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YEAR

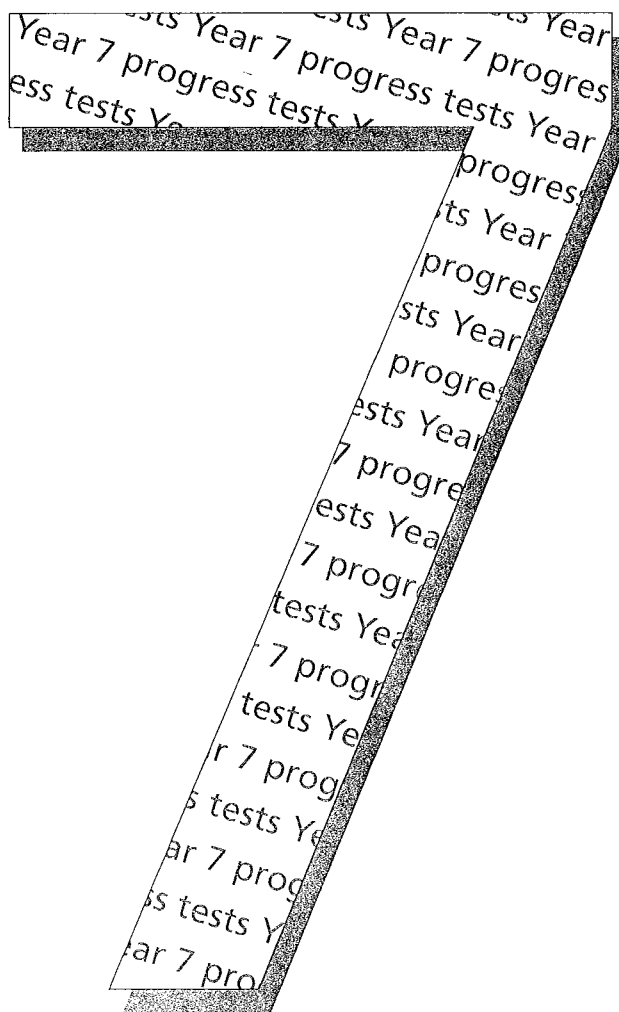
LEVELS

3-4

2005

Year 7 progress test in
mathematics

Mark scheme for Paper 1, Paper 2 and Mental mathematics



department for

education and skills

creating opportunity, releasing potential, achieving excellence

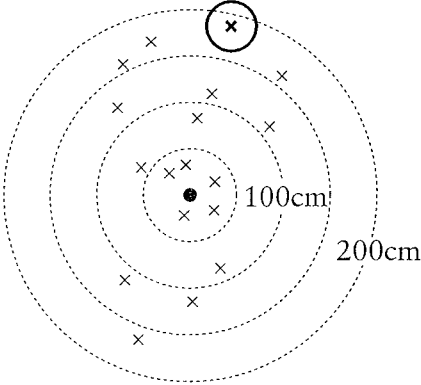
Mark scheme for Paper 1

Question	Making models		
1		Correct response	Additional guidance
	1m	12	

Question	Working out		
2		Correct response	Additional guidance
	1m	27	
	1m	26	

Question	Same values?		
3		Correct response	Additional guidance
a	1m	<p>Indicates Yes and gives a correct explanation</p> <p>The most common correct explanations:</p> <p>Complete the calculations eg</p> <ul style="list-style-type: none"> ■ $17 + 15 = 32$ and $2 \times 16 = 32$ ■ They are both 32 ■ $10 + 10 = 20$, $7 + 5 = 12$ and $2 \times 10 = 20$, $2 \times 6 = 12$ <p>Use knowledge of near doubles eg</p> <ul style="list-style-type: none"> ■ Subtract 1 from 17 and add it to the 15 and you have $16 + 16$ which is the same as 16×2 ■ Double 15 = 30 then add 2 and it's the same as double 16 	<p>✓ <i>Minimally acceptable explanation</i> eg</p> <ul style="list-style-type: none"> ♦ 32 seen, with no evidence of incorrect working ♦ $20 + 12$ and $20 + 12$ <p>✗ <i>Incomplete explanation</i> eg</p> <ul style="list-style-type: none"> ♦ $17 + 15 = 2 \times 16$ ♦ Same answer ♦ I did the calculations <p>✓ <i>Minimally acceptable explanation</i> eg</p> <ul style="list-style-type: none"> ♦ $16 + 1 + 16 - 1 = 2 \times 16$ ♦ $17 + 15 = 16 + 16$ <p>✗ <i>Incomplete explanation</i> eg</p> <ul style="list-style-type: none"> ♦ $17 + 15 = 2 \times 16$
b	1m	17	
c	1m	3	<p>! <i>Answer of 3×1</i> Condone</p>

Question	Coins		
4		Correct response	Additional guidance
	<p>2m</p> <p>or</p> <p>1m</p>	<p>57 p</p> <p>Shows the digits 57</p> <p>or</p> <p>Shows the digits 105 and 48</p> <p>or</p> <p>Shows the digits 1(00) and 43 with no evidence of an incorrect method or incorrect units</p> <p>or</p> <p>Shows a complete correct method with not more than one error</p> <p>eg</p> <ul style="list-style-type: none"> ■ $100 - 48 + 5$ ■ $£1.05 - 38p$ (error) = 67 	<p>! <i>For 1m, units incorrect or inconsistent</i></p> <p>Condone provided no ambiguity between pounds and pence is caused</p> <p>eg, for 1m accept</p> <ul style="list-style-type: none"> ♦ $1 - 48 = 42$ (error) [attempt is $100 - 48$] $42 + 5 = 47$ <p>eg, for 1m do not accept</p> <ul style="list-style-type: none"> ♦ $1 - 48 = 47$ (error) [attempt is $48 - 1$] $47 + 5 = 52$

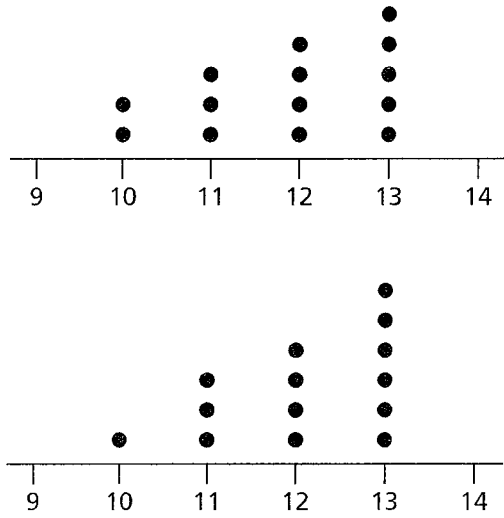
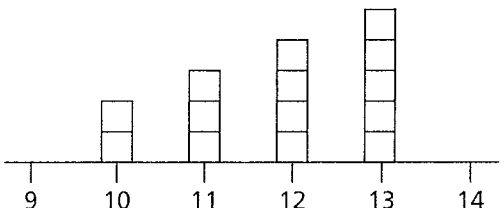
Question	Beanbag		
5		Correct response	Additional guidance
a	1m	<p>Indicates only the correct beanbag, ie</p> 	<p>! <i>Other beanbags indicated</i></p> <p>Ignore marks made on any beanbags inside the 100cm circle as these may have been used for part (b)</p> <p>Do not accept any other beanbags indicated</p>
b	1m	8	
c	<p>1m</p> <p>U1</p>	6	

Question		Decimals	
6		Correct response	Additional guidance
a	1m	<p>Gives any pair of decimal numbers that add to 1 other than those given</p> <p>eg</p> <ul style="list-style-type: none"> ■ 0.1 0.9 ■ 0.5 0.5 ■ 0.75 0.25 ■ 1.2 -0.2 	<p>✗ <i>Whole numbers or fractions</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ 1.0 0.0 ♦ $\frac{1}{4}$ $\frac{3}{4}$ <p>✗ <i>Given pair in reverse order</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ 0.7 0.3
b	1m	0.15 or equivalent decimal	✗ <i>Equivalent fractions</i>

Question		One line	
7		Correct response	Additional guidance
	1m	<p>Indicates one more square so the first shape has one line of symmetry, ie indicates one of the four black squares shown below</p>	<p>! <i>Square not shaded</i> Accept provided the indication is unambiguous</p> <p>! <i>Line(s) of symmetry drawn</i> Ignore, even if incorrect</p>
	1m	<p>Indicates one more square so the second shape has one line of symmetry, ie</p>	

Question	Using rules		
10		Correct response	Additional guidance
a	1m	Gives both correct numbers in the correct positions, ie 3 and 35	
b	2m	Gives both correct numbers in the correct positions, ie 5 and 95	
	or 1m	Gives one correct number in the correct position	

Question	How many?		
11		Correct response	Additional guidance
a	1m	10	✓ <i>Throughout the question, responses embedded</i> eg, for part (a) • 10×4
b	1m	5	! <i>Follow through</i> For part (b), accept follow through as their (a) $\div 2$
c	1m	80	! <i>Follow through</i> For part (c), accept follow through as either their (a) $\times 8$ or their (b) $\times 16$

Question	Youth club		
12		Correct response	Additional guidance
a	1m	10	
b	1m	6	
c	2m	<p>Completes the dot plot correctly, ie</p> 	<p>! Symbols not shaded, accurate or grouped in a straight line For 2m or 1m, condone provided the number of symbols is unambiguous for each age</p>
	<p>or</p> <p>1m</p>	<p>Completes a dot plot that satisfies at least four of the following six conditions, even if there are other errors</p> <ol style="list-style-type: none"> 1. There is a total of 14 dots 2. Age 11 has 3 dots 3. Only age 9 and age 14 have no dots 4. Age 13 has the greatest number of dots 5. Age 12 has more dots than age 11 6. Age 10 has at least one dot <p>or</p> <p>Shows or implies either set of correct values for the ages, even if the dot plot is incorrect or omitted</p> <p>eg</p> <ul style="list-style-type: none"> ■ (0), 2, 3, 4, 5, (0) ■ (0), 1, 3, 4, 6, (0) ■ 	

U2

			Keys
Question			
13		Correct response	Additional guidance
a	1m	5.3	<i>✓ Equivalent fractions or decimals</i> <i>! Follow through</i> Accept follow through as their (a) + 2.8, provided this requires 'bridging the units' eg, from their (a) as 6.4 accept • 9.2
b	1m <div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: 5px auto;">U1</div>	8.1	

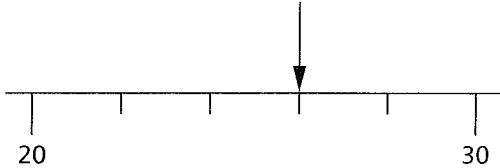
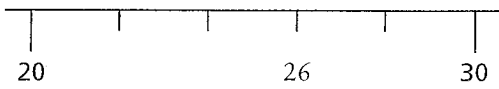
			Angles in a square
Question			
14		Correct response	Additional guidance
a	1m	90	<i>! Throughout the question, incorrect units inserted</i> Ignore <i>! Follow through</i> Accept follow through as their (a) ÷ 2 provided $0 < \text{their (a)} < 90$ <i>✗ Incomplete processing</i> eg • $\frac{1}{2}$ of 90
b	1m	45	

Question		Multiplication	
15		Correct response	Additional guidance
	1m	150	
	2m or 1m	400 Shows a complete correct method with not more than one computational error eg <ul style="list-style-type: none"> ■ $6 \times 25 = 150$ $10 \times 25 = 250$ $16 \times 25 = 150 + 250$ ■ $16 \times 20 = 320$ $16 \times 5 = 80, 320 + 80$ ■ $16 \times 100 = 1600$ $1600 \div 2 = 800$ $800 \div 2$ ■ $\begin{array}{r rr} & 10 & 6 \\ 20 & 200 & 120 \\ 5 & 50 & 25 \text{ (error)} \\ \hline & 200 + 120 + 50 + 25 = 395 \end{array}$ ■ $\begin{array}{r} 16 \\ 25 \\ \hline 320 \\ 80 \\ \hline 300 \text{ (error)} \end{array}$ 	<p>! <i>For 2m or 1m, follow through</i> For 2m, accept a correct evaluation of (250 + their answer to 6×25) For 1m, accept a correct method eg, for 1m accept</p> <ul style="list-style-type: none"> ♦ $10 \times 25 + \text{their answer to } 6 \times 25$ ♦ $250 + \text{their answer to } 6 \times 25$ <p>× <i>For 1m, conceptual error</i> eg</p> <ul style="list-style-type: none"> ♦ 16 $\begin{array}{r} 25 \\ 32 \\ \hline 80 \\ 112 \end{array}$ <p>! <i>Method is repeated addition</i> For 1m, at least some multiplication must be shown or implied eg, for 1m do not accept</p> <ul style="list-style-type: none"> ♦ $16 + 16 + \dots + 16$ [shown 25 times]

Question		Areas	
16		Correct response	Additional guidance
a	1m	4	
b	1m	2	✓ <i>Follow through as their (a) $\div 2$</i>

Question	Pairs of values		
17		Correct response	Additional guidance
a	1m <div>U1</div>	<p>Gives two correct pairs of values for x and y that add to 30</p> <p>eg</p> <ul style="list-style-type: none"> ■ $x = 10, y = 20$ ■ $x = 15, y = 15$ ■ $x = 1, y = 29$ ■ $x = 30, y = 0$ 	<p>✓ <i>Fractions, decimals or negatives</i></p> <p>! <i>Same values repeated, but order reversed</i> As this still gives different values for x and y, condone</p> <p>eg</p> <ul style="list-style-type: none"> ♦ $x = 10, y = 20$ ♦ $x = 20, y = 10$
b	1m	10	<p>✗ <i>Incomplete processing</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ $40 - 30$ <p>✗ <i>Answer of -10</i></p>

Mark scheme for Paper 2

Question		Number lines	
1		Correct response	Additional guidance
a	1m	<p>Indicates the value 26, ie</p> 	<p>! <i>Inaccurate indication</i> Accept provided the pupil's intention is clear</p> <p>✓ <i>Unambiguous indication</i> eg</p> 
b	1m	105	

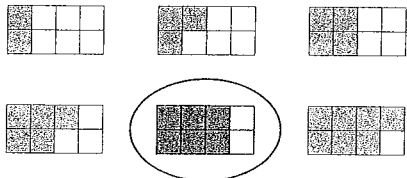

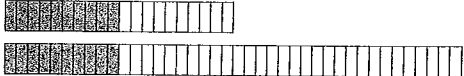
Question		Shopping	
2		Correct response	Additional guidance
	1m	£ 5.36	

Question		Times	
3		Correct response	Additional guidance
a	1m	Completes the missing time correctly eg <ul style="list-style-type: none"> 06:45 6:45 am 	<p>! <i>For the first mark, indication of am unconventional or omitted</i> Condone, but do not accept incorrect times eg, accept <ul style="list-style-type: none"> 6:45 morning 6:45 eg, do not accept <ul style="list-style-type: none"> 6:45 pm 18:45 </p> <p>! <i>For the second mark, indication of pm unconventional or omitted</i> Do not accept any indications other than the 24 hour clock and/or pm eg, accept <ul style="list-style-type: none"> 19:15pm eg, do not accept <ul style="list-style-type: none"> 7:15 7:15 in the evening </p>
	1m	Completes the missing time correctly eg <ul style="list-style-type: none"> 19:15 7:15 pm 	
b	1m	Completes the missing time correctly eg <ul style="list-style-type: none"> 9pm Nine o'clock at night 	<p>! <i>Indication of pm unconventional or omitted</i> Condone any unconventional indication eg, accept <ul style="list-style-type: none"> 9 o'clock afternoon Accept indication of pm omitted only if this error has already been penalised for the second mark in part (a)</p> <p>✗ <i>Time not interpreted</i> eg <ul style="list-style-type: none"> 21pm Twenty-one hundred hours </p>

Question		Titles	
4		Correct response	Additional guidance
a	1m	10	
b	1m	14	
c	1m	3	

Question	Units		
5		Correct response	Additional guidance
a	1m	<p>Indicates No and gives a correct explanation eg</p> <ul style="list-style-type: none"> ■ 100cm is 1 metre ■ 1000mm is 1m, not 1000cm ■ 1000cm = 10 metres not 1 metre 	<p>✓ <i>Minimally acceptable explanation</i> eg</p> <ul style="list-style-type: none"> ♦ 100 ♦ 1000mm ♦ 10m <p>! <i>Explanation uses known measurement(s)</i> Accept provided there is a comparison eg, accept</p> <ul style="list-style-type: none"> ♦ I would be less than 1 metre tall but I am 1.27 metres tall ♦ The door is 2m high, not 0.2m <p>eg, do not accept</p> <ul style="list-style-type: none"> ♦ I would be less than a metre tall ♦ The door is not 0.2m high <p>! <i>Response contains an incorrect statement</i> Ignore alongside a correct response eg, accept</p> <ul style="list-style-type: none"> ♦ 100cm = 1m, so 1000cm = 1km <p>eg, do not accept</p> <ul style="list-style-type: none"> ♦ 1000cm = 1km <p>✗ <i>Incomplete explanation</i> eg</p> <ul style="list-style-type: none"> ♦ 1000 ♦ 10
b	1m	10	

Question	Rounding		
6		Correct response	Additional guidance
	1m	<p>Indicates that the amount was rounded to the nearest hundred pounds eg</p> <ul style="list-style-type: none"> ■ Hundred ■ 100 	<p>! <i>Units repeated</i> eg</p> <ul style="list-style-type: none"> ♦ £100 <p>Condone</p> <p>✗ <i>Ambiguous spelling</i> eg</p> <ul style="list-style-type: none"> ♦ Hundredth ♦ Hundreth

Question	Shading fractions		
7		Correct response	Additional guidance
a	1m	<p>Indicates only the correct shape, ie</p> 	
b	1m	<p>Indicates No and gives a correct explanation</p> <p>The most common correct explanations:</p> <p>Show or imply the correct evaluation of both calculations</p> <p>eg</p> <ul style="list-style-type: none"> ■ $\frac{1}{2}$ of 20 = 10 and $\frac{1}{4}$ of 40 = 10 ■ They both equal 10 ■  ■ $\frac{1}{2}$ of 20 = $\frac{1}{4}$ of 40 <p>Use ratio</p> <p>eg</p> <ul style="list-style-type: none"> ■ 20 doubled is 40 and half of $\frac{1}{2}$ is $\frac{1}{4}$ 	<p>✓ <i>Minimally acceptable explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ 10, 10 seen ♦ Equal ♦ Same ♦  <p>✗ <i>Incomplete explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ 10 seen ♦ $\frac{1}{2}$ of 20 is 10 ♦ $\frac{1}{4}$ of 40 is 10 <p>✓ <i>Minimally acceptable explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ $20 \times 2 = 40, \frac{1}{2} \div 2 = \frac{1}{4}$ ♦ 20 is half of 40 and 2 is half of 4 ♦ You have doubled the number and halved the fraction <p>✗ <i>Incomplete explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ $\frac{1}{2}$ is double $\frac{1}{4}$ ♦ It's just doubled

U1

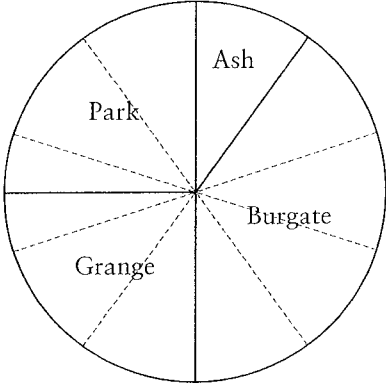
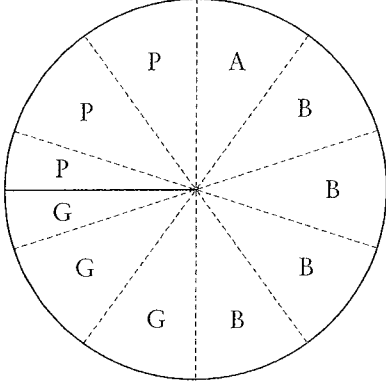
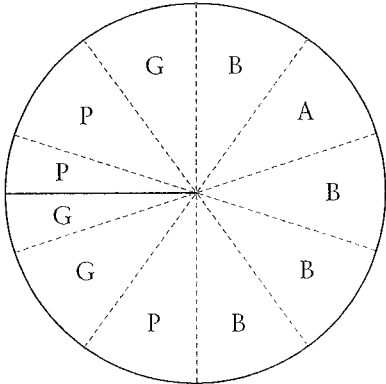
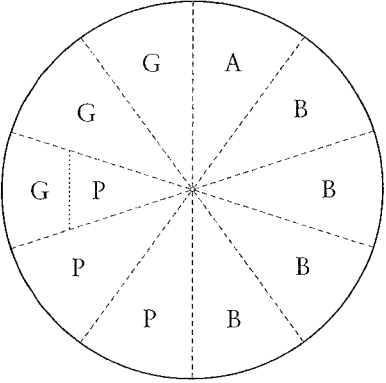
Question	Number line again		
8		Correct response	Additional guidance
	1m	-2	
	1m	12	


Question	Place value		
9		Correct response	Additional guidance
a	1m	Indicates the correct number, ie <div style="display: flex; justify-content: space-around; align-items: center;"> 47 407 4007 </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> 40007 400007 </div>	
b	1m	3 000 000	<p>! <i>Unconventional grouping of digits</i> Accept any groupings provided the digits are correct</p> <p>✗ <i>Value given in words</i></p>

Question	Turning direction		
10		Correct response	Additional guidance
a	1m	West	<p>✓ <i>Unambiguous indication</i> eg, for part (a)</p> <ul style="list-style-type: none"> • W
b	1m	South	
c	1m	45	<p>✓ -45</p> <p>! <i>Angle greater than 360</i> Accept any multiple of 360 + 45 eg</p> <ul style="list-style-type: none"> • 405

Question		Moving on a grid	
11		Correct response	Additional guidance
a	1m	(5, 5)	
b	1m	<p>Gives a correct pair of coordinates for a point on the line shown [$y = x + 2$]</p> <p>eg</p> <ul style="list-style-type: none"> ▪ (0, 2) ▪ (2, 4) ▪ (3.5, 5.5) 	<p>✓ <i>Response assumes the line continues as a straight line</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ (8, 10) ♦ (-2, 0) ♦ ($x, x + 2$)

Question		Multiplying chain	
12		Correct response	Additional guidance
	1m	1008	
	1m	24	

Question		Primary schools	
13		Correct response	Additional guidance
	2m	<p>Completes the pie chart correctly eg</p> <p>■</p> 	<p>✓ <i>Unambiguous labelling</i> eg</p> <p>♦</p> 
	or 1m	<p>Indicates all four sectors correctly but fails to label or labels incorrectly</p> <p>or</p> <p>Indicates and labels at least two of the sectors correctly</p> <p>or</p> <p>Indicates the size of all four sectors and labels them correctly, but the sectors are not continuous eg</p> <p>■</p> 	<p>! <i>Lines not ruled or accurate</i> Accept provided the pupil's intention is clear</p> <p>✗ <i>For sectors representing Grange and Park, line indicating 5% incorrect or omitted</i> eg</p> <p>♦</p> 

Question	Thinking fractions		
14		Correct response	Additional guidance
a	1m	<p>Indicates No and gives a correct explanation</p> <p>The most common correct explanations:</p> <p>Show or imply the correct sum eg</p> <ul style="list-style-type: none"> ▪ $\frac{1}{4} + \frac{1}{4} = \frac{2}{8} + \frac{2}{8}$ $= \frac{4}{8}$ ▪ $\frac{1}{4} + \frac{1}{4} = \frac{1}{2}$, but $\frac{2}{8} = \frac{1}{4}$ ▪ $0.25 + 0.25 = 0.5$ and $0.5 = \frac{4}{8}$ ▪  <p>Give a correct and comparable calculation that gives $\frac{2}{8}$ eg</p> <ul style="list-style-type: none"> ▪ $\frac{1}{4} + 0 = \frac{2}{8}$ ▪ $\frac{1}{4} = \frac{2}{8}$ so you can't add another $\frac{1}{4}$ ▪ $\frac{1}{8} + \frac{1}{8} = \frac{2}{8}$ <p>Address the misconception eg</p> <ul style="list-style-type: none"> ▪ Sam has just added the top numbers together and the bottom numbers together and you can't add fractions like that ▪ You don't need to change the bottom number, just add the top ones together 	<p>✓ <i>Minimally acceptable explanation</i> eg</p> <ul style="list-style-type: none"> ♦ $\frac{4}{8}$ ♦ $\frac{2}{4}$ ♦ $\frac{1}{2}$ ♦ Half <p>✓ <i>Minimally acceptable explanation</i> eg</p> <ul style="list-style-type: none"> ♦ $\frac{1}{4} = \frac{2}{8}$ <p>✓ <i>Minimally acceptable explanation</i> eg</p> <ul style="list-style-type: none"> ♦ He added the top and bottom numbers together ♦ You only add the top numbers [denominator unchanged implied] ♦ You don't add the bottom numbers [numerators added implied] <p>✗ <i>Incomplete explanation</i> eg</p> <ul style="list-style-type: none"> ♦ You add the numerators ♦ You keep the denominator the same


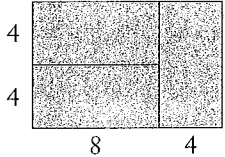
U1

Question		Thinking fractions (cont)	
14		Correct response	Additional guidance
b	1m	Indicates 5	<p>! <i>Answer repeats fifths</i> Condone eg, accept</p> <ul style="list-style-type: none"> • $\frac{5}{5}$ • $\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$ <p>! <i>The stated $\frac{1}{5}$ not included</i> Accept provided it is clear that it is not included eg, accept</p> <ul style="list-style-type: none"> • 4 more • An extra $\frac{4}{5}$ <p>eg, do not accept</p> <ul style="list-style-type: none"> • 4

Question		Net	
15		Correct response	Additional guidance
	1m	<p>Indicates the correct name, ie</p> <p>Cube Prism Square-based pyramid ✓</p> <p>Triangular-based pyramid Cuboid</p>	

Question	Calculators		
17		Correct response	Additional guidance
a	1m	28	! <i>Parts (a) and (b) transposed but otherwise correct</i> Mark as 0, 1
b	1m	24	

Question	158		
18		Correct response	Additional guidance
	1m (U1)	632	

Question	Block of three		
19		Correct response	Additional guidance
	2m or 1m (U1)	<p>40</p> <p>Shows or implies correct dimensions for the large rectangle, even if there is further incorrect working eg</p> <ul style="list-style-type: none"> ■ 12cm by 8cm ■  ■ $4 + 4 + 8 + 4 + 8 + 4 + 8$ ■ 20×2 ■ $12 \times 8 (= 96)$ 	<p>✓ <i>For 1m, minimally acceptable implication</i> eg</p> <ul style="list-style-type: none"> ♦  ♦ Four 4s and three 8s seen, with the intention to add also shown

Question	Boxes of counters		
20		Correct response	Additional guidance
a	1m	<p>Indicates box A and gives a correct explanation</p> <p>The most common correct explanations:</p> <p>State or imply that there are the same number of white counters in each, but different numbers of black counters or different totals</p> <p>eg</p> <ul style="list-style-type: none"> ■ There are the same number of white in each box, but in box B there are more black, so you are less likely to get white from box B ■ Both boxes have three white but B has one extra black so there is more chance of picking a black from B ■ There's the same number of whites in both, but in A it's out of a smaller total <p>Show the probabilities of getting a white counter or a black counter</p> <p>eg</p> <ul style="list-style-type: none"> ■ The probability of getting a white counter is $\frac{3}{4}$ for box A but $\frac{3}{5}$ for box B ■ For black it's 25% for A and 40% for B 	<p>✓ <i>Minimally acceptable explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ Same white, fewer black ♦ 3 white, but only one black ♦ 3 white, but more black in B ♦ Same number of white but fewer counters ♦ 3 is out of fewer counters <p>✗ <i>Response details the number of white and black counters with no comparison shown or implied</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ A has 3 white and 1 black ♦ B has 3 white and 2 black <p>✗ <i>Incomplete explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ There is the same number of white counters in each box ♦ It's only got one black counter ♦ Fewer black counters in A ♦ There are more black in B ♦ It is out of more counters in B <p>! <i>Numerical probability unconventionally or incorrectly expressed</i></p> <p>As this is a level 4 mark, condone even if the comparison is not explicit, provided the correct box is ticked</p> <p>eg, accept</p> <ul style="list-style-type: none"> ♦ A is 3 in 4, B is 3 in 5 ♦ 3 W to 1 B, 3 W to 2 B ♦ For black it's 1 out of 4 and 2 out of 5 <p>✗ <i>Incomplete explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ There's a greater probability of choosing a white counter from box A ♦ B is the best box for getting a black counter

U1

Question		Boxes of counters (cont)	
20		Correct response	Additional guidance
b	1m	Indicates equal numbers of black and white counters	<p>✓ <i>Unambiguous indication</i> eg</p> <ul style="list-style-type: none"> • Filled circle for black, unfilled circle for white <p>! <i>Number of black and white counters is zero</i> Accept only if at least one counter clearly labelled with another colour is given Do not accept no counters given</p> <p>! <i>Counters clearly labelled with other colours alongside black and white counters</i> Ignore</p>

Question		Flats	
21		Correct response	Additional guidance
a	1m	Gives the values 37, 38, 39, 40 in any order	
b	1m (U1)	15	

'Now we are ready to start the test.'

For the first group of questions you will have 5 seconds to work out each answer and write it down.'

1	Look at the numbers on your answer sheet. Add them.
2	Double seventeen.
3	How many sides does a hexagon have?
4	What is fifty per cent of sixty?
5	What is four hundred divided by one hundred?

'For the next group of questions you will have 10 seconds to work out each answer and write it down.'

6	Look at the calendar for the month of April. Alice was born on the twenty-second of the month. On what day was Alice born?
7	What is a quarter of twenty-four?
8	Look at the scale on your answer sheet. What value is the arrow pointing to?
9	Estimate the length of the line on your answer sheet in centimetres.
10	The line graph shows the temperature during one afternoon. At what time was the highest temperature?

'Now turn over your answer sheet.'

Year 7 mathematics 2005
Mental mathematics test

First name _____

Last name _____

School _____

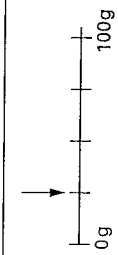
Total marks

Time: 10 seconds

6	<div> <div>Mon</div> <div>Tue</div> <div>Wed</div> <div>Thu</div> <div>Fri</div> <div>Sat</div> <div>Sun</div> </div> <div> <div>4</div> <div>5</div> <div>6</div> <div>7</div> <div>1</div> <div>2</div> <div>3</div> </div> <div> <div>11</div> <div>12</div> <div>13</div> <div>14</div> <div>8</div> <div>9</div> <div>10</div> </div> <div> <div>18</div> <div>19</div> <div>20</div> <div>21</div> <div>15</div> <div>16</div> <div>17</div> </div> <div> <div>25</div> <div>26</div> <div>27</div> <div>28</div> <div>22</div> <div>23</div> <div>24</div> </div>
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7

24



Practice question

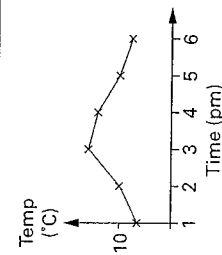
	95
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Time: 5 seconds

1	19	13
2	17	
3		
4	50%	60
5	400	

9

cm



11	Work out the answer to the calculation on your answer sheet.
12	There is one litre of water in a jug. Tom pours out two hundred and fifty millilitres of the water. How much water is left in the jug?
13	Look at your answer sheet. It shows the temperature on Monday. On Tuesday, it was ten degrees higher. What was the temperature on Tuesday?
14	What is the next square number after thirty-six?
15	Four y equals forty-four. What is the value of y ?

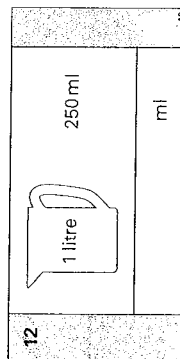
'For the next group of questions you will have 15 seconds to work out each answer and write it down.'

16	The bar chart shows pupils' favourite colours. Altogether, how many pupils are there?
17	The table shows the cost of a pen and a pencil. I buy two pens and two pencils. How much does that cost altogether?
18	Look at the sequence of numbers going down in steps of four. Write down the next two numbers in the sequence.
19	The pie chart shows how some pupils travel to school. About what percentage of the pupils cycle to school?
20	Look at the shaded shape drawn on a centimetre square grid. What is its area?

'Put your pens down. The test is finished.'

Time: 10 seconds continued

11	$6 \times 5 - 7$
----	------------------



13	$^{\circ}\text{C}$	-8°C
----	--------------------	----------------------

14		36
----	--	----

15		$4y = 44$
----	--	-----------

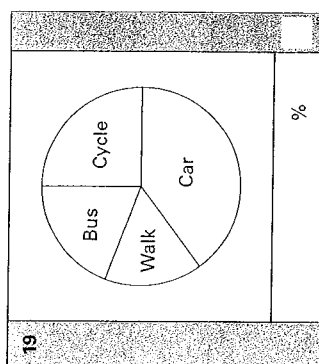
Time: 15 seconds continued

17

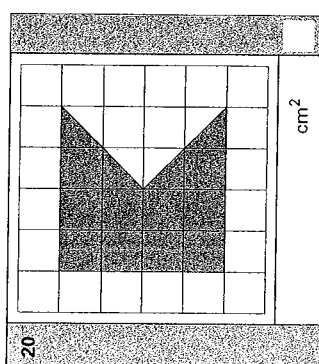
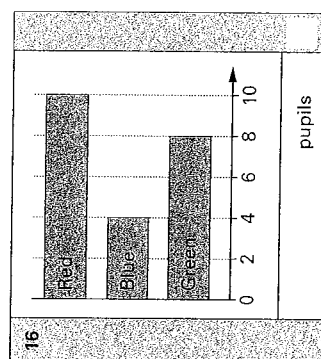
Pen	30p
Pencil	25p
£	

18

33, 29, 25, 21, ..., ...



Time: 15 seconds



Mark scheme

6	Friday	Accept any unambiguous indication, eg Fri or F
---	--------	--

7	6	
---	---	--

8	25 g	
---	------	--

9	$3.5 \text{ cm} \leq \text{answer} \leq 4.5 \text{ cm}$	
---	---	--

10	3 pm	
----	------	--

Time: 5 seconds

1	32	
---	----	--

2	34	
---	----	--

3	6	
---	---	--

4	30	Do not accept incorrect % signs
---	----	---------------------------------

5	4	
---	---	--

11	23	
----	----	--

12	750 ml	
----	--------	--

13	2 °C	
----	------	--

14	49	
----	----	--

15	11	Accept embedded responses, eg $4 \times 11 = 44$
----	----	---

17	£ 1.10	
----	--------	--

18	17 and 13	Accept pair in either order
----	-----------	--------------------------------

19	$23 \% \leq \text{answer} \leq 27 \%$	
----	---------------------------------------	--

Time: 15 seconds

16	22 pupils	
----	-----------	--

20	12 cm ²	
----	--------------------	--