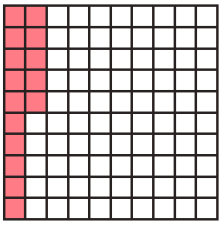
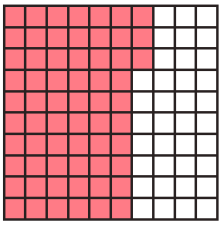
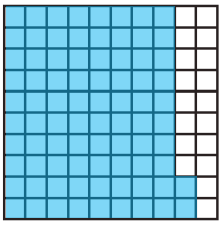
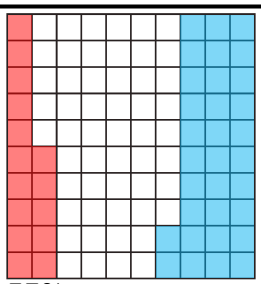
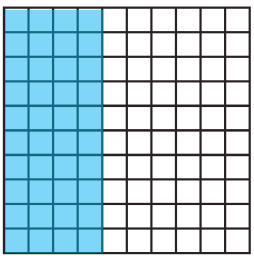
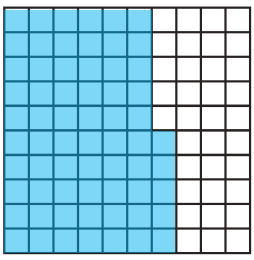
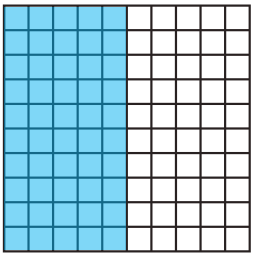
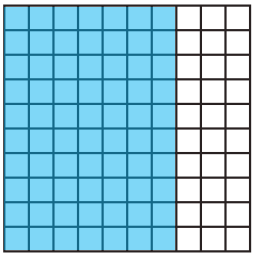
Y5 – Spring – Block 3 – Step 8 – Understand percentages Answers

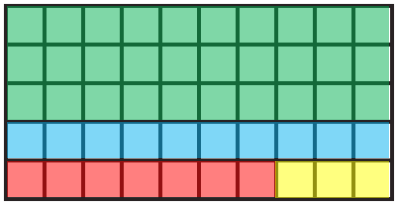
<table>
<tr><th>Question</th><th>Answer</th></tr>
<tr><td>1</td><td>a) There are 9 parts out of a hundred shaded.
This is 9%.
b) There are 24 parts out of a hundred shaded.
This is 24%.
c) There are 65 parts out of a hundred shaded.
This is 65%.</td></tr>
<tr><td>2</td><td>
<table>
<tr><th>Hundred square</th><th>Percentage</th></tr>
<tr><td>  </td><td>15%</td></tr>
<tr><td>  </td><td>63%</td></tr>
<tr><td>  </td><td>82%</td></tr>
</table>
</td></tr>
<tr><td>3</td><td> 
53%</td></tr>
<tr><td>4</td><td>a) No.
The bar is divided into 10 equal parts, so each part is 10%.
b) 30%
70%</td></tr>
<tr><td>5</td><td>a) 10
b) 85
c) 75</td></tr>
</table>

Y5 – Spring – Block 3 – Step 8 – Understand percentages Answers (continued)

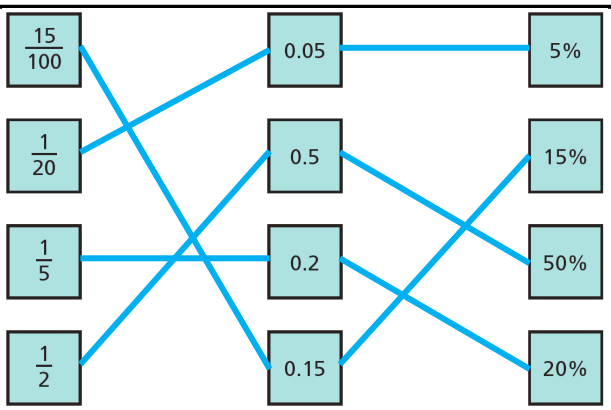
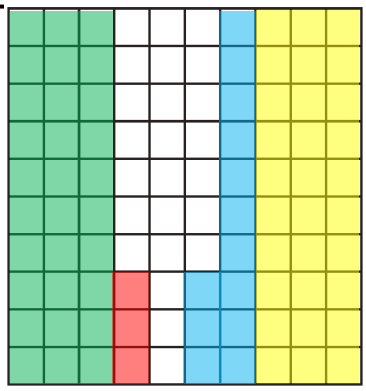
Question	Answer
6	65%
7	On Wednesday they sold 19 tickets.
8	 Any $8\frac{1}{2}$ squares can be shaded. They do not need to be continuous.

Y6 – Spring – Block 2 – Step 1 – Fractions to percentages Answers

Question	Answer
1	a) $\frac{3}{10}$ b) $\frac{7}{10}$ c) 30% d) 70% e) They add up to 100%.
2	a) $\frac{40}{100}$  $\frac{65}{100}$  $\frac{1}{2}$  $\frac{7}{10}$  b) $\frac{40}{100} = 40\%$ $\frac{65}{100} = 65\%$ $\frac{1}{2} = 50\%$ $\frac{7}{10} = 70\%$ c) The grids should have the same number of squares shaded, but they may be different squares.
3	a) $\frac{9}{10} = \frac{90}{100} = 90\%$ b) $\frac{9}{20} = \frac{45}{100} = 45\%$ c) $\frac{9}{50} = \frac{18}{100} = 18\%$ d) $\frac{9}{25} = \frac{36}{100} = 36\%$
4	Ron has doubled the percentage when he should have divided it by 2 5%

Question	Answer
5	a) 25% 50% 75% b) 20% 40% 80% c) 80% 40% 20% d) 90% 90% 90% e) Children may recognise various patterns: Part a): As the fraction goes up by $\frac{1}{4}$, the percentage goes up by 25%. Part b): When the numerator of the fraction is doubled, the percentage is doubled. Part c): When the numerator of the fraction is halved, the percentage is halved. Part d): All the fractions are equivalent and give the same percentage.
6	 6%
7	a) $\frac{1}{2} > 40\%$ $75\% = \frac{3}{4}$ $\frac{3}{5} < 65\%$ b) This is the only solution.

Y6 – Spring – Block 2 – Step 2 – Equivalent FDP Answers

Question	Answer
1	a) fraction $= \frac{1}{100}$ decimal $= 0.01$ percentage $= 1\%$ b) fraction $= \frac{1}{10}$ decimal $= 0.1$ percentage $= 10\%$ c) fraction $= \frac{100}{100}$ decimal $= 1$ percentage $= 100\%$
2	
3	a)  b) fraction $= \frac{24}{100} = \frac{6}{25}$ decimal $= 0.24$ percentage $= 24\%$

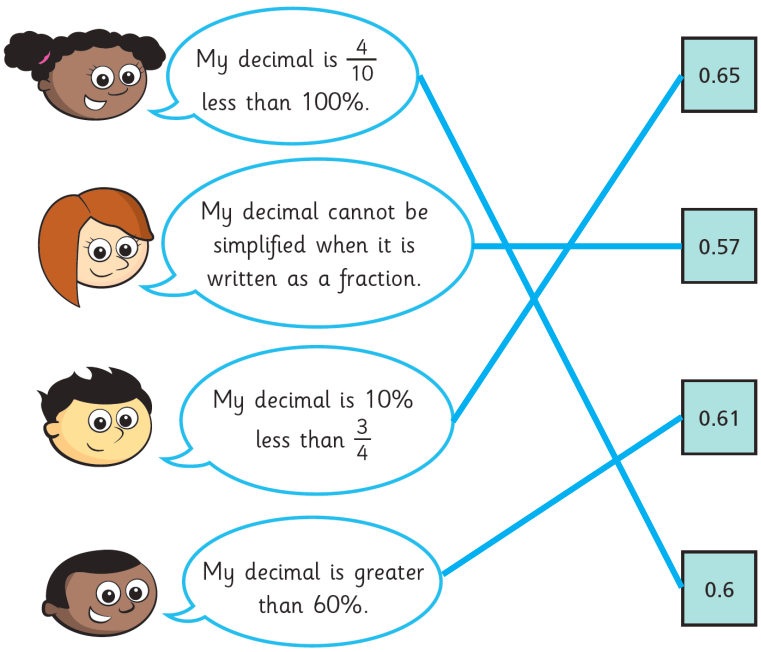
Question 4

Fraction	Decimal	Percentage
$\frac{21}{100}$	0.21	21%
$\frac{12}{100}$ or $\frac{3}{25}$	0.12	12%
$\frac{2}{10}$	0.2	20%
$\frac{4}{10}$ or $\frac{2}{5}$	0.4	40%
$\frac{44}{100}$ or $\frac{11}{25}$	0.44	44%
$\frac{4}{100}$ or $\frac{1}{25}$	0.04	4%
$\frac{3}{4}$	0.75	75%
$\frac{99}{100}$	0.99	99%

Question 5

He has not converted the numbers to the same form.
14% = 0.14 or 0.4 = 40%

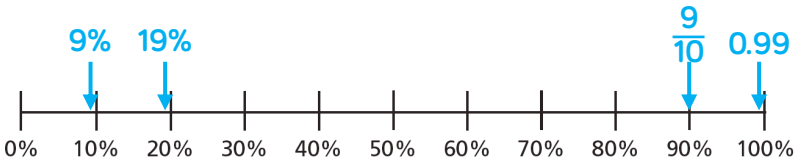
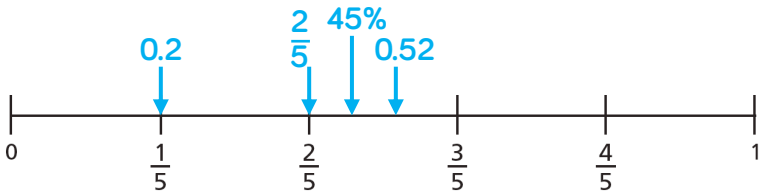
Question 6



Question 7

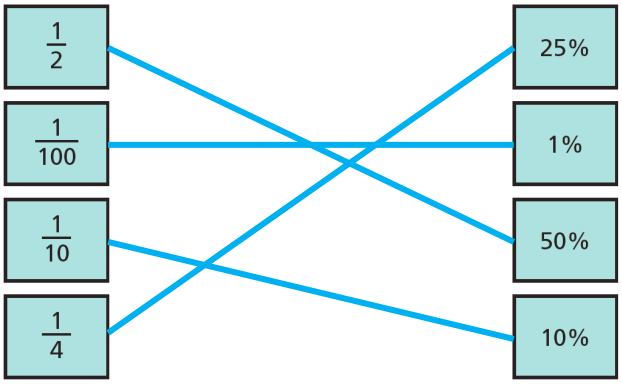
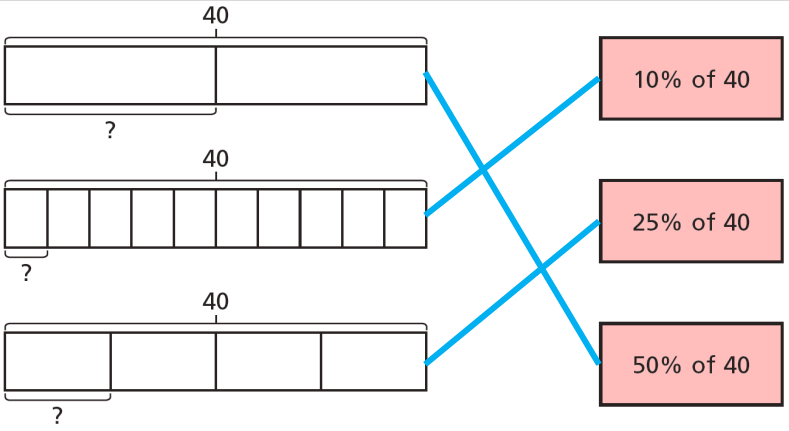
multiple possible answers, e.g.:
0.24 0.35
There are eight possible answers:
0.21 0.23 0.24 0.25
0.31 0.32 0.34 0.35

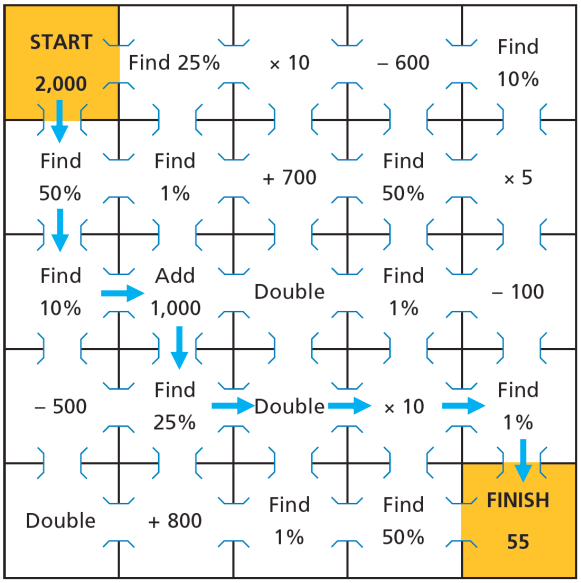
Y6 – Spring – Block 2 – Step 3 – Order FDP Answers

Question	Answer
1	a) $>$ b) $<$ c) $>$ d) $=$ e) $<$ f) $>$
2	a)  b) 
3	a) $\frac{13}{100}$ 21% $\frac{7}{10}$ 0.9 b) 0.6 61% 0.66 $\frac{37}{50}$ c) 12% 47% $\frac{63}{100}$ 0.89 d) Children's answers may vary. Possibly part c), because the fraction already has denominator 100 so is easy to convert to either a decimal or a percentage. e) Children's answers may vary. Possibly part b), because the fraction requires converting to a fraction with denominator 100 before converting to either a decimal or a percentage. f) All the lists of numbers include fractions, decimals and percentages. They have different numbers of fractions, decimals and percentages.
4	0.78 51% ✓ $\frac{3}{5}$ ✓ 0.6 ✓ $\frac{4}{10}$
5	No. $\frac{40}{50}$ = 80%, so Tommy did better in the test.
6	Scott drank the most (60%). Huan drank the least (55%).

Question	Answer
7	a) multiple possible answers, e.g.: $0.3 < \frac{5}{10} < 80\%$ There are four possible answers: $\frac{4}{10}, \frac{5}{10}, \frac{6}{10}, \frac{7}{10}$ b) multiple possible answers, e.g.: $\frac{2}{5} < 42\% < 0.75$ There are 13 possible answers: 42%, 43%, 46%, 47% 60%, 62%, 63%, 64%, 67% 70%, 72%, 73%, 74%

Y6 – Spring – Block 2 – Step 4 – Percentage of an amount (1) Answers

Question	Answer
1	
2	
3	a) 312 156 25% of 624 is half of 50% of 624 b) 1,710 855 342
4	a) 1,500 750 250 b) 750 375 125 c) 300 150 50 d) 30 15 5 The answers in part b) are half the answers in part a). When the percentage stays the same and the number halves, the answer also halves. When the percentage stays the same and the number is divided by 3, the answer is also divided by 3

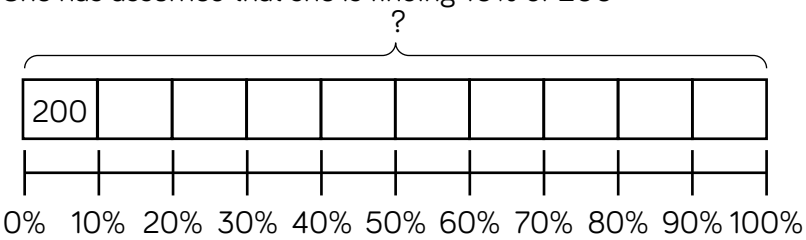
Question	Answer
5	a) 640 b) They need to pack **1,024** more boxes.
6	

Y6 – Spring – Block 2 – Step 5 – Percentage of an amount (2) Answers

Question	Answer
1	a) 50 b) 20% of 500 = **100** 90% of 500 = **450** 30% of 500 = **150** 70% of 500 = **350** 60% of 500 = **300** 100% of 500 = **500**
2	a) 2 b) 20 c) 200 d) 100 e) 300 When the percentage stays at 5% and the number increases by a factor of 10, the answer also increases by a factor of 10
3	a) 255 b) 255 c) 255 d) children's alternatives methods, e.g. find 25% and subtract from the number
4	Children may have different methods for finding each percentage. a) 200 110 8 b) 900 3,807 81 c) 600 240 58.8 d) 150 45 4.5 e) 550 2,420 4.4 f) 400 160 39.2
5	When the percentage doubles and the number stays the same, the answer doubles. When the percentage stays the same and the number halves, the answer halves. So doubling the percentage would double the answer and halving the number would halve the answer. These cancel each other out, so the answer stays the same.

Question	Answer
6	a) 20% of 40 = **8** 40% of 20 = **8** 25% of 60 = **15** 60% of 25 = **15** b) 20% of 40 = 40% of 20 and 25% of 60 = 60% of 25 c) Yes. Any calculations with the percentages and numbers swapped will have the same answer. d) Children can compare and check each other's calculations.

Y6 – Spring – Block 2 – Step 6 – Percentages – missing values Answers

Question	Answer
1	a) 1,368 b) 3,420 c) 684 d) 456
2	a) 470 b) 282
3	a) She has assumed that she is finding 10% of 200 b)  c) 2,000
4	a) 20% of **150** = 30 20% of **300** = 60 b) 10% of **400** = 40 10% of **200** = 20 c) **25**% of 400 = 100 **75**% of 300 = 225 d) 80% of **40** = 32 **25**% of 32 = 8
5	a) b) 448 c) 1,344
6	multiple possible answers, e.g.: The value of the triangle is always 5 times the value of the star.

a)

Day	Percentage of total visitors	Number of visitors
Thursday	10%	**224**
Friday	**20%**	448
Saturday	45%	**1,008**
Sunday	**25%**	**560**
Total	**100%**	2,240

▲	★
10	**2**
100	**20**
500	**100**