

## Mathematics:

- Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (e.g. how many 10,000s, how many 100s, etc.);
- Know key facts - see separate sheet;
- Add and subtract numbers with more than four digits, using formal written methods of columnar addition and subtraction - see below:

10,000	1,000	100	10	1
TTh	Th	H	T	O
●●		●	●●●●●●	●●●●●
●	●●●●●●	●	●●●●●●	●●●●●

TTh	Th	H	T	O
1	9	1	7	5
+	1	8	4	1
<hr/>				
3	7	5	9	2
<hr/>				
1				1

1	.	0.1	0.01
O	*	Tth	Hth
●●●●●	*	●●●●●	●●●●●
Exchange 1 tenth for 10 hundredths.			
●●●●●	*	●●●●●	●●●●●
Now subtract the 5 hundredths.			
●●●●●	*	●●●●●	●●●●●
Now subtract the 2 tenths, then the 2 ones.			
●●●●●	*	●●●●●	●●●●●

O	Tth	Hth
5	7	4
-	2	5
<hr/>		
	5	9

O	Tth	Hth
5	7	4
-	2	5
<hr/>		
3	4	9

- Be fluent with all times tables up to 12x12 (children should be able to recall the times tables in any order and know the inverse (division fact));
- Examples of online activities:
  - <https://ttrockstars.com/>
  - <https://www.topmarks.co.uk/maths-games/daily10>
  - <https://www.topmarks.co.uk/Flash.aspx?f=GuessMyNumber>

**Multiplication and division vocabulary**

Term	Definition	Example
factor	a number that divides exactly into another number	factors of 12 = 1, 2, 3, 4, 6, 12
common factor	factors of two numbers that are the same	common factors of 8 and 12 = 1, 2, 4
prime number	a number with only 2 factors: 1 and itself	2, 3, 5, 7, 11, 13, 17, 19...
composite number	a number with more than two factors	12 (it has 6 factors)
prime factor	a factor that is prime	prime factors of 12 = 2, 3
multiple	a number in another number's times table	multiples of 9 = 9, 18, 27, 36...
common multiple	multiples of two numbers that are the same	common multiples of 4 and 6 = 12, 24...
square numbers	the result when a number has been multiplied by itself	25 ( $5^2 = 5 \times 5$ ) 49 ( $7^2 = 7 \times 7$ )
cube numbers	the result when a number has been multiplied by itself 3 times	8 ( $2^3 = 2 \times 2 \times 2$ ) 27 ( $3^3 = 3 \times 3 \times 3$ )

**Roman numerals**

1	I	100	C
5	V	500	D
10	X	1000	M
50	L		

**Measurement conversions**

Month	Days		
January	31	1 centimetre	10mm
February	28 (29 in leap year)	1 metre	100cm
March	31	1 kilometre	1,000 m
April	30	1 mile	1.6 km
May	31	1 kilometre	0.625 ( $\frac{5}{8}$ ) mile
June	30	1 kilogram	1,000 grams
July	31	1 litre	1,000 millilitres
August	31		
September	30		
October	31		
November	30		
December	31		
1 year = 365 days (= 52 weeks)			
Leap year = 366 days			

**YEAR 6 MATHS KNOWLEDGE ORGANISER**

**2D shapes**

Name	No. of sides
quadrilateral	4
pentagon	5
hexagon	6
heptagon	7
octagon	8
nonagon	9
decagon	10

**Co-ordinates**

Read co-ordinates along the x axis (horizontal) first, then the y axis (vertical). E.g. (3,-4) = go right 3, down 4.

**Fractions, decimals & percentages**

$\frac{1}{100}$	0.01	1%	$\div 100$
$\frac{1}{20}$	0.05	5%	$\div 20$
$\frac{1}{10}$	0.1	10%	$\div 10$
$\frac{1}{5}$	0.2	20%	$\div 5$
$\frac{1}{4}$	0.25	25%	$\div 4$
$\frac{1}{2}$	0.5	50%	$\div 2$
$\frac{3}{4}$	0.75	75%	$\div 4, \times 3$
1	1	100%	$\div 1$

**Angles**

full turn	360°
half turn	180°
right angle	90°
acute angle	< 90°
obtuse angle	> 90°
reflex angle	> 180°
angles on a straight line	180°
angles inside a triangle	180°
angles inside a quadrilateral	360°

polygon = shape with straight sides  
 regular = all sides/angles the same  
 irregular = sides/angles not same

**Types of triangle**

scalene    equilateral    isosceles

**Types of quadrilateral**

parallelogram    trapezium    rhombus

**3D shapes**

	square-based pyramid	triangular-based pyramid	triangular prism
<b>faces</b> (the flat sides)	5	4	5
<b>edges</b>	8	6	9
<b>vertices</b> (the points where the edges meet)	5	4	6

**Volume** = the amount of space a 3D shape takes up, usually measured in  $\text{cm}^3$  or  $\text{m}^3$

**Volume of a cuboid = length x width x height**

**Shape vocabulary**

**perimeter** = measure around the edge (**circumference** = perimeter of a circle)

horizontal line	parallel lines
vertical line	perpendicular lines (at right angles)

**AREA**

is the amount of space inside a 2D shape usually measured in  $\text{cm}^2$  or  $\text{m}^2$ .

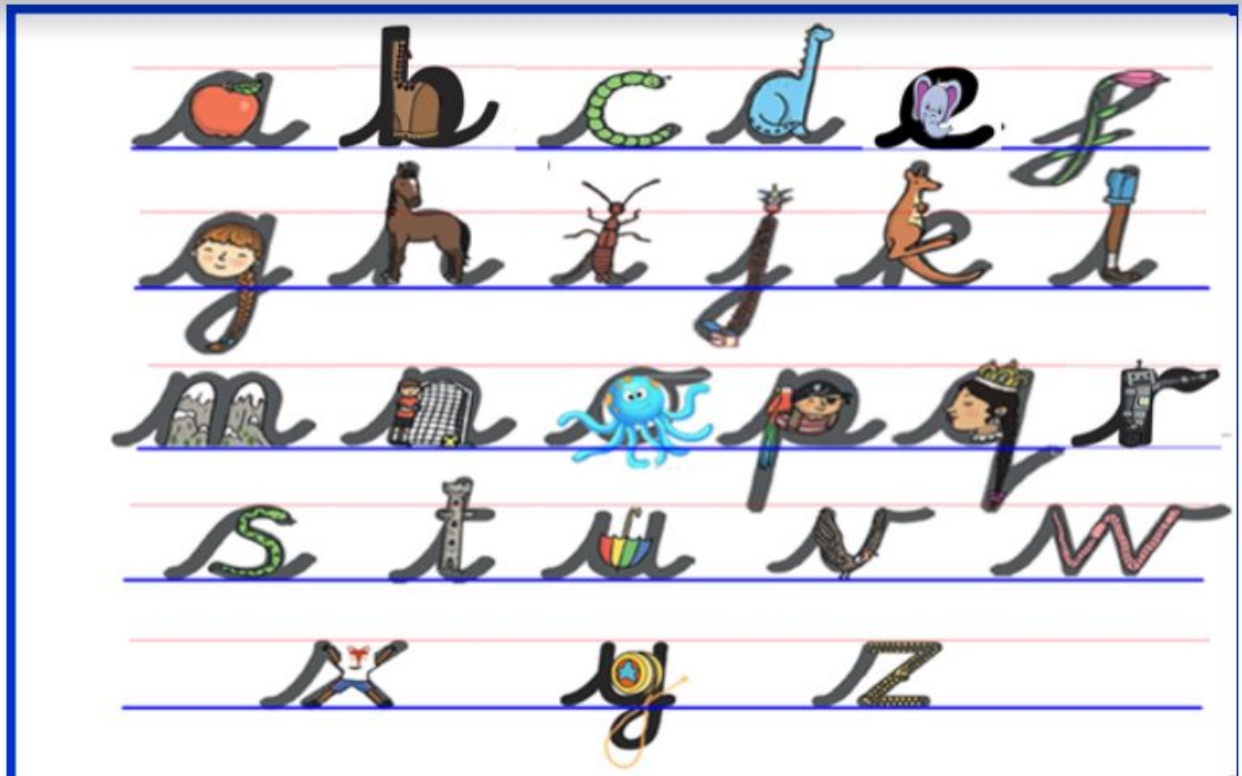
**Area of a triangle** = (base x height)  $\div$  2  
**Area of a parallelogram** = base x height  
*(Höheht = area under line height)*

**The mean**

The mean is a type of average. To find the mean, add up all the numbers and divide by how many there are. E.g. the mean of 4, 5, 3, 4 is 4.  
 (Because  $4 + 5 + 3 + 4 = 16$ , and  $16 \div 4 = 4$ )

**English:**

- Know Year 6 spelling rules (see Home-School diary) and recall rules and phonics from prior year groups
- Read daily a book of choice and reread pages to build fluency
- Regularly read a variety of reading materials and literature and identify punctuation and grammar used to convey the author's intent.
- Ask and answer questions of books you read or hear being read, remembering question types (copy cat, text detective, you judge)
- Form all letters of the alphabet using cursive handwriting with correct joins
- Spell all of the Year 5 and 6 wordlist
- Read and write the first 200 high frequency words



## Year 5 and 6 Statutory Spellings

accommodate	cemetery	develop	frequently	mischievous	pronunciation	stomach
accompany	committee	dictionary	government	muscle	queue	sufficient
achieve	communicate	disastrous	guarantee	necessary	recognise	suggest
aggressive	community	embarrass	harass	neighbour	recommend	symbol
amateur	competition	environment	hindrance	nuisance	relevant	system
ancient	conscience	equipment	identity	occupy	restaurant	temperature
apparent	conscious	equipped	immediate	occur	rhyme	thorough
appreciate	controversy	especially	immediately	opportunity	rhythm	twelfth
attached	convenience	exaggerate	individual	parliament	sacrifice	variety
available	correspond	excellent	interfere	persuade	secretary	vegetable
average	criticise	existence	interrupt	physical	shoulder	vehicle
awkward	curiosity	explanation	language	prejudice	signature	yacht
bargain	definite	familiar	leisure	privilege	sincere	
bruise	desperate	foreign	lightning	profession	sincerely	
category	determined	forty	marvellous	programme	soldier	