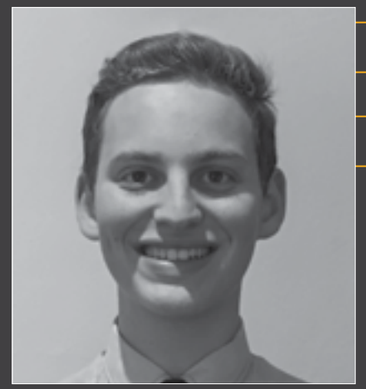
Finally, by developing strong foundations in these subjects you can free up more time in Year 11 for more time-intensive subjects like English or the humanities that you may wish to take, so there are flow-on benefits as well.

As you can see, scoring a high ATAR is very much a test of preparedness, determination and being savvy about your studies.

It's not always the smartest person who scores the highest ATAR, but those who are most determined. If you are in Year 10, you should seriously think about how to invest your time wisely this year, so that you can enjoy your final years and at the same time, be confident you will enter the University course of your choosing.

A final piece of advice to any student in Year 10 is this – pick your subjects wisely and see if you are able to achieve the required level of performance in those subjects. If you are able to perform decently in the highest scaling subjects, you should definitely consider doing them as they will help you secure a high ATAR. We believe strongly that the Headstart course can help you do this.

MEET THE STUDENT



RONAN DAVIS

School - Sydney Grammar
Favourite Pastime - Playing music

The Headstart course is an outstanding program, that introduces Year 11 concepts in a simple and easy-to-follow fashion. It provides you with a competitive advantage over your peers.

QUESTIONS

I recommend the Headstart course to anyone, even if you find learning at school effective for you.

How would you describe the Headstart course?

The Headstart course is an outstanding program, that introduces Year 11 concepts in a simple and easy-to-follow fashion. The course is designed to follow the syllabus dot-points, which makes it really easy to grasp onto the main ideas which will help your study in future years. It provides you with a competitive advantage over your peers, as you already have a foundational understanding of the topics, before being taught them again in class.

What did you like most about the Headstart course?

I personally loved the way the course was structured, focusing on syllabus dot-points with very detailed information and helpful tips. It was extremely helpful for those more difficult concepts, which were explained simply and therefore, allowed me to finally understand them in more detail. The mentors were amazingly helpful; having undertaken the subject themselves relatively recently, they were able to answer all possible questions and clarified any issues or problems I encountered.

Have your marks improved at school? Who should go to Headstart?

My marks have improved due to the Headstart course, not only due to having extra resource and learning videos but also as I constantly repeated possible exam questions and learnt new ways to approach and solve those more challenging ones. I recommend the Headstart course to anyone, even if you find learning at school effective for you; this course allows you to find new ways to solve questions, new methods and tips to get higher marks and most importantly, it helps you to develop and understand the key concepts of later year subjects in a stress-free environment with a talented mentor to answer any possible questions you may have.

MEET THE STUDENT

ANNELIESE EVANS

School - Kirrawee High School
Favourite Pastime - Netball
Ranks in School -
22/206 in Mathematics

The unique exam-style homework is the perfect way to test your knowledge every week while practicing being under exam conditions.

QUESTIONS

How would you describe the Headstart course?

The Talent 100 Headstart course was definitely a challenge at first, but as the year went on with the help of great Mentors, my knowledge of mathematics expanded, allowing me to catch on to new concepts quickly. Its unique exam-style homework is the perfect way to test your knowledge every week while practicing being under exam conditions. The course challenges you to think at a level beyond required which helps make the jump from Year 10 to Year 11 less daunting.

What did you like most about the Headstart course?

My favourite part of the Headstart course is the way the in-class workbooks are structured. At the beginning of any topic we are not just given a formula, we construct it as a class. This gave me a thorough understanding of each mathematical concept.

Have your marks improved at school? Who should go to Headstart?

I saw a dramatic improvement in my marks since I began the Headstart course in mathematics. I moved up a total of 54 ranks at my school within the first semester of beginning the Headstart course, which has given me the opportunity to undertake 3-unit mathematics in Year 11. I believe anyone looking to get ahead in Year 10 or to prepare themselves for the senior years should attend Headstart.

I moved up a total of **54 ranks** at my school within the first semester of beginning the Headstart course.

CREATE YOUR FUTURE

MAKE YOUR TALENT COUNT

FAQS

What is unique about the learning system? How can it help me improve my ATAR?

The Talent 100 learning system is unique in its results focus and ability to maximise ATARs.

1. On an overall level, by creating a personal study plan that shows you exactly what it takes to score the ATAR you are looking for.

2. On a subject-specific level, through superior expertise and a practical understanding of what it takes to score maximum marks in Physics, Chemistry, Maths, English and Economics.

This approach allows us to set and achieve the right goals for our students.

How does Talent 100 help me improve in each particular subject?

We help our students to dramatically improve their marks through a two-tier system of teaching.

In our classes (average eight students), we familiarise you with the key theory, focusing on building a deep conceptual understanding from first principles, rather than through memorisation. A Talent 100 Mentor explains the theory, working through typical HSC questions, before allowing you to reinforce what you learnt with further questions.

In a personalised tutorial, a Talent 100 Tutor gives directed and individual feedback to you (and up to three other students) if you require help in your school or Talent work.

Overall, the teaching system combines the best of a competitive class environment, with the personal attention and care of having a private tutor.

Who are the teachers at Talent 100?

Our team understands the HSC system and exactly what it takes to succeed in it. Teachers are drawn from three cohorts.

- Top performing undergraduates, who have themselves topped the HSC, scoring above 99.70, or achieving a state-ranking in their particular subject

- Teachers, including former Heads of Department, from Sydney's best selective and private schools

- Academics, including PhDs & other postgraduates.

Our team's depth and diversity of experience can help guide you to HSC success.

Talent 100 Mentors will help you maximise your ATAR through their:

- Outstanding levels of academic achievement to ensure that you receive the highest quality of instruction.

- Effective communication skills to ensure that the theory can be taught to you in a way that you will understand.

- Passion for teaching and improving your results, making sure you always feel comfortable to ask questions.

Who writes the course materials?

Our resources have been developed by the Notes Development team that consists of PhDs, leading textbook authors, teachers from Sydney's best schools and students who have topped the state in a particular subject.

Our unique team of experts knows exactly what it takes to achieve the top marks, and have translated that into a very practical set of notes that cover everything you need to know for the exams, in the level of detail that you need to know it. The notes are well structured and guide students through the syllabus in a step-by-step fashion that is easy to understand and follow.

Our notes are written with the central principle of exam relevance – they cover everything that is required by the syllabus in the level of detail needed to score FULL marks. The notes are thorough and comprehensive and designed to make your study time efficient. For instance, in Physics and Chemistry we include write-ups of all practicals with a discussion of reliability, validity and accuracy, which ensures that you are able to answer questions, even if you did not perform your practicals successfully.

Effectively, our system of notes and teaching allow you to leverage the collective expertise of the HSC's top performers.

What's so special about examination-style homework?

Ultimately how well you do in your HSC depends upon how well you are able to perform in exams. Hence, students who are naturally very intelligent but fail to develop good examination technique will often perform worse than those students who are well prepared and have developed perfect examination technique.

While understanding theory forms the basis of learning, we help you score maximum marks by also developing perfect exam technique. Our exam-style homework familiarises you with the typical range of HSC questions and tests your ability to perform under pressure. This gives us feedback on the type of mistakes that you make under exam conditions, and allows us to eliminate careless errors.

Our system of homework ensures that sitting exams is literally like doing another piece of homework.

I'd like to score my absolute, highest ATAR. How do I join the course?

If you'd like to join the course, visit talent-100.com.au/contact-us or contact Student Services on 1300 999 100 to let us know which classes you wish to join.

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THE LEADING ONLINE RESOURCE PLATFORM FOR STUDENTS PREPARING FOR THE HSC

Provides you access to:

- Online learning videos created by our inspirational Talent Mentors
- The best online homework and solutions. Nothing missing. All the work has been done for you
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- Teacher booklets, to revise lessons
- Guaranteed best study notes written by students who topped the state
- 24/7 learning forums managed by our talented HSC top scoring team
- Extra resources collected over 10 years in NSW

Allows you to:

- Book tutorials online
- Set goals based on your personal ATAR targets
- Check homework marks
- Sit practice exams in the comfort of your own home

24/7

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Find out how your ATAR is calculated and how your subject selection and school impacts your ATAR.

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Our mentors share their personal tips, tactics and strategies for succeeding in their final year.

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Your ATAR is a ticket to a degree and profession. Find out what a career in Medicine, Law, Business and STEM professions are really like from current industry professionals.

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AND MAKE YOUR TALENT COUNT

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The ulitmate launchpad for HSC Sucess. Launch your preparation for HSC success early, by building on fundamental skills in Maths and English.

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FOUNDATIONS PROGRAM

From Launchpad to Foundations. A solid foundation in Mathematics and English is the cornerstone to succeeding in the HSC.

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STEPS PROGRAM

Take your first step towards HSC Success. Early preparation and a solid foundation in Year 9 and 10 deliver results in Year 11 and 12.

YEAR 10

HEADSTART PROGRAM

Headstart your HSC. Gain advantage in Year 11 and 12 by preparing one year in advance. PLUS we will personally help you choose the right subjects for your HSC.

YEAR 11

PRELIMINARY YEARLY SUCCESS PROGRAM

Personal ATAR consultation and strategic target plan development. Structured learning program, taught by the state's best teachers , for Maths, English, Physics, Chemistry and Economics.

YEAR 12

HSC YEARLY SUCCESS PROGRAM

Personal ATAR consultation and strategic target plan development. Structured learning program, taught by the state's best teachers , for Maths, English, Physics, Chemistry and Economics.

7 8 9 10 11 12

"HOW WE SPEND OUR DAYS IS, OF COURSE, HOW WE SPEND OUR LIVES." Annie Dillard

"BUY THE TICKET TAKE THE RIDE."

HUNTER S. THOMPSON

HSC STUDY GUIDE

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