MHS
Parent Learning Group

Year 9

18 May 2021

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Presentation Content

- Syllabus Structure
- Competitions
- Differentiation
- Expectations
- Strategies for success
- Mindset
- Problem Solving
- Scope and Sequence
- Assessment Program
- Resources
- General
- Question time

Structure of Year 7-10 Syllabus

- Based on continuum

Content strands

- Number and Algebra
- Statistics and Probability
- Measurement and Geometry

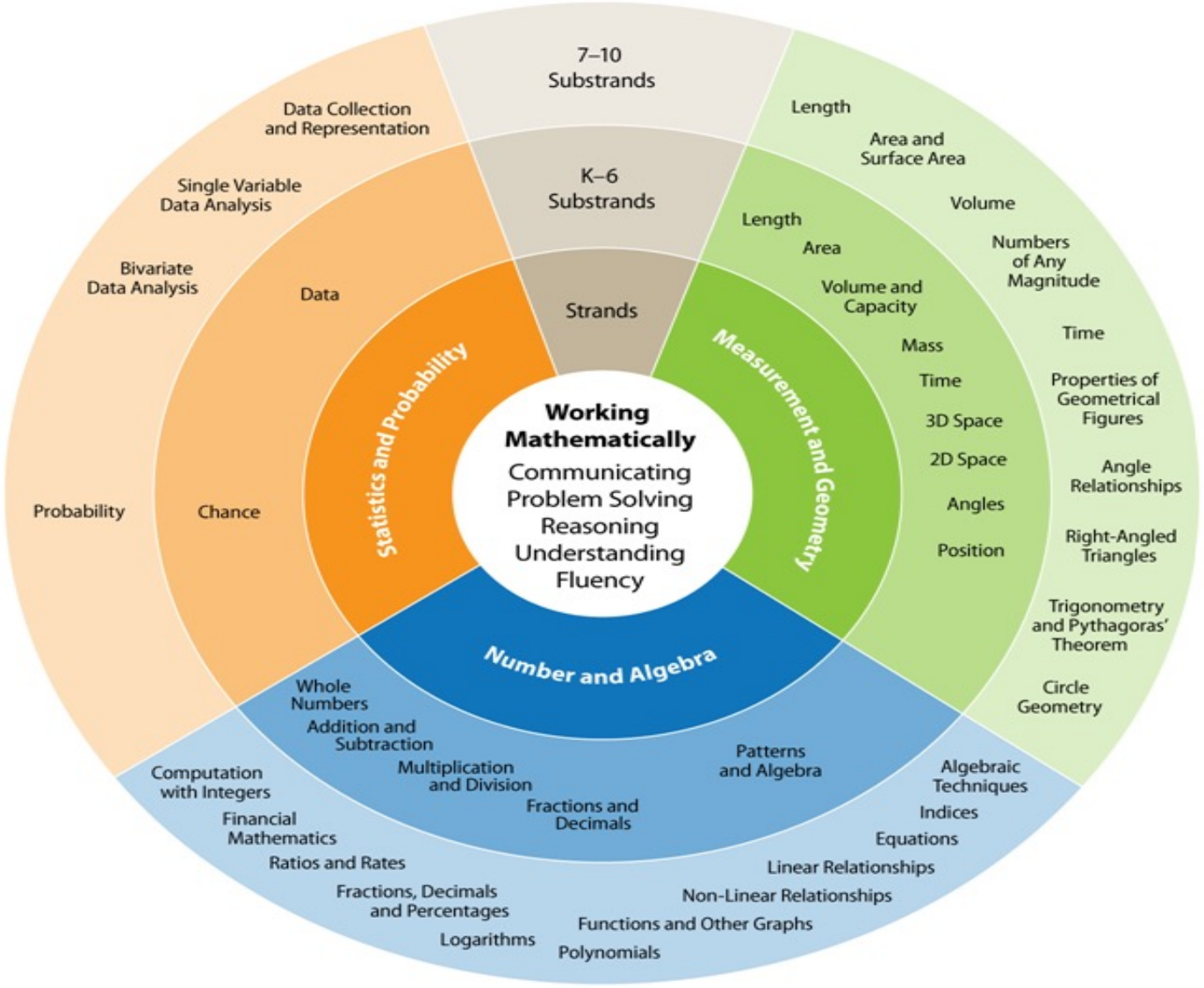
Structure of Year 7-10 Syllabus

- 1 process strand

"Working mathematically"

This is incorporated in all content strands and is the essential part of teaching the mathematics curriculum.

Organisation of content



The diagram represents the relationships between the strands and substrands only.
It is not intended to indicate the amount of time spent studying each strand or substrand.

MEREWETHER HIGH SCHOOL

MATHEMATICS COMPETITIONS 2021

Competition Name	Date and Day of Competition	Closing date of entry	Cost	Year	Coordinator	Comments
Australian Mathematics Competition -AMC	**Wednesday 4 August – Friday 6 August**	***Entries close: 30 July (online), 25 June (paper)***	**$6.50**	7-12	**Mrs Scollay**	Entries close Week 7 of Term 2 and Year 11 and 12 students to pay cashier. **Year 7 to 10 is included in their fees**
ICAS UNSW Mathematics Competition-REACH	**Monday, 30 August 2021 to Friday, 3 September 2021**	***26th June Term 2***	**$9.50**	7-12	**Mrs Easton**	Optional for 7-12.
Mathematics Challenge	**4 weeks before 25th June (Term 1 and 2)** March-June	***Week 10 Term 1***	**$25.50**	7-10	**Ms Dagg**	Coordinator Mr Singh and marked by Ms Dagg
Mathematics Enrichment	**April to 14th October (12-16 week period) (Term 2 and 3)**	***End of Term 1***	**$42.00**	7-10	**Ms Dagg**	Coordinator Mr Singh and marked by Ms Dagg.

Mr Singh
Head Teacher Mathematics, 2021

Differentiation

Differentiated teaching refers to methods teachers use to extend the knowledge and skills of every student in every classroom, regardless of their starting point.

The objective is to lift the performance of all students, including those who are falling behind and those ahead of year level expectations.

Expectations

Students are expected to

- Bring equipment to class
- Show all working in examinations
- Keep all written work neat and tidy
- Complete homework/study session consistently
- Access past exam questions on intranet
- Regularly use a diary
- Refer to the assessment calendar

Strategies for success

- Most math texts have chapter tests at the end of each chapter. Try one problem from each section. Make a note of their differences. Write down the first step to each problem –this is usually the hardest to remember.
- This practice will help you to know how to distinguish between the various types of problems. This is the hardest part.

Strategies for success

- Go back to the section in the text where you are having difficulty. Follow the examples making sure you understand each step. This takes time.

- Reading a math book is not like reading a novel. You have to practise as you go. It may take you 20 minutes to go through one example problem.

Strategies for success

- Don't leave preparing for a test to the last minute. Make sure you leave time to ask questions in class AFTER you have studied.

- Do as many problems as you can until you feel comfortable with the material

- In the class session a day or so BEFORE the test, ask the teacher to please point out any major similarities or differences among the various types of problems you will encounter on the test.

Strategies for success

- Get the phone number of someone in your class who won't mind if you call them to discuss questions
- If possible, form a small study group with members from your class.
- Math is a cumulative subject. You REALLY need to understand today's material to understand the material the next day. Ask questions immediately in class as soon as you don't understand anything.

Mindset

Fixed Mindsets

- Children who are taught that they should look smart instead of loving learning tend to develop a fixed mindset.
- They become more concerned with how they are being judged and fear that they might not live up to expectations.

Growth Mindsets

- Students who are taught to explore, embrace new experiences, and enjoy challenges are more likely to develop a growth mindset.
- Rather than seeing mistakes as setbacks, they are willing to try new things and make errors all in the name of learning and achieving their potential.

Change Your Mindset

- By focusing on the process rather than the outcome, we can help kids understand that their efforts, hard work, and dedication can lead to change, learning, and growth both now and in the future.

New Focus-Future Directions

Problem Solving

- Competitions External and Internal
- Problem Solving Hubs
- Class activities/program updates
- Working in an outside environment
- Hotmaths
- Quizes
- Questions of the Week Project
- Maths and Munch Program

Year 9 Scope and Sequence 2021

Semester 1		
Order	**Topic**	**Text Reference**
1	Measurement	Chapter 5
2	Algebra: Expressions, Equations, Inequalities & Simultaneous Equations	Chapter 2
3	Trigonometry	Chapter 3
4	Properties of Geometric figures	Chapter 7
5	Quadratic Expressions and Algebraic Fractions	Chapter 8

Semester 2		
Order	**Topic**	**Text Reference**
1	Indices	Chapter 6A-6H.
2	Surds – Mathscape 9	Mathscape 9
3	Linear Relationships	Chapter 4
4	Financial Mathematics	Chapter 1
5	Quadratic Equations and Parabolas	Chapter 10

Text: Year 9 Cambridge Mathematics and Mathscape 9
Note:
The textbook will be used in conjunction with HOTMATHS.

Assessment Schedule 2021

Merewether High School

Year 9 Mathematics (5.3 Pathway) Assessment Schedule 2021

	Task 1		Task 2		Task 3		Task 4	
Due Date	Term 1 Week 8		Term 2 Week 6		Term 3 Week 7		Term 4 Weeks 5/6	
Task Description	Class Test		Semester 1 Examination		Class Test		Semester 2 Examination	
Weighting	15%		35%		15%		35%	
Outcomes Assessed	*MA5.1-8MG* *MA5.2-11MG* *MA5.2-12MG* *MA5.3-13MG* *MA5.3-14MG* *MA5.2-8NA*	*MA5.1-2WM* *MA5.1-3WM* *MA5.2-2WM*	*MA5.1-8MG* *MA5.2-11MG* *MA5.2-12MG* *MA5.3-13MG* *MA5.3-14MG* *MA5.2-8NA* *MA5.1-10MG* *MA5.2-13MG* *MA5.1-11MG* *MA5.2-14MG* *MA5.3-16MG*	*MA5.1-1WM* *MA5.1-2WM* *MA5.1-3WM* *MA5.2-1WM* *MA5.2-2WM* *MA5.2-3WM* *MA5.3-1WM* *MA5.3-2WM* *MA5.3-3WM*	*MA5.2-6NA* *MA5.3-5NA* *MA5.1-5NA* *MA5.1-9MG* *MA5.2-7NA* *MA5.3-6NA*	*MA5.1-1WM* *MA5.1-2WM* *MA5.1-3WM* *MA5.2-1WM* *MA5.2-2WM* *MA5.2-3WM* *MA5.3-1WM* *MA5.3-2WM*	*MA5.2-6NA* *MA5.3-5NA* *MA5.1-5NA* *MA5.1-9MG* *MA5.2-7NA* *MA5.3-6NA* *MA5.1-6NA* *MA5.2-9NA* *MA5.2-5NA* *MA5.3-8NA* *MA5.1-4NA* *MA5.2-4NA*	*MA5.1-1WM* *MA5.1-2WM* *MA5.1-3WM* *MA5.2-1WM* *MA5.2-2WM* *MA5.2-3WM* *MA5.3-1WM* *MA5.3-2WM*
Report outcome	1, 2		1, 2, 3		4, 5		4, 5, 6, 7*	
When Reported	Semester 1				Semester 2			

Outcomes (Note: There may be slight variation to the outcomes reported depending on timing of completion of units of work.)

Report Outcomes	
!	Applies formulas to calculate the surface areas and volumes of prisms, cylinders, pyramids, cones and spheres, and converts between units of area and volume. (Measurement)
2	Solves linear and simple quadratic equations, linear inequalities and linear simultaneous equations, using analytical and graphical techniques. (Equations)
3	Applies trigonometry and the properties of scale factor and similar figures to solve a wide range of problems in triangles. (Trigonometry) and (Similarity)
4	Simplifies algebraic fractions and applies appropriate techniques to expand and factorise quadratic expressions. (Algebraic Fractions and Quadratic Expressions)
5	Applies index laws to operate with algebraic expressions and performs operations with surds. (Indices and Surds)
6	Determines the distance, midpoint and gradient between two points and uses various methods to form equations of straight lines. (Linear Relationships)
7	Solves financial problems involving earning, spending and investing money, including compound interest. (Financial Mathematics)*

*Outcome to be addressed if time permits.

Resources

- Hot Maths
- Competitions- AMC, ICAS, Challenge, Enrichment
- University links-Tutors and Enrichment activities
- Teachers
- MHS Moodle
- Khans Academy
- Peers
- Library Resources
- Online Competitions
- Project Maths
- Maths Club-in-school
- Problems of the week

Motivating Students in Mathematics

- 1. Call Attention to a Void in Students' Knowledge
- 2. Show a Sequential Achievement
- 3. Discovering a Pattern
- 4. Present a Challenge
- 5. Entice the Class with a “Gee-Whiz” Mathematical Result
- 6. Indicate the Usefulness of a Topic
- 7. Use Recreational Mathematics
- 8. Tell a Pertinent Story
- 9. Get Students Actively Involved in Justifying Mathematical Curiosities

Question Time ????

Quote of the Day