

Functional Skills Qualification in Maths at Level 1

SAMPLE ASSESSMENT MATERIALS

OCR Functional Skills Qualification in Maths at Level 1

Sample Assessment Materials

The scheme code for these qualifications is:

OCR Functional Skills Qualification in Maths at Level 1

09865

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OXFORD CAMBRIDGE AND RSA EXAMINATIONS
LEVEL 1 FUNCTIONAL SKILLS MATHEMATICS
TASK AND ANSWER BOOKLET

This assessment may be taken within these dates:

TASK AND ANSWER BOOKLET 2010

TIME: 1 HOUR 30 MINUTES

INSTRUCTIONS

Fill in all the boxes below. Make sure your personal details are entered correctly. Use BLOCK LETTERS.

Centre name	
Centre number	
Your OCR candidate number	
Your surname or family name	
Your first forename (if any)	
Your second forename (if any)	
Date of birth	

YOU NEED

- This task and answer booklet
- The Resource booklet for this test
- A pen with black ink
- A calculator
- A ruler

YOU HAVE 1 HOUR AND 30 MINUTES TO COMPLETE THE 3 TASKS.

- Read the tasks inside this booklet carefully before starting the tasks
- Write your answers in this booklet
- **For each task, clearly show how your working leads to your answer**
- When you have finished, hand this booklet to the supervisor

FOR EXAMINER USE ONLY		
Task No.	Mark	Total
1a	/1	
1b	/2	
1c	/3	
1d	/6	
1e	/6	
Checking	/2	/20
2a	/7	
2b	/3	
2c	/8	
Checking	/2	
3a	/4	
3b	/3	
3c	/11	
Checking	/2	
Total	/60	

QCA Accreditation Number – 500/8910/9

This document consists of 10 printed pages

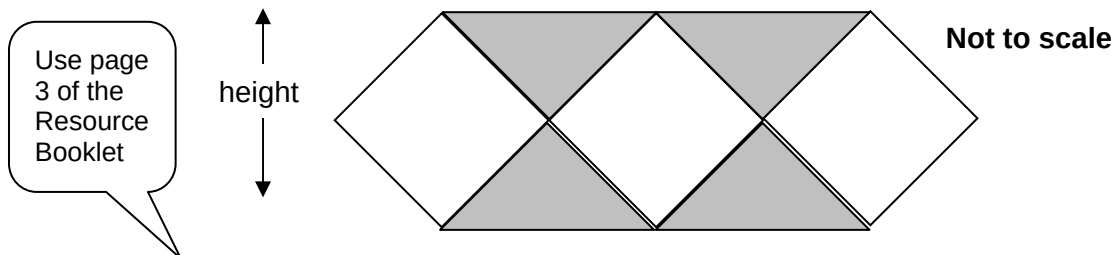
Task 1 Tiles

You must clearly show how your working leads to each answer
2 marks are available in each task when you show you have checked your work

Sam is going to tile his bathroom.

Sam plans to make this border using white **and** coloured square tiles.

Each tile is the same size, but some tiles must be cut to make the border.



- (a) What is the height of Sam's border?

Examiner
use only

(1 mark)

- (b) How many tiles are needed to make the part of the border shown above?

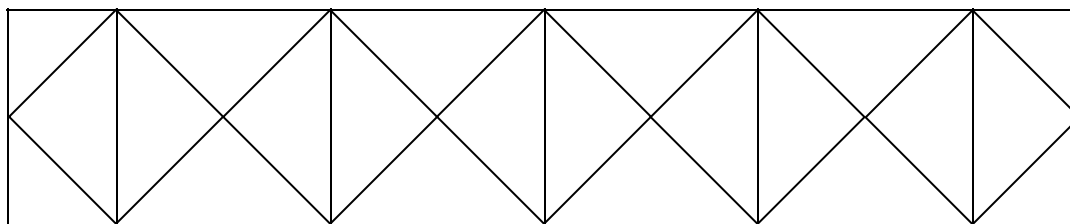
Examiner
use only

(2 marks)

- (c) Sam wants to draw a different **symmetrical** pattern using both types of tile for his border.

Use this diagram to create a pattern for Sam.

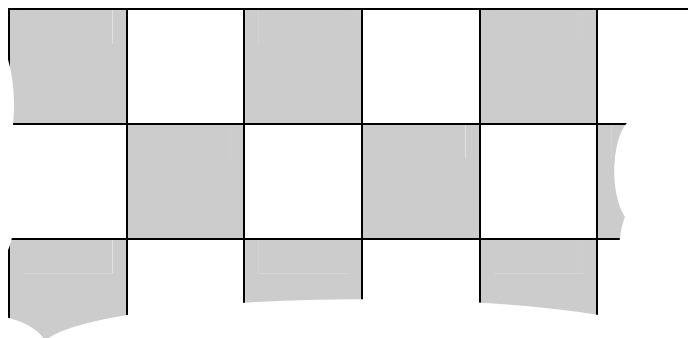
Explain how many of each type of tile your pattern uses.



Examiner
use only

(3 marks)

Sam decides to tile the wall above his bath like this.



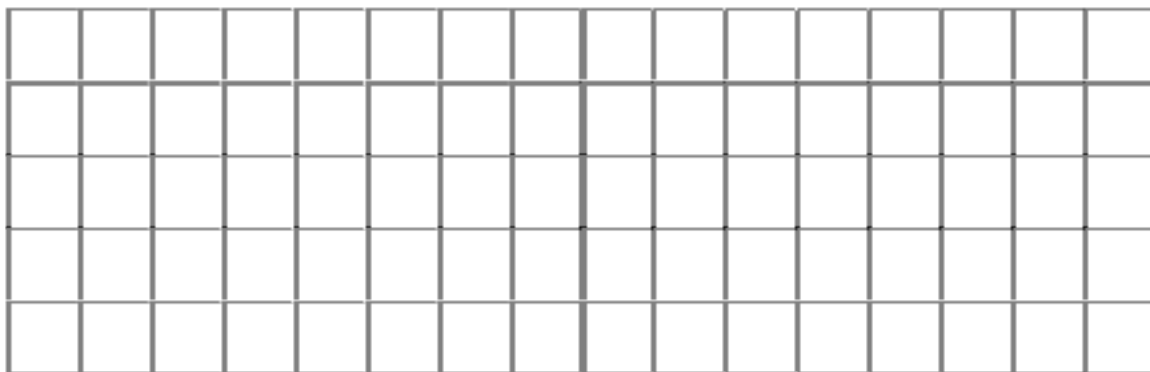
The wall is 2m long. He wants 5 rows of tiles above the bath. Sam finds these instructions.

Use page 3 of the
Resource Booklet

Tiling Instructions

- Mark the middle of the wall with a vertical line
- Stick horizontal rows of tiles on either side of the line
- Cut the tiles at the end to fit

- (d) How many of each type of tile will Sam need to buy?
He does not need to use spacers yet.
Use this grid to help.



(6 marks)

Examiner
use only

- (e) Sam thinks that he can fit a complete row of tiles without cutting any of them. Is Sam correct? Explain how you reached your answer.

[illegible]

(6 marks)

Examiner
use only

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Examiner
use only

11

TASK 1 CHECKING (2 marks)

Task 2 A Day Out

You must clearly show how your working leads to each answer
2 marks are available in each task when you show you have checked your work

Jean and her family live in Ormskirk.
Jean is going to take her two children
to a wildlife park near Chester for the day.
She decides that she will drive them
there, and back, in her car.

Use page 4 of
the Resource
Booklet



- (a) (i) How many miles is it from Ormskirk to Wigan?

(1 mark)

Examiner
use only

- (ii) What type of road will Jean be driving on from Ormskirk to Wigan?

(1 mark)

Examiner
use only

- (iii) What speed would Jean expect to be driving at on this road?

(1 mark)

Examiner
use only

- (iv) How many minutes would Jean expect to take to travel from Ormskirk to Wigan?

(3 marks)

Examiner
use only

Use pages 4
and 5 of the
Resource
Booklet

- (v) Explain why Jean cannot be certain to take the time you have worked out to travel from Ormskirk to Wigan.

Examiner
use only

Use page 4 of
the Resource
Booklet

(1 mark)

- (b) During the day out, how many miles will Jean drive on motorways?

Examiner
use only

(3 marks)

Use pages 4 and 5 of
the Resource Booklet

Jean has looked up the journey from Ormskirk to Chester on a map but she will have to find the wildlife park when she gets to Chester.

- (c) When should Jean and her two children leave home so they can pay off peak prices?

Examiner
use only

(5 marks)

(d) Jan is delayed and arrives at 10.45, how much more money will Jean have to pay?

(3 marks)

Examiner
use only

Examiner
use only

TASK 2 CHECKING (2 marks)

Task 3 Bread

You must clearly show how your working leads to each answer
2 marks are available in each task when you show you have checked your work

George has a bread shop.



(a) He is working out what he needs.

(i) How much flour does George need to make one large loaf?

Use page
6 of the
Resource
Booklet

Examiner
use only

(1 mark)

(ii) George plans to make 80 large loaves.
How much butter does he need?

Examiner
use only

(2 marks)

(iii) George has enough flour to make 80 large loaves.
He thinks he can only make 40 small loaves.
What mistake has he made?

Examiner
use only

(1 mark)

(b) George has an order for 400 bread rolls.
Which bag(s) of strong flour should he use to make these rolls?

Examiner
use only

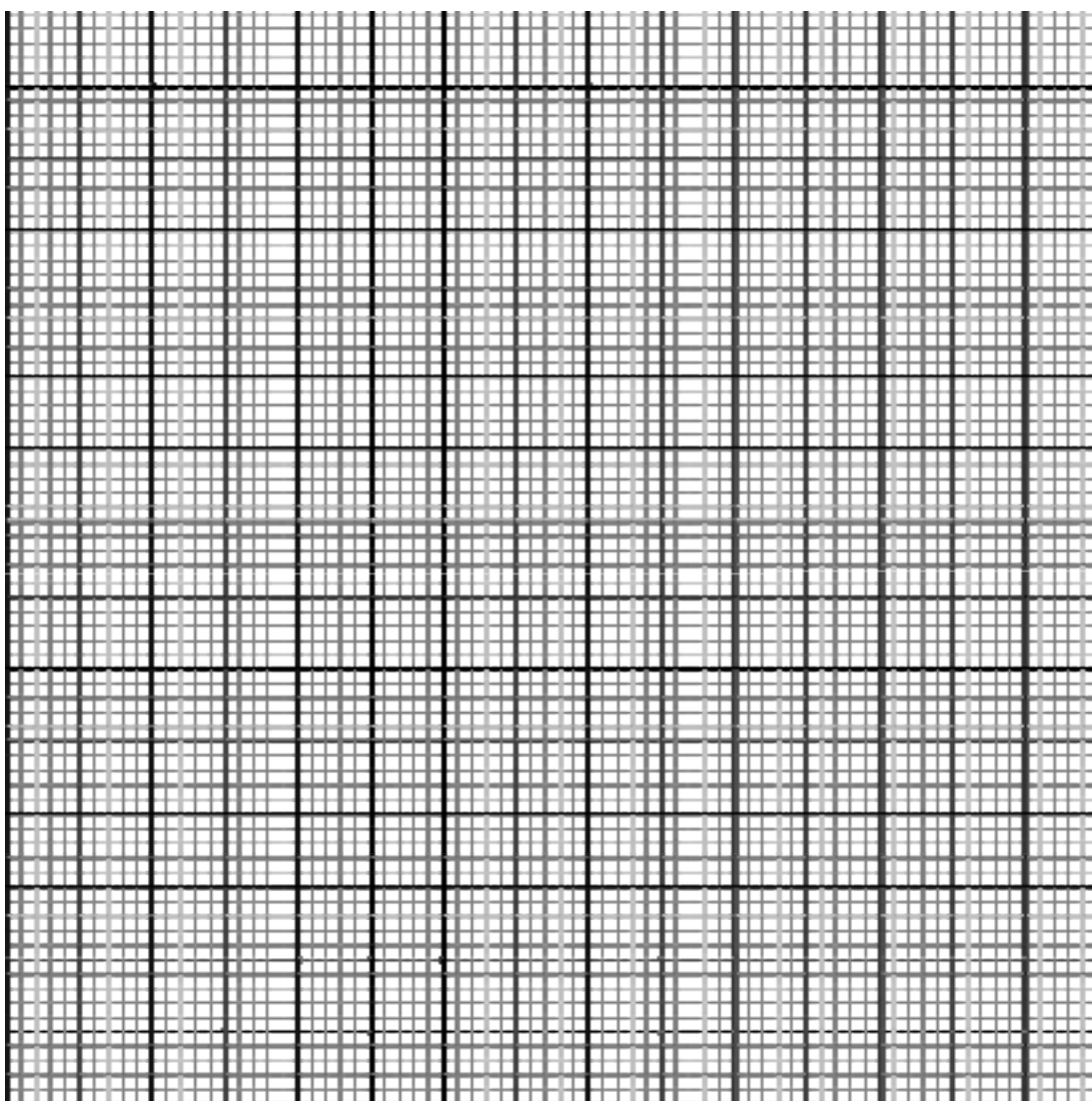
(3 marks)

- (c) George bakes large loaves in trays of 10.
He bakes small loaves in trays of 20.
Here is the record of the number of loaves he sells each day for one week.
He does not open the shop on Sunday.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Number of large loaves sold	109	87	65	123	131	146
Number of small loaves sold	81	71	68	62	84	104

- (i) George wants to use a graph to compare how many of each type of loaf he sold each day.

Draw a graph that George could use.



Examiner
use only



(5 marks)

(ii) What conclusions can you draw from the shape of your graph?

Examiner
use only

(2 marks)

(iii) Recommend the numbers of loaves George should bake each day.
Explain your answer.

Examiner
use only

(4 marks)

Examiner
use only

TASK 3 CHECKING (2 marks)

END OF TEST

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
FUNCTIONAL SKILLS ASSESSMENT PILOT
LEVEL 1 FUNCTIONAL SKILLS MATHEMATICS**

SAMPLE ASSESSMENT MATERIAL 2010

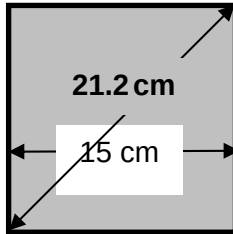
RESOURCE BOOKLET

This booklet contains information needed to answer the tasks for the OCR Functional Skills Mathematics sample assessment 2010.

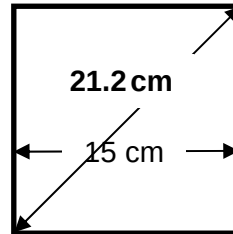
Task 1 Tiles

These are the types of tiles that Sam plans to use to tile his bathroom.
All the tiles are square.

Coloured tiles



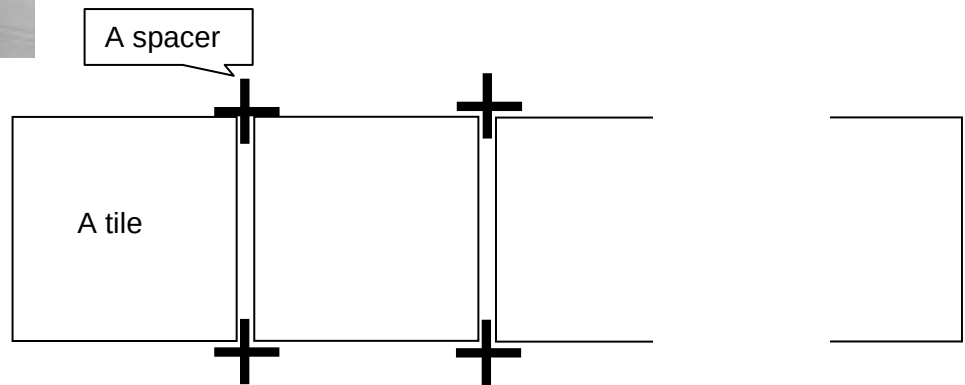
White tiles



Information for Tiles

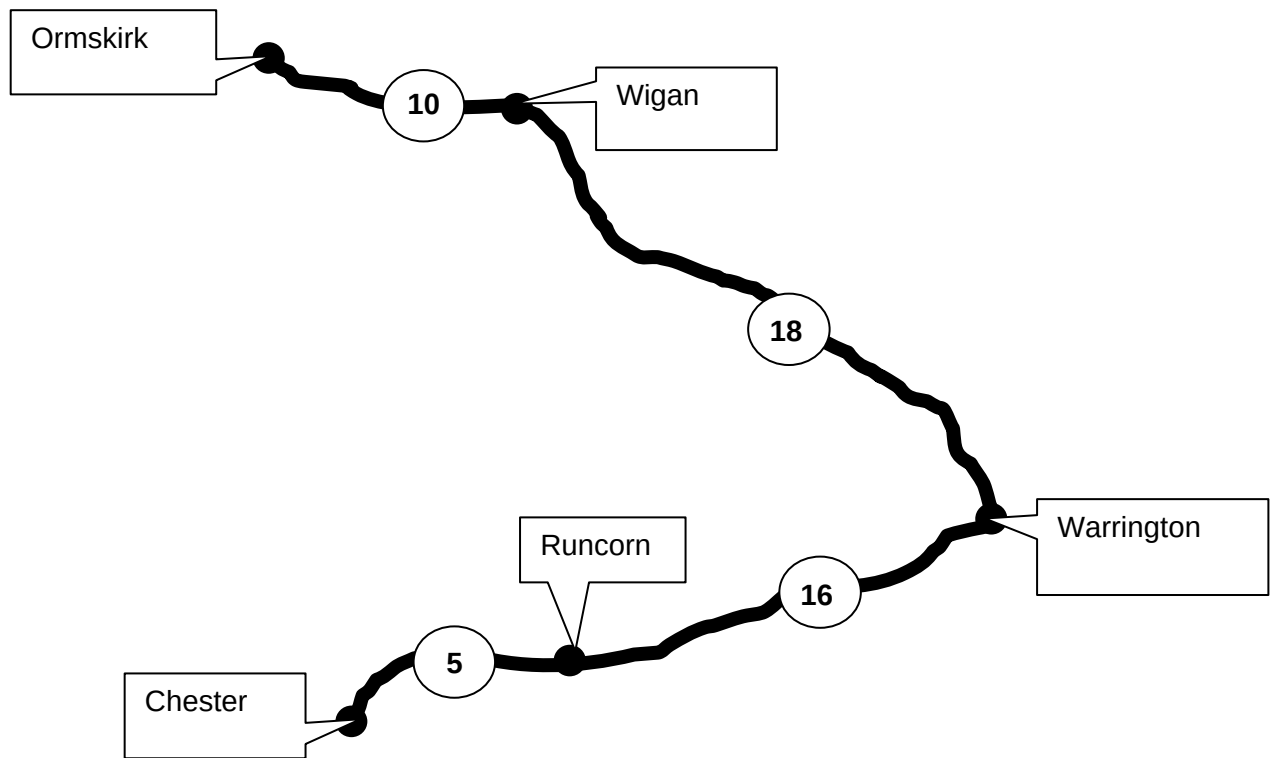


When you stick tiles to the wall, spacers are put between them to make sure each tile is the same distance from the next.
Spacers fix the gap between tiles at 4mm.



Task 2 A Day Out

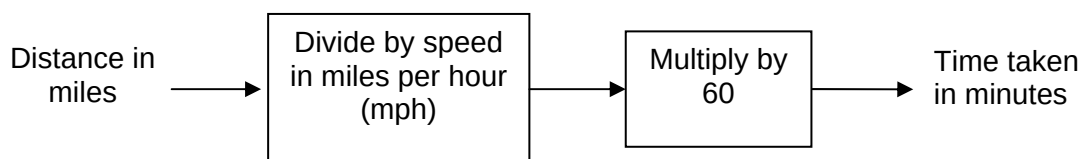
This is a map of the road from Ormskirk to Chester.
Between any two towns is a number in a circle.
This is the distance, in miles, between the towns.



The journey is along different roads where Jean can expect to travel at these speeds.

Journey	Type of road		Expected speed in mph
Ormskirk to Wigan	Main road	A570	50
Wigan to Warrington	Motorway	M6	65
Warrington to Runcorn	Motorway	M53	65
Runcorn to Chester	Main road	A56	50

This function machine is used to work out how many minutes a car takes to travel a distance when it travels at a steady speed.



Here is some information about entry costs for the wildlife park.

Entry costs

Off peak prices are charged before 10:30

Adult

Off peak £12.95

Full price £14.50

Child

Off peak £9.95

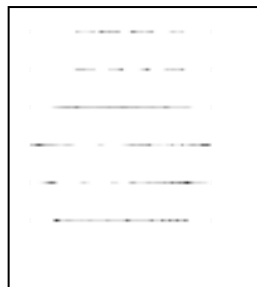
Full price £11.45

Task 3 – Bread

Ingredients to make one large loaf

750 g strong flour
25 g butter
2 teaspoons salt
12 g yeast
525 ml warm water

1 large loaf



The same amounts can also be used to make these different shapes of bread.

18 bread rolls



or

2 small loaves



George buys strong flour in bags of different sizes.



1.5kg



5kg



15kg



25kg

**OCR FUNCTIONAL SKILLS
QUALIFICATION IN MATHS AT LEVEL 1**

Specimen Mark Scheme

The maximum mark for this paper is [60].

**OCR Level 1 Functional Skills Maths
Mark Scheme Referencing**

Our ref	Coverage and Range
N1	Understand and use whole numbers and understand negative numbers in practical contexts
N2	Add, subtract, multiply and divide whole numbers using a range of strategies
N3	Understand and use equivalences between common fractions, decimals and percentages
N4	Add and subtract decimals up to two decimal places
N5	Solve simple problems involving ratio, where one number is a multiple of the other
N6	Use simple formulae expressed in words for one-or-two-step operations
G1	Solve problems requiring calculation, with common measures, including money, time, length, weight, capacity and temperature
G2	Convert units of measure in the same system
G3	Work out areas and perimeters in practical situations
G4	Construct geometric diagrams, models and shapes
S1	Extract and interpret information from tables, diagrams, charts and graphs
S2	Collect and record discrete data and organise and represent information in different ways
S3	Find mean and range
S4	Use data to assess the likelihood of an outcome

Process Skills/Skill Standards

R = Representing

A = Analysing

I = Interpreting

Representing	Our Ref
Understand practical problems in familiar and unfamiliar contexts and situations, some of which are non-routine.	R1
Identify and obtain necessary information to tackle the problem	R2
Select mathematics in an organised way to find solutions	R3
Analysing	
Apply mathematics in an organised way to find solutions to straightforward practical problems for different purposes.	A1
Use appropriate checking procedures at each stage.	A2
Interpreting	
Interpret and communicate solutions to practical problems, drawing simple conclusions and giving explanations.	I1

Task 1 Tiles

Part	Process	Award	On evidence of	Notes	Skill Standards R A I
a*	Find height of Sam's border (S1) Represent	1	1 21.2 (cm)	If units given with 21.2 then must be cm. Accept 212 mm	R1
b*	Find number of whole number of tiles to make border (N1,S1) Represent and Interpret	2	2 3 white and 2 coloured or 5 tiles or 7 tiles with justification OR 1 3 white tiles or 7 tiles or 2 coloured tiles		R2 I1
c	Draw a symmetrical pattern (G4) Represent, Analyse and Interpret	3	OR 2 Any symmetrical pattern using both types of tile 1 Symmetrical pattern very poorly constructed or with one error. Tile type must be clearly identified. AND 1 Correct count of <i>their</i> number of tiles of each type from <i>any</i> pattern	Condone some poor shading or lines that stray if intention is clear. Eg shading straying across many lines or rough freehand lines.	R1 A1 I1
d	Find number of each type of tile needed to complete tiling (N2, G1,G2,G4) Represent, Analyse and Interpret	6	1 Use of central point in tiling pattern 1 Find number of tiles in one row 1 Recognise equal numbers of tile types needed 1 Find number of tiles in five rows 1 Allow one of each tile type to complete row 1 Estimate total number of tiles with justification Allow full follow through at each stage	May be seen as shading on their diagram 100 (or 200) ÷ 15 oe or shading on diagram or repeated addition of 15 May subsume previous two marks May include cutting tiles in half May include cutting tiles in half	R3 R2 A1 I1 I1 I1

Task 2 A Day Out

Part	Process	Award	On evidence of	Notes	Skill Standards R A I
a(i)*	Distance from Ormskirk to Wigan (S1) Represent	1	1 10		R2
a(ii)*	Type of road (S1) Represent	1	1 Main Road or A road		R2
a(iii)*	Expected speed (S1) Represent	1	1 50 (mph)		R2
a (iv)	Expected time (N2,N6,G1) Represent, Analyse and Interpret	3	Award full marks for a correct answer seen 1 Clear attempt to use flow chart or $s = \frac{d}{t}$ 1 $10 \div 50 \times 60$ or 12 without units 1 12 minutes	May be seen in stages cao	R1 A1 I1
a(v)	Reason for different time Interpret	1	1 Because the speed is shown as “expected” so it could be different.	Condone, Clear road so faster, no hold ups, road works, accident, weather	I1
b*	Find the number of miles on motorways (N1,N2,S1) Represent, Analyse and Interpret	3	Award full marks for a correct answer seen 1 18 and 16 or 34 seen 1 (A wrong distance) x 2 1 68	Condone km	R2 A1 I1
c (i)	Find time to leave home to get off peak rate (N2,N4,G1,S1) Represent, Analyse and Interpret	5	1 Attempted use of flow chart with appropriate figures or attempted use of $s = \frac{d}{t}$ 1 One correct time calculation 1 Correct sum of at least two of <i>their</i> times 1 Evidence of “counting back” from 1030 using <i>their</i> total journey time to achieve a start time 1 0940 or 0941	Figures must be those found in the map or information table Using any figures (isw, eg 16.6 min = 16min 60 sec) Any two correctly added Correct answer only	R2 A1 I1 A1 I1

d	Find extra cost if they arrive late (N2,N4,G1,S1)	3	1 Extra cost for one adult OR total Full Price cost 1 Extra cost for both children OR total Off Peak cost 1 £4.55	Correct answer only	A1 I1 I1
	Checking	2	2 Clear evidence of a checking procedure being applied 1 Any recognition that answers are appropriate/expected or inappropriate/not expected or no obvious errors 0 Obvious incorrect answers or no evidence of checking or considering appropriateness of answer		A2 A2
	Analyse and Interpret				
	Analyse				
Total		20		Total	6 7 7

Expected solution

c(i)	Distances on main roads	A Ormskirk to Wigan B Runcorn to Chester	10 miles 5 miles	OR	A + B = 15 miles	
	Distances on motorways	C Wigan to Warrington D Warrington to Runcorn	18 miles 16 miles	OR	C + D = 34 miles	
	Time of journey	A $10 \div 50 \times 60$ B $18 \div 65 \times 60$ C $16 \div 65 \times 60$ D $5 \div 50 \times 60$	12 minutes 16.6 minutes 14.8 minutes 6 minutes	OR	$15 \div 50 \times 60$ $34 \div 65 \times 60$	18 minutes 31.4 minutes
	Total time		49.4 minutes			

(d)	Off Peak Adult	£12.95	= £12.95	
	Off Peak Children	£9.95 x 2	= £19.90	
	Total		= £32.85	
	Full Price Adult	£14.50	= £14.50	
	Full price Child	£11.45 x 2	= £22.90	
	Total		= £37.40	
	Difference	£37.40 – 32.85	= £4.55	
	OR			
	Adult extra	£14.50 – 12.95	= £1.55	
	Children extra	(£11.45 – 9.95) x 2	= £3.00	
	Total		= £4.55	

Task 3 Bread

Part	Process	Award	On evidence of	Notes	Skill Standards R A I
a(i)*	Amount of flour to make one large loaf (S1) Represent	1	1 750(g)		R2
a(ii)*	Amount of butter for 80 large loaves (N5,S1) Represent and Analyse	2	1 Award full marks for a correct answer seen 2000 or 2 without units (or wrong units) or 25 x 80 attempted 1 2000 g or 2 kg		R2 A1
a(iii)	Check error in calculation (N5,S1) Interpret	1	1 He has divided by 2 and not multiplied by 2 oe		I1
b	Use flour for 400 bread rolls (N2,N5,S1) Represent, Analyse and Interpret	3	1 25kg bag without supporting evidence or $400 \div 18$ attempted or 16 or 17 seen 1 Combination of bags supplying more than <i>their</i> 16.7 but not 25 kg bag without supporting evidence. or <i>Their</i> 22 (.2222..) x 750 1 Combination of bags supplying more than <i>their</i> 16.7 kg with supporting evidence.	May be repeated addition of 18 Implied by figs 16 667 $15 + 5$, $15 + 1.5 + 1.5$, $5 + 5 + 5 + 1.5 + 1.5$ etc	R3 A1 I1
c (i)	Draw graph (S1,S2) Represent, Analyse and Interpret	5	Set up two labelled axes for chart 1 Vertical scale appropriate 1 One title on one axis clear 1 Draw bars or lines correctly for <i>their</i> number of small loaves and 1 large loaves 1 Differentiate between bars or lines for different loaves through use of colour or hatching or...	Should use most of axis Heights or plots correct by eye May supply key or annotate or use different coloured lines or dashed and solid lines	R3 A1 I1 R3 I1

c (ii)	Describe trends (S1)	2	1 Statement describing general shape 1 ONE OF Statement comparing relative numbers sold (small loaves to large loaves) Statement comparing specific numbers.	High→low →high Some examples Small loaves usually sell fewer than large except on Wednesday He sells more small loaves than large on Wednesday	R1 I1																																																
c (iii)	Recommend amounts of bread to make daily (S1)	4	2 Large loaves Four of <table border="1"> <tr><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td>110</td><td>90</td><td>60 or 70</td><td>120</td><td>130</td><td>150</td></tr> </table> OR 1 With at least one justification Four of <table border="1"> <tr><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td>110</td><td>90</td><td>60 or 70</td><td>120</td><td>130</td><td>150</td></tr> </table> AND 2 Without justification Small loaves Four of <table border="1"> <tr><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td>80</td><td>60 or 80</td><td>60 or 80</td><td>60</td><td>80</td><td>100</td></tr> </table> OR 1 With at least one justification Small loaves Four of <table border="1"> <tr><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td>80</td><td>60 or 80</td><td>60 or 80</td><td>60</td><td>80</td><td>100</td></tr> </table> Without justification	M	T	W	T	F	S	110	90	60 or 70	120	130	150	M	T	W	T	F	S	110	90	60 or 70	120	130	150	M	T	W	T	F	S	80	60 or 80	60 or 80	60	80	100	M	T	W	T	F	S	80	60 or 80	60 or 80	60	80	100	Reason for rounding up or down, minimising waste... Accept numbers different to these if justified eg, always rounds down to avoid waste If no rounding to 10 or 20 then maximum of 1 mark (probably the case where they copy the table) If only TOTAL recommended for a loaf type in a week then maximum 1 mark. Large 660 or 670 (Given total 661) Small 440 or 460 (Given total 470)	R2 A1 I1
M	T	W	T	F	S																																																
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	Analyse				
	Total	20	Total		7 6 7
				Total across paper	19 20 21
				Total percentage across paper	32 33 35

Total marks in Assessment allocated to closed response questions: 12/60 = 20 %