

Year 5 mathematics. *What you need to know.*

Number and Place Value

- Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.

Continue these sequences.

-30 -20

-20 -15 -10

-23 -17 -11

- Count forwards or backwards in steps of powers of 10 for any given number up to 1000 000.

Count forwards by 10

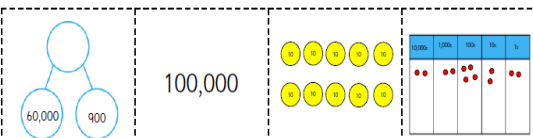


Count backwards by 10



- Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.

Order the following in descending order.



- Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
- Round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000. Round decimals with two decimal places to the nearest whole number and to one decimal place.

Addition and Subtraction

- Add and subtract whole numbers with more than 4 digits, including using formal written methods.

	1	3	1	6
+		3	2	9
	1	6	4	5

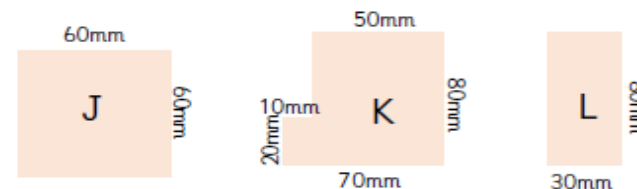
	1	4	1	6
-		1	2	6
	1	2	9	0

Measurement

- Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.

Order them from greatest perimeter to smallest.

Not to scale.



- Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes.
- Convert between different units of metric measure. (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).

Izzy is having a party.

She is making squash and combines 15 ml of cordial with 1.2 l of water.

How many ml of squash has she made?



Fractions, Decimals and Percentages

- Compare and order fractions whose denominators are all multiples of the same number.

$$\frac{1}{4} \bigcirc \frac{3}{12}$$

- Read, write, order and compare numbers with up to three decimal places.
- Round decimals with two decimal places to the nearest whole number and to one decimal place.
- 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 as a decimal fraction.
- Add and subtract fractions with the same denominator and multiples of the same number.

$$\frac{1}{16} + \frac{4}{16} = \frac{5}{16}$$

$$\frac{1}{16} + \frac{1}{4} = \frac{5}{16}$$

Multiplication and Division

- Multiply numbers up to 4 digits by a one- or two-digit number using a formal written

$$\begin{array}{r}
 1023 \\
 \times 45 \\
 \hline
 5115 \\
 40920 \\
 \hline
 46035
 \end{array}$$

method

- Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately.

Geometry

Shape

- Identify 3-D shapes.
- Draw given angles, and measure them in degrees (o).
- Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

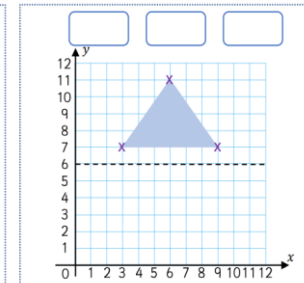
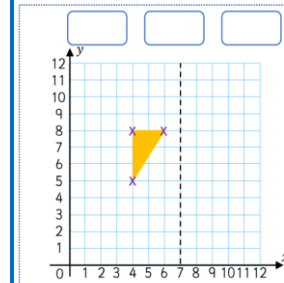
Which one is the odd one out? Circle and explain why.



Position and Direction

- 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.

Write the coordinates of the image after the object (triangle) has been reflected in the mirror line.

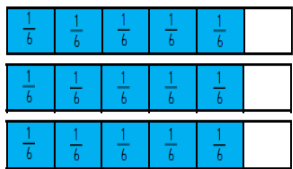


Can you explain Hannah's mistake?



$$\frac{1}{5} + \frac{1}{15} = \frac{1}{20}$$

- Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1 \frac{1}{5}$).
- Multiply proper fractions** and mixed numbers by whole numbers, supported by materials and diagrams.



Count the number of sixths to work out

$$3 \times \frac{5}{6} = \boxed{}$$

	0	3	2	9	
4	1	3	1	6	

- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.
- Know and use the vocabulary of **prime numbers, prime factors** and composite (non-prime) numbers.
- Recognise and use **square numbers** and **cube numbers**, and the notation for **squared (2)** and **cubed (3)**

Statistics

- Complete, read and interpret information in tables, including timetables.

Here is part of the morning bus timetable from Winton to Yansley.

Winton	9:35	9:55	10:15	10:35
Ingham	9:45	10:05	10:25	10:45
Carston	10:01	10:21	10:41	11:01
Dubley	10:23	10:43	11:03	11:23
Yansley	10:55	11:15	11:35	11:55

How many minutes does the bus take to get from Ingham to Dubley?