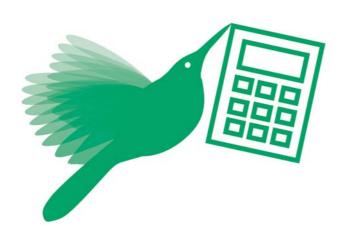
# Level 3 Essential Skills Wales in Application of Number (3768)



**Candidate logbook** 500/7629/2

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Your name:	
City & Guilds enrolment number:	
Unique Learner Number (ULN):	
Date of registration for 3768:	
Date portfolio started:	
Date portfolio completed:	
Assessor's name:	Internal verifier's name:

#### 1 How do I use this logbook?

This logbook will help you work towards Level 3 Essential Skills Wales in Application of Number. It contains:

- an **evidence record form** detailing the evidence you must provide to complete this qualification. You should use this to record and organise your evidence.
- a **skills checklist** containing all of the skills you need to have in order to show that you are competent. You can use this to help show how you have learnt and gained confidence in these skills.

The evidence and skills requirements for ESW are set out in full in the DCELLS document 'Essential Skills Wales'. This can be downloaded from **www.cityandguilds.com/esw**. Your assessor/tutor will also be able to explain to you in more detail what you need to do.

#### **About ESW**

The Essential Skills Wales (ESW) qualifications are designed to help you develop and demonstrate the skills to needed make the most of your learning, work and life.

This qualification will help you improve your **number** skills. You will be required to demonstrate your skills in:

- understanding numerical data
- carrying out calculations
- interpreting results and presenting findings

in order to tackle problems or tasks that you meet in education, training, work and social roles.

#### **About City & Guilds**

City & Guilds is your awarding organisation for Essential Skills Wales. City & Guilds is the UK's leading awarding body for vocational qualifications. You may also be working towards other City & Guilds qualifications at the same time as completing ESW and in some cases you may be able to use work completed for those qualifications towards your ESW portfolio.

Information about City & Guilds and our qualifications is available on our website **www.cityandguilds.com**.

## 2 Level 3 Essential Skills Wales in Application of Number

#### 2.1 Evidence record

Your portfolio must include **all** of the following. Please use this sheet to record what your evidence is and where it can be found. The Declarations on page 5 **must** be completed.

Standard	Description of evidence presented	Location/ reference	Confirmed met and date (assessor use only)
Overall You must carry out at least one active all three components (N3.1, N3.2, N3.1) If you need to carry out additional active requirements for N2.2 (a, b, c, d) eact tasks for either N2.1 and N2.2 or N.3		□ >=1 task covers all three components □ all cover >1 component	
N3.1.1 Identify, analyse and accurately describe at least one practical problem or task that involves a range of numerical data and information.			□ >=1 prob independently ID/described □ range of data/info
N3.1.2 Plan how you will tackle it.			plan devised, including how to obtain relevant data/info clear sequence of tasks showing how info used
N3.1.3 Collect relevant numerical data and information from a range of sources to meet the purpose of your task. Your sources must include at least two of a table, a chart, a graph or a diagram, of which at least one must be complex, and a large data set.			relevant data/info collected from >=3 sources >=1 appropriate data set grouped includes >=2 of table/ chart/graph/diagram >=1 complex/large data
N3.2.1 Choose and use appropriate methods to get the results you need and justify the methods you have used.			□ >1 method chosen/used to get results needed □ methods and purpose explained
N3.2.2 Use the data and information you have obtained to carry out calculations relevant to your task to do with: a) amounts or sizes b) scales or proportion c) handling statistics d) using formulae.			relevant data/info from N3.1 used amounts or sizes scales or proportions handling statistics (incl. use of grouped data) using formulae methods/accuracy justified checked methods/calcs results chked for sense

Standard	Description of evidence presented	Location/ reference	Confirmed met and date (assessor use only)
N3.3.1 Select and justify two different ways to present your results, using charts or graphs, and tables or diagrams appropriate to your audience.			<ul> <li>⇒=2 of chart/graph/ table/diagram selected</li> <li>Appropriateness of each explained and justified</li> </ul>
N3.3.2 Present and explain your methods and findings and justify how they meet the purpose of your task and are appropriate to your audience.			□ methods/findings explained effectively □ meaning described/ explained/justified in relation to problem

# 2 Level 3 Essential Skills Wales in Application of Number

### 2.2 Declarations

The candidate and assessor declarations below <b>must</b> be completed in	n all cases.			
Candidate name:				
Candidate declaration:				
I confirm that the evidence produced for this portfolio is entirely my over	wn work.			
Candidate signature:	_ Date:			
For centre staff and City & Guilds' use only				
Assessor declaration: I confirm that the candidate has met / not met (as applicable) all of the evidence requirements for this Essential Skills Wales qualification. Assessment is valid, authentic, reliable, current and sufficient.				
Assessor signature	_ Date			
Internal verifier declaration: (if sampled)				
I confirm that the candidate has met / not met (as applicable) all of the this Essential Skills Wales qualification. I have internally verified this wo				
Internal verifier signature:	_ Date:			
External verifier declaration: (if sampled)				
I confirm that the candidate has met $\prime$ not met (as applicable) all of the this Essential Skills Wales qualification. I have externally verified this w				
External verifier signature:	_ Date:			

#### 2 Level 3 Essential Skills Wales in Application of Number

#### 2.3 Skills checklist

This checklist is designed to help you show you have learnt all of the skills needed for this qualification. Unlike the Evidence record, this list is not a formal part of your assessment although you and your assessor/tutor should be confident that you can do all of these things by the time you complete your portfolio.

	order to show you are competent, u need to know how to:	Tick if you can	Further guidance
a) b) c)	identify, analyse and accurately describe the problem or task and its sub-problems plan how you will tackle the problem by breaking it down into a series of tasks plan how you will obtain the data and information you need		Problem At this level, problems must include sub-problems. The techniques you need to tackle the problem must be relatively sophisticated (eg interrelated multi-stage calculations rather than those that require two or more separate steps), and must require you to consider carefully the nature and sequence of tasks when you are planning how to obtain and use information to meet your purpose. Problems must offer different possible approaches which you must evaluate to decide how best to tackle the problem.  If you choose to tackle a problem of your own, rather than one given by your teacher/tutor/trainer, you must take their advice about whether your chosen problem is appropriate.  Plan  You need to know to break down an activity into a series of interrelated tasks, and identify the problems to be tackled. It may not be immediately clear what these problems are, and you may need to extend your knowledge of methods and approaches. You will need to take time to specify the problem, formulate questions in terms of the data you need, plan how you will obtain this information and what you are going to do (eg methods you will use for organising data, such as tabulating and grouping, types of calculations, how you will take account of variability or bias) to meet the purpose of your activity.
a) b) c) d) e)	read, understand and extract information from tables, diagrams, charts and graphs collect, obtain, read, understand, select and record relevant data and information from different sources, including at least one data set of a size appropriate to a planned activity, and use this to meet the purpose of the activity make accurate and reliable observations over time and use suitable equipment to measure in a variety of appropriate units group data into classes of width appropriate to the data use estimation to help you plan, multiplying and dividing numbers of any size read and understand ways of writing very large and very small numbers understand compound measures.		Collect, record You must know how to select and use suitable equipment for making accurate measurements and observations, as well as how to interpret a variety of numerical, written and graphical material, including complex tables and charts (ie those that present very detailed information relating to a large data set), in order to decide about their relevance to the purpose of your activity. You must record measurements and observations accurately and in a way that is fit for the purpose of your task.  Sources Sources can include graphical and/or written material (eg reference books and journals; organisations that collate their own statistical information; the internet; and newspapers) and/or direct measurements or observations, depending on the context in which you are working. This material must include at least two of: a table, a chart, a graph, or a diagram. You must be able to deal with scales, such as 1:1250 (as on large-scale maps), graphs with several graph lines on the same axes (eg power outputs compared with speed for different temperatures, weights against heights for a range of body mass indexes).  Data set The 'large data set' must be of a size appropriate to your activity, sufficiently complex to be challenging to interpret, and large enough to enable you to carry out statistical calculations relating to grouped data.

	order to show you are competent, u need to know how to:	Tick if you can	Further guidance
			Where you compare two sets of data, one set must have been obtained by you, while the other set may have been given to you. A set of about 50 items is likely to be appropriate at this level, but if opportunities arise in your normal work to manipulate slightly smaller sets of data for a worthwhile purpose, you should not reject these in favour of larger data sets that are less relevant to your activity. It is essential that there is a relevant and realistic need to group the data. You may produce a large data set by sampling or drawing from a larger set of secondary data.  Compound measures  You must know how to interpret compound measures, ie those presented as 'something per something' such as milligrams per 100 millilitres, or pressure in pounds per square inch (psi), or miles per litre/gallon, etc.
a)	identify and design methods that are appropriate for your task and justify your choice		Identify and design methods You must consider a range of possible methods (eg look up formulae/ information relating to similar tasks or problems), weigh up the pros and cons of alternatives, possibly adapt or originate new methods, and be able to justify your choice in relation to its suitability for your purpose and circumstances.
a)	carry out calculations clearly showing your methods		Carry out multi-stage calculations Application of Number requires you to show that you can
b)	justify the levels of accuracy you have worked to		carry out a number of different types of calculations (amounts or sizes; scales or proportion; handling
c)	carry out multi-stage calculations with numbers of any size		statistics; using formulae). 'Amounts or sizes' is a single category. 'Scales or proportion' is another single category. From each of these categories, you must
d)   e)	use powers and roots use compound measures		present at least one example as evidence.
f)	use mental arithmetic involving numbers, simple fractions, and percentages		You must show that you can carry out multi-stage calculations, ie where the results from one stage are used to provide some of the data for the next stage. For example, this could involve finding the mean time taken
g)	work out missing angles and sides in right-angled triangles from known sides and angles		by shoppers at checkouts, and using the results, together with data about the number of shoppers in the supermarket, to calculate the number of checkout
h)	calculate with sums of money in different currencies calculate, measure, record and compare time		assistants required at different times of the day (this differs from Level 2 in that each stage might include calculations involving two or more steps, eg adding and dividing to find the mean).
i)	in different formats estimate, measure and compare dimensions and quantities using metric and, where appropriate, imperial units, and check the accuracy of estimates		You must be able to carry out calculations both with and without a calculator.  Examples of calculations in each category:  a) Amounts or sizes Using powers and roots, such as 'square', 'cube' and
j)	calculate within and between systems and make accurate comparisons		'square root', 106, 10-3, finding missing angles and sides, such as when working out the space implications for ramps at different slopes, when it is
k)	draw 2-D representations of simple 3-D objects		quicker to use calculations than scale drawings. b) Scales or proportion
l)	solve problems involving irregular 2- D shapes		Knowing that if land measurements on a plan are doubled, the area of land is four times as much, or, if
m)	work out actual dimensions from scale drawings and scale quantities up and down		three dimensions of an object are trebled, its volume or weight becomes 27 times as much.  c) Handling statistics
n)	work out proportional change		Using several methods (visual, such as frequency charts, histograms or cumulative frequency graphs;
0)	compare distributions, using measures of average and range, and estimate mean, median and range of grouped data		numerical, such as calculations of mean, median and interquartile range) to compare distributions of grouped data.
p)	rearrange and use formulae, equations and expressions		
q)	make multi-step calculations efficiently		

you need to know how to:		Tick if you can	Further guidance
r)	use checking procedures to identify and correct errors in methods, calculations and results check that your results make sense.		d) Using formulae Solving simultaneous linear equations with two variables, using formulae with letters and rearranging them so as to change the subject (output) of a formula, such as making w or h the subject rather than b in b= hW2 as well as finding the value of W given the values of h and b.
			Levels of accuracy You must decide what levels of accuracy to work to (eg nearest whole number, nearest pound, one place of decimals) and be able to justify your choice.
			Multi-stage Where you use the results from one stage to provide data for calculations at the next stage, the stages can involve calculations from any of the four categories.
			Use checking procedures You must always check the accuracy of your calculations. This is often a mental process and you do not have to produce evidence every time you do it.
			Where there is a series of calculations of the same type, you must record evidence of checking at least the first few of each type. For the remainder, accurate results should confirm that you have checked effectively. You must be aware of the importance of checking your results and your methods and be familiar with different methods of carrying out checks.
			Check that results make sense While your results may be based on accurate calculations, they may not 'make sense' or be fit for purpose in relation to the problem or task that you have tackled. You must check this.
a) b)	understand what the results of your calculations mean in the context of your problem or task select and use appropriate methods to present and illustrate your findings, showing trends and making comparisons, including numerical, graphical and written formats		Select and justify You must be able to identify, describe and consider different ways to present your results (eg graphs, chart, tables, diagrams) to at least two different audiences. You must choose and use the two ways (ie charts and/or graphs, and tables and/or diagrams) that are most appropriate to your actual audience, to the nature of the data you want to present, and to the features you want to
c)	justify your choice of methods of presentation		highlight. You must be able to give reasons that justify your choice.  Evidence that you have considered different ways and that explains your choice must be in the form of notes, written by hand or electronically.
a)	construct and label tables, charts, graphs and diagrams using accepted conventions		Describe and justify You must be able to describe your methods and justify them in relation to the problem you have tackled.
b)	describe and justify your choice of methods		Draw appropriate conclusions
c) d)	describe what your results tell you draw appropriate conclusions based on your findings, including how possible sources of error might have	0	At this level, not only must you support your conclusions with evidence, but you must also assess the accuracy and dependability of the results, taking into account approximations in calculations and possible inaccuracies in the original information.
e)	affected your results explain how far your results meet your purpose respond constructively to feedback.		Respond constructively You must be able to respond constructively to feedback, whether it is positive or negative, eg by being assertive rather than aggressive or dismissive.

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