The Redeemer C. of E. Primary School

Year 4 Mathematics Core Knowledge Organiser

Times Tables (7x)

1 x 7 = 7	7 x 7 = 49
2 x 7 = 14	8 x 7 = 56
3 x 7 = 21	9 x 7 = 63
4 x 7 = 28	10 x 7 = 70
5 x 7 = 35	11 x 7 = 77
6 x 7 = 42	12 x 7 = 84

7 x 7 = 7 squared = 49

Times Tables (9x)

1 x 9 = 9	7 x 9 = 63
2 x 9 = 18	8 x 9 = 72
3 x 9 = 27	9 x 9 = 81
4 x 9 = 36	10 x 9 = 90
5 x 9 = 45	11 x 9 = 99
6 x 9 = 54	12 x 9 = 108

9 x 9 = 9 squared or 9^2 = 81

Times Tables (11x)

1 x 11 = 11	7 x 11 = 77
2 x 11 = 22	8 x 11 = 88
3 x 11 = 33	9 x 11 = 99
4 x 11 = 44	10 x 11 = 110
5 x 11 = 55	11 x 11 = 121
6 x 11 = 66	12 x 11 = 132

11 x 11 =11squared= 121

Times Tables (12x)

1 x 12 = 12	7 x 12 = 84
2 x 12 = 24	8 x 12 = 96
3 x 12 = 36	9 x 12 = 108
4 x 12 = 48	10 x 12 = 120
5 x 12 = 60	11 x 12 = 132
6 x 12 = 72	12 x 12 = 144

12x12=12squared or 12^2 =144

Vocabulary

Sum – the value of two or more numbers when added.

Product - the value of two or numbers when multiplied.

Multiple – a number that can be divided evenly by a given number.

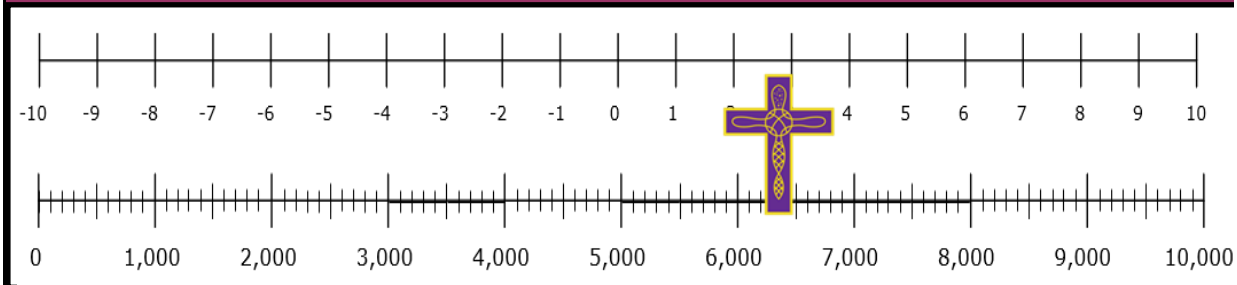
Factor – a number that is multiplied by another number, resulting in a product.

Estimate – Having an educated guess (perhaps based on rounding) at what the answer might be.

Inverse Operation – to reverse the effect of an operation (i.e. addition and subtraction; multiplication and division).

Equivalent – having the same value

Number Line



using known facts

4 x 7 = 28

7 x 4 = 28
40 x 7 = 280
400 x 7 = 2,800
4 x 70 = 280
4 x 700 = 2,800
40 x 70 = 2,800

Addition

			7	9
		6	5	4
+	1	3	1	2
	2	0	4	5
	1	1	1	

Subtraction

	Th	H	T	O
	~~6~~7	¹3	¹~~2~~	¹5
−	2	4	0	6
	4	9	1	9

Multiplication

	1	3	1
×			7
	9	1	7
	2		

Division

844 ÷ 4 =

H	T	O
100 100	10	1
100 100	10	1
100 100	10	1
100 100	10	1

Rounding

Round 3,851 to the nearest 10

Thousands	Hundreds	Tens	Ones
3	8	5	1

When you round to the nearest 10, look at the digit in the ones column.

If the number is smaller than 5, round to the previous multiple of 10
If the number is 5 or greater, round to the next multiple of 10

3,851 rounded to the nearest 10 is 3,850

Round 3,851 to the nearest 100

Thousands	Hundreds	Tens	Ones
3	8	5	1

When you round to the nearest 100, look at the digit in the tens column.

If the number is smaller than 5, round to the previous multiple of 100
If the number is 5 or greater, round to the next multiple of 100

3,851 rounded to the nearest 100 is 3,900

Round 3,851 to the nearest 1,000

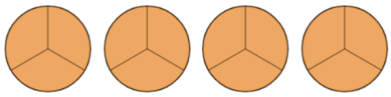
Thousands	Hundreds	Tens	Ones
3	8	5	1

When you round to the nearest 1,000, look at the digit in the hundreds column.

If the number is smaller than 5, round to the previous multiple of 1,000
If the number is 5 or greater, round to the next multiple of 1,000

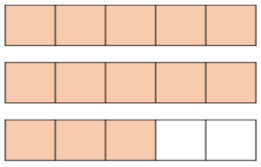
3,851 rounded to the nearest 1,000 is 4,000

Fractions



$\frac{12}{3} = 4$ wholes

An **improper fraction** is a fraction that has a numerator that is greater than or equal to the denominator.



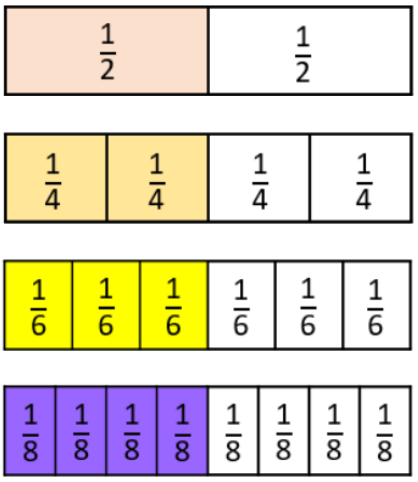
What mixed number is shown?

A mixed number is a whole number and a proper fraction.

The mixed number is $2\frac{3}{5}$

Equivalent fractions

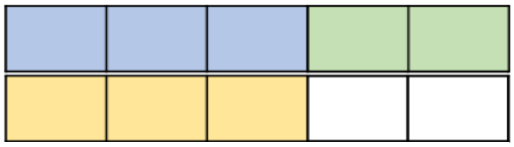
Equivalent (equal value) fractions



$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$

Addition/Subtraction

$\frac{3}{5} + \frac{3}{5} + \frac{2}{5} = \frac{8}{5} = 1\frac{3}{5}$



$\frac{9}{10} - \frac{2}{10} = \frac{7}{10}$

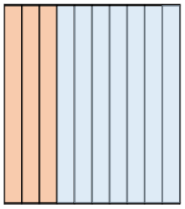
fractions of numbers

$\frac{3}{5}$ of 45

45 ÷ 5 = 9
9 x 3 = 27
$\frac{3}{5}$ of 45 = 27

Fractions and Decimals

The square represents 1 whole.
Each column represents 1 tenth .



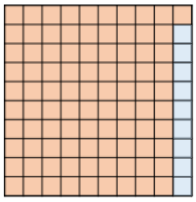
How much of the whole is shaded?

Fraction	Decimal
$\frac{3}{10}$	0.3

How much needs to be shaded to fill the whole?

Fraction	Decimal
$\frac{7}{10}$	0.7

The square represents 1 whole.
Each column represents 1 tenth .
Each small square represents 1 hundredth .



How much of the whole is shaded?

Fraction	Decimal
$\frac{91}{100}$	0.91

How much needs to be shaded to fill the whole?

Fraction	Decimal
$\frac{9}{100}$	0.09

$\frac{1}{2} = \frac{5}{10} = \frac{50}{100} = 0.5$

$\frac{1}{4} = \frac{25}{100} = 0.25$

$\frac{3}{4} = \frac{75}{100} = 0.75$

Geometry

angles

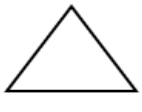
Angles are measured in degrees (°)
A right angle is 90°

An acute angle is less than 90°

An obtuse angle is larger than 90° and less than 180 °

triangles

equilateral (3 equal sides and 3 equal angles)



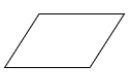
isosceles (2 equal sides and 2 equal angles)

scalene (no equal sides and no equal angles)

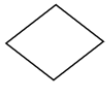
quadrilaterals

rectangle (4 right angles, opposite sides equal)

square (4 right angles and 4 equal sides)



parallelogram (two pairs of parallel sides and opposite sides equal)



rhombus (parallelogram with 4 equal sides)

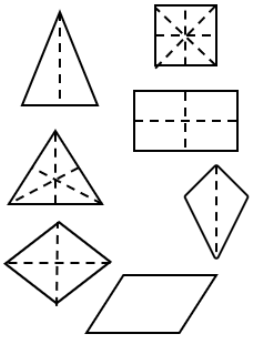
trapezium (two sides are parallel)

kite (two pairs of adjacent sides of the same length)

polygons

3 sides	**tri**angle
4 sides	**quad**rilateral
5 sides	**penta**gon
6 sides	**hexa**gon
7 sides	**hepta**gon
8 sides	**octa**gon
9 sides	**nona**gon
10 sides	**deca**gon

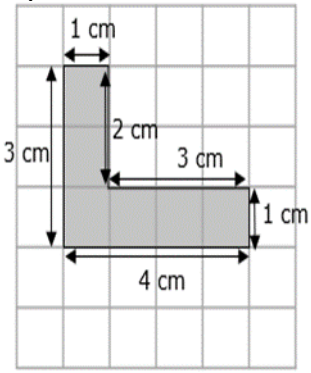
symmetry



Measure

+ Perimeter = length around the outside edge of a shape.

X Area = the amount of space a shape covers.



perimeter = 14 cm area = 6 cm²