Extract from Specification

Edexcel Level 2 Essential Skills Wales in Application of Number

This document has been extracted from – and should be used in conjunction with – the Edexcel Entry Levels 1-4 Essential Skills Wales in Application of Number Specification, the most up to date version of which can be found on the Edexcel website www.edexcel.com/esw

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Level 2 Essential Skills Wales in Application of Number

Level: 2

Credit value: 6

Guided learning hours: 60

About this qualification

This is about demonstrating your skills in:

- understanding numerical data (N2.1)

- carrying out calculations (N2.2)

- interpreting results and presenting findings (N2.3)

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

Amplification of evidence requirements

Notes

1   Each level of the skill incorporates and builds on the previous levels. So, for example, when carrying out calculations at Level 2, you need to know how to 'recognise equivalencies between common fractions, percentages and decimals, and use these to find proportions of whole numbers', which is a requirement at Level 1.

2   The subject matter and resources will be more complex than at Level 1 and you must show more independence in tackling problems and tasks. You must explain your methods and your findings and how they meet the purpose of your task and are appropriate for your audience.

3   You must provide evidence of your Application of Number skills, as they are specified in the first column of the component grid. Your evidence must be in the form described in the third column ('Evidence requirements'). In order to provide this evidence, you will need to have the skills that are listed in the second column.

4   The guidance included within the qualification supports the requirements of the three columns of the component areas and is intended to advise and help you and your teacher/tutor/trainer in your work. It provides explanations of some of the requirements of the standards that may be useful when you are developing the skill of Application of Number at Level 2 and producing evidence of your work. It is not a mandatory part of the standards.

5   Many learners when producing evidence have found that it is both more interesting and more effective to complete a task or activity that covers all three components (N2.1, N2.2 and N2.3) as a continuous process. However, this is not a requirement.

6   The Mandatory Definitions (*Annexe A*) give the exact meaning of certain words in the document. You must always refer to them when you are developing your skills, gathering evidence, and preparing for assessment.

7   Witness statements must not be the only form of evidence that you provide. When you provide a witness statement, it must be supported by other evidence.

Evidence

At Level 2, you will be assessed via a portfolio of evidence. The term 'evidence' is used in this document to refer to the work you produce for final assessment.

You must demonstrate understanding of the whole process:

- understand and tackle a problem
- collect and interpret data
- carry out calculations
- check results
- interpret results
- present findings
- reflect/review.

You must therefore carry out at least one activity that shows your skills in all three components (N2.1, N2.2, N2.3).

If you need to carry out additional activities to meet all the requirements of N2.2 (a, b, c, d), each activity must include tasks for:

either

- N2.1 and N2.2

or

- N2.2 and N2.3

but you need to meet only the missing requirement/s.

There must be evidence that all your work has been assessed and authenticated, for example there must be records/notes, written by a competent assessor, confirming that your work is your own and that it has achieved the required standard.

Skill requirements

In order to achieve this qualification, the evidence that you present for assessment needs to demonstrate that you can meet all of the skills requirements of the qualification for each of the component areas. A piece of work submitted could give assessment evidence for more than one skill.

Component: N2.1 Understand numerical data

You must provide evidence that you can:	In order to show that you are competent, you need to know how to:	Evidence requirements
N2.1.1 Help to identify and describe at least one practical problem or task that involves a range of numerical data and information.	• work with an appropriate person to help you identify and describe the problem or task...	Evidence must show that the learner has played an active part in identifying and describing the problem or task about which they have been briefed or which they have chosen. Evidence must be in the form of notes produced by the learner (by hand or electronically).
N2.1.2 Confirm with an appropriate person how you plan to tackle it.	• ...and confirm how you will tackle it.	Evidence of planning must include: • details of how the learner intends to obtain relevant data and information • a clear sequence of tasks showing how they intend to use this information. Evidence must be in the form of notes produced by the learner (by hand or electronically).

You must provide evidence that you can:	In order to show that you are competent, you need to know how to:	Evidence requirements
N2.1.3 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.	• read, understand and extract information from tables, diagrams, charts, and simple graphs • read and understand numbers presented in different ways • collect and record data from making accurate observations • read scales on a range of equipment to given levels of accuracy • use shape and space to record relevant measurements and make accurate observations • estimate amounts and proportions • understand compound measures.	Evidence must show that the learner is clear about how the data/information they obtain meets their purpose. Evidence must include data/information collected from at least three sources. At least one source must require the learner to collect and record data/information. Evidence must include: • copies of source material • details of the site/s of observation/measurement • records of data and information obtained.

Component: N2.2 Carry out calculations

You must provide evidence that you can:	In order to show that you are competent, you need to know how to:	Evidence requirements
N2.2.1 Use appropriate methods to get the results you need and explain the methods you have used.	• identify and use methods and calculations that are appropriate for your task, including grouping data when this is appropriate.	Evidence must show that the learner can: identify, use and explain appropriate methods for getting the results they need. Evidence must be in the form of notes produced by the learner (by hand or electronically).
N2.2.2 Use the data and information you have obtained to carry out calculations relevant to your task to do with: • amounts or sizes • scales or proportion • handling statistics • using formulae.	• show clearly your methods of carrying out calculations and give the levels of accuracy of your results • carry out calculations involving two or more steps, with numbers of any size with and without a calculator • use mental arithmetic involving whole numbers and simple fractions • work with and convert between fractions, decimals and percentages • calculate with sums of money and convert between currencies • calculate, measure and record time in different formats	Evidence must show that the learner: • has used data and information from N2.2.1 • is clear about the purpose and relevance of their calculations. Overall, evidence of calculations must include at least one example from each category: a) amounts or sizes b) scales or proportion c) handling statistics d) using formulae and must show how the learner has checked their methods and calculations.

You must provide evidence that you can:	In order to show that you are competent, you need to know how to:	Evidence requirements
N2.2.2 *continued*	• estimate, measure and compare length, weight, capacity and temperature using metric and, where appropriate, imperial units	Category (c) must include a comparison of data sets.
	• calculate within a system and between systems using conversion tables and scales, and approximate conversion factors	Evidence must show and explain methods and give levels of accuracy.
	• recognise and use common 2D representations of 3D bjects	Evidence must include records of how the learner has checked:
	• solve problems involving 2D shapes and parallel lines	• their methods and calculations
	• work out actual dimensions from scale drawings	• that the results make sense in relation to the purpose of the task.
	• use proportion and calculate using ratios where appropriate	Evidence must be in the form of written notes produced by the learner (by hand or electronically).
	• identify the range of possible outcomes of combined events through probability and record the information using diagrams and tables	
	• compare sets of data of an appropriate size, using percentages, mean/median/mode	
	• use range to describe the spread within sets of data	
	• understand and use given formulae	

You must provide evidence that you can:	In order to show that you are competent, you need to know how to:	Evidence requirements
N2.2.2 *continued*	• calculate efficiently using whole numbers, fractions, decimals and percentages • check your methods and calculations • identify and correct any errors • check that your results make sense.	

Component: N2.3 Interpret results and present findings

You must provide evidence that you can:	In order to show that you are competent, you need to know how to:	Evidence requirements
N2.3.1 Select two different ways to present your results, using charts or graphs, and tables or diagrams appropriate to your audience.	• understand what the results of your calculations mean in the context of your problem or task • identify and describe appropriate ways to present your findings to two different audiences, including numerical, graphical and written formats.	Evidence must show that the learner can • choose how to present their results, using two appropriate ways (ie charts and/or graphs, and tables and/or diagrams) • explain why these ways are appropriate to their audience. Evidence must be in the form of written notes produced by the learner (by hand or electronically).
N2.3.2 Present and explain your methods and findings and explain how they meet the purpose of your task and are appropriate to your audience.	• construct tables, charts and graphs, and label with titles, scales, axes and keys appropriate to your purpose and audience • use more than one way to present your findings, including numerical, graphical and written formats • describe your methods, highlight the main points of your findings, and explain how they meet your purpose.	Evidence must show that the learner can present their methods and findings effectively explain the methods they have used describe and explain what the results of their calculations mean in relation to the problem/task they have tackled, emphasising the key points. Evidence must be in the form of written notes produced by the learner (by hand or electronically). Whether or not ICT is used to produce graphics, evidence must show that the learner has checked their accuracy and can explain them fully. Evidence of this understanding may be in the form of a witness statement.

Guidance for Application of Number Level 2

This guidance supports the requirements set out in the three columns of the component areas and is intended to advise and help you and your teacher/tutor/trainer in your work. It explains of some of the requirements of the standards that may be useful when you are developing the skill of Application of Number at Level 2 and producing evidence of your work. It is not a mandatory part of the standards.

N2.1.1

Help to identify

While your teacher/tutor/trainer is likely to give you the outline of a problem or task, you must take part in discussions to help clarify and describe it in detail.

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.

N2.1.2

Confirm with an appropriate person

It is your responsibility to think about how you will tackle the problem but you must check with your tutor/teacher/trainer that your plan is a good one.

N2.1.3

Collect, record

You must know how to use suitable equipment for making accurate measurements and observations, as well as how to interpret a variety of numerical, written and graphical material, including tables and charts, 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 (for example 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 simple graph, or a diagram. You must be able to read scales, such as 1:2500 on a map.

Compound measures

You must know how to interpret compound measures, for example those presented as 'something per something' such as milligrammes per 100 millilitres, pressure in psi, or miles per hour.

N2.2.1

Identify and use methods

You must consider a range of possible methods (for example look up formulae, or information relating to similar tasks or problems), weigh up the pros and cons of alternatives, and choose methods that are appropriate for your purpose and circumstances.

Understand and use given formulae

You must know how to use formulae that you are given by, for example, substituting values. You do not have to create or rearrange formulae.

N2.2.2

Carry out calculations

Application of Number requires you to show that you can carry out a number of different types of calculations (amounts or sizes; scales or proportion; handling statistics; using formulae).

'Amounts or sizes' is a single category. 'Scales or proportion' is another single category. From each of these categories, you must present at least one example as evidence.

You must be able to carry out calculations both with and without a calculator.

You must show that you can carry out calculations involving two or more steps when working with:

a) amounts or sizes, for example when solving problems that involve converting between fractions, decimals and percentages, different currencies or systems of measurement; evaluating one number as a fraction or percentage of another; working out volumes and areas of composite shapes

b) scales or proportion, for example when enlarging shapes by using a positive whole number scale factor, calculating ratios such as sharing £60 in the ratio 3:5

c)   statistics, for example when finding the mean, median and mode (for example from charts showing two weeks' sales results), and using them to ompare two sets of data; finding the range and using it to describe the spread within sets of data

d)   formulae, for example when using given formulae expressed in words, as rules (for example 'length in cm / 2.54=length in inches'), as well as those using symbols (for example c / 2.54=l).

Levels of accuracy

You must decide what levels of accuracy to work to (for example 'nearest whole number', 'nearest pound', 'one place of decimals') and state what they are.

Sets of data

The data sets you work with must be of a size that is appropriate to your task/activity and its purpose. They must be large enough to enable you to make meaningful calculations of mean and/or median and/or mode, and to make meaningful comparisons.

Check calculations

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 must 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.

N2.3.1

Select ways to present

You must be able to identify, describe and consider different ways to present your esults (for example 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, and explain 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.

N2.3.2

Present, describe and explain

You must be able to describe your methods and explain how they meet your purpose.

Highlight main points

You must present your findings in ways that make it easy for your audience to identify the main points.

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