Childcare maths: costing equipment

Name: _____ Date:_____

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

Task 1

Think about the 10 most essential pieces of equipment you might use. ** You have £500 to spend.

Task 2

Look on the internet and cost these **ten** items. Make a list to show your results.

Task 3 On a separate sheet produce a table to answer questions 3a, 3b and 3c. (You can draw the table by hand or do it on the computer.)

a) Produce a table to show your chosen equipment and the prices.

b) Round each price to the nearest £10. Use the rounded prices to **estimate** the total cost.

c) Now add up the exact prices and record the total in your table.

Task 4

Have much money have you got left?
or
How much money did you go over?

Childcare 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 nursery walls.

The nursery is rectangular. It is 6 metres wide and 12 metres long.

a) How many metres do you need to go all round the nursery?

b) Explain why you will probably 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?

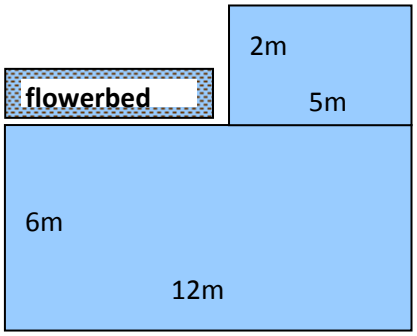
3. Each roll costs £3.50. How much will it cost in total?

Childcare maths: perimeter and area

Name: _____ Date:_____

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

4. The nursery 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 nursery 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 2½ m long.

   How many metres of rail will be needed?

Childcare maths: addition and subtraction

Name: _____ Date:_____

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

1. You have a box of 928 red and green bricks. 346 are green. How many are red?

2. In your nursery you have used 43 bottles of poster paint. You started with 220. How many do you have left?

3. For charity, you and your staff are doing face painting and hair braiding at a local fete. 114 children have their faces painted and 59 different children have their hair braided. How many children altogether?

4. 270 parents come to the fete. 182 are mums. How many dads are there?

5. You have a box of 800 disposable gloves. 333 have been used. How many have you still got?

Childcare maths: addition and subtraction

Name: _____ Date:_____

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

6. You order 370 coloured pencils, 285 wax crayons and 120 sticks of chalk.
   a) How many more coloured pencils than wax crayons?

   b) How many items altogether?

7. You have two hours to write some children's reports. The first three take you 35 minutes to do. How many minutes do you have left?

8. You go to visit a nursery fair. 299 people watch a demonstration about a new children's computer and 540 watch a video about playground equipment. How many more people watch the video?

9. **Use a coloured pen to go back over each question (1-8) and show how you can check your answers.**

Childcare maths: multiplication and division

Name: _____ Date:_____

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

1. Your nursery manager has asked you to fill in the costs on this order form and to give a total.

Code	Item	Price each £	Quantity	Total £
PA	Painting apron	2.50	**5**	
PP	12x pencils	3.20 pack	**8** packs	
WL	Washing up liquid 2 litres	2.95 each	**7**	
SS	Storage stack	7.00 each	**5**	
NP	Nappies	6.50 pack	**6** packs	
			TOTAL	

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

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

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

Childcare maths: multiplication and division

Name: _____ Date:_____

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

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

6. On sports day, 224 children will need to be divided into 7 teams. How many children will be in each team?

7. The Celebrations chocolate box has 85 sweets in it. You want to put them 5 to a bag for the children's party. How many bags will you need?

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

9. **Use a coloured pen to go back over each question (1-8) and check your answers. This includes stating the correct units where needed.**

Childcare maths: E3-L1 Functional Maths

Teaching notes, answers and curriculum mapping

Page		Answer	Functional Maths (see p.9-10)	
			E3	**L1**
1	**all**	Individual answers to be checked with tutor.	**c f h k**	**b d l**
2	**1a**	(6 x 2) = (12 x 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)	**Interpreting:** Draw conclusions in light of situations. Consider the appropriateness and accuracy of results and conclusions.	
	2	36m ÷ 5 = 8 (rounded up) so 8 rolls of border. This assumes joins can be made at any point and that the border goes round the entire room.	**b**	**b g**
	3	8 x £3.50 = £28.00	**f**	**g**
3	**4a**	(6 x 12) + (2 x 5) = 82 m^2		**i**
	4b	7 x 0.5 = 3.5m^2 or 7 x 1/2 = 3 ½ m^2		**h i**
	5	2.5 x 3 = 7.5m or 2 ½ x 3 = 7 ½ m rail	**i d h**	**c d**
4	**1**	928 - 346 = 582 red bricks	**a**	
	2	220 - 43 = 177 bottles left	**a**	
	3	114 + 59 = 173 children	**a**	
	4	270 - 182 = 88 dads	**a**	
	5	800 - 333 = 467 gloves left	**a**	
5	**6a**	370 - 285 = 85 more coloured pencils than wax crayons	**a**	
	6b	370 + 285 + 120 = 775 items in total	**a**	
	7	2hr x 60 = 120 min. 120 – 35 = 85 minutes left	**h j**	**g h**
	8	540 – 299 = 241 more watched the video	**a**	
	9	To check subtraction use addition. E.g. No 2: 220 - 43 = 177. To check: does 'your answer' + 43 = 220. To check addition of 2 nos. use subtraction; to check addition of 2 or more nos. add them up in a different order.	**Analysis:** Use simple / appropriate checking procedures. Note: simply stating 'use a calculator to check' is not acceptable.	
6	**1**		**f h**	**d g k**
	2	15 x 2l = 30 litres per annum	**h**	**b g**
	3	£5.95 x 7 = £41.65	**f h**	**g**
	4	49 ÷ 7 = 7 chairs around each table		**b**
7	**5**	100 ÷ 5 = 20 boxes of tiles	**b**	**b**
	6	224 ÷ 7 = 32 children per team		**b**
	7	85 ÷ 5 = 17 party bags	**b**	**b**
	8	3 x 3 = 9m so 3 lengths per roll. 24 ÷ 3 = 8 rolls of paper.		**b g**
	9	Various inverse operations. Multi-stage checking for some questions. Units clearly stated. E.g. £, litres, rolls, etc.	**Analysis:** Use simple / appropriate checking procedures.	

Code	Item	Price each £	Quantity	Total £
HS	Apron	2.50	**5**	12.50
PP	Pencils x 12	3.20	**8**	25.60
WL	Washing up	2.95	**7**	20.30
SS	Storage	7.00	**5**	35.00
NP	Nappies	6.50	**6**	39.00
			TOTAL	£132.40

Childcare 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 childcare 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

a) add and subtract using three-digit numbers ✓
b) solve practical problems involving multiplication and division by 2, 3, 4, 5 and 10 ✓
c) round to the nearest 10 or 100 ✓
d) understand and use simple fractions ✓
e) understand, estimate, measure and compare length, capacity, weight and temperature ✓
f) understand decimals to two decimal places in practical contexts ✓
g) recognise and describe number patterns
h) complete simple calculations involving money and measures ✓
i) recognise and name simple 2D and 3D shapes and their properties ✓
j) use metric units in everyday situations ✓
k) extract, use and compare information from lists, tables, simple charts and simple graphs ✓

Level 1

a) Understand and use whole numbers and understand negative nos. in practical contexts ✓
b) Add, subtract, multiply and divide whole numbers using a range of strategies ✓
c) Understand and use equivalences between common fractions, decimals and percentages ✓
d) Add and subtract decimals up to two decimal places ✓
e) Solve simple problems involving ratio, where one number is a multiple of the other
f) Use simple formulae expressed in words for one- or two-step operations
g) Solve problems requiring calculation, with common measures, including money, time, length, weight, capacity and temperature ✓
h) Convert units of measure in the same system ✓
i) Work out areas and perimeters in practical situations ✓
j) Construct geometric diagrams, models and shapes
k) Extract and interpret information from tables, diagrams, charts and graphs ✓
l) Collect and record discrete data and organise and represent information in different ways ✓
m) Find mean and range
n) Use data to assess the likelihood of an outcome

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

Childcare 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
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
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
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

Skillsworkshop tips

To develop this skill, encourage learners to:

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.

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. ✓

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