

Our Maths provision: Intent, implementation and impact

Date: Summer 2020 and reviewed on an on-going basis

Maths

More information about our intent and implementation of our Maths curriculum is available (eg see our Maths policy); more information about the impact of our Maths curriculum is available on our website ('Find Out' section, 'Results' page).



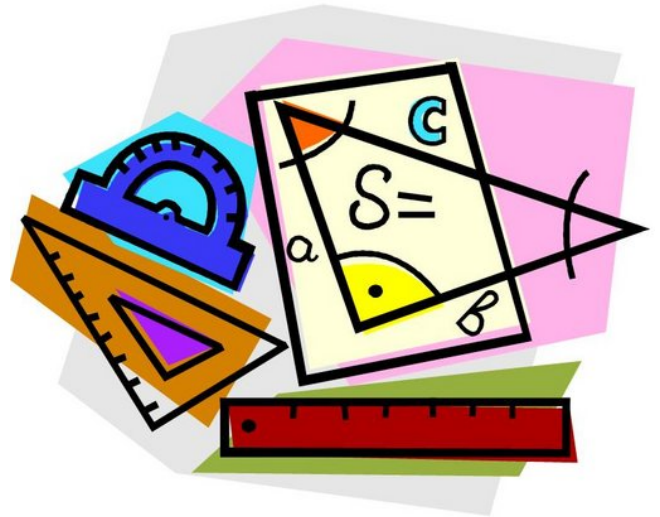
Intent

Maths is a really important part of everyday life. The intention of our Maths curriculum is for pupils to:

- 🌀 make sense of our world
- 🌀 tackle real life problems
- 🌀 communicate information
- 🌀 develop skills which are essential in most other areas of the curriculum
- 🌀 develop skills for life to achieve success in the work place and economic well-being

In addition, and importantly, the National Curriculum for Maths aims to ensure that all pupils:

- 🌀 become fluent in the fundamentals of mathematics
- 🌀 can reason mathematically
- 🌀 can solve problems by applying their mathematics



Implementation: planning

The National Curriculum (2014) sets out expectations for each year group in Key Stage 1 and 2. We have created lists of Maths age-related expectations ('ARE Grids') which have taken the National Curriculum content and listed these in a format which teachers can use as an overview for the year and for their planning and assessments.

Teachers use the White Rose Maths Schemes of Learning as the basis of their planning whilst using their professional judgement to adapt these to meet the needs of their class.

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Therefore, we must be ready and confident to build in challenges and puzzles. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Implementation: organisation and time

Key Stage 1

In KS1, there is a daily maths lesson of between 45 and 60 minutes for all children in mixed ability classes.

Key Stage 2

In KS2, we have a daily maths lesson of approximately 60 minutes for all children in mixed ability classes.

In addition to the daily maths lessons, teachers may also provide:

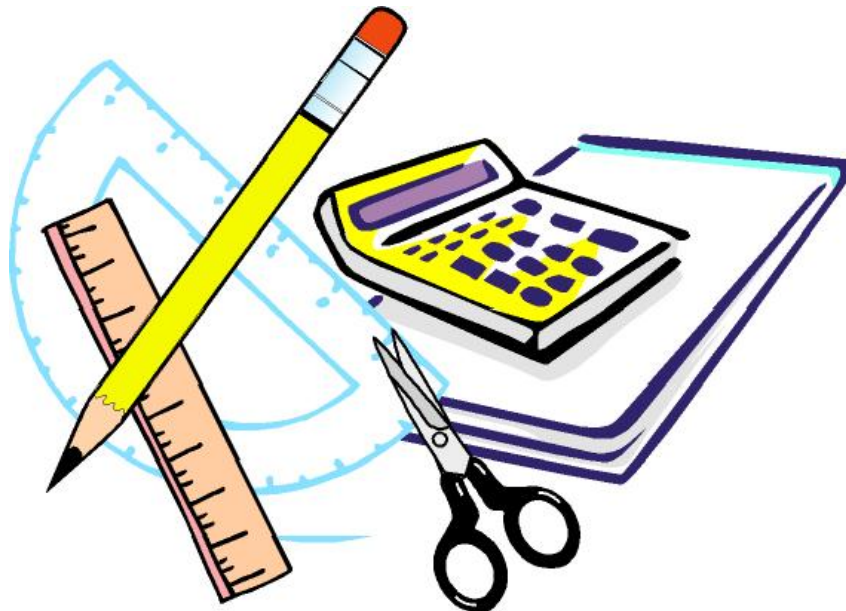
- short fluency sessions (5-10 minutes), ideally each day, to practise key calculating skills, counting, times tables (and corresponding division facts) or addition and subtraction facts
- opportunities to respond to feedback (possibly at the start of the next day's maths lesson, or – even better – during the current lesson)

Implementation: cross-curricular

To support cross-curricular learning of mathematical knowledge, skills and understanding, regular maths learning is planned within topic and/or science lessons (see p2). This should be roughly every three weeks. We don't expect full lessons; for example, 15-20 minutes where maths can be seen, used and applied would be appropriate without compromising time spent on foundation subjects.

Impact

End of Key Stage 2 assessments provide one indication of impact of our Maths curriculum. Up-to-date information about pupils' attainment and progress is available on our website ('Find Out' section, 'Results' page).



Age-related expectations: Maths, Year 1

Number and place value

1. count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
2. count, read and write numbers to 100 in numerals
3. count in multiples of twos, fives and tens
4. given a number, identify one more and one less
5. identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
6. read and write numbers from 1 to 20 in words

Addition and subtraction

7. know by heart number bonds to 20
8. represent and use number bonds and related subtraction facts within 20
9. add and subtract one-digit and two-digit numbers to 20, including zero
10. add and subtract more than two one-digit and two-digit numbers to 20, including zero
11. read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs
12. solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$

Multiplication and division

13. solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

Fractions

14. recognise, find and name a half as one of two equal parts of an object, shape or quantity
15. recognise, find and name a quarter as one of four equal parts of an object, shape or quantity

Measurement

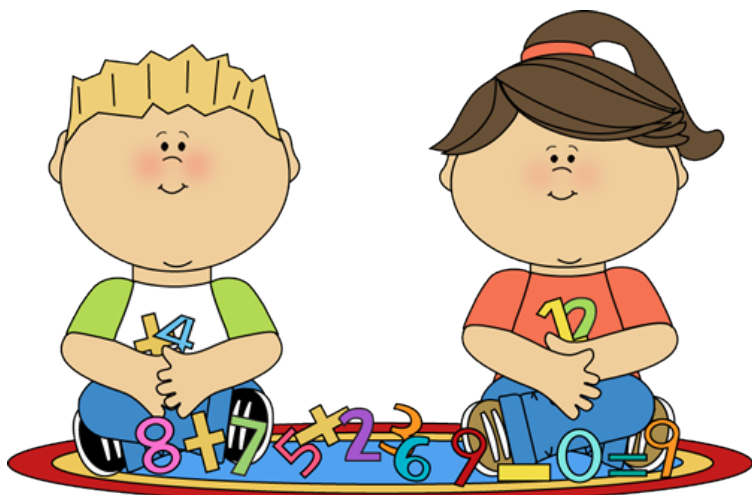
16. compare, describe and solve practical problems involving a full range of measures:
 - lengths and heights [eg long/short, longer/shorter, tall/short, double/half]
 - mass/weight [eg heavy/light, heavier than, lighter than]
 - capacity and volume [eg full/empty, more than, less than, half, half full, quarter]
 - time [eg quicker, slower, earlier, later]
17. measure and begin to record the following:
 - lengths and heights
 - mass/weight
 - capacity and volume
 - time (hours, minutes, seconds)
18. recognise and know the value of different denominations of coins and notes
19. tell the time to the hour and half past the hour and draw the hands on a clock face to show these times
20. sequence events in chronological order using language [eg before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
21. recognise and use language relating to dates, including days of the week, weeks, months and years

Geometry: properties of shapes

22. recognise and name common 2-D and 3-D shapes, including:
 - 2-D shapes [eg rectangles (including squares), circles and triangles]
 - 3-D shapes [eg cuboids (including cubes), pyramids and spheres]

Geometry: position and direction

23. describe position, direction and movement, including half, quarter and three quarter turns



Age-related expectations: Maths, Year 2

Number and place value

1. count in steps of 2, 3, and 5 from 0, forward and backward
2. count in tens from any number, forward and backward
3. recognise the place value of each digit in a two-digit number (tens, ones)
4. compare and order numbers from 0 up to 100
5. identify, represent and estimate numbers using different representations, including the number line
6. use $<$, $>$ and $=$ signs correctly
7. read and write numbers to at least 100 in numerals
8. read and write numbers to at least 100 in words
9. use place value and number facts to solve problems

Addition and subtraction

10. solve problems with addition and subtraction:
 - using concrete objects and pictorial representations, including those involving numbers, quantities and measures
 - applying their increasing knowledge of mental and written methods
11. recall and use addition and subtraction facts to 20 fluently
12. derive and use related facts up to 100 eg $30+70$
13. know 10 more / less
14. add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
 - a two-digit number and ones
 - a two-digit number and tens
 - two two-digit numbers
 - adding three one-digit numbers
15. show that addition of two numbers can be done in any order (commutative) and subtraction cannot
16. recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems

Multiplication and division

17. recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
18. calculate and write mathematical statements for multiplication and division within the multiplication tables, using multiplication (\times), division (\div) and equals ($=$) signs
19. show that multiplication of two numbers can be done in any order (commutative) and division cannot
20. recognise and use inverse
21. solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts

Fractions

22. recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity
23. recognise equivalence of simple fractions eg $\frac{2}{4}$, $\frac{1}{2}$

Measurement

24. choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
25. compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$
26. recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value
27. find different combinations of coins that equal the same amounts of money
28. solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change
29. compare and sequence intervals of time
30. tell the time to five minutes, including quarter past/to the hour
31. write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
32. know the number of minutes in an hour and the number of hours in a day

Geometry: properties of shapes

33. identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
34. identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces
35. identify 2-D shapes on the surface of 3-D shapes, [eg a circle on a cylinder and a triangle on a pyramid]
36. compare and sort common 2-D and 3-D shapes and everyday objects

Geometry: position and direction

37. order and arrange combinations of mathematics objects in patterns and sequences
38. use mathematical vocabulary to describe position, direction and movement in a straight line
39. distinguish between rotation as a turn and in terms of right angles for quarter, half and three quarter turns (clockwise and anticlockwise)

Statistics

40. construct simple pictograms, tally charts, block diagrams and simple tables
41. interpret simple pictograms, tally charts, block diagrams and simple tables
42. ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity
43. ask and answer questions about totalling and comparing categorical data

Age-related expectations: Maths, Year 3

Number and place value

1. count from 0 in multiples of 4, 8, 50 and 100
2. find 10 or 100 more or less than a given number
3. recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
4. compare and order numbers up to 1000
5. identify, represent and estimate numbers using different representations
6. read and write numbers up to 1000 in numerals
7. read and write numbers up to 1000 in words
8. solve number problems and practical problems involving these ideas

Addition and subtraction

9. add and subtract numbers mentally, including:
 - a three-digit number and ones
 - a three-digit number and tens
 - a three-digit number and hundreds
10. add numbers with up to three digits, using formal written methods of columnar addition
11. subtract numbers with up to three digits, using formal written methods of columnar subtraction
12. estimate the answer to a calculation
13. use inverse operations to check answers
14. solve problems, inc missing number problems, using number facts, place value, and more complex addition and subtraction

Multiplication and division

15. recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
16. write and calculate mathematical statements for multiplication and division using the multiplication tables that they know
17. multiply two-digit numbers by one-digit numbers, using mental and progressing to formal written methods
18. divide two-digit numbers by one-digit numbers, using mental and progressing to formal written methods
19. solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects

Fractions

20. as a vulgar and decimal fraction: count up and down in tenths; recognise that a tenth arises from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10
21. begin to recognise and understand decimals in relation to measures (money, length...) and simple unit fractions
22. recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
23. recognise, find and write fractions as numbers: unit fractions and non-unit fractions with small denominators
24. recognise and show, using diagrams, equivalent fractions with small denominators
25. add and subtract fractions with the same denominator within one whole eg $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$
26. know pairs of fractions that total 1
27. compare and order unit fractions
28. compare and order fractions with the same denominators
29. solve problems that involve all of the above

Measurement

30. measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
31. measure the perimeter of simple 2-D shapes
32. add and subtract amounts of money to give change, using both £ and p in practical contexts
33. tell and write the time from an analogue clock with increasing accuracy to the nearest minute
34. tell and write the time from a clock using Roman numerals from I to XII
35. tell and write the time from a clock with 12-hour and 24-hour clocks
36. estimate, record and compare time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours
37. use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight
38. know the number of days in each month
39. know the number of seconds in a minute and the number of days in each year and leap year
40. compare durations of events [eg to calculate the time taken by particular events or tasks]

Geometry: properties of shapes

41. draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them
42. recognise angles as a property of shape or a description of a turn
43. identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn
44. identify whether angles are greater than or less than a right angle
45. identify horizontal and vertical lines and pairs of perpendicular and parallel lines

Statistics

46. present data using bar charts, pictograms and tables
47. interpret and present data using bar charts, pictograms and tables
48. solve 1-step and 2-step questions (eg How many more/fewer?) using data presented in scaled bar charts, pictograms, tables

Age-related expectations: Maths, Year 4

Number and place value

1. count in multiples of 6, 7, 9, 25 and 1000
2. find 1000 more or less than a given number
3. count backwards through zero to include negative numbers
4. recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, ones)
5. order and compare numbers beyond 1000
6. identify, represent and estimate numbers using different representations
7. round any number to the nearest 10, 100 or 1000
8. solve number and practical problems that involve all of the above and with increasingly large positive numbers
9. read Roman numerals to 100 (I to C) and know that the numeral system changed to include concept of zero and place value

Addition and subtraction

10. add numbers with up to 4 digits using the formal written methods of columnar addition where appropriate
11. subtract numbers with up to 4 digits using the formal written methods of columnar subtraction where appropriate
12. estimate and use inverse operations to check answers to a calculation
13. solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Multiplication and division

14. recall multiplication and division facts for multiplication tables up to 12×12 (aim for rapid recall within five seconds)
15. use place value, known and derived facts to multiply and divide mentally (eg $3 \times 6 = 18$ so $30 \times 6 = 180$)
16. multiply by 0 and 1; divide by 1; multiply together three numbers
17. recognise and use factor pairs (eg 12×20 is the same as $12 \times 2 \times 10$) and commutativity in mental calculations
18. multiply two-digit and three-digit numbers by a one-digit number using formal written layout
19. divide two-digit and three-digit numbers by a one-digit number using formal written layout
20. solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects

Fractions (including decimals)

21. recognise and show, using diagrams, families of common equivalent fractions
22. as a vulgar and decimal fraction: count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten
23. recognise and write decimal equivalents: any number of tenths or hundredths
24. recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$
25. solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number
26. add and subtract fractions with same denominator
27. find the effect of (*ie begin to do the following*) multiplying and dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths (*ie this means understand the concept, know vocabulary such as 'ten times smaller', and the procedure of moving digits, place holders etc*)
28. round decimals with one decimal place to the nearest whole number
29. compare numbers with the same number of decimal places up to two decimal places
30. solve simple measure and money problems involving fractions and decimals to two decimal places

Measurement

31. convert between different units of measure [eg kilometre to metre; hour to minute]
32. measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
33. find the area of rectilinear shapes by counting squares
34. estimate, compare and calculate different measures, including money in pounds and pence
35. read, write and convert time between analogue and digital 12- and 24-hour clocks
36. solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days

Geometry: properties of shapes

37. compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
38. identify acute and obtuse angles and compare and order angles up to two right angles by size
39. identify lines of symmetry in 2-D shapes presented in different orientations
40. complete a simple symmetric figure with respect to a specific line of symmetry.

Geometry: position and direction

41. describe positions on a 2-D grid as coordinates in the first quadrant
42. describe movements between positions as translations of a given unit to the left/right and up/down
43. plot specified points and draw sides to complete a given polygon

Statistics

44. interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs
45. solve comparison, sum and difference problems using data presented in bar charts, pictograms, tables and other graphs

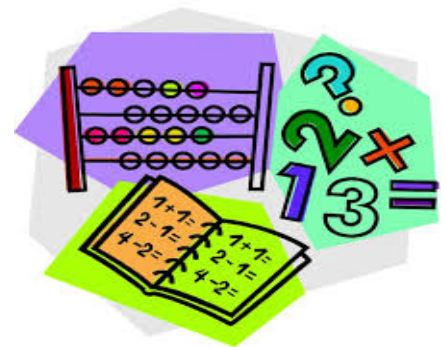
Age-related expectations: Maths, Year 5

Number and place value

1. read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit
2. count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000
3. interpret negative numbers in context
4. count forwards and backwards with positive and negative whole numbers, inc through zero
5. round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
6. solve number problems and practical problems that involve all of the above
7. read Roman numerals to 1000 (M) and recognise years written in Roman numerals

Addition and subtraction

8. add whole numbers with more than 4 digits, including using formal written methods (columns)
9. subtract whole numbers with more than 4 digits, including using formal written methods (columns)
10. add and subtract numbers mentally with increasingly large numbers
11. use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
12. solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.



Multiplication and division

13. identify multiples and factors, including finding all factor pairs of a number
14. identify common factors of two numbers
15. know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
16. establish whether a number up to 100 is prime
17. recall prime numbers up to 19
18. multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
19. multiply and divide numbers mentally drawing upon known facts
20. divide numbers up to 4 digits by a one-digit number using the formal written method
21. interpret remainders appropriately for the context
22. multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
23. recognise and use square numbers and cube numbers, and notation for squared (2) and cubed (3)
24. solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
25. solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes, scaling by simple fractions and problems involving simple rates

Fractions (including decimals and percentages)

26. compare and order fractions whose denominators are all multiples of the same number
27. identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
28. recognise mixed numbers and improper fractions and convert from one to the other
29. write mathematical statements > 1 as a mixed number [eg $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]
30. add and subtract fractions with the same denominator and denominators that are multiples of the same number
31. multiply proper fractions by whole numbers, supported by materials and diagrams
32. multiply mixed numbers by whole numbers, supported by materials and diagrams
33. read and write decimal numbers as fractions [eg $0.71 = \frac{71}{100}$]
34. recognise, use and count in thousandths and relate them to tenths, hundredths and decimal equivalents
35. round decimals with two decimal places to the nearest whole number and to one decimal place
36. read, write, order and compare numbers with up to three decimal places
37. solve problems involving number up to two decimal places
38. solve problems involving number up to three decimal places
39. recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal
40. solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.

Measurement

41. convert between different units of metric measure (eg kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
 42. understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
 43. measure and calculate perimeter of composite rectilinear shapes in centimetres and metres
 44. calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes
 45. estimate volume [eg using 1 cm^3 blocks to build cuboids (inc cubes)] and capacity [eg using water]
 46. solve problems involving converting between units of time
- use all four operations to solve problems involving measure [eg length, mass, volume, money] using decimal notation, including scaling

Geometry: properties of shapes

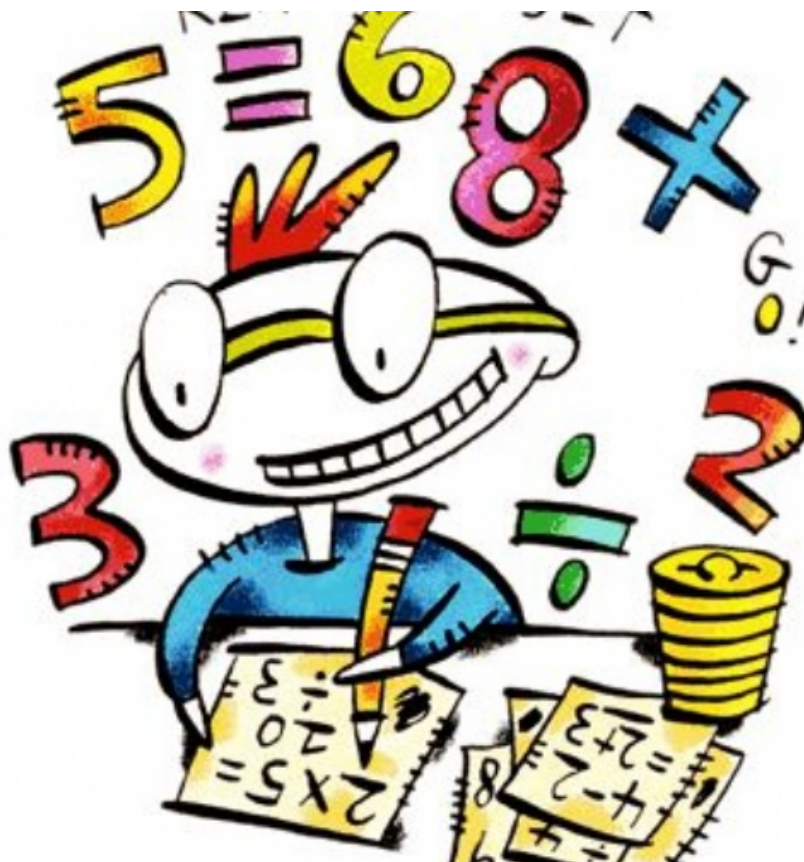
47. identify 3-D shapes, including cubes and other cuboids, from 2-D representations (nets and other drawings)
48. know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
49. draw given angles, and measure them in degrees ($^\circ$)
50. identify:
 - angles at a point and one whole turn (total 360°)
 - angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°)
 - other multiples of 90°
51. use the properties of rectangles to deduce related facts and find missing lengths and angles
52. distinguish between regular and irregular polygons based on reasoning about equal sides and angles

Geometry: position and direction

53. identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed

Statistics

54. solve comparison, sum and difference problems using information presented in a line graph
55. complete, read and interpret information in tables, including timetables



Age-related expectations: Maths, Year 6

Number and place value

1. order and compare numbers up to 10 000 000
2. read and write numbers up to 10 000 000 and determine the value of each digit
3. round any whole number to a required degree of accuracy
4. use negative numbers in context
5. calculate intervals across zero
6. solve number and practical problems that involve all of the above

Addition and subtraction, multiplication and division

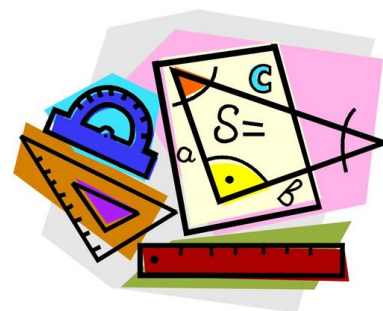
7. multiply numbers up to 4 digits by a two-digit whole number using formal written method
8. divide numbers up to 4 digits by a two-digit whole number using formal written method
9. interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
10. divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate
11. perform mental calculations, including with mixed operations and large numbers
12. identify common factors, common multiples and prime numbers
13. use their knowledge of the order of operations to carry out calculations involving the four operations
14. solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
15. solve problems involving addition, subtraction, multiplication and division
16. use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Fractions (including decimals and percentages)

17. use common factors to simplify fractions; use common multiples to express fractions in the same denomination
18. compare and order fractions, including fractions > 1
19. add and subtract fractions with different denominators and mixed numbers, using equivalent fractions
20. multiply simple pairs of proper fractions, writing the answer in its simplest form eg $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$
21. divide proper fractions by whole numbers eg $\frac{1}{3} \div 2 = \frac{1}{6}$
22. associate a fraction with division
23. calculate decimal fraction equivalents for a simple fraction [eg $\frac{3}{8} = 0.375$]
24. identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
25. multiply one-digit numbers with up to two decimal places by whole numbers
26. use written division methods in cases where the answer has up to two decimal places
27. solve problems which require answers to be rounded to specified degrees of accuracy
28. recall and use equivalences between simple fractions, decimals and percentages, in different contexts

Ratio and proportion

29. solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
30. solve problems involving the calculation of percentages [eg, of measures, and such as 15% of 360] and the use of percentages for comparison
31. solve problems involving similar shapes where the scale factor is known or can be found
32. solve problems involving unequal sharing and grouping using knowledge of fractions and multiples



Algebra

33. use simple formulae
34. generate and describe linear number sequences
35. express missing number problems algebraically
36. find pairs of numbers that satisfy an equation with two unknowns
37. enumerate possibilities of combinations of 2 variables

Measurement

38. solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
 39. use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
 40. convert between miles and kilometres
 41. recognise that shapes with the same areas can have different perimeters and vice versa
 42. recognise when it is possible to use formulae for area and volume of shapes
 43. calculate the area of parallelograms and triangles
- calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [eg mm^3 and km^3]

Geometry: properties of shapes

44. draw 2-D shapes using given dimensions and angles
45. recognise, describe and build simple 3-D shapes, including making nets
46. compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
47. illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
48. recognise angles where they meet at a point, are on a straight line, or vertically opposite; find missing angles

Geometry: position and direction

49. describe positions on full coordinate grid (4 quadrants)
50. draw and translate simple shapes on the coordinate plane, and reflect them in the axes

Statistics

51. interpret pie charts and line graphs and use these to solve problems
52. construct pie charts and line graphs and use these to solve problems
53. calculate and interpret the mean as an average

