

Numeracy Framework: Counting and Partitioning (B1) – 3 weeks

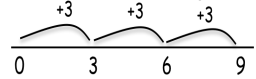
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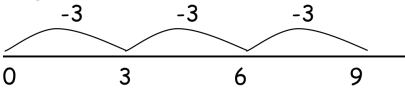
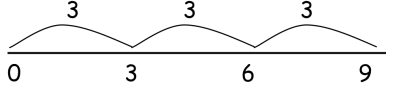
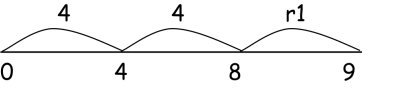
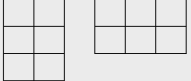
Class: Year 3	Year: 2009/10	Term: Autumn 1	Week 3 to 5: (21 st Sep to 9 th Oct)	Teacher:
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Prior learning – check that children can already:	Learning objectives:	Vocabulary:
<ul style="list-style-type: none"> • Solve one-step problems in the context of numbers, measures or money • Check solutions make sense in the context of the problem • Recognise patterns in numbers or shapes and predict and test with examples • Recall addition and subtraction facts for each number to at least 10, all pairs with totals to 20 and all pairs of multiples of 10 with totals up to 100 • Recall multiplication facts for the 2, 5 and 10 times-tables and the related division facts • Recognise multiples of 2, 5 and 10 up to 100 • Describe the properties of and sort common 2-D and 3-D shapes and recognise them in pictures • Identify and draw lines of symmetry • Identify right angles in shapes and as quarter turns 	<ul style="list-style-type: none"> • Represent the information in a puzzle or problem using numbers, images or diagrams; use these to find a solution and present it in context, where appropriate using £.p notation or units of measure • Identify patterns and relationships involving numbers or shapes, and use these to solve problems • Derive and recall all addition and subtraction facts for each number to 20, sums and differences of multiples of 10 and number pairs that total 100 • Derive and recall multiplication facts for the 2, 3, 4, 5, 6 and 10 times-tables and the corresponding division facts; recognise multiples of 2, 5 or 10 up to 1000 • Use knowledge of number operations and corresponding inverses, including doubling and halving, to estimate and check calculations • Relate 2-D shapes and 3-D solids to drawings of them; describe, visualise, classify, draw and make the shapes • Sustain conversation, explaining or giving reasons for their views or choices • Use a set-square to draw right angles and to identify right angles in 2-D shapes; compare angles with a right angle; recognise that a straight line is equivalent to two right angles 	<ul style="list-style-type: none"> • problem, solution, calculate, calculation, operation, inverse, answer, method, explain, reasoning, pattern, predict, estimate, approximate • add, subtract, multiply, divide, group, sum, total, difference, plus, minus, double, halve, multiple, product • pound (£), penny/pence (p), note, coin, units of measurement and their abbreviations • triangle, square, rectangle, quadrilateral, pentagon, hexagon, octagon, circle, semicircle, cube, cuboid, pyramid, cone, cylinder, prism, sphere, hemisphere, face, edge, vertex/vertices, surface, solid, side straight, curved, diagram, right-angled • line of symmetry, mirror line, reflection, symmetrical, reflective symmetry

Weekly homework includes children learning their times-tables and number bonds (differentiated to the numbers they are up to), which they are then tested on once a week

When HA are working on MA work without listening to my model a TA will check they understand it and are doing it correctly

	OBJECTIVES	TEACHING ACTIVITIES (20 mins)	INDEPENDENT WORK (20 mins)	Plenary / HOMEWORK (10 mins)	Success Criteria Must/should/could <i>I can:</i>	Evaluation
M	<p>Mental: Derive and recall all addition facts for each number to 20</p> <p>Main: Use knowledge of number operations and corresponding inverses to check calculations</p> <p>B1001</p>	<p>Mental: Display addition number bonds to 20 on IWB. In partners children practice questioning each other. I choose one pupil to stand up, look away and answer 3 questions. House point if they get them all right.</p> <p>Main: Explain the term inverse, and how addition and subtraction are inverse. Model how to use this knowledge to check calculations are correct. e.g. you can check $13 - 5 = 8$ by $8 + 5 = 13$ Emphasise the need to use the inverse calculation to actually check the first answer, not just write out the wrong answer as an inverse and move on e.g. $7 - 5 = 4$ $4 + 5 = 7$</p>	<p>Use addition to check subtraction involving:</p> <p>LA – 1-digit and 2-digit numbers</p> <p>MA – 2-digit numbers</p> <p>HA – 2-digit and 3-digit numbers and decimals to one decimal place</p>	<p>On WBs children come up with 4 number sentences using 3 numbers e.g. $3 + 8 = 11$, $8 + 3 = 11$, $11 - 3 = 8$ and $11 - 8 = 3$ HA can come up with additional related facts e.g. $30 + 80 = 110$</p>	<p>Use addition to check subtraction involving:</p> <p>M: 1-digit and 2-digit numbers</p> <p>S: 2-digit numbers</p> <p>C: 3-digit numbers and decimals</p>	
Tu	<p>Mental: Derive and recall all subtraction facts for each number to 20</p> <p>Main: Understand multiplication as repeated addition</p> <p>B1002</p>	<p>Mental: Display subtraction number bonds to 20 on IWB. In partners children practice questioning each other. I choose one pupil to stand up, look away and answer 3 questions. House point if they get them all right.</p> <p>Main: G + T do HA work without listening to my model. LA and MA sit on carpet Model how to do multiplication as repeated addition, with jumps</p> <div style="text-align:center;"> $\begin{array}{r} 1) 3 + 3 + 3 = 9 \\ \hline \end{array}$  </div> <p>on a number line $\begin{array}{r} 3 \times 3 = \\ \hline \end{array}$</p> <p>Give LA number lines to help them with the jumps Check G + T were OK with HA work G + T come to carpet and I explain how to use repeated addition in the same way for numbers with decimal places</p>	<p>Multiplication as repeated addition with:</p> <p>LA – 2, 3, 4, 5, 6 and 10</p> <p>MA – 3, 4, 6 and 7</p> <p>HA – 6, 7, 8 and 9</p> <p>Ext – numbers with decimal places</p>	<p>On WBs children come up with 3 other number sentences from one I give them e.g. $2 + 2 + 2 = 6$; they come up with $3 \times 2 = 6$, $3 + 3 = 6$, $2 \times 3 = 6$, for several questions</p>	<p>Understand multiplication as repeated addition with:</p> <p>M: 2, 3, 4, 5, 6 and 10</p> <p>S: 6, 7, 8 and 9</p> <p>C: numbers with decimal places</p>	

<p>W</p>	<p>Mental: Derive and recall all addition and subtraction facts for each number to 20</p> <p>Main: Understand division as repeated subtraction or repeated addition</p> <p>B1003</p>	<p>Mental: Display addition and subtraction number bonds to 20 on IWB. In partners children practice questioning each other. I choose one pupil to stand up, look away and answer 3 questions. House point if they get them all right.</p> <p>Main: G + T do HA work without listening to me or using number lines Explain how division is the inverse of multiplication so we can do division as repeated subtraction. Model how to division with jumps on a number line, as repeated subtraction e.g.</p> <p>$9 \div 3 = 3$</p>  <p>Explain that it is actually easier to count up in jumps to the number you are trying to get to e.g.</p> <p>$9 \div 3 = 3$</p>  <p>Show what happens when there is a remainder. Emphasise how the remainder cannot be bigger than the number you are dividing by e.g. $9 \div 4 = 1 \text{ r}5$ (5 bigger than 4)</p> <p>$9 \div 4 = 2 \text{ r}1$</p>  <p>Model for G + T how to use an empty number line with division with decimals</p>	<p>Division as repeated subtraction with:</p> <p>LA – 2, 5 and 10</p> <p>MA – 3, 4, and 6</p> <p>Ext – 2, 5 and 10, with remainders</p> <p>HA – 7, 8 and 9 with remainders</p> <p>G + T – numbers with decimal places (U.t ÷ .t)</p>	<p>On WBs children come up with 3 other number sentences from one I give them e.g. $6 \div 2 = 3$, they come up with $6 - 2 - 2 - 2 = 0$, $6 \div 3 = 2$, $6 - 3 - 3 = 0$</p>	<p>Understand division as repeated subtraction with:</p> <p>M: 2, 5 and 10</p> <p>S: 3, 4 and 6, and with remainders</p> <p>C: numbers with decimal places</p>	
<p>TH</p>	<p>Mental: Derive and recall all sums and differences of multiples of 10</p> <p>Main: Understand multiplication through arrays</p> <p>B1004</p>	<p>Mental: 'Who want to be a Mathematician' with multiples of 10.</p> <p>Main: HA do MA work without listening to my model Model how to draw arrays to answer multiplication problems and derive multiplication facts from arrays Once you have drawn the array you can count the squares to answer the multiplication question</p>  <p>e.g. 3×2</p> <p>Explain the terms row and column. Explain how each array can be drawn in 2 different ways that show the same thing. LA and MA start work. Check HA were OK with MA work Model for HA how to use known multiplication facts to work out unknown ones e.g. $4 \times 4 = 16$, so $0.4 \times 4 = 1.6$ Revisit idea of multiplication as repeated addition to check answers are sensible e.g. does $0.4 + 0.4 + 0.4 + 0.4 = 1.6$</p>	<p>Multiplication using arrays with:</p> <p>LA – 2, 3, 4, 5 and 10</p> <p>MA – 6, 7, 8 and 9</p> <p>HA – Use known multiplication facts to calculate similar decimals e.g. $4 \times 4 = 16$, so $0.4 \times 4 = 1.6$</p>	<p>In house groups have competition to get into array quickest e.g. I say 3×2 the children need to physically arrange themselves into 3 rows and 2 columns</p>	<p>Understand multiplication as arrays with:</p> <p>M: 2, 3, 4, 5 and 10</p> <p>S: 6, 7, 8 and 9</p> <p>C: use known multiplication facts to calculate unknown decimals</p>	

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M	<p>Mental: Derive and recall multiplication facts for the 2, 3, 4, 5, 6 and 10 times-tables and the corresponding division facts</p> <p>Main: Understand division as the inverse of multiplication</p> <p>B1006</p>	<p>Mental: Play 'Around the World' with differentiated questions on Multiplication and division</p> <p>Main: Revise the term inverse meaning opposite. HA attempt dividing with remainders without listening to my model Model how to use multiplication facts to solve division problems. e.g. $10 \div 2 = ?$ can become $2 \times ? = 10$ Model how you can tell a calculation has a remainder if it is not a multiple of the number you are dividing by e.g. $10 \div 3$; you know there will be a remainder because 10 is not in the 4 times-tables Emphasise how the remainder cannot be bigger than the number you are dividing by e.g. $10 \div 4 = 1 \text{ r}6$ (6 bigger than 4) Model how to solve calculations with remainders e.g. $10 \div 4 = 2 \text{ r}2$ 4, 8, 42 – cross out 12 because it is bigger than 10. How many fours were there in 10 (2); and then how many do you need to count on from 8 to get to 10 (2). LA and MA start work. Model for G + T how to express quotients as fractions. Explain what a quotient is (the answer to a division question) Model how to turn a remainder into a fraction by:</p> <ul style="list-style-type: none"> • making the divisor (the number you are dividing by) the bottom number • making the remainder the top number <p>e.g. $13 \div 2 = 6 \frac{1}{2}$</p>	<p>Use multiplication facts to solve division problems with:</p> <p>LA – 2, 3, 5 and 10 times tables</p> <p>MA – 3, 4, and 6 times tables</p> <p>Ext – 2, 3, 5 and 10 times tables, with remainders</p> <p>G + T – express quotients with remainders as fractions and answer word problems that require this skill</p>	<p>On IWB derive from a division problem e.g. $6 \div 2 = 3$, $6 \div 3 = 2$, $2 \times 3 = 6$, $3 \times 2 = 6$</p>	<p>M: use multiplication to divide without remainders</p> <p>S: divide with remainders</p> <p>C: express quotients with remainders as fractions</p>	
Tu	<p>Mental: Derive and recall multiplication facts for the 2, 3, 4, 5, 6 and 10 times-tables and the corresponding division facts</p> <p>Main: Use knowledge of</p>	<p>Mental: In ability pairs children practice by giving each other multiplication or division questions</p> <p>Main: HA attempt worksheet on undoing two-step problems without listening to my model e.g. I think of a number, double it and add 5. The answer is 35. What was my number? You subtract 5 from 35 (because it was added) and halve your answer (30) because the original number was doubled (15)</p>	<p>LA – doubles and halves of numbers to 20 and undo one-step problems</p> <p>MA – doubles and halves of doubles of multiples of 5 to 100 (e.g. 75×2), doubles of multiples of 50 to 500 (e.g. 450×2) and undo one-step</p>	<p>On WBs children make up one problem for their partner to solve. Swap boards and try to solve each other's problems.</p>	<p>M: double and halve whole numbers</p> <p>S use knowledge of inverses to undo two step problems</p> <p>C: double and halve numbers with decimals</p>	

	<p>corresponding inverses, including doubling and halving, to check calculations</p> <p>Represent the information in a puzzle or problem using numbers</p> <p>B1007</p>	<p>In Excel show some towers that are double / half the size of each other. Use unifix to show towers that are double / half the size of each other. Explain different words and symbols: $X \div 2$, $\frac{1}{2}$, double, half. Explain doubling and halving are inverses. Model how to do some examples. LA start work Model how we can use doubles we know to work out ones that we don't know e.g. $7 + 7 = 14$, so $70 + 70 = 140$ MA start work Check HA were OK with undoing two-step problems Model for HA how to double and half with decimals and how we can use doubles and halves we do know to work out ones we don't know e.g. $24 + 24 = 48$, so $2.4 + 2.4 = 4.8$ (you need to keep the decimal in the same place)</p>	<p>problems</p> <p>HA – use knowledge of inverses to undo two step problems</p> <p>G + T – doubles and halves with decimals</p>			
W	<p>Mental: Derive and recall multiplication facts for the 2, 3, 4, 5, 6 and 10 times-tables and the corresponding division facts</p> <p>Main: Use knowledge of number operations and corresponding inverses, including doubling and halving, to check calculations</p> <p>B1008</p>	<p>Mental: Play 'Gunfighters' with multiplication and division questions</p> <p>Main: revise what each of the number operations means and how to do them by changing operation only in a calculation e.g. $8 \div 4 = ?$: $8 + 4 = 12$, $8 - 4 = 4$, $8 \times 4 = 32$, $8 \div 4 = 2$. Model how to check a calculation by doing an inverse calculation. Emphasise the need to use the inverse to actually check the calculation and not just write out the wrong answer again e.g. $12 + 7 = 18$ $18 - 7 = 12$</p>	<p>LA – add and subtract 1-digit and 2-digit numbers. Multiply and divide by 2, 5 and 10.</p> <p>MA – add and subtract 2-digit and 2-digit numbers. Multiply and divide by 3, 4 and 5.</p> <p>HA – add and subtract 2-digit and 3-digit numbers. Multiply and divide by 3, 4, 6 and 7</p> <p>Ext – add, subtract, multiply and divide numbers with decimal places</p>	<p>On IWB derive as many number facts from a given fact as possible e.g. $2 \times 3 = 6$, $3 \times 2 = 6$, $6 \div 3 = 2$, $6 \div 2 = 3$, half 6 is 3, double 3 is 6, $6 - 3 = 3$, $6 - 2 = 4$, $2 + 2 = 4$, $2 + 2 + 2 = 6$, $3 + 3 = 6$.</p>	<p>M: do calculations involving all four operations</p> <p>S: correctly check calculations with an inverse calculation</p> <p>C: work with decimal numbers</p>	
TH	<p>Mental: Derive and recall multiplication facts for the 2, 3, 4, 5, 6 and 10 times-tables and the corresponding division facts</p> <p>Main: recognise</p>	<p>Mental: Play 'Who wants to be a mathematician' with multiplication and division questions</p> <p>Main: Explain what the term multiple means. Use Number grid ITP to show the relationship between multiples of 2 and 4, 3 and 6, 5 and 10. Ask pupils what rules they can find and record them on the non-IWB. Display my rules for finding multiples during independent work. LA and MA start work Explain digital roots to HA. Calculate the digital root of a</p>	<p>LA – Numbers up to 100 and multiples of 2, 5 and 10.</p> <p>MA – Numbers up to 1,000 and multiples of 2, 5, and 10.</p> <p>HA – Numbers up to 1,000 and multiples of 2, 3, 4, 5, 6 and 10</p>	<p>I say a number. Children need to write numbers on their WBs that are a multiple of the number I said e.g. I say 5, they write multiples of 5 on the WBs.</p>	<p>M: find multiples of 2, 5 and 10 up to 100</p> <p>S: find multiples of 2, 3, 4, 5, 6 and 10 up to 1,000</p> <p>C: investigate if numbers are a multiple of 3 or 6 by using their digital roots</p>	

	<p>multiples of 2, 5 or 10 up to 1000</p> <p>B1009</p>	<p>number by adding up the sum of its digits until only a single digit is left e.g. 756: $7 + 5 + 6 = 18$ $8 + 1 = 9$, so digital root of 756 is 9 and how:</p> <ul style="list-style-type: none"> • The digital root of a multiple of 3 is always 3, 6 or 9 • Any EVEN number with a digital root of 3, 6, or 9 must be a multiple of 6 	<p>Ext – investigate numbers of their own choice to see if they are a multiple of 3 or 6 by using digital roots</p>			
F	<p>Mental: Represent the information in a puzzle or problem using numbers, images or diagrams; use these to find a solution and present it in context</p> <p>Main: Use a set-square to identify right angles in 2-D shapes; compare angles with a right angle</p> <p>B1010</p>	<p>Mental: You need to measure 200ml of water. You have containers that hold 10ml, 20ml, 25ml and 75ml. Which different ways could you measure the 200ml? Children work it out on their WBs. Discuss different ways. Which would be quickest?</p> <p>Main: Explain the term 'angle' and what a right angle is. Use analogy of a crocodile's mouth:</p> <ul style="list-style-type: none"> • if the mouth is half open / half shut then it is a right-angle • if the mouth is open wide (more than halfway) it is bigger than a right angle • if the mouth is less than half open it is smaller than a right angle <p>Get children to make the 'crocodile's mouth' or angle with their hands Explain how a straight line is 180° because it is 2 right angles added together Explain how a circle is 360° because it is 4 right angles added together Model how to measure an angle using a set-square (or corner of sheet of paper if no set squares available). LA start work. Explain how angles smaller than a right angle are known as acute, and angles bigger than a right angle (up to a straight line) are known as obtuse. Introduce the term reflex. Display classification system for angles: Acute – 1° to 89° Obtuse – 91° to 179° Reflex – 181° to 359° Display worksheet and emphasise how the angle you are measuring is where the partial circle symbol is shown Model how to use a protractor by</p> <ol style="list-style-type: none"> 1) putting the cross hairs on the point where the two lines meet 2) lining up the 0° line with the horizontal line 3) looking at the correct numbers (inside or outside set of numbers) to get the angle <p>Display these steps on the IWB during independent work Model how extending the lines (with a ruler) can make it easier to measure the angle</p>	<p>LA – identify angles as right angles or being bigger / smaller than a right angle</p> <p>MA – measure and name acute, right and obtuse angles with a protractor</p> <p>HA – as MA, but also measure reflex angles</p> <p>Ext – with angles where neither line is horizontal</p>	<p>Children draw an angle on their WBs and in partners say whether it is bigger / smaller than a right angle or measure each other's angles</p>	<p>M: identify whether an angle is equal to, smaller or bigger than a right angle</p> <p>S: measure and name acute, right and obtuse angles with a protractor, always with a horizontal line</p> <p>C: also measure and name reflex angles, and those without a horizontal line</p>	

Class: Year 3	Year: 2009/10	Term: Autumn 1	Week 5: (5 th Oct to 9th Oct)	Teacher:
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	OBJECTIVES	TEACHING ACTIVITIES (20 mins)	INDEPENDENT WORK (20 mins)	Plenary / HOMEWORK (10 mins)	Success Criteria Must/should/could <i>I can:</i>	Evaluation
M	<p>Mental: Represent the information in a puzzle or problem using numbers, images or diagrams; use these to find a solution and present it in context</p> <p>Main: Relate 2-D shapes to drawings of them; describe, visualise, classify and draw the shapes</p> <p>B1011</p>	<p>Mental: You have a balancing scale and need to weigh 50g of sugar. You have lots of weights that weigh 2g, 5g, 10g or 20g. Which different ways could you measure the 50g? Children work it out on their WBs. Discuss different ways. Which would be quickest?</p> <p>Main: Display 2-D shapes poster (http://www.mathsisfun.com/shape.html) with the names of the shapes throughout lesson. Explain the following terms: straight, curved, edge, vertex/vertices, angle, right angle, regular and irregular. Children complete a table to show the properties of each shape filling it in by column from left to right, rather than by row from top to bottom as the further right in the table the more advanced the criteria. Do 'All Square' (answer - There are 31 squares in the diagram: seventeen 1 by 1, eight 2 by 2, five 3 by 3, and one 5 by 5).</p>	<p>Complete a table to show properties of 2-D shape</p> <p>Ext – problem solving activity (All Square (http://www.tes.co.uk/article.aspx?storycode=3000733) which requires systematic method to get the answer</p>	<p>Go through correct answers to independent work. Discuss relationship between number of sides, number of vertices and number of angles</p>	<p>M: name 2-D shapes</p> <p>S: identify straight and curved edges, vertices and angles</p> <p>C: identify whether a shape is regular or irregular</p>	
Tu	<p>Mental: Represent the information in a puzzle or problem using numbers, images or diagrams; use these to find a solution and present it in context</p> <p>Main: Relate 3-D solids to drawings of them; describe, visualize and classify them.</p> <p>Identify patterns and relationships involving numbers or shapes, and use these to solve problems</p>	<p>Mental: You need to check a race-track is 100m long. You have a ruler that is 1m long, a stick that is 2m long, a pole that is 10m long or a rope that is 65m long. How would you measure the 100m? Children work it out on their WBs. Discuss different ways. Which would be quickest?</p> <p>Main: HA do LA and MA work without listening to my model. Display 3-D solids poster on IWB (http://www.bbc.co.uk/schools/ks2bitesize/maths/revision_bites/hapes7.shtml). Display actual 3-D solids where children can see them. Have 3-D solids on each table. Revise the terms vertex / vertices (where 2 edges meet) and edge (where two faces meet) from yesterday. Explain what the term solid (3-D) and 'face' (a surface) mean. Model how to complete the table. LA and MA start work Introduce the term polyhedron (a solid with flat faces) e.g. a</p>	<p>LA and MA – complete table with list of 3-D solids and headings straight edges, curved edges, vertices and faces.</p> <p>HA – complete investigation into rules for finding the properties of different pyramids and prisms</p>	<p>In partners compare answers to independent work and discuss any differences, <i>without changing their answers</i></p>	<p>M: learn the names of the common 3-D solids</p> <p>S: identify straight and curved edges, vertices and faces in 3-D solids</p> <p>C: know what prisms and pyramids are, and generate rules to find properties of different types</p>	

	B1012	<p>cube, cuboid, NOT a cone, sphere</p> <p>Explain to HA what a prism is (3D solid with 2 identical 2D shapes at either end joined by rectangles) and show some actual 3D examples (including a cuboid)</p> <p>Prisms are named after the shape of their ends e.g. a triangular prism has triangular ends</p> <p>Explain to HA what a pyramid is (3D solid with a polygon base and triangles coming up from the base to meet at a point above the base – the apex)</p> <p>Pyramids are named after their bases e.g. a square pyramid has a square base</p> <p>Explain task – to complete a table for pyramids and prisms respectively, with the following columns: number of vertices, number of faces and number of edges. The table goes up to octagonal pyramids / prisms.</p> <p>Then use what they have found out to make rules for the properties of pyramids</p> <p>e.g. the number of vertices in a pyramid is the number of edges of the base add 1</p> <p>Then express these rules as an equation</p> <p>e.g. where n is the number of edges of the base, the number of vertices for a pyramid is $n + 1$</p>				
W	<p>Mental: Identify patterns and relationships involving numbers or shapes, and use these to solve problems</p> <p>Main: Relate 2-D shapes to drawings of them; describe, classify and draw the shapes in a Carroll diagram.</p> <p>B1013</p>	<p>Mental: Continue a pattern:</p> <p>LA: $9 - 7 = 2$ MA: $90 - 70 = 20$ HA: $0.9 - 0.7 = 0.2$ $19 - 7 = 12$ $190 - 70 = 120$ $1.9 - 0.7 = 1.2$ $29 - 7 =$ $290 - 70 =$ $2.9 - 0.7 =$</p> <p>Main:</p> <p>HA do LA / MA work without listening to my model</p> <p>Model how to complete a Carroll diagram using the Interactive Carroll diagram (http://nationalstrategies.standards.dcsf.gov.uk/node/47906). Do several examples with different criteria and then the one the children will be doing for independent work (4 sides and right angles).</p> <p>Explain the term 'quadrilateral' (4-sided shape) and revise what a right angle is.</p> <p>LA and MA start work</p> <p>Explain to HA how there are different types of triangles:</p> <ul style="list-style-type: none"> • equilateral – all the sides are the same length and all the angles are the same • isosceles – two of the sides are the same length and two of the angles are the same • scalene – none of the sides are the same length and none of the angles are the same 	<p>LA and MA – complete a Carroll diagram with the criteria quadrilateral / not quadrilateral and contains a right angle / no right angle.</p> <p>Ext – Label the shapes with their names.</p> <p>HA – classify triangles as equilateral, isosceles or scalene</p>	<p>On IWB get children to drag shapes into the correct section of the Carroll diagram.</p>	<p>M: identify quadrilaterals and right angles</p> <p>S: classify shapes in a Carroll diagram</p> <p>C: classify triangles as scalene, isosceles or equilateral</p>	

TH	<p>Mental: Identify patterns and relationships involving numbers or shapes, and use these to solve problems</p> <p>Main: Relate 2-D shapes to drawings of them; describe and classify the shapes in a Venn diagram.</p> <p>B1014</p>	<p>Mental: Continue a pattern: $LA - 3 \times 10 = 30$ $MA - 3 \times 100 = 300$ $HA - 3 \times 0.1 = 0.3$ $3 \times 20 = 60$ $3 \times 200 = 600$ $3 \times 0.2 = 0.6$ $3 \times 30 =$ $3 \times 300 =$ $3 \times 0.3 =$</p> <p>Main: Explain terms 'straight and curved'. Model how to complete the Venn diagram: Google 'straight and curved Venn primary' to find this worksheet</p> <ul style="list-style-type: none"> • shapes that only have straight sides go in the circle entitled 'straight' • shapes that only have curved sides go in the circle entitled 'curved' • shapes that have both straight and curved sides go in the overlapping intersection in the middle <p>LA start work. Revise the term quadrilateral. Explain the term parallel (two straight lines that will never meet no matter how much you extend them, like train tracks or the edges of a ruler) and show some examples of parallel lines. Explain that shapes that fit neither criteria go outside the circles Model how to complete this Venn diagram.</p>	<p>Place shapes in a Venn with the headings:</p> <p>LA – 'straight' and 'curved'</p> <p>HA – 'at least one set of parallel sides' and 'quadrilateral'</p>	<p>Compare their independent work with the person next to them. Discuss any differences.</p>	<p>M: classify shapes in a Venn diagram based on curved and straight sides</p> <p>S: understand what parallel means</p> <p>C: classify shapes in a Venn diagram based on shapes being quadrilaterals or not, and having at least one set of parallel sides</p>	
F	<p>Mental: Identify patterns and relationships involving numbers or shapes, and use these to solve problems</p> <p>Main: Identify patterns and relationships involving numbers or shapes, and use these to solve problems</p> <p>B1015</p>	<p>Mental: Continue a pattern $LA - 40 \div 4 = 10$ $MA - 400 \div 4 = 100$ $HA - 4 \div 0.4 = 10$ $36 \div 4 = 9$ $360 \div 4 = 90$ $3.6 \div 0.4 = 9.6$ $32 \div 4 = 8$ $320 \div 4 =$ $3.2 \div 0.4 =$</p> <p>Main: Give all children mirrors. Give children who will be doing rotational symmetry (MA and HA) 2 copies of shapes with regular shapes on it. HA start work on lines of reflective symmetry. Model for LA and MA how to find lines of reflective symmetry by using a mirror. Model how to draw broken mirror lines where you have found one line of symmetry so you don't count any line of symmetry more than once for the table. LA start work Model for MA and HA how to find the order of rotational symmetry of a shape by cutting one copy of the shape out and seeing how many times you can turn it so that it exactly covers over its corresponding shape on the other sheet. Model how to put a dot at the corner you started testing from so that you don't count the order of rotational symmetry incorrectly. At the end of all the worksheets the children need to use what they find out and their inferential skills to answer differentiated questions on reflective symmetry, rotational symmetry and size of angles in a regular decagon without being shown a decagon</p>	<p>Complete a table about regular shapes with the following headings:</p> <p>LA – lines of reflective symmetry</p> <p>MA – as LA, but also rotational symmetry</p> <p>HA – as MA, but also size of each angle within shapes</p>	<p>In partners, then as a class discuss what rules we discovered for lines of reflective symmetry, rotational symmetry and angles within regular shapes. Use these to make deductions about other number-sided shapes e.g. regular 20-sided shape. Explain how these rules do not apply for irregular shapes</p>	<p>M: find lines of reflective symmetry</p> <p>S: find order of rotational symmetry</p> <p>C: measure angles within shapes and use what they have found out to make deductions about other number-sided shapes</p>	