Mathematical	Non-negotiable end	Prior knowledge for pre	Post assessment		
aspect	points	assessment	Knowing more, remembering more		
Number and place	Knows how to calculate	Knows how to read and interpret	Knows how to count forwards and backwards through zero.		
value:	with negative and	negative numbers and find	Knows how to calculate intervals through zero.		
negative numbers	positive numbers.	differences between negative and	Knows how to use negative numbers in context.		
		positive numbers.	Knows how to solve number problems and practical problems that		
		Knows how to read, write, order	involve all of the above.		
		and compare numbers at least to	Knows how to use vertical and horizontal number lines to support		
		10,000,000 and determine the	understanding.		
		value of each digit.			
		Knows how to round any whole			
		number to a required degree of			
		accuracy.			
Links to resources a	nd policy documents:		Nikolas is finding the difference in temperature between midday and midnight.		
Use the number line to a	answer the questions.	Chin Stackholm	The thermometer shows the temperature at midday.		
<u>⊢</u> +-	$+ + + + + + + + + \rightarrow$	Capethagen			
 -5 -4 -3 -2 -1 0 1 2 3 4 5 What is 6 less than 4? What is 5 more than -2? What is the difference between 3 and -3? 		Dalas Sec Sec Lucian Parts Pro Pro Pro Pro Pro Pro Pro	C 10- 9- 8- 7- 6- 5-		
Here are the temperatures in four cities	at midnight and at midday.	Which place has the coldest temperature?	4-3-		
Temp	perature	Which place has the warmest temperature? What is the difference in the temperatures in Stockholm and Rome? °c			
City At midnight	At midday	What is the difference in the temperatures in Dublin and o _C Copenhagen? The temperature in Paris decreases the SYC What is the new	1-2-		
Paris -4°C	-2°C	temperature? °C The temperature in London increases by 6°C. What is the new °C temperature?	3-		
Oslo -13°C	-7°C	The temperature in Oslo increases by 4°C. What is the new oc temperature?	5- <u>-</u>		
Rome 3°C	10°C 2°C	The temperature in Berlin decreases by 3°C. What is the new oc temperature?			
At midnight, how many degrees colder was Paris than Rome?		Here are hus number earle			
		Find the difference between the numbers.	At midnight it is 7°c colder.		
Which city was 6 degrees colder at midnight than at midday?		Two million, three hundred thousand and sixty four Two million, three hundred and sixty four thousand Write the number three million, twenty five thousand	What is the temperature at midnight? -10 0 10 1		
		and seventeen in figures.			

In the daytime, the temperature reached a maximum of 8 $^{\circ}{\rm C}$ in Suzie's garden. At night it fell to -4 $^{\circ}{\rm C}$. By how many degrees did the temperature fall?			What is the temperature measured by this thermometer?		Ű.					
			If the temperature fell by 18 °C what would it be?							
			a) Continue this number sequence:							
			7	5	3	1				
			b) Cont	inue this numb	er sequence:		•			
			12	8	4	0				
All four operations: order of operations.	Knows the rules of BIDMAS.	Knows efficient methods for addition, subtraction, multiplication and division.	Knows operat Knows carry o Knows for exa Knows this me Knows conside Knows carried Knows run thr determ Knows the ans	how to pe ons and la how to use ut calculat how to ex mple, 2 + the conver ans multip how to loc er how the that in mix out from I that ment ough all st ine, in the that facts	rform me rge numb their known ons invol plore the 1 x 3 = 5 ntion that ly e.g. 4(2) k at diffe order of ed opera eft to right al calculate context of context of from one other similar	ntal calc pers. owledge ving the e order c and (2 + c when th 2+1) mea rent ope operatio tion calc nt. tions anc eck answ of a prob calculati ilar calcu	of the or four operat of operat 1) x 3 = 9 nere is no ans 4 x (2- rations w ns affects ulations, l sensible ers to cal lem, leve on can be lation with	including der of op rations. ions usin 9. operation +1). vithin a ca s the ans calculation lculation ls of accu e used to thout sta	g with mi perations of bracke on sign w alculation wer. ons are r ons need s and uracy. determi rting afro	xed s to ets; vithin n and not d to ine esh.
			to be a Knows Knows	ble to see how to fin how to fin	relationsh d commo d commo	nips betw n factors n multip	veen divid of two n les of nur	dend and iumbers. nbers.	divisor.	·

Kno fact	nows and can use the vocabulary of prime numbers, prime actors and composite numbers.
Links to resources and policy documents: Cacuato $32 + 8 \times 5$ $32 + 8 \times 5$ $16 \div 4 + 2 =$ $12 + 8 \div 4 =$ Can you add brackets to make this true? $(3 \times 8) + (2 + 4) = 4$ $32 + 8 \div 4 =$ $(3 \times 8) + (2 + 4) = 4$ $32 + 8 \div 4 =$ $(3 \times 8) + (2 + 4) = 4$ $32 + 8 \div 4 =$ $(3 \times 8) + (2 + 4) = 4$ $32 + 8 \div 4 =$ $(3 \times 8) + (2 + 4) = 4$ $32 + 8 \div 4 =$ $32 + 8$	sompare $31 + 9 \times 7$ and $(31 + 9) \times 7$ hat's the same? What's different?noose operations to go in the empty boxes to make these number intences true. $3 - 7 = 6$ $3 - 7 = 7$ $3 - 7 = 9$ at brackets in these number sentences so that they are true. $2 - 2 \times 5 = 50$ $2 - 8 - 5 = 9$ $2 - 8 - 5 = 9$ $2 - 8 - 5 = 9$ $2 - 8 - 5 = 5 = 50$ Now we are going to find some lowest common multiples for the following pairs of numbers.The lowest common multiple of 6 and 9 isThe lowest common multiple of 8 and 6 isThe lowest common multiple of 8 and 7 isOn a 100 square, shade the first 5 multiples of 7 and then the first 8 multiples of 7 and 5What common multiple of 7 and 5What common multiples of 7 and 5Use this number to find other common multiples of 7 and 5Use this number to find other common multiples of 7 and 5

All four	Knows the compact	Knows compact notation for log	g Knows how to solve problems involving addition, subtraction,
written methods	operations	Knows the compact algorithm f	Knows how to apply understanding of commutativity and inverse
whitten methods		short division including remain	lers. operations.
		Knows the formal written meth	ods Knows that mental calculations and sensible estimations need to
		of columnar addition and	run through all steps to check answers to calculations and
		subtraction with increasingly la	ge determine, in the context of a problem, levels of accuracy.
		numbers and decimals.	Knows that facts from one calculation can be used to determine
			the answer of another similar calculation without starting afresh.
Links to resources a	nd policy documents:	Standard Algorithm Standard Algorith for Multiplication for Division	Jack made cookies for a bake sale.
		34 48 R24 x 28 32 1560	He made 345 cookies.
Find the missing digits. W	hat do you notice?	272 <u>-128</u> + 680 280	The recipe says that he should have 17 raisins in each cookie.
5	2 2 4 7 2	952 <u>- 256</u> 24	······································
5		146 146	5 How many raisins did he use altogether?
+ 3	? 5 9 0 4	6 8 ² 7 ³ 9 6 8 ² 7 ³ 9	0
9	0 ? 3 ? 2		
		65442 845	Year 6 has 2,356 pencil crayons for the year.
		+26894 - 5810	9
234578		92,336 26,45	$\frac{1}{4}$ They put them in bundles with 12 in each bundle
234370			They per them in conores, with 12 in each conore.
Place the digits in the boxe	s to make the		
largest product.	s to make the		How many complete bundles can be made?
×			



Geometry: circles	Knows the parts of the circle.	Knows how unknown angles and lengths can be derived from known measurements. Knows the conventional markings for parallel lines, sides of equal length, angles and right angles.	Knows how to illustrate and name parts of circles, including radius, diameter and circumference. Knows the relationship between the radius and the diameter and recognises that the diameter is twice the length of the radius.
Using the labels comple	the diagram: Radius Diameter Centre Circumference	Work out the value of X and y. Explain each step of your working. Image: step of your working.	<image/>
Geometry: position and direction	Knows how to draw and label a pair of axes in all four quadrants with	Knows how to describe a translation or reflection of a shape,	Knows how to read and plot co-ordinates in all four quadrants. Knows which part of the axis is positive and negative. Knows how to draw shapes from co-ordinates given.



The diagram shows two identical triangles. The coordinates of three points are shown. Find the coordinates of point A.		Work out the value of x and y. Explain each step of your working. 56° 316° y	
Find the coordinates of point A.			
Measurement: area, perimeter and volume	Knows how to recognise that shapes with the same area can have different perimeters and vice versa. Knows the formula for volume <i>I x b x h</i>	Knows how to calculate the area from scale drawings using given measurements. Knows the conventional markings for parallel lines, sides of equal length, angles and right angles. Knows that approximately 5 miles = 8 kilometres. Knows the approximate conversions and are able to tell if an answer is sensible.	Knows that shapes with the same area can have different perimeters and vice versa. Knows how to use their knowledge of factors to draw rectangles with different areas; that can make connections between side lengths and factors. Knows that they can use their knowledge of finding the area of a rectangle to find the area of a parallelogram. Knows that there is a link between the area of a triangle and the area of a rectangle or square. Knows that a right-angled triangle with the same length and perpendicular height as a rectangle will have an area half the size. Knows that they can use the formula, base × perpendicular height ÷ 2 to calculate the area of a variety of triangles where different side lengths are given and where more than one triangle makes up a shape.



			Complete the sentences for each cuboid.
			The area of the base is: × = Volume = The area of the base \times =
			If each cube has a volume of 1 cm ³ , find the volume of each solid.
Fractions: calculating	Knows how to calculate with fractions. Knows that dividing by 2 is the same as	Knows how to add and subtract fractions with different denominators by identifying equivalent fractions with the same	Knows how to add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. Knows that when denominators are not multiples of the same
	multiplying by $\frac{1}{2}$.	denominator. Knows how to convert improper	number, they need to multiply the denominators together to find the LCM.
		fractions and mixed numbers.	Knows that there are different methods for subtracting mixed
			wholes and fractions separately and converting the whole number
			to an improper fraction.
			answer in its simplest form.
			Knows how to divide proper fractions by whole numbers.





			Mo is dividing $\frac{1}{3}$ by 2 I have divided one third into 2 equal parts. Each part is worth $\frac{1}{6}$ $\frac{1}{3} \div 2 = \frac{1}{6}$ Draw diagrams to calculate: $\frac{1}{3} \div 3 = \frac{2}{3} \div 3 = \frac{1}{5} \div 3 = \frac{2}{5} \div 3 =$
Fractions: calculating with decimals	Knows how to multiply and divide numbers with up to two decimal places by one-digit and two-digit whole numbers. Knows how to multiply decimals by whole numbers in practical contexts, such as measures and money. Knows how to divide decimal numbers by one-digit whole number, in practical contexts involving	Knows how to round decimals and use the correct notation for recurring decimal places.	Knows how to multiply one-digit numbers with up to two decimal places by whole numbers. Knows how to use written division methods in cases where the answer has up to two decimal places. Knows how to solve problems which require answers to be rounded to specified degrees of accuracy. Knows how to recall and use equivalences between simple fractions, decimals and percentages, including in different contexts; Know common fractions, such as thirds, quarters, fifths and eighths as decimals.

Mathematics Medium Term Planning: Spring term Y6







A theme park sells tickets online.			x + 2y = 20
There is a £3 charge for buying tickets.			r and v are whole numbers less than 10
Which of these shows how to calculate the total cost, in pounds?			x and y are whole humbers tess that to
	Tick one.		What could \boldsymbol{x} and \boldsymbol{y} be?
number of tickets × 3 + 24			x =
number of tickets × 24 + 3			
number of tickets + 3 × 24			<i>y</i> =
number of tickets + 24 × 3			
Geometry:	Knows how to visualise	Knows the conventional markings	Knows that a net is a two-dimensional figure that can be folded to
properties of	3D shapes from nets.	for parallel lines, sides of equal	create a three-dimensional shape.
shape, 3D nets		length, angles and right angles.	Knows how to recognise, describe and build simple 3D shapes,
			including making nets.
			Knows how to use their knowledge of 2D and 3D shapes to identify
			three-dimensional shapes from their nets.
Links to resources a	nd policy documents:	Calculate the missing angles in the isosceles triangles.	Look at the cuboid below.
Here are three nets of a cube. On each net draw one more dot so that each cube will have dots on opposite faces.		65° a° c° f° g°	4 cm 2 cm 2 cm
			Draw two more faces to complete the net of the cuboid.
			· · · · · · · · · · · · · · · · · · ·





