

Year 4

Maths Overview



Year 4 Overview

	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11	Wk 12	Wk 13	Wk 14	Wk 15	
Autumn	Number: Place Value			Number: Addition & Subtraction				Number: Multiplication & Division				Measures: Perimeter & area		Opportunity to consolidate, revisit and reinforce		
Spring	Number: Fractions			Measures: Time		Number: Decimals			Measures							
Summer	Number: Place value	Geometry: Properties of shapes				Geometry: Position & direction		Statistics		Number: Addition & Subtraction, Multiplication & Division			Opportunity to consolidate, revisit and reinforce			

Please note: The length of each unit has been given as a guide only. Use professional judgement to either extend or shorten units in line with the needs of pupils. The 'spare' weeks at the end of each term have been planned in to allow for this flexibility or give the opportunity to consolidate, revisit and reinforce.

Where units revisit objectives, use assessment data to inform planning.

AUTUMN TERM														
Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11	Wk 12	Wk 13	Wk 14	Wk 15
<u>Number: Place value</u> Count in multiples of 25 and 1000. Count in multiples of 6 Count in multiples of 7 Count in multiples of 9 Count backwards through zero to include negative numbers. Find 1000 more or less than a given number. Recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones) Order and compare numbers beyond 1000. Identify, represent and estimate numbers using different representations. Round any number to the nearest 10, 100 or 1000. Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. Solve number and practical problems that involve all of the above and with increasingly large positive numbers.			<u>Number: Addition & subtraction</u> Add numbers with up to 4 digits using the formal written methods of columnar addition where appropriate. Subtract numbers with up to 4 digits using the formal written methods of columnar subtraction where appropriate Estimate to check answers to a calculation Use inverse operations to check answers to a calculation Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why.				<u>Number: Multiplication & division</u> Recall multiplication and division facts for multiplication tables: 2, 3, 4, 5, 8 & 10 (covered in previous year groups) Recall multiplication and division facts for multiplication tables: 6, 7, 9, 11 and 12 (new to year 4) Use place value, known and derived facts to multiply by 0 and 1 Use place value, known and derived facts to divide by 1 Use place value, known and derived facts to multiply together three numbers. Recognise and use factor pairs and commutativity in mental calculations. Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. Divide two-digit and three-digit numbers by a one-digit number using formal layout Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit Solve integer scaling problems Solve harder correspondence problems such as n objects are connected to m objects.				<u>Measures: Perimeter & area</u> Measure and calculate the perimeter of a rectilinear figure (including squares) in cm and meters. Find the area of rectilinear shapes by counting squares.		Opportunity to consolidate, revisit and reinforce	

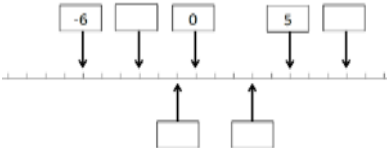


SPRING TERM									
Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10
<u>Number: Fractions</u> Recall multiplication and division facts for multiplication tables: 2, 3, 4, 5, 8 & 10 (covered in previous year groups) Recall multiplication and division facts for multiplication tables: 6, 7, 9, 11 and 12 (new to year 4) Recognise and show, using diagrams, families of common equivalent fractions. Count up and down in hundredths Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. 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. Add and subtract fractions with the same denominator.			<u>Measures: Time</u> Convert between different units of measure (hours, minutes, seconds) Read, write and convert time between analogue and digital 12 and 24 hour clocks. Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.		<u>Number: Decimals</u> Recognise and write decimal equivalents of any number of tenths or hundredths. Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ Find the effect of dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths. Round decimals with one decimal place to the nearest whole number. Compare numbers with the same number of decimal places up to two decimal places. Order numbers with the same number of decimal places up to two decimal places.			<u>Measures</u> Convert between different units of measure: mass (kg/g) and capacity/volume (l/ml) Convert between different units of measure: height/length (km, m, cm, mm) Estimate, compare and calculate different measures, including money in pounds and pence. Solve simple measure and money problems involving fractions and decimals to two decimal places. (From Number: Fractions)	

SUMMER TERM													
Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11	Wk 12	Wk 13	Wk 14
<u>Number: Place value</u> Count in multiples of 25 and 1000. Count in multiples of 6 Count in multiples of 7 Count in multiples of 9 Count backwards through zero to include negative numbers. Order and compare numbers beyond 1000. Round any number to the nearest 10, 100 or 1000. Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. Solve number and practical problems that involve all of the above and with increasingly large positive numbers.	<u>Geometry: Properties of shapes</u> Identify acute and obtuse angles Compare and order angles up to two right angles by size. Compare and classify geometric shapes, including quadrilateral s and triangles, based on their properties and sizes. Identify lines of symmetry in 2D shapes presented in different orientations. Complete a simple symmetric figure with respect to a specific line of symmetry.				<u>Geometry: Position &Direction</u> Describe positions on a 2D grid as coordinates in the first quadrant. Describe movements between positions as translations of a given unit to the left/ right and up/ down. Plot specified points and draw sides to complete a given polygon.		<u>Statistics</u> Interpret and present discrete (e.g. number counted) data using appropriate graphical methods: bar charts Interpret and present continuous (e.g. measure/time) data using appropriate graphical methods: time graphs. Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.		<u>Number: Addition & subtraction, multiplication & division</u> Add numbers with up to 4 digits using the formal written methods of columnar addition where appropriate. Subtract numbers with up to 4 digits using the formal written methods of columnar subtraction where appropriate Use inverse operations to check answers to a calculation Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why. Recall multiplication and division facts for multiplication tables: 2, 3, 4, 5, 8 & 10 (covered in previous year groups) Recall multiplication and division facts for multiplication tables: 6, 7, 9, 11 and 12 (new to year 4) Recognise and use factor pairs and commutativity in mental calculations. Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. Divide two-digit and three-digit numbers by a one-digit number using formal layout Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit Solve integer scaling problems Solve harder correspondence problems such as n objects are connected to m objects.	Opportunity to consolidate, revisit and reinforce			

	National Curriculum Statement	All students												
		Fluency	Reasoning	Problem Solving										
Place Value	<p>Count in multiples of 25 and 1000.</p> <p>Count in multiples of 6</p> <p>Count in multiples of 7</p> <p>Count in multiples of 9</p>	<ul style="list-style-type: none"> Find the next two numbers 6, 12, 18, 24, 7, 14, 21, 28, 35, 9, 18, 27, 36 25, 50, 75, 5000, 6000, 7000 Fill in the missing numbers: <table border="1"> <tr> <td>14</td><td></td><td>28</td><td>35</td><td></td></tr> </table> <table border="1"> <tr> <td>100</td><td></td><td></td><td>175</td><td>200</td></tr> </table> Hassan counts on in 25's from 250. Circle the numbers he will say. 990, 125, 300, 440, 575, 700 	14		28	35		100			175	200	<ul style="list-style-type: none"> What is the same and what is different about these two number sequences? 6, 12, 18, 24, 30..... 45, 36, 27, 18, 9..... Same: _____ Different: _____ Convince me that the number 14 will be in this sequence if it is continued. 49, 42, 35, 28 Always, Sometimes, Never Hayley is counting in 25's and 1000's. She says: <ul style="list-style-type: none"> - Multiples of 1000 are also multiples of 25. - Multiples of 25 are therefore multiples of 1000. <p>Are these statements always, sometimes or never true?</p>	<ul style="list-style-type: none"> Mr Hamm has three disco lights. The first light shines for 3 seconds then is off for 3 seconds. The second light shines for 4 seconds then is off for four seconds. The third light shines for 5 seconds then is off for 5 seconds. All the lights have just come on. When is the first time all the lights will be off? When is the next time all the lights will come on at the same time? Here is a hundred square. <div data-bbox="1724 699 1955 909" data-label="Figure"> </div> <p>Some numbers have been shaded in blue, and some in pink. Can you notice the pattern? Why are some numbers maroon?</p> <p>Work out the patterns on the parts of the hundred squares below. Could there be more than one pattern?</p> <div data-bbox="1686 1193 1995 1326" data-label="Figure"> </div>
14		28	35											
100			175	200										













	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Place Value	Find 1000 more or less than a given number.	<ul style="list-style-type: none"> What is 1000 more than 3452? What is 1000 less than 2671? Find the value of $3891 + \bullet = 4891$ 	<ul style="list-style-type: none"> Henry says 'When I add 1000 to 4325 I only have to change 1 digit.' Is he correct? Which digit does he need to change? Phil says that he can make the number that is 1000 less than 3512 using the number cards 1, 2, 3 and 4. Do you agree? Explain your answer. Lucy thinks of a number. She says 'The number 1000 more than my number has the digits 1,2,3 and 4.The number 1000 less uses the digits 1, 3 and 4' What number is Lucy thinking of? 	<ul style="list-style-type: none"> Fill in the boxes by finding the patterns.

Place Value






































	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
	<p>Count backwards through zero to include negative numbers</p>	<ul style="list-style-type: none"> Find the missing numbers in the sequences: 5, 4, 3, 2, 1, 0, <u> </u>, -2, <u> </u> 8, 6, 4, 2, 0, <u> </u>, -4, <u> </u> 10, 6, 2, -2, <u> </u>, -10, <u> </u> What temperature is 10 degrees below 3 degrees Celsius? Fill in the empty boxes on the number line. 	<ul style="list-style-type: none"> Anna is counting down from 11 in fives. Does she say -11? Explain your reasoning. Harris is finding the missing numbers in this sequence. <u> </u>, <u> </u>, 5, <u> </u>, <u> </u>, -5 He writes down: 15, 10, 5, 0, -0, -5 Explain the mistake Harris has made. Sam counted down in 3's until he reached -18. He started at 21. What was the tenth number he said? 	<ul style="list-style-type: none"> Fred is a police officer. He is chasing a suspect on Floor 5 of an office block. The suspect jumps into the lift and presses -1. Fred has to run down the stairs, how many flights must he run down? Draw the new temperature on the thermometer after each temperature change:   <p>-In the morning it is 4 degrees, it drops 8 degrees.</p> <p>-In the afternoon it is 12 degrees Celsius, overnight it drops by 14 degrees.</p> <p>-It is 1 degree, it drops by 11 degrees.</p>

Place Value

National Curriculum Statement	All students		
	Fluency	Reasoning	Problem Solving
<p>Recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones)</p>	<ul style="list-style-type: none"> Find the value of ● in each statement. $\bullet = 3000 + 500 + 40$ $2000 + \bullet + 2 = 2702$ $\bullet + 40 + 5 = 3045$ Write the value of the underlined digit. <u>3</u>462, 51<u>2</u>4, 702<u>4</u>, 472<u>0</u> 1423 is made up of _ thousands, _ hundreds, _ tens and _ ones. 	<ul style="list-style-type: none"> Show the value of 5 in each of these numbers. 5462, 345, 652, 7523 Explain how you know. Create 5 four digit numbers where the tens number is 2 and the digits add up to 9. Order them from smallest to largest. How many different ways can you write 5340? 	<ul style="list-style-type: none"> Claire thinks of a 4 digit number. The digits add up to 12. The difference between the first and fourth digit is 5. What could Claire's number be? Use the clues to find the missing digits. <div> <div></div> <div></div> <div></div> <div></div> </div> <p>The thousands and tens digit multiply together to make 24. The hundreds and tens digit have a digit total of 9. The ones digit is double the thousands digit. The whole number has a digit total of 18.</p> There are 4 number cards, A, B, C and D. They each have a four digit number on. Using the clues below, work out which card has which number. <p>3421, 1435, 3431, 1243 A has a digit total of 10. B and C have the same thousands digit. In C and D the tens and hundreds digits add up to 7. D has the largest digit total.</p>

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Place Value	<p>Order and compare numbers beyond 1000</p>	<ul style="list-style-type: none">Write these numbers in order from smallest to largest. <p>1324, 1423, 1342, 1432, 2341</p> <ul style="list-style-type: none">Here are 4 digit cards. Arrange them to make as many 4 digit numbers as you can and order your numbers from largest to smallest. <div><div>4</div><div>0</div><div>5</div><div>3</div></div> <ul style="list-style-type: none">Using four counters in the place value grid below make as many 4 digit numbers as possible. Put them in ascending order. <table><tr><td>1000s</td><td>100s</td><td>10s</td><td>1s</td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	1000s	100s	10s	1s					<ul style="list-style-type: none">If you wrote these numbers in order from largest to smallest which number would be fourth. 5331, 1335, 1533, 5313, 5133, 3513, 3531. Explain how you ordered them.Put one number in each box so that the list of numbers is ordered largest to smallest. <table><tr><td>1</td><td>1</td><td></td><td>3</td></tr><tr><td>1</td><td></td><td>2</td><td>7</td></tr><tr><td>1</td><td>2</td><td>5</td><td></td></tr><tr><td>1</td><td></td><td>5</td><td>9</td></tr><tr><td>1</td><td>3</td><td>0</td><td></td></tr><tr><td>1</td><td></td><td>1</td><td>5</td></tr></table> <ul style="list-style-type: none">True or False: You must look at the highest place value column first when ordering any numbers.	1	1		3	1		2	7	1	2	5		1		5	9	1	3	0		1		1	5	<ul style="list-style-type: none">I am thinking of a number. It is greater than 1500 but smaller than 2000. The digits add up to 13. The difference between the largest and smallest digit is 5. What could the number be? Order them from smallest to largest.Lola has ordered five 4 digit numbers. The smallest number is 3450, the largest number is 3650. All the other numbers have digit totals of 20. What could the other three numbers be?You have 2 sets of 0-9 digit cards. You can use each card once. Arrange the digits so they are as close to the target numbers as possible.<ol style="list-style-type: none">Largest odd numberLargest even numberLargest multiple of 3Smallest multiple of 5Number closest to 5000.
		1000s	100s	10s	1s																															
																																				
1	1		3																																	
1		2	7																																	
1	2	5																																		
1		5	9																																	
1	3	0																																		
1		1	5																																	

Place Value

Place Value	National Curriculum Statement	All students										
		Fluency	Reasoning	Problem Solving								
	Identify, represent and estimate numbers using different representations.	<ul style="list-style-type: none">What number is represented below? 	<ul style="list-style-type: none">Place 2500 on the number lines below.  0 5000  2000 4000  0 10000	<ul style="list-style-type: none">Using 3 counters and the place value grid below, how many 4 digit numbers can you make? <table border="1" data-bbox="1520 458 1897 561"><tr><td>1000</td><td>100</td><td>10</td><td>1</td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	1000	100	10	1				
		1000	100	10	1							
												
		<ul style="list-style-type: none">Use place value counters to represent the following numbers: 1245, 3015, 4702	<ul style="list-style-type: none">Hamish has one counter and a place value grid. He says he can make a one, two, three, four and five digit number. Is he correct? Show this on a place value grid.	<ul style="list-style-type: none">Dan was making a 4 digit number using place value counters. He dropped two of his counters on the floor. What number could he have made? 								
		<ul style="list-style-type: none">Show 1600 on the number line.  0 2000	<ul style="list-style-type: none">Amelia says 'The number in the place value grid is the largest number you can make with 8 counters.' Do you agree? Prove your answer. <table border="1" data-bbox="1032 1136 1402 1342"><tr><td>1000</td><td>100</td><td>10</td><td>1</td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	1000	100	10	1	   				<ul style="list-style-type: none">If the number on the number line is 1788, what could the start and end numbers be? 
		1000	100	10	1							
		   										

Place Value	National Curriculum Statement	All students					
		Fluency			Reasoning	Problem Solving	
	Round any number to the nearest 10, 100 or 1000.		Nearest 10	Nearest 100	Nearest 1000	<ul style="list-style-type: none">Caroline thinks that the largest whole number that rounds to 400 is 449. Is she correct? Explain why.Henry says '747 to the nearest 10 is 740.' Do you agree with Henry? Explain why.A number rounded to the nearest 10 is 550. What is the smallest possible number it could be?	<ul style="list-style-type: none">When a number is rounded to the nearest 100 it is 200. When the same number is rounded to the nearest 10 it is 250. What could the number be?Roll three dice. Make all the three digit numbers that you can using the three digits. Round them to the nearest 100. Can each of the numbers round to the same multiple of 100? Can all of the numbers round to a different multiple of 100?Using the number cards 0-9, can you make numbers that fit the following rules?<div><div>1. When rounded to the nearest 10, I round to 20.</div><div>2. When rounded to the nearest 10, I round to 10.</div><div>3. When rounded to the nearest 1000, I round to 1000.</div><div>4. When rounded to the nearest 100, I round to 7200.</div></div>
		667					
		1274					
		2495					
					<div></div>		
		4500	5000 to the nearest 1000	5499			
			300 to the nearest 100				
			___ to the nearest 10	74			
<ul style="list-style-type: none">The school kitchen wants to order enough jacket potatoes for lunch. Potatoes come in sacks of 100. How many sacks do they need for 766 children?							



	National Curriculum Statement	All students														
		Fluency	Reasoning	Problem Solving												
Place Value	<p>Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.</p>	<ul style="list-style-type: none">Match the Arabic numeral to the correct Roman numeral.Using the table above, fill in the missing Roman numerals. <table><tr><td>15</td><td>LV</td></tr><tr><td>55</td><td>XCIII</td></tr><tr><td>39</td><td></td></tr><tr><td></td><td>XV</td></tr><tr><td>88</td><td>C</td></tr><tr><td>93</td><td>XXXIX</td></tr></table> <ul style="list-style-type: none">Convert the Roman numeral into Arabic numerals.XVII - XXIV -XIX	15	LV	55	XCIII	39			XV	88	C	93	XXXIX	<ul style="list-style-type: none">Look at the multiples of 10. Is there a pattern? What do you notice?Bobby says “In the 10 times table, all the numbers have a zero. Therefore, in Roman numerals all multiples of 10 have an X.” Is he correct? Prove it.	<ul style="list-style-type: none">Treasure hunt- Complete the trail by adding the Roman Numerals together as you go.If you know 1 – 100 in Roman numerals can you guess the numbers up to 1000?
15	LV															
55	XCIII															
39																
	XV															
88	C															
93	XXXIX															

Addition and Subtraction







National Curriculum Statement	All students												
	Fluency	Reasoning	Problem Solving										
Add numbers with up to 4 digits using the formal written methods of columnar addition where appropriate. Subtract numbers with up to 4 digits using the formal written methods of columnar subtraction where appropriate.	<ul style="list-style-type: none">Complete the calculations below using the column method. 354 + 276 = 1425 + 2031 = 3864 – 2153 = 2416 – 1732 =Fill in the missing numbers: 432 + = 770 50 + 199 + = 450 - 75 = 94 - 5000 = 5700Choose whether to solve these questions mentally or using written methods. 54 + 46 540 + 460 34 + 69 + 26 298 + 342 566 + 931 999 + 999 1547 + 2742 1999 + 364	<ul style="list-style-type: none">There are mistakes in the following calculations. Explain the mistake and then make a correction to find the correct answer. <div><div>2451 782</div><div><div>+562</div><div>-435</div></div><div>8071 353</div></div><div><div> </div>- 555 = 8 5</div><p>What is the largest possible number that will go in the rectangular box? What is the smallest? Convince me.</p>Write three calculations where you would use mental calculations and three where you would use the column method. Explain the decision you made for each calculation.	<ul style="list-style-type: none">A game to play for two people. The aim of the game is to get a number as close to 5000 as possible. Each child rolls a 1-6 die and chooses where to put the number on their grid or the other players. Once they have filled their grids then they add up their totals to see who has won.<div><table><tr><td></td><td>?</td><td>?</td><td>?</td><td>?</td></tr><tr><td>+</td><td>?</td><td>?</td><td>?</td><td>?</td></tr></table></div>A chocolate factory usually produce 1568 caramel bars on a Saturday but on a Sunday production decreases and they make 325 fewer bars. How many bars are produced at the weekend in total?All of the digits below are either a 3 or a 9. Can you work out each digit? 7338=???? + ???? 		?	?	?	?	+	?	?	?	?
		?	?	?	?								
+	?	?	?	?									

Addition and Subtraction

National Curriculum Statement	All students		
	Fluency	Reasoning	Problem Solving
<p>Estimate to check answers to a calculation</p> <p>Use inverse operations to check answers to a calculation</p>	<p>Julie has 578 stamps, Heidi has 456 stamps. How many stamps do they have altogether? Show how you can check your answer using the inverse.</p> <p>Estimate the answers to these number sentences. Show your working.</p> <p>$3243 + 4428$ $7821 - 2941$</p> <p>Check the answers to the following calculations using the inverse. Show all your working.</p> <p>$762 + 345 = 1107$ $2456 - 734 = 1822$</p>	<p>Jenny estimates the answer to $3568 + 509 \approx 4000$. Do you agree? Explain your answer.</p> <p>Grace says that $5129 - 3372 = 2257$ because: $5000 - 3000 = 2000$ $300 - 100 = 200$ $70 - 20 = 50$ $9 - 2 = 7$ so $5129 - 3372$ is 2257' Do you agree with Grace? Use an addition calculation to justify your answer.</p> <p>Always, sometimes, never. The difference between two odd numbers is odd.</p>	<p>Harry thinks of a number, he multiplies it by 3, adds 7 and then divides it by 2. How could he get back to his original number?</p> <p>If Harry starts with the number 3, write out all the calculations he will do to get back to his original number.</p>

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Addition and Subtraction	<p>Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why.</p>	<ul style="list-style-type: none">There are 2452 people at a theme park. 538 are children, how many are adults? <p>Sarah draws a diagram to help. Place a (✓) next to the correct diagram</p> <table><tr><td colspan="2">Adults</td></tr><tr><td>2452</td><td>538</td></tr></table> <table><tr><td colspan="2">2452</td></tr><tr><td>Adults</td><td>538</td></tr></table> <table><tr><td colspan="2">538</td></tr><tr><td>2452</td><td>Adults</td></tr></table> <p>Use the correct diagram to help you solve the problem.</p>	Adults		2452	538	2452		Adults	538	538		2452	Adults	<ul style="list-style-type: none">Archie and Sophie are both working out the answer to the following question: $350 + 278 + 250$ They have both used different strategies. <table><tr><td><u>Archie's method</u> 350+ 278+ 250 350+ 278= 628 628 + 250= 878 Answer = 878</td><td><u>Sophie's method</u> 350+278+250 350+250= 600 600+ 278= 878 Answer= 878</td></tr></table> <p>Which do you prefer? Explain why. Use the method you preferred to solve $320+ 458 + 180$</p>	<u>Archie's method</u> 350+ 278+ 250 350+ 278= 628 628 + 250= 878 Answer = 878	<u>Sophie's method</u> 350+278+250 350+250= 600 600+ 278= 878 Answer= 878	<ul style="list-style-type: none">Alice is trying to complete a sticker book. It needs 350 stickers overall. She has 134 in the book and a further 74 ready to stick in. How many more stickers will she need?A supermarket has 1284 loaves of bread at the start of the day. During the day, 857 loaves are sold and a further 589 loaves are delivered. How many loaves of bread are there at the end of the day?John is having a garden party. He will need to make 412,250 sandwiches in total. He makes 28,000 tuna, 51,000 cheese, 84,500 ham and 75,025 egg. He decides to make the rest cucumber. How many cucumber sandwiches will there be?
		Adults																
2452	538																	
2452																		
Adults	538																	
538																		
2452	Adults																	
<u>Archie's method</u> 350+ 278+ 250 350+ 278= 628 628 + 250= 878 Answer = 878	<u>Sophie's method</u> 350+278+250 350+250= 600 600+ 278= 878 Answer= 878																	

Multiplication and Division

National Curriculum Statement	All students		
	Fluency	Reasoning	Problem Solving
<p>Recall multiplication and division facts for multiplication tables: 2, 3, 4, 5, 8 & 10 (covered in previous year groups)</p> <p>Recall multiplication and division facts for multiplication tables: 6, 7, 9, 11 and 12 (new to year 4)</p>	<ul style="list-style-type: none"> Find the answers: $4 \times 12 =$ $5 \times 9 =$ $7 \times 8 =$ $8 \times 11 =$ Fill in the gaps: $4 \times \quad = 12$ $8 \times \quad = 64$ $32 = 4 \times \underline{\quad}$ $6 = 24 \div \underline{\quad}$ Leila has 6 bags with 5 apples in each. How many apples does she have altogether? 	<ul style="list-style-type: none">  \times  = 48 Which pair of numbers could go in the boxes? Complete these calculations: $7 \times 8 =$ $7 \times 4 \times 2 =$ $5 \times 6 =$ $5 \times 3 \times 2 =$ $12 \times 4 =$ $12 \times 2 \times 2 =$ <p>Which calculations have the same answer? Can you explain why?</p> <ul style="list-style-type: none"> True or False $6 \times 8 = 6 \times 4 \times 2$ $6 \times 8 = 6 \times 4 + 4$ <p>Explain your reasoning. Can you write the number 24 as a product of three numbers?</p>	<ul style="list-style-type: none"> Find three possible values for  and .  \times  = 24 I am thinking of 2 secret numbers where the sum of the numbers is 16 and the product is 48. What are my secret numbers? Can you make up 2 secret numbers and tell somebody what the sum and product are? How many multiplication and division sentences can you write that have the number 72 in them?

	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Multiplication and Division	<p>Use place value, known and derived facts to multiply by 0 and 1</p> <p>Use place value, known and derived facts to divide by 1</p> <p>Use place value, known and derived facts to multiply together three numbers.</p>	<ul style="list-style-type: none"> Fill in the missing numbers: $\square \times 1 = 13$ $12 \times 0 = \square$ $3 \times 2 \times \square = 18$ Holly has 1 box of 12 eggs, how many eggs does she have? Sally has 0 boxes of 12 eggs, how many eggs does she have? Write these two questions as multiplication sentences. 	<ul style="list-style-type: none"> Always, sometimes, never An even number that is divisible by 3 is also divisible by 6. Harvey has written a number sentence. $13 \times 0 = 0$ He says, 'I can change one number in my number sentence to make a brand new multiplication.' Is he correct? Which number should he change? Explain your reasoning. 	<ul style="list-style-type: none"> Write the number 30 as the product of 3 numbers. Can you do it in different ways? Try to reach the target number below by multiplying three of the numbers together. Cross out any numbers you don't use. <p>Target number: 144</p> <div> <div>1</div> <div>5</div> <div>3</div> <div>0</div> <div>6</div> <div>8</div> </div>

Multiplication and Division


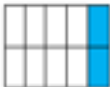




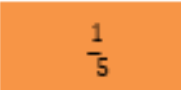


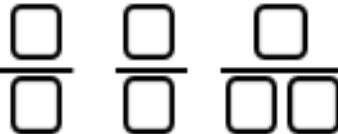

National Curriculum Statement	All students		
	Fluency	Reasoning	Problem Solving
Recognise and use factor pairs and commutativity in mental calculations.	<ul style="list-style-type: none"> $7 \times 5 = \blacksquare = 5 \times \blacksquare$ Find the missing numbers $12 \times 6 = 6 \times \underline{\quad}$ $2 \times 3 \times 5 = \quad \times 5$ $2 \times 7 \times 5 = \quad \times 5$ 13×12 can be solved by using factor pairs, eg $13 \times 3 \times 4$ or $13 \times 2 \times 6$. What factor pair could you use to solve 17×8? 	<ul style="list-style-type: none"> Fill in the missing numbers $25 \times 3 = \square = \square \div \square$ Use factor pairs to solve 15×8. Is there more than one way you can do it? Multiply a number by itself and then make one factor one more and the other one less. What do you notice? Does this always happen? Eg $4 \times 4 = 16$ $6 \times 6 = 36$ $5 \times 3 = 15$ $7 \times 5 = 35$ Try out more examples to prove your thinking. 	<ul style="list-style-type: none"> Place $<$, $>$, or $=$ in these number sentences to make them correct: $50 \times 4 \blacksquare 4 \times 50$ $4 \times 50 \blacksquare 40 \times 5$ $200 \times 5 \blacksquare 3 \times 300$ The school has a singing group of more than 12 singers but less than 32. They sing together in different ways. Sometimes they sing in pairs and sometimes in groups of 3, 4 or 6. Whatever size groups they are in, no one is left out and everyone is singing. How many singers are there in the school choir?

	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Multiplication and Division	Multiply two digit and three digit numbers by a one digit number using formal written layout.	<ul style="list-style-type: none"> $57 \times 5 =$ $324 \times 6 =$ Sahil has 45 packets of sweets. Each packet has 6 sweets in it. How many sweets does he have altogether? 	<ul style="list-style-type: none"> Penny says a two digit number multiplied by a one digit number will always give a two digit answer. Is she correct? Justify your answer. Find the mistake that has been made in the calculation below. Explain and correct it. $\begin{array}{r} 47 \\ \times \quad 8 \\ \hline 3256 \end{array}$ <ul style="list-style-type: none"> What number goes in the missing box? Convince me. $3 \square \times 4 = 140$	<ul style="list-style-type: none"> What could the numbers in the multiplication be? Every digit is different. $??? \times 3 = ????$ Miss Wood orders some new whiteboard pens for Year 5 and 6. There are 160 children in Year 5 and 6. If she orders 6 boxes of 27 pens, will she have enough? Show your calculation. In one month, Charlie read 814 pages in his books. His mum read 4 times as much as Charlie which was 184 pages more than Charlie's dad. How many pages did they read altogether? Use a bar model to help.



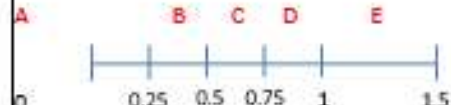
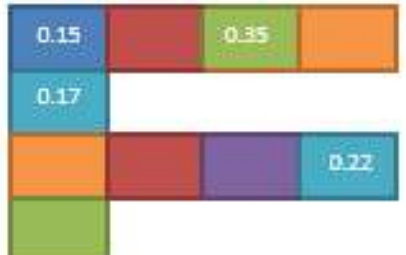
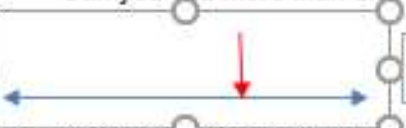
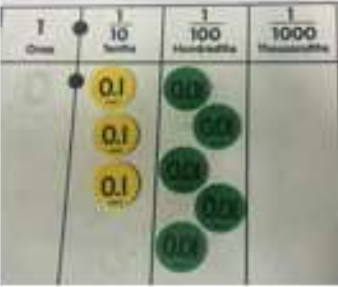
ADD DIVISION
Take from Y5




	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
Multiplication and Division	<p>Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit</p> <p>Solve integer scaling problems</p> <p>Solve harder correspondence problems such as n objects are connected to m objects.</p>	<ul style="list-style-type: none"> Harry buys 6 chocolate bars, one chocolate bar costs 54p. How much does Harry spend? <ol style="list-style-type: none"> Write a number sentence to represent the problem. Solve the problem. 	<ul style="list-style-type: none"> Miss Smith estimates $399 \times 60 = 240000$. Was she right to do that? Explain why. In a box there are red and yellow cubes. For every 5 red cubes there are 3 yellow cubes. Hannah says 'If I have more than 10 red cubes, I will definitely have more than 10 yellow cubes.' Do you agree? Convince me. 	<ul style="list-style-type: none"> An ice cream sundae is made from one scoop of ice cream, one topping and one sauce. How many different ice cream sundaes can be created from 5 different flavours of ice cream, 3 different toppings and 4 different sauces?

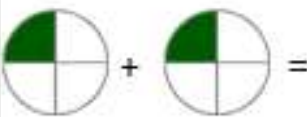
Fractions

National Curriculum Statement	All students		
	Fluency	Reasoning	Problem Solving
<p>Recognise and show, using diagrams, families of common equivalent fractions.</p>	<ul style="list-style-type: none"> Complete the statements: <div>  $\frac{\quad}{8} = \frac{1}{4}$ </div> <div>  $\frac{2}{\quad} = \frac{\quad}{5}$ </div> <div>  $\frac{\quad}{3} = \frac{4}{\quad}$ </div> <ul style="list-style-type: none"> $\frac{1}{2}$ is equivalent to 2 quarters. Write and draw three more fractions that are equivalent to a half. Draw diagrams to show fractions that are equivalent to $\frac{4}{8}$ 	<ul style="list-style-type: none"> A pizza is cut into 8 slices. Zara says, "If I take half of the pizza, and my brother takes 4 slices, we will both have the same amount." Is she correct? Convince me by using a diagram. Look at the three pictures. What's the same and what's different? <div>    </div> <ul style="list-style-type: none"> Two paper strips are ripped. Which paper strip was originally the longest? Explain your answer. <div>   </div>	<ul style="list-style-type: none"> Harry says, "$\frac{3}{4}$ is always the same as $\frac{6}{8}$." Jenny says, "$\frac{3}{4}$ is equivalent to $\frac{6}{8}$ but isn't always the same amount." <p>Use diagrams to show and prove your answer.</p> <ul style="list-style-type: none"> Use the digit cards to fill in the boxes below. <div>  </div> <div>  </div> <ul style="list-style-type: none"> Print the square below several times on a sheet. Children investigate the different ways they can show $\frac{1}{2}$ <div>  </div>

Fractions

National Curriculum Statement	All students		
	Fluency	Reasoning	Problem Solving
<p>Count up and down in hundredths</p> <p>Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.</p>	<ul style="list-style-type: none"> Use the number line to count from 0.05 to 0.12. How many steps did you take?  <ul style="list-style-type: none"> Count up from 0 on the number line to find the value of the missing amounts.  <ul style="list-style-type: none"> Continue the sequences: <p>2.45, 2.46, 2.47, _____, _____</p> <p>_____, _____, _____, _____, _____</p> <p>4.32, 4.31, 4.30, _____, _____</p>	<ul style="list-style-type: none"> Convince me that 4.27 is halfway between 4.22 and 4.32. Write down a fraction that could go in each section of the number line.  <ul style="list-style-type: none"> Jasper says, "If I multiply ten by ten I get one hundred so if I multiply tenths by ten I get hundredths." Do you agree? Explain your answer, use a place value grid to help. 	<ul style="list-style-type: none"> Fill in the gaps to find the missing numbers.  <ul style="list-style-type: none"> If the arrow is pointing to 4.56, what could the start and end numbers be? Can you find more than one option?  <ul style="list-style-type: none"> Amber is counting up in hundredths, she has dropped three counters. Write down the number Amber could have made and the next four numbers she would have said. How many different ways can you solve the problem? 

National Curriculum Statement	All students		
	Fluency	Reasoning	Problem Solving
<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>	<ul style="list-style-type: none"> Find: $\frac{2}{5} \text{ of } 45$ $\frac{3}{8} \text{ of } 24$ Emily buys a box of 24 chocolates. She eats $\frac{1}{4}$ of the chocolates and her Mum eats $\frac{1}{3}$. How many chocolates are left? George and Grace have ordered lemonade. Grace has a small lemonade which is 250ml. George has a large lemonade which is $\frac{4}{10}$ more than a small. How many ml does George have? If George only drinks half of his lemonade and Grace drinks three quarters of her lemonade, who drinks the most? Show your working. 	<ul style="list-style-type: none"> The school kitchen needs to buy potatoes for lunch. A large bag has 200 potatoes and a medium bag has $\frac{3}{5}$ of a large bag. <p>The school cook says, "I need 150 potatoes so I will have to buy a large bag." Is she correct? Explain your reasoning.</p> <ul style="list-style-type: none"> True or False <p>To find $\frac{3}{8}$ of a number, divide by 3 and multiply by 8. Convince me.</p> <ul style="list-style-type: none"> The two squares below are $\frac{2}{6}$ of a rectangle. Can you draw the rest of the rectangle? Can you do it more than one way? 	<ul style="list-style-type: none"> These three squares are $\frac{3}{4}$ of a whole shape.  <p>How many different shapes can you draw that could be the complete shape?</p> <ul style="list-style-type: none"> Jenny has 42 stickers. She gives $\frac{3}{7}$ of her stickers to Paul and $\frac{2}{6}$ of her stickers to Beth. How many stickers do they each have? Work out the answer to each question to make it through the maze. 

National Curriculum Statement	All students		
	Fluency	Reasoning	Problem Solving
Add and subtract fractions with the same denominator.	<ul style="list-style-type: none"> Calculate:  $\frac{1}{4} + \frac{1}{4} =$ <p>Use diagrams and bar modelling to solve the problems below.</p> $\frac{3}{8} + \frac{2}{8} = \quad \frac{1}{6} + \frac{2}{6} =$ $\frac{7}{8} - \frac{2}{8} = \quad \frac{5}{7} - \frac{2}{7} =$ <ul style="list-style-type: none"> Sarah eats $\frac{3}{8}$ of a bunch of grapes; Tom eats $\frac{2}{8}$ of a bunch of grapes. What fraction of the grapes have they eaten altogether? Fill in the box: $\frac{5}{8} + \boxed{} = \frac{7}{8}$ $\frac{5}{6} - \boxed{} = \frac{1}{6}$	<ul style="list-style-type: none"> The answer is $\frac{4}{9}$; what is the question? True or False $\frac{5}{12} + \frac{3}{12} = \frac{8}{12}$ $\frac{5}{12} + \frac{3}{12} = \frac{8}{24}$ $\frac{5}{12} + \frac{3}{12} = \frac{4}{6}$ <p>Explain your reasoning.</p> <ul style="list-style-type: none"> Describe the pattern: $\frac{7}{10} - \frac{1}{10} = \frac{6}{10}$ $\frac{6}{10} - \frac{1}{10} = \frac{5}{10}$ <p>Can you continue the pattern?</p>	<ul style="list-style-type: none"> Caroline chooses two fractions and subtracts the smaller one from the bigger one. Her answer was $\frac{1}{6}$. What fractions could Caroline have chosen? How many ways can you find to do it? Find three ways to complete each calculation. $\frac{\boxed{}}{\boxed{}} + \frac{\boxed{}}{\boxed{}} = \frac{8}{9}$ $\frac{\boxed{}}{\boxed{}} - \frac{\boxed{}}{\boxed{}} = \frac{8}{9}$ <ul style="list-style-type: none"> Dan has 2 pieces of rope. One is $\frac{2}{8}$ of the whole rope and one is $\frac{2}{4}$. Dan adds $\frac{4}{8}$ to the first rope and $\frac{1}{4}$ to the second rope. Which rope is longer? Do you notice anything about the lengths of the ropes? $\frac{2}{8} \quad \text{—————}$ $\frac{2}{4} \quad \text{—————}$

National Curriculum Statement

All students

Fluency

- Complete the table:

Fraction	Decimal
$\frac{6}{10}$	
	0.2
$\frac{37}{100}$	
	0.68

- Match the fraction to the correct decimal.

$\frac{6}{10}$	6.1
$\frac{6}{100}$	0.06
$\frac{53}{100}$	0.6
	0.53
	5.3

- Here is a tens frame with 3 squares shaded, what fraction does this represent? Place 0.1 place value counters on top of the shaded squares to find the decimal equivalent.

Reasoning

- Give the children 2 ones in place value counters.



Explain that we are going to try and divide them by 10. Show we need to exchange our 2 ones for 20 tenths.

Now when we share between 10 groups we have 0.2. This proves that $2/10 = 0.2$.

Can the children use this to prove that $5/10 = 0.5$, $4/10 = 0.4$ etc.

- Helen, Adam and Sam are talking about which fractions are equivalent to 0.4.

Adam: $\frac{4}{10}$ is equivalent to 0.4

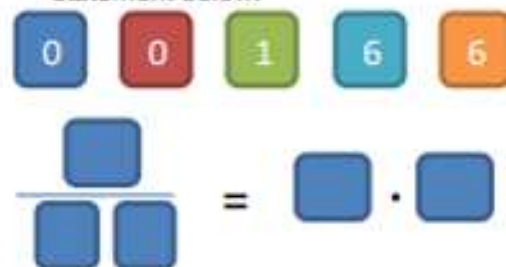
Helen: $\frac{40}{100}$ is equivalent to 0.4

Sam: $\frac{1}{4}$ is equivalent to 0.4

Who is correct? Justify your answer.

Problem Solving

- Use the five digit cards to complete the statement below.



- Fill in the missing numbers below so the fractions and decimals are equivalent in each row of the table. One has been done for you.

Fraction	Decimal
$\frac{35}{100}$	0.35
$\frac{4}{100}$	0.2
$\frac{1}{10}$	0.4
$\frac{50}{100}$	0.

Recognise and write decimal equivalents of any number of tenths or hundredths.

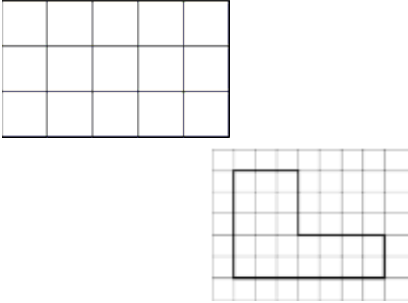
National Curriculum Statement	All students										
	Fluency	Reasoning	Problem Solving								
Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$...	<ul style="list-style-type: none">Fill in the table:<table><tr><th>Fraction</th><th>Decimal</th></tr><tr><td>$\frac{1}{2}$</td><td></td></tr><tr><td>$\frac{1}{4}$</td><td></td></tr><tr><td>$\frac{3}{4}$</td><td></td></tr></table>	Fraction	Decimal	$\frac{1}{2}$		$\frac{1}{4}$		$\frac{3}{4}$		<p>What could you use to show him?</p> <p>Harry: $\frac{1}{2} = 1.2$</p> <p>1</p> <ul style="list-style-type: none">Explain how you know $0.5 = \frac{1}{2}$	<ul style="list-style-type: none">Use the number cards 0 - 5 below to complete the number sentence.<div><div><div></div><div></div></div><div></div><div><div></div><div></div></div></div><div>Which number did you have left over?</div>
	Fraction	Decimal									
$\frac{1}{2}$											
$\frac{1}{4}$											
$\frac{3}{4}$											
	<ul style="list-style-type: none">Match the fraction to the correct decimal.<div><div><div>$\frac{3}{4}$</div><div>$\frac{1}{2}$</div><div>$\frac{1}{4}$</div></div><div><div>0.34</div><div>0.3</div><div>0.75</div><div>0.5</div><div>0.4</div><div>0.25</div></div></div>Write the fraction that matches to each decimal.<div>0.25 = 0.5 = 0.75 =</div>	<ul style="list-style-type: none">Harry has written the decimal equivalents to a half and a quarter. Can you explain to him what he has done wrong? What could you use to show him? <p>Harry: $\frac{1}{2} = 1.2$</p> <p>$\frac{1}{4} = 1.4$</p>	<ul style="list-style-type: none">Complete the number sentence below using the number cards 0 - 5:<div><div><div></div><div></div></div><div></div><div><div></div><div></div></div></div><div>Which number did you have left over? Was it the same number as before?</div><div>Which extra number would you need to make a number sentence that used your left over number?</div>								

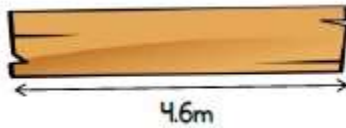
National Curriculum Statement	All students																													
	Fluency	Reasoning	Problem Solving																											
Find the effect of dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths.	<ul style="list-style-type: none">Use a place value flip chart to make a two digit number. Multiply the number by 10, which direction did the digits move? Start with the same 2 digit number. Divide the number by 10, which direction did the digits move this time? What number have you got? Repeat multiplying and dividing by 100.Complete the table below:<table><tr><th>Starting number</th><th>÷ 10</th><th>÷ 100</th></tr><tr><td>34</td><td></td><td></td></tr><tr><td>57</td><td></td><td></td></tr><tr><td>60</td><td></td><td></td></tr><tr><td>7</td><td></td><td></td></tr></table>Junaid is dividing 2 by 10. Draw where his counters will end up and write the answer.<div><table><tr><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Ones</td><td>Tenths</td><td>Hundredths</td><td>Thousandths</td></tr><tr><td><div><div></div><div></div></div></td><td></td><td></td><td></td></tr></table></div>	Starting number	÷ 10	÷ 100	34			57			60			7			1	1	1	1	Ones	Tenths	Hundredths	Thousandths	<div><div></div><div></div></div>				<ul style="list-style-type: none">I divide a number by 100 and the answer is 0.5. What number did I start with?True or False A two digit number divided by 10 always gives an answer with one decimal place. E.g. $52 \div 10 = 5.2$ Prove it.Jessie and Tao are dividing numbers by 10 and 100. They start with the same 1 digit number. Jessie divides by 10 and says, "My number has 0 ones and 4 tenths". Tao divides by 100 and says, "My number has 0 ones, 0 tenths and 4 hundredths." What number did they start with? Prove it.	<ul style="list-style-type: none">Kainat has multiplied a number by 100. Her answer is between 40 and 45. What number could she have multiplied? How many possibilities can you find?Use the number cards below to fill in the missing digits.<div><div><div>0 ÷ 10 =</div><div></div></div><div><div>4 × 10 = 3</div><div></div></div><div><div>8 - 100 = 1 6</div><div></div></div><div><div>5. 2 × 100 = 7</div><div></div></div></div> <div><div><div>9</div><div>7</div><div>3</div><div>2</div><div>1</div></div><div><div>8</div><div>4</div><div>9</div><div>5</div><div>6</div></div></div>
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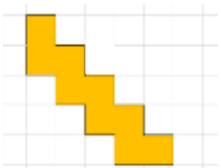
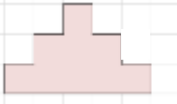

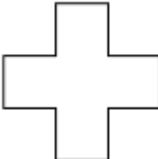
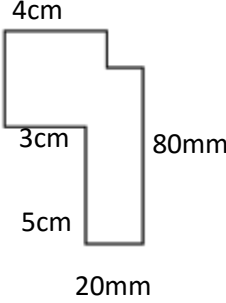


Decimals



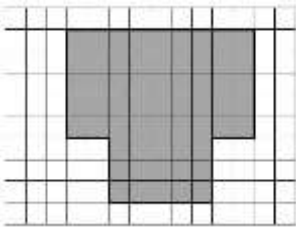
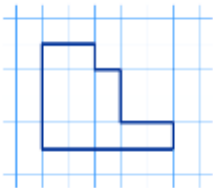
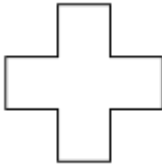
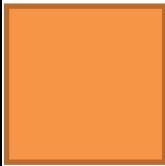

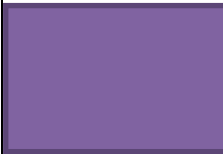
National Curriculum Statement	All students						
	Fluency	Reasoning	Problem Solving				
Round decimals with one decimal place to the nearest whole number.	<ul style="list-style-type: none">Round the following numbers to the nearest whole number: 3.2 = 4.7 = 25.5 =Write all the decimals with one decimal place that round to 32 to the nearest whole number.Sort the numbers below into the table rounding each of them to the nearest whole number. <div><div>23.1</div><div>23.2</div><div>24.4</div><div>23.5</div><div>23.4</div><div>24.3</div><div>23.9</div><div>22.8</div><div>22.5</div></div> <table><tr><td>Rounds to 23</td><td>Rounds to 24</td></tr><tr><td></td><td></td></tr></table>	Rounds to 23	Rounds to 24			<ul style="list-style-type: none">Which decimals below round to 4 when rounded to the nearest whole number? 4.2, 3.8, 4.5, 3.5, 4.7 <p>Explain your reasoning.</p> <ul style="list-style-type: none">Two numbers with one decimal place both round to 23. The numbers add up to 46. What could the two numbers be? Explain your thinking.Write a list of five instructions of how to round decimals with one decimal place to the nearest whole number.	<ul style="list-style-type: none">Roll two dice. Using the numbers make two numbers with one decimal place. Round the numbers to the nearest whole number. How many combinations of the two dice can you find that would round to the same whole number? <div><div></div><div></div></div> <ul style="list-style-type: none">Using the digit cards below, how many numbers can you make with one decimal place that would round to 45. You can only use each card once per number. <div><div>3</div><div>4</div><div>4</div><div>5</div><div>6</div></div> <p>Can you make more or less numbers that round to 46?</p> <p>If you were given this number card:</p> <div><div>7</div></div> <p>How many numbers could you make that round to 47?</p>
	Rounds to 23	Rounds to 24					

National Curriculum Statement	All students																																				
	Fluency	Reasoning	Problem Solving																																		
<p>Compare numbers with the same number of decimal places up to two decimal places.</p> <p>Order numbers with the same number of decimal places up to two decimal places.</p>	<ul style="list-style-type: none">Fill in $<$ and $>$ in the boxes below: <div>3.56 <input type="text"/> 3.62</div><div>7.21 <input type="text"/> 7.12</div><div>3.45 <input type="text"/> 3.42</div>Order the decimals below from smallest to largest. <div><div>3.51</div><div>3.48</div><div>3.52</div><div>3.57</div><div>3.42</div><div>3.43</div></div>Laura has £3.45, Hamid has £4.35. Who has the most money?	<ul style="list-style-type: none">Serena says, "When I am comparing numbers with 2 decimal places, the number with the largest number of hundredths is the largest number." Is she correct? Explain your thinking.The numbers below are ordered from smallest to largest. Circle the mistake. 4.52, 4.63, 4.62, 4.65, 4.68 Can you replace the mistake with a number that would fit in the sequence?Put a digit in each box to order the decimals in ascending order.<table><tr><td>2</td><td>●</td><td>4</td><td></td></tr><tr><td>2</td><td>●</td><td></td><td>6</td></tr><tr><td></td><td>●</td><td>5</td><td>3</td></tr><tr><td>3</td><td>●</td><td>0</td><td></td></tr><tr><td>3</td><td>●</td><td></td><td>9</td></tr></table>	2	●	4		2	●		6		●	5	3	3	●	0		3	●		9	<ul style="list-style-type: none">How many different numbers with 2 decimal places can you make using the grid below and four counters? One has been done for you.<table><tr><td>10s</td><td>1s</td><td>0.1s</td><td>0.01s</td></tr><tr><td>●</td><td></td><td>●</td><td>●●</td></tr></table><p>10.12</p><p>Can you order your numbers in descending order?</p>Three children have numbers with two decimal places. They each give a clue to their number. Can you work out which clue matches to which child?<table><tr><td>Billie</td><td>Shaukat</td><td>Nita</td></tr><tr><td>3.15</td><td>4.14</td><td>3.13</td></tr></table><div>My number has a one in the tenths column.</div><div>My number has the same amount of ones and hundredths.</div><div>My number is the largest number.</div>	10s	1s	0.1s	0.01s	●		●	●●	Billie	Shaukat	Nita	3.15	4.14	3.13
	2	●	4																																		
2	●		6																																		
	●	5	3																																		
3	●	0																																			
3	●		9																																		
10s	1s	0.1s	0.01s																																		
●		●	●●																																		
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	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
	Find the area of rectilinear shapes by counting squares.	<ul style="list-style-type: none"> Find the area of these shapes:  <ul style="list-style-type: none"> A rectangle measures 5 squares long by 3 squares wide. What is the area of the shape? Max is building a patio made of 24 square slabs. He has torn the paper with his design on. What would his complete design look like? Draw it on the grid. 	<ul style="list-style-type: none"> A shape has the area of 17cm^2. Could the shape be a rectangle? Explain your answer. A rectangle measures 5 squares by 3 squares. Amy says 'The area must be 8 squares' Do you agree? Explain your thinking. The area of any rectangle has an even number of squares. Do you agree? Prove it. 	<ul style="list-style-type: none"> A fourteen sided shape has an area of eight squares. Draw the shape on squared paper. How many shapes can you draw that have an area of 8 square centimetres?

	National Curriculum Statement	All Students		
		Fluency	Reasoning	Problem Solving
Measures	Convert between different units of measure: height/length (km, m, cm, mm)	<ul style="list-style-type: none"> Complete the statements: $100\text{cm} = \underline{\hspace{2cm}}\text{m}$ $1\text{km} = \underline{\hspace{2cm}}\text{m}$ $1500\text{ml} = \underline{\hspace{2cm}}\text{l}$ $3.5\text{kg} = \underline{\hspace{2cm}}\text{g}$ Use the word and number cards to complete the statements. To change from cm to mm $\underline{\hspace{2cm}}$ by $\underline{\hspace{2cm}}$ To change from kg to g $\underline{\hspace{2cm}}$ by $\underline{\hspace{2cm}}$ To change from ml to l $\underline{\hspace{2cm}}$ by $\underline{\hspace{2cm}}$ <div> <div>multiply</div> <div>10</div> <div>100</div> <div>divide</div> <div>1000</div> </div> Are these statements true or false? $1000\text{m} = 1\text{km}$ $1000\text{cm} = 1\text{m}$ $1000\text{ml} = 1\text{l}$ $1000\text{g} = 1\text{kg}$ $1000\text{mg} = 1\text{g}$ 	<ul style="list-style-type: none"> The answer is 475 metres. What is the question? Hamid says 'To convert kilometres to metres, add three zero's on to the end of the number.' Eg $2\text{km} = 2000\text{m}$ Do yo u agree with Hamid? Explain why. Laura is 2.72m tall. She is 59cm taller than her sister. How tall is her sister? Give your answer in centimetres. Put these amounts in order starting with the largest. Half of 5 litres Quarter of 8 litres 700 ml Explain your thinking. 	<ul style="list-style-type: none"> A plank of wood is 4.6m long.  Two lengths are cut from the wood. <div>350cm</div> <div>2 – m</div> How much wood is left? <ul style="list-style-type: none"> James and Sita do a sponsored walk for charity. They walk 1.2km altogether. James walks double the amount that Sita walks. How far does Sita walk? They each raise 75p for every 100m they walk. How much money do they each make? James _____ Sita _____

<div>Measures</div>	<p>Measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m</p>	<ul style="list-style-type: none"> Find the perimeter of the rectangle. <div> <div>8cm</div> <div>3cm</div>  </div> <div> <div>80m</div> <div>30m</div>  </div> <div> <div>0.8m</div> <div>30cm</div>  </div> <div> <div>80m</div> <div>30m</div>  </div> <ul style="list-style-type: none"> Draw and find the perimeter of the shapes in centimetres. <div>   </div>	<ul style="list-style-type: none"> The perimeter of a square is 16cm. How long is each side? <div>  </div> <ul style="list-style-type: none"> Here is a rectilinear shape. All the sides are the same length and are a whole number of centimetres. <div>  </div> <p>Which of these lengths could be the perimeter of the shape?</p> <p>48cm 36cm 80cm 120cm 66cm</p> <ul style="list-style-type: none"> Find the missing lengths on the shape and calculate the perimeter. <div>  </div>	<ul style="list-style-type: none"> The perimeter of the rectangle is 33m. <div> <div>3.6m</div>  <div>length</div> </div> <p>What is the length of the rectangle?</p> <ul style="list-style-type: none"> The width of a rectangle is 2 metres less than the length. <p>The perimeter of the rectangle is between 20m and 30m.</p> <div>  </div> <p>What could the dimensions of the rectangle be?</p> <p>Draw all the rectangles that fit these rules. Use 1cm=1m.</p>
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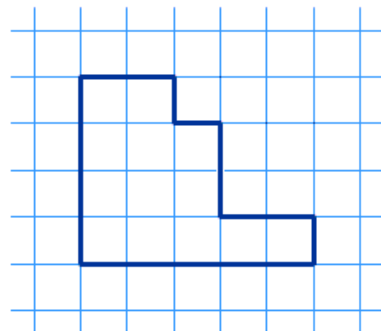
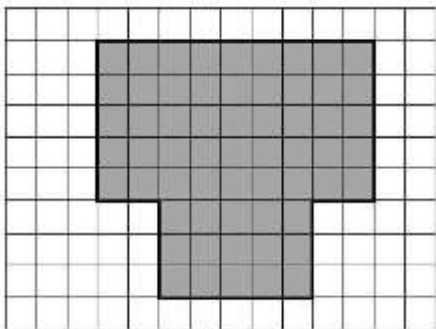
<div>Measures</div>	<p>Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</p>	<ul style="list-style-type: none"> Find the perimeter of the rectangle. <div> <div>60mm</div>  <div>2cm</div> </div> <div> <div>0.6m</div>  <div>20cm</div> </div> <ul style="list-style-type: none"> Draw and find the perimeter of the shapes in centimetres. <div>  </div> <div>  </div>	<ul style="list-style-type: none"> The perimeter of this shape is 48cm. All the sides are equal. How long is each side? <div>  </div> <ul style="list-style-type: none"> Here is a square. Each of the sides is a whole number of metres. <div>  </div> <p>Which of these lengths could be the perimeter of the shape?</p> <p>24m, 34m, 44m, 54m, 64m, 74m</p> <ul style="list-style-type: none"> Always, sometimes, never <p>When all the sides of rectangle are whole odd numbers, the perimeter is even.</p> <p>Prove it.</p>	<ul style="list-style-type: none"> The perimeter of the rectangle is 45m. The length of the rectangle is 15.5m. <div>  </div> <p>What is the width of the rectangle?</p> <ul style="list-style-type: none"> The width of a rectangle is 4 metres less than the length. <p>The perimeter of the rectangle is between 30m and 40m.</p> <div>  </div> <p>What could the dimensions of the rectangle be?</p> <p>Draw all the rectangles that fit these rules. Use 1cm=1m.</p>
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<div>Measures</div>	<div>Convert between different units of measure: height/length (km, m, cm, mm)</div>	<ul style="list-style-type: none"> Complete the statements: _____cm = 2 metres 4km = _____m _____ml = 3.5 litres _____kg = 7500g Convert the measures to the same unit and then complete the calculation. 3km + <input type="text"/> = 6500m 800m - <input type="text"/> = 0.3km Can you draw rectangles to represent the calculations below? 4cm + 30mm + 30mm + 4cm= 85mm + 85mm + 2.5cm + 2.5cm= Complete each calculation. What have you found? 	<ul style="list-style-type: none"> The answer is 550 metres. What is the question? Tilly says 'To convert millimetres to centimetres, take one zero off the end of the number.' Eg 30 millimetres = 3 centimetres Do you agree with Tilly? Explain why. What is the same and what's different about these measures? Half of 3000 metres Quarter of 6 kilometres 150,000 centimetres Explain your thinking. 	<ul style="list-style-type: none"> This shape has a perimeter of 5500m. Three of the sides are given in kilometres. Three of the sides are given in metres. <div data-bbox="1635 319 2038 654"> </div> Can you fill in each measurement to make the sides add up to the correct perimeter? Can you fill in the sides in more than one way?
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Measures

Find the area of rectilinear shapes by counting squares.

- Find the area of these shapes:



- Draw a rectangle that is 6 centimetres long and 4 centimetres wide.

What is the area of the rectangle?

- A shape has the area of 31cm^2 . Could the shape be a rectangle? Explain your answer.

- True or False?**

The area of any square has an even number of squares.

Prove it.

- Always, sometimes, never**

The bigger the perimeter of a shape, the bigger the area.

Convince me.

- A twelve sided shape has an area of nine squares. Draw the shape on squared paper.


- How many shapes can you draw that have an area of 12 square centimetres?

- Jack has drawn a shape that has 6 sides. All the angles are right angles. It has an area of more than 12 centimetre squares and less than 16 centimetre squares.

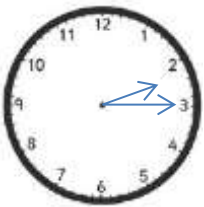




Draw a shape that Jack could have drawn.

Can you find any others?



Measurement - Time

National Curriculum Statement	All students		
	Fluency	Reasoning	Problem Solving
Convert between different units of measure e.g. hour to minute.	<ul style="list-style-type: none"> Fill in the gaps: 1 hour = minutes 1 minute = seconds 2 hours = minutes __ minutes = 180 seconds Katie goes swimming for 1 hour and 42 minutes. How many minutes was she swimming for? Kelsey is 7 and a half years old. How many months old is she? 	<ul style="list-style-type: none"> James says, "To convert hours to minutes, I multiply the number of hours by 60" Is he correct? Can you explain why? Mark is doing a sponsored silence. Mark says, "If I am silent for five hours at 10p per minute I will raise 50 pounds." Is he correct? Prove it. True or False 4 minutes is shorter than 250 seconds. Show your working. 	<ul style="list-style-type: none"> Five friends are running a race. Their times are below. Can you work out in what order they finished? Emily: 1 minute 32 seconds Simon: 95 seconds Lucy: 1 minute 28 seconds Tony: 89 seconds Carrie: 100 seconds What was the difference between the fastest time and the slowest time? Match the cards together to make a loop where correct answers are next to each other. 

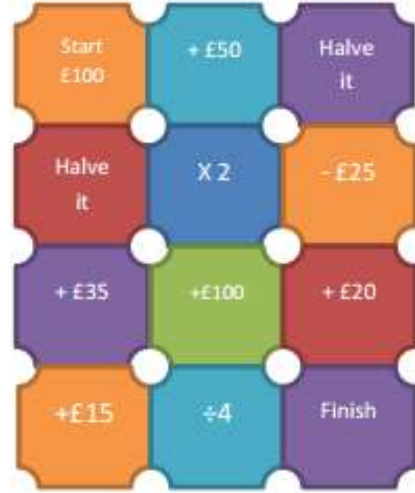

Measurement - Time

National Curriculum Statement	All students		
	Fluency	Reasoning	Problem Solving
<p>Read, write & convert time between analogue and digital 12 and 24 hour clocks.</p>	<ul style="list-style-type: none"> Read and write the following times in <ol style="list-style-type: none"> 24 hour clock 12 hour clock analogue <p>e.g. Quarter past 2 in the afternoon:</p> <ol style="list-style-type: none"> 14:15 2:15pm <p>c)</p>  <ul style="list-style-type: none"> Work out the problems and then draw the hands in the correct position on the analogue clocks. <p>Paul sets off to London at 11:05am, the journey took 3 hours and 50 minutes. Draw the time he arrived on the clock.</p> <p>Clare finishes school at 15:25, she had her tea 1 hour and 40 minutes later. Draw the time she ate tea on the clock.</p>	<ul style="list-style-type: none"> Sam says 'To change any time after midday from 12 hour to 24 hour clock just add 12 to the minutes'. Is he correct? Can you explain his thinking? Laura is writing the time 21:35 on the analogue clock below.  <ul style="list-style-type: none"> Can you make her time even more accurate? Explain your reasoning. Three children are meeting in the park. <p>Sam says we are meeting at 14:10.</p> <p>Laura says 'We are meeting ten to two.'</p> <p>Emma says 'We are meeting at 2:10pm'</p> <ul style="list-style-type: none"> Will all the children meet at the same time? Convince me. 	<ul style="list-style-type: none"> Can you match the analogue clocks to the digital time even though one of the hands is missing?  <p>14:45 8:15 20:55</p> <ul style="list-style-type: none"> On a 24 hour digital clock, over 24 hours, how many times does the number 4 appear?  <ul style="list-style-type: none"> Does the number 4 appear more or less on a 12 hour digital clock or a 24 hour digital clock? Can you match the time dominoes together so that the adjoining times are the same? 

National Curriculum Statement	All students																										
	Fluency	Reasoning	Problem Solving																								
Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	<ul style="list-style-type: none">Match the times; fill in the missing times in the empty boxes. <table><tr><td>11:30pm</td><td>18:30</td></tr><tr><td>6:30pm</td><td></td></tr><tr><td>2:30pm</td><td>14:30</td></tr><tr><td>11:30am</td><td>23:30</td></tr><tr><td></td><td>08:30</td></tr><tr><td>8:30am</td><td>05:30</td></tr></table> <ul style="list-style-type: none">A full day at school is 8 hours and 35 minutes. How long is this in minutes?Sarah is 7 years and 2 months old. Harry is 85 months old. Who is the oldest? Show your working.	11:30pm	18:30	6:30pm		2:30pm	14:30	11:30am	23:30		08:30	8:30am	05:30	<ul style="list-style-type: none">Hannah is travelling from Halifax to London by car; it takes 4 hours 11 minutes. Sam is travelling from Halifax to London by train; it takes 214 minutes. Who will have the quicker journey? Explain your answer.Phil says, "6420 seconds is longer than 107 minutes." Do you agree? Explain your reasoning.James says, "In a year with 365 days, there is one month that has an exact number of weeks." Which month has an exact number of weeks? Does it have an exact number every year?	<ul style="list-style-type: none">Tara is going to Blackpool for a day. She has 4 hours 30 minutes there and can choose 3 activities to do while she is there. <p>Which activities could she choose to do? How much time would they fill? How many combinations of activities can you find?</p> <table><tr><td>Donkey rides</td><td>30 minutes</td></tr><tr><td>Theme Park</td><td>110 minutes</td></tr><tr><td>Blackpool Tower</td><td>1 hour 20 minutes</td></tr><tr><td>Swimming pool</td><td>1 hour 45 minutes</td></tr><tr><td>Amusements</td><td>1 hour 10 minutes</td></tr><tr><td>Sea life Centre</td><td>125 minutes</td></tr></table> <ul style="list-style-type: none">It is the 6th of November. Can you work out when Jan, Tim and Saira's birthdays are using the clues below? <div>Jan: "It is my birthday in 3 weeks and 2 days."</div> <div>Tim: "It is my birthday in 96 hours."</div> <div>Saira: "It was my birthday 2 weeks and 72 hours ago."</div>	Donkey rides	30 minutes	Theme Park	110 minutes	Blackpool Tower	1 hour 20 minutes	Swimming pool	1 hour 45 minutes	Amusements	1 hour 10 minutes	Sea life Centre	125 minutes
	11:30pm	18:30																									
6:30pm																											
2:30pm	14:30																										
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National Curriculum Statement	All students																				
	Fluency	Reasoning	Problem Solving																		
Solve simple measure and money problems involving fractions and decimals to two decimal places.	<ul style="list-style-type: none">A box of chocolates costs £1.25. Hannah and Thomas want to buy 4 boxes of chocolates. If Hannah pays £2.45, how much must Thomas pay?  <ul style="list-style-type: none">Emma has five pounds. She spends a quarter of her money. How much does she have left?  <ul style="list-style-type: none">In the sale I bought some clothes for half price. Jumper £14 Scarf £7 Hat £2.50 T-shirt £6.50 How much would the clothes have been full price? How much did I spend altogether? How much did I save?	<ul style="list-style-type: none">A class is planning a trip to a theme park. Adult tickets cost £8. Children's tickets cost £4. How many tickets could they buy for £100. How many different ways can you find to do this?Hazel buys a teddy bear for £6.00, a board game for £4.00, a cd for £5.50 and a box of chocolates for £2.50. She has some discount vouchers. She can either get £10.00 off or half price on her items. Which voucher would save her more? Explain your thinking.Yasmin is choosing a new mobile phone. One phone costs £5.50 per month. The other costs £65.50 for a year. Which is the better deal over a year?	<ul style="list-style-type: none">Kim bought a chocolate bar and a drink. The cost of them both together is in one of the boxes below. <table border="1"><tr><td>£1.85</td><td>75p</td><td>£1.56</td></tr><tr><td>£1.74</td><td>£2.25</td><td>£1.00</td></tr><tr><td>£1.80</td><td>80p</td><td>£2.10</td></tr><tr><td>£1.44</td><td>£3.06</td><td>£1.50</td></tr><tr><td>£1.20</td><td>£1.25</td><td>£1.60</td></tr><tr><td>£1.45</td><td>90p</td><td>£1.27</td></tr></table> <p>Using these five clues can you work out which price in the boxes is correct?</p> <ol style="list-style-type: none">You need more than three coins to make this amount.There would be change when using the most valuable coin to buy them.The chocolate bar cost more than 50pYou could pay without using any copper coinsThe chocolate bar cost exactly half the amount of the drink.	£1.85	75p	£1.56	£1.74	£2.25	£1.00	£1.80	80p	£2.10	£1.44	£3.06	£1.50	£1.20	£1.25	£1.60	£1.45	90p	£1.27
	£1.85	75p	£1.56																		
£1.74	£2.25	£1.00																			
£1.80	80p	£2.10																			
£1.44	£3.06	£1.50																			
£1.20	£1.25	£1.60																			
£1.45	90p	£1.27																			

Money

	National Curriculum Statement	All students		
		Fluency	Reasoning	Problem Solving
	Estimate, compare and calculate different measures, including money in pounds and pence.	<ul style="list-style-type: none"> Order the following amounts placing $<$ or $>$ between them. £25.62, 2657p, 2567p. Robbie buys a toy car for 99p, a yoyo for £1.05, three sweets for 30p each and a chocolate bar for 47p. Does he have enough money to pay with a £5 note? Martina buys a jacket for 2165p and a t shirt for £9.99. Hamid buys a coat for £32.00. Who spends the most? 	<ul style="list-style-type: none"> Which would you rather have, three quarters of £2.40 or one quarter of £6? Explain your reasoning. Which would you rather have, five 50p coins or 12 20p coins? Explain why. 1 chocolate bar costs the same as 4 sweets. 4 sweets cost the same as 2 stickers. 1 sticker costs 30p. How much does the chocolate bar cost? 	<ul style="list-style-type: none"> Choose a route through the money maze. You can only go on each square once. Can you find the route that makes the highest amount of money? Which route makes the lowest amount of money?  <ul style="list-style-type: none"> Lola and Jamal are sharing some coins. Lola gets half the amount of Jamal. Which coins could they each get? 

Geometry: Angles

Identify acute and obtuse angles and compare and order angles up to two right angles by size.

- Label the angles below as **acute**, **right** or **obtuse**.

a)



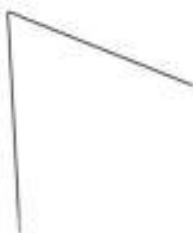
b)



c)



- Order the angles from smallest to largest. Label them **acute**, **right** or **obtuse**.



- Here is an angle on a protractor.

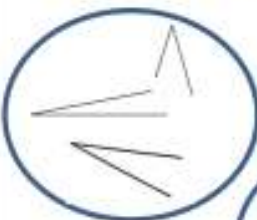


Sam says 'The angle is obtuse because it is more than 90° '

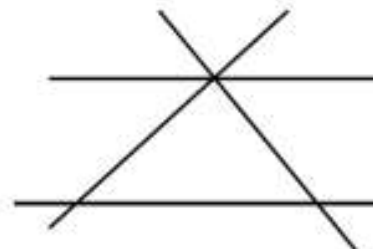
Gita says 'The angle is acute because it is less than 90° '

Who is correct?
Explain your thinking.

- Tim is sorting angles.
Can you label the groups?
Can you circle the odd one out?



- How many acute and obtuse angles can you find in the diagram below?



Label the acute angles (a) and the obtuse angles (o).

- Pair the lines below to make an acute angle, a right angle and a obtuse angle.
You can't change the orientation of the lines.

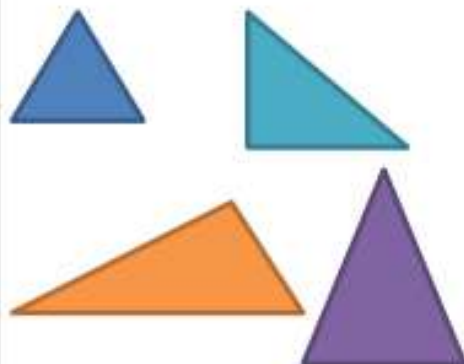


Can you do it in more than one way?

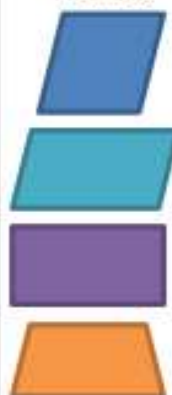
Geometry: Shapes

Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.

- Label each of the triangles **isosceles**, **scalene** or **equilateral**.



- Match the quadrilaterals to their names.



rectangle

rhombus

parallelogram

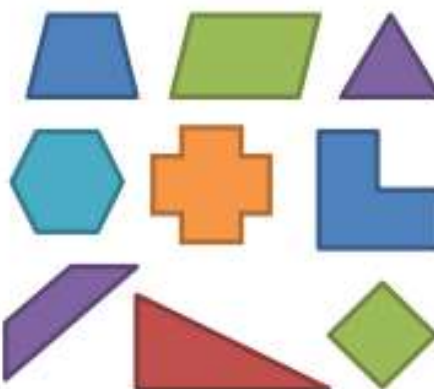
trapezium

Write down the properties of each of the shapes.

- Look at these shapes. What's the same? What's different? Can you name the shapes?



- Can you sort the shapes below into different groups? Ask other children to see if they can label your groups and work out how you have sorted your shapes.



- Can you add one more shape to each of your groups?
- Can you name each shape?
- Can you sort your shapes in a different way?

- Here is a square. Inside the square is an equilateral triangle. The perimeter of the triangle is 54cm. Find the perimeter of the square.



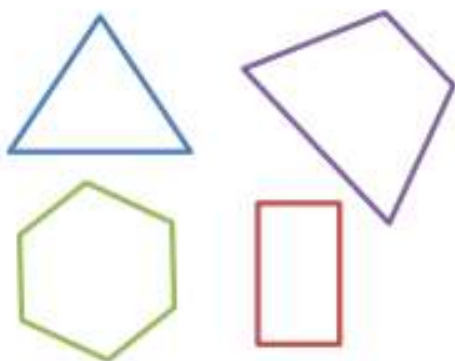
- Can you fill in each of the boxes below with a different shape?

Can you name each shape?

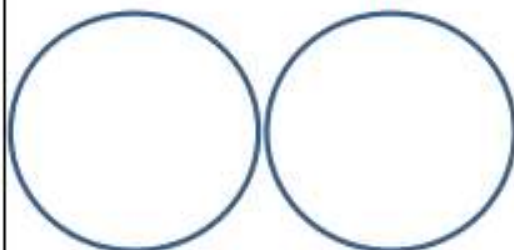
	Has a right angle	Has no equal sides
Has 4 or more sides		
Has three sides		
Has an obtuse angle		

Identify lines of symmetry in 2D shapes presented in different orientations.

- Find lines of symmetry in the shapes.

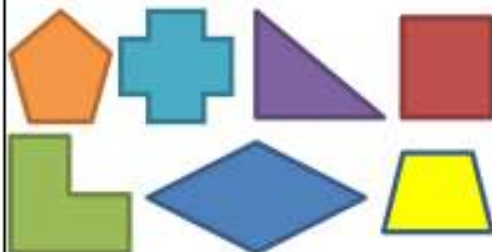


- Sort the shapes into the groups.



1 line of symmetry

2 or more lines of symmetry



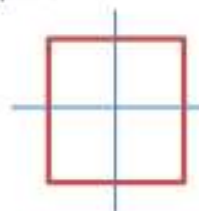
Can you add one more shape to each group?

- Always, sometimes, never**

Triangles have one line of symmetry.

Prove your answer using drawings.

- Jasmine has drawn the lines of symmetry on the square.

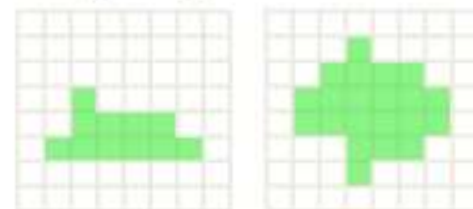


Has she found them all?
Explain how you could check.

- Hamza says 'Lines of symmetry are always straight.'

Is Hamza right?
Convince me.

- Colour in one more square on each pattern to create a shape with a line of symmetry.



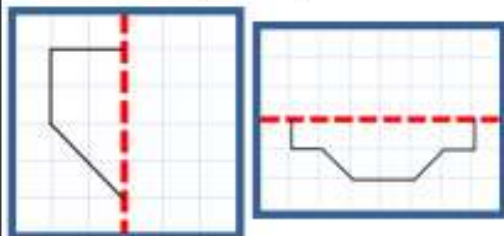
- Can you place one shape in each of the boxes below?

	Has an acute angle	Has two or more lines of symmetry
Has 4 sides		
Has three or less sides		
Has a right angle		

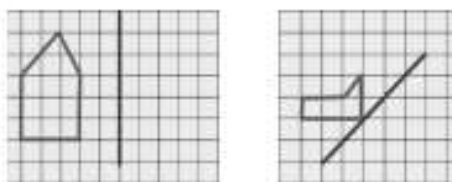


Complete a simple symmetric figure with respect to a specific line of symmetry.

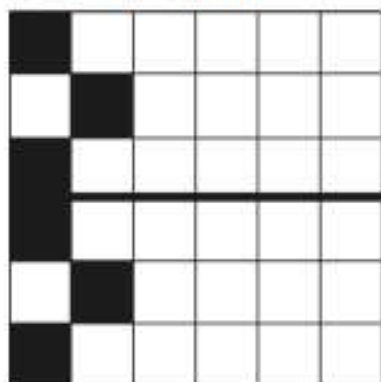
- Complete the shape with respect to the line of symmetry.



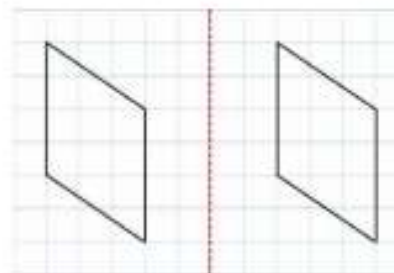
- Reflect the shape in the mirror line



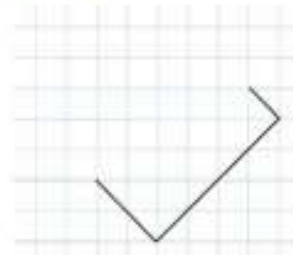
- Shade in the squares to complete a symmetrical pattern.



- Prove that the shape below is not reflected correctly.



- Complete the shape to make a square and draw on the mirror line.

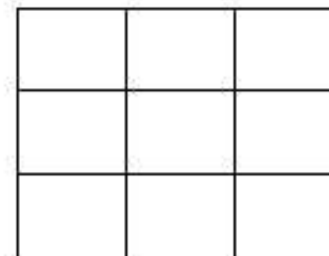


- Caroline thinks the shape will have 5 sides altogether when it is reflected in the mirror line.

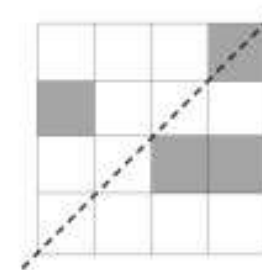
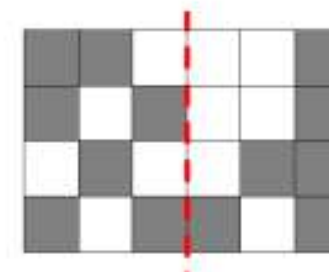


Do you agree?
Prove it.

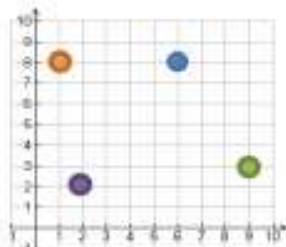
- How many different ways can you colour the squares below to create different symmetrical designs?



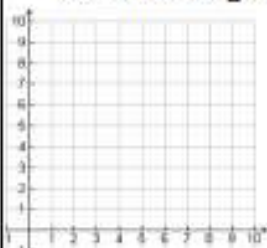
- Colour in extra squares to complete a symmetrical pattern.



- Write the co-ordinates of the coloured dots.



- Draw the shapes on the co-ordinates given.

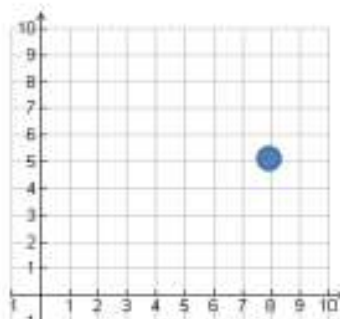


- Write the co-ordinates of the ships on the map.



Describe positions on a 2D grid as coordinates in the first quadrant.

- Point A is marked on the grid.



Henry says that point A is at (5,8)
Aisha says that point A is at (8,5)

Who is correct? Can you explain what mistake one of the children has made?

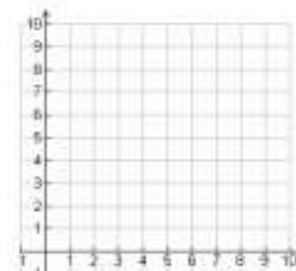
- Junaid says:

You can say either number first in co-ordinates, it doesn't matter.

Do you agree with Junaid?

Explain why.

- Can you place the letters below on the grid by following the rules?

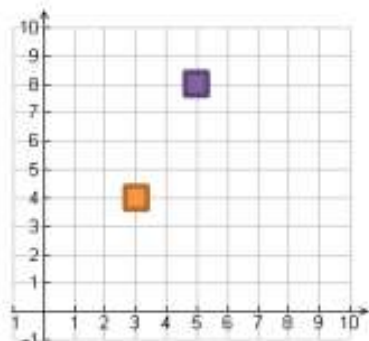


The letters at (1,1), (1,2) and (1,3) are all symmetrical about a vertical line.
The letter at (8,3) is not symmetrical and is made of straight and curved lines.
The letters at (1,1), (2,1) and (5,1) are symmetrical about a horizontal line.
The letter at (5,1) consists of just straight lines.
The letters at (5,3) and (2,0) consist of just curved lines.
The letters at (5,3), (5,2) and (5,1) are consecutive in the alphabet.
The letters at (0,2) and (1,2) are at the two ends of the alphabet.

Position and Direction

Describe movements between positions as translations of a given unit to the left/ right and up/ down.

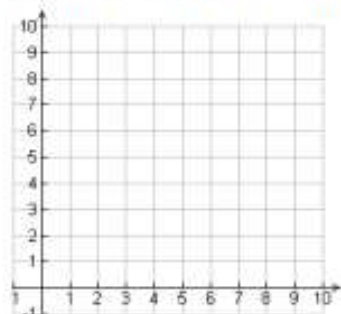
- Describe the movement of the orange square to the purple square.



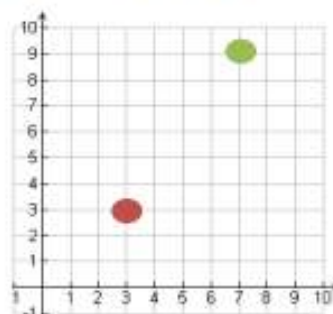
- The coordinates of point A are (3,2). Point B is 2 square left and 7 squares up from point A.

What are the co-ordinates of Point B?

Draw Point A and Point B on the grid.



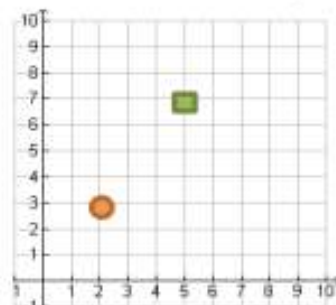
- Describe the movement from the green circle to the red circle.



Describe the movement from the red circle to the green circle.

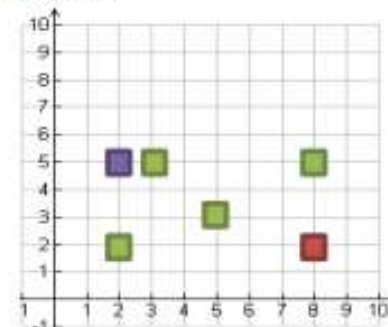
What do you notice about your descriptions?

- Keeley has described the movement of the orange circle to the green square as 3 squares to the left and 4 squares down.

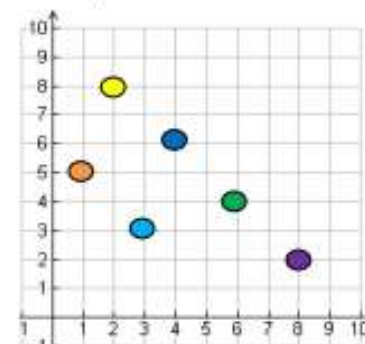


Do you agree? Explain why.

- Write a set of instructions to move the red square to the purple square without going through any green squares.



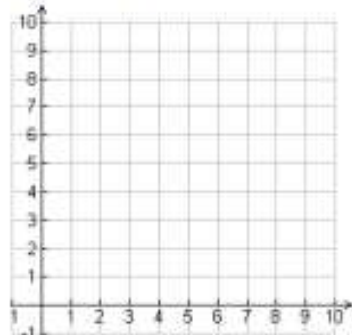
- Write a set of instructions to move from the yellow circle to the purple circle while passing through all the other coloured circles. Compare your instructions with a friend. How are they the same? How are they different?



Plot specified points and draw sides to complete a given polygon.

- Plot the points on the grid below to make a 2d shape.

(2,9) (2,2) (5,9) (5,2)



Tom draws a shape on the same grid using these co-ordinates.

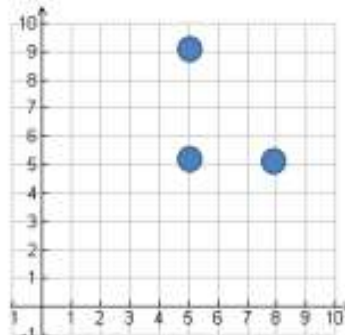
(2,9) (2,6) (5,9) (5,6)

What is the same and what is different about your shape and Tom's shape?

- Write co-ordinates for a friend to plot that make the following shapes:
 - Triangle
 - Trapezium
 - Rhombus

- Henry draws three points on a grid.

Aisha says 'You can make a square if you mark another point at (8,10)'



Do you agree with Aisha?
Explain your answer.

- Here are the co-ordinates of corners of a rectangle which has width of 4.

(7, 2) and (14, 2)

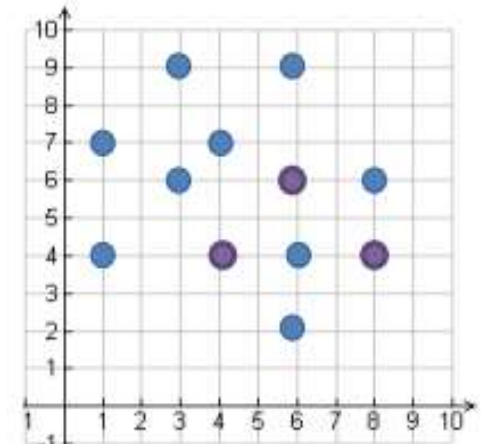
What are the other two co-ordinates?

- Plot the points given and join them to draw a letter of the alphabet.

Start: (2, 2) → (2, 8) → (4, 8)
→ (4, 6) → (6, 6) → (6, 8) → (8, 8)
→ (8, 2) → (6, 2) → (6, 4)
→ (4, 4) → (? , ?)

What is the final co-ordinate needed to complete the letter?

- There are 12 points marked on the grid that are all corners of squares. Can you work out where the 4 squares are?
The purple dots are corners of more than one square.



Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.

- Here is a graph showing how a group of children travel to school.



- How many children get the bus to school?
- What is the most/ least popular way to get to school?

- Produce your own bar chart showing how the children in your class travel to school.
- Here is a table with data from a bakery on how many cakes they sold each day. Choose a way to represent this data.

M	T	W	Th	F	Sa	Su
34	43	46	55	72	86	76

- Here are two graphs showing the amount of precipitation and the temperature in Hawaii. What's the same and what's different?

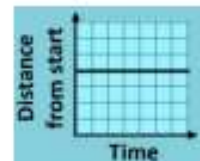


- Draw a graph that has both the rainfall and the maximum temperature on it.
- How could you complete the graph?
- How could you place both scales on one graph?

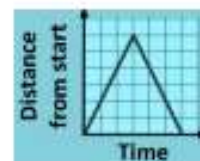
What do you notice about the different seasons in Hawaii? When is the most/least rainfall?

Choose your own place in the world and find out the rainfall and temperature. Plot it on a bar graph and time graph.

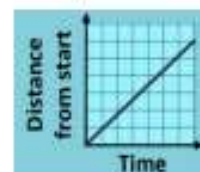
- Can you match the graph to the activity?



A bike travels away from home at a steady speed



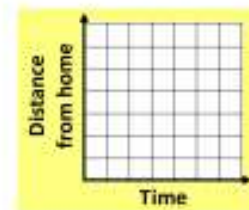
A car remains parked in a car park.



A runner runs at a steady pace to the end of a track and then runs back.

- Draw a distance time graph to show the following story.

A man goes out for a walk with his dog. He stops at the shop to buy a paper. He walks home quickly.



Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

- Use the graph to answer the questions below.




How many more children walk to school than go on a bike?
 How many children were asked altogether?
 How many children come to school on a car or a bus?


- Use the data in the table to answer the questions below.

Colour	Number of cars
Black	9
Red	10
Silver	7
Blue	14

How many cars were seen altogether?
 Half of the cars were _____.
 7 more cars were _____ than _____.
 24 cars were _____ and _____.
 Three quarters of the cars were _____ and _____.

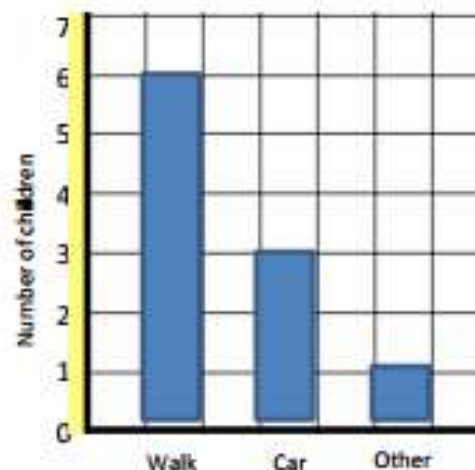
- Class 2 are doing a survey. They ask 20 children this question. "How do you travel to school?" Some results are shown in the pictogram.

Method of travel	Number of children
Walk	
Car	
Other	

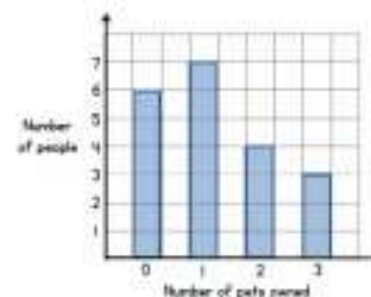
 = 2 children

The number of children who travel by car is half the number who walk to school. Complete the pictogram.

- Here is a bar graph showing the same data as above. Explain what mistake has been made.



- Year 4 are doing a survey. They ask 20 people the question 'How many pets do you own?' The results are shown in this bar chart.



How many pets in total do these people own?

- Here is a graph with a result missing. Use the clues to complete the graph.



- Find the difference between the February and September temperatures.
- Divide this by the difference between the November and March temperatures.
- Now, add the difference between the April and October temperatures.

