

# Catering skills: costing meals

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**You must show all your working out even if you use a calculator.**



## Smithy's Caterers

Take the hassle out of your party.  
No occasion too big or too small.  
Do not worry, just give us a call.



Item	Servings in one portion	Cost per portion	Item	Servings in one portion	Cost per portion
Prawn cocktail	3	£5.50	Topside of beef	3	£8.50
Melon	6	£4.10	Turkey	3	£7.80
Garlic mushrooms	3	£4.00	Pork	3	£8.20
Soup	3	£2.50	Lamb	3	£8.80
Cauliflower	6	£8.00	Gravy	3	£2.25
Mashed potatoes	6	£6.00	Nut loaf	3	£4.40
Roast potatoes	3	£4.00	Chocolate fudge cake	2	£1.50
Peas	6	£4.20	Fruit salad	3	£4.30
Carrots	3	£2.20	Cheesecake	3	£6.00
Runner beans	3	£2.60	Apple pie	2	£2.60
Cabbage	2	£1.50	Cheese and biscuits	6	£6.50

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**Calculate the costs of the following meals. Remember to check the number of servings per portion carefully.**

1) For 3 people:

prawn cocktail, roast potatoes, carrots, runner beans, lamb, gravy, and cheesecake.

2) For 3 people:

melon, cauliflower, mashed potatoes, peas, topside of beef, gravy, and fruit salad.

3) For 6 people:

garlic mushrooms, lamb, cabbage, carrots, peas, gravy, and chocolate fudge cake.

4) For 6 people:

prawn cocktail, mashed potatoes, roast potatoes, carrots, beans, pork, gravy, and cheese and biscuits.

5) For 12 people:

melon, cauliflower, mashed potatoes, peas, runner beans, gravy, turkey, and cheesecake.

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6) For 12 vegetarians:

garlic mushrooms, cauliflower, roast potatoes, carrots, cabbage, nut loaf, and fruit salad.

7) The vegetarians did not pay their bill on time. For every day that the bill was unpaid, £5 is added to the cost. After 5 days what was the total cost of their bill?

8) After 15 days what was the total cost of the vegetarian bill?

**For questions 9 and 10, show your workings out on a separate piece of paper.**

9) You plan a party for 12 people. This must include: a starter; potatoes, 3 other different vegetables; 1 kind of meat; 1 dessert.

How much does it come to? \_\_\_\_\_

10) You have £120 to plan a party for 12 people.

You must include: a starter, potatoes; 3 vegetables, 1 meat and 1 dessert.

Can you do it? \_\_\_\_\_

Do you have any change? \_\_\_\_\_

# Catering maths: perimeter and area

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**You must show all your working out even if you use a calculator.**

1. You have been asked to put up a border on the dining room walls.  
The room is rectangular. It is 6 metres wide and 12 metres long.



- a) How many metres do you need to go all round the dining room?
  
  
  
  
  
  
  
  
  
  
  - b) Explain why you might use a little less border than your answer.
2. Each roll of border is 5 metres long.  
How many rolls do you need to buy?



3. Each roll costs £3.50. How much will it cost in total?

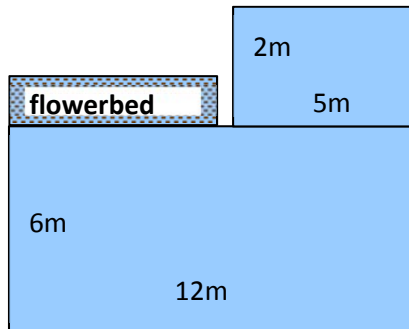
# Catering maths: perimeter and area

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**You must show all your working out even if you use a calculator.**

4. The dining room and reception carpet needs replacing.  
Look at the plan below. (Not drawn to scale)

a) How many square metres of carpet do you need to replace?



b) The flowerbed in front of the restaurant is 50 cm wide and 7 metres long.  
What is the area of the flowerbed in  $m^2$ ?

5. A handrail needs to be built around three sides of the disabled persons' toilet.  
The room is square and one side is  $2\frac{1}{2}$  m long.

How many metres of rail will be needed?

# Catering maths: percentages

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**You must show all your working out even if you use a calculator.**

1. You will come across these common fractions in catering.

Write each fraction as a percentage. One has been done for you.

a)  $\frac{1}{2} =$

c)  $\frac{1}{4} =$

b)  $\frac{3}{4} =$

d)  $\frac{1}{10} = 10\%$

2. Look at the menu below and work out 10% service charge will be for the following meals and the total cost.



 <b>Menu</b> Starter £2.50 Main £6.00 Dessert £3.50
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a) A starter, main and dessert \_\_\_\_\_

b) A main and a dessert \_\_\_\_\_

c) Two people having a starter and main meal \_\_\_\_\_

d) Five people having a main and a dessert \_\_\_\_\_

3. A 10% service charge is added to a bill of £75. What will the final total be?



# Catering maths: percentages

Name: \_\_\_\_\_ Date: \_\_\_\_\_

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8. The sausages you usually buy at £30 have been increased by 30%. How much would they cost now?

9. Lamb chops were £80 box. They have been increased by 25%. How much are you paying for them now?

10. A 600g box of rice has 20% extra free. What weight will it be now?

11. A three course meal was £15.50. Now has 10% off. What's the new price?

12. Complete the information in the advert below.

## **Bank holiday special**

Lager 20% off. Was £3.00, Now \_\_\_\_\_

Bottle of wine 15% off. Was £10.00. Now \_\_\_\_\_

Four course meal 25% off. Was £24.50. Now \_\_\_\_\_



# Catering maths: multiplication and division

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**You must show all your working out even if you use a calculator.**

1. Your kitchen uses 15 large bottles of washing up liquid a month. Each bottle contains 2 litres. How many litres are used in a month?



2. A trainee earns £5.95 per hour. How much does she earn in 7 hours?

3. Some tables and chairs are delivered to the restaurant. There are 7 round tables and 49 chairs. How many chairs should be put round each table?

4. You need 100 tiles to tile a kitchen wall. Tiles are sold in boxes of 5. How many boxes will you need to buy?

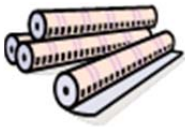
5. You have 72 sausages delivered. In each pack there are 9 sausages. How many packs do you have?

6. 130 children are coming to the Halloween party at your restaurant. Each table can seat 6 children. How many tables will you need?

# Catering maths: multiplication and division

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**You must show all your working out even if you use a calculator.**



7. It takes 24 lengths of wallpaper, each 3m long, to paper the dining room. A roll of wallpaper is 10m long. How many rolls will you need?

8. You are stocktaking. There are 7 boxes. Each box contains 8 tins of beans. How many tins of beans do you have?

9. An egg box holds half a dozen eggs. You have 6 full boxes and 3 empty ones. How many eggs do you have altogether?

10. You need 125g of sugar to make one Victoria sponge. How much sugar will you need to make 4 of them?

11. You need 550 g of flour to make a small white loaf. How much flour will you need to make 6 loaves? Give your answer in kilograms.



**12. Use a coloured pen to go back over each question (1-11) and check your answers. You must show how you have checked them.**

# Catering maths: E3-L1 Functional Maths

## Teaching notes, answers and curriculum mapping

Page	Answer	Functional Maths (see p.13-14)		
		E3	L1	
2	1	$£: 5.50 + 4 + 2.20 + 2.60 + 8.80 + 2.25 + 6 =$	f h k	d g
	2	$£: 2.05 + 4 + 3 + 2.10 + 8.50 + 2.25 + 4.30 =$	b f h k	d e g
	3	$£: 8.00 + 17.60 + 4.50 + 4.40 + 4.20 + 4.50 + 4.50 =$	b f h k	d e g
	4	$£: 11 + 6 + 8 + 4.40 + 5.20 + 16.40 + 4.50 + 6.50$	b f h k	d e g
	5	$£: 8.20 + 16 + 12 + 8.40 + 10.40 + 9 + 31.20 + 24 =$	b f h k	d e g
3	6	$£: 16 + 16 + 16 + 8.80 + 9 + 17.60 + 17.20 = £100.60$	b f h k	d e g
	7	$£100.60 + (5 \times £5.00) = £125.60$		d f g
	8	$£100.60 + (15 \times £5.00) = £175.60$		d f g
	9	To be checked with tutor	b f h k	d e g
	10	To be checked with tutor	b f h k	d e g
4	1a	$(6 \times 2) = (12 \times 2) = 36$ m border	b h i j	i
	1b	Because the border might not be used where there are doors and/or windows (this will depend on where the border is positioned on the wall).	<b>Interpret:</b> Draw conclusions in light of situations. Consider appropriateness and accuracy of results & conclusions.	
	2	$36\text{m} \div 5 = 8$ (round up) rolls of border (assumes joins are made at any point & border goes round the entire room)	b	b g
	3	$8 \times £3.50 = £28.00$	f	g
	4a	$(6 \times 12) + (2 \times 5) = 82$ m <sup>2</sup>		i
5	4b	$7 \times 0.5 = 3.5\text{m}^2$ or $7 \times 1/2 = 3 \frac{1}{2}\text{m}^2$		h i
	5	$2.5 \times 3 = 7.5\text{m}$ or $2 \frac{1}{2} \times 3 = 7 \frac{1}{2}$ m rail	i d h	c d
	6	1 a) 50% b) 75% c) 25%		
6	2	a) $£12 + £1.20 = £13.20$ b) $£9.50 + £0.95 = £10.45$ c) $£17 + £1.70 = £18.70$ d) $£42.50 + £4.25 = £46.75$	f h k	c d g
	3	$£75 + £7.50 = £82.50$		c g
	7	$£45 - £4.50 = £40.50$		c g
7	5	$360 \times 5/100 = £18$ delivery charge		c g
	6	$250 \times 20/100 = 50$ people		c g
	7	$£48/4 = £12$ each	b	c g
	8	$£30 + £9 = £39$		c g
8	9	$£80 + £20 = £100$		c g
	10	$600\text{g} + 120\text{g} = 720\text{g}$		c g
	11	$£15.50 - £1.55 = £13.95$		c g
	12	Lager $£2.60$ Wine $£8.50$ Meal $£24.50 - £6.13$ (rounded up) = $£18.37$		c g
	9	1 $15 \times 2\text{l} = 30$ litres per annum	h	b g
9	2	$£5.95 \times 7 = £41.65$	f h	g
	3	$49 \div 7 = 7$ chairs around each table reiterate		b
	4	$100 \div 5 = 20$ boxes of tiles	b	b
	5	$72 \div 9 = 8$ packs		b
	6	$130 \div 6 = 22$ tables (rounded up)		b
	10	7 $3 \times 3 = 9\text{m}$ so 3 lengths per roll. $24 \div 3 = 8$ rolls of paper.		b g
10	8	$7 \times 8 = 56$ tins beans	b	
	9	$6 \times 6 = 36$ eggs	b	
	10	$125\text{g} \times 4 = 500\text{g}$	b	
	11	$550\text{g} \times 6 = 3300\text{g} = 3.3\text{kg}$		b g h
		Various inverse operations. Multi-stage checking for some questions. Units clearly stated. E.g. £, litres, rolls, etc.	<b>Analysis:</b> Use simple / appropriate checking procedures.	

## Catering maths: E3-L1 Functional Maths

### Teaching notes, answers and curriculum mapping

#### Background and teaching notes

This activity was first used with a group of young adult L1-2 catering students.

#### Functional Mathematics

This resource is ideal for underpinning and revising many Functional Maths coverage and range statements – particularly at Entry Level 3 and Level 1. However, in Functional Maths it is the process skills that are assessed; these are key to successful Functional Maths learning and must always be developed and stressed during teaching (see next page).

#### FUNCTIONAL MATHEMATICS Coverage and Range statements (indicative only)

Coverage and range statements provide an indication of the type of mathematical content candidates are expected to apply in functional contexts. Relevant content can also be drawn from equivalent National Curriculum levels and the Adult Numeracy standards.

*Highlighting and ✓ indicates the main coverage and range skills covered in this resource, although these will vary with the student group and how the resource is used by the teacher.*

#### Entry Level 3

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>a) add and subtract using three-digit numbers ✓</li> <li>b) solve practical problems involving multiplication and division by 2, 3, 4, 5 and 10 ✓</li> <li>c) round to the nearest 10 or 100</li> <li>d) understand and use simple fractions ✓</li> <li>e) understand, estimate, measure and compare length, capacity, weight and temperature</li> <li>f) understand decimals to two decimal places in practical contexts ✓</li> </ul> | <ul style="list-style-type: none"> <li>g) recognise and describe number patterns</li> <li>h) complete simple calculations involving money and measures ✓</li> <li>i) recognise and name simple 2D and 3D shapes and their properties ✓</li> <li>j) use metric units in everyday situations ✓</li> <li>k) extract, use and compare information from lists, tables, simple charts and simple graphs ✓</li> </ul> |
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#### Level 1

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>a) Understand and use whole numbers and understand negative nos. in practical contexts</li> <li>b) Add, subtract, multiply and divide whole numbers using a range of strategies ✓</li> <li>c) Understand and use equivalences between common fractions, decimals and percentages ✓</li> <li>d) Add and subtract decimals up to two decimal places ✓</li> <li>e) Solve simple problems involving ratio, where one number is a multiple of the other</li> <li>f) Use simple formulae expressed in words for one- or two-step operations</li> </ul> | <ul style="list-style-type: none"> <li>g) Solve problems requiring calculation, with common measures, including money, time, length, weight, capacity and temperature ✓</li> <li>h) Convert units of measure in the same system ✓</li> <li>i) Work out areas and perimeters in practical situations ✓</li> <li>j) Construct geometric diagrams, models and shapes</li> <li>k) Extract and interpret information from tables, diagrams, charts and graphs ✓</li> <li>l) Collect and record discrete data and organise and represent information in different ways</li> <li>m) Find mean and range</li> <li>n) Use data to assess the likelihood of an outcome</li> </ul> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**References:** Ofqual (2009), *Functional Skills criteria for Mathematics: Entry 1, Entry 2, Entry 3, level 1 and level 2.*

<http://www.ofqual.gov.uk/files/2009-11-functional-skills-criteria-for-mathematics.pdf>

This resource also covers many **adult numeracy curriculum** <http://www.excellencegateway.org.uk/sflcurriculum> elements. For related resources and further curriculum links please visit the download page for this resource at [www.skillsworkshop.org](http://www.skillsworkshop.org)

# Catering maths: E3-L1 Functional Maths Teaching notes and curriculum mapping

Reference (Columns 1-3 only): Ofqual (2009), *Functional Skills criteria for Mathematics: Entry 1, Entry 2, Entry 3, level 1 and level 2*. <http://www.ofqual.gov.uk/>

## FUNCTIONAL MATHEMATICS PROCESS SKILLS

### Process Skills (all levels)

### Entry 3 skills standards

### Level 1 skill standards



### Skillsworkshop tips

To develop this skill, encourage learners to:

#### Representing

##### *Selecting the mathematics and information to model a situation*

- Recognise that a situation has aspects that can be represented using mathematics
- Make an initial model of a situation using suitable forms of representation
- Decide on the methods, operations and tools, including ICT, to use in a situation
- Select the mathematical information to use

- Understand practical problems in familiar contexts and situations
- Begin to develop own strategies for solving simple problems
- Select mathematics to obtain answers to simple given practical problems that are clear and routine

- Understand practical problems in familiar and unfamiliar contexts and situations, some of which are non-routine
- Identify and obtain necessary information to tackle the problem
- Select mathematics in an organised way to find solutions

#### Represent

- Highlight information they need and/or cross out unneeded information. ✓
- Arrange or reorganise given or selected information as needed e.g. in a table or list.
- Show all their working out. ✓  
Note that calculators are permitted at all levels of Functional Maths assessment but learners should get into the habit of recording all their working out – whether or not a calculator is used.

#### Analysing

##### *Processing and using mathematics*

- Use appropriate mathematical procedures
- Examine patterns and relationships
- Change values and assumptions or adjust relationships to see the effects on answers in models
- Find results and solutions

- Apply mathematics to obtain answers to simple given practical problems that are clear and routine
- Use simple checking procedures

- Apply mathematics in an organised way to find solutions to straight-forward practical problems for different purposes
- Use appropriate checking procedures at each stage

#### Analyse

- Check all their calculations or procedures and show proof that they have done so. ✓
- Investigate other options / situations (e.g. research related topics or items on the web).
- Create new questions about given information and try them out on others. ✓
- Mark each other's work. ✓

#### Interpreting

##### *Interpreting and communicating the results of the analysis*

- Interpret results and solutions
- Draw conclusions in light of situations
- Consider the appropriateness and accuracy of results and conclusions
- Choose appropriate language and forms of presentation to communicate results and solutions

- Interpret and communicate solutions to practical problems in familiar contexts and situations

- Interpret and communicate solutions to practical problems, drawing simple conclusions and giving explanations

#### Interpret

- Draw conclusions
- Discuss and justify their choice of method and their answer.
- Explain their answers and conclusions to others – verbally ✓ and in writing.

✓ = tip that works particularly well with this resource