


SPJS CURRICULUM LADDER - MATHS - FRACTIONS INCLUDING DECIMALS AND PERCENTAGES

COUNTING IN FRACTIONAL STEPS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		count up and down in tenths	count up and down in hundredths		

RECOGNISING FRACTIONS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>recognise, find and name a half as one of two equal parts of an object, shape or quantity</p> <p>recognise, find and name a quarter as one of four equal parts of an object, shape or quantity</p>	<p>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</p>	<p>recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</p> <p>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</p>  <p>LINK IT (Place Value, Multiplication and Division):</p> <p>recognise that tenths arise from dividing an object into 10 equal parts and in dividing one - digit numbers or quantities by 10.</p> <p>3F-1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.</p> <p>3F-2 Find unit fractions of quantities using known division facts (multiplication tables fluency).</p>	<p>recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten</p>	<p>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence)</p>	

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COMPARING FRACTIONS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		compare and order unit fractions, and fractions with the same denominators		compare and order fractions whose denominators are	compare and order fractions, including fractions >1




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		3F-3 Reason about the location of any fraction within 1 in the linear number system.		all multiples of the same number	6F-2 Express fractions in a common denominator and use this to compare fractions that are similar in value. 6F-3 Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denominator as a comparison strategy.
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COMPARING DECIMALS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			 LINK IT (Place Value, Measurement): compare numbers with the same number of decimal places up to two decimal places	 LINK IT (Place Value, Measurement): read, write, order and compare numbers with up to three decimal places	 LINK IT (Place Value, Multiplication and Division): identify the value of each digit in numbers given to three decimal places






ROUNDING INCLUDING DECIMALS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			 LINK IT (Place Value): round decimals with one decimal place to the nearest whole number	 LINK IT (Place Value): round decimals with two decimal places to the nearest whole number and to one decimal place	 LINK IT (Place Value): solve problems which require answers to be rounded to specified degrees of accuracy

EQUIVALENCE (INCLUDING FRACTIONS, DECIMALS AND PERCENTAGES)


Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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<p>write simple fractions e.g. $\frac{1}{2}$ of 6 = 3</p> <p>recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.</p>	<p>recognise and show, using diagrams, equivalent fractions with small denominators</p>	<p>recognise and show, using diagrams, families of common equivalent fractions</p> <p>recognise and write decimal equivalents of any number of tenths or hundredths</p> <p>recognise and write decimal equivalents to $\frac{1}{4}$; $\frac{1}{2}$; $\frac{3}{4}$</p>	<p>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>read and write decimal numbers as fractions (e.g. $0.71 = \frac{71}{100}$)</p> <p> LINK IT (Ratio and proportion): 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</p> <p> LINK IT (Place value): recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p> <p>5F-2 Find equivalent fractions and understand that they have the same value and the same position in the linear number system.</p>	<p> LINK IT (Multiplication and Division): use common factors to simplify fractions; use common multiples to express fractions in the same denomination</p> <p> LINK IT (Multiplication and Division): associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$)</p> <p> LINK IT (Multiplication and Division): recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</p> <p>6F-1 Recognise when fractions can be simplified, and use common factors to simplify fractions.</p>
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ADDITION AND SUBTRACTION OF FRACTIONS

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Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$) 3F-4 Add and subtract fractions with the same denominator, within 1.	add and subtract fractions with the same denominator 4F-3 Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.	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. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$)	 LINK IT (Multiplication and Division): add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

MULTIPLICATION AND DIVISION OF FRACTIONS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams 5F-1 Find non-unit fractions of quantities.	multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$) multiply one-digit numbers with up to two decimal places by whole numbers divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$)

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MULTIPLICATION AND DIVISION OF DECIMALS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			 LINK IT (Place Value, Multiplication and Division, Measures): 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	 LINK IT (Multiplication and Division): multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	 LINK IT (Multiplication and Division): multiply one-digit numbers with up to two decimal places by whole numbers  LINK IT (Place value, Multiplication and Division, Measures): multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places  LINK IT (Place Value, Multiplication and Division): identify the value of each digit to three decimal places  LINK IT (Multiplication and Division): use written division methods in cases where the answer has up to two decimal places  LINK IT (Multiplication and Division): 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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PROBLEM SOLVING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

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		<p>solve problems that involve all of the above</p>	<p>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</p> <p> LINK IT (Place Value, Measurement): solve simple measure and money problems involving fractions and decimals to two decimal places</p> <p>LINK IT (Fractions): estimate, compare and calculate different measures, including money in pounds and pence</p>	<p> LINK IT (Place Value, Measurement): solve problems involving numbers up to three decimal places</p> <p>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.</p>	
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OBJECTIVES BASED ON READY TO PROGRESS ONLY

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			<p>4F-1 Reason about the location of mixed numbers in the linear number system.</p> <p>4F-2 Convert mixed numbers to improper fractions and vice versa.</p>	<p>5F-3 Recall decimal fraction equivalents for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$, and for multiples of these proper fractions.</p>	

Main objectives are taken from the National Curriculum.

Highlighted objectives are non-statutory and are taken from the Ready to Progress documents.

 **LINK IT:** Indicates a link with another unit of work

Objectives written with a red heading and black writing MUST be taught within the unit

Objectives written in green are optional links - Discuss when possible and use for mental starters, extension tasks etc.