

Year Six Inspire Objective Target Sheet

UNIT ONE: ALGEBRA

1. recognise and write simple algebraic expressions in one variable
2. evaluate simple algebraic expressions by substitution
3. Pupils will be able to simplify algebraic expressions in one variable.
4. Pupils will be able to solve simple word problems involving algebraic expressions

UNIT TWO: ANGLES IN SHAPES AND DIAGRAMMS

5. find unknown angles in geometric shapes using the properties of:
 - (a) angles on a straight line
 - (b) angles at a point
 - (c) vertically opposite angles
 - (d) triangles
 - (e) four-sided shapes (square, rectangle, parallelogram, rhombus and trapezium)

UNIT THREE: NETS

6. identify and name cubes, cuboids, prisms, pyramids, cylinders and cones
7. identify the faces of a solid, state the number of faces and name their shapes. This excludes the cylinder and cone, which have surfaces but do not have faces
8. identify the nets of a cube, a cuboid, a prism and a pyramid
9. identify the solid formed by a given net

UNIT FOUR: FRACTIONS

10. add and subtract fractions or mixed numbers
11. multiply fractions
12. divide a fraction by a whole number
13. solve word problems on fractions
14. interpret the division of a whole number by a proper fraction
15. interpret the division of a proper fraction by another proper fraction
16. find the quotient by multiplying the dividend by the reciprocal of the divisor
17. solve word problems involving division of a whole number or proper fraction by a proper fraction

UNIT FIVE: RATIO

18. write the ratio of one quantity to another quantity in terms of (i) the actual number, and (ii) the number of groups
19. express one quantity as a fraction of another quantity given their ratio
20. find how many times larger one value is compared to another, given their ratio
21. express fractions and comparative statements as models
22. interpret a model and use the unitary method to solve word problems
23. solve word problems by applying the common multiple concept
24. apply the ratio concept to solve geometrical problems using the unitary method
25. recognise that a set of ratios can be expressed in their simplest form as the same ratio and that their corresponding values are multiples of the units in this ratio
26. apply these concepts and equivalent ratios to solve simple word problems
27. apply these concepts and the unitary method (together with models) to solve word problems
28. Pupils will be able to solve higher-order word problems involving ratios using model drawing, the 'before-after' concept and the strategy of working backwards.

UNIT SIX: PERCENTAGE

29. express a fraction or a decimal as a percentage and vice versa
30. find the whole given a part and the percentage
31. find a part given the whole and the percentage of the other part
32. solve word problems using model drawing and the unitary method
33. find the percentage change (percentage increase or decrease) using the unitary or fractional methods
34. find the original or final value given the percentage change
35. solve word problems involving percentage and discount

UNIT SEVEN: SPEED

- | | |
|-----|--|
| 36. | understand the concept of speed as the distance travelled per unit of time |
| 37. | use the unitary method or a formula to calculate speed, distance or time |
| 38. | read, interpret and write speed in different units |
| 39. | use different units of speed to solve speed problems |
| 40. | understand the concept of average speed as the total distance travelled divided by the total time taken |
| 41. | find average speed given the total distance travelled and the total time taken |
| 42. | find average speed given different intervals of time and distance, different speeds and distance, or different intervals of time and speed |
| 43. | Pupils will be able to solve higher-order word problems involving a combination of concepts such as average, speed and rate. |

UNIT EIGHT: CIRCLES

- | | |
|-----|---|
| 44. | identify the radius, diameter and circumference of a circle |
| 45. | state the relationship between:
(i) the radius and the diameter
(ii) the circumference and the diameter |
| 46. | recognise a semicircle as half of a circle and a quadrant as a quarter of a circle |
| 47. | find the circumference of a circle given its radius or diameter |
| 48. | state the relationship between the area of a circle and its radius |
| 49. | find the area of a circle given its radius or diameter |
| 50. | calculate the areas of shapes made up of circles, semicircles and quadrants |

UNIT NINE: PIE CHARTS

- | | |
|-----|--|
| 51. | recognise a pie chart as another type of graph |
| 52. | read and interpret pie charts |

UNIT TEN: AREA AND PERIMETER

- | | |
|-----|---|
| 53. | Pupils will be able to find the area and perimeter of shapes related to squares, rectangles, triangles and circles. |
|-----|---|

UNIT ELEVEN: VOLUME OF SOLIDS AND LIQUIDS

- | | |
|-----|--|
| 54. | find one dimension of a cuboid given the volume and two other dimensions, or the volume and the area of one face |
| 55. | use the square root of a number to find the side of a square given its area |
| 56. | use the square root of a number to find the side of a square given its area |
| 57. | find the volume of liquid in a cubical or a cuboid tank with given dimensions |
| 58. | find the height of the water in a cuboid tank given the volume of water and the length and width of the tank |
| 59. | find the time taken to fill a cuboid tank with water given the volume and the rate of flow |
| 60. | find the side of the square base of a cuboid tank given the volume and height of water |
| 61. | find the edge of a cubical tank given the volume of water |