Sample Mark Scheme: P000312

NCFE Functional Skills Qualification in Mathematics at Level 2 (501/2324/5)

Activity 1		Marks
1A1	**62.5 (%) with valid check**	**3**
	5/8 x 100 seen or other valid approach or evidence of (award this mark if 37.5% seen)	1
	62.5 (%) accept 63% or 62% if 62.5 seen	1
	valid check (not repeat), for example, 62.5 /100 x 8 = 5 or 0.625 x 8 = 5 or use of 3/8 or 0.375 as a check	1
1A2	**1:250 or 1 cm = 250 cm or 1 cm = 2.5 m (accept 4 mm = 1 m, 5 m = 2 cm, 0.4 cm = 1 m)**	**2**
	10 cm is equivalent to 25 m or 2500 cm or evidence of	1
	Correct answer only (CAO) 1 cm = 250 cm or 1 cm = 2.5 m or 1:250 (accept 4 mm = 1 m, 5 m = 2 cm, 0.4 cm = 1 m)	1
1B1	**1:3**	**3**
	25 x 16.8 = 420 (m2) and 16 x 8.75 = 140 (m2) or 420 and 140 seen	1
	140:420 or 140 to 420 or 140/420 (accept 420:140 or 420/140 seen)	1
	1:3 or 1 to 3 (don't accept 3:1 unless it's explicitly clear from final labelling/presentation)	1
1B2	**19 with a valid check (accept 18.288, as minimum (18 isn't acceptable))**	**4**

Activity 1		Marks
	50 x 0.9144 x 10 or 50 x 0.9144 or 25/0.9144	1
	457.2/**25** (**Follow through (FT)** on their 457.2 only) or **500**/27.34 (FT on 27.34 only)	1
	CAO 19 or 18.288 as minimum e.g. 18.3 but not 18.2 or 18	1
	valid check e.g. 19 x 25 = 475, 18.288 x 25 = 457.2	1
1C	**630 (m^3)**	**3**
	37.5 (m^2) seen or if both 25 (m^2) and 12.5 (m^2) seen or valid area methods (note: 420 (m^3) + 210 (m^3) can be awarded the first 2 marks)	1
	(12.5 + 25) x 16.8 or their area x 16.8	1
	CAO 630 (m^3)	1
	Total marks:	**15**

Activity 2		Marks
2A1	**£150 profit (units and profit must be shown)**	**3**
	Income = (3.8 x 1250) + (2.4 x 750) + (2.75 x 400) or 4750 + 1800 + 1100 seen	1
	7650 less 7500 (FT 7650)	1
	Made/surplus/profit £150, with units. Must be made clear that this is a surplus, or equivalent explanation/phrasing. FT but note that 3 marks can only be achieved if '£150 profit' is achieved.	1
2A2	**Correct graph with 3 columns showing 4750, 1800, 1100 or their values**	**4**

Activity 2		Marks
	Accept 3 columns showing 4750, 1800, 1100 or their income values from 2A1 (must be income)	1
	Suitable vertical scale, from 0 with consistent intervals, to display all values (FT - can award for £ or people)	1
	Minimum 2 axes titles shown: 'Income' and 'Type of user' or similar (don't accept just £ as label. Award if people, rather than income, is used but labelling must match/reflect values displayed)	1
	Appropriate main title shown (matching/reflecting values displayed)	1
2B1	**28.6 with valid comment**	**3**
	27.9 + 28.4 + 29.4 + 29.2 + 29.0 + 28.3 + 28.0 /7 or evidence of	1
	CAO 28.6	1
	On average, the actual temperature is not reaching temperature/lower/colder than the target temperature (or equivalent). Do not award without reference to the average/mean/typical temperature being **lower**. FT on their value.	1
2B2	**0.43**	**3**
	3 temperatures within 0.5 ° C identified (29.4, 29.2, 29.0)	1
	CAO 3/7 or evidence of (e.g. 42.86 (%), 3 out of 7, 3 in 7)	1
	0.43 Allow FT if their value (/7) is accurately shown to 2 decimal places e.g. 4/7=0.57, 2/7=0.29	1
	Total marks:	**13**

Activity 3		Marks
3A1	**90**	**2**
	0.3125 x 288 or equivalent	1
	CAO 90	1
3A2	**4/9**	**2**
	128/288 or 44.4% or 0.44 or similar showing correct proportion	1
	CAO 4/9	1
3B	**Medians: (team A) 72.2 (team B) 71, differences of 4 & 1.6, and a valid comment**	**5**
	Median for team B is (70.5 + 71.5)/2 or indicated as the midpoint of values 5 and 6 or evidence of	1
	CAO (team B) is 71	1
	CAO (team A) 72.2	1
	difference between **fastest** time and medians: team A = 4 seconds and team B = 1.6 seconds (FT on their median values (calculation /method error (e.g. mean))	1
	Valid interpretive comment e.g. in team B their fastest and median times are more alike, compared with A. Or that in team A their fastest/median speeds/times are more different, compared with B. Accept that team B has faster average but don't just accept that A has the fastest swimmer. FT on their median values (calculation /method error)	1
3C	**236 (calories)**	**3**
	6.0 x 75 x 0.0175	1

Activity 3		Marks
	7.875 x 30 (award this mark for value in range 7.8 - 8 x 30)	1
	CAO 236	1
	Total marks:	**12**

Overall marks:	**40**
Pass mark:	**26**

Summary of Skills Standards and Coverage and Range

(Note: where task reference and marks are indicated against a skill standard they can be for any of the associated coverage and range statements)

Skills standards	Total marks	Required weighting	Actual weighting	Coverage and range (can be covered across all skills standards)	Task reference	Marks awarded
Representing **R1** understand routine and non-routine problems in familiar and unfamiliar contexts and situations **R2** identify the situation or problems and identify the mathematical methods needed to solve them **R3** choose from a range of mathematics to find solutions	**13**	**30-40 %**	**32.5%**	**a.** understand and use positive and negative numbers of any size in practical contexts	**1A1, 1B2, 1B2, 2A1, 2B1, 2B2, 3A1, 3A2, 3A2, 3B, 3B, 3C, 3C**	**13**
				b. carry out calculations with numbers of any size in practical contexts, to a given number of decimal places		
				c. understand, use and calculate ratio and proportion, including problems involving scale	**1A1, 1A1, 1B1, 1B1, 3A1, 3C**	**6**
				d. understand and use equivalencies between fractions, decimals and percentages		
				e. understand and use simple formulae and equations involving one or two step operations		
Analysing **A1** apply a range of mathematics to find solutions **A2** use appropriate checking procedures and	**13**	**30-40%**	**32.5%**	**f.** recognise and use 2D representations of 3D objects	**1A2, 1A2, 1B1, 1B2, 1B2, 1C, 1C, 1C,**	**8**
				g. find area, perimeter and volume of common shapes		
				h. use, convert and calculate using metric and, where appropriate, imperial measures		

evaluate their effectiveness at each stage				**i.** collect and represent discrete and continuous data, using ICT where appropriate **j.** use and interpret statistical measures, tables and diagrams, for discrete and continuous data, using ICT where appropriate	**2A1, 2A1, 2A2, 2A2, 2A2, 2A2, 2B1, 3B, 3B**	**9**
Interpreting **I1** interpret and communicate solutions to multistage practical problems in familiar and unfamiliar contexts and situations **I2** draw conclusions and provide mathematical justifications	**14**	**30-40%**	**35%**	**k.** use statistical methods to investigate situations **l.** use probability to assess the likelihood of an outcome	**2B1, 2B2, 2B2, 3B**	**4**
Total marks:	**40**					**40**

Question Type	
Open:	**40 (100%)**
Closed:	**0 (0%)**