The James Young High School

S2 Phase Information Evening

Barry Whelan

Presentation Outline

Course Structure and Pathways In s2

Overview of Content s2

Digital Learning Resources / Extra Support

Attitude and Homework Expectations

Supporting at Home

Why maths

The book of nature is written in language of mathematics – Galileo

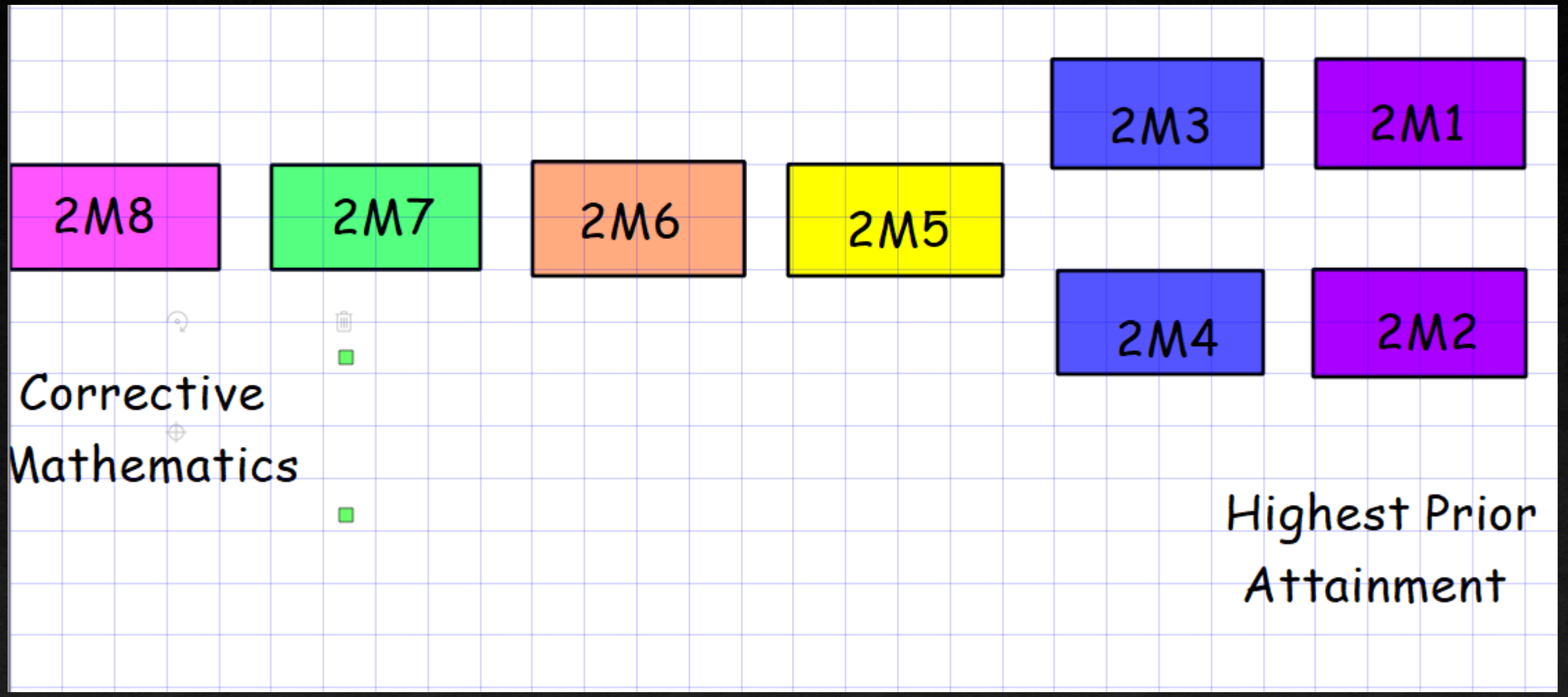
- The objects in mathematics behave according to the rules.
- The quest of mathematics is to uncover and describe these rules governing the inhabitants of the abstract plane, to find the laws of these realms and explore their implications and applications.
- To see the behavior of mathematics and to live-in it is to see rational, elegant truth in the world, and it is beautiful.
- The school mathematics curriculum is typically categorised according to the following areas: number, algebra, shape, ratio and proportion, probability, and statistics, and in some places a separate area called “mathematical reasoning”

S2 Classes

Unlike many other subjects students come to maths classes based on prior attainment.

Mathematical knowledge is vertical and it’s important that all knowledge is mastered.

Students have chance to change classes at key points throughout the year.
Assessments in November.
End of year test (April).
Teachers feedback at regular intervals


2M8
2M7
2M6
2M5
2M3
2M1
2M4
2M2
Corrective Mathematics
Highest Prior Attainment

Time Frame	Topic	Description	Checklist
June	Data & Analysis_A	• Revision- Reading/drawing pictographs/bar graphs/line graphs • Looking at averages-Mean, median, mode and range • Constructing/reading frequency tables • Reading/drawing simple pie Charts • Extension- Drawing more complicated pie charts (where angles needs to be worked out first) • Extension- Constructing cumulative frequency tables	
	Whole Numbers_Number problems/Number facts & Order of operations	• 4 operations involving (+,-,x,÷) • Long multiplication • Rules of order of operation- the order in which a sum with more than one operation must be done. BRACKETS, ORDER, DIVISION, MULTIPLICATION, ADD, SUBTRACT e.g. $5 * (3 + 4)$	
	Percentages_1	• Simple Non-calc. percentages (finding 1%,10%,20%,25%, etc. & 27% using 20%+7% etc.)	
	Negative Numbers	• Look at negative numbers in context (temperature, money etc.), • Basic add/subtract with negatives, involving number line (e.g. -2 + 5, 7 – 15 etc) • Add/subtract involving double negatives/negative with a positive e.g. -3 – (-5) or -4 + (-2) • Multiply/divide negative numbers	
August - October	Decimals	• 4 operations involving decimals (+,-,x,÷) • Reading decimal scales • Multiply/divide a decimal by decimal • Round to the nearest whole number/10/100/1000 and to a particular decimal place • Multiply/Divide a decimal by 10,100,1000 • Multiply/divide by multiples of 10,100,1000 e.g. x,÷ by 20,400 etc • Extension- Multiply/divide a decimal by decimal • Extension- Rounding to a given number of significant figures	
	Fractions	• Meaning of fractions (numerator/denominator) • Recognise and create Equivalent fractions ($\frac{4}{12}=\frac{1}{3}$), including simplifying fractions • Fraction of a quantity (Find ¾ of 20) • Add/subtract fractions with and without common denominator. • Extension– change a fraction from top heavy/mixed number to mixed/top heavy (e.g. $\frac{23}{4}=5\frac{3}{4}$) • Extension- Add/subtract mixed fractions • Extension – multiply/divide fractions.	

	Expressions & Equations_1 (Algebra)	• Simplifying expressions (collecting like terms) • Substitution (replacing a letter with a number) • Solving/Forming basic equations (e.g. $2x + 5 = 15$) • Extension- solving equations with fractions (e.g. $\frac{1}{2}x + 4 = 10$)	
	Measurement	• Metric unit conversion (convert between metres, centimetres, millimetres & kilometres. • Converting weight capacity (1 kilogram = 1000 grams)	

October - December	Area & Perimeter_A	• Perimeter and area of a rectangle revision (including unit conversion when required) • Area of triangle • Composite area • Extension- Area of other quadrilaterals	
	Volume	• Volume of cuboid & composite volume • Capacity– converting units (1ml = 1cm³, 1L = 1000ml)	
	Assessment (November Numeracy Test_**Non Calc**)	• A revision homework will be provided before this assessment. • Class moves normally take place after this assessment.	
	Percentages_2	• Convert between fractions/decimals & percentages (e.g. ¼ = 0.25 = 25%, ⅓ = 0.33 = 33⅓%) • Expressing a test score expressed as a % • Extension- Percentage increase and decrease • Extension- Reverse percentages	
	Time	• Revision of 12hr and 24hr clock & change between 12hr/24hr times • Using/reading timetables • Time intervals (e.g. how long is it from 1352 to 1719) • Distance, speed & Time calculations • Extension- Convert hours and minutes into decimal times (e.g. 4 hours 15mins = 4.25 hours)	
	Patterns & Formulae	• Simple and more complicated linear patterns (using a table and creating formulas) • Extension- square/triangular patterns • Extension- Using a table of values to draw graphs	

Download the Complete Scheme of Work from this link : S2 Scheme of work

Corrective Maths

Part of worlds largest ever educational experiment
Project follow through.

Focus on building the foundation of maths and catching students up to required level by S3

Scripted lessons and workbooks.

After School Support BGE

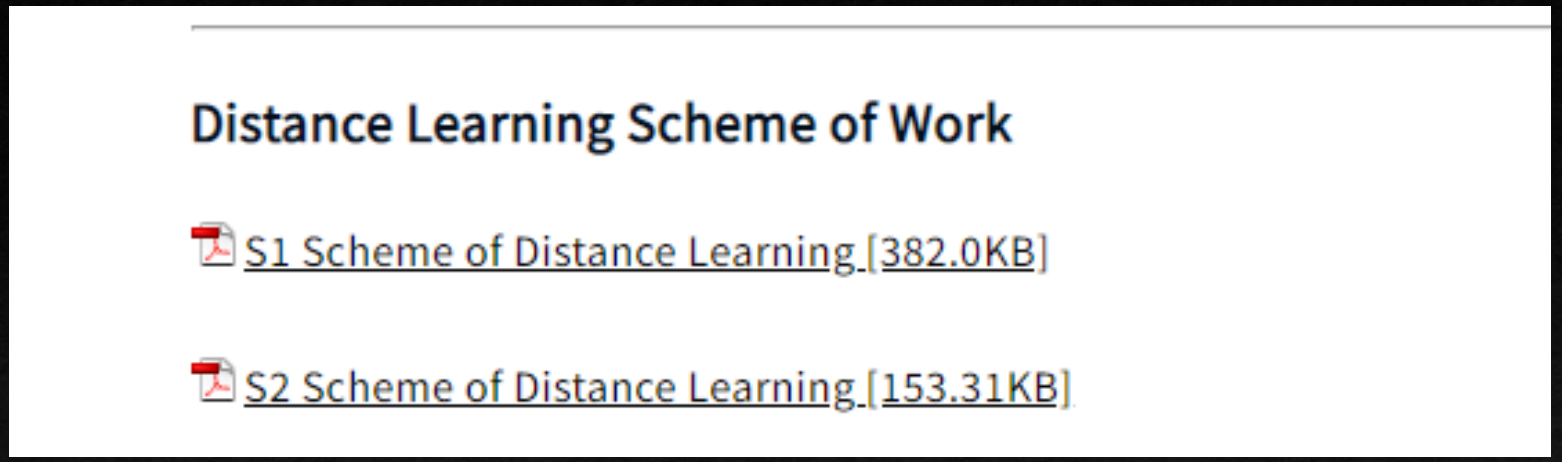
Wednesday Lunchtime

A typical maths lesson

Lesson Evaluation Toolkit :typical features of high-quality lessons		
Elements	**Illustrations**	**Notes**
Smooth Start	• Students come into lessons and settle within the first 5 minutes. • Students have a set routine to begin the lesson • Students know how to collect all resources for the lesson	
Shared Goal	• The goal of the lesson is shared with the students. • The goal is highlighted throughout the lesson. • Links to applications, the curriculum as appropriate • The students can articulate when asked what the goal of lesson was.	

	lesson was.	
Teaching for long term retention	• Previous learning is reviewed. • Quizzes are used to check for understanding • Linking of current content to previous content, interleaving/ interweaving.	
Modelling the learning	• Clear verbal and visual presentation of the material. • Analogies and concrete representation used where appropriate • Prerequisites are checked before beginning new content. • Presentation is interactive with frequent checks for understanding. • All students participating in questioning, whole class response, cold call, show me boards. • Wait time given for high order questions / think pair shares used. • Students obtain a high success rate before independent practice.	

Independent Practice	• Students get chance to practice material independently • Students have access to answers to check progress. • Teacher observes throughout the room, giving feedback as necessary. • All students obtain success and appropriate challenge.	
Relationships	• Teacher knows the students well. • Students are praised for effort. • High expectations of behaviour and quality of work. • Time and resources are used effectively • Poor student behaviour is dealt with in a systematic and calm manner.	
Lesson Exit	• Lesson is ended in calm and orderly fashion. • Students have a chance to reflect on their learning • Exit tickets are used to check for understanding	



Link to website to download distance learning materials – Website Link

Attitude and Expectations

Encourage a positive attitude about maths

Encourage them to agents of change and take personal responsibility , take advantage of the extra classes and online support.

All Students need a calculator.

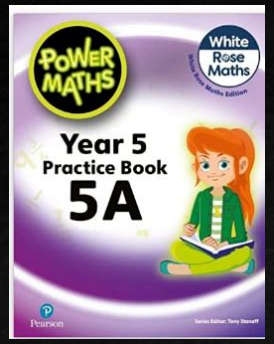
HW should be given to all students at least one per week, HW will average about 30 minutes per week.

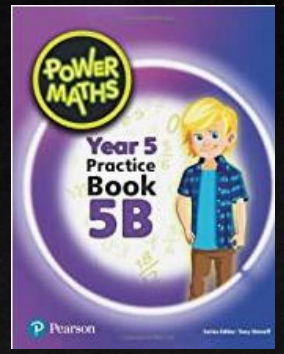
Beware the Dangers of phone use and social media especially in the run up to assessments.

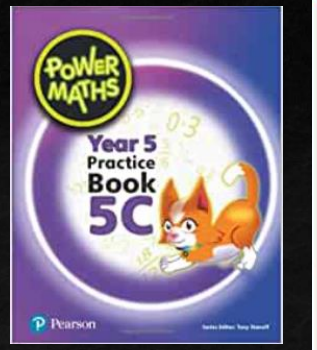
High Attendance is key , number one indicator in research study in England for obtaining 5 good GSCE was attendance above 95%.

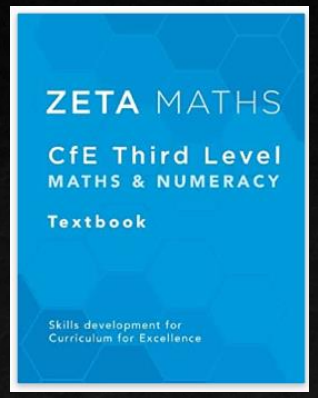
Wanting the Extra Push

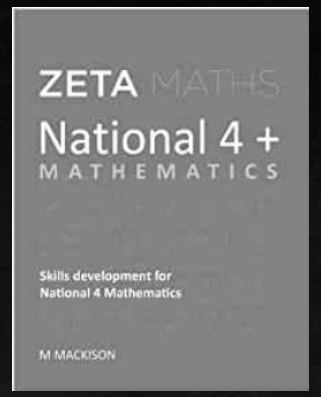
Recommend Textbooks for extra work at home





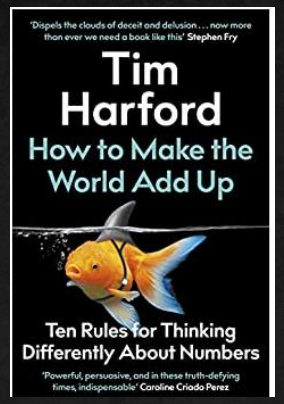


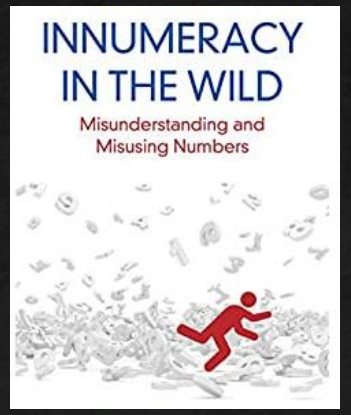


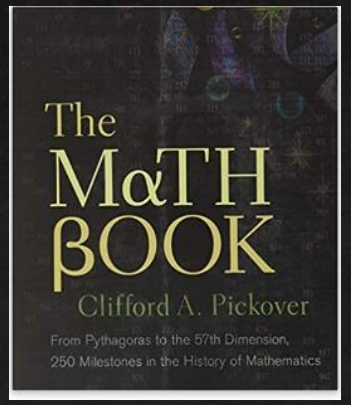


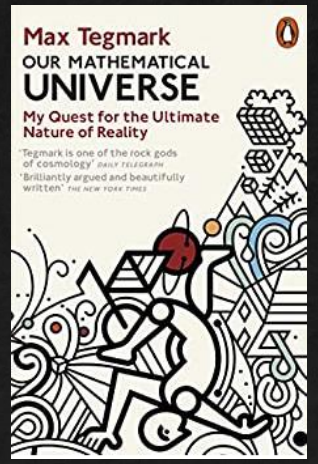
Podcasts : [Curious cases of Rutherford and Fry]

[Numberphile]









Questions Please