

SHCPS Progression in Number: Fractions (inc. decimals & percentages)

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
COUNTING IN FRACTIONAL STEPS	Three and Four-Year-Olds Reception Early Learning Goals						
			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	count up and down in tenths	count up and down in hundredths	extend counting from year 4, using decimals and fractions including bridging zero, for example on a number line. continue to practise counting forwards and backwards in simple fractions.	
RECOGNISING FRACTIONS		recognise, find and name a half as one of two equal parts of an object, shape or quantity recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ 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 tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10. recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators understand the relation between unit fractions	recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten understand the relation between non-unit fractions and multiplication and division of quantities, with particular emphasis on tenths and hundredths.	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	

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				<i>as operators (fractions of), and division by integers</i>			
COMPARING AND ORDERING 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
ADDITION & SUBTRACTION OF FRACTIONS				add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$)	add and subtract fractions with the same denominator	add and subtract fractions with the same denominator and multiples of the same number recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $\frac{2}{5}$ $+ \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$)	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

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MULTIPLICATION & 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. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$)
							divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$)
EQUIVALENCE OF FRACTIONS, DECIMALS & PERCENTAGES			write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.	recognise and show, using diagrams, equivalent fractions with small denominators	recognise and show, using diagrams, families of common equivalent fractions <i>use factors and multiples to recognise equivalent fractions and simplify where appropriate.</i>	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	use common factors to simplify fractions; use common multiples to express fractions in the same denomination
					recognise and write decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents to $\frac{1}{4}$; $\frac{1}{2}$; $\frac{3}{4}$	read and write decimal numbers as fractions (e.g. $0.71 = \frac{71}{100}$) recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$)

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						recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator 100 as a decimal fraction	recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
COMPARING DECIMALS					know that decimals and fractions are different ways of expressing numbers and proportions learn decimal notation and the language associated with it, including in the context of measurements. 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 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

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ADDING, SUBTRACTING, MULTIPLYING & DIVIDING DECIMALS						<i>mentally add and subtract tenths, and one-digit whole numbers and tenths.</i> <i>practise adding and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1.</i>	
					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 and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places multiply one-digit numbers with up to two decimal places by whole numbers 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	

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PROBLEM SOLVING				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 simple measure and money problems involving fractions and decimals to two decimal places.	solve problems involving numbers up to three 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. <i>go beyond the measurement and money models of decimals, for example, by solving puzzles involving decimals.</i>	solve problems which require answers to be rounded to specified degrees of accuracy