**Highfield Functional Skills Qualification in Mathematics at Level 2** **Practice Paper 2**

| Skills Standard | Marks available | % |
|---|---|---|
| Representing | 17 | 34 |
| Analysing | 16 | 32 |
| Interpreting | 17 | 34 |

| | |
|---|---|
| Total marks | 50 |
| Pass mark | **32** |

| **Level 2 Mapping Grid** | **Coverage and Range** | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **a** | | **b** | **c** | | | **d** | | | **e** | | **f** | **g** | | | **h** | | **i** | **j** | | | **k** | **l** |
| | *Positive no.* | *Negative no.* | *Calculation to given decimal* | *ratio* | *proportion* | *scale* | *fractions* | *decimals* | *percentage* | *formulae* | *equations* | *2D/3D* | *area* | *perimeter* | *volume* | *Metric measures* | *imperial* | *Collect & represent data* | *measures* | *tables* | *diagrams* | *Statistical methods to investigate* | *probability* |
| **1a** | X | | | | | | | | | | | | | | | | | | | X | | | |
| **1b** | | | X | | | X | | | | | | | X | | | X | | | X | | | | |
| **1c** | | | X | | | | | | | | | | | | | X | | | X | | | | |
| **1d** | | | | | | | | | | | | X | | | | | | | | | X | X | |

| **Level 2 Mapping Grid** | **Coverage and Range** | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **a** | | **b** | **c** | | | **d** | | | **e** | | **f** | **g** | | | **h** | | **i** | **j** | | | **k** | **l** |
| | *Positive no.* | *Negative no.* | *Calculation to given decimal* | *ratio* | *proportion* | *scale* | *fractions* | *decimals* | *percentage* | *formulae* | *equations* | *2D/3D* | *area* | *perimeter* | *volume* | *Metric measures* | *imperial* | *Collect & represent data* | *measures* | *tables* | *diagrams* | *Statistical methods to investigate* | *probability* |
| **1e** | **X** | | **X** | | | | | | | | | | | | | | | | | **X** | | | |
| **1f** | **X** | | | | | | | | | | | | | | | | | | | | **X** | | |
| **1g** | | | **X** | **X** | **X** | | | | | | | | | | | **X** | | | | | | | |
| **2a** | **X** | | | | | | | | | | | | | | | | | | | **X** | **X** | | |
| **2b** | | | | | | **X** | | **X** | | | | | | | | **X** | | **X** | **X** | **X** | | | |
| **2c** | | | **X** | | | | | | | **X** | **X** | | | | | | | | | | | | |
| **2d** | | | | | | | | | | **X** | **X** | | | | | | | | | | | | |
| **2e** | | | | | | **X** | | **X** | | | | | | | | | | | | | **X** | | **X** |
| **2f** | | | | | | | | | | | | | | | | | | | | | **X** | | |
| **2g** | **X** | | | **X** | **X** | | | | | | | | | | | | | | | | | | |
| | **5** | **0** | **6** | **2** | **2** | **3** | **0** | **3** | **0** | **2** | **2** | **2** | **1** | **0** | **0** | **5** | **0** | **1** | **3** | **4** | **5** | **1** | **1** |

Marks should be awarded positively. Answers within the mark scheme are not the only answers, each mark may have alternative answers which are not in the mark scheme. This does not mean they are not correct.

| Mark Scheme: Practice Paper 2 | | | | |
|---|---|---|---|---|
| **Question** | **Maximum marks per question** | **Skills Standard** | **Mark breakdown** | **Accepted answer**<br>**AFT = allow follow through CAO = correct answer only**<br>**(£) = sign not required for mark £ = sign is required for mark OE = or equivalent** |
| 1a | 4 | **I6** | **4** | **CAO**<br>**(£)509.00** |
| | | ***If answer is incorrect revert to:*** | | |
| | | R1 | 1 | CAO- calculates hours<br>22 (hours) |
| | | R2 | 1 | AFT - calculates total cost of room booking<br>(22) x 12 = (£264) |
| | | A4 | 1 | CAO- calculates total cost of catering<br>(£)245 |
| | | I6 | 1 | AFT- correct total cost based on their calculations<br>(£264) + (£245) = (£509) |
| 1b | 2 | I7 | **2** | **CAO**<br>**33.75m$^2$**<br>**Correct units required for the mark.** |
| | | ***If answer is incorrect revert to:*** | | |
| | | A4 | 1 | CAO - Identifies length and width<br>4.5(m) AND 7.5(m) |
| | | I7 | 1 | AFT – Their correct area based on their measurements (method must be correct)<br>(7.5) x (4.5) = (33.75m$^2$) |
| 1c | 1 | A5 | 1 | AFT - suitable checking method for at least ONE element of 1b<br>e.g. 33.75 ÷ 7.5 = 4.5 or 33.75 ÷ 4.5 = 7.5 |
| 1d | 5 | R2 | 1 | A floor plan is attempted |
| | | R3 | 1 | Floor plan has 20 or more tables drawn |
| | | A4 | 1 | Floor plan has twice as many rectangular tables as square<br>(e.g. 10 rectangular/5 square, 12 rectangular/6 square etc.…) |
| | | I6 | 1 | Floor plan has at least 3 round tables |
| | | I7 | 1 | Floor plan has 3 rectangular tables in a line |

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| 1e | 7 | I7 | **7** | **CAO**<br>**(£)1,596** |
| | | ***If answer is incorrect revert to:*** | | |
| | | R1 | 1 | CAO – calculates weekly wage of the chefs<br>(8.50 x 40) x 2 = (£)680 |
| | | R2 | 1 | CAO – calculates weekly wage of the sous chefs<br>(7.50 x 40) x 3 = (£)900 |
| | | A4 | 1 | CAO – calculates weekly wage of the kitchen porters<br>(6.80 x 40) x 2 = (£)544 |
| | | A4 | 1 | CAO – calculates weekly wage of the catering assistants<br>(3.90 x 40) x 5 = (£)780 |
| | | I6 | 1 | AFT – calculates the total wages<br>(£2,904) |
| | | I6 | 1 | CAO – calculates the total catering cost<br>250 x 18 = (£)4,500 |
| | | I7 | 1 | AFT – correctly calculates profit based on their calculations<br>(4,500) – (2,904) = (£1596) |

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| 1f | 2 | R1 | 1 | CAO<br>Pork sausages |
| | | I6 | 1 | CAO<br>Filo pastry |
| 1g | 4 | I7 | **4** | **CAO - Yes <u>with supporting calculations</u>**<br>**e.g Yes, there is 437(.5)g/0.44kg too much/left over** |
| | | ***If answer is incorrect or no supporting calculations given revert to:*** | | |
| | | R2 | 1 | CAO - calculates using ratio<br>(125 ÷ 12) =10.42g (for 1) OR<br>(2,000 ÷ 125) =16 (batches from 2kg flour) OR<br>(150 ÷ 12) = 12.5 (batches needed) |
| | | A4 | 1 | AFT -calculates the flour needed<br>12.5 x 125 OR 1562.50g OR<br>10.42g x 150 OR 1563g OR<br>1562.50g makes 150 pastries |
| | | A4 | 1 | AFT – Correctly converts kg to g OR g to kg<br>2kg = 2000g OR<br>1562.50g to 1.56kg OR<br>1563g to 1.56kg<br>*(award even if not rounded to 2 decimal places)* |
| | | I7 | 1 | AFT - correct interpretation based on their calculations |

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| 2a | 4 | I6 | **4** | **CAO**<br>**(£)138** |
| | | ***If answer is incorrect revert to:*** | | |
| | | R1 | 1 | CAO- selects ONLY ticket prices for more than 10 days in advance<br>*0 marks if evidence is seen that 'fewer than 10 days' tickets have been used in calculations* |
| | | R2 | 1 | AFT – subtracts discount from singular tickets ONLY<br>*0 marks if evidence is seen that discount has been applied to family tickets* |
| | | A4 | 1 | AFT - calculates using a 'family of 8' ticket and one adult ticket from any column (even if discount not given on singular ticket)<br>(£120) + (£18) = (£138) |
| | | R3 | 1 | CAO – correctly calculates 1 other valid ticket option (must include correct number of tickets and correctly applied discount). For example:<br>Single tickets (incl. discount):<br>(5 x £18) + (4 x £14) = (£)146 **OR**<br>Family of 4 + 3 adult tickets (incl. discount) + 2 child tickets (incl. discount):<br>(£65) + (3 x £18) + (2 x £14) = £147 |

Question 2b on next page…

<table>
<tr><td rowspan="4">2b</td><td rowspan="4">4</td><td>R2</td><td>1</td><td>Suitable table chosen- tally, frequency (see tables below for examples)</td></tr>
<tr><td>A4</td><td>1</td><td>Suitable labels/headings used in the table (see tables below for examples)</td></tr>
<tr><td>A4</td><td>1</td><td>All children listed in the table (Sebastian, Isabella, Harry and Ava)</td></tr>
<tr><td>I7</td><td>1</td><td>Table filled out correctly with no errors. Examples below (accept valid alternatives)
<table>
<tr><th>Name</th><th>Number of rides</th></tr>
<tr><td>Sebastian</td><td>6</td></tr>
<tr><td>Isabella</td><td>5</td></tr>
<tr><td>Harry</td><td>2</td></tr>
<tr><td>Ava</td><td>4</td></tr>
</table>
OR
<table>
<tr><td rowspan="2">Name</td><td colspan="6">Ride Name</td></tr>
<tr><td>Twirl</td><td>Shocker</td><td>Ocean’s Dream</td><td>Captain Highfield</td><td>Pirate’s Bay</td><td>Death Fall</td></tr>
<tr><td>Sebastian</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr>
<tr><td>Isabella</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td></tr>
<tr><td>Harry</td><td></td><td></td><td>✓</td><td></td><td>✓</td><td></td></tr>
<tr><td>Ava</td><td></td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td></tr>
</table></td></tr>
<tr><td>2c</td><td>1</td><td>I7</td><td>1</td><td>CAO<br>0.5 – can be an arrow drawn/circled etc.</td></tr>
</table>

| | | | | |
|---|---|---|---|---|
| 2d | 5 | I6 | **5** | **CAO - No <u>with supporting calculations</u>**<br>**e.g. No, I will be late/ I will be 45 minutes late/I will arrive at 10:45** |
| | | ***If answer is incorrect or no supporting calculations given revert to:*** | | |
| | | R2 | 1 | CAO - substitutes the correct values into the formula<br>125 ÷ 50 |
| | | R3 | 1 | AFT - calculates the time<br>2.5 |
| | | A4 | 1 | AFT - converts time into hours and minutes<br>2 hours 30 minutes |
| | | A4 | 1 | AFT - calculates the time of arrival<br>08:15 + (2hr 30) = (10:45) |
| | | I6 | 1 | AFT - correct interpretation of their calculations |
| 2e | 1 | A5 | 1 | AFT - suitable checking method for at least ONE element of 2d<br>e.g. (2.5) x 50 or (2.5) x 125 |
| 2f | 5 | I7 | **5** | **CAO**<br>**14:02 or 2:02pm** |
| | | ***If answer is incorrect revert to:*** | | |
| | | R2 | 1 | CAO - **One** mark for **one** route worked out (must include all attractions) Examples:<br>Entrance -Twirly -Ocean's Dream- Shocker - Captain Highfield - Pirate's Bay – Death Fall–Entrance = 62 mins<br>Entrance -Twirly - Shocker-Ocean's Dream- Captain Highfield - Pirate's Bay - Death Fall – Entrance = 66 mins<br>Entrance - Shocker -Twirly -Ocean's Dream- Captain Highfield - Pirate's Bay - Death Fall – Entrance = 70 mins<br>Entrance - Death Fall - Shocker -Pirate's Bay - Captain Highfield – Ocean's Dream –Twirly-Entrance = 72 mins |
| | | R3 | 1 | CAO - **One** mark for **second** route worked out (must include all attractions) Examples:<br>Entrance -Twirly -Ocean's Dream- Shocker - Captain Highfield - Pirate's Bay - Death Fall – Entrance = 62 mins<br>Entrance -Twirly - Shocker-Ocean's Dream- Captain Highfield - Pirate's Bay - Death Fall – Entrance = 66 mins<br>Entrance - Shocker -Twirly -Ocean's Dream- Captain Highfield - Pirate's Bay - Death Fall – Entrance = 70 mins<br>Entrance - Death Fall - Shocker -Pirate's Bay - Captain Highfield – Ocean's Dream –Twirly-Entrance = 72 mins |
| | | I6 | 1 | CAO – calculates time spent at each ride<br>6 x 20 mins = 120 mins/2 hrs |
| | | A4 | 1 | AFT- Calculates total time needed in the park<br>(120 mins or their time spent at rides) + (62 mins or their shortest route) = 182 mins/3 hrs 2 mins |

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|---|---|---|---|---|
| | | I7 | 1 | AFT – works out their correct time they return to the entrance using their total time in the park<br>11:00am plus (their time in the park) |
| 2g | 5 | I7 | **5** | **CAO - No <u>with supporting explanation</u>**<br>**e.g. No, they needed 101 staff. No, they were 11 staff short. OE** |
| | | ***If answer is incorrect or no supporting explanation given revert to:*** | | |
| | | R2 | 1 | CAO - calculates the total visitors for the month<br>100,192 |
| | | R1 | 1 | CAO - calculates the total number of days in August<br>31 days |
| | | A4 | 1 | AFT - calculates the average visitor per day/ratio of staff needed<br>(100,192) ÷ (31 days) = (3232)<br>OR<br>(100,192) ÷ 32 staff = (3131) |
| | | I6 | 1 | AFT- calculates the staff needed per day to maintain ratio<br>(3232) ÷ 32 staff = (101)<br>OR<br>(3131) ÷ (31 days) = (101) |
| | | I7 | 1 | AFT - correct interpretation based on their calculations |