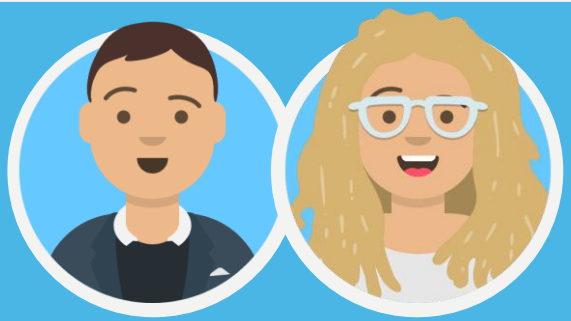
ACADEMIC LEARNING SUPPORT

Setting yourself up for Success with Maths and Statistics



Daniel Sutherland & Fran Baker
Learning Advisors
learningsupport@newcastle.edu.au

Acknowledgement of Country

Academic Learning Support acknowledges the traditional Aboriginal owners of the lands within our footprint areas:

Awabakal Nation, Darkinung Nation, Biripai Nation, Worimi Nation, Wonnarua Nation and Eora Nation.

We pay our respect to the wisdom of Elders past and present.

We also acknowledge the traditional Aboriginal and Torres Strait Islander owners of the lands on which you are located and send our respect to Elders past and present.

Super-charged Study!

Slides are available here:
https://www.newcastle.edu.au/current-students/support/academic/workshops-consultations-advisors/learning-resources/maths-and-stats

Scan for more information

Intro: Uni is different to school …

- New and different with lots to distract you
- Individual schedules – courses, days/times
- Varying Lecturer/course expectations
- Compact learning periods ⟺ extended breaks
- **You develop your own learning style ⇒ be organised**
- **YOU are responsible for your own learning**

University expectations for students

What is expected of me as a student of the University?

1. Participate and engage in all courses in which you are enrolled.
2. Take responsibility for your learning and accessing additional help.
3. Read prescribed materials and submit assessments when due.
4. Act ethically and honestly in the preparation and submission of all assessment items.
5. Consult the Program Convenor or Course Coordinator early if you're having difficulties with a course, assessment, etc.
6. Respond promptly to requests for information, usually within three (3) working days.
7. Provide honest and constructive feedback on programs and courses.
8. Access your UON email account and UONline (both via myUni).
9. Recognise academic staff have multiple roles, including teaching, research and administration.
10. Treat other students and all staff respectfully.

See further details on UON's Code of Conduct.

Super-charge your study!

From day 1 …

- Know the University systems and services
  https://www.newcastle.edu.au/current-students
- Develop your organisational skills
- Know how to study maths and stats
- Learn new IT skills to support your learning
- What support is available?
  … for when you get stuck, or need motivation or guidance

Super-charged Study!

1. Intro: Uni is different to school
2. **Organisational skills**
3. Tips for studying maths & stats
4. IT skills
5. Academic Learning Support

Get organised

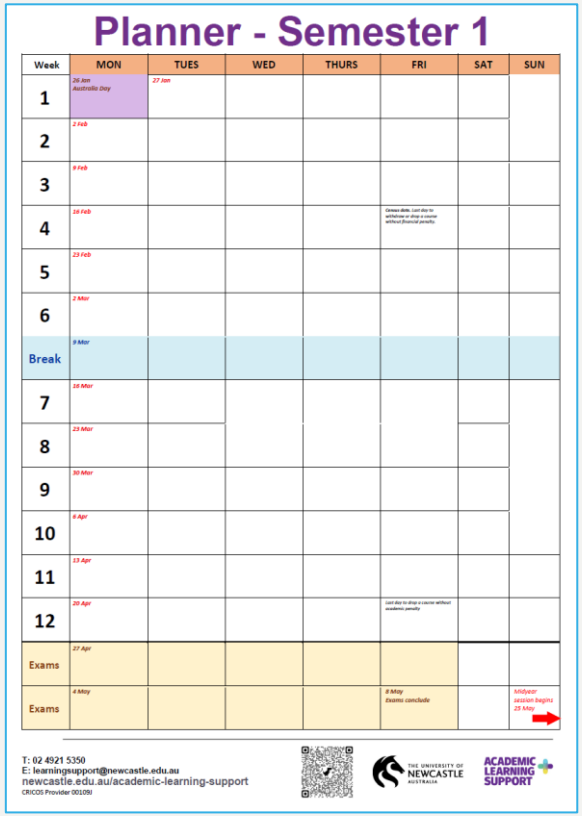
Read your course outline!

Schedule time for learning

Check Canvas and emails regularly

… stay calm and pace yourself over the 15 weeks!

Time management: use long/short term planners



Planner - Semester 1

Week	MON	TUES	WED	THURS	FRI	SAT	SUN
1	26 Jan Australia Day	27 Jan					
2	2 Feb						
3	9 Feb						
4	16 Feb				Census date. Last day to withdraw or drop a course without financial penalty.		
5	23 Feb						
6	2 Mar						
Break	9 Mar						
7	16 Mar						
8	23 Mar						
9	30 Mar						
10	6 Apr						
11	13 Apr						
12	20 Apr				Last day to drop a course without academic penalty		
Exams	27 Apr						
Exams	4 May				8 May Exams conclude		Midyear session begins 25 May

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THE UNIVERSITY OF NEWCASTLE AUSTRALIA

ACADEMIC LEARNING SUPPORT

Weekly Planner

Plan and record your study time over the week

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
6 am							
7 am							
8 am							
9 am							
10 am							
11 am							
12 pm							
1 pm							
2 pm							
3 pm							
4 pm							
5 pm							
6 pm							
7 pm							
8 pm							
9 pm							
10 pm							
11 pm							

www.newcastle.edu.au/current-students/support/academic/workshops-consultations-advisors/learning-resources/study-skills

Planning time

A three-step approach to building a study schedule

Step 1

Start by filling in the essentials

- Class times
- Work schedule
- Personal events

Step 2

Use due dates to prioritise study

- Weighting (%)
- Workload
- Urgency

Step 3

Name the tasks on your schedule

- “Revise MATH1002 week 5 worksheet”
- “Attend PASS”
- “Preview MATH1002 week 6 lecture notes”

Time management: assessment schedule

Week	STAT1070 (on campus)	MATH1002 (on campus)	MATH1900 (on campus)
1	No assessment	No assessment	No assessment
2	Online Quiz 1 (topics 1-2)	Online Quiz 1 (weeks 1-2)	Workshop Quiz 1 (shapes)
3	No assessment	Workshop Quiz 1 (week 1)	Workshop Quiz 2 (geometry)
4	Online Quiz 2 (topics 3-4)	Workshop Quiz 2 (week 2)	Workshop Quiz 3 (measurement)
5	No assessment	Online Quiz 2 (week 3)	Test 1: Space and Size **[24%]**
6	Online Quiz 3 (topics 5-6)	Workshop Quiz 3 (week 4)	Workshop Quiz 4 (combining numbers)
Recess			
7	No assessment	Midsemester Test **[20%]**	Workshop Quiz 5 (inverses)
8	Online Quiz 4 (topics 7-8)	Online Quiz 3 (week 5)	Workshop Quiz 6 (number systems)
9	Online Quiz 5 (topic 9)	Workshop Quiz 4 (week 6 + trig 3)	Test 2: Numbers **[24%]**
10	Assignment (topics 6-9) **[25%]**	Online Quiz 4 (functions)	Workshop Quiz 7 (statistics)
11	Online Quiz 6 (topics 10-11)	Workshop Quiz 5 (differentiation 1&2)	Workshop Quiz 8 (number theory)
12	No assessment	Online Quiz 5 (differentiation)	Test 3: Patterns **[24%]**
Exams	**Formal exam [50%]**	**Formal exam [30%]**	**No formal exam**
& Quiz	**Best 5 of 6 online quizzes [25%]**	**5 online quizzes [20%]**	**No online quizzes**
Totals	**No workshop quizzes**	**5 workshop quizzes [30%]**	**Best 7 of 8 workshop quizzes [28%]**

What's wrong with this schedule?

Day / Time	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
7am	Arrive at uni	Paid work	Arrive at uni	Paid work	Paid Work	Paid work	Study
8am	Lecture		Tutorial				
9am	Tutorial		Tutorial				
10am	Tutorial		Lecture				
11am	Lunch						
12pm	Lecture		Tutorial				
1pm			Lecture				
2pm	Break		Go home			Study	
3pm	Tutorial		Study				
4pm	Tutorial						
5pm	Go home						
Evening	Study	Study		Study	Study		Collapse!

What's better here?

Day Time	Mon	Tue	Wed	Thur	Fri	Sat	Sun
8am	Arrive at uni (get a park!)	Arrive at uni (get a park!)	Arrive at uni (get a park!)	Chores at home before uni	Study at home day	Footy game	Family day
9am	Library Pre-reading for SCIM	EDUC Lecture	Coffee with study group		2 hrs EDUC		
10am	Coffee with study group		LING Tutorial				
11am	SCIM Lecture	Coffee with study group	Library research for HIST assignment		Break – walk dog		
12pm	Lunch	Library research for LING assignment		Leave for uni	2 hrs HIST		
1pm	HIST Tutorial	Lunch	Lunch	Arrive at uni (get a park!)	Lunch		
2pm		SCIM LAB	HIST Lecture	Study group LING Lecture	2 hrs SCIM	Household chores	
3pm	Library						
4pm	Reading/ consolidating from SCIM lecture		Home	EDUC tutorial	1 hr LING Kid's footy training		
5pm	Home	Home	Swimming lessons	Home			
Evening	Pre-reading for EDUC lecture	Pre-reading for HIST lecture	Pre-reading for LING lecture	Consolidating EDUC work	Time out	Time out	Pre-reading for SCIM lecture

Super-charged Study!

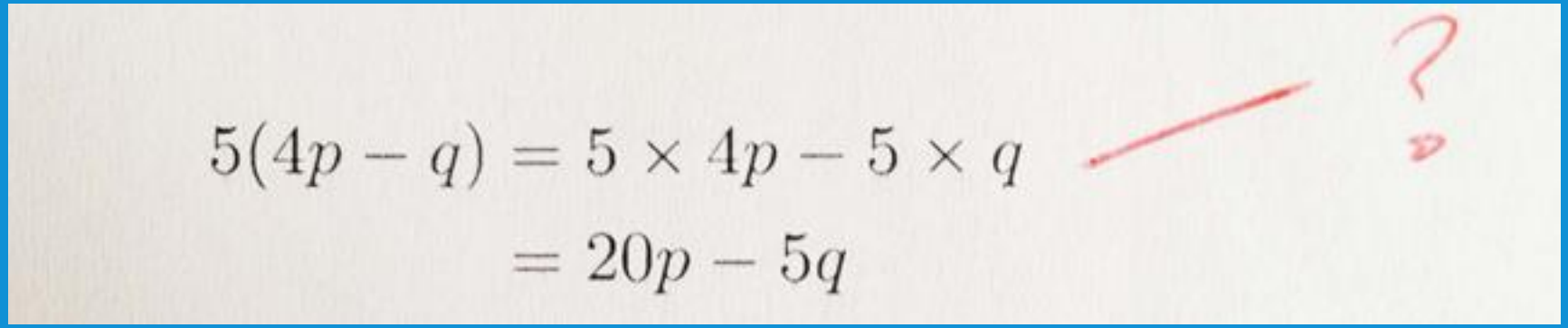
1. Intro: Uni is different to school
2. Organisational skills
3. **Tips for studying maths & stats**
4. IT skills
5. Academic Learning Support

MATHS and STATS study tips:

Annotate your course notes!

Make notes to yourself

- **By hand / Adobe Acrobat / OneNote / etc…**



Studying for the final exam starts in week 1!

Each week revise the course content by making a summary

- This help you to memorise and understand the content.
- **Start a list** of key words, definitions and formulae.
  - Add to this any special rules, tests, interpretations and even examples.
- There are **lots of places** where you can find difficult content explained.
  - Online videos and resources
  - PASS and MASH sessions, etc…
- It's not a spectator sport – *dive in!*

Do the exercises

Do the exercises

Do the exercises, **do the exercises**, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, **do the exercises**, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, do the exercises, …

1 Write each using a square root sign (i.e. as a surd).

(a) $5^{\frac{1}{2}}$ (b) $10^{\frac{1}{2}}$ (c) $2^{\frac{1}{2}}$

2 Use a fractional index to write:

(a) $\sqrt{3}$ (b) $3\sqrt{2}$ (c) $\sqrt[3]{11}$

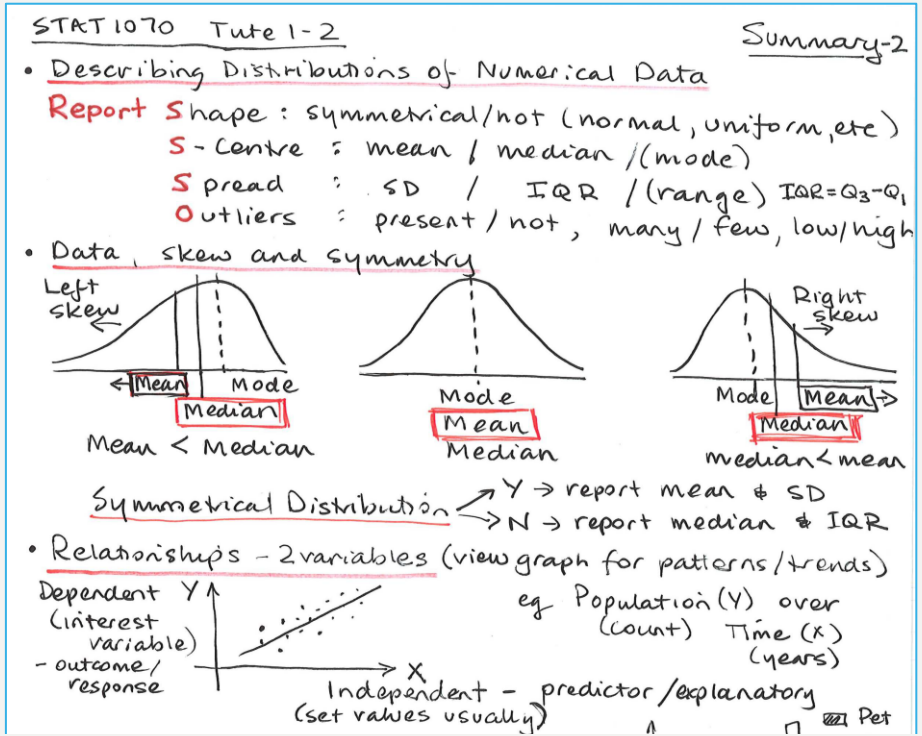
3 Find the value of the following.

(a) $4^{\frac{1}{2}}$ (b) $49^{\frac{1}{2}}$ (c) $8^{\frac{1}{3}}$

(e) $16^{\frac{1}{2}}$ (f) $100^{\frac{1}{2}}$ (g) $144^{\frac{1}{2}}$

(i) $121^{\frac{1}{2}}$ (j) $32^{\frac{1}{5}}$ (k) $81^{\frac{1}{2}}$

Strategy 1: Summaries


STAT 1070 Tute 1-2 Summary-2

- Describing Distributions of Numerical Data

Report Shape : symmetrical/not (normal, uniform, etc)
S - Centre : mean / median /(mode)
Spread : SD / IQR /(range) IQR=Q_3-Q_1
Outliers : present / not, many / few, low/high

- Data, skew and symmetry

Left skew
Mean Mode Median
Mean < Median

Mode Mean Median

Right skew
Mode Mean Median
median < mean

Symmetrical Distribution → Y → report mean & SD
→ N → report median & IQR

- Relationships - 2 variables (view graph for patterns/trends)

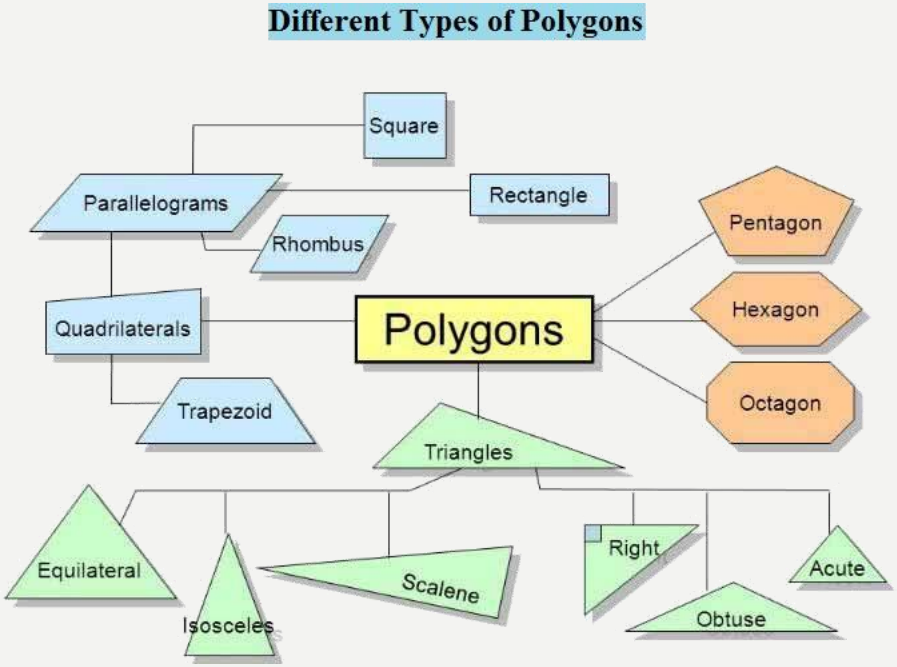
Dependent Y (interest variable) - outcome/response
X
Independent - predictor/explanatory (set values usually)

eg Population (Y) over (count) Time (X) (years)

Pet

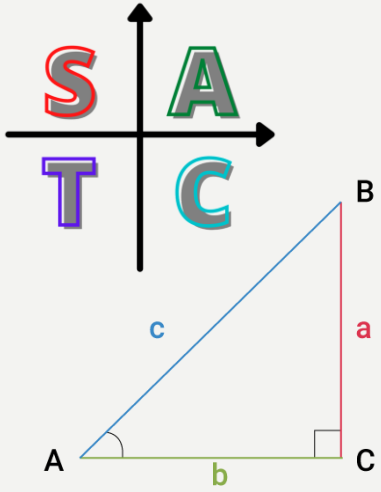
- Handwritten or typed
- By lecture / week / topic
- Make different versions
  - fill in blank boxes
  - colour the process
  - etc…
- Great for turning into a memory aid sheet to use in an exam!

Strategy 2: Flow charts or mind maps



- Design your own or find examples online
- Easy to make using PowerPoint or canva.com
- Great for turning into a memory aid sheet to use in an exam!

Strategy 3: Mnemonics



SOH – CAH - TOA

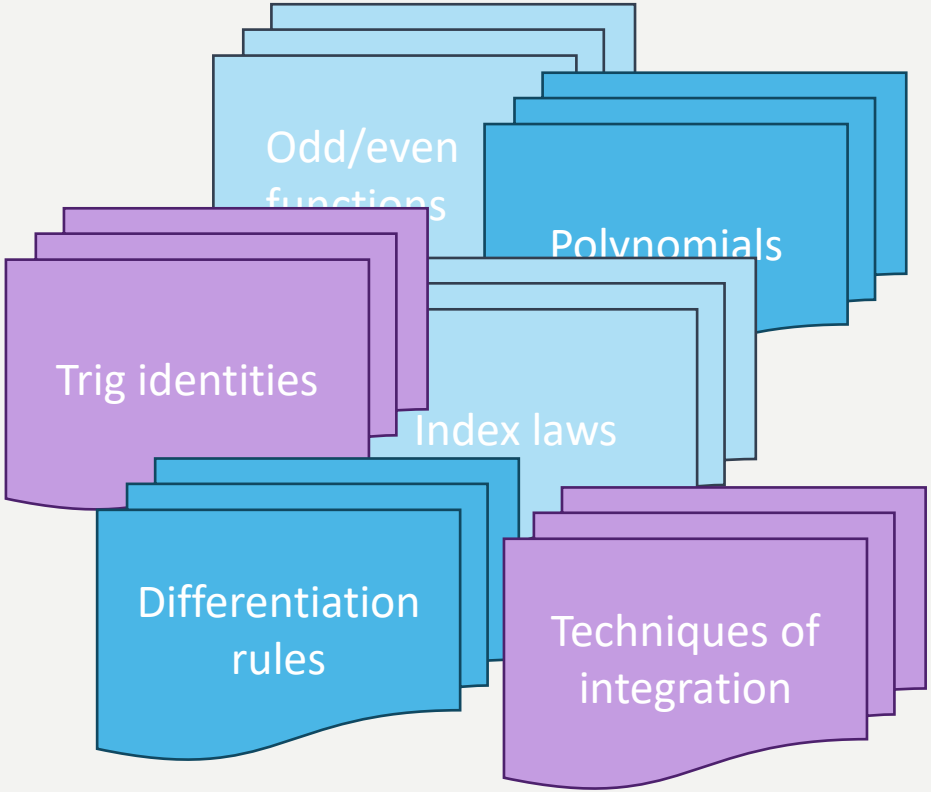
$$\text{sine } of\ \angle A = \sin A = \frac{Opposite}{Hypotenuse} = \frac{a}{c}$$

$$\text{cosine } of\ \angle A = \cos A = \frac{Adjacent}{Hypotenuse} = \frac{b}{c}$$

$$\text{tangent } of\ \angle A = \tan A = \frac{Opposite}{Adjacent} = \frac{a}{b}$$

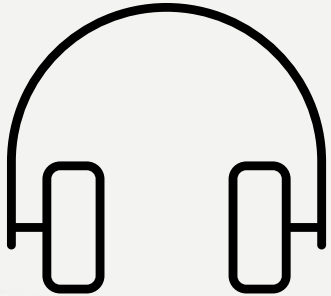
- Google [subject/topic] and ‘mnemonic’ for examples
- Or just make up your own!

Strategy 4: Flash cards



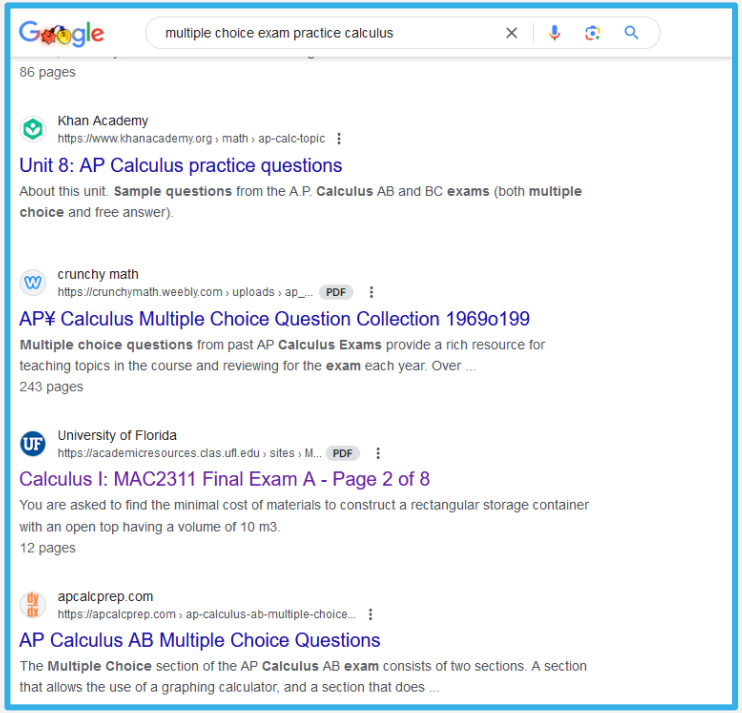
- Google [subject/topic] and ‘printable flash cards’
- Find or make online versions
  - quizlet.com
  - brainscape.com
- Great for revision on the go!

Strategy 5: Audio recordings



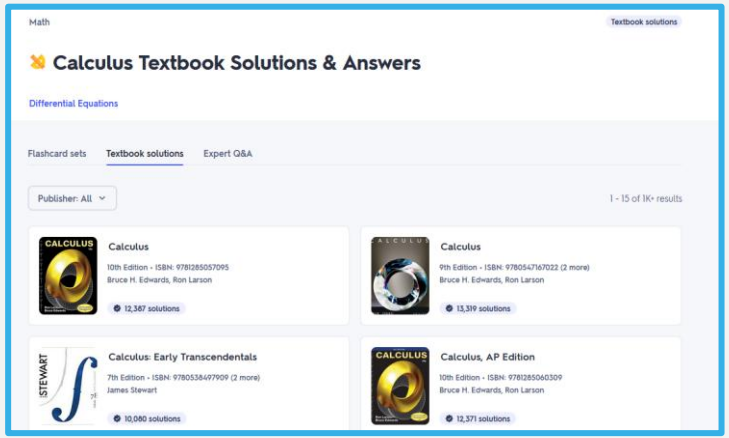
- Use your phone to record processes and procedures
- Break complex problems down into clear steps
- Great for revision on the go!
- Useful apps for recording and transcribing voice notes:
  - Otter
  - Transcribe

Strategy 6: Online quizzes and problem sets



- E.g., Google [subject/topic] and ‘multiple choice quiz’
  - BBC Bite-size guides: https://www.bbc.co.uk/bitesize/subjects/z6nygk7
  - Paul’s online notes: https://tutorial.math.lamar.edu
- Practice questions regularly

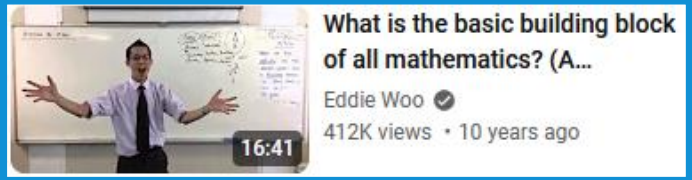
Strategy 7: Create your own online quizzes



- Work with a study group to create and attempt quizzes
- Useful websites:
  - quizlet.com
  - kahoot.it
- Check existing quizzes or flashcards thoroughly
  - Don’t assume that someone else is always correct!

Strategy 8: Online videos

Recommendations

Getting Ahead In Mathematics https://gaim1.wordpress.com/	Videos that support the content of MATH1001, MATH1002, MATH1110, MATH1120, MATH1510 and MATH2310.
Maths is fun https://www.mathsisfun.com/	A nice guide to maths with lots of explanations, examples and exercises.
The Khan Academy http://www.khanacademy.org/math/	Many short instructional videos on a range of topics including maths/stats.
Eddie Woo https://www.youtube.com/@misterwootube	

Strategy 8: Online videos

Recom dations

- Search on YouTube, etc…
  Find demonstrations or examples of topics
- Always confirm that the material falls within the scope of your course
- Great for when you're tired!

Getting Ahead

Maths is fu
https://www

The Khan Academy
http://www.khanaca y.org/m

Eddie Woo
https://www.youtube.com/@mist wootube

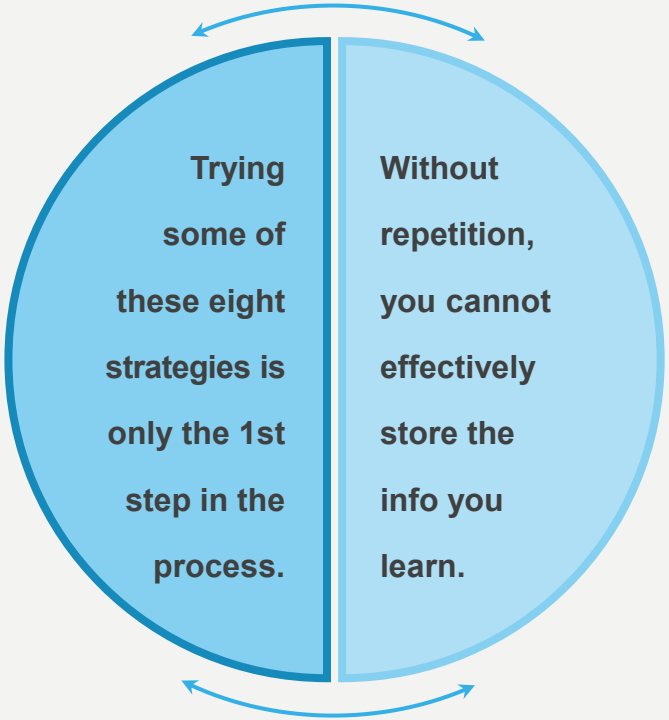
t the content of
MATH1110,
ATH2310.

ith lots of
rcises.

ional videos on a
ding maths/stats.

What is the basic building block of all mathematics? (A...
Eddie Woo
412K views • 10 years ago

Rehearse, review, revise



- Rehearsal helps information to be properly stored in your long-term memory.
- By committing information into long-term memory, your working memory is free to think, apply reasoning and approach problem-solving.

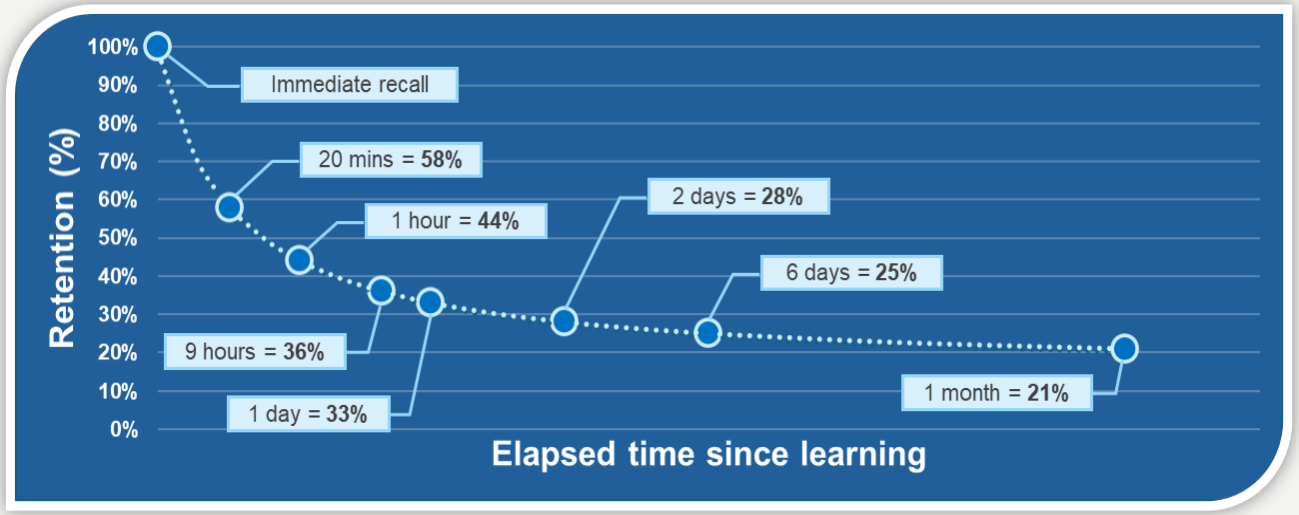
The Forgetting Curve

Your memory has a multi-component system with 3 key areas:

visuospatial sketchpad
holding a picture in your mind's eye

phonological loop
listening to, recalling, and repeating words, names or processes

episodic buffer
integrates information from several sources to create a unified memory



Short-term memory has a limited capacity for retaining information.

Make learning fun!

Teach your peers

- Outside of class and during class
- It reinforces the concept in your own mind
- Join/make a study group
- Invent stories to relate concepts

When learning, the more **senses** engaged the more memorable.

Spaced learning

Regular revision means no last-minute cramming!

The Leitner System is an easy method of study used to enhance memory retrieval.

- Use it to implement any of your study strategies.
- Make cards with content you want to remember.
- Cards could be your…
  - summary sheets of each lecture or week,
  - lists of mnemonics or flash cards,
  - titles of specific audio recordings,
  - links to specific online quizzes, etc…

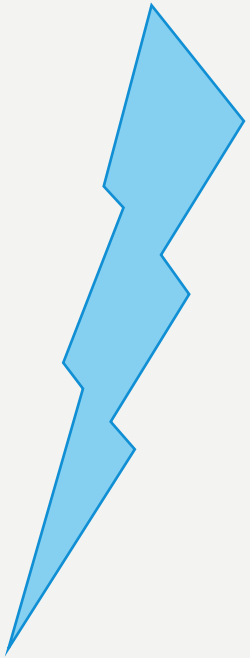
Crash Course Study Skills - YouTube

Promote a growth mindset!

Focus on learning – not on getting specific marks

Most assessments exist to encourage you to learn

- Review topics BEFORE any weekly / fortnightly quizzes.
- Just because they're only worth a few % doesn't mean they're less important.
  - A great opportunity for self-diagnosis on the current material!
- Don't just "aim for a pass" and turn the course into a balancing act.
  - A pass is too close to a fail!
- Turn assessments into a **learning opportunity.** Review mistakes / answers / feedback.
- Don't suffer in silence. Get help! ASK someone!



Get answers to your questions!

Seek out help before your class

Similar examples	**Discussion board**	**Online**
MASH sessions	**PASS**	**etc...**

There is lots of help available, so clear up the little things …

… **before they compound into big problems!**

Overwhelmed? What can I do?

You have done all you can but you are getting behind, the HECS census day is approaching and your car has broken down!

Discuss your options with the Course Coordinators or Program Convenor, like …

- Reduce time spent working, gaming or socializing
- Maybe you have chosen the wrong Degree Program for you
- Seek support from a learning advisor to improve your study approach
- Withdraw from the course (before the HECS census date means NO penalty)
- Drop another course. Studying 3 or 4 courses per semester is a **full-time load**
- Approach Support Services for health, life, counselling, financial, etc… support

Overwhelmed? What can I do?

You have done all you can but you ... e getting behind, the HECS census ... is approac... g and ... car has broken down!

Discuss your optio ... ogram Convenor, like …

- Redu...
- Maybe you ha...
- Seek ... approach
- Withdraw from the ... se (b... he H... nsus dat... ans NO penalty)
- Drop another course. Studyi... or 4 course... per semester is a **full-time load**
- Approach Support Services fo... health, life, counselling, financial, etc… support

Don't panic …
you have choices

Super-charged Study!

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3. Tips for studying maths & stats
4. **IT skills**
5. Academic Learning Support

IT Skills

Click the link for more:
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Scan for more information

Super-charged Study!

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4. IT skills
5. **Academic Learning Support**

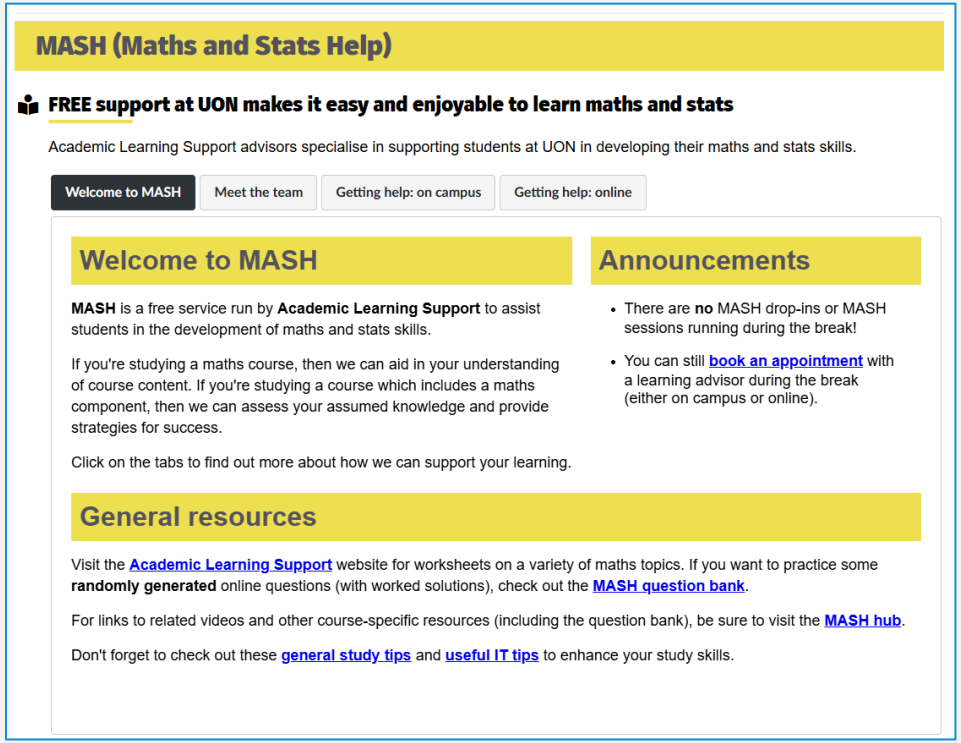
MASH (Maths and Stats Help)

Drop-ins (starting in week 1) and individual support

- **Callaghan campus drop-ins** – ALL welcome!
  - DAILY (Mon-Fri) from 11am-12pm (**GPG05, ground floor of GP**)
- **Gosford campus drop-ins** – ALL welcome!
  - Mon / Thurs / Fri from 9-10am and 12-1pm (**GOA217**)
- **Online drop-ins** – ALL welcome!
  - Mondays and Thursdays from 5-6pm (**on Zoom**)
- **Individual appointments**
  - Available on campus or online, booked through CareerHub

MASH (Maths and Stats Help)

Stay up-to-date using the MASH page on Canvas:



MASH (Maths and Stats Help)

FREE support at UON makes it easy and enjoyable to learn maths and stats

Academic Learning Support advisors specialise in supporting students at UON in developing their maths and stats skills.

Welcome to MASH | Meet the team | Getting help: on campus | Getting help: online

Welcome to MASH

MASH is a free service run by **Academic Learning Support** to assist students in the development of maths and stats skills.

If you're studying a maths course, then we can aid in your understanding of course content. If you're studying a course which includes a maths component, then we can assess your assumed knowledge and provide strategies for success.

Click on the tabs to find out more about how we can support your learning.

Announcements

- There are **no** MASH drop-ins or MASH sessions running during the break!
- You can still book an appointment with a learning advisor during the break (either on campus or online).

General resources

Visit the Academic Learning Support website for worksheets on a variety of maths topics. If you want to practice some **randomly generated** online questions (with worked solutions), check out the MASH question bank.

For links to related videos and other course-specific resources (including the question bank), be sure to visit the MASH hub.

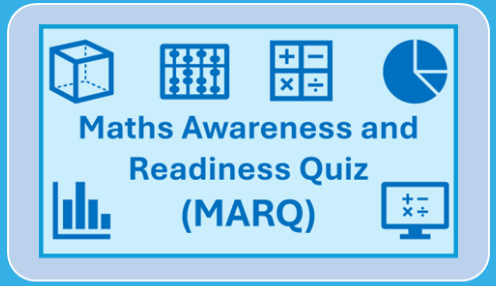
Don't forget to check out these general study tips and useful IT tips to enhance your study skills.

ACADEMIC LEARNING SUPPORT

Supporting your study wherever you need us

STUDY SKILLS
WRITING SKILLS
MATHS & STATS
24/7 SUPPORT

Make your MARQ



- **New student?** Try the new Maths Awareness and Readiness Quiz
- Identify the maths and stats skills you might need in your degree
- Get immediate quiz feedback
- Practice material to strengthen skills
- **Find it in Canvas today!**

Scan for more information

ACADEMIC LEARNING SUPPORT

Academic English Screening Test

For all commencing undergraduate students

For more info visit **bit.ly/3usBfF0**

Scan QR to start the test
or access it from Canvas

Get ready for written assignments.
This test evaluates and provides feedback on your academic English skill level. If needed, it will recommend a workshop to develop any skills gaps.

Week 1: Take the test

Week 2: Receive your feedback

Weeks 3 & 4: Attend a workshop

Get more out of your studies 🎉

ACADEMIC LEARNING SUPPORT

Supporting your study wherever you need us

Learning Advisors

- Enabling to postgrad coursework students
- All campuses, all modes of study
- Writing and study skills
- Maths and stats
- English language

Peer Assisted Study Sessions

- Student led study for undergraduate courses
- 1 hour of PASS = 3 hours of solo study

Studiosity

- Use Writing Feedback+ for **ethical** AI powered writing feedback
- **Unlimited** submissions
- Available 24/7 via Canvas through the ‘Need Help’ button

newcastle.edu.au/current-students/academic

Developing academic skills

Academic writing	Academic reading	Maths and stats	Exam preparation
Note-making	Study skills	Critical thinking	Group work
	Time management	Understanding your feedback	

Resources

Support

Academic support

- Workshops, consultations and advisors
- Learn from other students
- **Resources**
- Library

Personal support

IT support

Resources

Academic Learning Support

Supporting your study wherever you need us

No matter which campus you attend or if you study remotely, you can access support to help with your studies.

The University has a range of resources that can help you with general study skills and exam tips, as well as those that can help with course and subject-specific issues.

If you learn more effectively by interacting with people, there are also opportunities to speak directly to academic support services and receive one-on-one assistance online.

Online Resources

Our team of Learning Advisors have created a suite of online learning resources covering a wide range of areas:

- Study Skills including exam prep, word skills, study planners, etc.
- Taking control of your assignments
- Writing skills
- English Language skills
- Maths and Stats skills
- Graduate resources
- Guides for Enabling Pathways students

View Online Resources ›

ACADEMIC LEARNING SUPPORT

Supporting your study wherever you need us

PASS sessions

Peer assisted study sessions

Free 1 hour student led study groups for undergraduate courses

PASS

1 hr of PASS = 3 hr of solo study!

SCAN ME

Studiosity

Writing Feedback+

- **Ethical AI feedback** on assignments
- Available **24/7**
- Feedback in just a **few minutes**
- **Unlimited** submissions
- No changes made to your writing, just **helpful advice and suggestions**

Try it today! Look for the **'Need Help?'** button in Canvas.

Studiosity

newcastle.edu.au/current-students/support/academic/studiosity

Super-charged Study!

Slides are available here:
https://www.newcastle.edu.au/current-students/support/academic/workshops-consultations-advisors/learning-resources/maths-and-stats

Scan for more information

Reminder: How to super-charge your study

What makes a student a successful student?

How do you plan on being a successful student?

What questions do you have about studying at uni?

Thanks!

Stay in touch and let us know if you have any questions ☺