

Extract from Specification

Essential Skills Wales

Edexcel Level 4 Essential Skills Wales in Application of Number

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Publications Code ES026727

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Level 4 Essential Skills Wales in Application of Number

Level:	4
Credit value:	6
Guided learning hours:	60

About this qualification

This is about demonstrating your skills in:

- developing a strategy for using number skills (N4.1)
- monitoring your progress and adapting your strategy as necessary (N4.2)
- presenting the outcomes of your work (N4.3)
- evaluating your overall strategy (N4.3).

Amplification of evidence requirements

Notes

- 1 Each level of the skill incorporates and builds on the previous levels. You must therefore ensure that you are familiar with all the requirements of Application of Number Level 3 which, in turn, incorporates the requirements of the lower levels.
- 2 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.
- 3 The guidance 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 4 and producing evidence of your work. It is not a mandatory part of the standards.
- 4 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.
- 5 Witness statements may be used to support written evidence (for example of a discussion) but must not be the only form of evidence that you provide.

Evidence

At Level 4, 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 produce evidence of meeting the requirements of N4.1, N4.2 and N4.3 in the context of one activity.

Documents used in evidence may be hand-written, typed or word-processed.

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: N4.1 Developing a strategy

You must provide evidence that you can:	In order to show that you are competent, you need to know how to:	Evidence requirements
<p>N4.1.1 Develop a strategy for using number skills over an extended period of time.</p>	<ul style="list-style-type: none"> • establish opportunities to use number skills • clearly identify the outcomes you hope to achieve • plan your use of number skills over an extended period of time • make a reasoned choice of methods for achieving the quality of outcomes required, including: <ul style="list-style-type: none"> - formulating hypotheses, using models and other techniques to explore them - establishing methods for testing hypotheses • identify relevant sources of information, including people and reference material, and research the information you need. 	<p>Evidence may be presented in a variety of ways, both written and oral. It may include entries in a personal development plan or progress file, or a project proposal.</p> <p>Evidence must include:</p> <ul style="list-style-type: none"> • reasons for the choice of methods. • annotated references of sources used for researching information.

Component: N4.2 Monitoring progress

You must provide evidence that you can:	In order to show that you are competent, you need to know how to:	Evidence requirements
<p>N4.2.1 Monitor your progress and adapt your strategy, as necessary, to achieve the quality of outcomes required in work involving:</p> <ul style="list-style-type: none"> • deductive and inferential reasoning • algebraic modelling. 	<ul style="list-style-type: none"> • evaluate information from different sources, developing alternative lines of enquiry where appropriate • carry out calculations to appropriate levels of accuracy, drawing on a range of numerical, graphical and other mathematical techniques involved in: <ul style="list-style-type: none"> - making measurements or observations, including use of compound units - reading and interpreting scale drawings, graphs, complex tables and charts - organising and classifying data - making inferences from sets of data - using numerical, graphical and algebraic methods to develop models - using ideas of proportion, variation and scaling, including inverse proportion and other non-linear variation - working with expressions, formulae and equations, including powers and roots 	<p>Evidence of monitoring progress and adapting strategy may be through:</p> <ul style="list-style-type: none"> • written records of the learner's reflections on the progress of the work and of feedback obtained <p>and/or</p> <ul style="list-style-type: none"> • written notes of discussions with appropriate persons, supported by witness statements. <p>Evidence must describe choices made, reasons for these, and judgments of their effectiveness.</p> <p>Evidence must include:</p> <ul style="list-style-type: none"> • notes of planning • at least one draft, with evidence of checking • full references for all sources used.

You must provide evidence that you can:	In order to show that you are competent, you need to know how to:	Evidence requirements
<p>N4.2.1 continued</p>	<ul style="list-style-type: none"> - working with probability - making deductions in algebraic and spatial reasoning and applying these to your work • monitor and critically reflect on your use of number skills including: <ul style="list-style-type: none"> - obtaining feedback from others - noting choices made and judging their effectiveness • adapt your strategy as necessary to overcome difficulties and produce the quality of outcomes required. 	

Component: N4.3 Presenting outcomes and evaluating strategy

You must provide evidence that you can:	In order to show that you are competent, you need to know how to:	Evidence requirements
<p>N4.3.1 Present the outcomes of your work.</p>	<ul style="list-style-type: none"> • interpret results and identify the main findings from your work, including evidence to support your conclusions • present information effectively, selecting appropriate methods to illustrate findings, including charts, graphs and diagrams • explain results in relation to your work and hypotheses. 	<p>Evidence may be presented in written format, or in an oral presentation, or in a combination of these.</p> <p>If any part of the evidence is presented orally: evidence must include the learner's preparatory notes for the presentation</p> <ul style="list-style-type: none"> • there must be additional evidence which may be in the form of: <ul style="list-style-type: none"> - audio/visual clips of the presentation and/or - witness statements • brief notes may be used as a prompt, but the learner must not read these out. <p>Assessors must look for:</p> <ul style="list-style-type: none"> • clarity of expression • appropriate use of vocabulary

You must provide evidence that you can:	In order to show that you are competent, you need to know how to:	Evidence requirements
N4.3.1 <i>continued</i>		<ul style="list-style-type: none"> • the use of a variety of verbal, visual and other techniques • evidence that the presentation is well structured, with examples that are relevant to the audience • evidence that the audience has responded appropriately.
N4.3.2 Evaluate the effectiveness of your strategy, and identify ways to further develop your number skills.	<ul style="list-style-type: none"> • evaluate the effectiveness of your strategy, identifying factors that had an impact on the outcomes • identify ways to further develop your number skills. 	Evidence must be written but may be supported by a recorded discussion with an appropriate person.

Guidance for Application of Number Level 4

The guidance below 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 4 and producing evidence of your work. It is not a mandatory part of the standards.

N4.1.1

Establish opportunities to use number skills

You must spend some time researching and exploring work activities in order to identify where and how you can use number skills. Your activities must involve obtaining numerical information from different sources and working on data (for example in measuring environmental changes or making financial forecasts).

Identify the outcomes

An intended outcome is a statement of what you want or need to achieve (for example a better financial management system). You may need to negotiate these outcomes with other people who are involved in the work. You must identify and write down outcomes that are specific, so you will be able to tell if they have been achieved. This will help later when you are monitoring and evaluating your work.

Plan your use of number skills

You must take stock of the skills you will need to achieve your intended outcomes, and plan your use of number skills so you can make the most of your work activities. You need to be able to identify opportunities and constraints (for example your own expertise, resources, work patterns, health and safety issues, and social and ethical concerns). You must set realistic targets and deadlines over the coming months.

Make a reasoned choice of methods

You must know how to select methods that are valid and effective for exploring and testing hypotheses (for example to test whether or not the number of accidents at work indicates a breach of health and safety protocols). You must know how to use a mathematical model to represent an existing situation, select methods of collecting and recording data for the purpose of refining the model, and use statistical techniques for testing the possible consequences of changed circumstances.

Identify relevant sources of information

You must check a range of different sources, including people who may be able to support you in developing your skills and completing the work. You may need to arrange access to specialist training, online resources, a library, or specialist publications. You must know how to use appropriate referencing and filing systems, and keep records of the sources you use.

N4.2.1

Evaluate information

You must develop a 'critical eye' for assessing the quality and reliability of information from different sources, taking into account commercial, political, academic or personal interests that may influence content and presentation. You must know how to check, for example, the sufficiency of sample size and how to detect possible bias in the selection of samples. You must check facts, research other sources, and ask additional questions.

Carry out calculations

You need to know how to choose levels of accuracy appropriate to the task. When working with approximate numbers, or rounding to significant figures, you must be able to evaluate the scale of any accumulating errors and their effect on the overall results of calculations.

Monitor and critically reflect

You must know how to track, record, reflect on and evaluate your progress (the use of ICT may be helpful). You must identify reliable sources of feedback and use feedback constructively to help you monitor your performance and make decisions (for example on whether to adapt your overall strategy).

N4.3.1

Interpret results and identify the main findings

You must interpret the results of your calculations, identify the key features of a set of data, and use the data as a basis for drawing appropriate conclusions.

Present information effectively

You must know how to express relationships, patterns, trends and possible consequences in words, graphs, diagrams, rates, tables and/or formulae so as to clarify complex situations, and use appropriate terms to describe relationships and trends (for example linear, exponential). You must know how to select appropriate levels of accuracy for presenting data and how to choose appropriate styles, scales and axes for statistical and other diagrams, and appropriate class intervals for grouped data. Charts, diagrams and graphs must be labelled correctly.

Explain results

You must show that you understand how the information or data relates to your original hypothesis and give reasons, supported by evidence, to justify your results.

N4.3.2

Evaluate the effectiveness of your strategy

You must be able to identify how your decisions, level of precision, and the resources and people involved in your work, have influenced how you have tackled the activity and its outcomes. You must also take into account the effect of your own strengths and weaknesses in application of number.

Identify ways to further develop your application of number skills

You must reflect on your overall level of application of number skills and suggest areas where you need to improve, based on the experience you have gained in this activity. You must be able to identify opportunities that are available to you (for example for training, for changing working practices, or for tackling new kinds of tasks). You must discuss with a line manager, colleague or mentor how you might improve working methods, take advantage of new opportunities, and further develop your skills.

February 2011

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