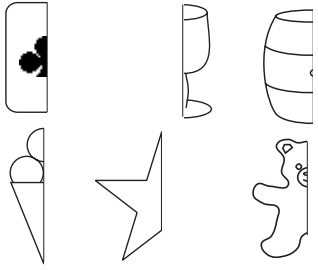
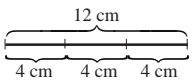







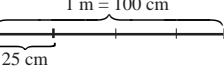
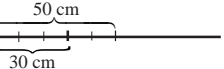


<h1>Y2</h1>	<p>R: Practice of operations C: Fractions: half, quarter, three quarters, etc. E: <i>Third, sixth, fifth</i></p>	<h2>Lesson Plan 141</h2>
<p>Activity</p> <p>1</p> <p>Extension</p>	<p>Logic puzzle (OHT 19, Txt 2, page 89, Q.3, LHS)</p> <p>Study this puzzle. What do you think the rule could be? (The number in the middle of each triangle is the <u>product</u> of the 3 numbers around it. The same colour means the same number.)</p> <p>Where should we start? (e.g. at the triangle with product 7.) A, come and write in the missing number and explain why you think so. ($1 \times 1 \times \underline{7} = 7$) Who agrees? A, write '7' in all the <i>blue</i> circles.</p> <p>Where should we go next? (e.g. triangle with product 14) B, come and write in the missing number and explain why you think so. ($1 \times 7 \times \underline{2} = 14$, so <i>orange</i> = 2) B, write '2' in all the <i>orange</i> circles.</p> <p>Continue in this way until puzzle is completed.</p> <p>Let's check that our solution is correct. Ps choose triangles at random and confirm that the 3 numbers multiply to give product in middle.</p> <p>Ps could make up own puzzles.</p> <p style="text-align: right;">8 min</p>	<p>Notes</p> <p>Whole class activity</p> <p>If no OHP, use copy master, enlarged and coloured appropriately</p> <p>Let Ps suggest where to start and how to continue.</p> <p><i>Solution:</i></p> <p>Blue → 7 Orange → 2 Green → 5 Pink → 3 Red → 4</p> <p>Agreement, checking, praising</p>
<p>2</p>	<p>Recognising half</p> <p>Study these pictures. BB: </p> <p>What do they have in common? (Only half of the pictures have been drawn.)</p> <p>Ps come out to draw in the other half. Class agrees/disagrees.</p> <p>Elicit that 2 halves make a whole. BB: 1 half + 1 half = 1 whole</p> <p style="text-align: right;">13 min</p>	<p>Whole class activity</p> <p>Drawn on BB or use enlarged copy master or OHP (or use any simple pictures cut out of magazines)</p> <p>Ps come to BB to draw in missing parts</p> <p>T (or class) corrects if necessary</p> <p>Discussion, agreement, checking, praising</p>
<p>3</p>	<p>PbY2b, page 141</p> <p>Q.1 a) Read: <i>Draw half the number of shapes in the picture.</i> Ps count the stars and draw half the number in <i>Pbs</i>. Review at BB with whole class. How many stars are there? (10) How many did you draw? (5) How did you know how many to draw? (Divide 10 by 2) Let's write it on the BB.</p> <p>b) Read: <i>Draw one third the number of shapes in the picture.</i> Ps count the circles and draw 1 third of the number in <i>Pbs</i>. Review at BB with whole class. How many circles are there? (6) How many did you draw? (2) How did you know how many to draw? (Divide 6 by 3) Let's write it on the BB.</p> <p>c) Read: <i>Draw one quarter of the number of shapes in the picture.</i> Ps count the triangles and draw 1 quarter of the number in <i>Pbs</i>. Review at BB with whole class. How many triangles are there? (12) How many did you draw? (3) How did you know how many to draw? (Divide 12 by 4) Let's write it on the BB.</p> <p>What would you have to do to find 1 sixth of the number of triangles? (Divide by 6) What is 1 sixth of 18 (30)? (3, 5)</p> <p style="text-align: right;">18 min</p>	<p>Individual work, monitored (helped)</p> <p>Discussion at BB</p> <p>Agreement, checking, praising</p> <p>BB: a) $10 \div 2 = \underline{5}$ 1 half of 10 = 2 b) $6 \div 3 = \underline{2}$ 1 third of 6 = 2 c) $12 \div 4 = \underline{3}$ 1 quarter of 12 = 3</p> <p>Elicit that:</p> <ul style="list-style-type: none"> • 1 half means divide by 2 • 1 third means divide by 3 • 1 quarter means divide by 4 • 1 sixth means divide by 6 <p>Ps show with fingers on command</p>

Y2		<i>Lesson Plan 141</i>
Activity 4	<p>PbY2b, page 141</p> <p>Q.2 Read: <i>There are 6 bananas in this bunch. Draw the bananas and fill in the numbers.</i></p> <p>a) <i>1 half of the bunch</i> b) <i>1 third of the bunch</i> c) <i>1 sixth of the bunch.</i></p> <p>Review at BB with whole class. T tells class that when we say 'a half', 'a third' we really mean '1 half', '1 third', etc</p> <p>Extension</p> <p>How many bananas would be in 2 thirds (3 sixths, 5 sixths)? BB: 1 third of 6 = $6 \div 3 = 2$, so 2 thirds of 6 = $2 \times 2 = 4$ Who could write it as one equation? Who agrees? etc.</p> <p style="text-align: right;">24 min</p>	<p style="text-align: center;">Notes</p> <p>Individual work, monitored, helped</p> <p>Discussion, agreement, checking, praising</p> <p>Self-correction</p> <p>Demonstrate with 6 Ps at front of class if necessary</p> <p>BB: (Note brackets)</p> <p>2 thirds of 6 = $2 \times (6 \div 3) = 4$ 3 sixths of 6 = $3 \times (6 \div 6) = 3$ 5 sixths of 6 = $5 \times (6 \div 6) = 5$</p>
5	<p>Interlude</p> <p>Song or rhyme</p> <p style="text-align: right;">26 min</p>	<p>Whole class in unison</p>
6	<p>PbY2b, page 141, Q.3</p> <p>Read: <i>Where will the parachutes land? Join them up to the correct hills.</i></p> <p>T explains task. (If problems, T could relate the whole '12' to bags of 12 oranges the parachutists were given to put in their backpacks. Some of them did not have room for the whole bag of oranges in their packs and had to leave some oranges in the plane.)</p> <p>Ps come out to choose a parachute and join up to matching fraction, explaining reasoning. Class agrees/disagrees. T writes equations on BB with Ps' help.</p> <p>BB: 3 parts of 12 → 1 quarter because $12 \div 4 = 3$ 6 parts of 12 → 1 half because $12 \div 2 = 6$ 4 parts of 12 → 1 third because $12 \div 3 = 4$ 12 parts of 12 → 1 whole because $12 \div 1 = 12$ 2 parts of 12 → 1 sixth because $12 \div 6 = 2$</p> <p>Extension</p> <p>Which parachute do you think will land first? Why? (All land at once)</p> <p style="text-align: right;">33 min</p>	<p>Whole class activity</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>BB: 1 whole = 12 parts (bag) (oranges)</p> <p>Ps can join up parachutes to hills in <i>Pbs</i> too.</p> <p>Agreement, reasoning, checking, praising</p> <p>Demonstrate with 12 Ps at front of class if necessary</p> <p>Discussion about gravity. Experiment by dropping 2 objects of very different mass</p>
7	<p>PbY2b, page 141</p> <p>Q.4 Read: <i>Draw how many dumplings there are and write the amount in the box if . .</i></p> <p>Deal with one part at a time. Make sure Ps know that the dumplings already drawn are only <u>part</u> (a <u>fraction</u>) of the total amount and that Ps have to draw the <u>whole</u> amount on RHS, not just the extra required, so drawings should be small!</p> <p>Review at BB with whole class. Demonstrate if necessary. (Or done as a whole class activity with Ps as the dumplings.)</p> <p style="text-align: right;">39 min</p>	<p>Individual work, monitored, helped</p> <p>Discussion, agreement, checking, praising</p> <p>BB: part or <u>fraction</u></p> <p>a) $10 \div 2 = 5$ or $5 \times 2 = 10$ b) $5 \div 5 = 1$ or $1 \times 5 = 5$ c) $12 \div 3 = 4$ or $4 \times 3 = 12$ d) $8 \div 4 = 2$ or $2 \times 4 = 8$</p>
8	<p>PbY2b, page 141</p> <p>Q.5 Read: <i>Draw a line 12 cm long and divide it into thirds.</i></p> <p>T revises how to draw a certain length of line accurately. Ps draw 12 cm line first. Discuss how to divide it into thirds.</p> <p>BB: 3 thirds (1 whole): 12 cm, 1 third: $12 \text{ cm} \div 3 = 4 \text{ cm}$</p> <p>Ps mark with short, vertical lines every 4 cm from LHS.</p> <p style="text-align: right;">45 min</p>	<p><i>Ps have rulers on desks</i></p> <p>Individual work, monitored, helped</p> <p>BB: </p> <p>Discussion, agreement, checking, praising accuracy</p> <p><i>Check: $3 \times 4 \text{ cm} = 12 \text{ cm}$</i></p>

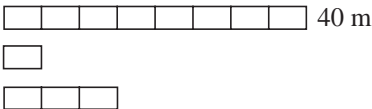
<h1>Y2</h1>	<p>R: Practice in calculation C: Fractions: half, quarter, 3 quarters, etc. E: Position of 'half' on the number line. Eighths, sixths</p>	<h2>Lesson Plan 142</h2>
<p>Activity</p> <p>1</p>	<p>Logic puzzle (OHT 19, Txt 2, page 89, Q.3, RHS)</p> <p>Study this puzzle. What do you think the rule could be? (The number in the middle of each shape (diamond) is the <u>product</u> of the 4 numbers around it. The same colour means the same number.)</p> <p>Where should we start? (At the diamond with product 7 because the numbers are small.) (Discuss the fact that zero is impossible and 2 is too big for the yellow squares.) A, come and write in the missing numbers and explain why you think so. ($1 \times 1 \times 1 \times 7 = 7$) Who agrees? A writes '1' in all the <i>yellow</i> squares and '7' in all the <i>pink</i> ones.</p> <p>Where should we go next? (e.g. diamond with product 63) B, come and write in the missing number and explain why you think so. ($1 \times 7 \times 9 = 63$, but $9 = 3 \times 3$, so <i>violet</i> = 3) B writes '3' in all the <i>violet</i> squares.</p> <p>Continue in this way until puzzle is completed.</p> <p>Let's check that our solution is correct. Ps choose diamonds at random and confirm that the 4 numbers multiply to give product in the middle.</p> <p>Extension</p> <p>Ps could make up own puzzles for their neighbours to solve.</p> <p style="text-align: right;"><i>10 min</i></p>	<p>Notes</p> <p>Whole class activity</p> <p>If no OHP, use copy master, enlarged and coloured appropriately</p> <p>Let Ps suggest where to start and how to continue.</p> <p><i>Solution:</i></p> <p>Yellow → 1 Pink → 7 Violet → 3 Green → 2 Orange → 5</p> <p>Agreement, checking, praising</p> <p>(Could be done at home)</p>
<p>2</p>	<p>Number sets</p> <p>T has number cards stuck (or written) on BB.</p> <div style="display: flex; align-items: center; margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">12</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">6</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">15</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">19</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">21</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">30</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">24</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">16</div> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;">41</div> </div> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="border: 1px solid black; padding: 5px; width: 45%; text-align: center;">Half of <input type="checkbox"/> is a whole number</div> <div style="border: 1px solid black; padding: 5px; width: 45%; text-align: center;">Half of <input type="checkbox"/> is NOT a whole number</div> </div> <div style="display: flex; justify-content: space-around; height: 100px;"> <div style="border: 1px solid black; width: 45%;"></div> <div style="border: 1px solid black; width: 45%;"></div> </div> <p>Let's put the numbers in the correct set.</p> <p>Class reads labels on sets.</p> <p>T explains meaning of each set by choosing, e.g. first the '6' and then the '19' cards.</p> <p>6: Half of 6 = $6 \div 2 = 3$ (3 is a whole number or <u>integer</u> (BB), so 6 belongs to the LH set.) P points to both 6 and 3 on class number line.</p> <p>19: Half of 19 = $19 \div 2 = 9$, remainder 1, or 9 and a half '9 and a half' is <u>not</u> a whole number (integer), so where should it go? (In set on RHS) Where do you think '9 and a half' would be on the number line? (halfway between 9 and 10) P comes out to point.</p> <p>Let's see if you are clever enough to put the rest of the numbers in the correct set. Ps come out to choose a card and stick in the correct set, explaining reasoning.</p> <p>What kind of numbers are in each set? (LHS: even, RHS: odd)</p> <p>If we labelled the sets 'a quarter' instead of 'half', would the numbers stay in the same set? (Elicit that only multiples of 4 would be in LH set: 4, 12, 16, 24; the others would be in RH set, because there would be remainders (quarters) when divided by 4, e.g. $19 \div 4 = 4$, remainder 3)</p> <p style="text-align: right;"><i>18 min</i></p>	<p>Whole class activity</p> <p>Drawn on BB or use enlarged copy master or OHP, with cards cut out</p> <p>In unison</p> <p>Demonstrate with Ps at front of class if necessary,</p> <p>BB: whole number or <u>integer</u></p> <p>Discussion, agreement, checking, praising</p> <div style="text-align: center; margin: 10px 0;"> </div> <p>Class agrees/disagrees.</p> <p>Ps show the positions of 'half' numbers on class number line</p> <p>Discussion, agreement, checking, praising</p> <p>Demonstrate with Ps at front of class if necessary</p>
<p>3</p>	<p>PbY2b, page 142</p> <p>Q.1 Read: <i>Four mice have found a lump of cheese. Draw where they should cut it so that they each have an equal amount.</i></p> <p>Review at BB with whole class. Cut up a copy of 'cheese' to check.</p> <p><i>Solution:</i> Each mouse has <u>1 quarter</u> of the cheese.</p> <p>What fraction of the cheese would 3 mice have altogether? (3 quarters)</p> <p style="text-align: right;"><i>23 min</i></p>	<p>Individual work, monitored, helped. (Can use copy master)</p> <p>Discussion, agreement, checking, praising</p> <p>BB:</p> <div style="text-align: center;"> </div>

<h1>Y2</h1>		<p><i>Lesson Plan 142</i></p>
<p>Activity</p> <p>4</p>	<p>Interlude</p> <p>Relaxation, with music playing</p> <p style="text-align: right;">25 min</p>	<p>Notes</p> <p>Whole class listening, resting</p>
<p>5</p>	<p>Sixths</p> <p>The mouse family (Mum, Dad and 4 children) found this bar of chocolate and want to share it out equally. How many equal parts should it be divided into? (2 parents + 4 children = 6 mice altogether)</p> <p>Where should they cut the chocolate bar?</p> <p>BB: </p> <p>Ps come out to draw in the lines (with T's help). Class agrees/disagrees.</p> <p>What part of the chocolate do</p> <ul style="list-style-type: none"> • they each get? (1 sixth) • Mum and Dad have altogether? (2 sixths) (or 1 third) • the 4 children have altogether? (4 sixths) (or 2 thirds) <p style="text-align: right;">30 min</p>	<p>Whole class activity</p> <p>Drawn on BB</p> <p>Discuss that dividing by 6 is the same as dividing by 3 and then by 2 (or by 2 and then 3)</p> <p>Ps can draw diagram in <i>Ex. Bks</i> too</p> <p>Reasoning, agreement, checking, praising</p> <p>(T could demonstrate with a real bar of chocolate or cut up a rectangular piece of card)</p> <p>Extra praise for '1 third', '2 thirds'</p>
<p>6</p> <p>Extension</p>	<p>PbY2b, page 142</p> <p>Q.2 Read: <i>Write below each shape what part of it is shaded.</i></p> <p>T tells Ps to think about, for each shape:</p> <ul style="list-style-type: none"> • How many parts has the shape been divided into? • What is each part called? • How many of them are shaded? <p>Review at BB with whole class. Discuss mistakes made.</p> <p>BB</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>a) </p> <p>1 half</p> </div> <div style="text-align: center;"> <p>b) </p> <p>1 half</p> </div> <div style="text-align: center;"> <p>c) </p> <p>1 quarter</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <p>d) </p> <p>3 quarter</p> </div> <div style="text-align: center;"> <p>e) </p> <p>1 eighth</p> </div> <div style="text-align: center;"> <p>f) </p> <p>3 eighth</p> </div> </div> <p>What part (fraction) of each shape has <u>not</u> been shaded?</p> <p style="text-align: right;">35 min</p>	<p>Individual work, monitored, helped</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Discussion, agreement, checking, praising</p> <p>BB: <u>Not shaded</u></p> <p>a) 1 half b) 1 half</p> <p>c) 3 quarters d) 1 quarter</p> <p>e) 7 eighths f) 5 eighths</p>
<p>7</p>	<p>PbY2b, page 142, Q.3</p> <p>T explains task. This is a plan of a garden. Into how many parts is the garden divided? (8) What is each part called? (1 eighth)</p> <p>a) Read: <i>We have planted red roses in 2 eighths of the garden. Colour it red.</i></p> <p>Ps work in <i>Pbs</i> and T (or P) works on the BB. Does it matter which 2 squares we colour red? (No, any 2 squares will do.)</p> <p>Repeat for parts b) to d). Who could equations about the story?</p> <p style="text-align: right;">40 min</p>	<p>Individual work but class kept together, monitored</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Agreement, checking, praising</p> <p>BB: 2 eights + 3 eighths + 2 eighths = 7 eighths</p> <p>8 eighths – 7 eighths = 1 eighth</p>
<p>8</p>	<p>PbY2b, page 142, Q.4</p> <p>Read: <i>Tortoise and Snail are having a race. Colour the animal who is ahead.</i></p> <p>Ps suggest strategies for solution (with T's help). T draws diagrams on BB with help from Ps.</p> <p><i>Tortoise:</i> 1 metre = 100 cm, 100 cm ÷ 4 = 100 cm ÷ 2 ÷ 2 = <u>25 cm</u></p> <p><i>Snail:</i> 1 fifth: 50 cm ÷ 5 = 10 cm, 3 fifths: 3 × 10 cm = <u>30 cm</u></p> <p><i>Answer:</i> Snail is ahead (by 5 cm).</p> <p style="text-align: right;">45 min</p>	<p>Whole class activity. Ps dictate answers. Agreement, checking, praising. BB:</p> <div style="text-align: center;"> <p>1 m = 100 cm</p> <p><i>Tortoise:</i> </p> <p><i>Snail:</i> </p> </div>

<h1>Y2</h1>	<p>R: Practice of operations C: Fractions: half, quarter, three quarters, etc. E: <i>Half, third of 2-digit numbers using the multiplication table.</i></p>	<h2>Lesson Plan 143</h2>
<p>Activity</p> <p>1</p>	<p>Logic puzzle (OHT 20, Txt 2, page 99, Q.2, LHS)</p> <p>Study this puzzle. What do you think the rule could be? (The number in the middle of each large square is the <u>product</u> of the 4 numbers around it. The same colour means the same number.)</p> <p>Where should we start? (At the square with product 16 because all 4 missing numbers are the same colour.) Which number multiplied by itself 4 times equals 16? A, come and write in the missing numbers and explain why you think so. ($2 \times 2 \times 2 \times 2 = 16$) Who agrees? A writes '2' in <u>all</u> the <i>green</i> squares.</p> <p>Where should we go next? (e.g. square with product 8) B, come and write in the missing number and explain why you think so. ($2 \times 2 \times 2 = 8$, so <i>orange</i> must be '1'. B writes '1' in all the <i>orange</i> squares.</p> <p>Continue in this way until puzzle is completed.</p> <p>Let's check that our solution is correct. Ps choose squares at random and confirm that the 4 numbers multiply to give product in the middle.</p> <p style="text-align: right;">8 min</p>	<p>Notes</p> <p>Whole class activity</p> <p>If no OHP, use copy master, enlarged and coloured appropriately</p> <p>Let Ps suggest where to start and how to continue.</p> <p><i>Solution:</i></p> <p style="padding-left: 40px;">Green → 2 Orange → 1 Violet → 5 Yellow → 4 Pink → 3 Turquoise → 7</p> <p>Agreement, checking, praising</p>
<p>2</p>	<p>Number cards</p> <p>Show me with number cards when I say:</p> <ul style="list-style-type: none"> half of 14, 20, <u>36</u>, <u>42</u>, <u>68</u>, <u>50</u>, <u>72</u>, etc. (7, 10, 18, 21, 34, 25, 36) Ps with correct responses explain how they did the calculation. e.g. $36 \div 2 = 20 \div 2 + 16 \div 2 = 10 + 8 = 18$ (or $68 \div 2 = 6 \text{ tens} \div 2 + 8 \text{ units} \div 2 = 3 \text{ tens} + 4 \text{ units} = 34$) 1 third of 24, 30, 18, <u>42</u>, etc. (8, 10, 6, 14) Ps with correct responses explain their calculations. e.g. $42 \div 3 = 21 \div 3 + 21 \div 3 = 7 + 7 = 14$ <p style="text-align: right;">14 min</p>	<p>Whole class activity</p> <p>Cards shown in unison</p> <p>Reasoning, agreement, checking, praising</p> <p>Underlined numbers can be replaced by easier multiples if necessary (or T shows calculations on BB)</p>
<p>3</p> <p>Extension</p>	<p>PbY2b, page 143</p> <p>Q.1 Read: <i>These things belong to a clown. Colour:</i></p> <ol style="list-style-type: none"> half of his coat yellow 3 quarters of his stick green 1 half of the pair of shoes blue and the other half red 5 eighths of his cake brown. <p>Review at BB with whole class. Who made a mistake? What kind of mistake? (Class discusses all cases.)</p> <p>What fraction of the clown's coat, stick, shoes, cake are <u>not</u> coloured? (half, 1 quarter, none, 3 eighths)</p> <p style="text-align: right;">20 min</p>	<p>Whole class activity</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Discussion, agreement, checking, praising</p> <p>Discussion, reasoning, checking, praising</p>
<p>4</p>	<p>Interlude</p> <p>Action song</p> <p style="text-align: right;">22 min</p>	<p>Whole class in unison</p>
<p>5</p>	<p>Problem</p> <p>Listen carefully and think about how you would work out the answer.</p> <p><i>Len and Sam shared out some bars of chocolate equally between them. If Len got 1 and a half bars, how many bars of chocolate did they share?</i></p> <p>What should we do first? (Draw diagram) T writes calculation on BB.</p> <p>BB: $1 \text{ and a half} + 1 \text{ and a half} = 1 + 1 + \text{half} + \text{half} = 2 + 1 = 3$</p> <p><i>Answer:</i> They shared 3 bars of chocolate. (Demonstrate if needed.)</p> <p style="text-align: right;">25 min</p>	<p>Whole class activity</p> <p>T writes on BB, Ps in <i>Ex. Bks</i></p> <div style="text-align: center;"> <p>Len Sam</p> <p>$\boxed{\text{one}} \text{ and } \boxed{\text{a half}} + \boxed{\text{one}} \text{ and } \boxed{\text{a half}}$</p> <p>$= \boxed{\text{one}} + \boxed{\text{one}} + \boxed{\text{a half}} + \boxed{\text{a half}}$</p> <p>$= \boxed{\text{one}} + \boxed{\text{one}} + \boxed{\text{one}} = 3 \text{ bars}$</p> </div>


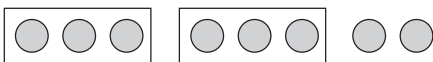
<h1>Y2</h1>		<p style="text-align: right;"><i>Lesson Plan 143</i></p>
<p>Activity</p> <p>6</p>	<p>PbY2b, page 143</p> <p>Q.2 Read: <i>Complete the sentences by drawing or writing.</i></p> <p>T explains task and makes sure that Ps know what to do for each part, i.e. draw in a) and write in b) and c). Drawings need only be rough (and small).</p> <p>Review at BB with whole class. Ps come out to explain to class.</p> <p>BB: a) 2 rabbits is 1 third of <u>6 rabbits</u> b) 3 cards is <u>3 quarters</u> of 4 cards c) 2 and a half apples is <u>half</u> of 5 apples</p> <p style="text-align: right;">33 min</p>	<p style="text-align: center;">Notes</p> <p>Individual trial, monitored, helped</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Discussion, agreement, checking, praising</p> <p>Demonstrate with Ps as rabbits, cards, apples at front of class. (half shown by P bent over)</p>
<p>7</p>	<p>PbY2b, page 143, Q.3</p> <p>T has enlarged pictures of the elephant and giraffe stuck to BB.</p> <p>Who can tell me something about one of these animals? Who has seen one drink water? Where? How do they drink? etc. (Refer to keepers in a zoo needing to know how much water they need to bring for the animals.)</p> <p>Read: <i>Elephant drank 24 litres of water. Giraffe drank 3 quarters of that amount. How much water did they drink altogether?</i></p> <p>What should we do first? Who agrees? Who thinks something else? etc.</p> <p>Plan: E: 24 litres G: 3 quarters of 24 litres</p> <p>Calculation: G: 24 litres ÷ 4 × 3 = 6 litres × 3 = <u>18 litres</u> (or 1 quarter of 24 litres = 24 litres ÷ 4 = 6 litres 3 quarters of 24 litres = 6 litres × 3 = <u>18 litres</u> E + G = 24 litres + 18 litres = <u>42 litres</u></p> <p>Answer: Altogether they drank 42 litres of water.</p> <p style="text-align: right;">38 min</p>	<p>Whole class activity</p> <p>Use copy master, enlarged and animals cut out</p> <p>Discussion involving many Ps</p> <p>In unison</p> <p>Ps suggest what T should write Agreement, checking, praising</p> <p>Diagram:</p> <div style="text-align: center;"> </div> <p>(or draw 4 × 6 litre buckets)</p>
<p>8</p>	<p>PbY2b, page 143</p> <p>Q.4 Read: <i>Draw a line of length 8 cm. Draw over 3 quarters of it in red.</i></p> <p>T revises how to draw a certain length of line accurately. Ps draw 8 cm line first. Discuss what to do next.</p> <p>Either:</p> <ul style="list-style-type: none"> divide the line into quarters. BB: 1 quarter of 8 cm = 8 cm ÷ 4 = <u>2 cm</u> Ps mark with short, vertical lines every 2 cm from LHS, then draw over 3 of the quarters in red <p>or</p> <ul style="list-style-type: none"> Do the whole calculation first: BB: 3 quarters of 8 cm = 8 cm ÷ 4 × 3 = <u>6 cm</u> Ps mark with a short, vertical line 6 cm from LHS, then draw over LH segment in red. <p style="text-align: right;">43 min</p>	<p>Ps have rulers on desks</p> <p>Individual work, monitored, helped</p> <p>Discussion, agreement, checking</p> <p>Check: 4 × 2 cm = 8 cm</p> <p>BB: </p> <p>BB: </p> <p>Praise accurate, neat work</p>
<p>9</p>	<p>Mental practice</p> <p>T says describes a number, e.g. 3, as a fraction, e.g. '1 quarter of 12'</p> <p>P describes same number with another fraction, e.g. 'half of 6'.</p> <p style="text-align: right;">45 min</p>	<p>Whole class activity</p> <p>At speed round class</p> <p>Praising/encouraging only</p>

Y2	<p>R: Practice of operations</p> <p>C: Fractions: half, quarter, 3 quarters, etc.</p> <p>E: <i>Problem solving. Divisibility</i></p>	<p><i>Lesson Plan</i></p> <p>144</p>
Activity		Notes
<p>1</p>	<p>Logic puzzle (<i>OHT 20, Txt 2, page 99, Q.2, Centre</i>)</p> <p>Study this puzzle. What do you think the rule could be? (The number in the middle is the <u>product</u> of the 4 numbers around it. The same colour means the same number.)</p> <p>Where should we start? (At the shape with product 6 because the numbers are small.) Elicit that 2 numbers are the same and zero is impossible. What could the two <i>violet</i> numbers be? (1 or 2; 3 is too big) If <i>violet</i> is 2, the other 2 numbers are impossible, so <i>violet</i> must be 1. A, come and write '1' in all the <i>violet</i> circles.</p> <p>If <i>violet</i> is 1, what must the other two numbers be? (2 and 3) Let's check: $1 \times 2 \times 3 = 6$, but which of 2 and 3 should be <i>orange</i> and which <i>green</i>? Let's check with the numbers around 12: $12 = 1 \times 2 \times 2 \times 3$ but $12 \neq 1 \times 2 \times 3 \times 3$, so the <i>green</i> circles must be 3 and the <i>orange</i> circles must be 2. Let's fill in all the <i>green</i> and <i>orange</i> circles.</p> <p>Where should we go next? (e.g. shape with product 30 as there is only one unknown number) B, come and write in the missing number and explain why you think so. ($1 \times 2 \times 3 \times 5 = 30$, so <i>pink</i> must be '5'. B writes '5' in all the <i>pink</i> circles.</p> <p>Continue in this way until the puzzle is solved.</p> <p style="text-align: right;"><i>10 min</i></p>	<p>Whole class activity</p> <p>If no OHP, use copy master, enlarged and coloured appropriately</p> <p>Let Ps suggest where to start and how to continue.</p> <p><i>Solution:</i></p> <p style="padding-left: 40px;">Violet → 1 Orange → 2 Green → 3 Pink → 5 Red → 7 Blue → 4</p> <p>Reasoning, agreement, checking, praising</p> <p>Ps choose shapes at random to check that solution is correct</p>
<p>2</p>	<p>Secret number</p> <p>I am thinking of a number. I will give you 4 clues. Listen carefully and after the last clue you should know the number I am thinking of.</p> <ol style="list-style-type: none"> 1. The number is more than 30 and less than 40. (i.e. 31, 32, . . . , 39) 2. Half of the number is a whole number. (i.e. even) 3. A quarter of the number is NOT a whole number. (i.e. not 32 or 36) 4. Twice the number is more than 70. (i.e. not 34) <p>Show me with number cards the number I am thinking of . . . now! (38)</p> <p>C, tell us how you worked out the answer. Who agrees? etc.</p> <p style="text-align: right;"><i>16 min</i></p>	<p>Whole class activity</p> <p>Ps could write possible numbers in <i>Ex. Bks</i> after 1st clue and cross out numbers as other 3 clues are given</p> <p>T repeats each clue slowly</p> <p>In unison</p> <p>Reasoning, agreement, checking, praising</p>
<p>3</p>	<p>PbY2b, page 144</p> <p>Q.1 Read: <i>Colour 2 thirds, 1 quarter, 2 sixths, 3 quarters.</i></p> <p>For each picture, Ps count the elements, write the calculation either above the picture (or in <i>Ex. Bks</i>) and colour appropriately.</p> <p>Review at BB with whole class. Mistakes corrected.</p> <p>BB: 2 thirds of 9 cups = $(9 \div 3 \times 2)$ cups = <u>6</u> cups 1 quarter of 8 glasses = $(8 \div 4)$ glasses = <u>2</u> glasses 2 sixths of 6 spoons = $(6 \div 6 \times 2)$ spoons = <u>2</u> spoons 3 quarters of 12 forks = $(12 \div 4 \times 3)$ forks = <u>9</u> forks</p> <p style="text-align: right;"><i>22 min</i></p>	<p>Individual work, monitored, (helped)</p> <p>Use enlarged copy master or OHP</p> <p>Discussion, agreement, checking, self-correction</p> <p>Praising</p> <p>(Demonstrate with Ps at front of class if necessary)</p>
<p>4</p>	<p>Interlude</p> <p>Song or rhyme</p> <p style="text-align: right;"><i>24 min</i></p>	<p>Whole class in unison</p>

Y2		<i>Lesson Plan 144</i>
Activity 5	<p>PbY2b, page 144</p> <p>Q.2 Read: <i>Draw how many nuts there are if</i></p> <p>a) 2 is 1 quarter b) 3 is 3 eighths c) 4 is 2 sixths?</p> <p>What kind of nuts are these? (walnuts) Who has tasted one? (T could have some real walnuts to show and crack open.) If walnuts are too difficult for you to draw, just draw circles. Review orally round class. Ps come out to write calculations on BB. Mistakes corrected. (Demonstrate with Ps as walnuts at front of class if necessary.)</p> <p style="text-align: right;">30 min</p>	<p style="text-align: center;">Notes</p> <p>Individual work, monitored, helped Initial whole-class discussion Reasoning, agreement, checking praising BB: a) $2 \times 4 = 8$ or $\boxed{8} \div 4 = 2$ b) $3 \div 3 \times 8 = 8$ or $\boxed{8} \div 8 \times 3 = 3$ c) $4 \div 2 \times 6 = 12$ or $\boxed{12} \div 6 \times 2 = 4$</p>
6	<p>PbY2b, page 144</p> <p>Q.3 Read: <i>Join up the values to the corresponding points on the number line.</i></p> <p>T explains task. Let's read out the labels together. Ps write numbers above relevant labels before joining to points on the number line. Review at BB with whole class. Calculations written on BB where necessary, e.g. BB: 2 quarters of 8 = $8 \div 4 \times 2 = 2 \times 2 = 4$ (or 2 quarters of 8 = half of 8 = 4)</p> <p style="text-align: right;">35 min</p>	<p>Individual work, monitored Drawn on BB or use enlarged copy master or OHP Reasoning, agreement, checking, praising Demonstrate where necessary, especially '2 halves of 6' and '1 half of 0'</p>
7	<p>PbY2b, page 144, Q.4</p> <p>Read: <i>Compare the shaded parts. Which is more? Write in the correct sign.</i></p> <p>What can you say about the rectangles? (each has 6 rows of 3 squares = 18 squares, with 3 squares shaded in) Which do you think has more squares shaded? (Both the same, so missing sign must be '=') Who can come and explain why the LH rectangle has '1 third of a half' to describe the 3 shaded squares? P comes out to show the 2 halves separated by the bold line (9 squares in each), then the 3 squares out of 9 shaded (1 third). Who can write it as one calculation? Who agrees? Who thinks something else? etc. Who can come and explain why the RH rectangle has '1 half of a third' to describe the 3 shaded squares? P comes out to show the 3 thirds separated by the bold lines (6 squares in each), then the 3 squares out of 6 shaded (1 half). Who can write it as one calculation? Who agrees? Who thinks something else? etc. Who can think of another fraction to describe the 3 shaded squares? (1 sixth, because $18 \div 6 = 3$)</p> <p style="text-align: right;">40 min</p>	<p>Whole class activity Drawn on BB or use enlarged copy master or OHP Discussion, agreement Reasoning, agreement, checking praising BB: LHS: <u>1 third of a half</u> $18 \div 2 \div 3 = 9 \div 3 = 3$ Reasoning, agreement, checking praising BB: RHS: <u>1 half of a third</u> $18 \div 3 \div 2 = 6 \div 2 = 3$ BB: 1 third of a half = 1 half of a third = 1 sixth</p>
8	<p>Problems in context</p> <p>Who can think up a problem for this diagram and plan?</p> <p>BB: <i>Diagram:</i></p>  <p>40 m</p> <p><i>Plan:</i></p> $40 \text{ m} \div \square = \triangle \text{ m}$ $\triangle \text{ m} \times \text{semicircle} = \text{trapezium} \text{ m}$ <p style="text-align: right;">45 min</p>	<p>Whole class activity Drawn on BB or use enlarged copy master or OHP Ps suggest questions and solutions (with T's help). Agreement, checking Praise creativity</p>

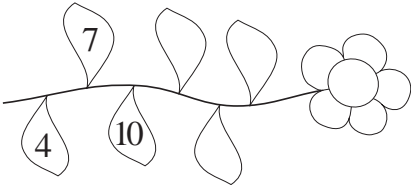
Y2		<i>Lesson Plan</i> 145
<i>Activity</i>	Tables practice, revision, activities, consolidation <i>PbY2b, page 145</i>	<i>Notes</i>


Y2	<p>R: Practice of operations C: Division with remainders in context E: <i>Division with quotient larger than 10</i></p>	<p style="text-align: center;"><i>Lesson Plan</i> 146</p>
Activity		Notes
1	<p>Logic puzzle (OHT 20, Txt 2, page 99, Q.2, RHS)</p> <p>Study this puzzle. What do you think the rule could be? (The number in the middle is the <u>product</u> of the 4 numbers around it. The same colour means the same number.)</p> <p>Where should we start? (At the shape with product 9 because the numbers are small.) Elicit that there are 2 pairs, each with both numbers the same and that 0 is impossible. What could the two numbers be? (1, 2 or 3; 4 is too big)</p> <p>If the numbers in one pair are 1, then what must the numbers in the other pair be? (3, because $1 \times 1 \times \underline{3} \times \underline{3} = 9$)</p> <p>If the numbers in one pair are 2, the other pair is impossible, as $2 \times 2 = 4$ cannot be multiplied by another whole number to make 9. So the only possible numbers are 1 and 3.</p> <p>But which of 1 and 3 should be <i>pink</i> and which <i>yellow</i>? Let's check with the numbers around 27: $27 \neq 1 \times 1 \times 1 \times 3$ but $27 = 3 \times 3 \times 3 \times 1$, so the <i>pink</i> circles must be 1 and the <i>yellow</i> circles must be 3. Let's fill in all the <i>pink</i> and <i>yellow</i> circles.</p> <p>Where should we go next? (e.g. shape with product 63 as there is only one unknown number) B, come and write in the missing number and explain why you think so. ($1 \times 3 \times 3 \times \underline{7} = 63$, so <i>blue</i> must be 7). Are there any other <i>blue</i> circles in the puzzle? (No)</p> <p>Continue in this way until the puzzle is solved.</p> <p style="text-align: right;"><i>10 min</i></p>	<p>Whole class activity</p> <p>If no OHP, use copy master, enlarged and coloured appropriately</p> <p>Let Ps suggest where to start and how to continue.</p> <p><i>Solution:</i></p> <p style="padding-left: 40px;">Pink → 1 Yellow → 3 Blue → 7 Green → 4 Turquoise → 2 Red → 5</p> <p>Reasoning, agreement, checking, praising</p> <p>Ps choose shapes at random to check that solution is correct</p>
2	<p>Divisibility by 2</p> <p>T has numbers on cards and stuck to the side of the BB:</p> <p>BB: 27, 4, 3, 25, 11, 23, 10, 9, 29, 5, 24, 28</p> <p>Which of these numbers can be divided exactly by 2 (with no remainder)?</p> <p>Ps come out to choose cards and stick to middle of BB in increasing order</p> <p>Let's put the next nearest whole numbers beside them:</p> <p>BB: 3, <u>4</u>, 5 9, <u>10</u>, 11 23, <u>24</u>, 25 27, <u>28</u>, 29</p> <p>What do you notice if you divide these next nearest numbers by 2?</p> <p>There is a remainder of 1 (or a whole number + a half), e.g.</p> <p>BB: $3 \div 2 = 1$, remainder 1 (or $3 \div 2 = 1$ and a half)</p> <p style="text-align: right;"><i>15 min</i></p>	<p>Whole class activity</p> <p>Use copy master, enlarged and cut out (or write on BB)</p> <p>Agreement, checking, praising</p> <p>Discussion about whole numbers, even, odd, divisible by 2, indivisible by 2</p>
3	<p>PbY2b, page 146</p> <p>Q.1 Read: <i>Sally and Susy Squirrel want to divide up the acorns they collected so that they both have an equal amount. How could they do it? Complete the table.</i></p> <p>P explains what each row of table means using the column already completed. (Middle row is top row divided by 2, bottom row is the remainder, top row is 2 times the middle row plus the bottom row.)</p> <p>Review at BB with whole class. Mistakes corrected.</p> <p>T uses expressions such as dividend (number being divided), divisor (number doing the dividing), quotient (answer), remainder.</p> <p style="text-align: right;"><i>23 min</i></p>	<p>Individual work, monitored (helped)</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Discussion, agreement, checking, praising</p> <p>If problems, Ps write equations on BB. Class agrees/disagrees.</p> <p>BB: e.g. $15 \div 2 = 7$, remainder 1 <i>Check:</i> $7 \times 2 + 1 = 15$</p>
4	<p>Interlude</p> <p>Song or rhyme</p> <p style="text-align: right;"><i>25 min</i></p>	<p>Whole class in unison</p>

Y2		<i>Lesson Plan 146</i>
Activity 5	<p>PbY2b, page 146</p> <p>Q.2 Read: <i>We want to put 3 flowers into each vase. How many vases will we fill and how many flowers will remain? Fill in the missing numbers.</i></p> <p>What kind of flowers are in the pictures? (daisy, tulip, harebell)</p> <p>Ps circle the flowers in groups of 3 (or colour in 3's), count the groups and write in missing numbers in <i>Pbs</i>.</p> <p>Review at BB with whole class. Mistakes corrected.</p> <p>How could we have worked it out without circling in 3s? (by division)</p> <p>Ps come out to BB to write a division for each picture Class agrees/disagrees.</p> <p style="text-align: right;">30 min</p>	<p style="text-align: center;">Notes</p> <p>Individual work, monitored, (helped)</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Discussion, agreement, checking, self-correction</p> <p>BB:</p> <p>$12 = 3 \times 4 + 0$, $12 \div 3 = 4$</p> <p>$13 = 3 \times 4 + 1$,</p> <p>$13 \div 3 = 4$, remainder 1</p> <p>$14 = 3 \times 4 + 2$,</p> <p>$14 \div 3 = 4$, remainder 2</p>
6	<p>PbY2b, page 146, Q.3</p> <p>Read: <i>A toy shop bought 35 teddy bears. The shop assistant could fit only 3 bears on each shelf. She put the remainder in the window. How many shelves were used? How many bears were put in the window?</i></p> <p>What should we do first? Who agrees? Who thinks something else? etc.</p> <p><i>Plan:</i> Number of bears: 35 Each shelf: 3 bears</p> <p><i>Calculation:</i> $35 \div 3 = 30 \div 3 + 5 \div 3 = 10 + 1$, remainder 2 $= 11$, remainder 2</p> <p><i>Answer:</i> 11 shelves were used and 2 bears were put in the window.</p> <p style="text-align: right;">35 min</p>	<p>Whole class activity (Demonstrate if necessary with enlarged, cut-out bears or Ps at front of class)</p> <p>Ps suggest what to write</p> <p>Ps can work in <i>Pbs</i> too</p> <p>Discussion, agreement, checking, praising</p> <p>BB:</p> <p><i>Check:</i> $3 \times 11 + 2 = 35$</p>
7 Extension	<p>Practice in Ex. Bks</p> <p>T draws pictures on BB and Ps write a multiplication and addition, and a division and addition about each, e.g.</p> <p>BB: a)  $2 \times 3 = 6$, $6 + 1 = 7$</p> <p>b)  $3 \times 3 = 9$, $9 + 2 = 11$</p> <p>Review at BB with whole class, Mistakes corrected.</p> <p>T writes a multiplication/division + addition on BB and Ps draw a picture to match.</p> <p style="text-align: right;">40 min</p>	<p>Individual work, monitored (helped)</p> <p><i>Heading:</i> Lesson number and date</p> <p>Reasoning, agreement, checking, praising</p> <p>BB: e.g.</p> <p>a) $3 \times 2 + 1 = 7$ $7 \div 2 = 3$, remainder 1</p> <p>b) $2 \times 3 + 2 = 8$ $8 \div 3 = 2$, remainder 2</p>
8	<p>PbY2b, Page 146</p> <p>Q.4 Read: <i>Fill in the missing numbers</i></p> <p>Let's see how quickly you can do these! Sit up with your arms folded when you have finished.</p> <p>Review orally round class. Mistakes corrected at number line.</p> <p style="text-align: right;">45 min</p>	<p>Individual work (or as a competition)</p> <p>Encourage quick, accurate calculation and checking</p> <p>Agreement, self-correction, praising</p>

Y2	R: Practice of operations C: Division with remainders, in context E: <i>Problem solving. Constructing problems</i>	<i>Lesson Plan</i> 147
Activity		Notes
1	Oral work Tell me numbers which have a remainder of 1 (2) when divided by 3. e.g. 1, 4, 7, 10, 13, . . . (2, 5, 8, 11, . . .) Are there any numbers which have a remainder of 3 when divided by 3? (No, because if there are 3 remaining, there is enough to make another group of 3, e.g. we do not say $12 \div 3$ is '3, remainder 3' but rather $12 \div 3 = 4$, with no remainder.) <div style="text-align: right;">5 min</div>	Whole class activity T chooses Ps at random At speed Agreement, checking, praising Refer to <i>Copy Master 147/1</i> , (multiples of 3)
2	PbY2b, page 147 Q.1 Read: <i>What do the pictures tell us? Write equations about them.</i> Review at BB with whole class. Mistakes corrected. BB: a) $3 \times 3 + 2 = 11$ b) $3 \times 2 + 1 = 7$ c) $2 \times 4 + 1 = 9$ $11 \div 3 = 3$, $7 \div 2 = 3$, $9 \div 4 = 2$, remainder 2 remainder 1 remainder 1 Ps think of a problems in context for each of the pictures. Class discusses whether or not they match the pictures. <div style="text-align: right;">12 min</div>	Individual work, monitored, helped Drawn on BB or use enlarged copy master or OHP Discussion, agreement, checking, praising Extra praise for creativity
3	PbY2b, page 147 Q.2 Read: <i>Alice has been given some flowers. She wants to put 3 flowers in each vase. How many vases will she fill and how many flowers remain?</i> <i>Draw in the flowers and write equations about the pictures, if she had:</i> a) 13 flowers, b) 14 flowers, c) 15 flowers. Ps draw flowers, then write equations. Review at BB with whole class. Mistakes corrected. Demonstrate if there are problems. Refer to <i>Copy Master 147/1</i> (multiples of 3) BB: a) $13 \div 3 = 4$, b) $14 \div 3 = 4$, c) $15 \div 3 = 5$ remainder 1 remainder 2 remainder 0 or $13 = 4 \times 3 + 1$ $14 = 4 \times 3 + 2$ $15 = 5 \times 3$ <div style="text-align: right;">20 min</div>	Individual work, monitored, (helped) Drawn on BB or use enlarged copy master or OHP Discussion, agreement, checking, self-correction Answers: a) Alice will fill 4 vases, and 1 flower will remain b) Alice will fill 4 vases, and 2 flowers will remain c) Alice will fill 5 vases, and no flowers will remain
4	Interlude Action song <div style="text-align: right;">22 min</div>	Whole class in unison
5	PbY2b, page 147 Q.3 Read: <i>A photo album can hold only 4 photos on each page. How many pages will be filled and how many photos will remain if there are:</i> a) 24 photos, b) 25 photos, c) 26 photos, d) 27 photos? T explains task by showing a real photo album to class. (Ps could talk about their own family photo albums). Let's see how quickly you can write the divisions! Review orally with whole class. Ps give answer in context. We have worked out how many pages we can fill, but how many pages will we need for the photos? (6, 7, 7, 7) <div style="text-align: right;">28 min</div>	Individual work, monitored, helped Discussion, agreement, checking, praising Refer to <i>Copy Master 147/1</i> (multiples of 4) BB: a) $35 \div 4 = 8$, remainder 3 Check: $8 \times 4 + 3 = 35$ b) $25 \div 4 = 6$, remainder 1 Check: $6 \times 4 + 1 = 25$, etc. Praising

Y2		<i>Lesson Plan 147</i>
Activity 6	<p>Problem</p> <p>Listen carefully, picture the story in your head and work out the answer. in your <i>Ex. Bks.</i> Let's see if you can write a plan, do the calculation and write the answer as a sentence.</p> <p><i>In a class, each girl was wearing a pair of earrings. One of the girls lost an earring at playtime and the girls in the class now have only 35 earrings altogether. How many girls are in the class?</i></p> <p>A, come and tell us how you worked out the answer. Who agrees? Who did it another way? etc.</p> <p>BB: <i>Plan:</i> Each girl: 2 earrings Earrings now: 35</p> $\begin{aligned} \text{Calculation: } 35 \div 2 &= 20 \div 2 + 10 \div 2 + 5 \div 2 \\ &= 10 + 5 + 2, \text{ remainder } 1 \\ &= 17, \text{ remainder } 1 \end{aligned}$ <p>or <i>Plan:</i> Each girl: 2 earrings Earrings at first: $35 + 1 = 36$</p> $\begin{aligned} \text{Calculation: } 36 \div 2 &= 20 \div 2 + 10 \div 2 + 6 \div 2 \\ &= 10 + 5 + 3 \\ &= \underline{18} \end{aligned}$ <p><i>Answer:</i> There are <u>18</u> girls in the class. (Only 17 are wearing a <u>pair</u> of earrings, the 18th girl is wearing only 1 earring, as 1 has been lost)</p> <p style="text-align: right;">35 min</p>	<p style="text-align: center;">Notes</p> <p>Individual work in <i>Ex. Bks</i>, closely monitored, helped.</p> <p>T repeats slowly</p> <p>Discussion, reasoning, agreement, checking, praising</p> <p>(or $35 \div 2 = 20 \div 2 + 15 \div 2$)</p> <p><i>Check:</i> $2 \times 17 + 1 = 35$</p> <p>(or $36 \div 2 = 20 \div 2 + 16 \div 2$)</p> <p><i>Check:</i> $2 \times 18 - 1 = 35$</p> <p>Extra praise for Ps who calculated correct answer without help</p>
7	<p>Problems in context</p> <p>Who can think up a problem for this division? BB: $43 \div 3 = ?$</p> <p>Ps suggest contexts and class chooses the best one.</p> <p>(e.g. 43 marbles wer packed into bags, with 3 marbles in each bag. How many bags were filled and how many marbles wer left over?)</p> <p>Let's work out the answer together. on the BB.</p> $\begin{aligned} \text{BB: } 43 \div 3 &= 30 \div 3 + 13 \div 3 = 10 + 4, \text{ remainder } 1 \\ &= \underline{14}, \text{ remainder } 1 \end{aligned}$ <p><i>Answer:</i> 14 bags were filled and 1 marble was left over.</p> <p style="text-align: right;">40 min</p>	<p>Whole class activity</p> <p>Involve several Ps.</p> <p>T repeats unclear problems correctly. Praise creativity</p> <p>Class agrees/disagrees</p> <p>T writes what Ps dictate</p> <p>Agreement, checking:</p> <p>BB: $3 \times \underline{14} + 1 = 43$</p> <p>Ps recite answer in unison</p>
8	<p>PbY2b, Page 147</p> <p>Q.4 Look carefully at the equations. What do you notice?</p> <p>(No need to work out the LHS first, because as $LHS = RHS$: 28 is 1 <u>more</u> than 27, so missing number must be 1 <u>less</u> than 35, 24 is 10 <u>less</u> than 34, so missing number must be 10 <u>more</u> than 39, etc.)</p> <p>Let's see how quickly you can do them! Sit up with your arms folded when you have finished.</p> <p>Review orally round class. Mistakes corrected at number line.</p> <p style="text-align: right;">45 min</p>	<p>Individual work, monitored, (helped)</p> <p>Discussion, agreement</p> <p>Praising if Ps notice, but T gives hint otherwise</p> <p>Agreement, checking, self-correction, praising</p>


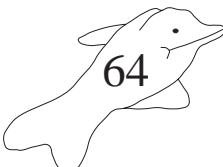
<h1>Y2</h1>	<p>R: Practice of calculation C: Division with remainders: in context E: <i>Problem solving</i></p>	<h2>Lesson Plan 148</h2>
<p>Activity</p> <p>1</p>	<p>What is the rule? Study the picture carefully. BB: What numbers could be missing from the leaves?</p>  <p>Ps come out to write in the missing numbers, explaining reasoning. What could the rule be? (increasing by 3) What else do you notice about the numbers? (If divided by 3, there is a remainder of 1; or they are all multiples of 3, plus 1.) Who can write the <u>sum</u> of the leaf numbers in the flower? (91)</p> <p style="text-align: right;">5 min</p>	<p>Notes</p> <p>Whole class activity Drawn on BB or use enlarged copy master (or write numbers on BB and cover with cut-out leaves) Class agrees/disagrees Discussion of rule Extra praise if Ps notice this by themselves, T gives hint if not Agreement, checking, praising</p>
<p>2</p>	<p>Division by 2, 3 Put 11 unit cubes (counters, items from Ps' collection) on your desk.</p> <ul style="list-style-type: none"> Arrange them in groups of 2. How many groups of 2 are there? How many are left over? Write equations about it in your <i>Ex. Bks.</i> (<i>Heading: Lesson number and date</i>) A, come and show us what you wrote. Who agrees? Who wrote a different equation? Let's check, etc. Now let's put the 11 cubes in groups of 3. (Repeat as above.) <p style="text-align: right;">12 min</p>	<p>Ps have manipulatives on desks Individual work, monitored Discussion at BB, agreement, checking, praising BB: $11 \div 2 = 5$, remainder 1 <i>Check:</i> $5 \times 2 + 1 = 11$ $11 \div 3 = 3$, remainder 2 <i>Check:</i> $3 \times 3 + 2 = 11$</p>
<p>3</p>	<p>PbY2b, page 148 Q.1 Read: <i>Write in the missing numbers. Draw pictures to match the calculation.</i></p> <p>Deal with one part at a time. Ps do top calculation first, then draw enough simple (small!) shapes to match the answer, then circle the shapes in the appropriate groups, then fill in the numbers missing from the calculation below.</p> <p>Review at BB with whole class. Mistakes corrected</p> <p>BB: a) $3 \times 5 + 1 = \underline{16}$ b) $3 \times 5 + 4 = \underline{19}$ c) $\underline{3} \times 5 + \underline{3} = 18$</p> <p style="text-align: center;"> $\underline{16} \div 5 = \underline{3}$, remainder $\underline{1}$ $\underline{19} \div 5 = \underline{3}$, remainder $\underline{4}$ $\underline{18} \div 5 = \underline{3}$, remainder $\underline{3}$</p> <p style="text-align: right;">22 min</p>	<p>Individual trial, monitored, helped T gives hints about order of tasks only if necessary Drawn on BB or use enlarged copy master or OHP Ps come out to show drawings and equations Reasoning, agreement, checking, praising</p>
<p>4</p>	<p>Interlude Song, rhyme, exercises</p> <p style="text-align: right;">24 min</p>	<p>Whole class in unison</p>
<p>5</p>	<p>PbY2b, page 148, Q.2 Read: <i>Grandad wants to put his 35 rabbits into hutches, with an equal number of rabbits in each hutch. Complete the table.</i></p> <p>Who has a pet rabbit? How many do you have? Where do you keep it? What is a hutch? What do you need to put inside it? (food, water, sawdust) Talk about the size of hutches: the larger it is, the more rabbits it can hold.</p> <p>T (or P) explains meaning of each row in table by completing the first column. (3rd row is top row divided by 2nd row, bottom row is the remainder) Ps come out to complete the columns, explaining reasoning. Class points out errors.</p> <p>Which of these hutches do you think would be best for Grandad's rabbits? (e.g. those which hold 5 or 7 rabbits, so that no rabbit will be on its own)</p> <p style="text-align: right;">30 min</p>	<p>Whole class activity Drawn on BB or use enlarged copy master or OHP Initial discussion Involve as many Ps as possible Agreement, checking, praising Some Ps may need to use their \times tables. Show details of difficult calculations on BB Demonstrate if problems Discussion, agreement</p>

Y2	R: Practice of calculation C: Division with remainder: in context E: <i>Problem solving</i>	<i>Lesson Plan</i> 149
Activity		Notes
1	Divisibility Tell me numbers which are divisible by 2 (3, 4). Tel me numbers which have a remainder of: <ul style="list-style-type: none"> • 1 when divided by 2 • 1 (2) when divided by 3 • 1 (2, 3) when divided by 4. <p style="text-align: right;"><i>8 min</i></p>	Whole class activity At speed. Involve all Ps Refer to <i>Copy Master 144/1</i> if necessary Agreement, checking, praising
2	PbY2b, page 149 Q.1 Read: <i>A school was taking its pupils on a trip on a steam railway. The carriages in the train were so small that they could seat only 6 people.</i> <i>Complete the table to show how many carriages were needed.</i> Elicit that middle row is top row divided by 6, bottom row is the remainder. Review at BB with whole class. Mistakes corrected. Which of these numbers of children do you think would be best for the school to take on the trip? Why? (24 or 30, so that nobody will be on their own and everyone will know each other.) <p style="text-align: right;"><i>16 min</i></p>	Individual work, monitored, (helped) Table drawn on BB or use enlarged copy master or OHP (Ps may use their × tables.) Discussion, agreement, checking, self-correcting Praising Discussion, agreement
3	Problem Listen carefully, picture the story in your head and work out the answer. in your <i>Ex. Bks.</i> Let's see if you can write a plan on your own, do the calculation and write the answer as a sentence. <i>On a parachute jump, the parachutists jumped from the aeroplane and floated to the ground, joined up in groups of 3.</i> <i>41 parachutists jumped from the aeroplane.</i> <i>How many groups were there? Did anyone jump alone?</i> A , come and tell us how you worked out the answer. Who agrees? Who did it another way? etc. BB: <i>Plan:</i> Parachutists: 41 Each group: 3 $\begin{aligned} \text{Calculation: } 41 \div 3 &= 30 \div 3 + 11 \div 3 \\ &= 10 + 3, \text{ remainder } 2 \\ &= 13, \text{ remainder } 2 \end{aligned}$ <i>Answer:</i> There were <u>13</u> groups. of 3 and 2 parachutists jumped alone (or as a pair) <p style="text-align: right;"><i>21 min</i></p>	Individual work in <i>Ex. Bks.</i> , closely monitored, helped. T repeats slowly BB: <u>parachutist</u>  Discussion, reasoning, agreement, checking, praising $\begin{aligned} \text{Check: } 3 \times 13 + 2 &= 39 + 2 \\ &= 41 \end{aligned}$ Extra praise for Ps who calculated correct answer without help
4	Interlude Song, rhyme, exercises <p style="text-align: right;"><i>23 min</i></p>	Whole class in unison

Y2		<i>Lesson Plan 149</i>
Activity 5	<p>PbY2b, page 149</p> <p>Q.2 Read: <i>How many weeks and days are there in each month? Fill in the table.</i></p> <p>Revise number of days in a week and in a normal month. Talk about leap years and normal years, e.g. 2000 and 1999. Let's fill in the table for a normal year. (e.g. 1999) T (or P) explains table by completing first 2 columns. (Middle row is top row divided by 7, bottom row is the remainder, <i>Check</i>: top row is middle row times 7, plus bottom row) Ps complete the rest of table in <i>Pbs</i>, with help of calendar. Review at BB with whole class. Mistakes corrected</p> <p style="text-align: right;"><i>31 min</i></p>	<p style="text-align: center;">Notes</p> <p>Whole class discussion to start, followed by individual work, monitored, helped</p> <p>Use enlarged copy master/OHP + LP 99/3 for 1999 calendar (Ps have copy on desks too)</p> <p>Discussion, agreement, checking, praising</p> <p>BB: $31 \div 7 = 4$, remainder 3 $28 \div 7 = 4$ $30 \div 7 = 4$, remainder 2</p>
6	<p>PbY2b, page 149</p> <p>Q.3 Read: <i>A train had carriages which could seat 8 people. Three carriages were full and the 4th carriage was half full. How many passengers were on the train?</i></p> <p>X, come and tell us how you worked out the answer. Who agrees? Who did it another way? etc.</p> <p>BB: <i>Plan</i>: Each carriage: 8 passengers 3 full carriages: 3×8 passengers 1 half full carriage: $8 \div 2$ passengers</p> <p><i>Calculation</i>: $3 \times 8 + 8 \div 2 = 24 + 4 = 28$</p> <p>How could we check it? (with a division)</p> <p><i>Check</i>: $28 \div 8 = 3$, remainder 4 (so 4 carriages, 3 full with 8 people each and 4th half full with 4 people)</p> <p><i>Answer</i>: There were <u>28</u> passengers on the train</p> <p style="text-align: right;"><i>35 min</i></p>	<p>Individual work, monitored, helped</p> <p>Reasoning, agreement, checking, praising</p> <p>or $3 \times 8 = 24$, $8 \div 2 = 4$, $24 + 4 = 28$</p> <p>Demonstrate with Ps at front of class if necessary</p> <p>Make sure that Ps write the answer in context</p>
7	<p>Problem</p> <p>Listen carefully and think how you would solve this problem</p> <p><i>Some children were playing a game and had to stand in rows.</i></p> <p><i>If they stood 2 in a row, then 1 child was left out.</i></p> <p><i>If they stood 3 in a row, then 2 children were left out.</i></p> <p><i>If they stood 4 in a row, then 3 children were left out.</i></p> <p><i>What was the smallest possible number of children playing the game?</i></p> <p>Who can suggest what we should do? Who agrees? Who thinks something else? (If nobody knows, T gives hints about using mathematical reasoning:</p> <ul style="list-style-type: none"> • number must be equal to, or more than, 7 (as 4 in row + 3 possible) • if 2 in a row, there was 1 over, so number must be odd • if 3 in a row, there were 2 over, so 7, 9, 13, 15 not possible. <p>Only number left is 11. Let's check it is possible for 4 in a row, plus 3.</p> <p><i>Answer</i>: <u>11</u> was the smallest number possible.</p> <p style="text-align: right;"><i>40 min</i></p>	<p>Whole class activity</p> <p>T repeats slowly and asks Ps to repeat in own words</p> <p>(Can use table on copy master for LP 148/7)</p> <p>Ask several Ps what they think</p> <p>Discussion, agreement, checking, praising</p> <p>BB $7 \ 8 \ 9 \ 10 \ 11 \ 12 \ 13 \ 14 \ 15$ $\times \times \times \times \quad \times \times \times \times$</p> <p>BB: $11 = 2 \times 5 + 1$ $11 = 3 \times 3 + 2$ $11 = 4 \times 2 + 3$, so ✓</p>
8	<p>PbY2b, page 149</p> <p>Q.4 Read: <i>Practise calculation.</i></p> <p>Let's see who can solve them all in 4 minutes!</p> <p>Review orally round class. Mistakes discussed/corrected.</p> <p style="text-align: right;"><i>45 min</i></p>	<p>Individual work, monitored</p> <p>T notes Ps' problems</p> <p>Quick checking, correcting</p> <p>Praising</p>

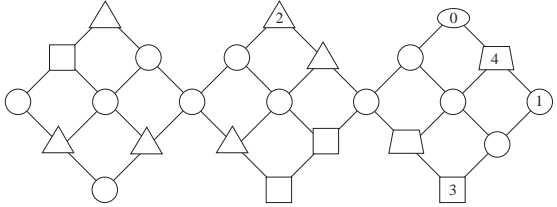
Y2		<i>Lesson Plan 150</i>
<i>Activity</i>	Tables practice, revision, activities, consolidation <i>PbY2b, page 150</i>	<i>Notes</i>

<h1>Y2</h1>	<p>R: Mental calculation C: Revision and practice E: 0 and 1 in multiplication and division</p>	<h2>Lesson Plan 151</h2>																																								
<p>Activity</p> <p>1</p>	<p>Logic puzzle</p> <p>Let's fill in the grid with the numbers 2, 5 or 10, so that the <u>product</u> of the 3 numbers in each row or column is the number shown.</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="padding-left: 5px;">= 8</td> </tr> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="padding-left: 5px;">= 50</td> </tr> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="padding-left: 5px;">= 100</td> </tr> <tr> <td style="text-align: center; border: none;"><u> </u></td> <td style="text-align: center; border: none;"><u> </u></td> <td style="text-align: center; border: none;"><u> </u></td> <td style="border: none;"></td> </tr> <tr> <td style="text-align: center; border: none;">20</td> <td style="text-align: center; border: none;">50</td> <td style="text-align: center; border: none;">40</td> <td style="border: none;"></td> </tr> </table> <p>Where should we start? (e.g. 1st row because 8 is the smallest product.) A, come and write in the missing numbers, giving your reasoning. Who agrees? etc. (All 3 numbers must be '2' because 5 and 10 would be too big.) <i>Check:</i> $2 \times 2 \times 2 = 8$</p> <p>Where should we go next? (e.g. 3rd column: $2 \times 20 = 2 \times 2 \times 10 = 40$) But where should we put the 2 and 10? (If we put 10 in middle square, the other 2 squares in the middle row would need a product of 5, which is impossible, so '2' must go in the middle square). etc.</p> <p style="text-align: right;">5 min</p>				= 8				= 50				= 100	<u> </u>	<u> </u>	<u> </u>		20	50	40		<p>Notes</p> <p>Whole class activity (or individually in <i>Ex. Bks</i> if Ps wish)</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Ps suggest what to do</p> <p>Reasoning, agreement, checking</p> <p>BB:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;">2</td> <td style="border: 1px solid black; width: 20px; height: 20px;">2</td> <td style="border: 1px solid black; width: 20px; height: 20px;">2</td> <td style="padding-left: 5px;">= 8</td> </tr> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;">5</td> <td style="border: 1px solid black; width: 20px; height: 20px;">5</td> <td style="border: 1px solid black; width: 20px; height: 20px;">2</td> <td style="padding-left: 5px;">= 50</td> </tr> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;">2</td> <td style="border: 1px solid black; width: 20px; height: 20px;">5</td> <td style="border: 1px solid black; width: 20px; height: 20px;">10</td> <td style="padding-left: 5px;">= 100</td> </tr> <tr> <td style="text-align: center; border: none;"><u> </u></td> <td style="text-align: center; border: none;"><u> </u></td> <td style="text-align: center; border: none;"><u> </u></td> <td style="border: none;"></td> </tr> <tr> <td style="text-align: center; border: none;">20</td> <td style="text-align: center; border: none;">50</td> <td style="text-align: center; border: none;">40</td> <td style="border: none;"></td> </tr> </table> <p>Praising</p>	2	2	2	= 8	5	5	2	= 50	2	5	10	= 100	<u> </u>	<u> </u>	<u> </u>		20	50	40	
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<p>2</p>	<p>Multiplication and division</p> <p>T writes the numbers 0, 1, 2 and 3 on LHS of BB and 0, 1, 5 on RHS.</p> <p>a) Let's make multiplications with a number from each side. How many <u>different</u> multiplications can we make? (Each number on LHS can multiply the 3 numbers on RHS: $4 \times 3 = 12$)</p> <p>BB: $0 \times 0 = 0$ $0 \times 1 = 0$ $0 \times 5 = 0$ $1 \times 0 = 0$ $1 \times 1 = 1$ $1 \times 5 = 5$ $2 \times 0 = 0$ $2 \times 1 = 2$ $2 \times 5 = 10$ $3 \times 0 = 0$ $3 \times 1 = 3$ $3 \times 5 = 15$</p> <p>What do you notice about these multiplications?</p> <ul style="list-style-type: none"> Zero times (multiplied by) any number is zero. 1 times (multiplied by) any number is the number itself. <p>b) Let's make divisions, with a number from LHS as the dividend and a number from RHS as the divisor. But be careful!</p> <p>BB: $0 \div 0$ is impossible $0 \div 1 = 0$ $0 \div 5 = 0$ $1 \div 0$ is impossible $1 \div 1 = 1$ $1 \div 5 = 1$ fifth $2 \div 0$ is impossible $2 \div 1 = 2$ $2 \div 5 = 2$ fifths $3 \div 0$ is impossible $3 \div 1 = 3$ $3 \div 5 = 3$ fifths</p> <p>What do you notice about these divisions? (T gives hints if necessary.)</p> <ul style="list-style-type: none"> Zero divided into any non-zero number of parts is still zero. Dividing by zero, i.e. dividing a number into groups of zero, is impossible; Any number divided by 1 is the number itself. <p style="text-align: right;">15 min</p>	<p>Whole class activity</p> <p>BB:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border: 1px solid black; width: 40px; height: 40px; text-align: center;">0</td> <td style="border: 1px solid black; width: 40px; height: 40px; text-align: center;">2</td> <td style="border: 1px solid black; width: 40px; height: 40px; text-align: center;">1</td> <td style="padding: 0 10px;">×</td> <td style="border: 1px solid black; width: 40px; height: 40px; text-align: center;">0</td> <td style="border: 1px solid black; width: 40px; height: 40px; text-align: center;">5</td> </tr> <tr> <td style="border: 1px solid black; width: 40px; height: 40px; text-align: center;">3</td> <td style="border: 1px solid black; width: 40px; height: 40px; text-align: center;">1</td> <td style="border: 1px solid black; width: 40px; height: 40px; text-align: center;">5</td> <td></td> <td style="border: 1px solid black; width: 40px; height: 40px; text-align: center;">1</td> <td style="border: 1px solid black; width: 40px; height: 40px; text-align: center;">5</td> </tr> </table> <p>T writes Ps' suggestions in logical order on BB and underlines those containing '0' or '1'</p> <p>Discussion, agreement, checking, praising</p> <p>T reminds Ps which number is dividend and which is divisor</p> <p>If necessary, T writes on BB: $3 \div 0 \neq 0$, as $0 \times 0 \neq 3$ $3 \div 0 \neq 3$, as $3 \times 0 \neq 3$</p> <p>Discussion, agreement, checking, praising</p> <p>Ps recite bullet points in unison (Quick mental practice round class as consolidation)</p>	0	2	1	×	0	5	3	1	5		1	5																												
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3	1	5		1	5																																					
<p>3</p>	<p>PbY2b, page 151, Q.1</p> <p>Read: <i>In a farmyard there are hens and rabbits. They have 52 legs altogether. How many hens and how many rabbits could there be in the farmyard?</i></p> <p><i>Complete the table. Write calculations for some of the columns.</i></p> <p>Ps come out to choose a column and fill in missing number, explaining reasoning and writing equations on BB.</p> <p>Class checks that they are correct. If problems, T leads Ps through by asking relevant questions: e.g. <i>1st column:</i> How many hens? (12) How many hens' legs? (24) How many rabbits legs? (28) How many rabbits? (7)</p> <p style="text-align: right;">23 min</p>	<p>Whole class activity</p> <p>Table drawn on BB or use enlarged copy master or OHP</p> <p>At a good pace. Reasoning, agreement, checking, praising</p> <p>BB: e.g. <i>1st column:</i> $12 \times 2 = 24$, $52 - 24 = 28$, $28 \div 4 = 7$ or $12 \times 2 + 7 \times 4 = 52$ or $(52 - 12 \times 2) \div 4 = 7$</p>																																								

Y2		<i>Lesson Plan 151</i>
Activity		Notes
4	Interlude Song or rhyme _____ 25 min _____	Whole class in unison
5	PbY2b, page 151 Q.2 Read: <i>Match up the dogs to their bones. Join them up or colour them.</i> Review at BB with whole class. Deal with all mistakes. BB: $49 = 9 \times 5 + 4 = 100 - 51 = 8 \times 6 + 1$ $32 = 8 \times 4 = 100 - 68 = (36 - 20) \times 2 = 16 \times 2 = 2 \times 12 + 8$ Draw another bone, with a different label, for each dog. _____ 30 min _____	Individual work, monitored, (helped) Drawn on BB or use enlarged copy master or OHP Discussion at BB Agreement, checking, praising
6	PbY2b, page 151 Q.3 Read: <i>Practise multiplication.</i> Let's see how quickly you can do these! You may use your multiplication tables if you need them but try to answer without them first. Sit up with your arms folded when you have finished. Review orally round class. Who had all correct? Who made a mistake? What kind of mistake? Who needed to look at their multiplication tables? Try to learn these facts at home. _____ 35 min _____	Individual work, monitored T notes Ps having problems Quick checking, agreement, self-correcting, evaluation Praising, encouragement only
7	Operations T sticks two pictures on BB, each containing a number. e.g. BB:  e.g. $11 + 16$ $52 - 25$ 3×9 $81 \div 3$  e.g. $19 + 45$ $100 - 36$ 8×8 $64 \div 1$ Who can tell me an operation (+, -, ×, ÷) for each dolphin? T chooses Ps at random. P says an operation. T writes it beside relevant picture on BB. Class agrees or points out errors or repeats. (Or done as a quick team competition, with Ps coming out one after another to write on BB. Team with most correct, different equations in a set time limit is the winner.) _____ 40 min _____	Whole class activity (or team competition) Pictures drawn or stuck to BB (use enlarged, cut-out copy master, or pictures cut out from magazines with numbers written or stuck on) At a good pace Agreement, checking, praising (If competition, stars/stickers etc. could be awarded)
8	PbY2b, page 151 Q.4 Read: <i>Practise addition and subtraction</i> Let's see how quickly you can do these! You may use your number lines if you need them but try to answer without them first. Sit up with your arms folded when you have finished. Review orally round class. Who had all correct? Who made a mistake? What kind of mistake? Who needed to look at their number line? Which equation is the odd one out? Why? (e.g. $15 + 72$ is the only equation with two 2-digit numbers on the LHS.) _____ 45 min _____	Individual work, monitored T notes Ps having problems Quick checking, agreement, self-correcting Praising, encouragement only Discussion, agreement

Y2	R: Mental calculation C: Revision and practice E: <i>Problem solving</i>	<i>Lesson Plan</i> 152																																	
Activity		Notes																																	
1 2 <i>Erratum in a) in Pbs – see revised copy master</i> <i>Ps correct Pbs</i> Extension	Number cards Show me with number cards when I say the number which is: <ul style="list-style-type: none"> • 5 more than 20 Show me ... now! (25) $20 + 5 = 25$ • 5 times 20 Show me ... now! (100) $5 \times 20 = 100$ • 5 less than 20 Show me ... now! (15) $20 - 5 = 15$ • A fifth of 20 Show me ... now! (4) $20 \div 5 = 4$ • 2 fifths of 20 Show me ... now! (8) $20 \div 5 \times 2 = 8$ <p style="text-align: right;"><i>5 min</i></p> <p>PbY2b, page 152, Q.1 T has equations written (or stuck) on BB. What do you notice about the equations? (All have the same numbers on LHS.) Ps come out to fill in missing signs, explaining reasoning. Class checks that they are correct. T gives hints only if necessary. BB: e.g. a) $40 \div 4 \div 5 = 2$ b) $40 + 4 + 5 = 49$ $40 \div 4 + 5 = 15$ $40 \div 4 \times 5 = 50$ $40 + 4 \times 5 = 60$ $40 - 4 - 5 = 31$</p> <p>Make up your own equations using 40, 4 and 5 on the LHS.</p> <p style="text-align: right;"><i>13 min</i></p>	Whole class activity Number cards shown in unison Quick feedback If problems, write equations on BB Praising Whole class activity Written on BB or use enlarged copy master Reasoning, agreement, checking, praising Ps can write in <i>Pbs</i> too e.g. $40 - 4 \times 5 = 20$ Praise creativity																																	
3	<p>PbY2b, page 152 Q.2 Read: <i>What is the connection between the shapes? Complete the table. Write the rule in different ways.</i></p> <p>Study the 3 columns already done. What could the rule be? T gives hint if nobody knows but give Ps time to think first. (Agree on one form of the rule, even if expressed only in words, e.g. 'the star plus the sun equals half of the moon ', or 'the bottom row equals twice the sum of the top and middle rows'.)</p> <p>Let's use this rule to complete the table. Review at BB with whole class. Mistakes corrected. (Final column can have many answers – deal with all cases. Class agrees/disagrees.)</p> <p>How could we write the rule? T writes with help from Ps, saying the equation in words too. Could we write it another way? Ps suggest different ways. T (or Ps) writes on BB, Ps in <i>Pbs</i>.</p> <p>BB:</p> <table border="1" style="margin-left: 20px;"> <tr> <td style="text-align: center;">☆</td> <td style="text-align: center;">5</td> <td style="text-align: center;">6</td> <td style="text-align: center;">1</td> <td style="text-align: center;">7</td> <td style="text-align: center;">3</td> <td style="text-align: center;">6</td> <td style="text-align: center;">1</td> <td style="text-align: center;">8</td> <td style="text-align: center;">1</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="text-align: center;">☀</td> <td style="text-align: center;">4</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> <td style="text-align: center;">9</td> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">☾</td> <td style="text-align: center;">18</td> <td style="text-align: center;">18</td> <td style="text-align: center;">10</td> <td style="text-align: center;">16</td> <td style="text-align: center;">12</td> <td style="text-align: center;">16</td> <td style="text-align: center;">20</td> <td style="text-align: center;">22</td> <td style="text-align: center;">6</td> <td style="text-align: center;">2</td> </tr> </table> <p style="margin-left: 20px;"><i>Rule:</i> $\text{☾} = (\text{☆} + \text{☀}) \times 2$, $\text{☆} = \text{☾} \div 2 - \text{☀}$, $\text{☀} = \text{☾} \div 2 - \text{☆}$</p> <p style="text-align: right;"><i>22 min</i></p>	☆	5	6	1	7	3	6	1	8	1	0	☀	4	3	4	1	3	2	9	3	2	1	☾	18	18	10	16	12	16	20	22	6	2	Whole class introduction Drawn on BB or use enlarged copy master or OHP Ask several Ps what they think Individual work, monitored, helped Agreement, checking, praising Discussion, reasoning, agreement, checking, praising
☆	5	6	1	7	3	6	1	8	1	0																									
☀	4	3	4	1	3	2	9	3	2	1																									
☾	18	18	10	16	12	16	20	22	6	2																									
4	Interlude Physical exercises to music <p style="text-align: right;"><i>24 min</i></p>	Whole class in unison																																	

<p>Y2</p>		<p><i>Lesson Plan 152</i></p>									
<p>Activity</p> <p>5</p>	<p>One operation instead of 2 Study these diagrams. What is missing from them?</p> <p>BB: a) $36 \xrightarrow{+40} \square \xrightarrow{-2} \square$ \square</p> <p>b) $91 \xrightarrow{-50} \square \xrightarrow{+6} \square$ \square</p> <p>c) $9 \xrightarrow{\square} 54 \xrightarrow{\square} 27$ \square</p> <p>d) $12 \xrightarrow{\square} 3 \xrightarrow{\square} 24$ \square</p> <p>Elicit that:</p> <ol style="list-style-type: none"> adding 40 and subtracting 2 is the same as adding 38; subtracting 50 and adding 6 is the same as subtracting 44; multiplying by 6 and then dividing by 2 is the same as multiplying by 3; dividing by 4 and then multiplying by 8 is the same as multiplying by 2. <p>Which do you think is easier? Why?</p> <p style="text-align: right;">29 min</p>	<p>Notes</p> <p>Whole class, activity Drawn on BB or use enlarged copy master or OHP</p> <p>Ps come out to write in the missing numbers and operation signs, saying the equation. Class points out errors</p> <p>Discussion, agreement, checking, praising</p> <p>T could ask Ps for other examples of each type</p> <p>Discussion. Involve several Ps</p>									
<p>6</p>	<p>Problem Listen carefully, picture the story in your head and think how you would work out the answer.</p> <p><i>Pooh Bear has 1 litre 20 cl of honey and wants to put it into two jugs so that one jug contains twice as much as the other. How much honey will he put in each jug?</i></p> <p>Think about how many equal parts the honey should be divided into. B, how you would you work out the answer? Who agrees? Who would do it another way? etc. (Draw a diagram. Write a plan)</p> <p>BB: <i>Plan:</i> Honey: 1 litre 20 cl = 120 cl No of equal parts: 3 <i>Calculation:</i> $120 \div 3 = 12 \text{ tens} \div 3 = 4 \text{ tens} = 40$ (or $120 \div 3 = 30 \div 3 + 30 \div 3 + 30 \div 3 + 30 \div 3$) <i>1st jug:</i> <u>40 cl</u> <i>2nd jug:</i> $2 \times 40 \text{ cl} = 80 \text{ cl}$</p> <p><i>Answer:</i> He will put 40 cl in one jug and 80 cl in the other jug.</p> <p style="text-align: right;">35 min</p>	<p>Whole class activity T repeats slowly and one or two Ps repeat problem in own words</p> <p>T gives hint to Ps to steer their thoughts in right direction</p> <p>Ps suggest what T should write Agreement, checking, praising</p> <p><i>Diagram:</i></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td rowspan="3" style="padding-right: 10px;">1 litre 20 cl = 120 cl</td> <td style="border: 1px solid black; padding: 5px;">1 third</td> <td rowspan="3" style="font-size: 2em; padding: 0 10px;">}</td> <td>40 cl</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">1 third</td> <td rowspan="2" style="font-size: 2em; padding: 0 10px;">}</td> <td>80 cl</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">1 third</td> <td></td> </tr> </table> <p><i>Check:</i> $40 \text{ cl} + 80 \text{ cl} = 120 \text{ cl}$</p>	1 litre 20 cl = 120 cl	1 third	}	40 cl	1 third	}	80 cl	1 third	
1 litre 20 cl = 120 cl	1 third	}		40 cl							
	1 third			}		80 cl					
	1 third										
<p>7</p>	<p>PbY2b, page 152 Q.3 Read: <i>Practise addition and subtraction</i> Let's see how quickly you can do these! Sit up with your arms folded when you have finished. Check them if you have time. Review orally round class. Mistakes corrected. If problems, Ps show calculation on BB. How many correct out of 18?</p> <p style="text-align: right;">40 min</p>	<p>Individual work, monitored (helped) Encourage quick, accurate work Agreement, checking, self-correction, praising, evaluation</p>									
<p>8</p>	<p>PbY2b, page 152 Q.4 Read: <i>Practise multiplication.</i> Let's see how many of these you can do in 4 minutes! Review orally round class. Who had all correct? Who made a mistake? What kind of mistake? etc. Let's check each one with a division.</p> <p style="text-align: right;">45 min</p>	<p>Individual work, monitored Ps may use \times tables if needed Agreement, checking, self-correction, praising At speed orally round class</p>									

<h1>Y2</h1>	<p>R: Calculation C: Revision and practice Probability (games with dice) E: <i>Extending numbers beyond 100</i></p>	<h2>Lesson Plan 153</h2>																																																			
<p>Activity 1</p>	<p>Logic puzzle (<i>Tx 2, page 99, activity 1</i>) Let's find ways through the maze so that the product of the numbers passed through is a) 24, b) 72, c) 1, d) 0. The same shape means the same number. We can only move along the lines given. BB:</p>  <p>What should we do first? (Write appropriate numbers in all the shapes, e.g. 1 in all the circles, 2 in all the triangles, etc.) Ps come out to show routes and class keeps check. <i>Solution:</i> a) several routes possible, e.g. $1 \times 3 \times 1 \times 2 \times 1 \times 2 \times 1 \times 2 \times 1 \times 1 \times 1 \times 1 \times 1 = 24$ b) several routes possible, e.g. $1 \times 2 \times 1 \times 2 \times 1 \times 2 \times 3 \times 3 \times 1 \times 1 \times 1 \times 1 \times 1 = 72$ c) route for '1' is impossible, as it would need all the numbers to be '1'. d) any route which contains 0.</p> <p style="text-align: right;"><i>10 min</i></p>	<p>Notes</p> <p>Whole class activity Drawn on BB or use enlarged copy master or OHP Ps could each have a copy of puzzle on desks.</p> <p>Discussion, agreement, checking, raising Ps show different routes for parts a) and b)</p> <p>Discussion, agreement Extra praise if Ps notice without T's help</p>																																																			
<p>2</p>	<p>Tossing coins Ps each have a coin (real or model) on desk. Make sure that Ps know which side is heads and which is tails. T explains table on BB and Ps copy into <i>Ex. Bks</i>. BB:</p> <table border="1" data-bbox="391 1276 957 1411"> <thead> <tr> <th></th> <th colspan="10">Throws</th> <th>Total</th> </tr> <tr> <th></th> <th>1st</th> <th>2nd</th> <th>3rd</th> <th>4th</th> <th>5th</th> <th>6th</th> <th>7th</th> <th>8th</th> <th>9th</th> <th>10th</th> <th></th> </tr> </thead> <tbody> <tr> <td>Heads</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Tails</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table> <p>Ps toss coins on command from T, note whether it lands heads up or tails up and tick the appropriate box in column headed '1st' in their tables. (Make sure Ps know to write only one 'tick' per column!) Hands up those who threw a 'head' ('tail'). T counts and writes total in table on BB. Continue in similar way for 10 (or 5) throws. Ps count up their individual totals for heads and tails and write in final column in table in <i>Ex. Bks</i>. T can use a calculator to obtain totals for class, shows each total to Ps and writes in table on BB. How can we check whether we have added up correctly? (Ps' totals for heads and tails should sum to 10 and T's totals for class should sum to 10 times number of Ps in the class.) What do you notice?</p> <p style="text-align: right;"><i>18 min</i></p>		Throws										Total		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th		Heads												Tails												<p>Whole class activity Table drawn on BB or use enlarged copy master or OHP Ps draw table in <i>Ex. Bks</i> or each has copy of copy master. T emphasises importance of care and accuracy in 'experiments' like this.</p> <p>Ps throw coins in unison Individual work in recording Ps raise hands in unison for either 'heads' or 'tails'</p> <p>BB: e.g. Heads Tails Total</p> <table border="1" data-bbox="1244 1635 1444 1691"> <tr> <td>132</td> <td>138</td> <td>270</td> </tr> </table> <p>Checking, correcting Discussion: elicit that the class data are more uniform. Why?</p>	132	138	270
	Throws										Total																																										
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<p>3</p>	<p>PbY2b, page 153 Q.1 Read: <i>I am going to toss a coin once. How certain can I be of the result? Join up the statements on the left to the correct labels on the right.</i> Class reads out one statement at a time and Ps join it up to correct label in <i>Pbs</i>. Review with whole class. After discussion, class agrees that each side of coin has equal chance of occurring.</p> <p style="text-align: right;"><i>24 min</i></p>	<p>Individual work but class kept together. Discussion, agreement BB: H: Possible, but not certain T: Possible, but not certain H and T: Impossible (1 throw) H or T: Certain</p>																																																			

<h1>Y2</h1>		<p>Lesson Plan 153</p>																																																																																																																				
<p>Activity</p> <p>4</p>	<p>Interlude</p> <p>Action song</p> <p style="text-align: right;">26 min</p>	<p>Notes</p> <p>Whole class in unison</p>																																																																																																																				
<p>5</p>	<p>PbY2b, page 153, Q.2</p> <p>Let's do another experiment! T reminds them of previous 'experiment' and encourages care and accuracy. You keep note of your own results in your <i>Pbs</i> and I will keep note of the class's results on the BB.</p> <p>How many dots are on the sides of your dice? (1, 2, 3, 4, 5, 6) Which numbers are opposite each other? (1 and 6, 2 and 5, 3 and 4) Let's practice throwing it so that it lands on your desk (and not on the floor!) Which number is facing up? Where can you find it in the table? (Ps come out to point.)</p> <p>Read: <i>Throw a dice on your desk 10 times. Keep a tally of the numbers thrown in the table. Fill in the last column to show how often you threw each number.</i></p> <p>Ps throw dice on command from T, note the number facing up and write a tick (or a) in the appropriate box in the tables in their <i>Pbs</i>. Hands up those who threw a '6' ('5', ... '1'). T counts and writes total in class table on BB. Continue in a similar way for 10 throws.</p> <p>Ps count up number of ticks and write totals in boxes at end of each row in their tables. T can use a calculator to obtain totals for class, shows each total to Ps and writes in table on BB.</p> <p>How can we check whether we have added up correctly? (Ps' totals for own data should sum to 10 and T's totals for class data should sum to 10 times number of Ps in the class, as the dice was thrown 10 times.)</p> <p>Let's draw a <u>bar chart</u> to show the results more clearly. Ps write numbers 1 to 10 on LHS of their copies then draw and colour bar charts for their own data.</p> <p>T writes appropriate numbers on LHS of class bar chart on BB and completes with help of Ps. What do you notice?</p> <p style="text-align: right;">36 min</p>	<p>Whole class activity</p> <p>Table drawn on BB or use enlarged copy master or OHP</p> <p>Ps have dice on desks.</p> <p>Familiarisation with dice</p> <p>T emphasises importance of care and accuracy in 'experiments' like this!</p> <p>Ps throw dice and raise hands in unison</p> <p>Individual work in recording</p> <p>BB: e.g. CLASS DATA</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2"></th> <th colspan="10">Throws</th> <th></th> </tr> <tr> <th colspan="2"></th> <th>1st</th> <th>2nd</th> <th>3rd</th> <th>4th</th> <th>5th</th> <th>6th</th> <th>7th</th> <th>8th</th> <th>9th</th> <th>10th</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>•</td> <td>1</td> <td>3</td> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>43</td> </tr> <tr> <td>•</td> <td>2</td> <td>5</td> <td>etc.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>45</td> </tr> <tr> <td>•</td> <td>3</td> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>43</td> </tr> <tr> <td>•</td> <td>4</td> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>46</td> </tr> <tr> <td>•</td> <td>5</td> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>45</td> </tr> <tr> <td>•</td> <td>6</td> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>48</td> </tr> <tr> <td colspan="11"></td> <td style="text-align: right;">270</td> </tr> </tbody> </table> <p>Checking, correcting</p> <p>Ps each have copy of <i>Copy Master 153/5b</i>, T uses enlarged copy on BB</p> <p>Discussion: elicit that class data are more uniform. Why?</p>			Throws													1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	•	1	3	3									43	•	2	5	etc.									45	•	3	4										43	•	4	5										46	•	5	6										45	•	6	4										48												270
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<p>7</p>	<p>PbY2b, page 153, Q.4</p> <p>Read: <i>I am going to toss a coin twice. Write the possible results in the table.</i></p> <p>T explains table. On my first throw, what could the outcome be? (Either Head or Tail) T points to relevant column in table. If I threw a 'Head' on the first throw, what could I throw on my second throw? (Head or Tail) T writes in table on BB, Ps in <i>Pbs</i>. Repeat for 'Tail'.</p> <p>We could also show it like this. (BB) This is called a <u>tree diagram</u>.</p> <p style="text-align: right;">45 min</p>	<p>Whole class activity</p> <p>Table drawn on BB</p> <p>Agreement, praising</p> <p>BB:</p> <table style="margin-left: 20px;"> <tr> <td></td> <td>1st</td> <td>2nd</td> </tr> <tr> <td></td> <td>H</td> <td>H</td> </tr> <tr> <td></td> <td>H</td> <td>T</td> </tr> <tr> <td></td> <td>T</td> <td>H</td> </tr> <tr> <td></td> <td>T</td> <td>T</td> </tr> </table> <p><u>Tree diagram</u></p>		1st	2nd		H	H		H	T		T	H		T	T																																																																																																					
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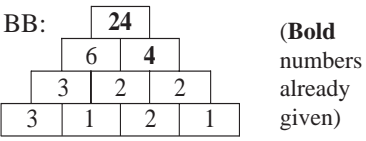
Y2	R: Calculation C: Revision and practice. Probability (games with dice) E: <i>Problems about probability</i>	<i>Lesson Plan</i> 154
Activity	Notes	
1 Probable outcomes T puts 3 white and 3, e.g. red, marbles into an opaque bag. A is going to take out 3 marbles from the bag with his eyes closed. What do you think the outcome will be? Is A more likely to take out <ul style="list-style-type: none"> • 3 marbles all the same colour, or • 3 marbles all different colours, or • 3 marbles, some white and some coloured? B, what do you think is more likely to happen? Why? Who agrees? Who thinks something else? Why? etc. Let's see what really happens! Repeat with several other Ps taking out 3 marbles. T keeps tally of outcomes on BB. Class agrees that 1st outcome is possible, though not likely, 2nd is impossible (not 3 colours in the bag), 3rd outcome is most probable.	Whole class activity (or white/red cubes into a box) Discussion, reasoning, agreement BB: e.g. • 3 the same: • 3 all different: 0 • 3 mixed: Praising only 8 min	Whole class activity Ps each have 3 cards on desks: <div style="display: flex; gap: 10px;"> <div style="border: 1px solid black; padding: 2px;">Certain</div> <div style="border: 1px solid black; padding: 2px;">Possible</div> <div style="border: 1px solid black; padding: 2px;">Impossible</div> </div> cut out from copy master In unison Discussion, reasoning, agreement, checking, praising Demonstrate with a bag and 6 marbles at front of class.
2 PbY2b, page 154, Q.1 Read: <i>There are 2 white, 2 black and 2 striped marbles in a bag. The bag is tied with cord and you cannot see inside.</i> How certain can I be that if, with my eyes shut: . . . T reads out one statement at a time and Ps show what they think with cards on command. Show me . . . now! C, why did you choose it? Who agrees? Who thinks something else? <i>Solution:</i> a), b), c) Possible (but not certain) d) Certain (only 4 needed to be sure of 2 the same colour) e) Impossible (there are not 4 colours in the bag)	Whole class activity to start, followed by individual work when T thinks Ps understand Explanation, demonstration with 2 dice if necessary BB: (write in rows of 6) <div style="border: 1px solid black; padding: 5px;"> $1 + 6, 1 + 5, 1 + 4, 1 + 3,$ $1 + 2, 1 + 1, 2 + 6, 2 + 5,$ $2 + 4, 2 + 3, 2 + 2, 2 + 1,$ $3 + 6, 3 + 5, 3 + 4, 3 + 3,$ $3 + 2, 3 + 1, 4 + 6, 4 + 5,$ $4 + 4, 4 + 3, 4 + 2, 4 + 1,$ $5 + 6, 5 + 5, 5 + 4, 5 + 3,$ $5 + 2, 5 + 1, 6 + 6, 6 + 5,$ $6 + 4, 6 + 3, 6 + 2, 6 + 1$ </div> In unison. Agreement, checking, praising e.g. 2 (12) has 1 chance out of 36 throws 16 min	Whole class activity to start, followed by individual work when T thinks Ps understand Explanation, demonstration with 2 dice if necessary BB: (write in rows of 6) <div style="border: 1px solid black; padding: 5px;"> $1 + 6, 1 + 5, 1 + 4, 1 + 3,$ $1 + 2, 1 + 1, 2 + 6, 2 + 5,$ $2 + 4, 2 + 3, 2 + 2, 2 + 1,$ $3 + 6, 3 + 5, 3 + 4, 3 + 3,$ $3 + 2, 3 + 1, 4 + 6, 4 + 5,$ $4 + 4, 4 + 3, 4 + 2, 4 + 1,$ $5 + 6, 5 + 5, 5 + 4, 5 + 3,$ $5 + 2, 5 + 1, 6 + 6, 6 + 5,$ $6 + 4, 6 + 3, 6 + 2, 6 + 1$ </div> In unison. Agreement, checking, praising e.g. 2 (12) has 1 chance out of 36 throws 24 min
3 PbY2b, page 154 Q.2 a) Read: <i>If we were to throw 2 dice at the same time, how many different results could there be?</i> <i>Continue writing them out, with A's number first.</i> T explains task and encourages logical listing, referring to the first 3 already given. (If <i>Dice A</i> shows 1 facing up, what are all the possibilities for <i>Dice B</i> ?) (If T thinks class do not understand, do the next few on the BB with the whole class first.) Rest done as individual work. Review at BB with whole class. T writes what Ps dictate in order on BB. How many different results are possible? (For each of the 6 numbers on <i>Dice A</i> , there are 6 possible numbers on <i>Dice B</i> , so number of results = $6 \times 6 = 36$) b) Read: <i>Which total is:</i> i) the smallest possible ii) the largest possible? Ps write in Pbs, then show answer with number cards on command. (smallest: $1 + 1 = 2$; largest: $6 + 6 = 12$) Discuss the chance of certain totals occurring.	Whole class activity to start, followed by individual work when T thinks Ps understand Explanation, demonstration with 2 dice if necessary BB: (write in rows of 6) <div style="border: 1px solid black; padding: 5px;"> $1 + 6, 1 + 5, 1 + 4, 1 + 3,$ $1 + 2, 1 + 1, 2 + 6, 2 + 5,$ $2 + 4, 2 + 3, 2 + 2, 2 + 1,$ $3 + 6, 3 + 5, 3 + 4, 3 + 3,$ $3 + 2, 3 + 1, 4 + 6, 4 + 5,$ $4 + 4, 4 + 3, 4 + 2, 4 + 1,$ $5 + 6, 5 + 5, 5 + 4, 5 + 3,$ $5 + 2, 5 + 1, 6 + 6, 6 + 5,$ $6 + 4, 6 + 3, 6 + 2, 6 + 1$ </div> In unison. Agreement, checking, praising e.g. 2 (12) has 1 chance out of 36 throws 24 min	Whole class activity to start, followed by individual work when T thinks Ps understand Explanation, demonstration with 2 dice if necessary BB: (write in rows of 6) <div style="border: 1px solid black; padding: 5px;"> $1 + 6, 1 + 5, 1 + 4, 1 + 3,$ $1 + 2, 1 + 1, 2 + 6, 2 + 5,$ $2 + 4, 2 + 3, 2 + 2, 2 + 1,$ $3 + 6, 3 + 5, 3 + 4, 3 + 3,$ $3 + 2, 3 + 1, 4 + 6, 4 + 5,$ $4 + 4, 4 + 3, 4 + 2, 4 + 1,$ $5 + 6, 5 + 5, 5 + 4, 5 + 3,$ $5 + 2, 5 + 1, 6 + 6, 6 + 5,$ $6 + 4, 6 + 3, 6 + 2, 6 + 1$ </div> In unison. Agreement, checking, praising e.g. 2 (12) has 1 chance out of 36 throws 24 min
4 Interlude Rhyme or song	Whole class in unison 26 min	Whole class in unison

Y2		<i>Lesson Plan 154</i>
Activity 5	<p>PbY2b, page 154</p> <p>Q.3 Read: <i>We have put 5 red, 5 yellow and 5 green marbles into a bag. The bag is tied with cord and you cannot see inside. If you take out some marbles with your eyes closed, what is the smallest number of marbles you should take out to make certain that you have at least:</i></p> <p>a) 1 red marble b) 1 yellow marble c) 2 green marbles d) 3 marbles of the same colour?</p> <p>Review with whole class. Ps give answers with reasoning. Class agrees/disagrees. Pairs of Ps demonstrate each part.</p> <p><i>Solution:</i></p> <p>a) <u>11 marbles</u> (because we could take out 10 marbles and it is possible (though not likely) that they could be the 5 green and the 5 yellow marbles, but after that only red marbles would be left in the bag)</p> <p>b) <u>11 marbles</u> (same reasoning as in a) above)</p> <p>c) <u>12 marbles</u> (similar reasoning as in a) but 2 more marbles need to be taken out after the 10th withdrawal)</p> <p>d) 7 marbles (because we could take out 6 marbles and they could be 2 red, 2 yellow and 2 green, but the 7th marble <u>must</u> be another of one of these colours, making 3 marbles of the same colour)</p> <p style="text-align: right;">36 min</p>	<p style="text-align: center;">Notes</p> <p>Individual (or paired) trial</p> <p>Each pair could have coloured counters in a box on desk</p> <p>Otherwise Ps colour marbles in picture in Pbs to help them</p> <p>Deep discussion reasoning, agreement, checking</p> <p>Extra praise for Ps who reason clearly and correctly and can demonstrate to class</p>
6	<p>Throwing 2 dice</p> <p>Look at your results for <i>Question 2</i>. How many different results did we write down? (36)</p> <p>If we think of, e.g. (2 + 3) and (3 + 2) as being the same because we are adding the same numbers together, how many different results would there be then?</p> <p>Ps draw brackets around (or cross out) the 2nd of each such pair and count all those left.</p> <p>Show me the answer with number cards . . . now! (21) Let's check.</p> <p style="text-align: right;">41 min</p>	<p>Individual work, monitored, helped</p> <p>BB:</p> <p>1 + 6, 1 + 5, 1 + 4, 1 + 3, 1 + 2, 1 + 1, 2 + 6, 2 + 5, 2 + 4, 2 + 3, 2 + 2, 3 + 6, 3 + 5, 3 + 4, 3 + 3, 4 + 6, 4 + 5, 4 + 4, 5 + 6, 5 + 5, 6 + 6</p> <p>Agreement, checking, praising</p>
7	<p>Problem</p> <p>Listen carefully and think about what we have done in this lesson.</p> <p>a) <i>How likely do you think this is? If I choose any 8 children in the class, at least 2 of them were born on the same day of the week.</i></p> <p>Do you think it is certain, possible but not certain, or impossible? Show me with one of your cards . . . now! (Certain)</p> <p>X, explain your answer. Who agrees? etc. (The first 7 children could have been born on each of the 7 days of the week, but the 8th child must have been born on one of these days too.)</p> <p>b) <i>What is the smallest number of children I should choose to be <u>certain</u> that at least 2 of them were born on the same <u>date</u> in any month?</i></p> <p>Show me with number cards . . . now! (32)</p> <p>Y, explain your answer. Who agrees? etc. (The most number of days in a month is 31, and the first 31 children could have been born on each of these dates, but the 32nd pupil <u>must</u> have been born on one of these dates too.)</p> <p style="text-align: right;">45 min</p>	<p>Whole class activity</p> <p>T repeats slowly</p> <p>Ps use cards from <i>Activity 2</i></p> <p>In unison</p> <p>Reasoning (with T's help), agreement, checking, praising</p> <p>T repeats slowly</p> <p>Ps use cards from <i>Activity 2</i></p> <p>In unison</p> <p>Reasoning (with T's help), agreement, checking, praising</p>

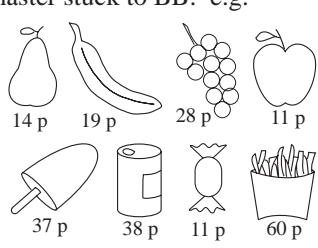
Y2		<i>Lesson Plan 155</i>
<i>Activity</i>	Tables practice, revision, activities, consolidation <i>PbY2b, page 155</i>	<i>Notes</i>




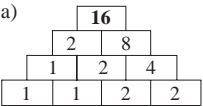
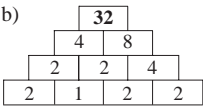
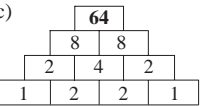
Y2	<p>R: Practice addition, subtraction, multiplication</p> <p>C: Division by 2, 3, . . . , 9</p> <p>E: <i>Brackets</i></p>	<p><i>Lesson Plan</i></p> <p>156</p>
Activity		Notes
1	<p>Logic set</p> <p>Let's use our logic set. How many elements are in the set? (40)</p> <ul style="list-style-type: none"> Lay them out on your desk in matching pairs. (e.g. with/without centre point) How many pairs have you made? Write a division about it in your <i>Ex. Bks</i> and check it with a multiplication. (<i>Heading: Lesson number and date</i>) Review at BB. Make 2 equal groups, one on each side of your desk (e.g. big/small) Write a division about it in your <i>Ex. Bks</i>. Check it with a multiplication. Review at BB. Make 4 equal groups (e.g. small black/large black/small white / large white) Ps write equations as above. Repeat for groups of 5 (circles/triangles/squares/pentagons/hexagons), (and groups of 8 and 10 if there is time) Ps write equations as above. <p style="text-align: right;"><i>10 min</i></p>	<p>Whole class activity (or working in pairs)</p> <p>Grouping as instructed by T</p> <p>Individual work in writing equations</p> <p>BB:</p> <p>a) $40 \div 2 = 20$, $20 \times 2 = 40$</p> <p>b) $40 \div 20 = 2$, $2 \times 20 = 40$</p> <p>c) $40 \div 4 = 10$, $10 \times 4 = 40$</p> <p>d) $40 \div 5 = 8$, $8 \times 5 = 40$</p> <p style="text-align: center;">etc.</p> <p>Agreement, checking, praising</p>
2	<p>PbY2b, page 156</p> <p>Q.1 Read: <i>Mrs Hedgehog and Mrs Squirrel always take the same number of strawberries home for their babies.</i></p> <p style="text-align: center;"><i>There are 8 baby hedgehogs and 4 baby squirrels.</i></p> <p style="text-align: center;"><i>How many strawberries will each baby get?</i></p> <p style="text-align: center;"><i>Complete the table.</i></p> <p>P explains what each row of table means using the column already completed. (Middle row is top row divided by 4 (or 2 times bottom row), bottom row is top row divided by 8 (or middle row divided by 2), top row is 4 times middle row (or 8 times bottom row.)</p> <p>Review at BB with whole class. Mistakes corrected.</p> <p style="text-align: right;"><i>16 min</i></p>	<p>Individual work, monitored (helped)</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Discussion, agreement, checking, praising</p> <p>If problems, Ps write equations on BB. Class agrees/disagrees.</p> <p>BB: e.g.</p> <p>$80 \div 8 = 10$, $2 \times 10 = 20$</p> <p>$2 \times 7 = 14$, $8 \times 7 = 56$</p>
3	<p>PbY2b, page 156</p> <p>Q.2 Read: <i>Write a division about each picture. Check with a multiplication.</i></p> <p>Deal with one part at a time. Review at BB with whole class.</p> <p>BB:</p> <p>a) $7 \div 2 = 3$, remainder 1 b) $9 \div 4 = 2$, remainder 1 c) $13 \div 3 = 4$, remainder 1</p> <p style="margin-left: 40px;">$3 \times 2 + 1 = 7$ $2 \times 4 + 1 = 9$ $4 \times 3 + 1 = 13$</p> <p>Ps think of a problem in context for each part.</p> <p>Class decides whether or not they match the pictures.</p> <p style="text-align: right;"><i>23 min</i></p>	<p>Individual work, monitored, helped</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Discussion, agreement, checking, praising</p> <p>Extra praise for creativity</p>
4	<p>Interlude</p> <p>Song, rhyme</p> <p style="text-align: right;"><i>25 min</i></p>	<p>Whole class in unison</p>

Y2	Lesson Plan 156	
Activity	Notes	
<p>5</p> <p>Problem 1</p> <p>Listen carefully, picture the story in your head and think how you would work out the answer.</p> <p><i>If 28 apples were shared equally among 4 children, how many apples would each child get?</i></p> <p>Write a division about it in your <i>Ex. Bks</i> and check with a multiplication.</p> <p>Review at BB with whole class. A, come and tell us how you worked out the answer. Who agrees? Who did it another way? etc.</p> <p>BB: $28 \text{ apples} \div 4 = 7 \text{ apples}$, <i>Check:</i> $7 \text{ apples} \times 4 = 28 \text{ apples}$</p> <p><i>Answer:</i> Each child would get 7 apples.</p> <p style="text-align: right;">30 min</p>	<p>Individual work, monitored, helped</p> <p>Discussion at BB</p> <p>(If necessary, use enlarged copy master or demonstrate with Ps at front of class.)</p> <p>(Similar to Q. 2b on page 95)</p> <p>Reasoning, agreement, checking, praising</p>	
<p>6</p> <p>Problem 2</p> <p>Listen carefully, picture the story in your head and think how you would work out the answer.</p> <p><i>Sam has 14 fish in his garden pond. Before he can clean the pond, he has to lift the fish out into a bucket of water.</i></p> <p><i>His little net can hold only 3 fish at a time. What is the least number of times that Sam will have to use his net to lift out the fish?</i></p> <p>Write a division about it in your <i>Ex. Bks</i> and check with a multiplication.</p> <p>Review at BB with whole class. B, come and tell us how you worked out the answer. Who agrees? Who did it another way? etc.</p> <p>BB: <i>Calculation:</i> $14 \text{ fish} \div 3 \text{ fish} = 4 \text{ (times)}$, remainder 2 fish <i>Check:</i> $4 \times 3 \text{ fish} + 2 \text{ fish} = 14 \text{ fish}$</p> <p><i>Answer:</i> Sam will have to use his net at least 5 times. (4 times to lift out 3 fish each time and the 5th time to lift out the remaining 2 fish)</p> <p style="text-align: right;">35 min</p>	<p>Individual work, monitored, helped</p> <p>Ps may draw a diagram in their <i>Ex. Bks</i> to help them</p> <p>(If necessary, put 14 'fish' in a bucket and a P draws out 3 at a time, or draw 14 'fish' on BB and P circles in groups of 3)</p> <p>Reasoning, agreement, checking, praising</p>	
<p>7</p> <p>PbY2b, page 156</p> <p>Q.3 Read: <i>Colour the amount asked for in each picture.</i></p> <p style="padding-left: 40px;">a) 1 half, b) 1 third, c) 4 sixths</p> <p>Count how many elements there are in the whole picture. Then think how many equal groups you are dividing them into. Then think how many of these groups you will colour.</p> <p>Review at BB with whole class. Ps come out to explain reasoning and write equation on BB. Class agrees/disagrees.</p> <p>What is 1 half of 8 boats (1 third of 12 ice-creams, 4 sixths of 18 mushrooms)? (4, 4, 12)</p> <p>Read: <i>Draw 10 marbles. Colour 2 fifths of them red.</i></p> <p>Show me with your fingers how many you coloured red . . . now! (4) What fraction have you <u>not</u> coloured? (3 fifths = 6)</p> <p style="text-align: right;">40 min</p>	<p>Individual work, monitored, (helped)</p> <p>Initial discussion, using enlarged copy master of OHP</p> <p>Reasoning, agreement, checking, praising</p> <p>BB:</p> <p>a) 1 half of $6 = 6 \div 2 = 3$</p> <p>b) 1 third of $9 = 9 \div 3 = 3$</p> <p>c) 1 sixth of $6 = 6 \div 6 = 1$ 4 sixths of $6 = 4 \times 1 = 4$</p> <p>d) 1 fifth of $10 = 10 \div 5 = 2$ 2 fifths of $10 = 2 \times 2 = 4$</p>	
<p>8</p> <p>Brackets</p> <p>T has BB already prepared. Revise order of operations.</p> <p>BB: a) $6 \times 7 - 3 =$ b) $(3 + 5) \times 9 =$ c) $10 + 7 \times 2 =$ $6 \times (7 - 3) =$ $3 + 5 \times 9 =$ $(10 + 7) \times 2 =$ $8 \times (2 + 8) =$ $13 - 4 \times 3 =$ $(20 - 1) \times 2 =$ $8 \times 2 + 5 =$ $(13 - 4) \times 3 =$ $20 - 1 \times 2 =$</p> <p style="text-align: right;">45 min</p>	<p>Whole class activity (or individually if Ps wish)</p> <p>Ps come out to BB to write answer and explain reasoning.</p> <p>Class agrees/disagrees.</p> <p>Praising. Note effect of brackets</p>	

Y2	<p>R: Calculation</p> <p>C: Division by 2, 3, . . . , 9</p> <p>E: <i>Division in context. Brackets in complicated number tasks</i></p>	<p style="text-align: center;"><i>Lesson Plan</i></p> <p style="text-align: center;">157</p>
Activity		Notes
1	<p>Logic puzzle</p> <p>Each number is the <u>product</u> of the 2 numbers directly below it.</p> <p>Let's fill in the missing numbers.</p> <p>Ps come out to BB to write in numbers, explaining reasoning. Class agrees/disagrees.</p> <div style="text-align: center;">  </div> <p style="text-align: right;">5 min</p>	<p>Whole class activity</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>At a good pace</p> <p>Reasoning, agreement, checking, praising</p>
2	<p>PbY2b, page 157, Q.1</p> <p>Read: <i>Fill in the missing numbers and signs.</i> (+, −, ×, ÷)</p> <p>Ps come out to BB to choose an arrow, fill in the missing number or sign and say the division. Class agrees/disagrees. T writes difficult equations on BB and class suggests how to calculate them, e.g.</p> <p>a) $42 \div 14 = (28 + 14) \div 14 = 28 \div 14 + 14 \div 14 = 2 + 1 = \underline{3}$</p> <p style="padding-left: 2em;">$42 \div 3 = (21 + 21) \div 3 = 21 \div 3 + 21 \div 3 = 7 + 7 = \underline{14}$</p> <p>b) $36 \div 18 = (18 + 18) \div 18 = 18 \div 18 + 18 \div 18 = 1 + 1 = \underline{2}$</p> <p style="padding-left: 2em;">$36 \div 12 = (24 + 12) \div 12 = 24 \div 12 + 12 \div 12 = 2 + 1 = \underline{3}$</p> <p style="text-align: right;">12 min</p>	<p>Whole class activity</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Involve several Ps</p> <p>Reasoning, agreement, checking with multiplication</p> <p>Ps write in <i>Pbs</i> too</p> <p>Praising</p>
3	<p>Problem 1</p> <p>Listen carefully, picture the story in your head and work out the answer in your <i>Ex. Bks.</i> (<i>Heading:</i> Lesson number and date)</p> <p><i>George has 63 books and he wants to put an equal number of books on each of the 7 shelves in his bookcase. How many books should George put on each shelf?</i></p> <p>Write a division about it in your <i>Ex. Bks</i> and check with a multiplication.</p> <p>Review at BB with whole class. A, come and tell us how you worked out the answer. Who agrees? Who did it another way? etc.</p> <p>BB: $63 \text{ books} \div 7 = \underline{9} \text{ books}$, <i>Check:</i> $7 \times \underline{9} \text{ books} = 63 \text{ books}$</p> <p><i>Answer:</i> George should put 7 books on each shelf.</p> <p style="text-align: right;">17 min</p>	<p>Individual work, monitored, helped</p> <p>T repeats slowly and a P repeats in own words</p> <p>Ps may use \times tables to help them</p> <p>Discussion at BB</p> <p>Reasoning, agreement, checking, praising</p>
4	<p>Problem 2</p> <p>Listen carefully, picture the story in your head and show me the answer with a number card when I say.</p> <p><i>We are arranging flowers in bunches of 5. How many bunches can we make from 45 flowers?</i></p> <p>Show me the answer with number cards . . . now! (9)</p> <p>B, come and tell us how you worked out the answer. Who agrees? Who did it another way? etc.</p> <p>BB: $45 \text{ flowers} \div 5 \text{ flowers} = \underline{9} \text{ (times)}$,</p> <p style="padding-left: 2em;"><i>Check:</i> $\underline{9} \times 5 \text{ flowers} = 45 \text{ flowers}$</p> <p><i>Answer:</i> We can make 9 bunches.</p> <p style="text-align: right;">22 min</p>	<p>Whole class activity</p> <p>T repeats slowly and a P repeats in own words</p> <p>In unison</p> <p>Discussion, reasoning, agreement, checking, praising</p> <p>T notes Ps still having difficulty</p>
5	<p>Interlude</p> <p>Ps have heads on desk and eyes closed and say the multiples of 9 from 0 to 90 and 90 to 0 in their heads.</p> <p style="text-align: right;">24 min</p>	<p>Class counting mentally</p> <p>T insists on quiet.</p>

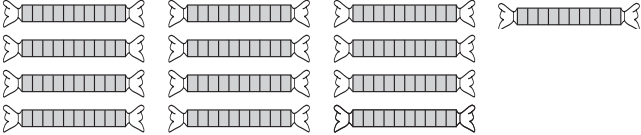
Y2		<i>Lesson Plan 157</i>
Activity 6	<p><i>PbY2b, page 157</i></p> <p>Q.2 Read: <i>Pete has 48 stamps, 8 times more than the number Laura has.</i></p> <p>a) <i>How many stamps does Laura have?</i></p> <p>b) <i>How many stamps do they have altogether?</i></p> <p>Do the calculations and write the answer as sentences.</p> <p>Review at BB with whole class. Who had both answers correct? Who made a mistake? What kind of mistake? etc.</p> <p style="text-align: right;">30 min</p>	<p style="text-align: center;">Notes</p> <p>Individual work, monitored</p> <p>Reasoning, agreement, checking, self-correcting</p> <p>BB:</p> <p>a) $48 \div 8 = \underline{6}$ Laura has 6 stamps.</p> <p>b) $6 + 48 = \underline{54}$ They have 54 stamps altogether</p>
7	<p>Fractions</p> <p>a) T calls 8 Ps to stand in a line facing the class. T whispers to 7 of them to smile and one of them to frown.</p> <p>What fraction of the whole group is frowning (smiling)? (1 eighth, 7 eighths)</p> <p>b) T calls out 9 Ps to stand in a line facing the class. T gives, e.g. a soft toy, to 3 of them to hold.</p> <p>What fraction of the whole group is holding a toy? (e.g. 3 ninths) Who can think of another fraction? (e.g. 1 third) (BB)</p> <p>What fraction of the group is <u>not</u> holding a toy? (6 ninths, or 2 thirds)</p> <p>c) T calls 10 Ps to stand in a line facing the class. T gives each of them a balloon to hold (2 of the balloons should be e.g. red)</p> <p>What fraction of the balloons are red? (e.g. 2 tenths) Who can think of another fraction? (e.g. 1 fifth) (BB)</p> <p>What fraction of the balloons are <u>not</u> red? (8 tenths, or 4 fifths)</p> <p>d) T calls 12 Ps to stand in a line facing the class (6 girls and 6 boys).</p> <p>What fraction of the whole group are girls? (e.g. 1 half) Who can think of another fraction? (e.g. 6 twelfths, 2 quarters) (BB)</p> <p>What fraction of the whole group are boys? (1 half, 6 twelfths, etc.)</p> <p style="text-align: right;">36 min</p>	<p>Whole class activity to demonstrate fractions (other situations may be used instead)</p> <p>At a good pace!</p> <p>BB:</p> <p>a) $1 = 1 \text{ eighth of } 8$</p> <p>b) $3 = 3 \text{ ninths of } 9$ $= 1 \text{ third of } 9$</p> <p>c) $2 = 2 \text{ tenths of } 10$ $= 1 \text{ fifth of } 10$</p> <p>d) $6 = 6 \text{ twelfths of } 12$ $= 2 \text{ quarters of } 12$ $= 1 \text{ half of } 12$</p> <p>Demonstrate each fraction by dividing up the group</p> <p>Agreement, checking, praising</p>
8	<p><i>PbY2b, page 157</i></p> <p>Q.3 Read: <i>Practise division. Check with multiplication.</i></p> <p>Review orally round class. Mistakes corrected. If problems, Ps write equations on BB. (Demonstrate where necessary.)</p> <p>e.g. $0 \div 4 = \underline{0}$, remainder 0 Check: $\underline{0} \times 4 + 0 = 0$</p> <p>How many had all correct? Who made a mistake? What kind of mistake? etc.</p> <p style="text-align: right;">41 min</p>	<p>Individual work, monitored, helped</p> <p>Can use enlarged copy master</p> <p>Some Ps may need \times tables</p> <p>Discussion, agreement, checking, self-correcting</p> <p>Praising, encouragement only</p>
9	<p>Brackets</p> <p>T has BB already prepared. Revise order of operations first.</p> <p>BB:</p> <p>$15 - 3 \times 3 + 2 =$ (15 - 9 + 2 = 8)</p> <p>$(15 - 3) \times 3 + 2 =$ (12 \times 3 + 2 = 38)</p> <p>$15 - 3 \times (3 + 2) =$ (15 - 3 \times 5 = 0)</p> <p>$(15 - 3) \times (3 + 2) =$ (12 \times 5 = 60)</p> <p>$15 - (3 \times 3 + 2) =$ (15 - 11 = 4)</p> <p style="text-align: right;">45 min</p>	<p>Whole class activity (or individually if Ps wish)</p> <p>Ps come out to BB to write answer and explain reasoning.</p> <p>Class agrees/disagrees</p> <p>Praising</p> <p>Note the effect of the brackets</p>

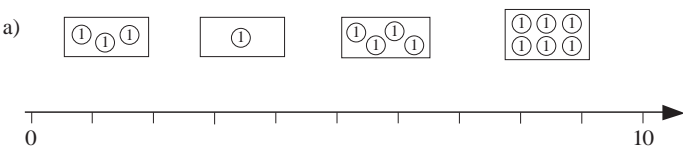
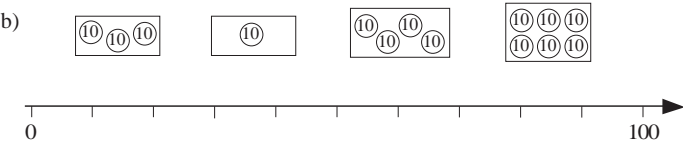
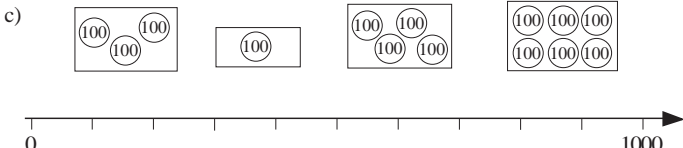
<h1>Y2</h1>	<p>R: Practice of operations C: Division by 2, 3, . . . , 9 E: <i>Problem solving</i></p>	<h2 style="text-align: center;">Lesson Plan 158</h2>																																
<p>Activity</p> <p style="text-align: center;">1</p>	<p>Shopping</p> <p>T has real items, with prices attached, on table at front of class, or pictures cut from magazines or copy master stuck to BB: e.g.</p> <p>T calls Ps in pairs to front of class, one to be the shopkeeper, the other to be the customer.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;">  </div> <p>Customer chooses an item and pays with:</p> <ol style="list-style-type: none"> only 2 p and 1 p coins, but using <u>not more than one</u> 1 p coin. T (or P) writes equation on the BB. Class agrees/disagrees. (Use items costing 19 p, 15 p, 14 p, 11 p) only 5 p and 1 p coins, but using <u>not more than four</u> 1 p coins. T (or P) writes equation on the BB. Class agrees/disagrees. (Use items costing 19 p, 15 p, 37 p, 38 p) only 10 p and 1 p coins, but using <u>not more than nine</u> 1 p coins. T (or P) writes equation on the BB. Class agrees/disagrees. (Use items costing 19 p, 28 p, 37 p, 60 p) <p>At each part, involve different pairs of Ps choosing different items.</p> <p style="text-align: right;"><i>10 min</i></p>	<p style="text-align: center;">Notes</p> <p>Whole class activity (or paired work)</p> <p>Use copy master (enlarged and cut out)</p> <p>Use real or model money (either in purses or stuck to side of BB) and Ps choose what they need</p> <p>Agreement, checking, praising</p> <p>BB: e.g.</p> <ol style="list-style-type: none"> $19\text{ p} = 9 \times 2\text{ p} + 1 \times 1\text{ p}$ $15\text{ p} = 7 \times 2\text{ p} + 1 \times 1\text{ p}$ $19\text{ p} = 3 \times 5\text{ p} + 4 \times 1\text{ p}$ $37\text{ p} = 7 \times 5\text{ p} + 2 \times 1\text{ p}$ $19\text{ p} = 1 \times 10\text{ p} + 9 \times 1\text{ p}$ $60\text{ p} = 6 \times 10\text{ p}$ etc. 																																
<p style="text-align: center;">2</p>	<p>PbY2b, page 158</p> <p>Q.1 Read: <i>Each number is the product of the 2 numbers directly below it. Fill in the missing numbers.</i></p> <p>Deal with one part at a time. Ps may use their \times tables.</p> <p>Review at BB with whole class. Ps come out to fill in each pair of numbers, explaining reasoning. Class agrees/disagrees.</p> <p><i>Solution:</i></p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>a)</p> <table border="1" style="margin: auto;"> <tr><td colspan="4" style="text-align: center;">48</td></tr> <tr><td colspan="2" style="text-align: center;">6</td><td colspan="2" style="text-align: center;">8</td></tr> <tr><td style="text-align: center;">3</td><td style="text-align: center;">2</td><td colspan="2" style="text-align: center;">4</td></tr> <tr><td style="text-align: center;">3</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">2</td></tr> </table> </div> <div style="text-align: center;"> <p>b)</p> <table border="1" style="margin: auto;"> <tr><td colspan="4" style="text-align: center;">54</td></tr> <tr><td colspan="2" style="text-align: center;">6</td><td colspan="2" style="text-align: center;">9</td></tr> <tr><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td colspan="2" style="text-align: center;">3</td></tr> <tr><td style="text-align: center;">2</td><td style="text-align: center;">1</td><td style="text-align: center;">3</td><td style="text-align: center;">1</td></tr> </table> </div> </div> <p style="text-align: right;"><i>16 min</i></p>	48				6		8		3	2	4		3	1	2	2	54				6		9		2	3	3		2	1	3	1	<p>Individual work, monitored, helped</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Reasoning, agreement, checking, praising</p>
48																																		
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<p style="text-align: center;">3</p> <p>Extension</p>	<p>PbY2b, page 158, Q.2</p> <p>Read: <i>Join up the equal pairs.</i></p> <p>T could have the pencils cut out and stuck to each side of BB. Ps come out to choose a pair, explain reasoning and write value on BB. Class agrees/disagrees.</p> <p>BB: $42 \div 6 + 1 = 1$ third of 24 = 8 3 quarters of 12 = 2 thirds of 15, minus 1 = 9 $26 \div 2 - 3 = 1$ quarter of 40 = 10 1 half of 8 = $35 \div 7 - 1 = 4$</p> <p>Who can think of other pencils of equal value?</p> <p style="text-align: right;"><i>22 min</i></p>	<p>Whole class activity</p> <p>Use enlarged copy master or OHP (or cut up and colour the pencils individually)</p> <p>Ps can join up pencils in <i>Ex. Bks</i> too</p> <p>Reasoning, agreement, checking, praising</p> <p>Orally round class, praising</p>																																
<p style="text-align: center;">4</p>	<p>Interlude</p> <p>Physical exercises</p> <p style="text-align: right;"><i>24 min</i></p>	<p>Whole class in unison</p>																																

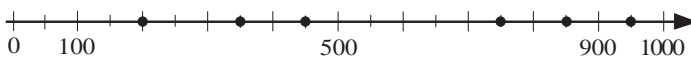
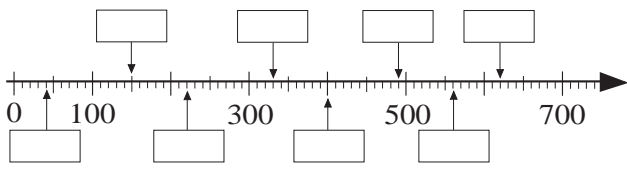
<p>Y2</p>	<p>R: Practice of operations C: Division by 2, 3, . . . , 9 E: <i>Problem solving</i></p>	<p><i>Lesson Plan</i> 159</p>
<p>Activity 1</p>	<p>Secret numbers T divides class into 6 teams, calls a P from each team out to front of class and gives each a number written on a card which they hold against their chest so that the rest of the class cannot see. The rest of the Ps in each team ask questions in turn to determine their number. The P at the front can answer only 'yes' or 'no'. T keeps a tally of number of questions asked by each team. e.g. 14: it is less than 50? (Yes) Is it even? (Yes) Does it have 2 digits? (Yes) Is it more than 20? (No) Is it divisible by 4? (No) Is it more than 15? (No) Is it 14? (Yes) The winning team deduces their number with the <u>least</u> questions.</p> <p style="text-align: right;"><i>10 min</i></p>	<p>Notes Whole class activity Teams should be of roughly equal ability Encourage Ps to ask logical questions and keep in mind clues already given Rest of class applauds the winning team.</p>
<p>2</p>	<p>Comparison T has BB already prepared:</p> <p>Compare the 2 sides. Which is more? How many more?</p> <p>a)  <input type="checkbox"/></p> <p>b)  <input type="checkbox"/></p> <p>c)  <input type="checkbox"/></p> <p>Ps come out to calculate values on LHS and RHS and then write the relevant sign between them. Class agrees/disagrees.</p> <p style="text-align: right;"><i>16 min</i></p>	<p>Whole class introduction Use enlarged copy master/OHP Reasoning, agreement, checking, praising BB: a) $35 \div 7 + 3 < 99 \div 9$ b) $3 \text{ quarters of } 16 = 36 \div 3$ c) $0 \div 6 + 8 = > 1 \text{ fifth of } 20$</p>
<p>3</p>	<p>PbY2b, page 159, Q.1 Read: <i>Each number is the product of the 2 numbers directly below it. Fill in the missing numbers.</i> Deal with one part at a time. Ps may use their \times tables. Ps come out to fill in each pair of numbers, explaining reasoning. Class agrees/disagrees.</p> <p>Solution: a)  b)  c) </p> <p>e.g.</p> <p style="text-align: right;"><i>26 min</i></p>	<p>Whole class activity (or individual work if Ps wish) Drawn on BB or use enlarged copy master or OHP Discussion, agreement, checking, praising N.B. Other solutions possible</p>
<p>4</p>	<p>Interlude Song, rhyme, exercises</p> <p style="text-align: right;"><i>28 min</i></p>	<p>Whole class in unison</p>
<p>5</p>	<p>PbY2b, page 159 Q.2 Read: <i>Four ladybirds are sharing 22 leaves so that they all have an equal amount. How many leaves will each ladybird get and how many will remain?</i> Ps write missing numbers in Pbs. Review at BB with whole class. Demonstrate with 4 Ps at front of class only if necessary. BB: $22 \text{ leaves} \div 4 = 5 \text{ leaves, remainder } 2 \text{ leaves}$ Check: $4 \times 5 + 2 = 22$ What do you think the ladybirds would do with the 2 leaves remaining? (Divide each one so that there are 4 halves) Answer: Each will ladybird get 5 and a half leaves.</p> <p style="text-align: right;"><i>33 min</i></p>	<p>Individual work, monitored, helped Discussion at BB Agreement, checking, praising Accept '5 leaves each and 2 leaves left over'. Elicit that: $1 \text{ quarter of } 22 = 5 \text{ and a half}$</p>


Y2		<i>Lesson Plan 159</i>
Activity 6	<p><i>PbY2b, page 159</i></p> <p>Q.3 Read: <i>Practise division. Check with multiplication.</i></p> <p>Deal with one part at a time. Review at BB with whole class. Mistakes corrected. Write 'difficult' calculations in detail on BB: e.g. $99 \div 9 = 90 \div 9 + 9 \div 9 = 10 + 1 = \underline{11}$</p> <p>BB: a) $26 \div 8 = 3$ $49 \div 8 = 6$ $72 \div 8 = 9$ remainder 2 remainder 1 remainder 0 $3 \times 8 + 2 = 26$ $6 \times 8 + 1 = 49$ $9 \times 8 = 72$</p> <p> b) $39 \div 9 = 4$ $81 \div 9 = 9$ $99 \div 9 = 11$ remainder 3 remainder 0 remainder 0 $4 \times 9 + 3 = 39$ $9 \times 9 = 81$ $11 \times 9 = 99$</p> <p style="text-align: right;">38 min</p>	<p style="text-align: center;">Notes</p> <p>Individual work, monitored, helped</p> <p>Written on BB or use enlarged copy master or OHP</p> <p>Discussion, agreement, checking, self-correction</p> <p>Praising, encouragement only</p>
7	<p><i>PbY2b, page 159</i></p> <p>Q.4 Read: <i>In which order will the cars pass the finishing line? Write the position numbers in the boxes. The car with the highest value will be 1st!</i></p> <p>Ps first calculate the value of each car and write at the side. Review with whole class. Calculations which caused problems written in detail on BB, e.g.</p> <p>$44 \div 2 = 20 \div 2 + 20 \div 2 + 4 \div 2 = 10 + 10 + 2 = \underline{22}$</p> <p>$69 \div 3 = 30 \div 3 + 30 \div 3 + 9 \div 3 = 10 + 10 + 3 = \underline{23}$ (or $69 \div 3 = 6 \text{ tens} \div 3 + 9 \text{ units} \div 3 = 2 \text{ tens} + 3 \text{ units} = \underline{23}$)</p> <p>Then Ps write the position numbers (1st, 2nd, 3rd, etc.) in the boxes on the cars. Colour the winning car red.</p> <p>Who can think of another way to describe the value of the red car? (e.g. $23 = 100 - 77 = 4 \times 5 + 3 = 30 \div 3 + 13$, etc.)</p> <p>Read: <i>Write the values in decreasing order.</i></p> <p>Ps write out values in decreasing order to check their position numbers. Let's read them out together. Mistakes corrected.</p> <p style="text-align: right;">45 min</p>	<p>Individual work, monitored, helped</p> <p>Use enlarged copy master or OHP</p> <p>Discussion, agreement, checking, praising</p> <p>Involve several Ps. Encourage creativity. Praising</p> <p>BB: $23 > 22 > 12 > 11 > 7 > 4 > 3 > 0$</p> <p>In unison</p>

Y2		<i>Lesson Plan</i> 160
<i>Activity</i>		<i>Notes</i>
	<p>Tables practice, revision, activities, consolidation</p> <p>or</p> <p><i>PbY2b, page 160</i> can done as a test to see what Ps have learned.</p> <p>Q.1 2 marks (1 mark for correct calculation, 1 mark for answer) Q.2 10 marks (1 mark for each part) Q.3 10 marks (1 mark for each part) Q.4 3 marks (1 mark for each part)</p> <p>Total = 25 marks</p> <p>(Time allowed: 25 minutes)</p> <p>Review and evaluation at end of test. Ps mark neighbour's work and count how many correct out of 25.</p>	

Y2	<p>R: 1-digit and 2-digit numbers</p> <p>C: Extending the number line: counting beyond 100</p> <p>E: <i>Writing numbers as words</i></p>	<p style="text-align: center;"><i>Lesson Plan</i></p> <p style="text-align: center;">161</p>
<p>Activity</p> <p style="text-align: center;">1</p>	<p>Numbers beyond 100</p> <p>T has BB already prepared. Who can count the sweets?</p> <p>BB: </p> <p>Ps come out to BB to count. (e.g. in 10s, 20's or 40s, Let's write it as an addition on the BB:</p> <p>$40 + 40 + 40 + 10 = 80 + 40 + 10 = 100 + 20 + 10 = 100 + 30 = \dots$</p> <p>Who knows how to write 130? Who agrees? etc.</p> <p>How can we write it in words? (Ps come to BB to try)</p> <p>BB: 130 = one hundred and thirty</p> <p>T calls Ps out to write other 3-digit numbers in numbers and in words:</p> <p>110, 120, (111, 112, 126)</p> <p>e.g. BB: 110 = one hundred and ten</p> <p style="padding-left: 100px;">126 = one hundred and twenty six</p> <p style="text-align: right;"><i>6 min</i></p>	<p style="text-align: center;">Notes</p> <p>Whole class activity</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>or even in 1s – be patient !</p> <p>Ps might want to write the addition in other ways</p> <p>Agreement, praising</p> <p>With T's help</p> <p>Ps write as numbers and words in <i>Ex. Bks</i> too.</p> <p>Praising, encouragement only</p>
<p style="text-align: center;">2</p>	<p>PbY2b, page 161, Q.1</p> <p>What can you tell me about these diagrams?</p> <p>(Two squares, each with 10 rows of 10 columns; 1st square shows numbers 1 to 100, 2nd square shows numbers 101 to 200; some numbers are missing.)</p> <p>Read: <i>Write these numbers in the correct places in the two tables.</i></p> <p>T says number, Ps come out in relay to write numbers in squares. Class agrees/disagrees. Ps write numbers in <i>Pbs</i> too.</p> <p>Read: a) <i>How many 10s are in 100?</i> (10 rows of 10: $10 \times 10 = 100$)</p> <p style="padding-left: 40px;">b) <i>How many 100's are in 200?</i> ($2 \times 100 = 200$)</p> <p>How many 10s are in 200? (20 rows of 10: $2 \times 10 = 20$)</p> <ul style="list-style-type: none"> • T says a 3-digit number and Ps come out to point to it on number square or to where they think it is on the 100s number line. • T could model some 3-digit numbers using toy money. (e.g. 100 p = £1, 150 p = £1 and 50 p, 200 p = £2, etc.) <p style="text-align: right;"><i>18 min</i></p>	<p>Whole class activity</p> <p>Use enlarged copy master or OHP</p> <p>Involve several Ps</p> <p>At a good pace</p> <p>Agreement, checking, praising</p> <p>Use copy master, enlarged and cut into strips (Ps could each have copies on desks too)</p> <p>(Or use real money, so that Ps become familiar with mass and colour of different coins)</p>
<p style="text-align: center;">3</p>	<p>Counting beyond 100</p> <ul style="list-style-type: none"> • Let's count together from 93 to 104 (117 to 126; 278 to 283) etc. Who can show us where they are on the number line? • Let's count in 100s from 0 to 1000. T points to 100s on number line. (If problems, Ps could have blank strips on desks to write on the numbers.) <p style="text-align: right;"><i>23 min</i></p>	<p>Whole class activity</p> <p>In chorus. At speed</p> <p>Use copy master from <i>Activity 2</i></p> <p>Label the blank strip with relevant numbers as required.</p>
<p style="text-align: center;">4</p>	<p>Interlude</p> <p>Song or rhyme</p> <p style="text-align: right;"><i>25 min</i></p>	<p>Whole class in unison</p>

Y2		<i>Lesson Plan 161</i>
Activity 5	<p>PbY2b, page 161</p> <p>Q.2 Read: <i>Join up the amounts in the middle to the matching numbers.</i> Let's read all the hundreds in increasing (decreasing) order. What do you notice about the 2 columns? (They are of equal value but on LHS numbers are written in words and on RHS numbers are shown as a multiplication of 100.) Ps first calculate the total value of each shape in the middle and write it above shape. Then they join the shapes to the labels. Review at BB with whole class. Mistakes corrected.</p> <p style="text-align: right;">30 min</p>	<p style="text-align: center;">Notes</p> <p>Individual work, monitored, helped Use enlarged copy master or OHP BB: $4 \times 50 = 200$ $4 \times 100 = 400$ $3 \times 200 = 600$ $2 \times 500 = 1000$ Discussion, agreement, checking, praising</p>
6	<p>Number line</p> <p>Join up each amount to the corresponding point on the number line.</p> <p>BB:</p> <p>a) </p> <p>b) </p> <p>c) </p> <p>Talk about the number line segments first. Elicit that each represents a different part of the number line (0 to 10, 0 to 100, 0 to 1000) . Ps come out to choose an amount, say and write its total value and join up to the number line. Class agrees/disagrees.</p> <p>Extension</p> <p>Compare the 3 parts. Show that a) is an enlarged part of b) and that a) and b) are enlarged segments of the number line in c). Elicit that: c) is 10 times b) and 100 times a); b) is 10 times a) and 1 tenth of c); a) is 1 tenth of b) and 1 hundredth of c).</p> <p style="text-align: right;">35 min</p>	<p>Whole class activity</p> <p>Use enlarged copy maser or OHP</p> <p>Ps might notice the connection between each part without help</p> <p>Discussion, agreement Reasoning, agreement, checking, praising</p> <p>Discussion</p> <p>Extra praise if Ps deduce this without help</p>
7	<p>PbY2b, page 161</p> <p>Q.3 Read: <i>Colour in the number you think is the odd one out. Why did you choose it?</i></p> <p>Review orally with whole class. Deal with all cases. Class decides whether reasons are valid, e.g. a) 137 (only 3-digit number) b) 210 (only number >100)</p> <p style="text-align: right;">40 min</p>	<p>Individual work, monitored Discussion, reasoning, agreement, checking Accept any other <u>valid</u> reason Praising</p>
8	<p>Reading numbers</p> <ul style="list-style-type: none"> T writes 3-digit numbers (e.g. 310) on BB and Ps read them out. T says a 3-digit number and Ps come out to write on BB in digits. Point to the hundreds (tens, units) digit. Class agrees/disagrees. <p style="text-align: right;">45 min</p>	<p>Whole class activity (or Ps write in <i>Ex. Bks</i>) At a good pace Praising, encouragement only</p>

<h1>Y2</h1>	<p>R: Number line C: Extending the number line. Counting beyond 100 E: Addition with/to whole hundreds</p>	<h2>Lesson Plan 162</h2>
<p>Activity</p> <p>1</p>	<p><i>PbY2b, page 162, Q.1</i> Read: Write in the missing numbers. Deal with one part at a time. Ps come out to fill in the numbers. Let's continue the numbers forwards (backwards). 5 min</p>	<p>Notes</p> <p>Whole class activity Use enlarged copy master Ps write in Pbs too. Agreement In unison, at speed</p>
<p>2</p>	<p>Number line 1 T has BB already prepared. Which numbers are shown by the dots? BB:  <input type="text"/> < 200 < <input type="text"/> <input type="text"/> < 750 < <input type="text"/> <input type="text"/> < 350 < <input type="text"/> <input type="text"/> < 850 < <input type="text"/> <input type="text"/> < 450 < <input type="text"/> <input type="text"/> < 950 < <input type="text"/> Ps come out to point to a dot on the number line and write the relevant number below it. (350, 200, 450, 850, 750, 950) Then they point to and fill in the next nearest hundreds in the inequality and read it aloud. Who agrees? Who thinks something else? etc. <ul style="list-style-type: none"> • What is special about the number 1000? (smallest 4-digit number) • Which is the biggest (smallest) 3-digit number? (999, 100) 12 min</p>	<p>Whole class activity</p> <p>Drawn/written on BB or use enlarged copy master or OHP</p> <p>BB: 100 < 200 < 300 300 < 350 < 400 etc.</p> <p>Agreement, checking, praising Ask several Ps what they think. Praising</p>
<p>3</p>	<p><i>PbY2b, page 162</i> Q.2 Read: At which numbers have we written the letters? Write them in the boxes. Deal with one part at a time. T tells Ps to note the beginning and end number on each number line and then to try out possible numbers by counting along the line, pointing to each tick before writing in the missing numbers. Review at BB with whole class. Mistakes corrected. Discuss the relationship between parts a), b) and c). Use the words '10 times', '100 times', '1 tenth', '1 hundredth')</p> <p>18 min</p>	<p>Individual work, monitored, helped Use enlarged copy master/OHP Agreement, checking, praising BB: a) $a = 3, b = 6, c = 8, d = 9$ b) $a = 30, b = 60, c = 80, d = 90$ c) $a = 300, b = 600, c = 800, d = 900$</p>
<p>4</p>	<p>Interlude Exercises or action song 20 min</p>	<p>Whole class in unison</p>
<p>5</p>	<p>Number line 2 BB:  Let's read out the numbers marked on the number line. 'zero, forty, one hundred, one hundred and fifty, . . . , six hundred and twenty' Which numbers are missing from the large 'ticks'? Ps come out to write them on the number line. (200, 600) What does every small (medium, large) 'tick' show? (10s, 50s, 100s) 25 min</p>	<p>Whole class activity Drawn on BB or use enlarged copy master or OHP Ps come out to BB to write in missing numbers In unison, with T pointing to each number in turn Class agrees/disagrees Discussion, agreement Praising</p>

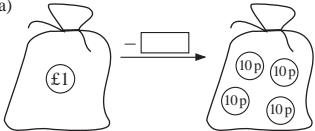
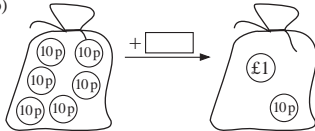
Y2		Lesson Plan 162
<p>Activity</p> <p>6</p>	<p>Exercise Books</p> <p>Let's draw a number line in 100s from 0 to 1000 in your <i>Ex. Bks.</i> (<i>Heading: Lesson number and date</i>)</p> <p>What should we do first? How long should we make the line so that it fits in your <i>Ex. Bks.</i>? (e.g. 10 cm) How far away from each other should we put the hundreds? (e.g. 1 cm) how should we label the ticks? (0, 100, 200, . . . , 1000)</p> <p>T demonstrates each step on the BB using a BB ruler (or plastic ruler and an OHP). Ps copy T, drawing and measuring using own rulers.</p> <p><i>Step 1</i> Draw a horizontal line 10 cm long.</p> <p><i>Step 2</i> Draw a short vertical line (tick) at LHS of line and label '0'.</p> <p><i>Step 3</i> Lay your ruler along the number line so that the zeros match up and mark every cm so that there are 10 marks.</p> <p><i>Step 4</i> Draw short vertical lines (ticks) at each dot and label from 100 to 1000. Draw an arrowhead at RHS of number line.</p> <p>BB:</p>  <p>Mark these numbers with a large dot on your number line: 200, 900, 100, 600, 500</p> <p>Write them in increasing order. ($100 < 200 < 500 < 600 < 900$)</p> <p style="text-align: right;">30 min</p>	<p>Notes</p> <p>Individual work under T's instruction but class kept together</p> <p>Monitored, helped</p> <p>Ps suggest what to do, with hints from T if necessary</p> <p>Encourage care and accuracy</p> <p>Make sure that the 'ticks' are the same distance apart</p> <p>Ps can extend horizontal lines if drawn too short at first</p> <p>Praising, encouragement only</p> <p>Individual work, monitored</p> <p>T reads and also writes on BB</p> <p>Ps recite in unison. Praising</p>
<p>7</p> <p>Extension</p>	<p>PbY2b, page 162</p> <p>Q.3 Read: <i>Write additions about the pictures.</i></p> <p>Deal with one part at a time. Review at BB with whole class.</p> <p>What do you notice about the answers? (e.g. The amounts in the middle pictures are 10 times more than the amounts on the LHS and 1 tenth of the amount on the RHS, etc).</p> <ul style="list-style-type: none"> If you had 100 p, what single coin would you have? (£1) If you had £10 in 1 p coins, how many coins would you have? (1000) <p style="text-align: right;">35 min</p>	<p>Individual work, monitored (helped with the hundreds)</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Agreement, checking praising</p> <p>BB: a) $3 + 2 = 5$ b) $30 + 20 = 50$ c) $300 + 200 = 500$ d) $4 + 5 = 9$ e) $40 + 50 = 90$ f) $400 + 500 = 900$</p>
<p>8</p>	<p>Addition</p> <p>Let's calculate these sums. T writes on BB and class say them in unison, or T says them and Ps write on BB.</p> <p>BB: $100 + 100 = \underline{200}$ $100 + 200 = \underline{300}$ $200 + 300 = \underline{500}$ $100 + 40 = \underline{140}$ $520 + 80 = \underline{600}$ $930 + 70 = \underline{1000}$</p> <p>Ps come out to show each answer on number square or number line.</p> <p style="text-align: right;">40 min</p>	<p>Whole class activity</p> <p>T writes in answers as dictated by Ps</p> <p>Ps copy into <i>Ex. Bks</i> too</p> <p>Agreement, checking, praising</p>
<p>9</p>	<p>PbY2b, page 162</p> <p>Q.4 Read: <i>Join up the numbers to the number line.</i></p> <p>Review at BB with whole class. Mistakes corrected.</p> <p>At each number T asks, 'How many is it from 100 (to 200)?'</p> <p>Who can show us where the number 105 (195) would be on the number line? Ps come out to point. Class agrees/disagrees.</p> <p style="text-align: right;">45 min</p>	<p>Individual work, monitored, helped</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Discussion, agreement, checking praising</p>


Y2		<i>Lesson Plan 163</i>
Activity 6	<p><i>PbY2b, page163</i></p> <p>Q.2 Read: <i>Join the picture to the corresponding point on the number line. Write the numbers below the line.</i></p> <p>T tells Ps to write the values below the rectangles first of all. Review quickly with whole class. Mistakes corrected.</p> <p>Elicit that the ticks mark every 10 from 100 to 200. Ps join up pictures to number line and write in numbers. Review a BB with whole class.</p> <p>Who could tell me an addition for each picture? (e.g. $100 + 20 = 120$, $100 + 60 = 160$, etc.)</p> <p style="text-align: right;">35 min</p>	<p style="text-align: center;">Notes</p> <p>Individual work, monitored, helped</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Discussion at BB</p> <p>Agreement, checking, self-correcting</p> <p>Class agrees/disagrees</p> <p>Praising</p>
7	<p><i>PbY2b, page163, Q.3</i></p> <p>Read: <i>Fill in the missing numbers. Use the number line to help you.</i></p> <p>Which equation do these jumps show? ($270 + \square = 340$)</p> <p>A, come and explain the 1st column to us. Who agrees? Who thinks something else? (First jump 30 to next nearest hundred, 300, then jump another 40 to 340.)</p> <p>Ps come out in pairs to point to numbers, draw the jumps and write numbers on number line and in equations. Class agrees/disagrees.</p> <p>How many would I have to jump to get from from 90 to 120? ($10 + 20 = 30$)</p> <p style="text-align: right;">40 min</p>	<p>Whole class activity</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Reasoning, demonstration, agreement, checking, praising</p> <p>BB: $270 + 30 + 40 = 340$</p> <p style="margin-left: 100px;">$340 + 60 + 20 = 420$</p> <p style="margin-left: 100px;">$420 + 80 + 10 = 510$</p>
8 Extension	<p><i>PbY2b, page163</i></p> <p>Q.4 Read: <i>Write these numbers using digits.</i></p> <p style="margin-left: 40px;">a) <i>one hundred and forty; four hundred</i></p> <p style="margin-left: 40px;">b) <i>two hundred and ten; five hundred</i></p> <p>Review at BB with whole class. Mistakes corrected.</p> <p>How far is from 140 to 210? How could we calculate it? Who could come and show us on the BB? Who agrees? Who thinks something else?</p> <p>Repeat for 140 to 400 (210 to 500) if Ps understand. (BB: $140 + 60 + 200 = 400$, $210 + 90 + 200 = 500$)</p> <p style="text-align: right;">45 min</p>	<p>Individual work, monitored</p> <p>Agreement, self-correction</p> <p>Whole class discussion</p> <p>Ps suggest what to do</p> <p>BB: $140 + 60 + 10 = 210$</p> <p>or $140 + 70 = 210$, etc.</p> <p>Praising only</p>

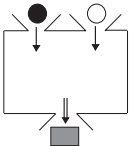
Y2	R: Mental calculation C: Extending the number line. Counting beyond 100 E: <i>Addition and subtraction</i>	<i>Lesson Plan</i> 164
Activity		Notes
1	Secret numbers Which number am I thinking of? a) Its next nearest hundreds are 200 and 300. It is 10 more than the smaller of these. What is my number? Show me . . . now! (210) b) Its next nearest tens are 360 and 370. It is 2 less than the bigger of these. What is my number? Show me . . . now! (368) c) Its next nearest hundreds are 100 and 200. It is bigger than 198. What is my number? Show me . . . now! (199) <div style="text-align: right;"><i>6 min</i></div>	Whole class activity Ps have scraps of paper on desks to write the numbers in large digits and show to T on command Ps may use number squares or number lines if needed Agreement, checking, praising
2	Odd one out T has BB already prepared. BB: $100 + 50$ $70 + 80$ $60 + 90$ $110 + 40$ $80 + 80$ Which do you think is the odd one out? A , what do you think? Why? Who agrees with A ? Who thinks another one? Why? etc. (e.g. $80 + 80 = 160$, but all the others sum to 150) <div style="text-align: right;"><i>10 min</i></div>	Whole class activity Ask several Ps what they think Ps give reasoning too Agreement, checking, praising
3	PbY2b, page 164, Q.1 Read: <i>Fill in the missing numbers.</i> What can you tell me about this number line? (100 to 400, large ticks mark the hundreds, small ticks mark the tens) Ps come out to BB to choose an addition, write number below number line and complete the addition. Ps say the whole equation, e.g. $100 + 10 = 110$, $130 + 80 = 210$, etc.) Class agrees/disagrees. T writes additions in detail on BB, e.g. $130 + 70 + 10 = 130 + 80 = 210$ <div style="text-align: right;"><i>18 min</i></div>	Whole class activity Drawn on BB or use enlarged copy master or OHP Ps may write in <i>Pbs</i> too Reasoning, agreement, checking, praising
4	Interlude Physical exercises (to music) <div style="text-align: right;"><i>20 min</i></div>	Whole class in unison
5	Inequality Let's solve this inequality. BB: $100 + 250 < \square < 370 - 10$ What should we do first? (Calculate values of RHS and LHS) Ps come out to write in values. Class agrees/disagrees. What numbers could the rectangle be? T asks several Ps BB: \square : 351, 352, 353, 354, 355, 356, 357, 358, 359 <div style="text-align: right;"><i>25 min</i></div>	Whole class activity Ps suggest what to do BB: $100 + 250 = 350$ $370 - 10 = 360$ T writes what Ps dictate Show on number line if possible
6	Ordering 3-digit numbers T has 3-digit numbers written (or stuck) on BB: 340 260 758 521 819 695 Let's put these numbers in increasing order. Pupils come out to write (arrange) one number at a time. Ps write them in <i>Ex. Bks.</i> too. (Elicit that Ps should look at hundreds digit first, then tens digit, then units digit to decide which number is smallest/biggest.) <div style="text-align: right;"><i>31 min</i></div>	Whole class activity Ps read numbers in unison first BB: $260 < 340 < 521 < 695 < 758 < 819$ Discussion, agreement, praising

Y2		<i>Lesson Plan 164</i>
Activity 7	<p><i>PbY2b, page 164</i></p> <p>Q.2 Read: <i>Colour the items we can pay for exactly with only 10 p coins.</i> Talk about each picture in turn. Which do you like best (least)? Where (when) would you buy them?</p> <p>T explains task. How many 10 p coins are equal to £1? (10) Review at BB with whole class. Model with coins if problems.</p> <p style="text-align: right;">38 min</p>	<p style="text-align: center;">Notes</p> <p>Whole class discussion first, then individual work, monitored, helped</p> <p>Use enlarged copy master/OHP</p> <p>Discussion, agreement, checking, praising</p>
8	<p><i>PbY2b, page 164</i></p> <p>Q.3 Read: <i>Practice addition and subtraction.</i> Let's see how many of these you can do in 5 minutes! Review orally round class. Mistakes corrected.</p> <p>(Or done orally as whole class activity, with T writing what Ps dictate on BB)</p> <p style="text-align: right;">45 min</p>	<p>Individual work, monitored, helped</p> <p>Agreement, self-correcting</p> <p>Do not expect too much!</p> <p>Praising, encouragement only</p>

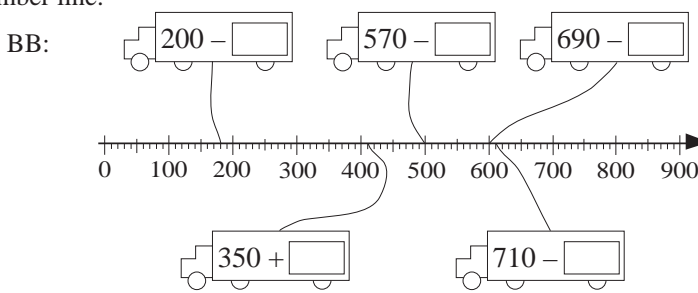
Y2		<i>Lesson Plan</i> 165
<i>Activity</i>	Tables practice, revision, activities, consolidation <i>PbY2b, page 165</i>	<i>Notes</i>

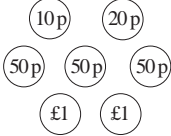


<h1>Y2</h1>	<p>R: Mental calculation C: Hundreds, tens and units (using money) E: <i>Writing 3-digit numbers</i></p>	<h2>Lesson Plan 166</h2>
<p>Activity</p> <p>1</p>	<p>Money</p> <p>What is our money like? What coins (notes) do we have?</p> <p>T discusses with class, using real coins and bank notes if possible, or toy money. Ps could have set of toy money on desks if possible.</p> <p>Elicit that standards units used are pounds (£) and pence (p)</p> <p>BB: £1 = 100 p, £1 = 10 ten pence coins $10 \times 10 \text{ p} = 100 \text{ p} = £1$</p> <p><u>Coins</u>: 1 p, 2 p, 5 p, 10 p, 20 p, 50 p, £1, £2 <u>Notes</u>: £5, £10, £20, £50, £100</p> <ul style="list-style-type: none"> T (or P) says an amount and Ps come out to choose correct coins. T (or P) hold up some coins and Ps say the amount. <p style="text-align: right;">6 min</p>	<p style="text-align: center;">Notes</p> <p>Whole class activity</p> <p>Involve several Ps in the discussion</p> <p>Ps copy into <i>Ex. Bks.</i></p> <p>Or paired work using using toy money</p>
<p>2</p> <p>Extension</p>	<p>PbY2b, page 166, Q.1</p> <p>Read: <i>Complete the table.</i></p> <p>T explains what each column in table means. Ps come out to fill in missing items and explain reasoning, one row at a time. Class agrees/disagrees. Ps may write in <i>Pbs</i> too.</p> <p>(Numbers in 4th column are: 26, 126, 226, 326, 526).</p> <p>Which row is missing? (426, but also 626, . . .)</p> <p>What would we write and draw if we made a row for 426 (626, . . .)?</p> <p style="text-align: right;">14 min</p>	<p>Whole class activity</p> <p>Use enlarged copy master or OHP</p> <p>Discussion, reasoning, agreement, checking</p> <p>Praising</p> <p>Ps come out to BB to show or Ps draw/write in <i>Ex. Bks</i></p>
<p>3</p>	<p>Operations</p> <p>T has BB already prepared. What has changed? How has it changed?</p> <p>BB: a)  b) </p> <p>Deal with one part at a time. Ps come out to BB to write equations, explaining reasoning. Class agrees/disagrees.</p> <p>Demonstrate with real or model money if there are problems.</p> <p style="text-align: right;">20 min</p>	<p>Whole class activity</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Discussion, reasoning, agreement, checking, praising</p> <p>BB: a) £1 = 100 p, $100 \text{ p} - 60 \text{ p} = 40 \text{ p}$</p> <p>b) $60 \text{ p} + 50 \text{ p} = 110 \text{ p}$ $= £1 \text{ and } 10 \text{ p}$</p>
<p>4</p>	<p>Interlude</p> <p>Song or rhyme</p> <p style="text-align: right;">22 min</p>	<p>Whole class in unison</p>
<p>5</p>	<p>Paying amounts</p> <p>In how many different ways could we pay these amounts?</p> <p>a) A, how could you pay £1? (e.g. a £1 coin) How else could we pay £1?</p> <p>BB: e.g. $£1 = 2 \times 50 \text{ p} = 5 \times 20 \text{ p} = 10 \times 10 \text{ p} = 20 \times 5 \text{ p} = 50 \times 2 \text{ p} = 50 \text{ p} + 20 \text{ p} + 20 \text{ p} + 10 \text{ p}$, etc.</p> <p>b) B, how could you pay 80 p? (e.g. $4 \times 20 \text{ p}$) How else could we pay 80 p?</p> <p>BB: e.g. $80 \text{ p} = 4 \times 20 \text{ p} = 8 \times 10 \text{ p} = 10 \times 5 \text{ p} + 3 \times 10 \text{ p} = 50 \text{ p} + 20 \text{ p} + 10 \text{ p}$, etc.</p> <p style="text-align: right;">28 min</p>	<p>Whole class activity (or paired work)</p> <p>Ps suggest different ways</p> <p>T (or P) lists (or sticks relevant coins) on BB</p> <p>Class agrees/disagrees</p> <p>Checking, praising</p> <p>Elicit which way would use the least number of coins.</p>
















<h1>Y2</h1>		<p>Lesson Plan 166</p>																																										
<p>Activity</p> <p>6</p>	<p>PbY2b, page 166</p> <p>Q.2 Read: <i>In how many different ways could we pay these amounts? Complete the table.</i></p> <p>T (or P) explains table using the first 2 rows already completed. (e.g. 1st column on LHS shows amount to be paid; 1st row shows one way of paying £2 and 2nd row shows a different way; a dash means that none of this amount was used.)</p> <p>Review at BB with whole class. T (or Ps) write equations on BB as a check. Deal with all cases. Demonstrate if necessary with model money.</p> <p><i>Possible solution:</i></p> <table border="1" data-bbox="625 667 1002 927"> <thead> <tr> <th></th> <th>10p</th> <th>50p</th> <th>£1</th> <th>£10</th> <th>£20</th> </tr> </thead> <tbody> <tr> <td>£2</td> <td>20</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>£2</td> <td>-</td> <td>4</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>£2</td> <td>-</td> <td>-</td> <td>2</td> <td>-</td> <td>-</td> </tr> <tr> <td>£23</td> <td>-</td> <td>-</td> <td>3</td> <td>-</td> <td>1</td> </tr> <tr> <td>£23</td> <td>-</td> <td>6</td> <td>-</td> <td>2</td> <td>-</td> </tr> <tr> <td>£23</td> <td>-</td> <td>-</td> <td>23</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <p>Ps can write extra ways of paying the amounts in their <i>Ex. Bks.</i></p> <p>Which way uses least (most) coins?</p> <p style="text-align: right;">35 min</p>		10p	50p	£1	£10	£20	£2	20	-	-	-	-	£2	-	4	-	-	-	£2	-	-	2	-	-	£23	-	-	3	-	1	£23	-	6	-	2	-	£23	-	-	23	-	-	<p>Notes</p> <p>Whole class explanation followed by individual work, monitored, helped</p> <p>Drawn on BB or use enlarged copy master or OHP (or coins stuck to BB)</p> <p>Reasoning, agreement, checking, praising</p> <p>BB: e.g. $£2 = 200 \text{ p} = 20 \times 10 \text{ p}$, or $£2 = 200 \text{ p} = 4 \times 50 \text{ p}$ etc.</p> <p>$£23 = 1 \times £20 + 3 \times £1$, or $£23 = £10 + 6 \times 50 \text{ p}$, etc.</p> <p>The more solutions found, the more praise given.</p> <p>Whole class discussion</p>
	10p	50p	£1	£10	£20																																							
£2	20	-	-	-	-																																							
£2	-	4	-	-	-																																							
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£23	-	-	23	-	-																																							
<p>Extension</p>	<p>7</p> <p>PbY2b, page 166, Q.3</p> <p>Read: <i>Which of these could you buy? Draw pictures and write additions.</i></p> <p>T has sets of cut-out items with prices attached stuck to BB and purses containing coins totalling each of the 4 amounts shown in <i>Pbs</i>.</p> <p>T talks about each item first. When would you eat them? Which is good for you? Which is your favourite? Why?</p> <p>X, come and choose a purse. X counts the money in his purse, chooses the items he can buy and sticks in unlabelled box drawn on BB. How much money has X in his purse? (e.g. £1 20 p) T labels box.</p> <p>What else could X have bought with his money? Who agrees? Who can think of other items X could have bought? etc.</p> <p>Repeat with 3 other Ps choosing from the 3 remaining purses. T (or Ps) writes equations on BB as a check.</p> <p>Ps can choose own way and draw/write in <i>Pbs</i> atoo.</p> <p style="text-align: right;">40 min</p>	<p>Whole class activity</p> <p>Use items from copy master enlarged, coloured, cut out and stuck to BB (or use whole copy master and Ps draw items in boxes)</p> <p>At a good pace</p> <p>Ask several Ps what they think</p> <p>BB: e.g $70 \text{ p} + 20 \text{ p} = 90 \text{ p}$ $£1 + 50 = £1 50 \text{ p}$ $70 \text{ p} + 70 \text{ p} + 70 \text{ p} = £2 10 \text{ p}$ $70 \text{ p} + 50 \text{ p} = £1 20 \text{ p}$</p> <p>Reasoning, agreement, checking, praising</p>																																										
<p>8</p>	<p>Number line</p> <p>Which numbers does this part of the number line show? (100 to 800)</p> <p>BB:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; width: 60px; text-align: center;">60 + 90</div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; width: 60px; text-align: center;">300 + 450</div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; width: 60px; text-align: center;">120 + 110</div> </div>  <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; width: 60px; text-align: center;">580 - 60</div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; width: 60px; text-align: center;">350 - 50</div> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; width: 60px; text-align: center;">640 - 540</div> </div> <p>Ps come out to choose a 'cloud' and join it to the corresponding point on the number line, saying the whole equation. Class agrees/ disagrees.</p> <p style="text-align: right;">45 min</p>	<p>Whole class activity</p> <p>Drawn on BB or use enlarged copy master or oHP</p> <p>At a good pace</p> <p>Reasoning, agreement, checking praising</p> <p>P writes result above the operation first</p> <p>Class can think of other operations with the same result</p>																																										

<h1>Y2</h1>	<p>R: Mental calculation C: Hundreds, tens and units E: <i>Writing 3-digit numbers</i></p>	<h2>Lesson Plan 167</h2>																																				
<p>Activity 1</p>	<p>Revision of mass</p> <p>T has a pair of scales and one or two items to weigh. (Try to choose objects weighing between 600 g and 800 g, previously weighed by T)</p> <p>What does this tool measure? (mass or weight) What standard units does it use? (g, kg) How many g are in one kg? (1000) (BB)</p> <p>Ps come out to choose an item, weigh on scales, read the value and write on BB. Which item is heaviest (lightest)?</p> <p style="text-align: right;"><i>5 min</i></p>	<p>Notes</p> <p>Whole class activity At a good pace Discussion, agreement P comes out to read the scale BB: 1 kg = 1000 g (10 hundred) Discussion, agreement, praising</p>																																				
<p>Activity 2</p>	<p>Function machine</p> <p>T has BB already prepared. Who can tell us what the machine is doing? (Ask several Ps what they think.)</p> <p>BB:</p>  <table border="1" data-bbox="475 792 1069 909"> <tr> <td>●</td> <td>5</td> <td>16</td> <td>28</td> <td>70</td> <td>58</td> <td>62</td> </tr> <tr> <td>○</td> <td>2 hundreds</td> <td>3 hundreds</td> <td>1 hundred</td> <td>4 hundreds</td> <td></td> <td></td> </tr> <tr> <td>■</td> <td>205</td> <td></td> <td></td> <td></td> <td>658</td> <td>362</td> </tr> </table> <p>Ps explain what is happening using the column already completed. (e.g. the rectangle is the sum of the black and white circles.)</p> <p>Let's complete the table. Ps come out to choose a column and fill in the missing numbers or words. Class agrees/disagrees.</p> <p>Who can write the rule in a mathematical way? Who can write it another way? etc. Let's check with values from the table.</p> <p style="text-align: right;"><i>12 min</i></p>	●	5	16	28	70	58	62	○	2 hundreds	3 hundreds	1 hundred	4 hundreds			■	205				658	362	<p>Whole class activity Drawn on BB or use enlarged copy master or OHP (or real box with relevant shape cards)</p> <p>At a good pace</p> <p>Reasoning, agreement, checking, praising</p> <p>BB: <i>Rule:</i> ● + ○ = ■ ■ - ○ = ● ■ - ● = ○</p>															
●	5	16	28	70	58	62																																
○	2 hundreds	3 hundreds	1 hundred	4 hundreds																																		
■	205				658	362																																
<p>Activity 3</p>	<p>PbY2b, page 167</p> <p>Q.1 Read: <i>Complete the table.</i></p> <p>T (or P) explains meaning of table. Do first row with the whole class first, writing a 'dash' in the hundreds column to show that there are no hundreds. Ps fill in the other rows in <i>Pbs</i>.</p> <p>Review at BB with whole class. Mistakes corrected.</p> <p>Elicit that a 'dash' meaning there are no tens or units is shown in the number by zero, e.g. 304 = 3 hundreds + 0 tens + 4 units, 350 = 3 hundreds + 5 tens + 0 units</p> <p>Read: <i>Write the total at the bottom of each column.</i></p> <p>Do each column together, drawing coins and writing numbers in digits or in words, T on the BB and Ps in <i>Pbs</i>.</p> <p>T points to one of the numbers (digits or words) and class reads it together. (T points to relevant coins as they are read.)</p> <p>BB:</p> <table border="1" data-bbox="427 1765 1011 2092"> <thead> <tr> <th></th> <th>Hundreds</th> <th>Tens</th> <th>Units</th> <th>Number in digits</th> <th>Number in words</th> </tr> </thead> <tbody> <tr> <td></td> <td>—</td> <td>⑩ ⑩</td> <td>①</td> <td>21</td> <td>twenty-one</td> </tr> <tr> <td></td> <td>①①① ①①①</td> <td>—</td> <td>① ① ① ①</td> <td>304</td> <td>three hundred and four</td> </tr> <tr> <td></td> <td>①①①</td> <td>⑩</td> <td>① ① ①</td> <td>113</td> <td>one hundred and thirteen</td> </tr> <tr> <td></td> <td>①①① ①①①</td> <td>⑩ ⑩ ⑩ ⑩ ⑩ ⑩</td> <td>—</td> <td>350</td> <td>three hundred and fifty</td> </tr> <tr> <td>Total</td> <td>①①① ①①① ①①①</td> <td>⑩ ⑩ ⑩ ⑩ ⑩ ⑩ ⑩ ⑩ ⑩</td> <td>① ① ① ① ① ① ① ①</td> <td>788</td> <td>seven hundred and eighty eight</td> </tr> </tbody> </table>		Hundreds	Tens	Units	Number in digits	Number in words		—	⑩ ⑩	①	21	twenty-one		①①① ①①①	—	① ① ① ①	304	three hundred and four		①①①	⑩	① ① ①	113	one hundred and thirteen		①①① ①①①	⑩ ⑩ ⑩ ⑩ ⑩ ⑩	—	350	three hundred and fifty	Total	①①① ①①① ①①①	⑩ ⑩ ⑩ ⑩ ⑩ ⑩ ⑩ ⑩ ⑩	① ① ① ① ① ① ① ①	788	seven hundred and eighty eight	<p>Whole class introduction followed by individual work, monitored, helped</p> <p>Drawn (or coins stuck) on BB or use enlarged copy master or OHP</p> <p>Discussion, agreement, checking, self-correcting, praising</p> <p>Whole class activity, with Ps dictating what to write/draw</p> <p>In unison. At a good pace With T's help. Praising</p> <p>[Preparation for vertical addition and place value.</p> <p>T can write numbers again as below and Ps can point to the hundreds (tens, units) digits]</p> <p>BB: $\begin{array}{r} 21 \\ 304 \\ 113 \\ 350 \\ \hline 788 \end{array}$</p>
	Hundreds	Tens	Units	Number in digits	Number in words																																	
	—	⑩ ⑩	①	21	twenty-one																																	
	①①① ①①①	—	① ① ① ①	304	three hundred and four																																	
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Total	①①① ①①① ①①①	⑩ ⑩ ⑩ ⑩ ⑩ ⑩ ⑩ ⑩ ⑩	① ① ① ① ① ① ① ①	788	seven hundred and eighty eight																																	

Y2		<i>Lesson Plan 167</i>																											
Activity 4	Interlude Action song <i>22 min</i>	Notes Whole class in unison																											
5	<i>Pby2b, page 167</i> Q.2 Read: <i>Colour as many 100s, 10s and 1s as the number at the bottom shows.</i> T explains task. Do part a) with the whole class first. a) Let's all read the number at the bottom of the column: 'three hundred and twenty five'. A , come and point to the hundreds column. How many hundreds should we colour in? (3) Who agrees? A colours in 3 of the hundreds on BB and Ps colour in <i>Pbs</i> . B , come and point to the tens column. How many tens should we colour in? (2) Who agrees? B colours in 2 of the tens on the BB and Ps colour in <i>Pbs</i> . C , come and point to the units column. How many units should we colour in? (5) Who agrees? C colours in 5 of the units on the BB and Ps colour in <i>Pbs</i> . Parts b) to d) done as individual work. Deal with one part at a time. Review at BB with whole class. Mistakes corrected. Lets read out the numbers in increasing (decreasing) order. (Elicit that Ps should look at the hundreds first, then the tens, then the units to decide which number is bigger/smaller.) <i>32 min</i>	Whole class introduction Drawn on BB or use enlarged copy master or OHP In unison, T pointing to relevant column Agreement, praising Agreement, praising Agreement, praising Individual work, monitored, helped. Self-correction In unison, at a good pace BB: 186 < 207 < 325 < 940																											
6	<i>PbY2b, page 167</i> Q.3 Read: <i>Find the rule. Complete the table. Write the rule in different ways.</i> T (or P) explains what each row of table means using the columns already completed. (Top row + middle row = bottom row; bottom row – middle row = top row, etc.) Ps complete table in <i>Pbs</i> . Review at BB with whole class. Mistakes corrected. Which number is biggest (smallest)? BB: <table border="1" data-bbox="443 1518 1023 1653"> <tr> <td>☆</td> <td>106</td> <td>245</td> <td>200</td> <td>180</td> <td>250</td> <td>150</td> <td>400</td> <td>356</td> </tr> <tr> <td>☾</td> <td>1 ten</td> <td>2 hundreds</td> <td>1 ten</td> <td>2 hundreds</td> <td>2 hundreds</td> <td>5 hundreds</td> <td>11 tens</td> <td>5 tens</td> </tr> <tr> <td>☀</td> <td>116</td> <td>445</td> <td>210</td> <td>380</td> <td>450</td> <td>650</td> <td>510</td> <td>406</td> </tr> </table> Who can write the rule in a mathematical way? Who agrees? Who can write it another way? etc. Check with values from table. <i>40 min</i>	☆	106	245	200	180	250	150	400	356	☾	1 ten	2 hundreds	1 ten	2 hundreds	2 hundreds	5 hundreds	11 tens	5 tens	☀	116	445	210	380	450	650	510	406	Individual work, monitored, helped Table drawn on BB or use enlarged copy master or OHP Reasoning, agreement, checking, praising <i>Rule:</i> ☀ = ☆ + ☾ ☾ = ☀ - ☆ ☆ = ☀ - ☾ <i>Check:</i> 245 + 200 = 445
☆	106	245	200	180	250	150	400	356																					
☾	1 ten	2 hundreds	1 ten	2 hundreds	2 hundreds	5 hundreds	11 tens	5 tens																					
☀	116	445	210	380	450	650	510	406																					
7 Extension	Oral work Revise standard units of measure: length, money, capacity. <ul style="list-style-type: none">How many cm are in 4 m 26 cm (3 m 17 cm)? (426 cm, 317 cm)How many pence are in £1 40 p (£1 45 p)? (140 p, 145 p)How many centilitres are in 2 litres 81 cl (4 litres 40 cl)? (281 cl, 440 cl) How many g are there in 1 kg? (1000 g = 10 hundred g) <ul style="list-style-type: none">How many kg in 2000 g (5000 g)? (2 kg, 5 kg) <i>45 min</i>	Whole class activity BB: 1 m = 100 cm £1 = 100 p 1 litre = 100 cl At speed round class. T reverses questions too, e.g. How many m in 500 cm? (5) BB: 1 kg = 1000 g																											

<h1>Y2</h1>	<p>R: Mental calculation C: Hundreds, tens and units E: <i>Writing 3-digit numbers</i></p>	<h2>Lesson Plan 168</h2>
<p>Activity</p> <p>1</p>	<p>Chain calculation</p> <p>Listen carefully, do each calculation in your heads and show me the final answer when I say. (Ps nod heads after step to show they have done it.) Ps can write the final answer (in large digits) on sheets of scrap paper. Ps can have '100s' number line on desks to help them.</p> <p>T: '120 + 10' ⁽¹³⁰⁾ ... '- 20' ⁽¹¹⁰⁾ ... '+ 100' ⁽²¹⁰⁾ ... '+ 30'</p> <p>Write the answer on your sheet and show me ... now! (240)</p> <p>A, explain to us how you got your answer. Who agrees? Who thinks something else?</p> <p>Repeat using other numbers and operations.</p> <p style="text-align: right;"><i>5 min</i></p>	<p>Notes</p> <p>Whole class activity</p> <p>T waits until majority of Ps have nodded their heads before continuing to next step</p> <p>In unison</p> <p>Reasoning, agreement, checking, praising</p> <p>Ps can say the number and operations too.</p>
<p>2</p>	<p>Number line</p> <p>Let's fill in the missing numbers according to their position on the number line.</p> <p>BB:</p>  <p>B, come and choose a truck. Which number is it joined up to on the number line? (e.g. 180) What do you think the missing number is? (20) Why do you think that? (Because $200 - 20 = 180$) Who agrees? Who thinks something else? etc.</p> <p>Repeat with other Ps until all missing numbers are filled in.</p> <p style="text-align: right;"><i>12 min</i></p>	<p>Whole class activity</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Ps recite hundreds at speed with T pointing to each</p> <p>Discussion about medium and small 'ticks' (50s, 10s)</p> <p>Ps come to BB to write numbers and explain reasoning</p> <p>Class agrees/disagrees and applauds good work</p> <p>Write equations on BB if there are problems</p>
<p>3</p>	<p>PbY2b, page 168</p> <p>Q. 1 Read: <i>Write the total amount below each column.</i></p> <p>T leads Ps through part a) first:</p> <p>How many 100s are there? (5) Write 5 in the box below the hundreds. (T writes on BB) How many 10s are there? (2) Write '2' in the box below the tens. (T writes on BB) How many 1s are there? (3) Write '3' in the box below the 1s (units). (T writes on BB) What 3-digit number have we written? (523)</p> <p>Ps do parts b) to d) in <i>Pbs</i>. Review at BB with whole class. Ps read their numbers and explain their reasoning. Mistakes corrected. Discuss importance of writing '0' when no tens (units).</p> <p><i>Solution:</i> a) 523, b) 245, c) 402, 540</p> <p style="text-align: right;"><i>17 min</i></p>	<p>Whole class introduction</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Class dictates what to write, T writes on BB, Ps in <i>Pbs</i></p> <p>In unison</p> <p>Reasoning, agreement, checking, praising</p>

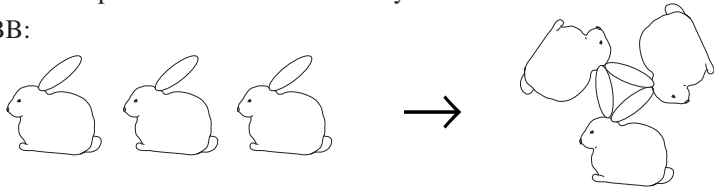
Y2		<i>Lesson Plan 168</i>
<p>Activity</p> <p>4</p>	<p>Paying amounts</p> <p>T has one 10 p, one 20 p, three 50 p and two £1 coins stuck to BB.</p> <p>We have these coins in our purse. Which of these amounts could we pay exactly (i.e. with no change needed)? How could we do it?</p> <p>BB: 60 p YES 50 p + 10 p = 60 p</p> <p>90 p NO</p> <p>£1 30 p YES e.g. £1 + 20 p + 10 p</p> <p>£2 30 p YES e.g. £1 + £1 + 20 p + 10 p = £2 30 p</p> <p>£4 NO, because total amount of all the coins is</p> <p style="text-align: right;">$£1 + £1 + 50\text{ p} + 50\text{ p} + 50\text{ p} + 20\text{ p} + 10\text{ p} = £3\text{ }80$</p> <p style="text-align: right;">$£3\text{ }80\text{ p} < £4$</p> <p>T points to each and class shouts 'Yes' or 'No'. Ps come out to confirm whether answers are correct by choosing the relevant coins. Who can think of another way we could pay it? Who agrees? etc.</p> <p>Extension</p> <ul style="list-style-type: none"> • How could we pay 90 p if we were allowed to receive change? • How much more money would we need to pay £4? (20 p) <p style="text-align: right;"><i>25 min</i></p>	<p>Notes</p> <p>Whole class activity</p> <p>BB: </p> <p>Or T has a purse containing real coins and Ps choose coins from it.</p> <p>Agreement, reasoning, checking, praising</p> <p>e.g. pay £1, and get 10 p change</p> <p>$£3\text{ }80\text{ p} + 20\text{ p} = £3 + £1 = £4$</p>
<p>5</p>	<p>Interlude</p> <p>Song, rhyme, exercises</p> <p style="text-align: right;"><i>27 min</i></p>	<p>Whole class in unison</p>
<p>6</p>	<p>PbY2b, page 168</p> <p>Q.2 Read: <i>Join up the equal amounts.</i></p> <p>Ps read numbers in relay round class first. Ps join up in <i>Pbs</i>.</p> <p>Review at BB with whole class. Mistakes corrected.</p> <p style="text-align: right;"><i>32 min</i></p>	<p>Individual work, monitored, helped</p> <p>Use enlarged copy master/OHP</p> <p>Agreement, checking, praising</p>
<p>7</p>	<p>PbY2b, page 168</p> <p>Q.3 Read: <i>Join up the equal amounts.</i></p> <p>What is this creature? (octopus) Where do you find it? (in the sea) How many legs does it have? (8) (relate to octagon)</p> <p>Let's all say the numbers on the octopus's legs, starting at 100 and reading <u>clockwise</u> (anti-clockwise). (BB)</p> <p>Ps write values beside rectangles and join up to octopus in <i>Pbs</i>.</p> <p>Review at BB with whole class. Deal with all mistakes.</p> <p>If problems, write equation on BB or show on number line (square).</p> <p style="text-align: right;"><i>38 min</i></p>	<p>Whole class discussion</p> <p>Draw on BB or use enlarged copy master or OHP</p> <p>In unison</p> <p>BB: <u>clockwise</u> </p> <p><u>anticlockwise</u> </p> <p>Discussion, checking, agreement, praising</p>
<p>8</p>	<p>PbY2b, page 168</p> <p>Q.4 Read: <i>Complete the table. The rule is: the square minus the triangle equals the circle.</i></p> <p>What do you notice about the table? (Values shown are quantities of measure: money, mass, capacity) Revise standard units used.</p> <p>Ps come out to show which are which. Ps complete table in <i>Pbs</i>.</p> <p>Review at BB with whole class. Mistakes corrected.</p> <p>Who can write the rule in another way? Who agrees?</p> <p>Is there another way? Check with values from the table.</p> <p style="text-align: right;"><i>45 min</i></p>	<p>Individual work, monitored, helped</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Reasoning, agreement, checking, praising</p> <p>Whole class discussion</p> <p><i>Rule:</i> $\triangle = \square - \circ$</p> <p>$\square = \triangle + \circ$</p>

<p>Y2</p>	<p>R: Calculation practice C: Hundreds, tens and units E: <i>Multiplication and division beyond 100</i></p>	<p><i>Lesson Plan</i> 169</p>					
<p>Activity 1</p>	<p>Secret money I have an amount of money in this purse (T holds up). How much is in the purse? I will give you a clue to work it out. Write the amount on a sheet of paper and show me it when I say.</p> <ul style="list-style-type: none"> In the purse there are: one £10 note, two £1 coins and three 10 p coins. Show me the amount . . . now! (£12 30 p) A, explain to us how you worked it out. Let's check. A takes out the £10 note and coins and sticks them on the BB as a check. I had this note and these coins (£12 30 p) in my purse and I bought some things in a shop. I now have only <u>one</u> of these left. What amount could I have paid to the shop assistant? B, what do you think? Who agrees? Who thinks something else? etc. Elicit that: If £10 note remains, amount paid was £2 + 30 p = £2 30 p If £1 coin remains, amount paid was £10 + £1 + 30 p = £11 30 p If 10 p coin remains, amount paid was £10 + £2 + 20 p = £12 20 p <p style="text-align: right;"><i>6 min</i></p>	<p>Notes Whole class activity T has purse already prepared with model (or real) £10 note and coins Class show answer in unison Reasoning, agreement, checking, praising Ps dictate solutions Reasoning, agreement, checking, praising Ask several Ps what they think Demonstrate each case in logical order on BB Praising</p>					
<p>2</p>	<p>PbY2b, page 169 Q.1 Read: <i>Bob has only £5 notes in his wallet. He is thinking of buying one of these.</i> <i>Buying which item would give him:</i> a) <i>most change back,</i> b) <i>least change back?</i></p> <p>Talk about each picture first. T writes names above each (or can use letters A, B, C, D, E) to make it easier for Ps to specify in <i>Pbs</i>. For each item, think about how many £5 notes you would give the shop assistant and how much change you would receive. Deal with one part at a time. Review at BB with whole class. Ask several Ps what they think.</p> <p style="text-align: center;">BB:</p> <table border="0" style="width: 100%; text-align: center;"> <tr> <td style="width: 20%;"> <p><i>Ball</i></p>  £5 - £4 = £1</td> <td style="width: 20%;"> <p><i>Bag</i></p>  £10 - £7 20 p = £2 80 p</td> <td style="width: 20%;"> <p><i>Badminton set</i></p>  £20 - £15 90 p = £4 10 p a) Most change</td> <td style="width: 20%;"> <p><i>Slippers</i></p>  £10 - £6 10 p = £3 90 p</td> <td style="width: 20%;"> <p><i>Car</i></p>  £10 - £9 30 p = 70 p b) Least change</td> </tr> </table> <p style="text-align: right;"><i>12 min</i></p>	<p><i>Ball</i></p>  £5 - £4 = £1	<p><i>Bag</i></p>  £10 - £7 20 p = £2 80 p	<p><i>Badminton set</i></p>  £20 - £15 90 p = £4 10 p a) Most change	<p><i>Slippers</i></p>  £10 - £6 10 p = £3 90 p	<p><i>Car</i></p>  £10 - £9 30 p = 70 p b) Least change	<p>Individual or paired work, monitored, helped Ps could have toy money on desks to help them Discussion about how to solve the problem T gives hints if necessary Reasoning, agreement, checking, praising Demonstrate with notes and coins with whole class if necessary.</p>
<p><i>Ball</i></p>  £5 - £4 = £1	<p><i>Bag</i></p>  £10 - £7 20 p = £2 80 p	<p><i>Badminton set</i></p>  £20 - £15 90 p = £4 10 p a) Most change	<p><i>Slippers</i></p>  £10 - £6 10 p = £3 90 p	<p><i>Car</i></p>  £10 - £9 30 p = 70 p b) Least change			
<p>3</p>	<p>Problems Listen carefully, picture the story in your head and think how you would work out the answer. a) <i>How much do 3 pens cost if one pen costs 40 p?</i> C, how you would you work out the answer? Who agrees? Who would do it another way? etc. Plan: 1 pen: 40 p 3 pens: 3 × 40 p Calculation: 3 × 40 p = 40 p + 40 p + 40 p = 120 p = £1 20 p Answer: 3 pens cost £1 20 p.</p>	<p>Whole class activity Ps suggest what to do Agreement, checking T writes on BB and Ps write in <i>Ex. Bks.</i> Praising</p>					


Y2		<i>Lesson Plan 169</i>
Activity	<p>b) <i>How many pens can be bought for £2 40 p?</i> D, how you would you work out the answer? Who agrees? Who would do it another way? etc.</p> <p><i>Plan:</i> Total cost: £2 40 p = 240 p Each pen: 40 p</p> <p><i>Calculation:</i> $\square \times 40 \text{ p} = 240 \text{ p}$, $240 \text{ p} \div 40 \text{ p} = \underline{6}$ or $40 \text{ p} + 40 \text{ p} + 40 \text{ p} + 40 \text{ p} + 40 \text{ p} + 40 \text{ p} = 240 \text{ p}$, so $\underline{6} \times 40 \text{ p} = 240 \text{ p}$</p> <p><i>Answer:</i> 6 pens can be bought for £2 40 p.</p> <p style="text-align: right;"><i>19 min</i></p>	<p style="text-align: center;">Notes</p> <p>Whole class activity Ps suggest what to do Reasoning, agreement, checking T writes on BB and Ps copy in <i>Ex. Bks.</i> Or from a), 3 pens: £1 20 p 6 pens: $2 \times \text{£}1 \text{ 20 p} = \text{£}2 \text{ 40}$ Praising</p>
4	<p>Interlude Song, rhyme, exercises</p> <p style="text-align: right;"><i>21 min</i></p>	<p>Whole class in unison</p>
5	<p>PbY2b, page 169 Q.2 Read: <i>Write the additions and subtractions in a shorter way. Write the answers too.</i></p> <p>Do parts a) and b) with whole class first to show Ps what to do. Then Ps do parts c) to g) in <i>Pbs</i>. Review at BB with whole class. Mistakes corrected.</p> <p><i>Solutions:</i></p> <p>a) $80 + 80 + 80 = 3 \times 80 = 240$ b) $\underbrace{25 + 25 + 25 + 25}_{100} + \underbrace{25 + 25 + 25}_{75} = 100 + 75 = 175$ c) $70 + 70 = 2 \times 70 = 140$ d) $100 + 100 + 100 + 100 = 4 \times 100 = 400$ e) $250 + 250 = 2 \times 250 = 500$ f) $120 - 30 - 30 - 30 = 120 - 3 \times 30 = 120 - 90 = 30$ g) $150 - 50 - 50 - 50 = 150 - 3 \times 50 = 150 - 150 = 0$</p> <p style="text-align: right;"><i>29 min</i></p>	<p>Whole class activity to start Then individual work, monitored, helped Discussion at BB Agreement, checking, praising Or b) $7 \times 25 = 7 \times (20 + 5)$ $= 7 \times 20 + 7 \times 5$ $= 140 + 35$ $= 175$ e) $2 \times 250 = 2 \times (200 + 50)$ $= 2 \times 200 + 2 \times 50$ $= 400 + 100$ $= 500$</p>
6	<p>Operations T writes these numbers on the BB: 240 2 10 5 48 120. How can we make 24 from any two of these numbers? What operation should we use? (division) T writes on BB and Ps in <i>Ex. Bks.</i></p> <p style="text-align: right;"><i>33 min</i></p>	<p>Whole class activity Ps suggest what to write BB: $240 \div 10 = 24$, $120 \div 5 = 24$, $48 \div 2 = 24$ Discussion, agreement, praising</p>
7	<p>PbY2b, page 169 Q.3 Read: <i>Write in the missing numbers.</i></p> <p>Deal with one part at a time. Review on BB with whole class. Mistakes corrected. (Ps may use number lines if necessary.) (Or done as mental practice. Ps showing final answer with n/cards.)</p> <p style="text-align: right;"><i>40 min</i></p>	<p>Individual work, monitored, helped Written on BB or use enlarged copy master or OHP Agreement, checking, praising</p>
8	<p>PbY2b, page 169 Q.4 Read: <i>How many 40 cl jars can be filled from a 3 litre 20 cl tub of honey?</i></p> <p>Ps write plan, do calculation in <i>Pbs</i> and write answer in relevant box. Review at BB with whole class (or Ps can show with number cards).</p> <p style="text-align: right;"><i>45min</i></p>	<p>Individual work, monitored Reasoning, agreement, praising BB: 1 tub: 3 litre 20 cl = 320 cl 1 jar: 40 cl $320 \text{ cl} \div 40 \text{ cl} = \underline{8}$ (jars)</p>

Y2		<i>Lesson Plan 170</i>
<i>Activity</i>	Tables practice. Revision, activities, consolidation <i>PbY2b, page 170</i>	<i>Notes</i>

<h1 style="text-align: center;">Y2</h1>	<p>R: Calculation practice C: Revision and practice. Puzzles and challenges E: <i>Relationary topics. Transposition. Rotation</i></p>	<h2 style="margin: 0;">Lesson Plan</h2> <h1 style="margin: 0;">171</h1>																					
<p>Activity 1</p>	<p>Opposites</p> <ul style="list-style-type: none"> Tell me the opposite of what I say and think of an example for each. e.g. <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">T:</td> <td style="width: 33%;">Ps:</td> <td style="width: 33%;">Examples: e.g.</td> </tr> <tr> <td>even number</td> <td>odd number</td> <td>(4, 5)</td> </tr> <tr> <td>addition</td> <td>subtraction</td> <td>($14 + 2 = 16$, $18 - 7 = 11$)</td> </tr> <tr> <td>multiplication</td> <td>division</td> <td>($5 \times 4 = 20$, $20 \div 4 = 5$)</td> </tr> <tr> <td>divisible by 3</td> <td>not divisible by 3</td> <td>(12, 35)</td> </tr> <tr> <td>true statement</td> <td>false statement</td> <td>($6 > 5$, $8 < 4$)</td> </tr> <tr> <td>1-digit number</td> <td>more than 1 digit number</td> <td>(7; 26, 141, etc.)</td> </tr> </table> <ul style="list-style-type: none"> How many even numbers are there? (unlimited number) How many 1-digit numbers are there? (10) How many 2-digit numbers are there? (90) <p style="text-align: center;">8 min</p>	T:	Ps:	Examples: e.g.	even number	odd number	(4, 5)	addition	subtraction	($14 + 2 = 16$, $18 - 7 = 11$)	multiplication	division	($5 \times 4 = 20$, $20 \div 4 = 5$)	divisible by 3	not divisible by 3	(12, 35)	true statement	false statement	($6 > 5$, $8 < 4$)	1-digit number	more than 1 digit number	(7; 26, 141, etc.)	<p style="text-align: center;">Notes</p> <p>Whole class activity</p> <p>T chooses Ps at random, first P_1 to give opposite name and then P_2 and P_3 to give examples</p> <p>Class agrees/disagrees</p> <p>Ps could think of opposites too</p> <p>T could introduce the word <u>infinite</u> (BB) here.</p> <p>Discussion, agreement, checking on number line/square. Praising</p>
T:	Ps:	Examples: e.g.																					
even number	odd number	(4, 5)																					
addition	subtraction	($14 + 2 = 16$, $18 - 7 = 11$)																					
multiplication	division	($5 \times 4 = 20$, $20 \div 4 = 5$)																					
divisible by 3	not divisible by 3	(12, 35)																					
true statement	false statement	($6 > 5$, $8 < 4$)																					
1-digit number	more than 1 digit number	(7; 26, 141, etc.)																					
<p>2</p>	<p>Revision of Mass</p> <p>How can we work out what these fruits weigh?</p> <p>BB:</p> <p style="text-align: center;"> Apple : <input type="text"/> g Lemon : <input type="text"/> g Pear : <input type="text"/> g </p> <p>A, what do we know from the picture? (1 plum = 20 g) Who can tell us what to do next? B, come and explain what you think. Who agrees? etc.</p> <p><i>Solution:</i> e.g.</p> <p>LH balance: 6 plums = 2 lemons, so 3 plums = 1 lemon. $3 \times 20 \text{ g} = 60 \text{ g}$ <u>1 lemon weighs 60 g</u></p> <p>Middle balance: 3 lemons = 1 apple + 1 plum, $3 \times 60 \text{ g} = 1 \text{ apple} + 20 \text{ g}$ so 1 apple = $180 \text{ g} - 20 \text{ g} = 160 \text{ g}$ <u>1 apple weighs 160 g</u></p> <p>RH balance: 1 apple + 2 plums = 1 pear, $160 \text{ g} + 2 \times 20 \text{ g} = 160 \text{ g} + 40 \text{ g} = 200 \text{ g}$ <u>1 pear weighs 200 g</u></p> <p style="text-align: center;">15 min</p>	<p>Whole class activity</p> <p>Drawn on BB or use enlarged copy master or OHP (or use real balance and a selection of real or plastic fruit pre-weighed so T knows what to expect)</p> <p>Give Ps time to think</p> <p>Ps suggest what to do first and where to go next.</p> <p>Ps come to BB to explain and write equations.</p> <p>Class agrees/disagrees</p> <p>Discussion, agreement, checking, praising</p>																					
<p>3</p>	<p>PbY2b, page 171</p> <p>Q.1 Read: Which of the numbers 2, 5 or 10 does each shape represent? The same shape means the same number. The arrows point to the multiplication which has <u>twice</u> the value.</p> <p>Let Ps try to solve it individually (or in pairs) first.</p> <p>Ps come out to BB to explain reasoning.</p> <p>Class agrees/disagrees.</p> <p style="text-align: center;">23 min</p>	<p>Individual trial, monitored, helped</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Discussion at BB</p> <p>Reasoning, agreement, checking, praising</p> <p>Check: $2 \times 10 = 20$ $2 \times 20 = 40$</p> <p>What would the arrows show if they pointed the other way? (half)</p>																					

Y2		<i>Lesson Plan 171</i>
Activity		Notes
4	<p>Interlude Song, rhyme, exercises</p> <p style="text-align: right;">25 min</p>	Whole class in unison
5	<p>Pby2b, page 171 Q.2 Read: <i>Practise multiplication.</i> Let's see how many of these you can do in 3 minutes! Try to do it without looking at your multiplication table! Of course you may look at it if you are stuck. Review orally round class. Mistakes corrected. Who had them all correct? Who made a mistake? What kind of mistake? Who did the same? etc. Write problem equations on BB. (e.g. $35 \times 2 = 30 \times 2 + 5 \times 2 = 60 + 10 = 70$)</p> <p style="text-align: right;">30 min</p>	<p>Individual work, monitored Keep to time limit T notes Ps who need to use \times tables</p> <p>Agreement, checking, self-correcting, praising</p>
6	<p>Pby2b, page 171 Q.3 Read: <i>Practise division.</i> Let's see how many of these you can do in 3 minutes! Try to do it without looking at your multiplication table! Of course you may look at it if you are stuck. Review orally round class. Mistakes corrected. Who had them all correct? Who made a mistake? What kind of mistake? Who did the same? etc. Demonstrate with Ps at front of class if necessary.</p> <p style="text-align: right;">36 min</p>	<p>Individual work, monitored Keep to time limit. T notes Ps who need to use \times tables</p> <p>Agreement, checking, self-correcting, praising</p>
7	<p>PbY2b, page 171 Q.4 Read: <i>List the numbers which make the statements true.</i> Deal with one part at a time. Review at BB with whole class. For each part, Ps read out inequality and come to write their numbers on BB, explaining reasoning and showing on class number line or square. Class agrees/disagrees. Ps choose numbers from those listed to check that inequalities are true.</p> <p style="text-align: right;">40 min</p>	<p>Individual work, monitored, helped Reasoning, agreement, checking, praising BB: a) \blacksquare : 6, 7, 8, 9 b) \bigcirc : 7, 6, 5, 4, 3, 2, 1, (0) c) \triangle : 1, (0)</p>
8	<p>Rotation T sticks 3 pictures of a rabbit with only one ear on BB.</p> <p>BB:</p>  <p>Let's place these 3 one-eared rabbits so that each rabbit has two ears! Ps try on desks without help first. If a P discovers the solution he/she sits up with arms folded. If nobody has solved it after 2 minutes, T gives hint to try rotation. P who has solved it explains to whole class at BB, otherwise T explains.</p> <p style="text-align: right;">45 min</p>	<p>Individual trial first, monitored but <u>not</u> helped Use copy master, enlarged, coloured and cut out. Ps can have set on desks too</p> <p>Praise Ps who have solved it but give others more time</p> <p>Demonstration, agreement Ps could take sets home to try out on friends/parents.</p>

<h1>Y2</h1>	<p>R: Mental calculation C: Revision and practice. Puzzles and challenges E: Roman numbers. Combinatorics</p>	<h2>Lesson Plan 172</h2>												
<p>Activity 1</p>	<p>Crossword with numbers</p> <p>T talks about normal crosswords which have numbers to show where each clue starts. T explains about clues going <u>across</u> the row (horizontal) and going <u>down</u> a column (vertical).</p> <p>This is a crossword puzzle about numbers, so each clue is shown by a letter.</p> <div style="display: flex; align-items: center; justify-content: center;"> <table border="1" style="border-collapse: collapse; text-align: center; width: 40px; height: 40px;"> <tr><td>a)</td><td>b)</td></tr> <tr><td> </td><td> </td></tr> <tr><td>c)</td><td> </td></tr> </table> → <table border="1" style="border-collapse: collapse; text-align: center; width: 40px; height: 40px;"> <tr><td>a)</td><td>b)</td></tr> <tr><td>6</td><td>9</td></tr> <tr><td>c)</td><td>9</td></tr> </table> </div> <p>CLUES (BB)</p> <p><u>Across</u> (horizontal)</p> <p>a) The number of sides in a hexagon. b) The biggest 1-digit number. c) A 2-digit number which has its units digit 3 times its tens digit.</p> <p><u>Down</u> (vertical)</p> <p>a) Odd number, less than 70, more than 60 and divisible by 3 b) the biggest 2-digit number.</p> <p>Ps come out to choose a clue and write in the answer, explaining reasoning. Let's check that all the clues are satisfied.</p> <p>Extension</p> <ul style="list-style-type: none"> • What other clues could we have given for each number? • Ps could make up own crosswords and clues for neighbours to solve. <p style="text-align: right;"><i>6 min</i></p>	a)	b)			c)		a)	b)	6	9	c)	9	<p>Notes</p> <p>Whole class activity</p> <p>T could have a crossword to show.</p> <p>Drawn on BB or use enlarged copy master or OHP</p> <p>Class reads each clue in unison</p> <p>Class agrees/disagrees Checking horizontally and vertically</p> <p>Ps have copies of blank crossword on desks</p>
a)	b)													
c)														
a)	b)													
6	9													
c)	9													
<p>2</p>	<p>Making 2-digit numbers</p> <p>T writes on BB: 3, 4, 5</p> <p>a) Write down in your <i>Ex. Bks</i> all the 2-digit numbers which can be made from these digits. (<i>Heading</i>: Lesson number and date) You may repeat a digit. Try to do it logically.</p> <p>A, how many did you write? Who had the same? Who had more? What is the most we could make? (For each digit you choose as the tens, you can make three 2-digit numbers, i.e. $3 \times 3 = 9$) BB: 33, 34, 35, 43, 44, 45, 53, 54, 55 (9 numbers)</p> <p>b) Underline those numbers which are divisible by 3. (33, 45, 54)</p> <p>B, what did you underline? Who agrees? Who thinks another? etc. Show calculations on BB: $45 = 30 + 15$, $54 = 30 + 24$</p> <p style="text-align: right;"><i>13 min</i></p>	<p>Individual work, monitored, helped</p> <p>Discussion, reasoning agreement</p> <p>Agreement, checking, praising Discussion, agreement, checking, praising. BB: e.g. $45 \div 3 = 30 \div 3 + 15 \div 3$ $= 10 + 5 = 15$</p>												
<p>3</p>	<p>PbY2b, page 172, Q.1</p> <p>Read: <i>In a bag there are 10 white and 8 black marbles. What is the smallest number of marbles you must take out of the bag (with your eyes closed) to make <u>certain</u> that you have taken out at least:</i></p> <p>a) 1 white marble b) 1 black marble c) 5 white marbles d) 5 black marbles e) 1 white and 1 black marble?</p> <p>T (or P) puts 10 white and 8 black marbles into an opaque bag.</p> <p>Deal with one part at a time. For each part, Ps agree on the least number required and the reasoning behind it. A P takes out agreed number of marbles with eyes closed as a check.</p> <p><i>Solution:</i> a) 9, c) 13 (as first 8 marbles could all be black) b) 11, d) 15 (as first 10 marbles could all be white) e) 11 (as for b) and d))</p> <p style="text-align: right;"><i>18 min</i></p>	<p>Whole class activity</p> <p>Ask several Ps what they think and why.</p> <p>Class agrees on a number. Check by demonstration</p> <p>Encourage Ps to visualise what the outcomes might be T helps if necessary</p> <p>Repeat if there is time with other colours or numbers</p>												

Y2		<i>Lesson Plan 172</i>
Activity		Notes
4	Interlude Song, rhyme, exercises <p style="text-align: right;">20 min</p>	Whole class in unison
5	PbY2b, page 172 Q.2 Read: <i>Colour the equal amounts in the same colour.</i> Tell Ps to write result above each multiplication first, then to write in the answers. Review at BB with whole class. Mistakes corrected. Who notices a quicker way to do it? Elicit that, e.g. $\underline{5} \times 2 + \underline{2} \times 2 = \underline{7} \times 2 = \underline{3} \times 2 + \underline{4} \times 2 = 14$ $6 \times \underline{2} + 6 \times \underline{5} = 6 \times \underline{7} = 6 \times \underline{6} + 6 \times \underline{1} = 42$ <p style="text-align: right;">25 min</p>	Individual work, monitored (helped) Written on BB or use enlarged copy master Discussion, agreement, checking, self-correcting Extra praise if Ps notice this without help. Otherwise T explains it.
6	Roman numerals Revise meaning of I, V, X, IX (X – I), VI (V + I), etc. T has BB already prepared: a) $V = IX + III$ Change the position of only 1 stick to make the equation true. P comes out to BB to rewrite equation, explaining reasoning. b) $XX = I + I$ Change the position of 2 sticks to make the equation true. P comes out to BB to rewrite equation, explaining reasoning. <p style="text-align: right;">30 min</p>	Whole class activity Ps explain meanings to class BB: a) $VI = IX - III$ Agreement, checking, praising BB: b) $X = I + IX$ Agreement, checking, praising
7	PbY2b, page 172 Q.3 Read: <i>Do the calculations in the correct order.</i> Revise order of calculation first. (brackets, \times or \div , + or –) Ps write result of each operation above the sign and then fill in the answer. Review orally round class, with Ps explaining in which order they did the calculations. Mistakes corrected. Write any problem calculations on the BB, e.g. $72 \div 8 + 7 \times 9 - 27 = 9 + 63 - 27 = 72 - 27 = 45$ <p style="text-align: right;">35 min</p>	Individual work, monitored (helped) Whole discussion on order T takes note of Ps who still need to refer to \times table Reasoning, agreement, checking, praising
8	PbY2b, page 172 Q.4 Read: <i>One side of the paper strip is white and the other side is black. Continue colouring the parts of the paper strips which should be black.</i> Ps could each have 3 paper strips to colour and fold if needed. Review with whole class. T (P) demonstrates with large strip. <p style="text-align: right;">40 min</p>	Individual (or paired) work, monitored (helped) Discussion, agreement, checking, praising Solution:  (Or use copy master)
9	Problem Listen carefully, picture the story in your mind and solve it in your <i>Ex. Bks.</i> <i>There are 70 cl of water in a 1 litre bottle. How much water will be in the bottle if we pour another 50 cl into it?</i> T asks several Ps what they think before doing calculation on BB. BB: $70 \text{ cl} + 50 \text{ cl} = 120 \text{ cl} = 1 \text{ litre } 20 \text{ cl}$ BUT bottle holds only 1 litre! <i>Answer:</i> 1 litre of water will be in the bottle and 20 cl will spill over! <p style="text-align: right;">45 min</p>	Individual trial first, monitored but <u>not</u> helped Discussion, reasoning, agreement, checking Demonstrate if necessary Extra praise for Ps who deduced correct answer by themselves

Y2	R: Mental calculation C: Revision and practice. Puzzles and challenges E: <i>Combinatorics. Problem solving</i>	<i>Lesson Plan</i> 173																																										
Activity 1	Making 2-digit numbers Let's list all the 2-digit numbers which have 4 as the tens digit and which have a units digit that is not more than the tens digit. T writes Ps' responses in logical order on BB. BB: 44, 43, 42, 41, 40 Repeat with 6 as the tens digit. (BB: 66, 65, 64, 63, 62, 61, 60) <div style="text-align: right;">5 min</div>	Notes Whole class activity (Or Ps could write numbers in <i>Ex.Bks</i> if they wish) At a good pace Class agrees/disagrees Praising																																										
2	Rules Let's find possible numbers for a , b and c so that the equations are true. BB: <i>Rule: $a + 3 = b \times 3 = c - 3$</i> <table border="1" style="width: 100%; text-align: center; border-collapse: collapse;"> <tbody> <tr> <td style="width: 5%;">a</td> <td style="width: 5%;">0</td> <td style="width: 5%;">3</td> <td style="width: 5%;">6</td> <td style="width: 5%;">9</td> <td style="width: 5%;">12</td> <td style="width: 5%;">15</td> <td style="width: 5%;">18</td> <td style="width: 5%;">21</td> <td style="width: 5%;">24</td> <td style="width: 5%;">27</td> <td style="width: 5%;">30</td> <td style="width: 5%;">33</td> <td style="width: 5%;">36</td> </tr> <tr> <td>b</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> <td>11</td> <td>12</td> <td>13</td> </tr> <tr> <td>c</td> <td>6</td> <td>9</td> <td>12</td> <td>15</td> <td>18</td> <td>21</td> <td>24</td> <td>27</td> <td>30</td> <td>33</td> <td>36</td> <td>39</td> <td>42</td> </tr> </tbody> </table> T (or P) explains rule using first column. Ps come out one at a time to fill in the other columns, explaining reasoning. Class agrees/disagrees. Who could write the rule in another way? Who agrees? Who thinks something else? (There are several possibilities.) Let's check with values from the table. <div style="text-align: right;">13 min</div>	a	0	3	6	9	12	15	18	21	24	27	30	33	36	b	1	2	3	4	5	6	7	8	9	10	11	12	13	c	6	9	12	15	18	21	24	27	30	33	36	39	42	Whole class activity Table drawn on BB or use enlarged copy master or OHP Reasoning, agreement, checking, praising (Bold numbers given already, Ps fill in rest) Encourage logical solution, but accept any order <i>Rule: $a = 3 \times b - 3$</i> $b = (a + 3) \div 3$ $c = a + 6$, etc. <i>Check: e.g. $9 = 3 + 6$</i>
a	0	3	6	9	12	15	18	21	24	27	30	33	36																															
b	1	2	3	4	5	6	7	8	9	10	11	12	13																															
c	6	9	12	15	18	21	24	27	30	33	36	39	42																															
3	PbY2b, page 173 Q.1 Read: <i>Colour the odd one out. Write the reason for your choice.</i> Ps write values above ellipses first. Review at BB with whole class. Ps write divisions on BB. Mistakes corrected. Deal with all choices. Class decides whether reasoning is valid. <i>Solution: '1 sixth of 6' is the odd one out because it has a value of '1' whereas all the others have a value of '4', or it is the only one where the amount is divided by itself.</i> <div style="text-align: right;">18 min</div>	Individual work, monitored, helped Discussion, agreement, checking, praising BB: $12 \div 3 = 4$ $8 \div 2 = 4$ $16 \div 4 = 4$ $6 \div 6 = 1$																																										
4	Interlude Action song <div style="text-align: right;">20 min</div>	Whole class in unison																																										
5	PbY2b, page 173 Q.2 Read: <i>Fill in the missing numbers.</i> Let's see how many of these you can do in 3 minutes! You may use your multiplication tables if you need to, but try to do as many as you can without them. Review orally round the class. Mistakes corrected. Who had all correct? Who made a mistake? Try to learn by heart the facts you did not know. <div style="text-align: right;">25 min</div>	Individual work, monitored T notes Ps who need to refer to their tables Agreement, checking, self-correcting, praising Encouragement only																																										

Y2	R: Mental calculation C: Revision and practice. Puzzles and challenges E: <i>Brackets</i>	<i>Lesson Plan</i> 174
Activity		Notes
1	Oral practice Describe these numbers in different ways (72, 17) e.g. <u>72</u> : $60 + 12$, 8×9 , $100 - 28$, $7 \times 10 + 2$, etc. <u>17</u> : 4th 2-digit odd number, 3 less than 20, $100 - 83$, $34 \div 2$, etc. Repeat for other numbers if there is time. Ps may choose the numbers. <div style="text-align: right;">5 min</div>	Whole class activity At speed round class Involve all Ps Class points out errors Praise creativity
2	Secret shapes or numbers A P comes to front of class, thinks of a number or shape and the rest of the class has to deduce what it is by asking questions. P at front can answer only 'Yes' or 'No'. (e.g. Is it a number? (Yes) Does it have 2 digits? (Yes) Is it even? (No) Is it less than 20? (Yes) Is it more than 15? (Yes) Is it 17? (No) It is 19! <div style="text-align: right;">10 min</div>	Whole class activity Involve majority of Ps Encourage Ps to ask logical questions and to keep in mind the clues already given. Praise creative questioning
3 Extension	PbY2b, page 174 Q.1 Read: <i>We have put some of these shapes one on top of the other to give the shape on the right.</i> <i>Colour the shapes we have used in the correct colour.</i> Remind Ps that B = blue, Y = yellow, R = red. Review at BB with whole class. Check by demonstration. (Use pre-coloured shapes to lay one on top of the other.) What are the names of these shapes? Ps come to BB to point to a shape and to name and describe it (e.g. rectangle is a quadrilateral which has opposite sides the same length and has square (right-angled) corners; square is a rectangle which has all 4 sides the same length, triangle has 3 sides, etc.) (parallelogram is a quadrilateral with opposite sides parallel, rhombus is a parallelogram with all 4 sides of equal length) <div style="text-align: right;">15 min</div>	Individual work, monitored (helped) Use copy master, enlarged, coloured appropriately and shapes cut out and stuck to BB Discussion, agreement, checking, praising To see what Ps remember about shapes With help of T if needed Discussion, agreement, praising Revise meaning of <u>parallel</u> // lines (stay same distance apart however far they are extended)
4	Number cards I will ask some questions and you must show me the answer with number cards when I say. Write the calculations and answers in your <i>Ex Bks</i> first. (<i>Heading</i> : Lesson number and date) What is: a) the difference between 48 and a half of 48? Show me . . . now! $(48 - 48 \div 2 = 48 - 24 = \underline{24})$ b) the sum of 35 and a fifth of 35? $(35 + 35 \div 5 = 35 + 7 = \underline{42})$ c) the sum of 65 and a half of 54? $(65 + 54 \div 2 = 65 + 27 = \underline{92})$ d) the difference between 1 sixth of 36 and 1 sixth of 24? $(36 \div 6 - 24 \div 6 = 6 - 4 = \underline{2})$ <div style="text-align: right;">20 min</div>	Individual work but class kept together T repeats each part slowly Give Ps time to think/write In unison Ps who answer correctly come to BB to explain reasoning Agreement, self-correction Praising Ps could ask the questions too!
5	Interlude Song, rhyme, exercises <div style="text-align: right;">22 min</div>	Whole class in unison

Y2		<i>Lesson Plan 174</i>
Activity		Notes
5	<p>PbY2b, page 174</p> <p>Q.2 Read: <i>The length of a room is 4 m 30 cm and the width is 2 m 70 cm. What is the difference between them?</i></p> <p>Review at BB with whole class. Mistakes corrected.</p> <p><i>Plan:</i> Length of room: 4 m 30 = 430 cm Width of room: 2 m 70 = 270 cm <i>Calculation:</i> 430 cm – 270 cm = 160 cm = <u>1 m 60 cm</u></p> <p style="text-align: right;">26 min</p>	<p>Individual trial, monitored, helped</p> <p>Discussion, checking, praising</p> <p>If problems, show calculation in more detail on BB:</p> $430 - 200 - 30 - 40$ $= 230 - 30 - 40$ $= 200 - 40 = \underline{160}$
6	<p>PbY2b, page 174, Q.3</p> <p>Read: <i>On a farm, each hen lays 1 egg per day. Complete the table.</i></p> <p>Ps come out one after another to complete bottom row of table, explaining reasoning. Class agrees/disagrees. Ps complete table in <i>Pbs</i> too.</p> <p>Let's write a rule about the table. What should we do first?</p> <p>Let H = number of hens, D = number of days, E = number of eggs.</p> <p>X, come and write the rule. Who agrees? Who thinks something else? Who can write it another way? Let's check with values from the table.</p> <p style="text-align: right;">32 min</p>	<p>Whole class activity</p> <p>Table drawn on BB or use enlarged copy master or OHP</p> <p>Discussion, agreement, checking, praising</p> <p><i>Rule:</i> $E = H \times D$ $H = E \div D$ $D = E \div H$</p>
7	<p>PbY2b, page 174</p> <p>Q.4 Read: <i>Do the calculations in the correct order.</i></p> <p>What do you notice about the equations? (All have the same numbers in the same order.)</p> <p>Do you think that the results will all be the same? (No, because the brackets are not the same).</p> <p>Revise order of calculation. Deal with one part at a time. Review at BB with the whole class. Mistakes corrected.</p> <p>BB: a) $12 + 24 \div 6 - 4 = 12 + 4 - 4 = \underline{12}$ $12 + 24 \div (6 - 4) = 12 + 24 \div 2 = 12 + 12 = \underline{24}$ $12 + (24 \div 6 - 4) = 12 + (4 - 4) = \underline{12}$</p> <p>b) $(12 + 24) \div 6 - 4 = 36 \div 6 - 4 = 6 - 4 = \underline{2}$ $12 + (24 \div 6 - 4) = 12 + (4 - 4) = \underline{12}$</p> <p>What do you notice about the last equation in part b)? (Exactly the same as the last equation in part a).) How could we make it different from all the others? Change to:</p> $(12 + 24 \div 6) - 4 = (12 + 4) - 4 = 16 - 4 = \underline{12}$ <p style="text-align: right;">40 min</p>	<p>Initial discussion and revision with whole class.</p> <p>Written on BB or use enlarged copy master or OHP</p> <p>Individual work, monitored, helped</p> <p>(Or whole class activity: T could write 6 identical equations on BB <u>without</u> brackets and Ps could add brackets to make each equation different.)</p> <p>Agreement, checking, praising</p>
8	<p>PbY2b, page 174, Q.5</p> <p>Read: <i>In a card game, the cards have pictures of apples, pears, cherries and bananas. The rules are:</i></p> <p><i>3 pears = 1 apple, 6 cherries = 1 pear, 2 bananas = 1 cherry</i></p> <p><i>How many bananas are equal to an apple?</i></p> <p>How could we solve it? Y, what do you think? Who agrees? Who thinks something else? Ps dictate what T should write on BB.</p> <p><i>Solution:</i> 1 apple = 3 pears, 3 pears = (3 × 6) cherries = 18 cherries, 18 cherries = (18 ÷ 2) bananas = 9 bananas So 1 apple = <u>9</u> bananas</p> <p style="text-align: right;">45 min</p>	<p>Whole class activity</p> <p>Ps suggest how to solve it</p> <p>T gives hints if necessary</p> <p>Rules drawn/written on BB</p> <p>Reasoning, agreement, checking</p> <p>Extra praise if Ps solve it without help</p>

Y2**Lesson Plan
175****Activity**

Three investigations on *PbY2b*, page 175

Solutions:

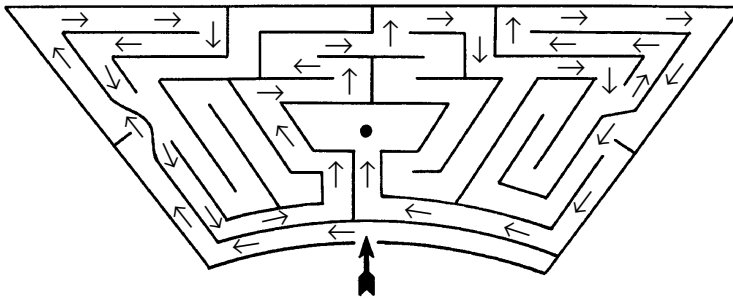
- Q.1
- | | | | | | |
|----|---|---|---|---|---|
| 1. | h | o | n | e | y |
| 2. | o | n | e | | |
| 3. | l | e | m | o | n |
| 4. | f | i | v | e | |
| 5. | a | d | d | | |
| 6. | m | a | t | h | |
| 7. | y | e | a | r | |

Q.2 a) several solutions possible

b) Start → Rhinos → Lions → Giraffes → Elephants
→ Monkeys → Start (or reverse order)

Length of route = $(19 + 18 + 16 + 15 + 11 + 17) \text{ m} = \underline{96 \text{ m}}$

Q.3

**Notes**

Individual (or paired) work

Solutions discussed with
whole class