

PROGRESSIONS OF SKILLS FOR MATHS

Fractions

0-3 YEARS	NURSERY	RECEPTION	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
COUNTING IN FRACTIONAL STEPS								
combine objects like stacking blocks and cups (parts of a whole)				Pupils should count in fractions up to 10, starting from any number and using the $\frac{1}{2}$ and $\frac{2}{4}$ equivalence on the number line (Non Statutory Guidance)	count up and down in tenths	count up and down in hundredths		
RECOGNISING FRACTIONS								
		compose and decompose shapes (eg split one square into 4 equal parts)	recognise, find and name a half as one of two equal parts of an object, shape or quantity	recognise, find, name and write fractions and of a length, shape, set of objects or quantity	recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence)	
					recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10.			
			recognise, find		recognise and use			

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			and name a quarter as one of four equal parts of an object, shape or quantity		fractions as numbers: unit fractions and non-unit fractions with small denominators			
COMPARING FRACTIONS								
					compare and order unit fractions, and fractions with the same denominators		compare and order fractions whose denominators are all multiples of the same number	compare and order fractions, including fractions >1
COMPARING DECIMALS								
						compare numbers with the same number of decimal places up to two decimal places	read, write, order and compare numbers with up to three decimal places	identify the value of each digit in numbers given to three decimal places
ROUNDING INCLUDING DECIMALS								
						round decimals with one decimal place to the nearest whole number	round decimals with two decimal places to the nearest whole number and to one decimal place	solve problems which require answers to be rounded to specified degrees of accuracy
EQUIVALENCE (INCLUDING FRACTIONS, DECIMALS AND PERCENTAGES)								
				write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and	recognise and show, using	recognise and show, using	identify, name and write	use common factors to simplify

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				recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$	diagrams, equivalent fractions with small denominators	diagrams, families of common equivalent fractions	equivalent fractions of a given fraction, represented visually, including tenths and hundredths	fractions; use common multiples to express fractions in the same denomination
						recognise and write decimal equivalents of any number of tenths or hundredths	read and write decimal numbers as fractions (e.g. $0.71 = \frac{71}{100}$)	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$)
						recognise and write decimal equivalents to $\frac{1}{4}$; $\frac{1}{2}$; $\frac{3}{4}$	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
							recognise the per cent symbol (%) and understand that per cent relates to "number of parts	

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							per hundred”, and write percentages as a fraction with denominator 100 as a decimal fraction	
ADDITION AND SUBTRACTION OF FRACTIONS								
					add and subtract fractions with the same denominator within one whole (e.g. $5/7 + 1/7 = 6/7$)	add and subtract fractions with the same denominator	add and subtract fractions with the same denominator and multiples of the same number	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
							recognise mixed numbers fractions and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $2/5 + 4/5 = 6/5 = 1 1/5$)	



MULTIPLICATION AND DIVISION OF FRACTIONS

							multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $1/4 \times 1/2 = 1/8$)
								multiply one-digit numbers with up to two decimal places by whole numbers
								divide proper fractions by whole numbers (e.g. $1/3 \div 2 = 1/6$)

MULTIPLICATION AND DIVISION OF DECIMALS

						find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths		multiply one-digit numbers with up to two decimal places by whole numbers
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								multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places
								identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places
								associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$)
								use written division methods in cases where



								the answer has up to two decimal places
PROBLEM SOLVING								
complete inset puzzles (put in parts of a whole to create the whole picture)					solve problems that involve all of the above	solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number	solve problems involving numbers up to three decimal places	
						solve simple measure and money problems involving fractions and decimals to two decimal places.	solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those with a denominator of a multiple of 10 or 25	

VOCABULARY

whole part	whole part	whole part equal	Whole Equal Parts Four equal parts One half, two halves A quarter Two quarters	Three quarters One third, a third Equivalence Equivalent to	Numerator Denominator Unit fraction, non-unit fraction Compare and order Tenths	Equivalent decimals and fractions Families of common equivalent fractions	Multiples Tenths and hundredths Common factors Proper fractions Improper fractions Mixed numbers Simplest form Percentage Half Quarter Fifths Ratio and proportion	Degree of accuracy Simplify Simplest form Equivalent fractions Decimal/fraction equivalents Common factors
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