	! '' #\$ % & %	" "' # % ()	(& & \$ (* # + \$, # +	, - , !	. / 0 1
2 1 3 1 1 (National Curriculum)					

	of two numbers			
•	 Use prime 			

alculate with	steps are	e5pected	range from a		
posit ve indices	re3uired	outcomes	grouped		Use the concept
(roots) using			fre3uenc& table	, ! ● ?dentf&ratoina	of scaling in
wri6en methods	 . hec- the 	Use esperimental		real"life conte5t	diagrams
 . alculate with nega t ve indices in the conte5t of standard form	 solut on to an e3uat on b& substtut on Understand the meaning of the four ine3ualit& s&mbols 	 Benerate a se3uence from a term"to"term 	 4nal&se and compare sets of data <u>#/</u> 4ppreciate the limita t ons of diCerent statstcs (mean, median, mode, 	 Write a rato to describe a situaton 2dentf& proporton in a situaton 	 7 easure and state a specifed bearing . onstruct a scale diagram involving bearings
 Know how to s3uare (or cube) a negatve number 	 . hoose the correct ine3ualit& 	Understand the meaning of a posit on"to"term rule	 range) hoose appropriate statstcs to describe a set of 	 =ind a relevant multplier in a situaton involving proporton 	Use bearings to solve geometrical problems
 \$ubsttute negatve numbers into e5pressions 	• Aepresent	Use a position"to" term rule to generate a se3uence	data Dust f& choice of statstcs to describe a set of data	 Use fractons Euentl& in situatons involving rato or proporton 	. onstruct triangles (\$\$\$, \$4\$, 4\$4,
 *nter negat ve numbers into a calculator 2nterpret a calculator 	situa t ons as ine3uali t es = ind the set of integers that are solu t ons to an ine3ualit&	Use the nth term of a se3uence to deduce if a given number is in a se3uence () • 2lot graphs of	 Know the meaning of cont nuous data 2nterpret a grouped fre3uenc& table for cont nuous data 	 Understand the connect ons between ratos and fractons Aecognise a graph that illustrates direct proport on 	

	displa& when	to list a set of	functions of the	onstruct a	Aecognise a graph	
	wor-ing with	integers)(form & H m5.8 c (5	grouped	that illustrates	
	negatve	Use a formal	+ & H c a5 + b& H	fre3uenc& table	inverse proport on	
	numbers	method to solve		for contnuous		
				data		
				 . onstruct 		
	to use the order	with un-nowns	Understand the	histograms for		
	of operations	on both sides	concept of the	grouped data		
	including		gradient of a	with e3ual class		
	powers and	Use a formal	straight line	intervais		
	roots	method to solve				
	l leo o colculator to	an ine3ualit&		• 2nterpret		
	evaluate numerical	involving	• =ind the gradient	histograms for		
	e5pressions	brac-ets	of a straight line	grouped data		
	involving powers	 Know how to 	on a unit grid	with e3ual class		
	(roots)	deal with		intervals		
	. ,	nega t ve number				
	a Jalam t f 0 ; f a	terms in an	• =ind the &"	onstruct and use		
		ine3ualit&	intercept of a	the horizontal abis		
	fraction is	 Know how to 	straight line			
	terminat ng or	show a range of				
	recurring	values that solve	• =ind the e3uat on	<u> </u>		
		an ine3ualit& on	of a line through			
•	 Aecall some 	a number line	one point with a			
	decimal and		aiven aradient			
	fracton	Know when to	given gradient			
	e3uivalents					
	(efgf tenths,	use an open of				
	f Ghs, eighths)	ciosed circle at				
		the end of a	of a line through			
		range of values	two given points			

Write a decimal			
as a fract on			
• Write a fract on			
in its lowest			
terms h&			
cancolling			
cancening			
common			
factors			
• 2dentf& when a			
fract on can be			
scaled to tenths			
or hundredths			
• . onvert a			
fract on to a			
decimal b&			
scaling (when			
possible)			
pocololoj			
to change and			
fraction to a			
decimal			
Write a decimal			
as a percentage			

as a percentage			
Aecognise			
when a fract on			
(percentage)			
should be			
interpreted as a			
number			
Aecognise			
when a fract on			
(percentage)			
should be			
interpreted as a			
operator			
• 2dentf& the			
multplier for a			
percentage			
increase or			
decrease when			
the percentage			
is greater than			
+!!J "			
Use calculators			
to increase an			
amount b& a			
percentage			
greater than			
+!!J "			

 \$olve problems involving percentage change \$olve original value problems when wor-ing with percentages \$olve f nancial problems including simple interest Understand the meaning of giving an e5act solu t on 					
\$olve problems that re3uire e5act calculaton with fractons					
4 5 4 3	6 7 ! 3	4 5 4 3	6 7 ! 3	4 5 4 3	6"7! 3

#	\$ %& ' (
) * "	%		
+	, (/ ! '0 1 2 '(3 ?upils use mathematcs as an integral part of classroom actvitesF Khe& represent their wor- with ob;ects or pictures and discuss itF Khe& recognise and use a simple pa6ern or relatonshipf	#! -& 22! ! '0 1 2 '(3 tettepiils desclopathecipowntsprategies/fbr/solv/b/g/. K problems and use these strategies both in wor-ing within mathematcs and in appl&ing mathematcs to practcal conte5tsf When solving problems, with or without 2. K, the& chec- their results are reasonable b& considering the conte5tf Khe& loo- for pa6erns and relatonships, presentng informaton and results in a clear and organised wa&, using 2. K appropriatel&F Khe& search for a soluton b& tr&ing out ideas of their ownF	4 ' ! 2 -5 ! '0 1 2 '(3 poupviisobær råroudo s filo set an t al tas-s and solve 3uite comple5 problems b& independentl& and s&stema t call& brea-ing them down into smaller, more manageable tas-sf Khe& interpret, discuss and s&nthesise informat on presented in a variet& of mathema t cal forms, miss of gerendorgetea theologinalesosode/Etsik Keinod informs their use of diagramsF Khe& begin to give mathemat cal ; ust f cat ons, ma-ing connect ons between the current situat on and situat ons the& hrc às trcitde sprix , st 9 @=cfbail

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			mathemat cal e5planat on and e5perimental evidenceF
?u of aru dis be an dia ge e5	upils tr& diCerent approaches and fnd wa&s f overcoming diLcultes that arise when the& re solving problemsFKhe& are beginning to rganise their wor- and chec- resultsF?upils iscuss their mathematcal wor- and are eginning to e5plain their thin-ingFKhe& use nd interpret mathematcal s&mbols and iagramsF?upils show that the& understand a eneral statement b& fnding partcular 5amples that match itF	?upils carr& out substant al tas-s and solve 3uite comple5 problems b& independentl& and s&stemat call& brea-ing them down into smaller, more manageable tas-sf Khe& interpret, discuss and s&nthesise informat on presented in a variet& of mathemat cal forms, relatng findings to the original conte5tf Kheir wri6en and spo-en language e5plains and informs their use of diagramsf Khe& begin to give mathemat cal ;ust f cat ons, ma-ing connect ons between the current situat on and situat ons the& have encountered beforef	?upils develop and follow alternative approaches! Khe& compare and evaluate representations of a situation, introducing and using a range of mathematical techni3ues! Khe& reEect on their own lines of en3uir& when e5ploring mathematical tas-s! Khe& communicate mathematical or stats tical meaning to diCerent audiences through precise and consistent use of s&mbols that is sustained throughout the wor-f Khe& e5amine generalisations or solutions reached in an activit& and ma-e further progress in the activit& as a result! Khe& comment constructivel& on the reasoning and logic, the process emplo&ed and the results obtained!
?u pri wo ma so ch co pa inf	upils develop their own strategies for solving roblems and use these strategies both in ror-ing within mathematcs and in appl&ing nathematcs to practcal conte5tsF When olving problems, with or without 2. K, the& nec- their results are reasonable b& onsidering the conte5tF Khe& loo- for a6erns and relatonships, presentng iformaton and results in a clear and	\$tartng from problems or conte5ts that have been presented to them, pupils e5plore the eCects of var&ing values and loo- for invariance in models and representatons, wor-ing with and withoicatat ma il	

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	organised wa&, using 2. K appropriatel&F Khe& search for a solut on b& tr&ing out ideas of their ownF	solutons, loo-ing for e3uivalence to diCerent problems with similar structuresf Khe& appreciate the diCerence between mathematcal e5planaton and e5perimental evidencef	mathemat cal language and s&mbols eCect vel& in present ng a convincing, reasoned argumentF Kheir reports include mathemat cal ;ust f cat ons, dist nguishing between evidence and proof and e5plaining their solut ons to problems involving a number of features or variables
	2n order to e5plore mathemat cal situatons, carr& out tas-s or tac-le problems, pupils identf& the mathemat cal aspects and obtain necessar& informat onF Khe& calculate accuratel&, using 2. K where appropriateF Khe& chec- their wor-ing and results, considering whether these are sensibleF Khe& show understanding of situat ons b& describing them mathemat call& using s&mbols, words and diagramsF Khe& draw simple conclusions of their own and e5plain their reasoningF	?upils develop and follow alternative approachesF Khe& compare and evaluate representations of aU0age2e&	

?upils will develop their spelling of -e& mathemat cal words? Khis will be monitored using spelling tests at the start and end of each unit? Khis will be \$?4B mar-ed? ?upils will be given opportunites to write in sentences and paragraphs when suited to the topic?

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Develop fluency

consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots

select and use appropriate calculation strategies to solve increasingly complex problems

use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships

substitute values in expressions, rearrange and simplify expressions, and solve equations

move freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs]

develop algebraic and graphical fluency, including understanding linear and simple quadratic functions use language and properties precisely to analyse numbers, algebraic expressions, 2-Dand -D shapes, probability and statistics!

Reason mathematically

extend their understanding of the number system" make connections between number relationships, and their algebraic and graphical representations

extend and formalise their knowledge of ratio and proportion in working with measures and geometry, and in formulating proportional relations algebraically

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