TOWNLEY GRAMMAR SCHOOL | LEARNING JOURNEY

The Mathematics Journey

YEAR 13

- Get your first job applying the maths skills learnt over your journey
- Continue your lifelong love of learning and mathematical development
- Get an apprenticeship in a mathematical field
- Take a mathematically based degree
- Complete revision and sit the exams
- Apply vectors to more complicated situations both in pure and applied maths
- Solve more complicated calculus problems
- Solve mechanics problems where acceleration is not constant
- Revise for and complete Y13 mock exams
- Explore conditional probability in statistics
- Resolve forces and solve mechanics problems on slopes
- Visit a university and become inspired and informed about Maths courses
- Extend knowledge of trigonometry to include radians
- Take part in the fifth STEM day

YEAR 12

- Review the important algebraic concepts learnt at GCSE
- Complete some reading around the subject over the summer
- Explore the equation of a circle
- Start learning statistics, including probability models
- Investigate binomial expansions where the power is integer
- Expand knowledge of trigonometry and start using identities
- Revise and complete Y12 mock exams
- Sit the Senior Maths Challenge for the first time
- Learn about hypothesis testing
- Start learning about calculus with the basics of differentiation
- Recognise integration as the inverse of differentiation
- Start the journey of learning mechanics
- Understand Newtons Laws of motion
- Apply for Sixth Form student leadership team
- Explore logarithms and exponentials

YEAR 11

- Revise for and sit your actual GCSEs to give yourself a competitive edge in life
- Explore the concept of vectors
- Take the concept of surds further and explore rationalising
- Sit the maths assessment and decide to take Maths/Further Maths at A-level
- Learn about functions and how these can be applied in different circumstances
- Revise for and sit your Y11 mock exams.
- Investigate cubics and their graphs
- Explore more complicated algebra
- Learn about the properties of circles and how these theorems can solve problems
- Extend knowledge of trigonometry to include graphs

YEAR 10

- Start using complicated formula and explore non-linear sequences
- Revisit number facts and extend knowledge to the use of surds
- Take part in the third STEM day – Inspiring the Future
- Learn about time-series data
- Sit the Intermediate Maths Challenge for the first time
- Review FDP
- Learn about trigonometry for the first time
- Sit an end of year assessment
- Recognise the different styles of graphs formed by equations
- Start solving area and shape problems using more complicated algebra
- Revisit transformations
- Take part in the fourth STEM day – Enigma
- Solve more complicated quadratics using new methods like completing the square
- Review probability and extend to conditional probability
- Sit an end of year assessment
- Learn about histograms
- Understand congruency and similarity

YEAR 9

- Start the new year in streamed groups
- Sit an end of year assessment
- Calculate surface areas and volumes of shapes
- Take part in the second STEM day – Mission to Mars
- Learn about circles and the importance of π
- Sit the Junior Maths Challenge and compete against students across the nation
- Extend knowledge of statistics to include how to represent data graphically, including cumulative frequency
- Learn about the symmetry of shapes and how shapes can be transformed
- Understand how coordinates can be mapped out with equations when in a straight line
- Develop knowledge of solving equations to include equations with brackets and simultaneous equations
- Understand how successive events can be predicted both theoretically and via experiment
- Become more confident with fractions

YEAR 8

- Start solving algebraic equations
- Review and enrich the basics of Mathematics
- Explore problem solving via enrichment week
- Learn about codebreaking and the mathematics behind it
- Take part in your first STEM Day, 'The Magic of STEM'
- Learn about triangles, including Pythagoras
- Decipher Factors, Multiples and Prime numbers
- Learn how to analyse data using statistics, including mean, median and mode
- Sit the Junior Maths Challenge and compete against students across the nation
- Understand how maths can be used in Economics through percentages and ratios
- Recognise how to interpret maps
- Learn about graphs and coordinate axes
- Sit an end of year assessment
- Use the summer to explore fun maths

YEAR 7

- Complete the summer transition work
- Visit Townley and have your first Townley maths lesson
- Learn about how to analyse basic statistics
- Sit SATS in Y6
- Develop problem solving skills
- Discover the beauty of algebra
- Explore the basics of number including the four operations of calculations

PRIMARY SCHOOL

- Learn about the enjoyment of counting

TOWNLEY GRAMMAR SCHOOL
From here it's possible

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