

Maths objectives Learning Ladder.

Reception

- Count reliably forwards and backwards to 20.
- Write numerals 1 – 20 clearly
- Order numbers 1 – 20.
- Say 1 more/1 less with numbers to 20.
- Add two single digit numbers using objects
e.g. $4+2=6$
- Subtract two single digit numbers using objects
e.g. $7-4=3$.
- Use everyday language for comparing measures e.g. tall(er)/ long(er)/short(er); big(ger)/small(er) and for time
e.g. morning, afternoon, lunchtime, yesterday, today, tomorrow.
- Identify circle, triangle, square, rectangle.

Year 1

- Count in multiples of 2, 5 and 10
- Count, read and write numbers to 100.
- Count forward and backwards from 100 or 0 or from a given number
- Say the number that is one more or one less than a given number
- Recall all pairs of addition and subtraction number bonds to 20
e.g. 17 & 3/ 9 & 11/ 15 & 5.
- Recognise all coins and notes: £1; 50p; 20p; 10p; 5p; 2p and 1p
- Use language to name days of the week, months and years
- Tell the time to the hour and half past the hour
- Recognise and name 2D shapes (square, rectangle, circle and triangle) and 3D shapes (cube, pyramid, sphere).

Year 2

- Count, read and write numbers to at least 100 in numerals and words.
- Count in steps of 2, 3, 5 and 10s from 0 forwards and backwards.
- Recognise the place value of each digit in a 2-digit number.
e.g. 34 (3 = 30 (3 tens)/ 4 = 4 (4 units); 79 (7 = 70 (7 tens)/ 9 = 9 (9 units)).
- Recognise odd and even numbers.
- Add and subtract: two 1-digit ($9+4$ / $9-5$); 2-digit and 1 digit ($18-7$; $15+4$); 2-digit and 10s ($31+20$; $45-10$); two 2-digit ($37-15$; $24+12$) and add three 1-digit numbers ($6+8+4$).
- Know the 2, 5 and 10x multiplication tables.
- Recognise, name and describe 2D shapes (square, rectangle, circle and triangle) e.g. square 4 sides, 4 equal angles; triangle 3 sides, 3 angles.
- Recognise, name and describe 3D shapes (cube, pyramid, sphere) e.g. cube 6 faces, 12 edges and 8 vertices.

Year 3

- Read and write numbers to 1000 in numerals and words.
- Order numbers to 1000.
- Count from 0 in multiples of 4, 8, 50 and 100.
- Recognise the place value of each digit in a 3-digit number
e.g. 752 (7 = 700 (7 hundreds); 5 = 50 (5 tens); 2 = 2 (2 units)).
- Find 10/ 100 more or less than a number
e.g. 10 more than 125 = 135; 100 less than 348 = 248.
- Add and subtract numbers with up to 3-digits using formal written methods.
- Building on Year 2, know the 3, 4 and 8x multiplication tables.
- Tell and write the time to nearest minute from an analogue clock, 12 hour and 24 hour clocks and use specific vocabulary: seconds, am and pm.
- Know the number of seconds in a minute, days in each month, a year and leap year.

- Know there are 100cm in a metre; 10mm in a cm; use a ruler to measure lines.

Year 4

- Recognise the place value of each digit in a 4-digit number
e.g. 4327 4 = 4000 (4 thousands); 3 = 300 (3 hundreds); 2 = 20 (2 tens); 7 = 7 (7 units).
- Count in multiples of 6, 7, 9, 25 and 1000.
- Order and compare numbers beyond 1000
e.g. 12 011, 12 602, 120 001, 1 211 put in order from smallest to largest is: 1 211, 12 011, 12 602, 120 001.
- Count backwards through zero to include negative numbers
e.g. 7, 6, 5, 4, 3, 2, 1, 0, -1, -2, -3, -4; 50, 40, 30, 20, 10, 0, -10, -20, -30.
- Add 4 digit numbers using the formal written method
e.g. 8762 + 4389.
- Subtract 4 digit numbers using the formal written method
e.g. 7468 – 3819.
- Multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout
e.g. 25 x 6; 241 x 4.
- Recall all multiplication facts to 12 x 12.
- Divide a 1 or 2-digit number by 10 or 100
e.g. $22 \div 10 = 2.2$; $22 \div 100 = 0.22$; $8 \div 10 = 0.8$; $8 \div 100 = 0.08$.
- Identify triangles (3 sides); quadrilaterals (4 sides, includes square, rectangle, parallelogram, rhombus, trapezium, kite); pentagons (5 sides); hexagons (6 sides); heptagon (7 sides); octagons (8 sides) and what they look like as regular shapes – all sides same length/ all angles the same size.
- Read the time using analogue and digital clocks, including 12 and 24 hour clocks.

Year 5

- Count forwards and backward with positive and negative numbers through zero.
- Count forwards/backwards in steps of 10 for any given number up to 1,000,000
e.g. 246 678, 246 688, 246 698, 246 708, 246 718.
- Compare and order numbers up to 1,000,000.
- Compare and order numbers with 3 decimal places
e.g. 2.405, 2.889, 2.099, 2.901 form smallest to largest is: 2.099, 2.405, 2.889, 2.901.
- Recall prime numbers up to 19: 2, 3, 5, 7, 11, 13, 17, 19 – prime numbers are numbers that can only be divided by themselves and 1.
- Recognise square numbers 1 (1x1); 4 (2 x2); 9 (3x3); 16 (4 x4) 25 (5 x5); 36 (6 x6); 49 (7 x7); 64 (8 x8); 81 (9 x9); 100 (10 x10), 121 (11 x 11); 144 (12 x12).
- Recognise place value of any number up to 1,000,000.
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
e.g. $246.7 \times 10 = 2467$; $246.7 \times 100 = 24670$; $246.7 \times 1000 = 246700$; $246.7 \div 10 = 24.67$; $246.7 \div 100 = 2.467$; $246.7 \div 1000 = 0.2467$
- Multiply number up to 4-digit by a 1 or 2-digit number using formal methods
e.g. 2428 x 15
- Divide numbers up to 4-digits by 1-digit numbers and interpret remainder.
- Know all the shapes from the Year 4 list and able to describe their properties e.g. number of sides, angles, faces.

Year 6

- Confidently use the mathematical objectives from all the previous years.
- Compare and order numbers up to 10,000,000.
- Identify common factors, common multiples and prime numbers.
- Identify the value of each digit to 3 decimal places.
- Add and subtract numbers with 4 digits or more.
- Multiply 4-digit by 2-digit
- Divide 4-digit by 2-digit
- Calculate percentage of whole number.

Addition and subtraction

789 + 642 becomes

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \\ \hline 1 \quad 1 \end{array}$$

Answer: 1431

874 – 523 becomes

$$\begin{array}{r} 874 \\ - 523 \\ \hline 351 \end{array}$$

Answer: 351

932 – 457 becomes

$$\begin{array}{r} \overset{8}{\cancel{9}} \overset{12}{\cancel{3}} \overset{1}{2} \\ - 457 \\ \hline 475 \end{array}$$

Answer: 475

Multiplication

24 × 6 becomes

$$\begin{array}{r} 24 \\ \times 6 \\ \hline 144 \\ \hline 2 \end{array}$$

Answer: 144

342 × 7 becomes

$$\begin{array}{r} 342 \\ \times 7 \\ \hline 2394 \\ \hline 2 \quad 1 \end{array}$$

Answer: 2394

2741 × 6 becomes

$$\begin{array}{r} 2741 \\ \times 6 \\ \hline 16446 \\ \hline 4 \quad 2 \end{array}$$

Answer: 16 446

Long Multiplication

24 × 16 becomes

$$\begin{array}{r} 2 \\ 24 \\ \times 16 \\ \hline 240 \\ 144 \\ \hline 384 \end{array}$$

Answer: 384

124 × 26 becomes

$$\begin{array}{r} 12 \\ 124 \\ \times 26 \\ \hline 2480 \\ 744 \\ \hline 3224 \\ \hline 1 \quad 1 \end{array}$$

Answer: 3224

Division

98 ÷ 7 becomes

$$\begin{array}{r} 14 \\ 7 \overline{) 98} \\ \underline{7} \\ 28 \\ \underline{28} \\ 0 \end{array}$$

Answer: 14

496 ÷ 11 becomes

$$\begin{array}{r} 45 \text{ r } 1 \\ 11 \overline{) 496} \\ \underline{44} \\ 56 \\ \underline{55} \\ 1 \end{array}$$

Answer: $45\frac{1}{11}$

432 ÷ 15 becomes

$$\begin{array}{r} 28 \text{ r } 12 \\ 15 \overline{) 432} \\ \underline{30} \\ 132 \\ \underline{120} \\ 12 \end{array}$$

Answer: 28 remainder 12

Addition and subtraction

789 + 642 becomes

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \\ \text{1} \quad \text{1} \end{array}$$

Answer: 1431

874 – 523 becomes

$$\begin{array}{r} 874 \\ - 523 \\ \hline 351 \end{array}$$

Answer: 351

932 – 457 becomes

$$\begin{array}{r} 8 \quad 12 \quad 1 \\ 932 \\ - 457 \\ \hline 475 \end{array}$$

Answer: 475

932 – 457 becomes

$$\begin{array}{r} 1 \quad 1 \\ 932 \\ - 457 \\ \hline 475 \\ \text{5} \quad \text{6} \end{array}$$

Answer: 475

Short multiplication

24 × 6 becomes

$$\begin{array}{r} 24 \\ \times 6 \\ \hline 144 \\ \text{2} \end{array}$$

Answer: 144

342 × 7 becomes

$$\begin{array}{r} 342 \\ \times 7 \\ \hline 2394 \\ \text{2} \quad \text{1} \end{array}$$

Answer: 2394

2741 × 6 becomes

$$\begin{array}{r} 2741 \\ \times 6 \\ \hline 16446 \\ \text{4} \quad \text{2} \end{array}$$

Answer: 16 446