

# Parent Learning Group

Year 11

1<sup>st</sup> June, 2021

Dharmendra Singh

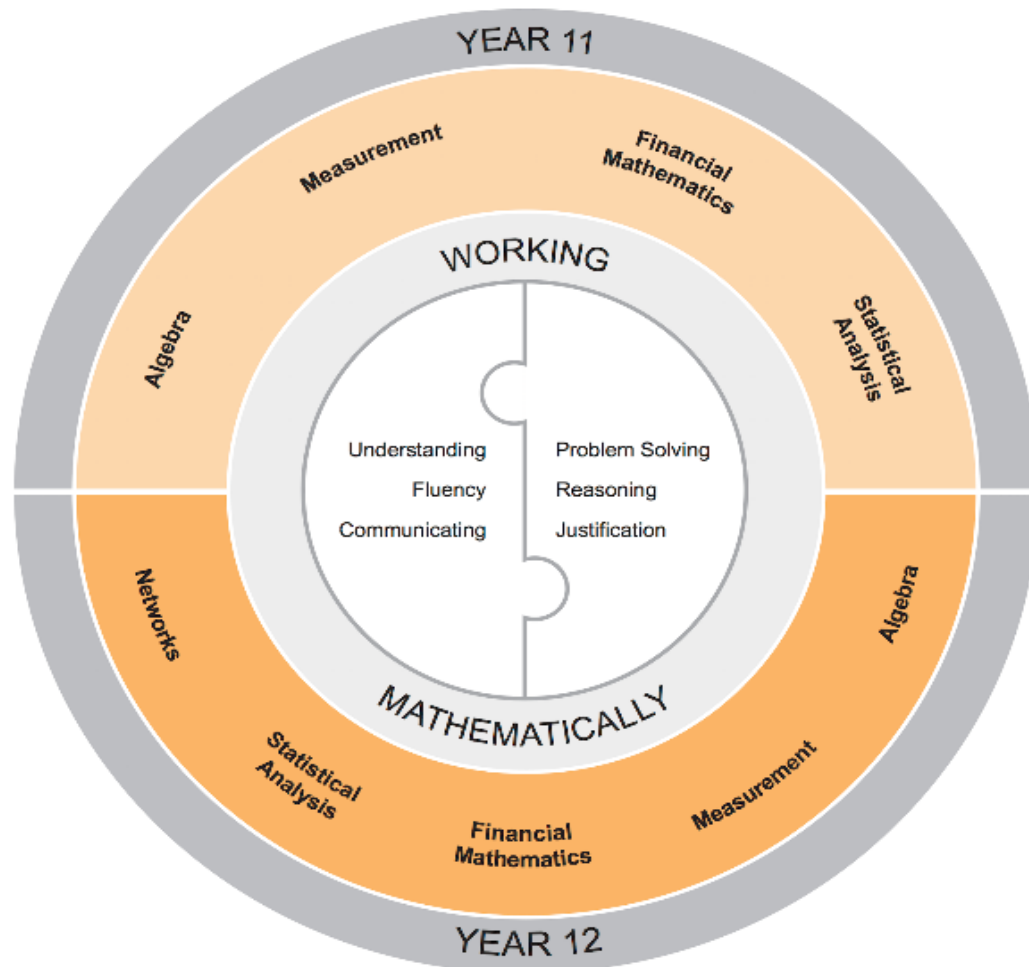
(Head Teacher, Mathematics)

# Presentation Content

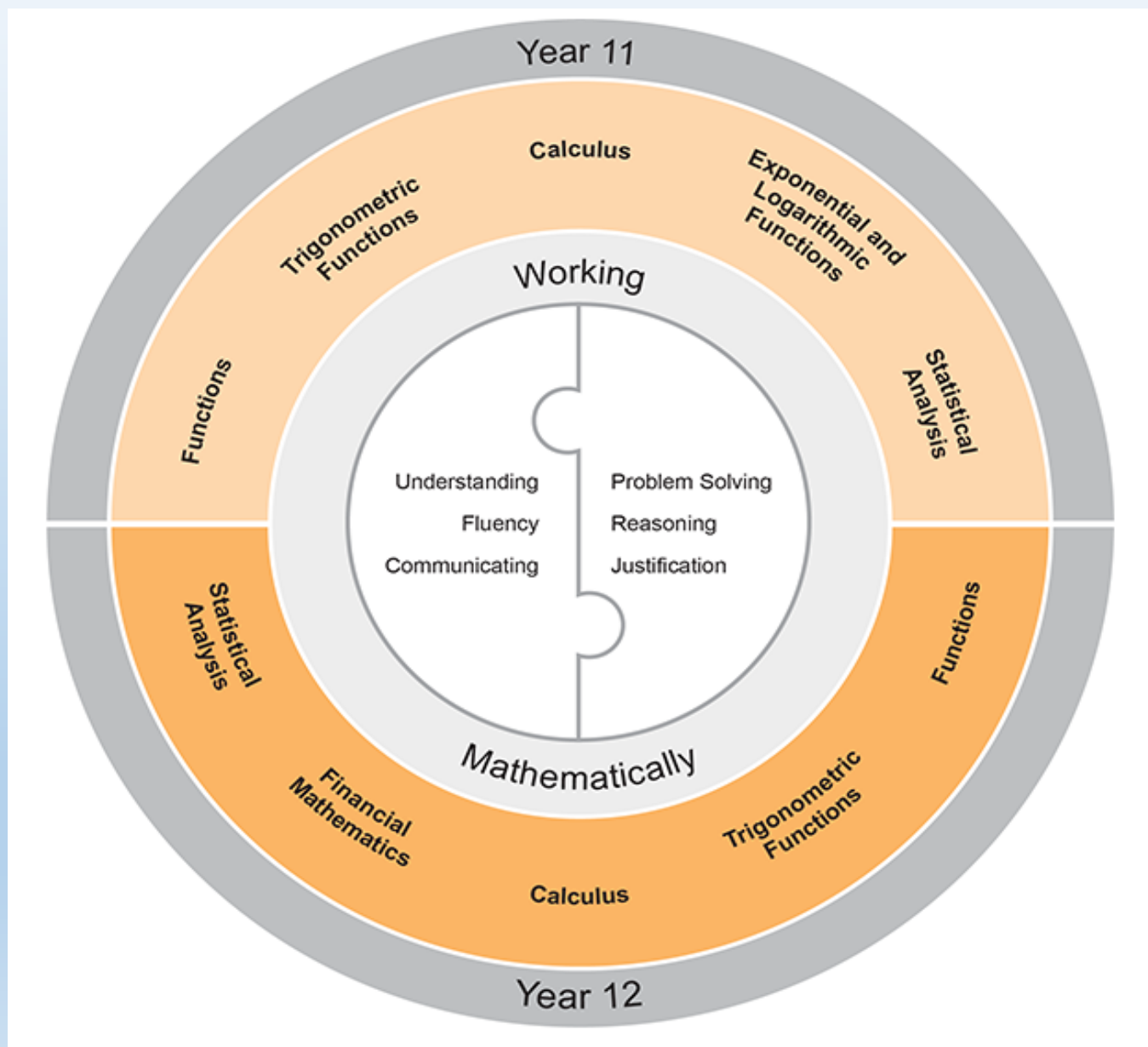
- Syllabus Structures
- Curriculum Differentiation
- Competitions
- Expectations
- Strategies for success
- Scope and Sequence
- Assessment Program
- Resources
- How Students Learn
- HOTmaths
- Question time
- Quote

# Year 11 and 12 Standard Mathematics

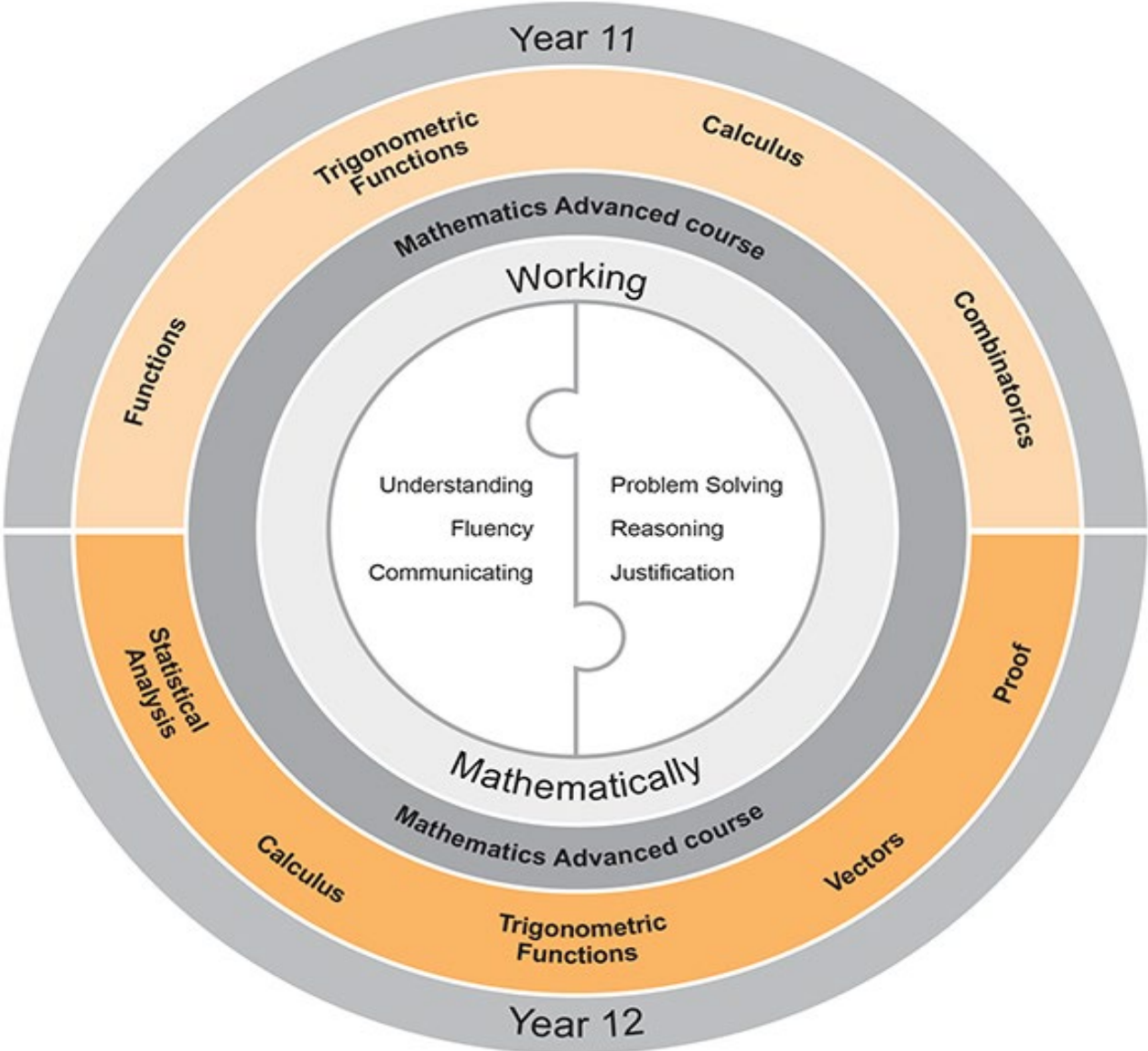
The Year 11 **Mathematics Standard** course is organised in topics, with the topics divided into subtopics. The Year 11 course is undertaken by all students intending to study either the Mathematics Standard 1 Year 12 course or the Mathematics Standard 2 Year 12 course.



# Year 11 and 12 Advanced Mathematics



# Mathematics Extension 1 Course



# Curriculum Differentiation

Gifted students have specific learning needs that may require adjustments to the pace, level and content of the curriculum. Differentiated educational opportunities assist in meeting the needs of gifted students.

- Generally, gifted students demonstrate the following characteristics:
- the capacity to learn at faster rates
- the capacity to find and solve problems
- the capacity to make connections and manipulate abstract ideas.

There are different kinds and levels of giftedness. Gifted and talented students may also possess learning difficulties and/or disabilities that should be addressed when planning appropriate teaching, learning and assessment activities.

## Curriculum strategies for gifted and talented students may include:

- differentiation: modifying the pace, level and content of teaching, learning and assessment activities
- acceleration: promoting a student to a level of study beyond their age group
- curriculum compacting: assessing a student's current level of learning and addressing aspects of the curriculum that have not yet been mastered.

School decisions about appropriate strategies are generally collaborative and involve teachers, parents and students, with reference to documents and advice available from NESAs and the education sectors.

Gifted and talented students may also benefit from individual planning to determine the curriculum options, as well as teaching, learning and assessment strategies, most suited to their needs and abilities.

# 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 and practice
- Regularly use a diary
- Refer to the assessment calendar



## Strategies for success

- ❖ Attempt Chapter Reviews at the end of each chapter. Try one problem from each section. Make a note of their differences. There is challenge exercises as well.
- ❖ 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.
- ❖ 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.
- ❖ Growth mindset-, "In a growth mindset, people believe that their most basic abilities can be developed through dedication and hard work-brains and talent are just the starting point. This view creates a love of learning and a resilience that is essential for great accomplishment

# Strategies for success

- ❖ 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.
- ❖ 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.
- ❖ Use **different stimulus materials** and texts
- ❖ Make time available to do **catch up**

# Strategies for success

- ❖ 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.
- ❖ 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.

# Strategies for success

- ❖ Differentiation to avoid repetition
- ❖ Practice mental computations
- ❖ Spend **half an hour to 45 minutes** to revise daily
- ❖ Read next day's lesson from text
- ❖ Enjoy what you do!
- ❖ **Annotate your work**
- ❖ Relate your mathematics to a story
- ❖ **Feel confident in your ability**
- ❖ Appreciate your achievements

# Scope and Sequence

Term 1		Week 1/2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	
	Topic	Algebraic Techniques		Equations and Inequations		Introduction to functions		Further Functions			
	Unit title	Algebraic techniques MA-F1.1			Introduction to Functions MA-F1.2		Linear, quadratic and cubic functions MA-F1.3		Further functions and relations MA-F1.4		
	Outcomes	MA11-1, MA11-2, MA11-8, MA11-9		<b>Y11 AT 1</b>  <b>Investigative Task</b>  <b>Handed out Week 4</b>		MA11-1, MA11-2, MA11-8, MA11-9		MA11-1, MA11-2, MA11-8, MA11-9		<b>Wk. 9 T1</b>  <b>Hand in and Validation</b>  Weighting 20%	

# Mathematics Advanced- cont.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
<b>Term 3</b>	<i>Topic</i>	Introduction to Calculus		Probability			Exponential and Logarithmic Functions	Year 11 Final Assessment Period		Exponential and Logarithmic Functions
	<i>Unit title</i>	The derivative function and its graph MA-C1.3	Calculating with derivatives MA-C1.4	Probability and Venn Diagrams MA-S1.1		Discrete Probability Distributions MA-S1.2		Introducing logarithms E1.1	<b>Year 11 Task 3</b>	Logarithmic laws and applications E1.2
	<i>Outcomes</i>	MA11-1, MA11-5, MA11-8, MA11-9		MA11-7, MA11-8, MA11-9		MA11-7, MA11-8, MA11-9		MA11-6, MA11-8, MA11-9		MA11-6, MA11-8, MA11-9

# Assessment Schedule

		Task 1	Task 2	Task 3
	Task Description	Alternative Task	Mid Course Assessment	Final Examination
Components	Weighting	Hand-Out: Week 4 Term 1 2021 Hand In and Validation Week 9 Term 1	Week 4-5 Term 2	Week 8-9 Term 3
Understanding, Fluency and Communication	50	10	20	20
Problem Solving, Reasoning and Justification	50	10	20	20
TOTAL	100	20	40	40
Outcomes assessed		MA11-1, MA 11-2, MA 11-8, MA 11-9	MA11-1, 11-2, 11-8, 11-9 MA11-1, 11-3, 11-4, 11-8, 11-9	MA11-1, 11-2, 11-3, 11-4, 11-5, 11-6, 11-8, 11-9
Report Outcome		1, 2	1,2,3	1-5
When reported		Semester 1	Semester 2	

# Resources

- Project Maths online program
- Competitions- AMC, ICAS, Colin Doyle
- University links-Tutors and Enrichment activities
- Teacher assistance during recess lunch breaks/study period
- MHS Moodle-past exams, textbooks, resources
- Khans Academy online video
- Peers and Peer tuition
- Library space and resources
- Online Competitions
- Eddie Woo videos



# How students learn Maths

Allowing multiple strategies, perhaps by helping students explore and discuss their own methods to “see what is easy and difficult about each of them.”

- By providing an instructional environment in which there is not always a single correct approach, students will learn to focus on the process of problem-solving, not simply on whether the answer is right or wrong.

Encouraging math talk “to make students’ thinking visible.” This approach provides the teacher with better information to use when diagnosing student difficulties, and it makes more than one “teacher” available to help students make connections.

Designing “bridging instructional activities” that “pre-emptively” address areas of misconceptions students often have.

# Question Time ????



## Quote of the Day

# How to be a **MATH PERSON:**



Step 1:

Do math  
(any type)

Step 2:

Be a person