

Subject	Year 8 Threshold Knowledge – Autumn/Spring/Summer term	How to support students' learning
Maths	<p>Ratio and Proportion -</p> <ol style="list-style-type: none"> 1. Comparing ratios as fractions and percentages (M267, U176). 2. Writing ratios in the form 1:n (M543, U687). 3. Share a value into a given ratio (M525, U577). 4. Solve ratio problems given one amount (M801, U753). 5. Solve 'best buy' problems (M681, U721). 6. Solve problems with exchange rates (U610). 7. Explore conversion graphs (M771, U638). 8. Understand scale factors as multiplicative representations. 9. Explore relationships between similar shapes (M377, U551). 10. Draw and interpret scale diagrams (M112, U257). 11. Interpret maps using scale factors and ratio (M112). <p>Multiplying and Dividing Fractions -</p> <ol style="list-style-type: none"> 12. Multiplying fractions (M157, U475). 13. Understand and use the reciprocal. 14. Divide fractions by an integer (M110, U544). 15. Dividing fractions (M110, U544). <p>Sequences -</p> <ol style="list-style-type: none"> 16. Generate other sequences given a complex algebraic rule (M166, U530). 17. Find the rule for the nth term of a linear sequence (M991, U498). 18. Find the rule for the nth term of a linear sequence given diagrammatically (M866, U978). <p>Working in a Cartesian Plane -</p> <ol style="list-style-type: none"> 19. Identify and draw lines that are parallel to the axes (M797). 20. Recognise, use and draw the lines $Y=X$, $Y=-X$ (M797). 21. State intercepts (U315). 	<ul style="list-style-type: none"> • Follow the teacher's guidance and use Sparx Maths to support home learning. • If your child is struggling with a particular skill encourage them to use the support materials or contact their teacher to resolve the issue. • Sparx Maths will send a homework update. Please encourage your child to complete the homework to the best of their ability. The homework is a recap of the skills they have been taught.

22. Calculate gradients (U315).
23. Plot straight line graphs (U741).
24. Link $Y=KX$ to direct proportion problems (M448).
25. Find the equation of a line from a graph (U315).
26. Write an equation in the form $y = mx + c$ (U315).

Number Sense -

27. Estimating calculations (U225).
28. Finding error intervals (U657).
29. Error intervals for truncated numbers (U301).

Indices -

30. Multiplying indices (U235).
31. Dividing indices (U235).
32. Understand and use the power zero (U694).
33. Work with powers of powers (U662).
34. Calculate higher powers and roots (U851).
35. Estimating roots and powers (U299).

Standard Index Form -

36. Write 10, 100, 1000 etc. as powers of ten (M719).
37. Investigate negative powers of 10.
38. Convert from an ordinary number into standard form (U330, U534).
39. Convert from standard form to an ordinary number (U330, U534).
40. Compare and order numbers in standard form.

Area of 2D Shapes -

41. Calculate the area of a trapezium (U265).
42. Calculate the perimeter of compound shapes (U351).
43. Calculate the area of compound shapes (U970).
44. Calculate the area of compound shapes including triangles (U575).
45. Calculate the area of a circle (U950).
46. Calculate the circumference of a circle (U604).

Brackets and Equations -

47. Use directed number with algebra (M795).
48. Expand a single bracket (U179).
49. Expand multiple single brackets and simplify (M792).
50. Solve equations with two or more steps (U325).
51. Form algebraic expressions (M813).
52. Form and solve equations (U599).
53. Factorise into a single bracket (U365).

Angles in Polygons -

54. Using quadrilateral properties to find angles (U329).
55. Find interior angles in a regular polygon (U427).
56. Find exterior angles in a regular polygon (U427).

Fractions and Percentages -

57. Calculate percentage increase and decrease without a calculator (U773).
58. Calculate percentage increase and decrease with a calculator (U671).
59. Express one number as a fraction or a percentage of another using a calculator (U925).
60. Express one number as a fraction or a percentage of another without a calculator (U925).
61. Finding the percentage an amount has been changed by (U278).

Data Handling and Measures of Location -

62. Understand populations and samples.
63. Find the range from an ungrouped frequency table (U312).
64. Find and interpret the mean from an ungrouped frequency table (U569).
65. Find and interpret the mode from an ungrouped frequency table (U569).
66. Interpret frequency polygons (U840).
67. Interpret information from a scatter graph (U277).

68. Understand that correlation does not always imply causation.
69. Understand and describe linear correlation (M596).
70. Draw and plot points on a scatter graph (U199).
71. Draw a line of best fit (U128).
72. Understand interpolation and extrapolation.
73. Use line of best fit (U128).
74. Identify outliers.
75. Interpret stem-and-leaf diagrams (U909).
76. Construct stem-and-leaf diagrams (U200).
77. Construct frequency polygons (U840).
78. Compare distributions using charts and measures (U520).

Probability -

79. Interpret a two-way table (U981).
80. Probability - Construct a two-way table (U981).
81. Find probabilities from two-way tables (U981).
82. Construct sample space diagrams (U104).
83. Find probabilities from a sample space (M718).
84. Find probabilities from Venn Diagrams (U699).