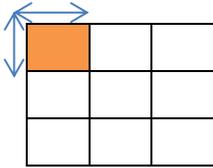
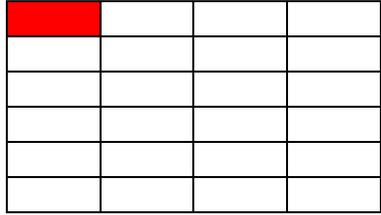


	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Fractions	Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions.	<ul style="list-style-type: none"> A jug contains some milk. Josh pours $\frac{1}{2}$ of the milk into a glass. Josh pours $\frac{3}{10}$ of the milk into another glass. What fraction of the milk is left? Work out: $5\frac{3}{7} - 2\frac{6}{5}$ Use diagrams to represent a calculation. 	<ul style="list-style-type: none"> Bashir says “I do not need to do any written calculations to solve $\frac{4}{8} + \frac{2}{4}$,” Do you agree? Explain how you know. Emily says “When you add fractions together the answer is actually smaller because when the numerator is a bigger number the piece is actually smaller.” What mistake has Emily made? Explain your answer using a diagram. Rajesh doesn’t understand why the denominator doesn’t change when adding fractions but the numerator does. Can you explain why? 	<ul style="list-style-type: none"> If the answer to a word problem involving subtracting fractions with different denominators is $\frac{14}{32}$, what could the question be? Katie subtracted $\frac{3}{5}$ away from a fraction and her answer was $\frac{8}{45}$. What was the original question? Think of 3 questions for adding fractions with different denominators where the answer is $\frac{15}{17}$. Could you do it? Why? Why not?

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Fractions	<p>Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]</p>	<ul style="list-style-type: none"> Work out $\frac{1}{8} \times \frac{1}{5}$ Use diagrams to represent multiplying fractions. <p>$\frac{1}{3} \times \frac{1}{3} = \frac{1}{9}$</p>  <ul style="list-style-type: none"> What is 1 ninth multiplied by 1 seventh? 	<ul style="list-style-type: none"> Ginny is multiplying the following sum: $\frac{1}{5} \times \frac{1}{6}$. The answer she gets is $\frac{2}{30}$. Explain what she has done. Megan sees that when she multiplies 2 fractions together she ends up with a smaller fraction. She thinks she will eventually have a decimal fraction. Do you agree? Explain your answer. Draw a diagram to represent the calculation below. Explain what you have drawn and why. $\frac{1}{6} \times \frac{1}{8}$ 	<ul style="list-style-type: none"> Hanna has half a pizza. She cuts it into 4 slices. What fraction of the original pizza is each slice? The shaded square in the grid below is the answer to a multiplying fractions question. If that is the answer, what is the question?  <ul style="list-style-type: none"> If $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ is <p>$\frac{2}{8} \times \frac{2}{4} = \frac{2}{16}$?</p> <p>Explain your answer.</p>

	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Fractions	Divide proper fractions by whole numbers [for example $\frac{1}{3} \div 2 = \frac{1}{6}$]	<ul style="list-style-type: none"> Work out $\frac{4}{7} \div 5$ Solve one seventh divided by six. Alfie has $\frac{4}{6}$ of a pizza left. He shares it between 4 people. How much do they each get? 	<ul style="list-style-type: none"> Roman says "When dividing fractions by a whole number, I just ignore the numerator." Do you agree? Explain why. Betty says "When you divide a fraction by a whole number the answer is bigger than the original fraction." Is she correct? Convince me! Solve the following calculations: $\frac{1}{3} \div 2 = \text{---}$ $\frac{1}{4} \div 2 = \text{---}$ $\frac{1}{5} \div 2 = \text{---}$ $\frac{1}{6} \div 2 = \text{---}$ What do you notice? Explain why the pattern has formed. 	<ul style="list-style-type: none"> Look at the calculation below. Work out the missing parts. $\text{---} \div \text{---} = \frac{4}{36}$ How many different ways can you find? Becky's mum ordered a pizza for her and her friends. By the time they arrived home there was only $\frac{7}{12}$ of it left. When she shared it among her friends they each got $\frac{7}{72}$. How many friends did Becky have with her? Think of 3 questions for dividing fractions by a whole number where the answer is $\frac{1}{20}$. Could you do it? Why? Why not?

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Decimals	Multiply one digit numbers with up to 2dp by whole numbers.	<ul style="list-style-type: none"> Solve: $4.32 \times 5 =$ $6.72 \times 8 =$ $9 \times 4.35 =$ $7 \times 5.21 =$ Idrees has to walk 1.5km to get to school. How far will he have to walk over 4 days to get to school and back? Katie is saving money. Her mum says, <div style="border: 1px solid blue; border-radius: 15px; padding: 5px; margin: 10px 0; background-color: #4a7ebb; color: white; text-align: center;"> "Whatever you save, I will give you five times the amount." </div> <ul style="list-style-type: none"> a) If Katie saves £4.82, how much money will her mum give her? b) If Katie saves £7.73, how much money will her mum give her? 	<ul style="list-style-type: none"> Tanya is using the grid method to multiply decimals. 4.56×7 <table border="1" style="margin: 10px auto;"> <tr><td style="background-color: black;"></td><td style="background-color: #f4a460;">7</td></tr> <tr><td style="background-color: #f4a460;">4</td><td style="background-color: #f4a460;">28</td></tr> <tr><td style="background-color: #f4a460;">0.5</td><td style="background-color: #f4a460;">3.5</td></tr> <tr><td style="background-color: #f4a460;">0.06</td><td style="background-color: #f4a460;">4.2</td></tr> </table> <p>After adding up, Tanya says her answer is 35.7.</p> <p>Is Tanya correct?</p> <p>Explain your reasoning.</p> <ul style="list-style-type: none"> True or False? <p>When you multiply a number with 2 decimal places by a whole number, the answer always has more than 2 decimal places.</p> <p>Prove it.</p>		7	4	28	0.5	3.5	0.06	4.2	<ul style="list-style-type: none"> You need to travel from Point A to Point B. You can only travel through each point once. <div style="text-align: center; margin: 10px 0;"> </div> <p>What is the largest product you can make from A to B? What is the smallest product you can make from A to B?</p> <ul style="list-style-type: none"> Fill in the empty boxes <div style="margin: 10px 0;"> <table style="border-collapse: collapse;"> <tr> <td style="border: 1px solid blue; padding: 5px; text-align: center;">3</td> <td style="font-size: 2em; vertical-align: middle;">•</td> <td style="border: 1px solid blue; padding: 5px; text-align: center;">4</td> <td style="border: 1px solid blue; padding: 5px; text-align: center;">5</td> </tr> <tr> <td colspan="2"></td> <td style="border: 1px solid orange; width: 30px; height: 30px;"></td> <td></td> </tr> </table> </div> <div style="margin: 10px 0;"> <table style="border-collapse: collapse;"> <tr> <td style="font-size: 2em; vertical-align: middle;">×</td> <td style="border: 1px solid blue; padding: 5px; text-align: center;">0</td> <td style="font-size: 2em; vertical-align: middle;">•</td> <td style="border: 1px solid blue; padding: 5px; text-align: center;">3</td> <td style="border: 1px solid blue; padding: 5px; text-align: center;">0</td> </tr> <tr> <td></td> <td style="border: 1px solid purple; width: 30px; height: 30px;"></td> <td style="font-size: 2em; vertical-align: middle;">•</td> <td style="border: 1px solid purple; padding: 5px; text-align: center;">4</td> <td style="border: 1px solid purple; padding: 5px; text-align: center;">0</td> </tr> <tr> <td></td> <td style="border: 1px solid green; padding: 5px; text-align: center;">1</td> <td style="font-size: 2em; vertical-align: middle;">•</td> <td style="border: 1px solid green; padding: 5px; text-align: center;">0</td> <td style="border: 1px solid green; padding: 5px; text-align: center;">0</td> </tr> <tr> <td></td> <td style="border: 1px solid red; width: 30px; height: 30px;"></td> <td style="font-size: 2em; vertical-align: middle;">•</td> <td style="border: 1px solid red; width: 30px; height: 30px;"></td> <td style="border: 1px solid red; width: 30px; height: 30px;"></td> </tr> </table> </div> 	3	•	4	5					×	0	•	3	0			•	4	0		1	•	0	0			•		
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Percentages	<p>Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison.</p>	<ul style="list-style-type: none"> Calculate: <ul style="list-style-type: none"> 10% of 60 25% of 300 45% of 460 Find: <ul style="list-style-type: none"> 20% of £340 35% of 6m 75% of £1340 20% of 2 hours Daniel has spent 30 minutes doing his homework so far this week. This is 25% of the time he has to spend on his homework. <p>How much longer must he spend on his homework this week?</p> 	<ul style="list-style-type: none"> Isla says, <div style="border: 1px solid blue; border-radius: 15px; padding: 5px; background-color: #4a7ebb; color: white; text-align: center; margin: 10px 0;"> "To find 10% you divide by 10, to find 20% you divide by 20" </div> <p>Do you agree? Explain your reasoning.</p> Danyaal is saving money. His dad offers him two lots of money. <div style="border: 1px solid blue; border-radius: 10px; padding: 5px; background-color: #4a7ebb; color: white; text-align: center; margin: 10px 0;"> 60% of £35 </div> <div style="border: 1px solid purple; border-radius: 10px; padding: 5px; background-color: #6a3d9a; color: white; text-align: center; margin: 10px 0;"> 45% of £48 </div> <p>Which should he take? Show your reasoning.</p> Would you rather: <ul style="list-style-type: none"> Be given 60% of two cakes or 26% of 5 cakes. Be surrounded by 25% of 40 snakes or 40% of 25 snakes? <p>Explain your reasons clearly for each choice.</p> <p>Can you make up some of your own 'Would you rather?' questions?</p> 	<ul style="list-style-type: none"> A golf club has 200 members. 58% of the members are male. 50% of the female members are children. <ul style="list-style-type: none"> a) How many male members are in the golf club? b) How many female children are in the golf club? Jack and Tara both have a string of beads. They have red beads, blue beads, white beads and purple beads. They both count how many of each colour they have. <ul style="list-style-type: none"> Jack's beads are 50% blue, 35% red, 10% white and 5% purple. Tara's beads are 40% blue, 32% red, 20% white and 8% purple beads. <p>They have the smallest amount of beads possible with those percentages.</p> <p>How many beads did Jack have? How many beads did Tara have?</p> <p>If we know that Jack and Tara have 10 purple beads between them, how many beads do they have altogether?</p>