Mathematics in Foundation 2

Numbers To 20
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

Number Bonds Within 5

1	2	3	4	5
0 + 1	0 + 2	0 + 3	0 + 4	0 + 5
	1 + 1	1 + 2	1 + 3	1 + 4
			2 + 2	2 + 3

Doubles

0	0
1	2
2	4
3	6
4	8
5	10

Halves

0	0
2	1
4	2
6	3
8	4
10	5

Language

5 + 3	Addition
8 - 3	Subtraction
+	Plus
-	Subtract
=	Is Equal To

Quantity To 10

1	●	6	●●●●● ●
2	●●	7	●●●●● ●●
3	●●●	8	●●●●● ●●●
4	●●●●	9	●●●●● ●●●●
5	●●●●●	10	●●●●● ●●●●●

Shapes

circle	○
triangle	△
square	□
rectangle	▭

Pattern

Colour	■ ■ ■ ■	blue, green, blue, green
Size	🧸 🧸 🧸 🧸	big, small, big, small
Length	🧍 🧍 🧍 🧍	tall, short, tall, short

Months Of The Year

January	February	March
April	May	June
July	August	September
October	November	December

Capacity

Empty	Half Full	Full

Time

O'Clock		The minute hand points to twelve and the hour hand points to the hour.

Weight

Heavy / Heavier / Heaviest	
Light / Lighter / Lightest	
Balanced / Equal	

Year 1 Sentence Stems

Number and Place Value *[NPV]*	**Number Facts** *[NF]*	**Addition and Subtraction** *[AS]*	**Multiplication and Division** *[MD]*	**Fractions** *[F]*	**Geometry** *[G]*	**Measurement** *[M]*
One part is ____. The other part is ____. The whole is ____. ____ is the whole. ____ is a part, and ____ The parts are ____ and ____ The whole is ____ ____ is equal to____ I can partition ____ into ____ and ____ This represents ____ because ____ ____ is greater than ____ ____ is less than ____	One more than ____ is ____ One less than ____ is ____ This number pattern is increasing by____ This number pattern is decreasing by____ ____ plus ____ is greater than ____ because____ If I know____ then I know____ because____ I know ____ plus____ is equal to ____ so I know that ____ plus ____ is equal to ____ ____ and ____ make ____	____ plus ____ is equal to____ ____ subtract____ is equal to ____ When we subtract, we start with the whole The whole is ____. The parts are ____ and ____ To find the unknown part/whole I need to____ The difference between ____ and ____ is ____ ____ is (so many) greater than ____ ____ and ____ have a difference of ____	____ groups of____ are equal to____ ____ shared equally into groups of ____ makes ____ groups. I shared ____ into ____ equal groups. There are ____ in each group. The pattern is increasing in ____ The pattern is decreasing in ____ There are ____ groups of ten. There are ____ ones. ____ groups of ten are equal to ____ ____ groups of two are equal to ____ There will be ____ in each group.	Half of ____ is equal to ____ When I halve a number, I make two equal parts A half is one of two equal parts. There are ____ parts in total. ____ parts are shaded	A circle has one curved side. A square has 4 straight sides and 4 vertices. A triangle has 3 straight sides and 3 vertices. A ____ has ____ sides and ____ vertices.	There are 7 days in a week. There are 60 seconds in a minute. There are 12 months in a year. One pound is the same as one hundred pence. ____ is longer/shorter because ___ ____ is heavier/lighter because ____

Year 1 Reasoning Sentence Stems

- I know that because …
- The picture shows …
- I have spotted that …
- I made a mistake when I …
- This is the same because …
- This is different because …

Year 1 Reasoning Sentence Stems

- I know that because …
- The picture shows …
- I have spotted that …
- I made a mistake when I …
- This is the same because …
- This is different because …

Year 1 Knowledge Organiser

Doubles	
6	12
7	14
8	16
9	18
10	20

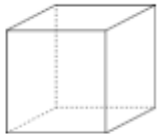
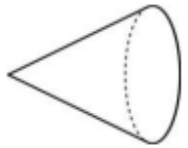
Halves	
12	6
14	7
16	8
18	9
20	10

Symbols and Language	
+	plus add
-	minus subtract
=	is equal to
5 – 3 = 2	difference
odd numbers	numbers ending with 1, 3, 5, 7 or 9
even numbers	numbers ending with 2, 4, 6, 8 or 0

Derived Facts

part + part = whole	3 + 1 = 4
part + part = whole	1 + 3 = 4
whole - part = part	4 - 3 = 1
whole - part = part	4 - 1 = 3

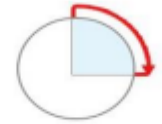
2D Shapes	
circle	1 curved side 0 vertices
triangle	3 straight sides 3 vertices
rectangle	4 straight sides 4 right-angled vertices

3D Shapes	
sphere	
pyramid	
cube	
cuboid	
cone	
cylinder	

Numerals and Number Names			
0	zero	10	ten
1	one	20	twenty
2	two	30	thirty
3	three	40	forty
4	four	50	fifty
5	five	60	sixty
6	six	70	seventy
7	seven	80	eighty
8	eight	90	ninety
9	nine	100	one hundred

Number Bonds Within 10	
6	0 + 6, 1 + 5 2 + 4, 3 + 3
7	0 + 7, 1 + 6 2 + 5, 3 + 4
8	0 + 8, 1 + 7, 2 + 6 3 + 5, 4 + 4
9	0 + 9, 1 + 8, 2 + 7 3 + 6, 4 + 5
10	0 + 10, 1 + 9, 2 + 8 3 + 7, 4 + 6, 5 + 5

Turns



Time

Half Past		The long minute hand points to six and the short hour hand points past the hour.
24 hours in a day.		60 minutes in an hour
60 seconds in a minute		
A.M. - Morning		P.M. - Afternoon
Midday – 12:00PM		Midnight – 12:00AM

Place Value Grid

	tens	ones
Numeral	10	1

Year 2 Sentence Stems

Number and Place Value *[NPV]*	**Number Facts** *[NF]*	**Addition and Subtraction** *[AS]*	**Multiplication and Division** *[MD]*	**Fractions** *[F]*	**Geometry** *[G]*	**Measurement** *[M]*
One part is ____. The other part is ____. The whole is ____ There are ____ tens and ____ ones. There are ____ altogether. The digit ____ has a value of ____ tens/ ones. The whole is ____ and the parts are ____ The number ____ is written as ____. These words represent the number ____ ____ is greater than ____ ____ is less than ____ ____ is equal to ____	The numbers are increasing (decreasing) because ____. If I know ____ then I know____. I know ____ so I also know ____. I can use the number bond ____. I can double ____ then add on ____. I can "make ten" by adding ____. Ten more/less than ____ is ____ I know ____ plus____ is equal to ____ so I know that ____ and ____ plus ____ is equal to ____.	The picture tells me I need to add/subtract the numbers. The parts are known/unknown. The whole is known/unknown. I can partition ____ into ____ and ____. ____ ones/tens add ____ ones/tens is equal to ____. I will regroup one ten for ten ones. ____ plus ____ is equal to____ ____ subtract____ is equal to ____ When we subtract, we start with the whole ____ and ____ have a difference of ____	There are ____ parts with a value of ____. The whole is ____. ____ groups of ____ is equal to ____. ____ shared into ____ equal parts ____ is ____. ____ divided by ____ is equal to ____. When we multiply, the parts are known but the whole is unknown. When we divide, the whole is known and the number or parts or the value of the parts is unknown ____ multiplied by/divided by ____ is equal to ____. Numbers in the multiplication table of ____ always ____	Half/A quarter/A third of ____ is equal to ____ When I find a ____, I make ____ equal parts Two quarters is the same as one half. There are ____ parts in total. ____ parts are shaded One half is greater than one quarter.	A ____ has ____ sides and ____ vertices. A ____ has ____ faces, ____ edges and ____ vertices. This shape is a ____ because it has ____. An irregular shape is one without equal sides or equal angles.	There are one 1000 millilitres in one litre. There are 100 centimetres in one metre. The time is ____ past/to ____. One pound is the same as one hundred pence. There are 1000 grams in one kilogram. There are 60 seconds in a minute. There are 24 hours in a day.

Year 2 Reasoning Sentence Stems

- I know that because …
- My representation shows _____ because _____.
- I have spotted …
- This is the same because …
- This is different because …
- I agree with _____ because …
- I disagree with _____ because …

Year 2 Reasoning Sentence Stems

- I know that because …
- My representation shows _____ because _____.
- I have spotted …
- This is the same because …
- This is different because …
- I agree with _____ because …
- I disagree with _____ because …

Year 2 Knowledge Organiser

Doubles	
11	22
12	24
13	26
14	28
15	30
16	32
17	34
18	36
19	38
20	40

Halves	
22	11
24	12
26	13
28	14
30	15
32	16
34	17
36	18
38	19
40	20

Bonds To 20	
0	20
1	19
2	18
3	17
4	16
5	15
6	14
7	13
8	12
9	11
10	10

Bonds Up To 20

19 = 0 + 19	19 = 5 + 14
19 = 1 + 18	19 = 6 + 13
19 = 2 + 17	19 = 7 + 12
19 = 3 + 16	19 = 8 + 11
19 = 4 + 15	19 = 9 + 10

Derived Facts

part + part = whole	3 + 1 = 4
part + part = whole	1 + 3 = 4
whole = part + part	4 = 3 + 1
whole = part + part	4 = 1 + 3
whole - part = part	4 - 3 = 1
whole - part = part	4 - 1 = 3
part = whole - part	1 = 4 - 3
part = whole - part	3 = 4 - 1

Fractions

$\frac{1}{2}$	one half
$\frac{1}{3}$	one third
$\frac{2}{3}$	two thirds
$\frac{1}{4}$	one quarter
$\frac{3}{4}$	three quarters
$\frac{1}{5}$	one fifth

½ = 2/4

Multiplication Tables

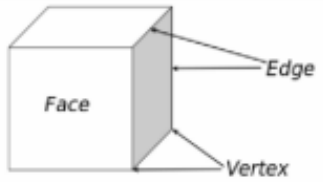
X	2	3	5	10
1	2	3	5	10
2	4	6	10	20
3	6	9	15	30
4	8	12	20	40
5	10	15	25	50
6	12	18	30	60
7	14	21	35	70
8	16	24	40	80
9	18	27	45	90
10	20	30	50	100
11	22	33	55	110
12	24	36	60	120

2D Shapes

Quadrilateral	Four straight sides Four vertices
Pentagon	Five straight sides Five vertices
Hexagon	Six straight sides Six vertices
Polygon	A closed shape with three or more straight sides
Regular Shape	A shape where all sides are equal and all angles are equal
Irregular Shape	A shape with sides or angles of different sizes
Has a line of symmetry	
Does not have a line of symmetry	

3D Shapes

Faces, Edge and Verticies



Turns

Quarter Turn	Three-quarter Turn
	
1 right angle quarter turn 90°	3 right angles 3 quarter turns 270°

Time

Quarter Past		The minute hand points to three and the hour hand points past the hour.
Quarter To		The minute hand points to nine and the hour hand points near the next hour.

Numbers to 1000

100	one hundred	600	six hundred
200	two hundred	700	seven hundred
300	three hundred	800	eight hundred
400	four hundred	900	nine hundred
500	five hundred	1000	one thousand

Place Value Grid

	hundreds	tens	ones
Numeral	100	10	1

Year 3 Sentence Stems

Number and Place Value *[NPV]*	**Number Facts** *[NF]*	**Addition and Subtraction** *[AS]*	**Multiplication and Division** *[MD]*	**Fractions** *[F]*	**Geometry** *[G]*	**Measurement** *[M]*
One part is ____. The other part is ____. The whole is ____ The digit ____ has a value of ____ hundreds/tens/ ones. The whole is ____ and the parts are ____ There are ten hundreds in one thousand. I can partition ____ into ____ hundreds ___ tens and ___ ones. ____ is between ____ and ____ The previous multiple of one hundred is ____. The next multiple of one hundred is ____. ____ is greater than/less than/equal to ____	____ times ____ is equal to ____ To compare three-digit numbers, we need to compare the hundreds digits. If I know ____ then I know____. I can "make ten" by adding ____. One hundred more/less than ____ is ____ We can exchange one ten/hundred for ten ones/tens. If the ____ digits are the same, we need to compare the ____ digit. A number can be rounded up, to the larger number, or down, to the smaller number, to get it to the closest 10/100.	The calculation tells me I need to add/ subtract the numbers. If the column total is equal to ten or more we must regroup. Whole minus/subtract a part is equal to the difference. I will regroup one hundred for ten tens. ____ plus ____ is equal to____ ____ subtract____ is equal to ____ When we subtract, we start with the whole ____ ones/tens/hundred add ____ ones/tens/hundred is equal to ____.	To find ten times as many, multiply by ten. ____ is a multiple of ____ because ____ ____ multiplied by ____ is equal to ____. ____ divided by ____ is equal to ____. Products in the ____ time table are also in the ____ time table. When we multiply, the parts are known but the whole is unknown. When we divide, the whole is known and the number or parts or the value of the parts is also known. ____ x ____ is the same as ____ groups of ____	If ____ is the whole, then ____ is part of the whole. The whole has been divided into ____ equal/unequal parts. The whole has been divided into ____ equal parts. ____ of the parts has been shaded. The denominator is ____ because the whole is divided into ____ equal parts. When the numerator and denominator are the same, the fraction is equivalent to one whole.	There are three hundred and sixty degrees in a full circle — a complete turn. ____ pence is equal to ____ pounds and ____ pence. We measure angles in degrees. A right angle is ninety degrees, this is a quarter turn. The perimeter is the distance around the outside of the shape.	Quadrilaterals are shapes that have four sides. A ____ is a shape with ____ equal sides and ____ equal angles. A regular triangle is called an equilateral because it has equal sides. If two lines never meet it is called a parallel line. A ____ has ____ sides and ____ vertices. A ____ has ____ faces, ____ edges and ____ vertices.

Year 3 Reasoning Sentence Stems

- I know that because …
- A calculation to show my representation is …
- I have spotted this pattern …
- This is the same because …
- This is different because …
- I agree with _____ because …
- I disagree with _____ because …
- It is simpler, if you …

Year 3 Reasoning Sentence Stems

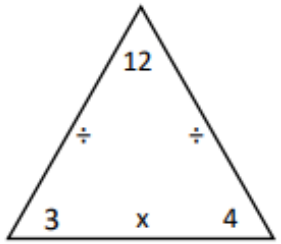
- I know that because …
- A calculation to show my representation is …
- I have spotted this pattern …
- This is the same because …
- This is different because …
- I agree with _____ because …
- I disagree with _____ because …
- It is simpler, if you …

Year 3 Knowledge Organiser

Number Bonds To 100

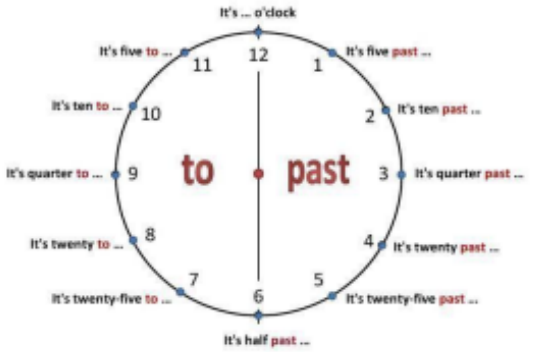
0	100		20	80		35	65
5	95		25	75		40	60
10	90		30	70		45	55
15	85					50	50

Multiplication and Division – Derived Facts



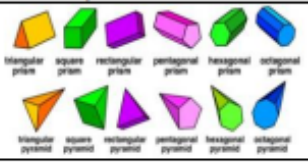
3 x 4 = 12
4 x 3 = 12
12 = 3 x 4
12 = 4 x 3
12 ÷ 3 = 4
12 ÷ 4 = 3
4 = 12 ÷ 3
3 = 12 ÷ 4

Telling The Time



2.05	five past two
3.10	ten past three
19.20	twenty past seven
16.25	twenty-five past four
8.35	twenty-five to nine
21.40	twenty to ten
5.50	ten to six
12.55	five to one

3D Shapes

Prisms and Pyramids	

Fractions

$\frac{1}{2}$	one half
$\frac{1}{3}$	one third
$\frac{2}{3}$	two thirds
$\frac{1}{4}$	one quarter
$\frac{3}{4}$	three quarters
$\frac{1}{5}$	one fifth
$\frac{1}{6}$	one sixth
$\frac{1}{7}$	one seventh
$\frac{1}{8}$	one eighth
$\frac{1}{9}$	one ninth

Multiplication Tables

X	4	8	3	6	9
1	4	8	3	6	9
2	8	16	6	12	18
3	12	24	9	18	27
4	16	32	12	24	36
5	20	40	15	30	45
6	24	48	18	36	54
7	28	56	21	42	63
8	32	64	24	48	72
9	36	72	27	54	81
10	40	80	30	60	90
11	44	88	33	66	99
12	48	96	36	72	108

Days in a Month

January	31
February	28*
March	31
April	30
May	31
June	30
July	31
August	31
September	30
October	31
November	30
December	31

Leap year is 366 days with 29 days in February

2D Shapes

triangle	a three sided polygon
quadrilateral	a four sided polygon
pentagon	a five sided polygon
hexagon	a six sided polygon
heptagon	a seven sided polygon
octagon	an eight sided polygon
nonagon	a nine sided polygon
decagon	a ten sided polygon
hendecagon	an eleven sided polygon
dodecagon	a twelve sided polygon

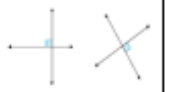
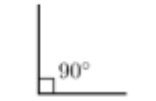
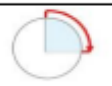
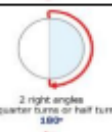
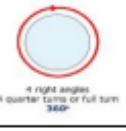
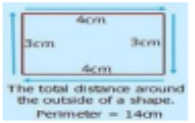
Measurements

mm in a cm	10 mm = 1 cm	**m in a km**	1000m = 1km
mm in a m	1000 mm = 1 m	**g in a kg**	1000g = 1 kg
cm in a m	100 cm = 1 m	**ml in a l**	1000 ml = 1 l

60 seconds in a minute.	60 minutes in an hour.	24 hours in one day.

7 days in a week.	12 months in one year.

Geometry

Vertical Horizontal		Parallel	
Perpendicular		Right Angle	
Quarter Turn		Three-quarter Turn	
Half Turn		Full Turn	
Perimeter			

Place Value Grid

	thousands	hundreds	tens	ones		tenths	hundredths
Numeral	1000	100	10	1	●	0.1	0.01

Year 4 Sentence Stems

Number and Place Value *[NPV]*	**Number Facts** *[NF]*	**Addition and Subtraction** *[AS]*	**Multiplication and Division** *[MD]*	**Fractions** *[F]*	**Geometry** *[G]*	**Measurement** *[M]*
One part is ____. The other part is ____. The whole is ____	____ times ____ is equal to ____	The calculation tells me I need to add/subtract the numbers.	When zero is a factor, the product is zero.	The line is divided into ____ equal parts. This allows us to count in ____.	The perimeter of a square is four times the length of one of the sides.	One centimetre is one hundredth of a metre, so we can write one centimetre as zero-point-zero-one.
The digit ____ has a value of ____ thousands…	One tenth can be written as 0.1, so ____ tenths can be written as ____.	If the column total is equal to ten or more we must regroup.	For every group of one twelve, there are two groups of six.	The denominator is ____. This means that the whole has been split into ____ equal parts.	To find the area of a rectangle, multiply the length by the width.	Ten centimetres is one tenth of a metre so we can write ten centimetres as zero-point one.
The whole is ____ and the parts are ____	If I know ____ then I know ____.	Whole minus/subtract a part is equal to the difference.	All multiple of tens have a ones digit of zero.	When a whole number is multiplied by a unit fraction, it makes the whole number smaller.	The distance around the edge of the ____ is its perimeter.	Ten groups of ten pence is equal to one pound, so ten pence is one tenth of a pound.
There are ten hundreds in one thousand.	____ is the previous whole number. ____ is the next whole number.	I will regroup one hundred for ten tens.	____ is divided into groups of ____.There are ____ groups and a remainder of ____.	The parts are ____ and ____. The total or whole is ____.	If two lines never meet it is called a parallel line.	One hundred groups of one penny is equal to one pound, so one penny is one hundredth of a pound.
I can partition ____ into ____ hundreds ___ tens and ___ ones.	One thousand more/less than ____ is ____	____ plus ____ is equal to ____	Products in the ____ time table are also in the ____ time table.	When comparing fractions with the same denominator, the greater the numerator, the greater the fraction.	A ____ has ____ sides and ____ vertices.	Ten groups of one penny is equal to ten pence, so one penny is one tenth of ten pence.
____ is between ____ and ____	We can exchange one thousand for ten hundreds.	____ thousand add ____ thousand is equal to ____.	The remainder is always less than the divisor.		A ____ has ____ faces, ____ edges and ____ vertices.	
The previous multiple of one thousand is ____. The next multiple of one thousand is ____.	If the hundreds digit is four or less we round down. If the hundreds digit is five or more we round up.	When we subtract, we start with the whole	When we divide, the whole is known and the number or parts or the value of the parts is also known.			
The whole is divided into one hundred equal parts; ____ parts is ____ hundredths.	I say ____ - point - ____, but I think ____ and ____ tenth(s).	____ tenths/hundredths plus ____ tenths/hundredths is equal to ____.	All multiples of one hundred have both a tens and ones digit of zero.			
____ is greater than/less than/equal to ____		____ tenths/hundredths minus ____ tenths/hundredths is equal to ____.				

Year 4 Reasoning Sentence Stems

- I know that because …
- The calculation which represents this is …
- I have spotted this pattern …
- This is the same because …
- This is different because …
- I agree/disagree with _____ because …
- It is simpler, if you …
- I solved this problem by using ….

Year 4 Reasoning Sentence Stems

- I know that because …
- The calculation which represents this is …
- I have spotted this pattern …
- This is the same because …
- This is different because …
- I agree/disagree with _____ because …
- It is simpler, if you …
- I solved this problem by using ….

Year 4 Knowledge Organiser

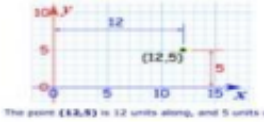
Fraction Decimal Equivalence

1/10 = 0.1	4/10 = 0.4	7/10 = 0.7	10/10 = 1	¾ = 0.75
2/10 = 0.2	5/10 = 0.5	8/10 = 0.8	½ = 0.5	1/100 = 0.01
3/10 = 0.3	6/10 = 0.6	9/10 = 0.9	¼ = 0.25	23/100 = 0.23

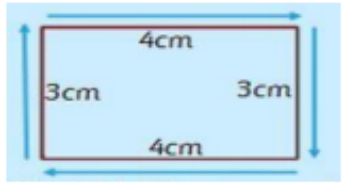
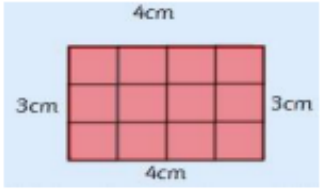
Roman Numerals

I	1	IX	9
II	2	X	10
III	3	XI	11
IV	4	X11	12
V	5	L	50
VI	6	C	100
VII	7	D	500
VIII	8	M	1000

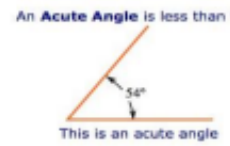
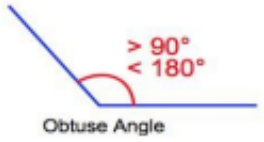
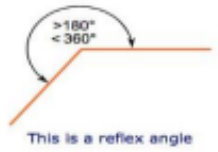
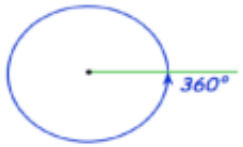
Coordinates

Coordinate Grid	
Finding the coordinates of a point. *(x then y)*	

Geometry

Perimeter		The distance around the outside of the shape.
Area		The amount of space taken up by a 2D shape.

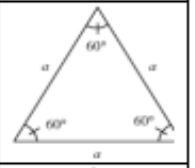
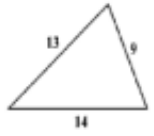
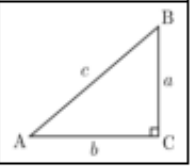
Angles

Acute Angle	1º to 89º	
Right Angle	90º	
Obtuse Angle	91º to 179º	
Reflex Angle	181º to 359º	
Full Turn	360º	

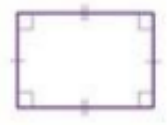
Multiplication Tables

X	7	6	12	11
1	7	6	12	11
2	14	12	24	22
3	21	18	36	33
4	28	24	48	44
5	35	30	60	55
6	42	36	72	66
7	49	42	84	77
8	56	48	96	88
9	63	54	108	99
10	70	60	120	110
11	77	66	132	121
12	84	72	144	132

Triangles

Equilateral	All three sides and angles equal.	
Isosceles	Two sides and angles equal.	
Scalene	All three sides and angles of different sizes.	
Right Angled	A triangle with a right angle. Can be isosceles or scalene.	

Quadrilaterals

Rectangle	• Four sides • Opposite sides parallel • Opposite sides equal length • Four right angles	
Parallelogram	• Four sides • Opposite sides parallel	
Rhombus	• Four equal sides • Opposite sides parallel • Opposite angles equal	
Kite	• Four sides • Pairs of adjacent sides equal • Angles where adjacent sides meet are equal • Diagonals intersect at right angles	

Place Value Grid

	thousands	hundreds	tens	ones		tenths	hundredths
Numeral	1000	100	10	1	●	0.1	0.01

Year 5 Sentence Stems

Number and Place Value *[NPV]*	**Number Facts** *[NF]*	**Addition and Subtraction** *[AS]*	**Multiplication and Division** *[MD]*	**Fractions** *[F]*	**Geometry** *[G]*	**Measurement** *[M]*
I can estimate the answer to be ____ because ____ Decimals are part of a integer. ____ is more than ____ because negative numbers get lower as they get bigger. 0.00____ is ____ thousandths. Thousandths are a tiny part because they are a thousand of one. The next whole number is ____. Ten one thousands make ten thousand. One hundred hundreds make ten thousand. Negative numbers are below/less than zero. Positive numbers are above/greater than zero.	____ is greater / less than ____ because I know ____ is ____ than ____ ____ is getting 10 / 100 / 1000 times smaller / larger. ____ rounded to the nearest integer is ____ The midpoint of ____ and ____ is ____, so the midpoint of ____ thousand and ____ thousand is ____ thousand. The value of the expressions on each side of an equals symbol must be the same. ____ times ____ ones is equal to ____ ones, so ____ times ____ hundredths is equal to ____ hundredths. When a number is divided by one hundred, the digits move two places to the right.	The most efficient way to add these numbers is by ____ because ____ ____ tens plus the ____ we already have, gives us ____ To subtract ____ from ____ I can partition ____ into ____ The calculation tells me I need to add/subtract the numbers. If the column total is equal to ten or more we must regroup. Whole minus/subtract a part is equal to the difference. I will regroup one hundred for ten tens. ____ thousandths plus ____ thousandths is equal to ____. ____ thousandths minus ____ thousandths is equal to ____.	____ is not in its simplest form, because ____ is a common factor of ____ ____ is a factor/multiple of ____ because ____ x ____ = ____ ____ is a factor/multiple of ____ because ____ ÷ ____ = ____ Numbers that have more than two factors are composite numbers. Numbers that have only two factors are called prime numbers. ____ is not prime because it has the factors ____ ____ is prime because it only has two factors: 1 and itself. ____ squared is ____. The square root of ____ is ____. If I multiply ____ by two, I must divide ____ by two for the product to stay the same.	The denominator tells us it is split into ____ parts. The numerator tells us how many parts we have. There are ____ halves in four / six / eight / ten ____ ____ is a integer and a fraction, which is ____ as an improper fraction ____ The parts are ____ and ____. The total or whole is ____. When comparing fractions with the same denominator, the greater the numerator, the greater the fraction. When adding fractions with the same denominators, just add the numerators. ____ and ____ are related fractions because the denominator ____ is a multiple of the other denominator ____. If the numerators are the same, the bigger the denominator, the smaller the fraction.	X and Y axis - Along the corridor and up the stairs or walk before you fly. When we move a shape sideways, up or down, we call it translation. The x / y co-ordinate has changed to ____ because it has moved ____ Perpendicular lines intersect at a right angle. This polygon is a ____ because it has ____ vertices and ____ straight sides. It is / is not a polygon because ____ It is / is not a regular shape because ____ If one angle is ____ the other angles will be ____ I know that angles in a triangle always add up to 180˚ so the missing angle is ____	I know ____ ml is equivalent to ____ L because there are 1000ml in 1L. ____ m is ____ km because there are 1000m in 1km. There are ____ centimetres in ____ metres. There are ____ grams in ____ kilograms. There are ____ millilitres in ____ litres. The amount of space that the ____ takes up is its volume. The ____ has a larger volume than the ____ because it occupies more space. The volume of a cuboid can be found by multiplying the length by the width by the height.

Year 5 Reasoning Sentence Stems

- I can check my calculation by using the inverse with …
- The calculation which represents this is …
- I estimate the answer to be _____ because _____.
- The most efficient method is …
- This is the same because …
- This is different because …
- I agree/disagree with _____ because …
- I know that _____ so I can work out _____.

Year 5 Reasoning Sentence Stems

- I can check my calculation by using the inverse with …
- The calculation which represents this is …
- I estimate the answer to be _____ because _____.
- The most efficient method is …
- This is the same because …
- This is different because …
- I agree/disagree with _____ because …
- I know that _____ so I can work out _____.

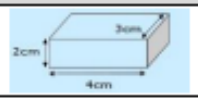
UKS2 Knowledge Organiser

Cube Numbers		Cube Roots	
1^3	1	$\sqrt{1}$	1
2^3	8	$\sqrt{8}$	2
3^3	27	$\sqrt{27}$	3
4^3	64	$\sqrt{64}$	4
5^3	125	$\sqrt{125}$	5

Square Numbers		Square Roots	
1^2	1	$\sqrt{1}$	1
2^2	4	$\sqrt{4}$	2
3^2	9	$\sqrt{9}$	3
4^2	16	$\sqrt{16}$	4
5^2	25	$\sqrt{25}$	5
6^2	36	$\sqrt{36}$	6
7^2	49	$\sqrt{49}$	7
8^2	64	$\sqrt{64}$	8
9^2	81	$\sqrt{81}$	9
10^2	100	$\sqrt{100}$	10
11^2	121	$\sqrt{121}$	11
12^2	144	$\sqrt{144}$	12
13^2	169	$\sqrt{169}$	13

Prime Numbers			
2	17	41	67
3	19	43	71
5	23	47	73
7	29	53	79
11	31	59	83
13	37	61	89

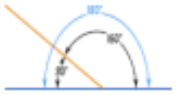
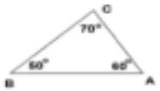
Numbers	
0	a number with no value that comes between the positive and negative numbers
positive number	a number more than 0
negative number	a number less than 0
prime number	A number with exactly two factors, itself and one.
composite number	A number with more than two factors.

Geometry	
volume	
Volume = length x height x depth	

Statistics	
mean	the sum of all data points divided by the number of data points

Circle Geometry	
radius	a straight line from the centre to the circumference
chord	a straight line joining two points on the circumference
diameter	a chord which passes through the centre
circumference	the distance once around the circle

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

Angle Totals	
	Angles around a point total 360º
	Angles on a straight line total 180º
	Angles in a quadrilateral total 360º
	Angles in a triangle total 180º

Factors and Multiples	
factors	numbers we multiply together to get other numbers
multiple	the result of multiplying a number by an integer
HCF	Highest Common Factor - the largest factor shared by two or more numbers
LCM	Lowest Common Multiple - the smallest number that is a multiple of two or more numbers.

Multiplication Grid												
X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Place Value Grid											
	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones		tenths	hundredths	thousandths
Numeral	1,000,000	100,000	10,000	1000	100	10	1	●	0.1	0.01	0.001

Year 6 Sentence Stems

Number and Place Value *[NPV]*	**Number Facts** *[NF]*	**Addition and Subtraction** *[AS]*	**Multiplication and Division** *[MD]*	**Fractions** *[F]*	**Geometry** *[G]*	**Measurement** *[M]*
I know that ____ is larger/smaller/equal to ____ because ____. ____ tenths have the same value as ____ hundredths. I need ____ 0.1s to exchange for a whole one. I know that ____ is bigger than ____ because ____ I estimate that the answer will be larger than ____ because ____. We can partition this number into ____, ____ and ____ I know that ____ (decimal) is more/less/equal to ____ (fraction) because ____ One million is one thousand thousands. The ____ represents ____. The value of ____ is ____	There are ____ tenths/hundredths/ thousandths in this number. The value of the digit ____ each time it moves to the left/right. To find 50% of a number, halve it. To find 10% of a number, divide it by 10. To find 1% of a number, divide it by one hundred. ____ is between ____ and ____ The previous multiple of one million is ____. The next multiple of one million is ____. ____ is ____ when rounded to the nearest million. I can convert tenths to hundredths by multiplying the denominator by ____.	When there are no brackets, division is completed before addition and subtraction. The mean is the size of each part when a quantity is shared equally. The mean is the total of the numbers divided by how many numbers there are. The most efficient way to add these numbers is by ____ because ____ The calculation tells me I need to add/subtract the numbers. If the column total is equal to ten or more we must regroup. ____ million plus ____ million is equal to ____. ____ million minus ____ million is equal to ____.	If ____% of my number is ____, then I need to multiply it by ____ to find the full amount. When a number is multiplied by ____ the digits move ____ places to the ____ I know that 3 ones divided by 3 is ____ ones (see images). I know that if I divide ____ by ____, there will be ____ whole ones and ____ left over. When a number is multiplied by one thousand, the digits move three places to the left. When a number is divided by one thousand, the digits move three places to the right. If one factor is made ten times the size, the product will be ten times the size. If I double/halve one factor, I must double/halve the product. If I multiply/divide one factor by ____, I must multiply the product by ____	I know that ____ fifths are equivalent to ____% because I know ____ In order to convert a percentage to a fraction I must first convert it to a fraction with a denominator of ____ When a whole is divided into a hundred equal parts, each part is one hundredth of the whole. When a number is divided by ____ the digits move ____ places to the ____ When multiplying unit fractions, multiply the denominators. To multiply fractions, we can multiply the numerators and multiply the denominators. ____ is equivalent to ____ I can convert a fraction to a decimal by ____ In order to convert a percentage to a fraction, first convert it to a fraction with a denominator of 100.	A ____ is a parallelogram because ____. A parallelogram is a quadrilateral with opposite sides that are parallel and equal in length. If the scale factor is greater than one, the shape is made larger. We can say the shape is enlarged. If the scale factor is equal to one, the shape is the same size. If the scale factor is less than one, the shape is made smaller. We can say the shape is reduced. When we move a shape sideways, up or down, we call it translation. I know that angles in a triangle always add up to 180˚ so the missing angle is ____	To find the area of a rectangle, multiply the length by the width To find the area of a parallelogram multiply the base by the perpendicular height. To find the area of a triangle multiply the base by the perpendicular height and then divide by two. The length of one of the sides of square is ____. ____ times the length of one of the sides gives us the perimeter. The ratio of the dimensions of shape ____ to the dimensions of shape ____ is equal to ____ - to - ____. There are ____ centimetres in ____ metres. There are ____ grams in ____ kilograms. There are ____ millilitres in ____ litres. The volume of a cuboid can be found by multiplying the length by the width by the height.

Year 6 Reasoning Sentence Stems

- I can check my calculation by using the inverse with …
- The calculation which represents this is …
- I estimate the answer to be _____ because _____.
- The most efficient method is …
- This is the same because …
- This is different because …
- I agree/disagree with _____ because …
- I know that _____ so I can work out _____.
- I need to use _____ for this problem because _____.

Year 6 Reasoning Sentence Stems

- I can check my calculation by using the inverse with …
- The calculation which represents this is …
- I estimate the answer to be _____ because _____.
- The most efficient method is …
- This is the same because …
- This is different because …
- I agree/disagree with _____ because …
- I know that _____ so I can work out _____.
- I need to use _____ for this problem because _____.