## Maths at Thomas Estley - A Support Guide for Students, Parents + Carers.

2019 Edition v1

At Thomas Estley we teach maths using a stage-not-age approach. This means work being done by our more able Year 8s might also be taught to moderate or lower ability Year 9 or 10 Students.

Very roughly, we break all the work required for GCSEs up into sections:
Grade 1 (Red)
Grade 2 (Orange)
Grade 3 (Yellow)
Grade 4 (Light Green)
And we teach pupils according to set and current working grade. Through five years this looks roughly like so:

|  | Higher Ability | Middle Ability | Lower Ability |
| :--- | :--- | :--- | :--- |
|  | KS2 Score 107 or Better | KS2 Score 97-106 | KS2 score 96 or Fewer |
| Y7 Autumn Term | Red and Orange | Red and Half Orange | Red |
| Y7 Spring Term | Most Yellow | All Orange | Some Orange |
| Y7 Summer Term | All Yellow | Most Yellow | Most Orange |
| Y8 Autumn Term | Half Light Green | All Yellow | All Orange |
| Y8 Spring Term | All Light Green | Half Light Green | Some Yellow |
| Y8 Summer Term | Half Dark Green | Most Light Green | Half Yellow |
| Y9 Autumn Term | All Dark Green | All Light Green | Most Yellow |
| Y9 Spring Term | Half Light Blue | Half Dark Green | All Yellow |
| Y9 Summer Term | All Light Blue | Most Dark Green | Half Light Green |
| Y10 Autumn Term | Half Dark Blue | All Dark Green | Most Light Green |
| Y10 Spring Term | All Dark Blue | Half Light Blue | All Light Green |
| Y10 Summer Term | Some Violet | All Light Blue | Half Dark Green |
| Y11 Autumn Term | Most Violet | Half Dark Blue | Most Dark Green |
| Y11 Spring Term | All Violet | All Dark Blue | All Dark Green |
| Y11 Summer Term | Revision | Revision | Revision |

Each colour is then split into topics (Algebra, Geometry etc) which are later in this guide. Each topic should take between 2-4 weeks and is concluded with a short review task.

From day 1 in year 7 , all pupils need:

- A Scientific calculator - the model sold by the school library is currently the Casio fx85-gtx version and it is this calculator which our guides and teaching are based on. We strongly recommend the Casio fx85 range for ease of following along in lessons.
- Protractor and Compass
- Usual school kit (Pen, Pencil, 30 cm Ruler)
- A GCSE Foundation Revision Guide and Exam Practice Workbook*
* All pupils study grades 1-5 at varying speeds in Years 7-9, so even if a pupil will later sit higher tier these two books (available for $£ 2.50$ each from the school library) will cover them to the end of Year 9 . Higher pupils would then purchase the Higher GCSE Revision Guide and Exam Practice Workbook to cover grades 4-9 during Year 10 and 11.


Assessments

## For AP1

Years 7,8,9 and 10 will sit single paper exams in the week commencing $21^{\text {st }}$ October.
Year 11 will sit full Mocks in the weeks commencing $25^{\text {th }}$ November
For AP2
Years 7,8 and 10 will sit single paper exams in the week commencing $10^{\text {th }}$ February.
Y9 Mid-year exams (three one hour papers) commence the week $27^{\text {th }}$ January.
Y11 second round of mocks will take place before Easter (dates tbc)
For AP3
Years $7+8$ will sit three 50-minute end of year papers in the week commencing $18^{\text {th }}$ May
Year 9 sit end of year exams in the week commencing $18^{\text {th }}$ May These are 3 GCSE Foundation papers - this allows us to decide which pupils should be aiming for higher tier - normally those who achieve a grade 4 in this exam Y10 have full mocks in the weeks commencing $8^{\text {th }}$ June.

## Supporting learning

In addition to the regular review tasks, Years 7-10 undertake weekly skills tests, though these are not necessarily weekly! They contain common mathematical problems and photos/copies should be taken of any questions that pupils are not comfortable completing. Year 11 complete fortnightly mock papers which highlight areas for further practice.

In order to help pupils with independent learning - at the end of this document is a series of links to Mymaths lessons, supporting pages in the exam practice book and revision guide. These tasks should be completed outside of college, and are an integral part of study. Some tasks may be explicitly set as homework during topics, or if further practice is required.

Pupils who complete all these tasks independently during their study have significantly better progress over the five years. Please support pupils to complete them. If at any point you would like to know what topic is being studied right now - please do not hesitate to email your maths teacher or myself
(ahutchinson@thomasestley.org.uk)
Please note Hegarty Maths is a resource we use with Key Stage 4 pupils - it is much more exam oriented and there is little need to use it during KS3.

Algebra -

| Hegarty <br> Clips | Mymaths Tasks | Foundation <br> Revision <br> Guide Pages | Foundation <br> Exam <br> Workbook <br> Pages | Higher <br> Revision <br> Guide Pages | Higher Exam <br> Workbook <br> Pages |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $196-198$ | G1 Sequences |  |  |  | A1-Sequences |  |


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| 222 | 645 brackets | 27 | 23 | 18, |  | A13 - Double brackets |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 190-195 | 645 Simultaneous $1,2,3$ and Negatives | 39, | 36 | 37, | 34,35 | A14 - <br> Simultaneous equations |
| 168-171 | G23 Factorising---Linear G45 Factorising Quadratics 1 | 28 | 24 | 19, | 17 | A15-Factorising |
| 199-216 | G45 Equation ofa line 2,3 | $\begin{array}{\|c\|} \hline 42, \\ 43,44,45,46 \\ , 47, \\ \hline \end{array}$ | 44 |  | 38,39 | A16 - Straight line 2 |
| 251-260 | G23 Plotting Graphs 3 -Quadratics | 48, 49 | 35,42,43 | 29,48,49 | 40,41 | A17-Quadratic graphs |
| 223-228 | G67 Quadratic Equations 2 G67 Completing the square G67 Quadratic Formula | 38, | 24 | $\begin{gathered} 25,26,27,28 \\ , 29 \end{gathered}$ | 23,24,25 | A18 - Harder factorising and solving quadratics |
| 247-260 | G45 Geometric Sequences 1 G67 Geometric Sequences 2 and Quadratic Sequences |  |  |  |  | A19-Harder sequences |
| 269-276 | G67 Shading Inequalities 689 Quadratic Inequalities |  |  | 34,35 | 31 | A20 - <br> Inequalities 2 |
|  | G67 Cancelling Algebraic Fractions G89 Adding Algebraic Fractions |  | 37 | 30,3940, | 26,36 | A21 - Algebraic Proof and fractions |
| 288-297 | 689 functions 2 |  |  | 41 | 37, | A22-Functions |
| 246 | G89 Quadratic Simultaneous equations G89 Iterative Methods |  |  | 38 | 34,35 | A23- <br> Simultaneous equations 2 |
| 298-313 |  |  |  | 50,51,53 | $\begin{gathered} 42,43,44,45 \\ , 46 \\ \hline \end{gathered}$ | A24 - More graphs |
| 341-320 |  |  |  | 49, |  | A25-Equations of circles |

Number

| Hegarty <br> Clips | Mymaths Tasks | Foundation <br> Revision Guide Pages | Foundation Exam Workbook Pages | Higher <br> Revision Guide Pages | Higher Exam Workbook Pages |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 14 | G1 Comparing Numbers G1 Ordering Whole numbers |  |  |  |  | N1 - Comparing numbers |
| 15 | 61 Rounding to 10, 100 etc | 16,17,19 | 16,17 | 10 |  | N2 - Rounding to whole numbers and decimals |
| 16 | G1 Multiplying by 10 and 100 G1 Dividing by 10 and 100 | 4 |  |  |  | N3 - Multiplying and dividing by powers of 10 |
| 18-23 | G23 Order of Operations | 5 | 4,5,6,7 |  |  | N4 -Operations (whole numbers) |
| 37-43 | G1 Negative numbers 1623 Negative numbers 2 | 7 | 8 |  |  | N5 - Negative Numbers |
| 24,44 |  | 2 | 3 | 2 | 3 | N6 - Order of operations |
| 27-36 | 61 Multiples 61 Factors and Primes | 8,9 | 9,10 | 3 | 4 | N7-Multiples, Factors and Primes |
| 52 | G1 Fractions to decimals G1 Simple Equivalent Fractions 61 Improper and mixed Fractions | 15 | 15 | 7 |  | N8 - Simple FDP, inc top heavy and mixed |
| 47-51 | G1 Ordering Decimals G23 Any activity on the Number list | 6 |  |  |  | N9 - Operations with decimals |
| 65-70 | See N9 | 12,13,14 | 12,13,14 | 5,6 | 6,7 | N10 - Four Operations with Fractions |
| $\begin{gathered} 84- \\ 88,93 \end{gathered}$ | G1 Percentage of amounts 1 to 4 | $\begin{gathered} 61,62,63,64 \\ , 65 \end{gathered}$ | 53,54 | 64, | 56-58 | N11 - <br> Percentages 1 |
| 84-87 |  |  |  |  |  | N12- Quantities of amounts |


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| 52-55 | G1 Frac Dec Perc 1 and 2 |  |  | 7 |  | N13 - FDP (nonrecurring) |
| 121-128 | G23 Standard Form Large, Small and Calcs | 22,23 | 20 | 13,14 | 12,13 | N14 - Standard Form |
| 99-101 |  |  |  |  |  | N15-Sequences and Special numbers |
| 90-98 | G23 Percentage change 1 G45 Percentage Change 2 G23 Change as a percentage/Reverse Percentages | $\begin{gathered} 61,62,63,64 \\ , 65 \end{gathered}$ | 55 | 65,66,67 | $\begin{gathered} 56- \\ 58,59+60 \end{gathered}$ | N16 - <br> Percentages 2 |
| 29-36 | G1 Factors and Primes G23 HCF/LCM | 10,11 | 10,11 | 3,4 | 4,5 | N17 - Prime factors, HCF and LCM |
| 102-110 | Indices 1,2,3 and 4 | 20,21 | 19 | 17 | 15 | N18-Powers |
| $\begin{array}{\|c\|} \hline 130- \\ 139,774- \\ 777 \end{array}$ | G45 Error Intervals G67 <br> Upper and lower bounds 1 and 2 |  |  | 12 | 9,10,11 | N19-Bounds and Rounding |
| 53,54 | G67 Recurring Decimals 1 and 2 |  |  | 8,9 | 8 | N2O - Recurring decimals |
| 111-119 | G67 Surds 1689 Surds 2 |  |  | 20 | 18 | N21 - Surds and irrational numbers |
|  |  |  |  |  |  | N22 - Fractional and Negative Powers |

Geometry


| Hegarty |
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| Clips | Mymaths Tasks | Foundation |
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| Revision |
| Guide Pages | | Foundation |
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| Exam |
| Workbook |
| Pages |$\quad$| Higher |
| :---: |
| Revision |
| Guide Pages | | Higher Exam |
| :---: |
| Workbook |
| Pages |



Statistics

| Hegarty <br> Clips | Mymaths Tasks | Foundation Revision Guide Pages | Foundation Exam Workbook Pages | Higher Revision Guide Pages | Higher Exam Workbook Pages |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | G1 Frequency Tables/Bar Charts and Pictograms |  |  |  |  | S1 - Reading information from charts and tables |
|  | See Above | 117 | 98, 99, 100 |  |  | S2 - Constructing charts and tables |
|  | G23 Reading Pie Charts | 117 |  |  |  | S3 - Interpreting Data |
| 404-421 | G23 Mean and Mode/Median and range/G23 Mean from Frequency Tables | 116 | 96,97 |  | 102 | S4-Averages |
| 425-429 | G23 Drawing Pie Charts G45 Scatter Graphs | 118,119,120 | 101,102,103 |  |  | S5- Pie charts and scatter diagrams |
|  |  | 123 |  | 114, |  | S6 - Interpret and Discuss Misleading Data |
|  | 623 Mean from Grouped <br> Data $1 / 2$ | 121,122 | 104 | 116,117,118 | 103 | S7 - Working with Grouped Data |
|  |  | 114,115 | 95 | 114 | 101 | S8-Planning a survey |
| 453,454 | 645 Line of best fit | 119,120 | 102,103 | 123 | 109,110 | S9 - Scatter Diagrams and Lines of Best Fit |
|  |  |  |  | 122 |  | S10-Using Moving Averages to describe trends |
| 434-440 | G67 Cumulative Frequency $1 / 2$ |  |  | 119,120 | 104,105,106 | S11-Cumulative Frequency and Quartiles |
|  | G67 Box and Whisker Plots |  |  | 124,125 |  | S12 - Comparing two or more distributions |
|  | 689 Histograms |  |  |  | 109,110 | S13-Analysing data |
| 442-449 |  |  |  | 121 | 107,108 | S14 - Construct and Interpret <br> Histograms |

## Probability

| Hegarty <br> Clips | Mymaths Tasks | Foundation <br> Revision Guide Pages | Foundation Exam <br> Workbook Pages | Higher <br> Revision Guide Pages | Higher Exam Workbook Pages |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 623 Probability Intro | 107 | 87 |  |  | P1 - Probability Scale |
| 349-352 | 623 Simple Probability | 108 | 88,89 |  |  | P2 - Theoretical probability |
|  | G23 Listing Outcomes G23 Two-way Tables |  |  | 106,107 | 92,93 | P3 - Listing outcomes |
| 356 | $\underset{\text { Probability }}{G 45 \text { Experimental }}$ | 109,110 | 90, | 108,109 | 94,95 | P4 - <br> Experimental probability |
| 368,369 ,422424 | 623 Frequency Trees | 111 | 91 |  |  | P5 - Two-way tables and frequency trees |
| 357 | G45 Relative Frequency |  |  |  |  | P6 - Relative Frequency |
| 370-391 | 623 Venn Diagrams 1/2 | 113 | 94 | 113 | 99,100 | P7 - Venn <br> Diagrams |
| 361,362 | 645 Making Tree Diagrams | 112 | 92,93 | 110,111 | 96,97,98 | P8 - Probability Tree Diagrams |
|  |  |  |  |  |  | P9 - Complex <br> Probability <br> Problems |
| 364-367 | G67 Conditional Probability <br> 1 |  |  | 112, | 98 | P10 - Conditiona Probability |

Ratio and Proportion

| Hegarty <br> Clips | Mymaths Tasks | Foundation <br> Revision <br> Guide Pages | Foundation <br> Exam <br> Workbook <br> Pages | Higher <br> Revision Guide Pages | Higher Exam Workbook Pages |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 328-331 | 61 Ratio Introduction | 55 | 47 | 59,60 |  | RP1 - Writing and Simplifying Ratios |
| 332-338 | 623 Ratio Dividing $1 / 2$ | 56 | 47,48 | 59,60 |  | RP2 - Dividing Into Ratios |
| 739-742 | G23 Unitary Method/Best Buys and value for money | 57 | 48 | 60 | 51-53 | RP3 - <br> Proportional Reasoning and Unitary Method |
|  |  |  | 49 | 61 | 51-53 | RP4 - Unit Ratios and Solving Ratio Problems |
| 339-347 | 645 Direct/Inverse Proportion | 58,59,60 | 50,51,52 | 62,63 | 54,55 | RP5 - Direct and Inverse Proportion |
| 348 |  |  |  |  | 39,50 | RP6-Gradients |
| 864-871 | G67 Area/Nolume Scale Factor |  |  |  |  | RP7 - Length, <br> Area and Volume Scale Factors |
| 343-347 | G89 Direct and Inverse proportion |  |  | 63 |  | RP8 - Direct and Inverse <br> Proportion 2 |

