

Name:		
Advanced Multiplicative Part-Whole		Date achieved
I am learning to ...		I can ...
Knowledge		
• Count	Forwards and backwards in 0.001s, 0.01s, 0.1s, ones, tens	
• Say	Number 0.001, 0.01, 0.1, 1, 10 before/after any whole number	
• Order	Decimals up to three places, for example, 6.25 and 6.3	
• Order	Fractions including halves, thirds, quarters, fifths, tenths	
• Know	Groupings of 10, 100, 1 000, made from a number of up to seven digits, for example, tens in 47 562	
• Know	Equivalent fractions and proportions for $\frac{1}{2}$ s, $\frac{1}{3}$ s, $\frac{1}{4}$ s, $\frac{1}{5}$ s, $\frac{1}{10}$ s with denominators of 10, 100, 1 000, for example, $\frac{1}{4} = \frac{25}{100}$	
• Round	Whole numbers and decimals to the nearest 1 or $\frac{1}{10}$	
• Recall	\times and \div facts to 10×10 , $100 \div 10$	
• Recall	Fraction decimal percentage conversions for $\frac{1}{2}$ s, $\frac{1}{3}$ s, $\frac{1}{4}$ s, $\frac{1}{5}$ s, and $\frac{1}{10}$ s, for example, $\frac{3}{4} = 0.75 = 75\%$	
• Use	Divisibility rules for 2, 3, 5, 9, 10 e.g., 245 is divisible by 5 since the ones digit is 5	
• Know	Square numbers to 100, and the matching square roots, e.g., $7^2 = 49$ so $\sqrt{49} = 7$	
• Identify	Factors of numbers to 100, e.g., Factors of 35 = {1, 5, 7, 35}	
• Find	Common multiples of numbers to 10, e.g., Common Multiples of 3 and 7 = {21, 42, 63, ...}	

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Advanced Multiplicative Part-Whole (continued)

I am learning to ...		I can ...
Strategy		
<ul style="list-style-type: none"> Solve + and - problems by using 	<p>Compensation from tidy numbers, e.g., $3.2 + 1.95$ as $3.2 + 2 - 0.05$</p> <p>Place value, e.g., $8.65 - 4.2 = (8 - 4) + (0.6 - 0.2) + 0.05$ or $8.65 - 4 = 4.65$ then $4.65 - 0.2 = 4.45$</p> <p>Reversibility and commutativity, e.g., $6.03 - 5.8 = \square$ as $5.8 + \square = 6.03$ (reversibility) or $\square + 3.98 = 7.04$ as $3.98 + \square = 7.04$ (commutativity)</p> <p>Equal additions, e.g., $7.24 - 3.8$ as $7.44 - 4.0 = 3.44$</p> <p>Using negatives, e.g., $6.4 - 2.5$ as $0.4 - 0.5$ is -0.1; $6.0 - 2.0 = 4.0$; $4.0 - 0.1 = 3.9$</p> <p>Decomposition, e.g., $9.25 - 6.83$ as $8.25 - 6.83$</p> <p>Averaging and common factors. e.g., $27 + 33 + 31 + 29 = 4 \times 30$</p> <p>Adding and subtracting integers, e.g., $-4 - -3 = -1$</p> <p>Simple equivalent fractions, e.g., $\frac{3}{4} + \frac{3}{8} = \frac{6}{8} + \frac{3}{8} = \frac{9}{8} = 1\frac{1}{8}$</p>	
<ul style="list-style-type: none"> Solve \times and \div problems using 	<p>Compensation from tidy numbers, e.g., 6×998 as, $(6 \times 1000) - (6 \times 2)$ or $56 \div 4$ using $(60 \div 4) - 1$</p> <p>Place value, e.g., 28×7 as $(20 \times 7) + (8 \times 7)$ or $72 \div 4$ as $(40 \div 4) + (32 \div 4)$</p> <p>Reversibility, e.g., $96 \div 6$ as $6 \times \square = 96$ and commutativity, e.g., 17×6 as 6×17</p> <p>Proportional adjustment, e.g., 4×18 as 8×9 or $81 \div 3$ as $(81 \div 9) \times 3$</p> <p>Written working forms or calculators where the numbers are difficult and/or untidy</p> <p>Repeated multiplication or division by factors, e.g., $144 \div 8 = 72 \div 4 = 36 \div 2$</p> <p>Finding remainders in division problems, e.g., $54 \div 7 = 7 \text{ r } 5$</p>	
<ul style="list-style-type: none"> Solve problems with fractions, decimals, proportions, and ratios, using 	<p>Unit fractions, e.g., $\frac{4}{9} \times 18$ as $(\frac{1}{9} \times 18) \times 4$</p> <p>Place value, e.g., 3.4×8 as $(3 \times 8) + (0.4 \times 8)$ $= 24 + 3.2 = 27.2$</p> <p>Compensating from tidy numbers or fractions, e.g., $\frac{3}{8} \times 28$ as $\frac{1}{2}$ of $\frac{3}{4} \times 28$ or 1.9×3.4 as $(2 \times 3.4) - (0.1 \times 3.4)$</p> <p>Using equivalent fractions and ratios, e.g., 40% of 35 as $\frac{2}{5}$ of 35 = 14</p>	