

**Maths
Information
for
Parents**

(Upper School)

St. Helen's College
St. Helen's College



Introduction

This booklet aims to show you how we teach the 4 main operations
(addition, subtraction, multiplication and division)
at St. Helen's College.

It gives you some handy activities that you can do with your child to
consolidate key ideas.

It also contains a maths dictionary of core language.



It is important to note that this by no means covers all of the maths topics that we teach
your children.

ADDITION

Language of addition

addition, add, find the sum of, find the total of, increase

double ($25 + 25$), near double ($25 + 26$)

count on, count back

carry forward

Mental strategies for addition

- Adding two-digit / three-digit multiples of 10:

$$5 + 7 = 12 \quad \text{so} \quad 50 + 70 = 120 \quad \text{and} \quad 500 + 700 = 1200$$

$$5 + 7 + 4 + 8 + 3 = 27 \quad \text{so} \quad 50 + 70 + 40 + 80 + 30 = 270$$

- Adding two two-digit / three digit numbers:

$$54 + 27 = 81 \quad (\text{partition into tens and units})$$

$$50 + 20 = 70, \quad 4 + 7 = 11 \quad (70 + 11 = 81)$$

$$354 + 283 = 637 \quad (\text{partition into hundreds, tens and units})$$

$$300 + 200 = 500, \quad 50 + 80 = 130, \quad 4 + 3 = 7 \quad (500 + 130 + 7 = 637)$$

- Adding doubles / near doubles:

$$56 + 56 = 112 \quad \longrightarrow \quad 50 + 50 = 100, \quad 6 + 6 = 12$$

$$65 + 67 = 132 \quad \longrightarrow \quad 65 + 65 = 130 + 2 = 132$$

- Adding doubles of multiples of 10:

$$63 + 63 = 126 \quad \text{so} \quad 630 + 630 = 1260$$

- Addition of three-digit numbers:

$$326 + 152 = 478 \quad \longrightarrow \quad 300 + 100 = 400, \quad 20 + 50 = 70, \quad 6 + 2 = 8$$

Standard written methods of addition

A standard vertical recording

$$\begin{array}{r} 2432 \\ + 2357 \\ \hline 4789 \end{array}$$

Always begin
with the units
column

An addition which involves a carry
Forward / over

$$\begin{array}{r} 3528 \\ + 1359 \\ \hline 4887 \\ 1 \end{array}$$

Write the digit carried
underneath the next
column along

An addition which involves two
or more carry forwards

$$\begin{array}{r} 4572 \\ + 1819 \\ \hline 6391 \\ 1 \quad 1 \end{array} \qquad \begin{array}{r} 6748 \\ + 2795 \\ \hline 9543 \\ 1 \quad 1 \quad 1 \end{array}$$

An addition which involves four
or five numbers with different
numbers of digits

$$\begin{array}{r} 3562 \\ 483 \\ 71 \\ + \quad 9 \\ \hline 4125 \\ 1 \quad 2 \quad 1 \end{array}$$

**IMPORTANT...DIGITS MUST BE RECORDED IN THE CORRECT
PLACE VALUE COLUMNS WITH ONE DIGIT PER SQUARE.**

SUBTRACTION

Language of subtraction

subtraction, subtract, take away, minus, reduce, decrease, less

difference between

count on, count back

exchange, column

Mental strategies for subtraction

- Subtracting a multiple of 10:

$$76 - 40 = 36$$

7 tens take away 4 tens equals 3 tens

- Subtracting a two-digit number:

$$67 - 31 = 36 \quad (\text{take away tens and then the units}) \quad 67 - 30 = 37 \quad 37 - 1 = 36$$

$$76 - 48 = 28 \quad \longrightarrow \quad 76 - 40 = 36, \quad 36 - 8 = 28$$

- Subtracting a near-multiple of 10:

$$826 - 49 = 777$$

$$826 - 50 = 776, \quad 776 + 1 = 777$$

$$328 - 52 = 276$$

$$328 - 50 = 278, \quad 278 - 2 = 276$$

- Subtracting two-digit / three-digit multiples of 10:

$$32 - 18 = 14$$

so

$$320 - 180 = 140$$

Standard written methods of subtraction

A subtraction without exchanging

$$\begin{array}{r} 6438 \\ - 2337 \\ \hline 4101 \end{array}$$

Always begin with the units column

Exchanging a thousand

Start at the units and work left. Firstly $8-4=4$. Secondly $7-1=6$.

$$\begin{array}{r} 5278 \\ - 3614 \\ \hline 64 \end{array}$$

When a number cannot be subtracted you will need to exchange. In this case, exchange from the 'thousands'

$$\begin{array}{r} 41 \\ 5278 \\ - 3614 \\ \hline 664 \end{array}$$

$$\begin{array}{r} 41 \\ 5278 \\ - 3614 \\ \hline 664 \end{array}$$

Exchanging a thousand and a hundred

$$\begin{array}{r} 7256 \\ - 2671 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 11 \\ 7256 \\ - 2671 \\ \hline 85 \end{array}$$

$$\begin{array}{r} 6111 \\ 7256 \\ - 2671 \\ \hline 585 \end{array}$$

$$\begin{array}{r} 6111 \\ 7256 \\ - 2671 \\ \hline 4585 \end{array}$$

Exchanging a thousand, a hundred, and a ten

$$\begin{array}{r} 710161 \\ 8176 \\ - 4398 \\ \hline 3778 \end{array}$$

Standard written methods of multiplication

Short Multiplication

Multiplying a two-digit number
by a one-digit number

Long method

$$\begin{array}{r} 38 \\ \times 5 \\ \hline 40 \quad (5 \times 8) \\ + 150 \quad (5 \times 30) \\ \hline 190 \end{array}$$

Short method

$$\begin{array}{r} 38 \\ \times 5 \\ \hline 190 \\ \quad 4 \end{array}$$

Long Multiplication

Multiplying a two-digit number
by a two-digit number

$$\begin{array}{r} 65 \\ \times 34 \\ \hline 260 \quad (4 \times 65) \\ + 1950 \quad (30 \times 65) \\ \hline 2210 \end{array}$$

When multiplying
by the tens (30) you
must put a zero as a
place marker before
calculating 3 x 5

Multiplying a three-digit number
By a two-digit number

$$\begin{array}{r} 328 \\ \times 45 \\ \hline 1640 \quad (5 \times 328) \\ + 13120 \quad (40 \times 328) \\ \hline 14760 \end{array}$$

DIVISION

Language of division

share equally between, divide, divided by, quotient, divisible by,

left over, remainder,

round to the nearest ten / hundred

Mental strategies for division

- Division facts for 2-10, varying the division language:

Divide thirty-six by nine.

How many sixes are in forty-two?

What divided by eight gives four?

Share fifty-six equally among eight.

What is one fifth of thirty-five?

- Mental divisions where there will be a remainder:

Describe a scenario where 17 mats are shared equally among 5 restaurant tables and ask

How many mats will be on each table?

... and how many mats will be left over?

Three

Two

$$17 \div 5 = 3 \text{ r } 2$$

- Halving

Find half of 178:

Half of 100 is 50. Half of 78 is 39.
So half of 178 is 50 plus 39. That's
89

Standard written methods of division

Short method

$$968 \div 3 = 322 \text{ r } 2$$

$$3 \overline{) 968} \begin{array}{r} 322 \\ \text{r } 2 \end{array}$$

3 will go into 9 three times.
3 will go into 6 twice.
3 will go into 8 twice and there will be two left (the remainder).

$$9145 \div 8 = 1143 \text{ r } 1$$

$$8 \overline{) 9145} \begin{array}{r} 1143 \\ \text{r } 1 \end{array}$$

8 will go into 9 once and there will be one left.
8 will go into 11 once and there will be three left.
8 will go into 34 four times and there will be two left.
8 will go into 25 three times and there will be one left (the remainder).

Long method

$$511 \div 23$$

$$\begin{array}{r} 22 \text{ r } 5 \\ 23 \overline{) 511} \\ \underline{- 46} \\ 051 \\ \underline{- 46} \\ 05 \end{array}$$

23 will go into 51 twice. ($23 \times 2 = 46$)

Take away 46 from 51 ($51 - 46 = 5$)
Bring down 1 to become 51.
23 will go into 51 twice ($23 \times 2 = 46$)
Take away 46 from 51 ($51 - 46 = 5$)
5 is the remainder.

$$875 \div 34$$

$$\begin{array}{r} 25 \text{ r } 25 \\ 34 \overline{) 875} \\ \underline{- 68} \\ 195 \\ \underline{- 170} \\ 025 \end{array}$$

You must estimate and find out how many times 34 will go into 87:
($34 \times 2 = 68$)

Take 68 away from 87. ($87 - 68 = 19$)
Bring down 5 to become 195.
You must estimate and find out how many times 34 will go into 195:
($34 \times 5 = 170$)
Take away 170 from 195
($195 - 170 = 25$)
25 is the remainder.

Generic activities which can be adapted for different topics and levels of mathematics

1) 'Target'

Ask your child to make a 'target' number, specifying the rule or rules they should apply. For example:

The diagram illustrates two target number activities. On the left, a green oval contains the text "Make seventeen...". Three boxes point to it from the right, each containing a different method to reach 17: "...by adding two single-digit numbers ($9 + 8 = 17$)", "...by adding a teens number ($10 + 7 = 17$)", and "...by adding three numbers ($3 + 8 + 6 = 17$)". Below this, another green oval contains "Make fifty-three...". Two boxes point to it from the right, each containing a different method to reach 53: "...by subtracting 10 from a number" and "...by subtracting from sixty".

2) 'Describe a number'

Write a two-digit number and ask your child to say as many different things as possible about it. For example:

36

The diagram shows the number 36 in the center. Four boxes point to it from the bottom, each containing a different description: "it is one more than thirty-five", "it is between thirty and forty", "its two digits make nine when you add them", and "it is four less than forty".

3) 'Number Chains'

A number chain builds through a series of instructions which requires your child to calculate mentally while keeping a running total in their head.

Initially chains should contain only two or three instructions.

A chain can deal with a single aspect of number or a variety of aspects. For example:

Adding:

- Start with five
- Add three
- Add seven
- Add ten
- Add thirty
- What number do you have?

Fifty-five

Adding/Subtracting/Doubling:

- Start with three
- Add four
- Double the number
- Subtract two
- Add ten
- What number do you have?

Twenty-two

Change the starting number to repeat the task.

NUMBERS TO 100, then 1000

Language:

Counting on and back in ones, twos, threes, fours, fives, tens, hundreds, odd, even, larger, smaller, largest, smallest, order, before, after, between, one more, two more, one less, two less.

The hundred square:

Display a hundred square and ask your child to:

- Say a sequence, for example, from 20 to 30, forwards and backwards
- Continue the sequence, from any number, forwards and backwards
- Point to numbers given orally
- Give the numbers before/after a given number
- Give the numbers 1 or 2 more/less than a given number
- State a number between, for example, 22 and 24

Display a hundred square and ask your child to identify patterns:

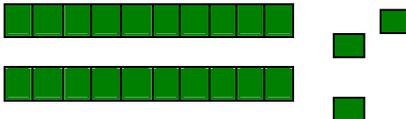
- Count from ten in tens to 100 (10, 20, 30, 40 etc.)
- Count from a one-digit number in tens to 100 (3, 13, 23, 33 etc.)

Further counting activities:

- Count in 2s to 100
- Count in 5s to 100

Place Value:

Number 23 is made up of 2 tens and 3 units -



Drawing your own number line:

Your child will be taught how to draw their own number line to enable them to calculate answers.

$$34 + 23 = 57$$

$$34 + 20 = 54 + 3 = 57$$



ADDITION

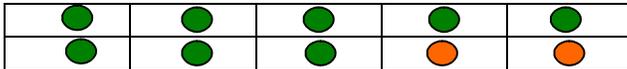
Language: Add, makes, gives, equals, plus, double, How many altogether?, total, one-digit number, two-digit number, 'teens' number

Addition to 20:

- Number bonds

A ten frame can help your child learn number bonds to ten

$$8 + 2 = 10$$



Use two ten-frames to help with number bonds to twenty.

- Doubles/Near Doubles

Memorise doubles to 10 + 10

$$1 + 1 = 2$$

$$2 + 2 = 4$$

$$3 + 3 = 6$$

.....

$$10 + 10 = 20$$

Use knowledge of doubles to calculate near doubles

$$6 + 6 = 12 \quad \text{so} \quad 6 + 7 = 13$$

- Adding 10:

$$3 + 10 = 13$$

Using cubes/counters –

Ask your child to lay out three cubes and a tens stick.



How many cubes are there altogether?

$$3 + 10 = 13$$

- Adding a single digit to a teens number:

$$14 + 5 = 19$$

a) Using a number line, start at fourteen (the bigger number) and count/jump on 5.

b) Lay out a stick of ten cubes and four loose cubes. Lay out a further five loose cubes. Count the cubes. Point out that they added the four to the five, as the stick of ten was already complete.



Highlight the link with a known fact - $14 + 5 = 19$ so $15 + 4 = 19$

$$12 + 6 = 18 \quad \text{so} \quad 16 + 2 = 18$$

c) 'Hold' 14 (the biggest number) in your head and count on 5.

Addition to 100:

- **Adding mentally using known facts:**

$$\begin{aligned}4 + 3 &= 7 \\14 + 3 &= 17 \\24 + 3 &= 27 \\34 + 3 &= 37 \text{ etc}\end{aligned}$$

Use a number line and discuss how a known fact such as $4 + 3 = 7$ is related to $14 + 3 = 17$:

- **Adding mentally multiples of 10 using known facts:**

$$4 + 3 = 7 \quad \text{so} \quad 40 + 30 = 70$$

- **Adding 10 and a two-digit number:**

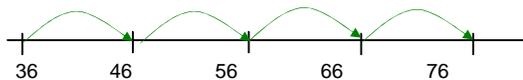
$$32 + 10 = 42$$

- Using a number line, start at 32 (the bigger number) and count on ten.
- Using a hundred square, start at 32 and count on ten/ move to the number underneath.

Highlight that the units stay the same and the tens column increases by one.

- **Adding a two-digit number and a multiple of 10:**

$$36 + 40 = 76$$



Use knowledge of adding 10 and count on the correct number of tens either on a number line or on a hundred square. Your child may be able to count on using their fingers – each finger represents 10.

Or

$$30 + 40 = 70 \quad \text{and} \quad 70 + 6 = 76$$

- **Adding on in ones to bridge 20:**

$$17 + 5 = 22$$

- Using a number line or hundred square, start at 17 and count on 5 – highlight that 3 more makes 20 and then add 2 more.
- 'Hold' 17 in your head and count on 5.

- **Adding on 11 and 21:**

If your child can mentally add a two-digit number and a multiple of 10 they may be able to extend this to add on 11 and 21.

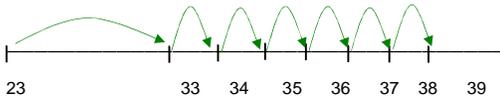
$$42 + 11 = 53 \quad 42 + 10 = 52 + 1 = 53$$

$$36 + 21 = 57 \quad 36 + 20 = 56 + 1 = 57$$

▪ **Adding a teens number and a two-digit number:**

$23 + 16 = 39$

- a) Lay out 2 tens sticks and 3 loose cubes. Lay out 1 tens stick and 6 loose cubes. Count up the tens and continue with the units.
- b) Start at 23 – add 10 and then 6 – your child could draw their own number line to calculate this.



SUBTRACTION

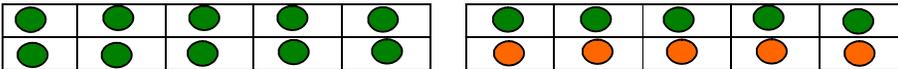
Language:

Take away, subtract, minus, leaves, How many are left?, difference between, How many more?, take four from seventeen,, subtract eight from sixteen, three less than twelve.

Subtraction to 20:

▪ **Linking to addition**

- a) Display two ten-frames, side-by-side, with fifteen green circles and five orange circles.



$15 + 5 = 20$

so

$20 - 5 = 15$

- b) Display a strip like this



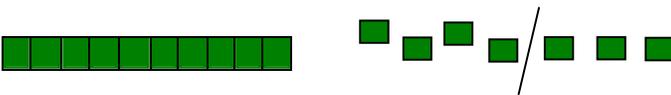
How many red and blue squares are there? (9 and 8)
 What is the sum of nine and seven? $9 + 8 = 17$

The related subtractions $17 - 8 = 9$ and $17 - 9 = 8$

▪ **Subtracting a single-digit number:**

$17 - 4 = 3$

- a) Using a number line, start at seventeen (the bigger number) and count/jump back 4.
- b) Lay out a stick of ten cubes and seven loose cubes. Take away/set aside three. Count the cubes. Point out that $7 - 4$ leaves 3. The answer is 10 and 3, 13.



- c) 'Hold' 17 in your head and count back 4.

Subtraction to 100:

▪ Linking to known subtraction facts:

Show a subtraction such as $9 - 5$ and calculate $9 - 5 = 4$

Link to facts $9 - 5 = 4$
 $19 - 5 = 14$
 $29 - 5 = 24$

▪ Subtracting 10:

$$42 - 10 = 32$$

- Using a number line, start at 42 (the bigger number) and count back ten.
- Using a hundred square, start at 42 and count back ten/ move to the number above.

Highlight that the units stay the same and the tens column decreases by one.

▪ Subtracting mentally multiples of 10 using known facts:

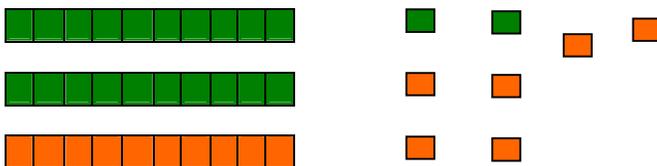
$$7 - 3 = 4 \quad \text{so} \quad 70 - 30 = 40$$

$$5 - 1 = 4 \quad \text{so} \quad 50 - 10 = 40$$

▪ Subtracting a teens number from a two-digit number:

$$38 - 16 = 22$$

- Using a number line or hundred square, start at 38 and count back 16.
- Lay out 3 tens sticks and 8 loose cubes. Take away 1 ten and 6 units (loose cubes).



- 'Hold' 38 in your head and count back 16.
- Take away a 10 and then 6: $38 - 10 = 28$
 $28 - 6 = 22$

▪ Finding a small difference

What is the difference between 38 and 41?

Place counters on a number line. Count back from 41 to 38 or on from 38 to 41 to show that the difference is 3.

Record: $41 - 38 = 3$

The answer can be found mentally, perhaps using fingers, by counting on from 38 or counting back from 41.

MULTIPLICATION

Language: Two sets of four, three times two, four fives, multiply, double, repeated addition.

Activities for multiplication

- **Multiplication is introduced by laying out 'sets' of,** for example:

3 sets of 2 

$$3 \times 2 = 6$$

Answers can be found by using repeated addition. ($2 + 2 + 2 = 6$)

Point out that 2×3 and 3×2 have the same answer, 6 (they are commutative)

- **The two times-table**

Make a drawing of a set of 2



$1 \times 2 = 2$

Add another set of 2



$2 \times 2 = 4$

Continue with 3 sets of 2



$3 \times 2 = 6$

Work up to 10 sets of 2

$10 \times 2 = 20$

Continue to learn the two times-table by saying them in order and ask your child questions which requires them to know them out of order. *For example 7×2 , 2 times 8, 5 twos, 2 nines.*

- **The ten times-table**

Count on and back in tens from 0 – 100. Point out the numbers 10, 20, 30 ... 100 are called 'multiples' of 10.

Build up tables : $0 \times 10 = 0$

$$1 \times 10 = 10$$

$$2 \times 10 = 20$$

$$3 \times 10 = 30$$

.....

$$10 \times 10 = 100$$

You could use apparatus such as cubes to demonstrate.

Continue to learn the ten times-table by saying them in order and ask your child questions which requires them to know them out of order. *For example 7×10 , 8 times 10, 5 tens, 10 nines.*

Ask your child to use their knowledge to answer $\times 10 = 60$

- **The five times-table**

Count on and back in fives from 0 – 50. Point out the numbers 5, 10, 15, 20 ..50 end in 0 and 5 alternately.

Display a dot pattern for 5 (as on a dice) $1 \times 5 = 5$



Build up tables: $0 \times 5 = 0$

$$1 \times 5 = 5$$

$$2 \times 5 = 10$$

$$3 \times 5 = 15$$

.....

$$10 \times 5 = 50$$

DIVISION

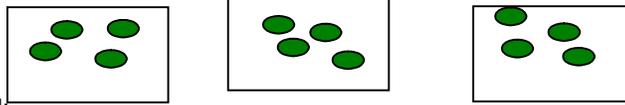
Language:

Share, group, halve, half, divide, divided by, How many twos are in twenty?, How many in each share?

Activities for division

Division is introduced by sharing using materials.

Using pencils/counters share out an equal amount of objects, for example:



Show how to record:

$$12 \div 3 = 4$$

Use language

twelve divided by three is four

twelve shared among three is four

MONEY

Language: Buy, spend, cost, sell, money, coins, amount, pay, change, pence, pounds, How much altogether?, same value, fewest coins.

Activities with money

- Display a collection of coins – (10p, 5p, 2p, 1p).
How much money is there? Encourage your child to start with the coin of greatest value.
When your child is confident in using 10p, 5p, 2p and 1p, introduce the 20p coin.
- Attach prices to objects and ask your child to count out coins that would be needed to pay for the item. *Encourage your child to use the fewest coins possible.*
When your child is confident in using 10p, 5p, 2p and 1p, introduce the 20p coin.

- Find different ways of making 20p, for example:

$$10p + 5p + 2p + 2p + 1p = 20p \quad \text{or} \quad 5p + 5p + 5p + 5p = 20p$$

- Introduce the 50p coin and find ways of making 50p, for example:

$$20p + 20p + 10p = 50p \quad \text{or} \quad 10p + 10p + 10p + 10p + 5p + 5p = 50p$$

$$20p + 20p + 2p + 2p + 2p + 2p + 2p = 50p$$

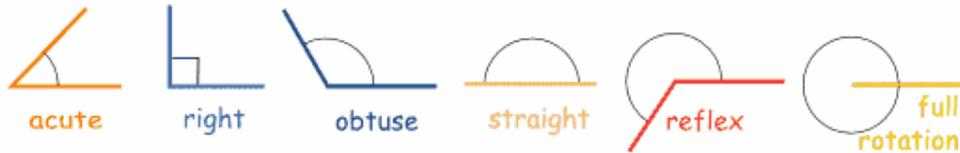
- Introduce the £1 coin and find ways of making one pound, for example:

$$50p + 50p = \text{£}1 \quad \text{or} \quad 20p + 20p + 20p + 20p + 20p = \text{£}1$$

Maths Dictionary

- angles** -

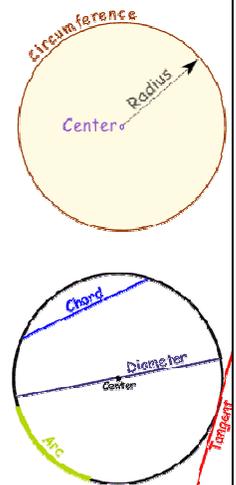
Type of Angle	Description
<u>Acute Angle</u>	an angle that is less than 90°
<u>Right Angle</u>	an angle that is 90° exactly
<u>Obtuse Angle</u>	an angle that is greater than 90° but less than 180°
<u>Straight Angle</u>	an angle that is 180° exactly
<u>Reflex Angle</u>	an angle that is greater than 180°



- area** – area is a measure of the total surface of a shape or object. You can find the area of a square or a rectangle by multiplying its length by its width **area = length x width**
- capacity** – the capacity of a container is the amount of water or other liquid that it will hold.
- conversions** -

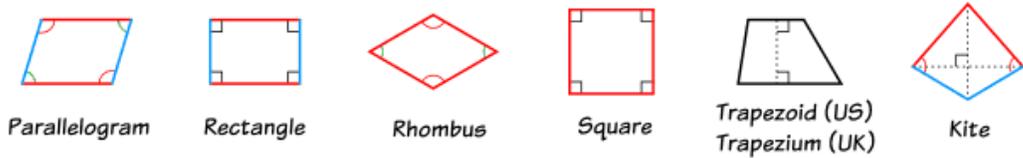
Length	1 km = 1000m	1m = 100cm	1cm = 10mm
Weight	1 tonne = 1000kg	1kg = 1000g	1g = 1000mg
Capacity	1l = 1000ml	1cl = 10ml	

- circumference** – the circumference is the distance all the way around the edge of a shape.
- congruent** – two shapes are congruent if they are exactly the same. One shape can be placed exactly on the other.
- cubic number** – when you multiply a whole number by itself twice, the answer is called a cubic number. $3 \times 3 \times 3 = 27$
- denominator** – the denominator is the number below the line in a fraction.
- diameter** – a diameter is a line that cuts a circle in half. It passes through the centre of the circle.
- difference** – the difference is the number you must count on to get from a smaller number to a bigger one.
- digit** – a digit is any one of the following: 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. The number 143 is made up of three digits.
- equation** – an equation says that one thing is equal to another. Every equation has an equals sign, which shows that the numbers to the left of the sign are the same as, or equal to, the numbers to the right of it.
- factor** – a factor is a number that you can divide into another number without leaving a remainder. For example, 2 divides into 8 four times with no remainders. So 2 is a factor of 8.
Ten has four factors : 1, 2, 5 and 10



- hypotenuse** – the hypotenuse is the longest side of a right-angled triangle.

- **integer** – an integer is a whole number. An integer can be a positive number such as 1, 2, 3 etc., or a negative number such as -1, -2, -3 etc. Zero is also an integer.
- **Quadrilateral** – A shape with 4 sides, 4 vertices and the interior angles add up to 360°



- **mean** – the mean of a set of numbers is one way of measuring the average. You find the mean by adding all the numbers together and dividing by how many numbers there are.
- **median** – the median is the middle, or central, number in a set of numbers. If you line up five children in the order of their heights, the child in the middle has the median height. The median is often close to, but not always the same as, the mean.
- **multiple** - an answer in a given times-table: 4, 8, 12, 16, 20 are multiples of 4
6, 12, 18, 24, 30 are multiples of 6.
- **mode** – the mode is the most common number in a set of numbers.
- **numerator** – the numerator is the number above the line in a fraction.
- **perfect number** - a perfect number is a number whose factors (apart from itself) add up to the number. For example, the proper factors of 6 are 1, 2 and 3 $1 + 2 + 3 = 6$
- **perimeter** – the perimeter is the edge, or boundary, of an area. The perimeter of a curved shape is the same as its circumference.
- **perpendicular** – two lines are perpendicular if they meet or cross at a right angle.

- **Place value** - The value of where the digit is in the number, such as: units, tens, hundreds, etc.

Example: In 352, the place value of the 5 is "tens"

Example: In 17.591, the place value of the 9 is "hundredths"

hundred millions
ten millions
millions
hundred thousands
ten thousands
thousands
hundreds
tens
units
• decimal
tenths
hundredths
thousandths
ten thousandths

- **polygon** – a polygon is a flat, or plane, shape with three or more straight sides.

Number of Sides	Name of Polygon
3	Triangle
4	Quadrilateral
5	Pentagon
6	Hexagon
7	Heptagon
8	Octagon
9	Nonagon
10	Decagon
11	Hendecagon
12	Dodecagon

- **polyhedron** – a polyhedron is a solid shape with straight edges. When each of the faces of a polyhedron is identical, we call it a regular polyhedron. There are five different regular polyhedra:

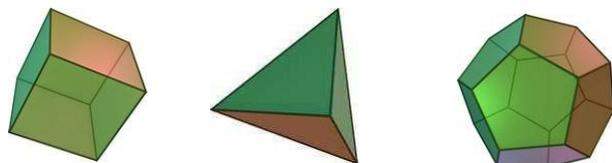
Tetrahedron – 4 triangular faces

Cube – 6 square faces

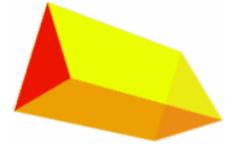
Octahedron – 8 triangular faces

Dodecahedron – 12 pentagonal faces

Icosahedron – 20 triangular faces.



- **prime number** – a prime number is any whole number, apart from 1, that can only be divided by itself and by 1 without leaving a remainder. The first four prime numbers are 2, 3, 5 and 7.
- **prism** – a prism is a solid shape with matching ends. The ends are shaped like triangles, squares or polygons. A prism has the same cross-section all the way along its length.



- **product** – the product is the answer you get when you multiply together two or more numbers. **The product of 2 and 3 is 6. $2 \times 3 = 6$**
- **quotient** – the quotient is the number of times that one number will divide into another number. It is the whole number part of the answer to a division sum.
- **radius** – the radius is the length of a straight line from the centre of a circle to its circumference.
- **rotation** – a rotation means a turn. A complete turn always brings a shape back to its starting point. We say that shapes like squares and equilateral triangles have rotational symmetry because they look the same after less than a full turn.

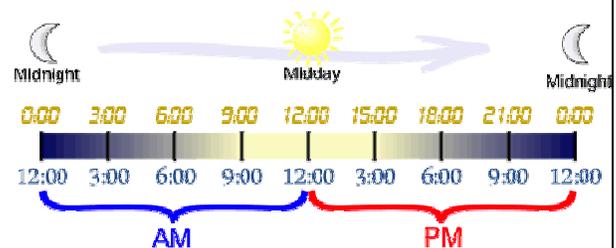
- **square number** – when you multiply a whole number by itself the answer is called a square number.
 $3 \times 3 = 9$ $7 \times 7 = 49$
The square root of 9 is 3
The square root of 49 is 7

- **sum** – the sum of two or more numbers is the answer you get when you add them together. **The sum of 2 and 3 is 5. $2 + 3 = 5$**

- **symmetry** – a shape has symmetry when two or more of its parts are matching shapes. There are different kinds of symmetry:
Rotational symmetry – when an object looks exactly the same when it is turned by an angle less than 360 degrees.
Reflection/mirror symmetry – when one half of a shape is the mirror image of the other half.

- **three-dimensional** – a solid shape is three-dimensional because it has length, width and height.

- **time** - Normally the time is shown as Hours : Minutes. There are 24 Hours in a day and 60 minutes in each hour. There are two main ways to show the time: "24 Hour Clock" or "AM/PM":



- **total** – the total is the result when you add together a group of numbers. **The total of 6 and 4 is 10.**
 $6 + 4 = 10$

- **translation** – a translation is a movement of a shape in a straight line.

- **triangular number** – a triangular number can be arranged as dots in the shape of a triangle. The number of dots is the same as the number itself. The first five triangular numbers are 1, 3, 6, 10, and 16.



1 3 6 10 16
 Add another row of dots to the base of the triangle to find the next triangular number.

- **two-dimensional** – a two-dimensional shape has length and width but no height. A plane shape is two-dimensional.

Maths – Websites

www.bbc.co.uk/schools/starship

www.brainboxx.co.uk

www.mathsisfun.com

www.woodlands-junior.kent.sch.uk/maths

www.mathletics.co.uk/