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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   |  | | --- | | 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   |  | | --- | | Addition with integers and decimals | | Subtraction with integers and decimals | | Understand zero pairs |   NP3   |  | | --- | | 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   |  | | --- | | Writing and evaluating powers | | Square roots and cube roots | | Index laws | | Prime numbers | | Prime factors |   NP5   |  | | --- | | Order of operations with four operations, exponents and brackets to break the order |   NP6   |  | | --- | | Four operations with directed numbers | | Powers of negative numbers |   NP7   |  | | --- | | 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   |  | | --- | | Simplifying expressions and like terms | | Basic substitution | | Solving 1 and 2 step equations |   A2   |  | | --- | | Adding and subtracting expressions | | Multiplying and dividing expressions | | Writing expressions |   A3   |  | | --- | | Expand and a single bracket | | Factorise a single bracket |   A4   |  | | --- | | Equality and equations | | Solving 1 and 2 step equations | | Solving equations with an unknown on both sides | | Solving equations containing brackets | | Forming equations |   A5   |  | | --- | | 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**   |  | | --- | | **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**   |  | | --- | | **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**   |  | | --- | | **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 | |  | |  | |  | | 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**   |  | | --- | | **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 | |  | | 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**   |  | | --- | | 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**   |  | | --- | | 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> |  |