

## Mark scheme – Notes

### Examples

Examples in the last column are shown in *italics*. An example on the right relates to the description of a type of answer on the left. They are **only examples**. Other possibilities are credit-worthy if they (more or less) fit the description. But if a response doesn't fit the mark scheme, *use your judgement*.

### Structures

The mark schemes for different questions have different structures.

#### Type 1: Simple

*Factory (a) and (b); Cooking (a)*

These are very straightforward. The answer is either right or wrong. There are not many questions like this!

#### Type 2: Levels of response

*Nines; Factory (c), (d) and (e)*

Different types of response to these questions are worth different numbers of marks. Try to match the student's response to **one** of the descriptions on the left, using the examples as a guide. But if a response doesn't fit the mark scheme, *use your judgement*.

#### Type 3: Points

*Pool; Good old days (a) and (b); Money, Money! (a) and (b); Cooking (b)*

There is a list of different 'points' that a student might make in the left hand column, with descriptions of responses that are worth different numbers of marks. Marks may be awarded for each point that the student makes. So in *Pool*, for example, a student might, possibly, discuss all four points – *Accuracy*, the *Social context*, the *Physical context* and *Measurement*, and get two or three marks for each giving a maximum total possible of 8 marks. In reality, though, most students make just one or two points, so the scoring on *Pool* is much lower than this. Here again, if a response doesn't fit the mark scheme, *use your judgement*.

#### Type 4: Steps

*Money, money (c)*

Part (c) of *Money, money* has two 'points': the calculations made, and the degree to which the student actually related to the context of the problem. Within the first point there are three methods described, and two of these (using *Volumes* and using *Layers*) include a number of possible steps each of which is worth one mark. Do not agonise too long over responses to this question or you may lose the will to live. Here especially, if a response doesn't fit the mark scheme *use your judgement*.

### Mark record

For the more complex, multi-mark questions where students often pick up marks for making different 'points' (*Good old days (b)*, *Money, money (a), (b) and (c)*, and *Cooking (b)*) I found it helpful to keep a record of the number of marks awarded for each 'point' and then add them up for the whole question. I used a *Mark record* sheet which I have pasted in at the end of this mark scheme.

### Most important point

If a response doesn't fit the mark scheme... *use your judgement!*

	<b>Answer</b>	<b>Marks</b>	<b>Examples and Comments</b>
	<b>Nines</b>		
	Calculation using three 9s, greater than $9 \times 9 - 9$ , <b>or</b> 999 <b>or</b> $9 \times 9 \times 9$ <b>or</b> Calculation using three 9s, greater than $9 \times 9 \times 9$ <b>or</b> Uses three 9s and: Raises to power of 9 once <b>or</b> Multiplies by another symbol <b>or</b> Uses three 9s and: Raises to power of 99, <b>or</b> Raises to power of 9 twice, <b>or</b> Uses 'to the power of' another symbol	1   2   3   4   5	$9 \times 9 + 9$  999  $9 \times 9 \times 9 (= 729)$  $99 \times 9 (= 891)$  $9 \times 9^9$ $9 \times 9 \times 9 \times \infty; 9 \times 9 \times 9 \times \pi; 9 \times 9 \times 9 \times \pi^2$  $9^{99}$ $(9^9)^9$ <del><math>9 \times 9 \times 9</math></del> ; <del>999</del> ; <del>999</del>
			<b>Maximum marks available for Nines: 5</b>

	<b>Answer</b>	<b>Marks</b>	<b>Examples and Comments</b>
	<b>Pool</b>		Marks may be awarded for each point relevant to the response.
	<i>1<sup>st</sup> point: Accuracy</i> Indicates that 1.000m is too accurate <b>or</b> Explains why 1.000m is too accurate a measurement	1  2	<i>There are too many zeros</i> <i>You don't need the decimal places</i>  <i>That would be to the nearest millimetre</i> <i>Only 100 cm in one m</i>
	<i>2<sup>nd</sup> point: The social context</i> Indicates that feet and inches are too unfamiliar to be useful <b>and/or</b> Indicates that the extra zeros could be confusing	1  1	Note: Both these marks may be awarded if appropriate. <i>People don't understand old measurements</i>  <i>People might think it meant 1000 metres</i>
	<i>3<sup>rd</sup> point: The physical context</i> Indicates that 1000m is too deep for the shallow end <b>or</b> Explains why 1.000m is too accurate in this context	1  2	This answer gets one mark because, although irrelevant, it is a true statement and indicates that the student has at least engaged with the context  <i>The water will be choppy so the exact depth will vary</i>
	<i>4<sup>th</sup> point: Measurement</i> Indicates that the two measurements are not exactly equal <b>or</b> Shows working comparing the measurements <b>or</b> Observes that the figures given are accurate to only 3 significant figures	1  2  3	<i>3ft 3½ inches is not exactly 1.000m</i>  <i>3ft 3½ inches is a bit less than 1.000m (with supporting working)</i> Note: Using the figures given, 3ft 3 ½ inches = 1.004m; 1.000m = 3ft 3.34 inches  <i>You can't really change the 1.000m to inches because it says 'to 3 significant figures'</i>
			<b>Maximum marks available for Pool: 8</b>

	<b>Answer</b>	<b>Marks</b>	<b>Examples and Comments</b>
	<b>Factory</b>		
(a)	12	1	
(b)	8, 2 and 1 shaded	1	
(c)	<p>Indicates that the total is 31</p> <p><b>and/or</b></p> <p>Indicates that different numbers can be shown with the lights</p> <p><b>or</b></p> <p>Explains why 31 is the greatest number that can be made</p> <p><b>or</b></p> <p>Explains why all numbers up to 31 can be made uniquely</p>	<p>1</p> <p>1</p> <p>2</p> <p>3</p>	<p>Note: Both of the first two marks may be awarded if appropriate.</p> <p><i>Because they all add up to 31</i>  <math>16 + 8 + 4 + 2 + 1 = 31</math>  <i>31 is the total of the numbers</i></p> <p><i>Because all the numbers add up to make different numbers</i></p> <p><i>If you use all the lights you will get 31</i>  <i>Because to get the answer 31 all of the lights will turn on</i>  <i>31 is the total of the numbers so it can't be more</i></p> <p><i>They can be rearranged to get any number up to 31</i>  <i>There is one way to show each number from 1 to 31</i>  <i>Because there are 31 different combinations of numbers</i>  <i>The numbers can make up 31 different numbers</i></p>
			<b>Maximum marks available for Factory part (c): 3</b>
(d)	<p>Gives an answer implying that the number of the new light is unknown, but total must be more than 31</p> <p><b>or</b></p> <p>63 (with no supporting working)</p> <p><b>or</b></p> <p>63 with working</p>	<p>1</p> <p>2</p> <p>3</p>	<p><i>You can't know exactly but greater than 31</i>  <i>31 upwards</i>  <math>32 + 16 = 48</math> (ie new light taken as another 16 rather than 32)</p> <p><math>31 + 32 = 63</math></p>
			<b>Maximum marks available for Factory part (d): 3</b>

	<b>Answer</b>	<b>Marks</b>	<b>Examples and Comments</b>
	<b><i>Factory continued</i></b>		
(e)	Indicates that there is no upper limit <b>or</b> Gives some indication of structure of the generalisation <b>or</b> Indicates structure of the generalisation with an end point <b>or</b> Gives a correct general formula	1  2  3  5	<i>Infinite</i> <i>As many as you need</i>  $1 + 2 + 4 + \dots$  $1 + 2 + 4 + \dots$ go on until there are $n$ numbers, then you add them all together  $2^0 + 2^1 + 2^2 + \dots 2^n$ or $2^n - 1$
			<b>Maximum marks available for <i>Factory</i> part (e): 5</b>
			<b>Maximum marks available for <i>Factory</i>: 13</b>
	<b><i>Good old days?</i></b>		In parts (a) and (b) marks may be awarded for each point relevant to the response.
(a)	<b><i>1<sup>st</sup> point: Draws</i></b> Disagrees and gives numbers of draws <b>or</b> Disagrees and gives proportions of draws	1  2	<i>No because there were 4 draws in 2011, and only 3 in 1911</i>  <i>No, 4 out of 8 games were draws in 2011, 3 out of 7 were draws in 1911</i>
	<b><i>2<sup>nd</sup> point: Sample size</i></b> Indicates that the data is too limited for conclusions to be valid	2	<i>You can't tell anything from just a few games</i> <i>It might have been different on a different day.</i>
			<b>Maximum mark available for <i>Good old days?</i> part (a): 4</b>

	<b>Answer</b>	<b>Marks</b>	<b>Examples and Comments</b>
	<b><i>Good old days? continued</i></b>		
(b)	Indicates any of points 2 to 4 below without figures or with incorrect figures	1	In part (b) any reason may be presented to support or to disagree with Grandad. <i>More goals scored in 2011; or 2011: 23 goals , 1911: 18 goals (2<sup>nd</sup> point)</i> <i>The scores differ more in 2011 (3<sup>rd</sup> point)</i> <i>More games in 2011; or 2 more games in 2011 (4<sup>th</sup> point)</i>
	<i>1<sup>st</sup> point: Draws</i> Indicates that there were more draws in 2011 <b>or</b> Indicates that there were a higher proportion of draws in 2011	2  3	Note: Figures are not required here if they were given in part (a). <i>There were more draws in 2011</i>  <i>There were more draws per game in 2011</i>
	<i>2<sup>nd</sup> point: Goals</i> Indicates with figures that more goals were scored in 2011 <b>or</b> Indicates with figures that more goals per game were scored in 2011	2  3	<i>25 goals scored in 2011, but only 18 in 1911</i> <i>More games with 4 or more goals in 2011</i>  <i>1911: 18 goals in 7 games, 2011: 25 goals in 8 games, so more goals per game now</i>
	<i>3<sup>rd</sup> point: Score differences</i> Indicates with figures that there are greater differences in the numbers of goals scored now <b>or</b> Indicates with calculations that there are greater differences in the numbers of goals scored now	2  3	<i>You get scores like 5-0 now, but before you only got 3-0</i>  <i>The greatest range was only 3 in 1911, but it was 5 in 2011</i>
	<i>4<sup>th</sup> point: Number of games</i> Indicates with figures that more games were played in 2011	2	<i>In 2011 there were 8 games but in 1911 there were only 7</i>

	<b>Answer</b>	<b>Marks</b>	<b>Examples and Comments</b>
	<b><i>Good old days? (b) continued</i></b>		
	<p><i>5<sup>th</sup> point: Insignificant differences</i> Indicates without figures that the differences are not great enough to draw conclusions</p> <p><b>or</b></p> <p>Indicates with figures that the differences are not great enough to draw conclusions</p>	<p>2</p> <p>3</p>	<p><i>There is not enough difference between the two years to say much</i></p> <p><i>About half the games were draws in each year so it hasn't changed much</i> <i>There were about 3 goals per game in each year</i> <i>Only one game had a score difference of 5, all the rest were 3 or less</i> <i>There was only one more game in 2011 than in 1911</i></p>
	<p><i>6<sup>th</sup> point: Sample size</i> Indicates that the data is too limited for conclusions to be valid</p>	3	<p><i>You can't tell anything from just a few games</i> <i>It might have been different on a different day</i></p>
	<p><i>7<sup>th</sup> point: What is 'exciting'?</i> Indicates that 'exciting' is undefined, <b>or</b> Indicates one possible interpretation of 'exciting' Discusses different possible interpretations of 'exciting'</p>	<p>1</p> <p>2</p>	<p><i>Scoring doesn't tell you how exciting the game was</i> <i>That is a matter of opinion</i> <i>More draws is more tension</i> <i>Fewer draws means more games won or lost, which is more exciting</i></p> <p><i>Not clear what he means by 'exciting' – goals are exciting so more goals scored, or harder to score makes final a nailbiter</i></p>
	<p><i>8<sup>th</sup> point: Social context</i> Makes a relevant comment about the social context.</p>	1	<p><i>I would agree due to the rise in anti-social games</i></p>
			<b>Maximum mark available for <i>Good old days?</i> part (b): 20</b>
			<b>Maximum mark available for <i>Good old days?</i> 24 [But any one student is very unlikely to get all 20 marks in part (b)]</b>

	<b>Answer</b>	<b>Marks</b>	<b>Examples and Comments</b>																					
	<b>Money, Money!</b>		Marks may be awarded for each point relevant to the response.																					
	<p><i>1<sup>st</sup> point: Rectangular sides</i>            Sketches or indicates three different rectangular sides, <b>or</b>            Sketches at least one rectangle with dimensions of edges indicated</p> <p><b>or</b></p> <p>Sketches three different rectangular sides with dimensions of edges indicated.</p> <p><b>or</b></p> <p>Makes some, but not complete, allowance for the thickness of the wood in the dimensions of the rectangles</p> <p><b>or</b></p> <p>Consistently allows for the thickness of the wood in the dimensions of the rectangles</p>	<p>1</p> <p>2</p> <p>3</p> <p>5</p>	<p><i>2 each of three different rectangles (or thin cuboids) drawn</i>            Dimensions of edges of rectangles (without allowing for thickness of wood) are:            8 cm by 16 cm; 6 cm by 16 cm; 8 cm by 6 cm</p> <p>For example, with wood 1 cm thick overall dimensions of the box would be 16 × 8 × 6 if the wood had rectangular dimensions:</p> <table border="1" data-bbox="926 695 1398 932"> <thead> <tr> <th>Top</th> <th>Sides</th> <th>Ends</th> </tr> </thead> <tbody> <tr> <td>16 × 8</td> <td>16 × 4</td> <td>4 × 6</td> </tr> <tr> <td>16 × 8</td> <td>4 × 14</td> <td>4 × 8</td> </tr> <tr> <td>14 × 6</td> <td>16 × 6</td> <td>6 × 6</td> </tr> <tr> <td>16 × 6</td> <td>16 × 6</td> <td>4 × 6</td> </tr> <tr> <td>14 × 6</td> <td>14 × 6</td> <td>6 × 8</td> </tr> <tr> <td>14 × 8</td> <td>14 × 4</td> <td>6 × 8</td> </tr> </tbody> </table> <p>These are probably the most common figures, but there are an infinite number of possible alternatives.</p>	Top	Sides	Ends	16 × 8	16 × 4	4 × 6	16 × 8	4 × 14	4 × 8	14 × 6	16 × 6	6 × 6	16 × 6	16 × 6	4 × 6	14 × 6	14 × 6	6 × 8	14 × 8	14 × 4	6 × 8
Top	Sides	Ends																						
16 × 8	16 × 4	4 × 6																						
16 × 8	4 × 14	4 × 8																						
14 × 6	16 × 6	6 × 6																						
16 × 6	16 × 6	4 × 6																						
14 × 6	14 × 6	6 × 8																						
14 × 8	14 × 4	6 × 8																						
	<p><i>2<sup>nd</sup> point: Slot</i>            Indicates position and dimensions of slot</p>	2	Accept slot length 23 to 30 mm; width 1.8 to 2.5 mm																					
			<b>Maximum mark available for Money, money! part (a): 7</b>																					



	Answer	Marks	Examples and Comments
	<b>Money, Money! continued</b>		
(b)	<b>Method 1: Using the graph grid</b>		Note: The graph grid on the question paper did not print out to the correct scale. A line of '9 cm' drawn on the graph paper is actually about 10 cm. This complicates matters rather. Two methods are given here for the students to respond to this part of the question.
	<i>1<sup>st</sup> point: Rectangle</i> Uses the graph grid provided to draw an 8 cm by 16 cm rectangle	1	Marks for part (a) <i>1<sup>st</sup> point</i> may be awarded if thickness of wood is indicated here.
	<i>2nd point: Slot</i> Draws a slot of any dimensions in the correct position on their rectangle, <b>or</b> Draws a slot of acceptable dimensions in any position on their rectangle <b>or</b> Draws a slot of the correct dimensions in the correct position in their rectangle	1  3	Accept slot length 23 to 30 mm; width 1.8 to 2.5 mm

	<b>Answer</b>	<b>Marks</b>	<b>Examples and Comments</b>																					
	<b>Money, Money! (b) continued</b>																							
	<b>Method 2: Ignoring the graph grid</b>																							
	<p><i>1<sup>st</sup> point: Rectangle</i>            Draws a rectangle with one correct dimension</p> <p><b>or</b></p> <p>Draws a rectangle with two correct dimensions</p>	<p>1</p> <p>2</p>	<p>Accept what looks on the graph lines like length 14 to 15.5 cm, width 6.5 to 8 cm for the rectangle.</p>																					
	<p><i>2nd point: Slot</i>            Draws a slot of any dimensions in the correct position in their rectangle <b>or</b>            Draws a slot of acceptable dimensions in any position on their rectangle</p> <p><b>or</b></p> <p>Draws a slot of the correct dimensions in the correct position in the rectangle</p>	<p>1</p> <p>2</p>	<p>Accept what looks on the graph lines like length 23 to 30 mm, width 1.8 to 2.5 mm for the slot.</p> <p>The relevant lengths of the 16cm by 8cm rectangle and the slot map onto the following lengths on the printed paper:</p> <table border="0"> <thead> <tr> <th><b>Actual length</b></th> <th><b>Equivalent on the graph grid</b></th> <th></th> </tr> </thead> <tbody> <tr> <td>16 cm</td> <td>14.4 cm</td> <td>(Length of rectangle)</td> </tr> <tr> <td>8 cm</td> <td>7.2 cm</td> <td>(Width of rectangle)</td> </tr> <tr> <td>2.2 cm</td> <td>2 cm</td> <td>(Minimum length of slot.)</td> </tr> <tr> <td>6 cm</td> <td>5.4 cm</td> <td>(Maximum length of slot)</td> </tr> <tr> <td>1.8 mm</td> <td>1.6 mm</td> <td>(Minimum width of slot.)</td> </tr> <tr> <td>10 mm</td> <td>9 mm</td> <td>(Maximum width of slot)</td> </tr> </tbody> </table>	<b>Actual length</b>	<b>Equivalent on the graph grid</b>		16 cm	14.4 cm	(Length of rectangle)	8 cm	7.2 cm	(Width of rectangle)	2.2 cm	2 cm	(Minimum length of slot.)	6 cm	5.4 cm	(Maximum length of slot)	1.8 mm	1.6 mm	(Minimum width of slot.)	10 mm	9 mm	(Maximum width of slot)
<b>Actual length</b>	<b>Equivalent on the graph grid</b>																							
16 cm	14.4 cm	(Length of rectangle)																						
8 cm	7.2 cm	(Width of rectangle)																						
2.2 cm	2 cm	(Minimum length of slot.)																						
6 cm	5.4 cm	(Maximum length of slot)																						
1.8 mm	1.6 mm	(Minimum width of slot.)																						
10 mm	9 mm	(Maximum width of slot)																						
			<p><b>Maximum mark available for <i>Money, money!</i> part (b): 3 or 4, depending on use made of grid</b></p>																					

	<b>Answer</b>	<b>Marks</b>	<b>Examples and Comments</b>
	<b>Money, Money! continued</b>		
(c)	<b>1<sup>st</sup> point: Calculations</b>	Up to 8	Award a mark for each step in a reasonable method. Two possible methods are shown below, but there are probably more.
	<p><b>Method 1: Volumes</b></p> <p>A mark may be awarded for each of the following steps correctly carried out using their figures</p> <ul style="list-style-type: none"> <li>• Calculates volume of the box</li> <li>• Calculates base area of a coin</li> <li>• Calculates volume of one coin</li> <li>• Converts volumes to a consistent measure</li> <li>• Divides their volume of box by their volume of coins to find number of coins</li> <li>• Calculates value of their number of coins <b>or</b> Calculates that £100 is 500 coins</li> <li>• Draws a sensible conclusion for their figures</li> <li>• Shows evidence of sensible rounding somewhere in their calculations</li> </ul>		<p><i>Volume of box: <math>6 \times 8 \times 16 =</math> a value rounding to 750 or 800 <math>\text{cm}^3</math></i> (or, allowing for the thickness of the wood, down to <math>4 \times 6 \times 14 =</math> a value rounding to 300 <math>\text{cm}^3</math>)</p> <p><i>Base area of coin: <math>10.7^2 \times \pi =</math> a value rounding to 360 <math>\text{mm}^2</math></i></p> <p><i>Volume of coin: <math>360 \times 1.7 =</math> a value rounding to 600 <math>\text{mm}^3</math></i></p> <p><i><math>750 \text{ cm}^3 = 750000 \text{ mm}^3</math> (or <math>300 \text{ cm}^3 = 300000 \text{ mm}^3</math>)</i></p> <p><i><math>600 \text{ mm}^3 = 0.6 \text{ cm}^3</math></i></p> <p><i>Number of coins: <math>750 \div 0.6 = 1250</math> (or <math>300 \div 0.6 = 500</math>)</i></p> <p><i>1250 coins is £250 (or 500 coins is £100)</i></p> <p><i>£100 needs 500 coins</i></p> <p><i>£250 is more than £100</i></p> <p><i>1250 coins is more than 500 coins</i></p> <p><i>Gives a whole number of coins in the box</i></p>

	Answer	Marks	Examples and Comments
	<b>Money, Money! (c) continued</b>	Up to 9	
	<p><b>Method 2: Layers</b></p> <p>A mark may be awarded for each of the following steps correctly carried out using their figures</p> <ul style="list-style-type: none"> <li>• Converts lengths to a consistent measure</li> <li>• Estimates number of coins in one row</li> <li>• Estimates number of coins in one column</li> <li>• Estimates number of coins in one layer</li> <li>• Estimates number of layers</li> <li>• Estimates number of coins</li> <li>• Calculates value of their number of coins, or calculates that £100 is 500 coins</li> <li>• Draws a sensible conclusion for their figures</li> <li>• Shows evidence of sensible rounding somewhere in their calculations</li> </ul>		<p>All values in the example below are approximate. Accept any reasonable figures.</p> <p><i>Diameter of coin: 2.14 cm</i>  <i>Box measures: 60 mm by 80 mm by 160 mm</i>  (or, allowing for the thickness of the wood, down to 40 mm by 60 mm by 140 mm)</p> <p><i>Distance across box ÷ diameter of coin: 80 ÷ 22 is about 3 or 4 coins across</i>  (or 60 ÷ 22 = 2 or 3 coins across)</p> <p><i>Distance along box ÷ diameter of coin: 160 ÷ 22 is about 7 coins along</i>  (or down to 40 ÷ 22 = 1 or 2 coins along)</p> <p><i>About 25 coins in the bottom layer</i> (or down to about 6)</p> <p><i>Height of box ÷ thickness of coin: 60 ÷ 1.7 is about 35 layers</i>  (or down to 40 ÷ 1.7 is about 23 layers)</p> <p><i>25 × 35 is more than 800 coins</i> (or down to 6 × 23 is about 140 coins)</p> <p><i>800 coins is £160</i> (or 140 coins is about £28)  <i>£100 needs 500 coins</i></p> <p><i>£160 is more than £100</i> (or <i>£28 is less than £100</i>), so he is/is not correct.  <i>800 coins is more than 500 coins</i></p> <p><i>Gives a whole number of coins in the box</i></p>

	<b>Answer</b>	<b>Marks</b>	<b>Examples and Comments</b>
	<b>Money, Money! (c) continued</b>		
	<p><b>Method 3: Unreasoned (but not unreasonable) guess or solution</b></p> <p>Makes a reasonable but unsupported guess</p> <p><b>and/or</b></p> <p>Suggests an alternative solution that fits the context</p>	<p>1</p> <p>1</p>	<p>Note: Both these marks may be awarded if appropriate.</p> <p><i>Estimates number of coins as between 100 and 1000, with no reasoning</i>  <i>Estimates value of coins as between £20 and £200, with no reasoning</i></p> <p><i>You could put five £20 notes in instead.</i></p>
	<p><b>2<sup>nd</sup> point: Relating to the context</b></p> <p>Made some attempt to find a way to solve the problem</p> <p><b>or</b></p> <p>Used an unsophisticated approach</p> <p><b>or</b></p> <p>Used a more sophisticated approach</p>	<p>1</p> <p>2</p> <p>3</p>	<p><i>Attempted to find the volume of the box and of one coin.</i></p> <p><i>Attempted all the steps in any reasonable method, eg method 1.</i></p> <p><i>Made some attempt to allow for the spaces between the coins, eg used Method 2, Layers, or Method 1, Volumes with the additional comment 'But you couldn't really jam them all in'.</i></p>
			<b>Maximum mark available for Money, money! part (c): 12</b>
			<b>Maximum mark available for Money, money!: 22 or 23</b>

	Answer	Marks	Examples and Comments
	<b>Cooking</b>		In part (b) marks may be awarded for each point relevant to the response.
(a)	3 minutes	1	
	Indicates structure	1	2 min + 1 min 9, 7, 5, 3
(b)			<b>Note:</b> <b>If at first glance the student seems to have produced a reasonable timetable, go straight to the 6<sup>th</sup> Point: Correct times. If at least six of the tasks given there are shown in the response, in a correct order and with times within acceptable limits, then you can just award all 12 marks for part (b).</b>
	<i>1<sup>st</sup> point: Key tasks identified</i> Identifies at least three of the tasks <b>or</b> Identifies at least six of the tasks	1  2	Key tasks include: Heat grill Chops in Turn chops Wash rice Put rice on hob (or Put water on) Turn rice down (or Put rice in) Sprouts in Sprouts rest  Note: Some students boiled the water for the rice first and then put the rice in to cook, so accept 'Put water on' for 'Put rice on hob', and 'Put rice on' for 'Turn rice down'.
	<i>2<sup>nd</sup> point: Duration of tasks</i> Shows evidence of taking account of duration of at least three tasks <b>or</b> Shows evidence of taking account of duration of at least six tasks	1  2	Duration of tasks Heat grill – 10 min Cook chops – first side 8 to 10 min (Accept any duration within these limits) Cook chops – second side 8 to 10 min (Accept any duration within these limits) Wash rice – 2 min Put rice on hob (or Put water on), bring to boil – 5 min Cook rice – 12 to 15 min (Accept any duration within these limits) Cook and rest sprouts – 3 min  Note: Some students boiled the water for the rice first and then put the rice in to cook, so accept 'Put water on' for 'Put rice on hob', and 'Put rice on' for 'Turn rice down'.

	<b>Answer</b>	<b>Marks</b>	<b>Examples and Comments</b>
	<b><i>Cooking (b) continued</i></b>		
	<p><i>3<sup>rd</sup> point: Timetable presentation</i> Lays out at least some aspects of a timetable</p> <p><b>or</b></p> <p>Lays out a complete timetable</p>	<p>1</p> <p>2</p>	<p><i>A list of jobs in order, but with no actual times shown</i> <i>Jobs given out of order, but with times given</i></p> <p>Need not be tidy</p>
	<p><i>4<sup>th</sup> point: Total time</i> Indicates a total time of less than 1 hour</p> <p><b>or</b></p> <p>Indicates a total time of 30 minutes or less</p>	<p>1</p> <p>2</p>	<p>Eg, indicates start time between 12 and 1</p> <p>Eg, indicates start time at or after 12:30</p>
	<p><i>5<sup>th</sup> point: Tasks order</i> Indicates an interleaved sequence with at least three tasks in a correct order</p> <p><b>or</b></p> <p>Indicates an interleaved sequence with at least six tasks in a correct order</p>	<p>1</p> <p>2</p>	<p>Note</p> <p>'Interleaved' means they do not assume chops fully cooked first, then rice, then sprouts.</p> <p><i>Tasks in correct interleaved order, with or without correct times</i> <i>Tasks out of order, but at correct times for an interleaved sequence</i></p> <p>Correct order with all tasks interleaved: Heat grill; Wash rice/ Chops in; Put rice on hob/ Chops in; Turn rice down; Turn chops; Sprouts in; Sprouts rest</p> <p>Note: Some students boiled the water for the rice first and then put the rice in to cook, so accept 'Put water on' for 'Put rice on hob', and 'Put rice on' for 'Turn rice down'.</p>

	<b>Answer</b>	<b>Marks</b>	<b>Examples and Comments</b>																		
	<b>Cooking (b) continued</b>																				
	<p>6<sup>th</sup> point: <i>Correct times</i> Shows correct times for at least three interleaved tasks</p> <p><b>or</b></p> <p>Shows correct times for at least six un-interleaved tasks</p> <p><b>or</b></p> <p>Shows correct times for at least six interleaved tasks</p>	<p>1</p> <p>1</p> <p>2</p>	<p>Note</p> <p>'Interleaved' means they do not assume chops fully cooked first, then rice, then sprouts. 'Un-interleaved' means they do.</p> <table border="0"> <tr> <td>Times with interleaved tasks:</td> <td>Times with un-interleaved tasks:</td> </tr> <tr> <td>Heat grill – 12:30 to 12:34</td> <td>Heat grill – 12:05 to 12:12</td> </tr> <tr> <td>Wash rice – 12:30 to 12:41</td> <td>Chops in – 12:15 to 12:22</td> </tr> <tr> <td>Put rice on hob – 12:40 to 12:43</td> <td>Turn chops – 12:25 to 12:30</td> </tr> <tr> <td>Chops in – 12:40 to 12:44</td> <td>Wash rice – 12:35 to 12:38</td> </tr> <tr> <td>Turn rice down – 12:45 to 12:48</td> <td>Put rice on hob – 12:37 to 12:40</td> </tr> <tr> <td>Turn chops – 12:50 to 12:52</td> <td>Turn rice down – 12:42 to 12:45</td> </tr> <tr> <td>Sprouts in – 12:57</td> <td>Sprouts in – 12:57</td> </tr> <tr> <td>Sprouts rest – 12:59</td> <td>Sprouts rest – 12:59</td> </tr> </table> <p>Note: Some students boiled the water for the rice first and then put the rice in to cook, so accept 'Put water on' for 'Put rice on hob', and 'Put rice on' for 'Turn rice down'.</p> <p>Note: Accept times consistently up to five minutes earlier so it is all just ready up to five minutes before 1 o'clock.</p> <p>Note: A timetable showing at least six of the tasks in the first 'interleaved' column, with all of their times, covers all of points 1 to 6 so it can be awarded 12 marks straight away.</p>	Times with interleaved tasks:	Times with un-interleaved tasks:	Heat grill – 12:30 to 12:34	Heat grill – 12:05 to 12:12	Wash rice – 12:30 to 12:41	Chops in – 12:15 to 12:22	Put rice on hob – 12:40 to 12:43	Turn chops – 12:25 to 12:30	Chops in – 12:40 to 12:44	Wash rice – 12:35 to 12:38	Turn rice down – 12:45 to 12:48	Put rice on hob – 12:37 to 12:40	Turn chops – 12:50 to 12:52	Turn rice down – 12:42 to 12:45	Sprouts in – 12:57	Sprouts in – 12:57	Sprouts rest – 12:59	Sprouts rest – 12:59
Times with interleaved tasks:	Times with un-interleaved tasks:																				
Heat grill – 12:30 to 12:34	Heat grill – 12:05 to 12:12																				
Wash rice – 12:30 to 12:41	Chops in – 12:15 to 12:22																				
Put rice on hob – 12:40 to 12:43	Turn chops – 12:25 to 12:30																				
Chops in – 12:40 to 12:44	Wash rice – 12:35 to 12:38																				
Turn rice down – 12:45 to 12:48	Put rice on hob – 12:37 to 12:40																				
Turn chops – 12:50 to 12:52	Turn rice down – 12:42 to 12:45																				
Sprouts in – 12:57	Sprouts in – 12:57																				
Sprouts rest – 12:59	Sprouts rest – 12:59																				
			<b>Maximum marks available for <i>Cooking part (b)</i>: 12</b>																		
			<b>Maximum marks available for <i>Cooking</i>: 14</b>																		



## Mark record

ID	N	P	F-ab	F-c	F-d	F-e	G-a	G-b	M-a	M-b	M-c	C-a	C-b

