

Out for a drink

Name _____ Date _____

Source: <http://www.churchendbrewery.co.uk/>



Church End Brewery started life in an old coffin workshop behind the Griffin Inn, Shustoke, Warwickshire. Its goal was to be a 'hands on' craft brewery making a wide range of cask conditioned beers. The Brewery philosophy only allows the use of good quality raw materials, such as floor malted barley and whole hops; definitely no processed sugars!

M-Reg was the first brew on August 1st 1994. They now have a range of over forty distinct products including fruit beers made with real fruit, herb beers made with fresh herbs, wheat beers made with a high proportion of malted wheat, black beers with chocolate malt, honey beers made with real honey, etc. etc.

The plant was constructed from mainly second hand stainless steel equipment, with an output capacity of four brewer's barrels per brew (36 gallons is a brewer's barrel). At that time, an average of five brews a week were made and everything that was brewed was sold.

Today, Church End Brewery is housed in a refurbished social club. During 2008 the brewing plant upgraded to 20 Barrels per brew. During the installation new greener refrigeration and gas burners were installed, and this has already led to a 25% reduction in the consumption of both.

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Opening Hours

Tap Room opening hours are:

Thursday 18:00-23:00

Friday 12:00-23:00

Saturday 12:00-23:00

Sunday 12:00-22:30

Today's Beers

Bats In The Belfry: A soft, full flavoured wheat beer made with real grapefruit. ABV: % 5.6 £3.35/pint

Fallen Angel: A sharp, full flavoured pale bitter. Bucketfuls of American hops, give it that lemony edge. ABV: % 5.0 £3.20/pint

Grave Digger's Ale: Dark black and red in colour, with a complex mixture of chocolate and roast flavours. The use of two different hops, gives the beer a complex feel and smooth finish. ABV: % 3.8 £2.90/pint

Shakes Beer : Appropriately brewed in Shakespeare's county. Enjoy the blend of four hops and four malts, along with a hint of chocolate, to give it a light brown colour. ABV: % 4.0 £3.05/pint



Please note: you must be 18 to enter the bars.

ABV = alcohol by volume

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Questions

Show all your working out clearly.

Jayne, John, Jenny and Jack want to meet up at the Church End Brewery for a lunchtime drink. John works weekends until 5 pm.

Q1. When could they all get together?

They have such a good time that they agree to meet again the following Saturday night at 7.30 pm. Jayne lives 40 minutes away from the brewery.

Q2. When should she leave home, to arrive on time?

Jenny buys the first round of drinks. She and Jack both have a pint of Fallen Angel. John has a pint of Grave Digger's Ale and Jayne a pint of Shakes Beer.

Q3. How much does Jenny pay for the drinks?

Q4. If she uses a £20 note to pay, how much change should she get?

Q5. Give two possible combinations for how the change is paid?

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Jack buys another round of drinks. He and Jayne have the same as the first round, but Jenny has a half pint of Bats In The Belfry and John asks for a pint of the least alcoholic beer available.

Q6. Which beer does he buy for John?

Q7. Rounding to the nearest penny, how much does Jack pay for the drinks?

Q8. How much more or less does he pay than Jenny?

Jayne buys one pint of each beer.

Q9. What is the total price she pays?

Q10. What is the range and mean of the prices?

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Jayne puts the beer down on their table, without identifying the drinks.

Q11. Jenny takes a drink at random. What is the probability that she selects the pint of Grave Digger's Ale?

Jayne wants to be home by 2300 hours.

Q12. At what time should she leave?

John has £5.20 left. A bus ticket home costs £2.25.

Q13. If he buys another pint, will he have to walk?

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Challenge

Q1. For how many years has the brewery been open?

Q2. When the brewery first opened, how many gallons of beer were produced in an average week?

Q3. Using the upgraded brewing plant, how many pints are made in each brew?

Functional Skills Mathematics mapping – coverage and range statements

This resource is ideal for underpinning many Functional Maths coverage and range statements – particularly at Entry Level 3 and Level 1 (see ticked statements below).

However, in Functional Maths exams **it is the process skills that are assessed; these are key to successful Functional Maths teaching and learning and must always be developed and stressed during teaching** (see next page).

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.

✓ *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 2

- | | |
|---|---|
| <ul style="list-style-type: none"> a) understand and use whole numbers with up to two significant figures b) understand and use addition/subtraction in practical situations ✓ c) use doubling and halving in practical situations d) recognise and use familiar measures, including time and money ✓ | <ul style="list-style-type: none"> e) recognise sequences of numbers, including odd and even numbers f) use simple scales and measure to the nearest labelled division g) know properties of simple 2D and 3D shapes h) extract information from simple lists ✓ |
|---|---|

Entry Level 3

- | | |
|--|--|
| <ul style="list-style-type: none"> a) add and subtract using three-digit numbers b) solve practical problems involving multiplication and division by 2, 3, 4, 5, 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 ✓ | <ul style="list-style-type: none"> 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

- | | |
|---|---|
| <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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>

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Answers and curriculum mapping

FUNCTIONAL MATHEMATICS PROCESS SKILLS

Process Skills (all levels)	Entry 3 skills standards	Level 1 skill standards	Skillsworkshop tips
<p>Representing</p> <p><i>Selecting the mathematics and information to model a situation</i></p> <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<p> Skillsworkshop tips</p> <p>To develop this skill, encourage learners to:</p> <p>Represent</p> <ul style="list-style-type: none"> 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. ✓ <p>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.</p>
<p>Analysing</p> <p><i>Processing and using mathematics</i></p> <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Apply mathematics to obtain answers to simple given practical problems that are clear and routine Use simple checking procedures 	<ul style="list-style-type: none"> Apply mathematics in an organised way to find solutions to straight-forward practical problems for different purposes Use appropriate checking procedures at each stage 	<p>Analyse</p> <ul style="list-style-type: none"> 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. ✓
<p>Interpreting</p> <p><i>Interpreting and communicating the results of the analysis</i></p> <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Interpret and communicate solutions to practical problems in familiar contexts and situations 	<ul style="list-style-type: none"> Interpret and communicate solutions to practical problems, drawing simple conclusions and giving explanations 	<p>Interpret</p> <ul style="list-style-type: none"> Draw conclusions Discuss and justify their choice of method and their answer. ✓ Explain their answers and conclusions to others – verbally ✓ and in writing. <p>✓ = tip that works particularly well with this resource</p>

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Answers and curriculum mapping

This resource also covers many **adult numeracy curriculum** elements: <http://www.excellencegateway.org.uk/sflcurriculum>

Adult Numeracy references

N1/E3.9 Use and interpret +, -, x, ÷ and = in practical situations for solving problems

N2/E3.3 Read, write and understand decimals up to two decimal places in practical contexts (such as: common measures to one decimal place, e.g. 1.5 m; money in decimal notation, e.g. £2.37)

N2/E3.4 Use a calculator to calculate using whole numbers and decimals to solve problems in context, and to check calculations

MSS1/E3.1 Add and subtract sums of money using decimal notation

N2/L1.7 Approximate decimals by rounding to a whole number or two decimal places

MSS1/L1.1 Add, subtract, multiply and divide sums of money and record

MSS1/L1.2 Read, measure and record time in common date formats and in the 12-hour and 24-hour clock

MSS1/L1.3 Calculate using time

MSS1/L1.7 Convert units of measure in the same system

HD1/L1.1 Extract and interpret information (e.g. in tables, diagrams, charts and line graphs)

HD1/L1.3 Find the arithmetical average (mean) for a set of data

HD1/L1.4 Find the range for a set of data

HD2/L1.2 Express the likelihood of an event using fractions, decimals & percentages with the probability scale of 0 to 1

For related resources and further curriculum links please visit the download page for this resource at www.skillsworkshop.org

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Answers and curriculum mapping

Questions (Q1-13 are based on the text on page 2)

Jayne, John, Jenny and Jack want to meet up at the Church End Brewery for a lunchtime drink. John works weekends until 5 pm.

Q1. When could they all get together? Friday lunchtime

They have such a good time that they agree to meet again the following Saturday night at 7.30 pm. Jayne lives 40 minutes away from the brewery.

Q2. When should she leave home, to arrive on time? 6:50 pm (1850)

Jenny buys the first round of drinks. She and Jack both have a pint of Fallen Angel. John has a pint of Grave Digger's Ale and Jayne a pint of Shakes Beer.

Q3. How much does Jenny pay for the drinks? $(£3.20 \times 2) + £2.90 + £3.05 = £12.35$

Q4. If she uses a £20 note to pay, how much change should she get? £7.65

Q5. Give two possible combinations for how the change is paid? For example: £5 note, £2 coin, 50p, 10p, 5p.

Jack buys another round of drinks. He and Jayne have the same as the first round, but Jenny has a half pint of Bats In The Belfry and John asks for a pint of the least alcoholic beer available.

Q6. Which beer does he buy for John? Grave Diggers (same as he had before)

Q7. Rounding to the nearest penny, how much does Jack pay for the drinks? $£3.20 + £3.05 + £2.90 + £1.675$ (rounds to £1.68) = £11.83

Q8. How much more or less does he pay than Jenny? He pays 52p less

Jayne buys one pint of each beer.

Q9. What is the total price she pays? $£3.20 + £3.05 + £2.90 + £3.35 = £12.50$

Q10. What is the range and mean of the prices? Mean = £3.125 (rounds to £3.13). Range = £0.45

Jayne puts the beer down on their table, without identifying the drinks.

Q11. Jenny takes a drink at random. What is the probability that she selects the pint of Grave Digger's Ale? $\frac{1}{4}$ or 25% or 0.25 (one in four chance)

Jayne wants to be home by 2300 hours.

Q12. At what time should she leave? Friday lunchtime

John has £5.20 left. A bus ticket home costs £2.25.

Q13. If he buys another pint, will he have to walk? Not if it's a pint of Grave Digger's Ale!

Challenge (based on the text on page 1)

Q1. For how many years has the brewery been open? $2012 - 1994 = 18$ years. Change to suit the year the question is asked in.

Q2. When the brewery first opened, how many gallons of beer were produced in an average week? $5 \times 4 \times 36 = 720$ gallons

Q3. Using the upgraded brewing plant, how many pints are made in each brew? There are 8 pints in a gallon. $20 \times 36 \times 8 = 5760$ pints