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| Subject: Mathematics Year 10F Curriculum Map 2024-2025 |
| Terms | **Topics covered** and **core knowledge and skills** | Links to careers | Links to the Knowledge organiser and other additional resources |
| Half term 1 | **Unit 1: NP1-3 Essentials**NP1

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| Writing integers in words |
| Be able to place integers and decimals on a number line |
| Ordering integers and decimals |
| Ordering negative values |
| Multiplying and dividing by powers of 10 |
| Rounding to nearest 10, 100, 1000 |
| Rounding to decimal places |
| Rounding to significant figures |

NP2

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| Addition with integers and decimals |
| Subtraction with integers and decimals |
| Understand zero pairs |

NP3

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| Multiplying integers and decimals with grids |
| Multiples and common multiples |
| Division of integers and decimals |
| Factors and common factors |

**Unit 2: NP4-7 Essentials**NP4

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| Writing and evaluating powers |
| Square roots and cube roots |
| Index laws |
| Prime numbers |
| Prime factors |

NP5

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| Order of operations with four operations, exponents and brackets to break the order |

NP6

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| Four operations with directed numbers |
| Powers of negative numbers |

NP7

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| Identifying fractions |
| Identifying fractions greater than 1 |
| Converting between mixed and improper fractions |
| Simplifying fractions |
| Adding and subtracting fractions |
| Finding a fraction given the whole, finding a whole given a fraction. |
| multiplying and dividing fractions, fraction of an amount (incl. fractions of fractions) with link to multiplying; increasing and decreasing by a fraction by multiplying |

 | Approximation: <https://www.youtube.com/watch?v=cABMOLgTkYM>Decimals:<https://www.youtube.com/watch?v=X0Gl72XKiyI>Fractions:<https://www.youtube.com/watch?v=3pccvFEWO0k>Multiples:<https://www.youtube.com/watch?v=xyOCgnixiaE>Whole Numbers:<https://www.youtube.com/watch?v=iLoKfB9hFLA> | This link would take you to the KO on our website<https://teachers.thenational.academy/subjects/maths/key-stages/key-stage-4><https://www.bbc.co.uk/bitesize/subjects/z38pycw><https://vle.mathswatch.co.uk/vle/><https://corbettmaths.com/contents/> |
| Half term 2 | **Continue Unit 2: NP4-7 Essentials****Unit 3: A1-5 Essentials**A1

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| Simplifying expressions and like terms |
| Basic substitution |
| Solving 1 and 2 step equations |

A2

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| Adding and subtracting expressions |
| Multiplying and dividing expressions |
| Writing expressions |

A3

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| Expand and a single bracket |
| Factorise a single bracket |

A4

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| Equality and equations |
| Solving 1 and 2 step equations |
| Solving equations with an unknown on both sides |
| Solving equations containing brackets |
| Forming equations |

A5

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| Using substitution to evaluate expressions |
| Using formulae |
| Rearranging formulae to change the subject |

 | Algebra: <https://www.youtube.com/watch?v=c4xwvFtsrMU> |  |
| Half term 3 | **Unit 4: GM1-3 Essentials**

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| **GM1 - Drawing, Measuring and Constructing** |
| Measuring and naming angles |
| Constructing and drawing triangles |
| Bisecting angles and lines |
| **GM2 - Polygons and Angles** |
| Angles round points and on straight lines |
| Vertically opposite angles  |
| Missing angles in triangles |
| Missing angles in quadrilaterals |
| Properties of quadrilaterals |
| Interior angles in polygons |
| **GM3 - Area** |
| Rectilinear area |
| Area of a parallelogram |
| Area of a triangle |
| Area of a trapezium |
| Area of a circle |

**Unit 5: SP1-2 Essentials**

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| **SP1 - Discrete data** |
| Collecting data |
| Processing data |
| Stem and Leaf diagrams (Edexcel only) |
| Drawing and using pie charts |
| Mode, median and range |
| Mean |
| Summary statistics from frequency tables and graphs |
| **SP2 - Bivariate data** |
| Reading a scatter graph |
| Drawing a scatter graph |
| Correlation |
| Outliers |
| Lines of best fit |
| Time series graphs |

 | Angles:<https://www.youtube.com/watch?v=S-Xx22DaOvE>Area:<https://www.youtube.com/watch?v=D8RJUooe9CI>2D Shapes:<https://www.youtube.com/watch?v=Ybe3gKeT7Jo>Data:<https://www.youtube.com/watch?v=SBPtIAv5CRM>Graphs:<https://www.youtube.com/watch?v=JcEHR6O5E6Q>Averages:<https://www.youtube.com/watch?v=SALCargi1_0> |  |
| Half term 4 | **Continue Unit 5: SP1-2****Unit 6: NP8-10 Essentials**

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| **NP8 - Percentages, Fractions and Decimals** |
| Writing decimals as fractions |
| Writing fractions as decimals |
| Writing percentages as fractions and decimals |
| Finding a percentage of an amount |
| Decimal multipliers  |
| Increasing and decreasing by a percentage |
| **NP9 - Estimation and use of the calculator** |
| Fluent use of the calculator |
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| Rounding, truncation and error intervals |  |
| Estimation of calculations |  |
| **NP10 - Proportional reasoning** |  |
| Direct proportion |  |
| Inverse proportion  |  |
| Value for money |  |
| Exchange rates |  |
| Decimal multipliers to increase and decrease |  |

 | Decimals:<https://www.youtube.com/watch?v=X0Gl72XKiyI>Fractions:<https://www.youtube.com/watch?v=3pccvFEWO0k>Percentages:<https://www.youtube.com/watch?v=7EB0H1bhGTo>Estimation:<https://www.youtube.com/watch?v=meOjLJF9F7U>Proportion:<https://www.youtube.com/watch?v=Mz4nMRtTDCw>Finance:<https://www.youtube.com/watch?v=Yjc_VxMMCy8> |  |
| Half term 5 | **Unit 7: A6-8 Essentials**

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| **A6 - The Cartesian grid** |
| Coordinates in all 4 quadrants |
| Find the midpoint of a line segment |
| Horizontal and vertical lines |
| Plot a linear graph |
| Finding gradient and y intercept from y=mx+c |
| Plot a quadratic graph |
| **A7 - Introduction to sequences** |
| Find missing numbers in sequences |
| Writing term to term rules |
| Generate terms of a sequence |
| Find the nth term of a sequence |
| Picture sequences |
| **A8 - Linear Inequalities** |
| Understanding inequality symbols |
| Comparitive inequalities |
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| Restrictive inequalities |  |
| Solve linear inequalities |  |
| Represent inequalities involving x or y by shading on a graph |  |

 | Algebra:<https://www.youtube.com/watch?v=c4xwvFtsrMU>Sequences:<https://www.youtube.com/watch?v=7Vf6BJwdy_0>Inequalities:<https://www.youtube.com/watch?v=5sOw5og5sgc> |  |
| Half term 6 | **Unit 8: GM4 – Congruence and Similarity**

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| Congruence - introduction |
| Tessellating congruent shapes to fill the plane |
| Isometries: translation (as a vector), reflection and rotation, including rotational and reflective symmetry, combinations of transformations, including successive translations. Knowing that reflection, rotation and translation produce congruent shapes |
| Similarity of length, proving shapes are similar, finding scale factors and writing equivalent sides as equivalent ratios |
| Enlargement (including **negative** and fractional enlargements). Knowing that enlargements produce similar shapes |
| **Conditions for congruent triangles - simple examples, getting familiar with terms** |

**Unit 9: SP3 – Introduction to Probability**

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| systematic listing **(product rule for counting)** |
| Record, describe and analyse the frequency of outcomes of simple probability experiments, introduce language of probability |
| Theoretical probability - formalising language and notation, calculating |
| Sum of probabilities of all mutually exclusive events = 1 |
| Generate theoretical sample spaces, including systematic listing of combinations and outcomes, and use these to calculate probabilities |
| Recording outcomes and possibilities using frequency trees, two-way tables and simple Venn diagrams. Use these diagrams to calculate probabilities |

 | Symmetry:<https://www.youtube.com/watch?v=WMV_bw17JzI>Transformations:<https://www.youtube.com/watch?v=ejuJ20JroTo>Vectors:<https://www.youtube.com/watch?v=1M2bOhIqfEA>Probability:<https://www.youtube.com/watch?v=cJ1QPiGnGEM> |  |