Name_____ Date_____

Volume: real life practice – air conditioners

SWANSEA ITeC

Task A: What is the volume of …

Measure and calculate the volume of the following objects in the training / class room.

Object	Length	Width	Height	*Volume*
Storage Box				
Box File				
Computer Case				
CD/DVD Box				

Task B: Buying an Air Conditioner

You are going to estimate a price for buying an air conditioner for the training / class room.

Useful Fact 1
Air conditioner power ratings are based on BTUs (British Thermal Units)

Useful Fact 2
100 BTU/h (British thermal units per hour) of room air conditioner capacity will be required to cool and dehumidify each cubic metre of space.

Useful Fact 3
An extra 500 BTUs will be needed for every person who is in the room.

1. Measure the length, width and height of the training suite and work out the volume of air it contains

2. Work out what the BTU of your air conditioner will need to be.

3. Use the Internet to price a suitable air conditioner.

Task C: Buying an Air Conditioner (continued)

Present your findings as a short report. Make sure that you show all your working out, along with evidence that you have checked your work. You must also include justification for your choice of air conditioner.

Attach evidence of internet research along with any other useful information.

Volume: real life practice – air conditioners

Functional Skills criteria – highlighting indicates main skills covered in this resource, although these will vary with the student group and how the resource is used by the teacher.
The process skills are key to Functional Maths and must always be developed and stressed during teaching.

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)		
• 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	• apply a range of mathematics to find solutions • use appropriate checking procedures and evaluate their effectiveness at each stage	• interpret and communicate solutions to multistage practical problems in familiar and unfamiliar contexts and situations • draw conclusions and provide mathematical justifications
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		
• 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 • 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

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 documents at: http://www.ofqual.gov.uk/qualification-and-assessment-framework/89-articles/238-functional-skills-criteria

Functional Maths teaching notes

This resource provides ideal practice for Functional Mathematics – and meets the "unfamiliarity" criteria expected at this level. It can be adapted for individual learners. For example, some may require further scaffolding and may need support with planning an order of work or checking their calculations.

Encourage learners to:

- Plan their work
- Show all their working out clearly
- Use a calculator if needed
- Show evidence of checking their work

- Explain what they are doing and why
- Discuss and compare their results with others
- Write clear conclusions

To obtain an editable Word version of this resource simply send a resource
you would like to share to **maggie@skillsworkshop.org**
THANK YOU