Year 4 Fractions

Baseline Assessment

		Answer	Assessment Focus	Possible Misconceptions and Interventions
1	1 mark	$\frac{6}{10} \ \frac{7}{10} \ \frac{8}{10} \ \frac{9}{10}$	Count up in tenths	Children may struggle to count in tenths because they do not understand the concept of a tenth and may not recognise that the count increases or decreases by one-tenth each time. Children may struggle to interpret the fraction notation and may not have a clear understanding of what a numerator or a denominator is and may be unsure of how to interpret them. This may cause errors in counting and
				recording.
2	1 mark	3 5	Recognise fractions of a discrete set of objects	Children may confuse the numerator with the denominator when recording a fraction to match an amount.
		\sim		Children may become confused when recording the fraction for a shaded set of objects and write the fraction to match the unshaded part of the image rather than the shaded part of the image.
3	1 mark	2	Calculate the unit fraction $(\frac{1}{4})$ of a number or an amount	Children may struggle to find a unit fraction of an amount. Children may not make the connection between halving and halving again when calculating a quarter of an amount.
4	1 mark		Identify equivalent fractions by comparing shaded shapes	Children may find it difficult to compare shaded shapes to identify equivalent fractions, especially if the equivalence is less obvious and requires them to visualise in order to manipulate the fraction.





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		Answer	Assessment Focus	Possible Misconceptions and Interventions
5	1 mark	6 7	Add fractions with the same denominators	Children will sometimes become confused when adding fractions with the same denominator and may add the numerators together and the denominators. For example: $\frac{1}{7} + \frac{3}{7} = \frac{4}{14}$
6	1 mark	$\frac{1}{10}$, $\frac{1}{6}$, $\frac{1}{3}$, $\frac{1}{2}$	Compare and order unit fractions	Children may make errors when comparing and ordering unit fractions because they may think that a large denominator means a large fraction, when this is actually not the case. Large denominators mean smaller- sized parts.
7	1 mark	3 10	Connect tenths to place value	Children may not make the connection between tenths, place value and decimals.
8	2 marks 1 mark for recording the calculation 6 ÷ 3 even if the answer is incorrect 2 marks for a correct calculation and answer	6 ÷ 3 = 2 2 strawberries	Understand the relationship between unit fractions as operators (fractions of) and division by integers	Children may not know how to calculate a unit fraction of an amount. They may not realise that to find a fraction of an amount you need to divide the quantity by the denominator.
9	2 marks 1 mark for all three missing numbers identified correctly 2 marks for all four correct answers	A = $1\frac{1}{2}$ B = $\frac{8}{10}$ C = $1\frac{3}{10}$ $\frac{1}{2} = \frac{5}{10}$	Understand unit and non-unit fractions as numbers on the number line and deduce relations between them, such as size and equivalence, going beyond the [0, 1] interval	Children may struggle to count in fractions (especially above one) and position numbers correctly on a fraction number line. Children may have difficulties using fraction number lines as a tool to identify equivalent fractions.





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10	1 mark	10 parts	Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10	Children may not understand that tenths are created when the whole is split into 10 equal parts.
11	2 marks 1 mark for two or three correct matches 2 marks for all four correct matches	$\begin{array}{c} 2 \\ 3 \\ 2 \\ 4 \\ 9 \\ 1 \\ 9 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$	Recognise fractions in the context of parts of a whole, numbers, measurements, a shape and unit fractions as a division of a quantity	Children may struggle to interpret unit and non-unit fractions that have been represented in a variety of ways. Children may confuse the numerator and denominator when identifying fractions from a variety of different representations.
12	2 marks 1 mark for each correct answer	a) <u>6</u> b) <u>4</u> 10	Solve problems that involve adding and subtracting fractions with the same denominator	Children may struggle to use and apply their knowledge of adding and subtracting fractions with the same denominator to solve problems.





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		Answer	Assessment Focus	Possible Misconceptions and Interventions
13	2 marks 1 mark for each correct answer	2 squares should be shaded on the first shape and 10 hexagons should be shaded on the second shape	Recognise and understand non-unit fraction notation and shade shapes accordingly	Children may struggle to interpret fraction notation and shade shapes to represent the fraction notation. Children may have difficulties distinguishing between unit and non-unit fractions.
14	2 marks 1 mark for a diagram to represent the equivalent fractions but the explanation is not accurate 2 marks for an accurate explanation even if they have not drawn a diagram to prove it	Neither snail is the fastest. They both travelled the same distance because $\frac{1}{5}$ is equivalent to $\frac{2}{10}$.	Solve problems that involve comparing equivalent fractions	Children may not be able to see the equivalent relationship between two fractions when solving a problem. Children may struggle to mathematically reason when solving problems related to equivalent fractions.
15	1 mark	This is false. If you divide 7 by 10, it equals $\frac{7}{10}$ not $\frac{6}{10}$.	Solve problems using and applying the understanding that tenths are created by dividing a whole number into 10 equal parts	Children may not think that a whole number less than 10 can be divided into 10 parts. Children may not understand that when a single digit number is divided by a number that is greater than it, the answer will always be a fraction.





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		Answer	Assessment Focus	Possible Misconceptions and Interventions
16	2 marks 1 mark for two correct answers 2 marks for all three correct answers	$\frac{1}{2} \text{ of } 20 = 10$ $\frac{2}{4} \text{ of } 12 = 6$ $\frac{2}{3} \text{ of } 15 = 10$	Find a fraction of a number	 Children may struggle to find a fraction of a number because they have not made the connection between fractions and division. Children may divide the number by the numerator rather than the denominator when calculating the fraction of a number. When calculating a non-unit fraction of a number, the children may remember to divide the number by the denominator but then forget to multiply that answer by the numerator. Therefore, only working out the unit fraction of the number than the non-unit fraction of the number.
17	2 marks 1 mark for each calculation completed correctly	$\frac{\frac{7}{8}}{\frac{5}{8}} - \frac{5}{\frac{5}{8}} = \frac{2}{8}$ $\frac{3}{6} + \frac{1}{6} = \frac{4}{6}$	Solve problems that involve finding a fraction of a number	 Children may struggle to find a fraction of a number because they have not made the connection between fractions and division. Children may divide the number by the numerator rather than the denominator when calculating the fraction of a number. When calculating a non-unit fraction of a number, the children may remember to divide the number by the denominator but then forget to multiply that answer by the numerator. Therefore, only working out the unit fraction of the number rather than the non-unit fraction of the number.



