

L1-L2 World Maths (for World Maths Day or any day!)

Answers | Functional Maths mapping | Teaching notes

What is the total population of the UK (all four countries together)? **60,000,000**

What is the population of Wales as a fraction and a percentage of the UK total? $3/60 = 1/20 = 5\%$

What is the population of Scotland as a fraction of the UK total? $5/60 = 1/12$

Work out the median, mean and range of the populations. **Median = 4,000,000 (Scotland + Wales / 2)** **Mean = 60,000,000 / 4 = 15,000,000** **Range = England – N. Ireland = 48,000,000**

From the most northerly point to the most southerly point of Africa is a distance of 5000 miles.

1 mile = 1.6 kilometers. What is the distance in kilometres? **8000km**

The rainy season in Mali is from May- September. Write the number of rainy months and dry months as a ratio. **5:7**

In February it can be 35°C in Mali. Use the formula below to convert this to °F: $F = (C \times 9/5) + 32$ **$35 \times 9/5 + 32 = 95F$**

The population of Pakistan is approximately 147,663,430

It is growing at about 2% per year.

What will the population of Pakistan be next year?

$147,663,430 / 100 = 1,476,634.3$ (1%) **Answer $\times 2 = 2,953,268.6$ (2%)** then add this to 147,663,430 = **150,616,698.6**

The population of Pakistan is roughly split as follows:

Write this as a ratio and simplify it.

40:60 4:6 2:3

urban	rural
40	60

The literacy rate in Peru is 87.7%. Round this to the nearest whole number. **88%**

The highest point in Mexico is 5636m. The lowest point is -10m. What is the difference between the highest and the lowest points? **5646m**

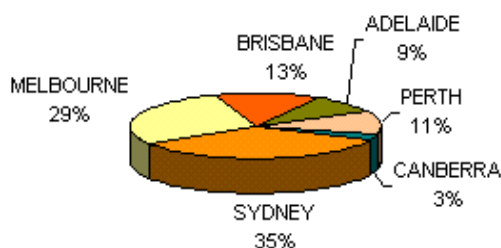
A lock on The Panama Canal is 33.53m wide, 304.8m long and 23.16m deep. Write a formula to show how to work out the volume. Work out the volume. You may use a calculator if you wish.

$L \times W \times D$ $304.8 \times 33.53 \times 23.16 = 236693.9m^3$ (2366.939km³)

It is 11680 miles from London to Wellington in New Zealand. Round this number to the nearest thousand. **12000**

There are 320 islands in Fiji. 105 of these are inhabited. Write this as a fraction and simplify it. **$105/320 = 21/64$**

The Coral Coast in Fiji is 80km long. If 1.6km = 1 mile, how long is this in miles? **50km**



What kind of graph is this? **Pie chart**

Which city has the highest population? **Sydney**

What is missing from the graph? **title**

Carrie has spent her summer exploring and has discovered this new country!

Use a ruler and measure the perimeter of the map of the new country. **23 cm**

Then work out the area of the map. **$8.2cm \times 3.6cm = 29.526cm$**

(Answers to this last question may vary slightly depending on the way the question sheet is printed)

Level 1 and Level 2 Adult Numeracy

This resource covers many aspects of adult numeracy (whole numbers, money, division, time, etc.). For related resources and further curriculum links visit the resource description page at www.skillsworkshop.org

Functional Mathematics

This resource is ideal for underpinning many Functional Maths coverage and range statements at Level 1 and Level 2 (see highlighted areas of the table 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 (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 & Adult Numeracy standards.

Level 2

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|---|---|
| <ul style="list-style-type: none"> understand and use positive and negative numbers of any size in practical contexts carry out calculations with numbers of any size in practical contexts, to a given number of decimal places understand, use and calculate ratio and proportion, including problems involving scale understand and use equivalences between fractions, decimals and percentages understand and use simple formulae and equations involving one or two operations recognise and use 2D representations of 3D objects | <ul style="list-style-type: none"> find area, perimeter and volume of common shapes use, convert and calculate using metric and, where appropriate, imperial measures collect and represent discrete and continuous data, using information and communication technology (ICT) where appropriate use and interpret statistical measures, tables and diagrams, for discrete and continuous data, using ICT where appropriate. use statistical methods to investigate situations use probability to assess the likelihood of an outcome |
|---|---|

Level 1

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|--|---|
| <ul style="list-style-type: none"> understand and use whole numbers and understand negative numbers in practical contexts add, subtract, multiply and divide whole numbers using a range of strategies understand and use equivalences between common fractions, decimals and percentages add and subtract decimals up to two decimal places solve simple problems involving ratio, where one number is a multiple of the other use simple formulae expressed in words for one- or two-step operations | <ul style="list-style-type: none"> use data to assess the likelihood of an outcome solve problems requiring calculation, with common measures, including money, time, length, weight, capacity & temperature convert units of measure in the same system work out areas and perimeters in practical situations construct geometric diagrams, models and shapes extract and interpret information from tables, diagrams, charts and graphs collect and record discrete data and organise and represent information in different ways find mean and range |
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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>

Further functional skills documents available at <http://www.ofqual.gov.uk/>

Ideas for developing process skills

Encourage students to:

- highlight information they need, cross out unneeded information
- show all their working out (note that calculators are permitted at all levels of FM assessment but learners should get into the habit of recording their calculations)
- check all their calculations or procedures and show proof that they have done so
- draw conclusions
- discuss and justify their choice of method and their answers
- explain their answers and conclusions to others – verbally and in writing
- investigate other options / situations (e.g. some question topics could be researched on the web)
- create new questions about given information and try them out on other students
- mark each other's work

Process Skills (all levels)		
Representing – selecting the mathematics and information to model a situation	Analysing – processing and using mathematics	Interpreting – interpreting and communicating the results of the analysis
Skill Standards (Level 2)		
<ul style="list-style-type: none"> • understand routine and non-routine problems in familiar and unfamiliar contexts and situations • identify the situation or problems and identify the mathematical methods needed to solve them • choose from a range of mathematics to find solutions 	<ul style="list-style-type: none"> • apply a range of mathematics to find solutions • use appropriate checking procedures and evaluate their effectiveness at each stage 	<ul style="list-style-type: none"> • interpret and communicate solutions to multistage practical problems in familiar and unfamiliar contexts and situations • draw conclusions and provide mathematical justifications
Skill Standards (Level 1)		
<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 	<ul style="list-style-type: none"> • apply mathematics in an organised way to find solutions to straightforward practical problems for different purposes • use appropriate checking procedures at each stage 	<ul style="list-style-type: none"> • interpret and communicate solutions to practical problems, drawing simple conclusions and giving explanations