Subject	Y9 Threshold Knowledge – Autumn/Spring/Summer term	How to support students' learning
Maths	**Autumn Term** **Number -** 1. Multiply mixed numbers. 2. Divide mixed numbers. 3. Add mixed numbers. 4. Subtract mixed numbers. 5. Add numbers given in standard form. 6. Subtract numbers given in standard form. 7. Find the LCM using prime factor decomposition. 8. Find the HCF using prime factor decomposition. 9. Multiply numbers in standard form. 10. Divide numbers in standard form. 11. Use standard form with a calculator. **Equations, Inequalities and Expanding Brackets -** 12. Substitute into algebraic formulae. 13. Substitute into real-life formulae. 14. Solve equations with unknowns on both sides. 15. Expand double brackets. 16. Solve one-step inequalities. 17. Solve inequalities with two or more steps. 18. Solve inequalities, including with unknowns on both sides. 19. Form and solve inequalities. 20. Changing the subject of a formula. **Rotation, Reflection and Translation -** 21. Describe translations of shapes. 22. Translate shapes by a given vector. 23. Describe rotation. 24. Rotate a shape. 25. Rotate a shape about a point. 26. Describe reflection. 27. Reflect shapes in given lines. **Enlargement and Similarity -** 28. Explore relationships between similar shapes. 29. Work out missing sides and angles in a pair of given similar shapes. 30. Describe enlargements. 31. Enlarge a shape by a positive integer scale factor. **Spring Term** **Probability -** 32. Enlarge a shape by a positive integer scale factor from a point. 33. Expected outcomes. 34. Use experimental data to estimate probabilities.	• Student can complete independent practice on Dr Frost Maths https://www.drfrost.org/index.php • Dr Frost Maths has topic-based learning with videos to support students and questions available that give automatic feedback to students. • Otherwise, students can also access past papers that can be completed online. • All homework and revision for students will be set on Dr Frost by their class teacher. • Other useful websites: Maths Genie (topic based and past papers) https://www.mathsgenie.co.uk/gcse.php • On Maths (online papers) https://www.onmaths.com/

	35. Understand that increasing the number of trials leads to a more accurate estimate of the theoretical probability. **Solving Proportion Problems -** 36. Solve problems with inverse proportion. 37. Model real-life graphs involving inverse proportion. **Graphs -** 38. Find the equation of a line from a graph. 39. Solve shape problems involving coordinates. 40. Understand and use y = mx + c. 41. Determine whether a point is on a line. 42. Draw quadratic graphs. **Rates -** 43. Convert units of area. 44. Convert units of volume. 45. Solve speed, distance and time problems. 46. Interpret distance-time graphs. 47. Calculating speed from distance-time graphs. 48. Plotting distance-time graphs. 49. Solve problems with density, mass and volume. 50. Solve problems with pressure, force and area. **Angles -** 51. Identify and calculate co-interior angles. 52. Identify and calculate alternate angles. 53. Identify and calculate corresponding angles. 54. Combining angle facts. **Summer Term** **Pythagoras' Theorem -** 55. Use Pythagoras' theorem to calculate the hypotenuse. 56. Use Pythagoras' theorem to calculate a smaller side. **Using Percentages/Maths and Money -** 57. Calculate simple interest. 58. Calculate compound interest and depreciation. 59. Solve financial maths problems. 60. Solve reverse percentage problems. **3D Shapes -** 61. Volume of cubes and cuboids. 62. Volume of other prisms. 63. Accurate nets of cuboids and other 3-D shapes. 64. Finding the surface area of cubes and cuboids. 65. Finding the surface area of prisms.	

	Trigonometry - 66. Solving equations with the variable in the denominator. 67. Understanding sin, cos and tan. 68. Finding unknown sides in right-angled triangles. 69. Finding unknown angles in right-angled triangles. **Constructions and Congruency -** 70. Construct triangles when given SSS. 71. Construct triangles when given SAS and ASA. 72. Construct an angle bisector. 73. Construct a perpendicular bisector. 74. Construct a perpendicular from a point. 75. Construct a perpendicular to a point. 76. Understanding congruence. 77. Know the criteria for congruence of triangles. 78. Identify congruent triangles**.**	