Course Support Notes

National 4 Mathematics Course Support Notes

Please refer to the note of changes at the end of this document for details of changes from previous version (where applicable).

Contents

Introduction

These support notes are not mandatory. They provide advice and guidance on approaches to delivering and assessing the National 4 Mathematics Course. They are intended for teachers and lecturers who are delivering the Course and its Units. They should be read in conjunction with the *Course Specification*, the *Added Value Unit Specification* and the *Unit Specifications* for the Units in the Course.

General guidance on the Course

Aims

Mathematics is important in everyday life, allowing us to make sense of the world around us and to manage our lives.

Using mathematics enables us to model real-life situations and make connections and informed predictions. It equips us with the skills we need to interpret and analyse information, simplify and solve problems, assess risk and make informed decisions.

The Course aims to:

- motivate and challenge learners by enabling them to select and apply straightforward mathematical skills in a variety of mathematical and real-life situations
- develop confidence in the subject and a positive attitude towards further study in mathematics
- enable the use of numerical data and abstract terms and develop the idea of generalisation
- allow learners to interpret, communicate and manage information in mathematical form; skills which are vital to scientific and technological research and development
- develop the learner's skills in using mathematical language and to explore straightforward mathematical ideas
- develop skills relevant to learning, life and work in an engaging and enjoyable way

Progression into this Course

Entry to this Course is at the discretion of the centre. However, learners would normally be expected to have attained the skills and knowledge required by one or more of the following or by equivalent qualifications and/or experience:

- National 3 Lifeskills Mathematics Course

Experiences and outcomes

New National Courses have been designed to draw on and build on the curriculum experiences and outcomes as appropriate. Qualifications developed for the senior phase of secondary education are benchmarked against SCQF levels. SCQF level 4 and the curriculum level 4 are broadly equivalent in terms of level of demand, although qualifications at SCQF level 4 will be more specific to allow for more specialist study of subjects.

Learners who have completed Curriculum for Excellence experiences and outcomes will find these an appropriate basis for doing this Course.

Centres wishing to establish the suitability of learners without prior qualifications and/or experiences and outcomes may benefit from carrying out a review of prior life and work experiences. This approach may be particularly suitable for adult returners to education.

Skills, knowledge and understanding covered in the Course

This section provides further advice and guidance about skills, knowledge and understanding that could be included in the Course.

Note: teachers and lecturers should refer to the *Added Value Unit Specification* for mandatory information about the skills, knowledge and understanding to be covered in this Course.

The following mathematical skills are developed in each of the Units in the Course. An overview of the Units in which these skills are developed is shown in the table below:

Mathematical skills	**Expressions and Formulae**	**Relationships**	**Numeracy**
Use algebraic skills	✓	✓	
Use geometric skills	✓	✓	
Use trigonometric skills		✓	
Use statistical techniques	✓	✓	
Use numerical skills	✓	✓	✓
Interpret a situation which requires the use of mathematics and select an appropriate strategy	✓	✓	✓
Explain a solution and relate it to context	✓	✓	✓

The table in Appendix 1 details the skills, knowledge and understanding of the Course and provides some examples of the contexts in which the mathematical skills can be developed.

Progression from this Course

This Course or its Units may provide progression to:

- National 5 Mathematics
- National 5 Lifeskills Mathematics

Mathematics has applications in many subject areas, and skills developed in this Course could support progression in other curriculum areas. These skills can also support progression into Skills for Work Courses, National Progression Awards, National Certificate Group Awards, and employment.

Hierarchies

Hierarchy is the term used to describe Courses and Units which form a structured sequence involving two or more SCQF levels.

It is important that any content in a Course and/or Unit at one particular SCQF level is not repeated if a learner progresses to the next level of the hierarchy. The skills and knowledge should be able to be applied to new content and contexts to enrich the learning experience. This is for centres to manage.

The National 4 Mathematics Course is in a hierarchy with the National 5 Mathematics Course.

National 4 Mathematics	**National 5 Mathematics**
Expressions and Formulae	Expressions and Formulae
Relationships	Relationships
Numeracy*	*Applications
Added Value Unit	Course assessment

This hierarchical structure provides progression, aims to provide a mechanism for fall back, and enables learners to be given recognition for their best achievement. Achievement of the Units at National 5, but not the Course assessment, would provide the potential for fall back to Mathematics at National 4.

*The *Applications* Unit at SCQF level 5 by itself does not cover all the skills necessary to achieve the *Numeracy* Unit at National 4. Evidence of all the skills associated with Outcome 2 of the *Numeracy* Unit at SCQF level 4 is not covered by this, or the combination of all Units, in Mathematics at National 5. There are a number of ways of generating this evidence. SQA will provide further guidance on these additional Evidence Requirements for *Numeracy* Units at SCQF levels 4 and 5 which will clarify the situation where they are being used in conjunction with the Mathematics Courses at National 4 and National 5. SQA Co-ordinators

should be able to provide advice on combinations of Units necessary to achieve the Mathematics Course at National 4.

The learner would also need to complete the Added Value Unit to be given credit for the National 4 Course.
Also, the achievement of the first three Units (see table above) at National 4, (ie excluding the Added Value Unit) would provide fall back to a Course award in Lifeskills Mathematics at National 3 without the need for additional evidence.

This only applies to the Course. There is no direct relationship between the Units of Mathematics (National 4) and those of Lifeskills Mathematics (National 3), so there is no opportunity to substitute a Unit from the National 4 Mathematics Course for one in the Lifeskills Mathematics (National 3) Course.

Approaches to learning and teaching

The purpose of this section is to provide general advice and guidance on approaches to learning and teaching across the Course.

The overall aim of the Course is to develop a range of mathematical operational and reasoning skills that can be used to solve mathematical and real-life problems. Approaches to learning and teaching should be engaging, with opportunities for personalisation and choice built in where possible.

A rich and supportive learning environment should be provided to enable a learner to achieve the best they can. This could include learning and teaching approaches such as:

- investigative or project-based tasks such as data collection, organisation and analysis
- a mix of collaborative and independent tasks which engage learners
- using materials available from service providers and authorities, eg working with real-life plans and drawings
- solving problems, explaining thinking strategies and solutions to others
- making links across the curriculum to encourage transferability of skills, knowledge and understanding such as technology, social subjects and health and wellbeing, and science
- using technology where appropriate to extend experience and confidence

The development of mathematical skills is an active and productive process, building on learners' current knowledge, understanding and capabilities. Existing knowledge should form the starting point for any learning and teaching situation with new knowledge being linked to existing knowledge and then built on. Presenting learners with an investigative or practical task is a useful way of allowing learners to appreciate how a new idea relates to their existing knowledge and understanding — for example, finding out what learners already know by setting up groups to discuss a variety of prisms in the form of packaging. Learners could then be given an investigative task building on their existing knowledge, eg drawing and constructing nets and calculating surface area. Extension activities could explore the most efficient use of materials for creating new packaging for products.

It is important that teachers always use learning and teaching approaches that engage learners, eg by offering choices and making the most of opportunities to set learning in a personal context.

Questions could be used to ascertain a learner's level of understanding and provide a basis for consolidation or remediation, where necessary. Examples could include:

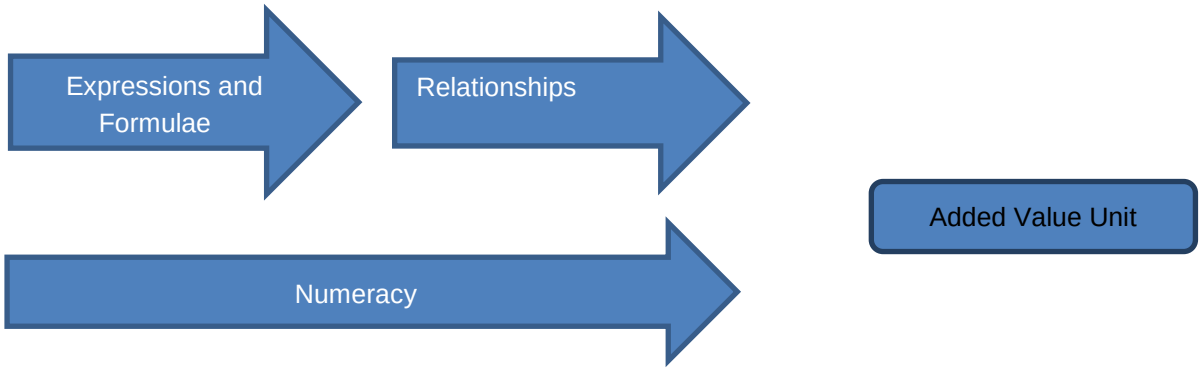
1 How did you decide what to do?
2 How did you approach exploring and solving this task or problem?
3 Could this task or problem have been solved in a different way? If yes, what could you have done differently?

As learners develop concepts in mathematics, they will benefit from continual reinforcement and consolidation to build a foundation for progression.

Sequencing and integration of Units within the Course
Sequencing and integration of the delivery and assessment of the Units within the Course is at the discretion of the centre.

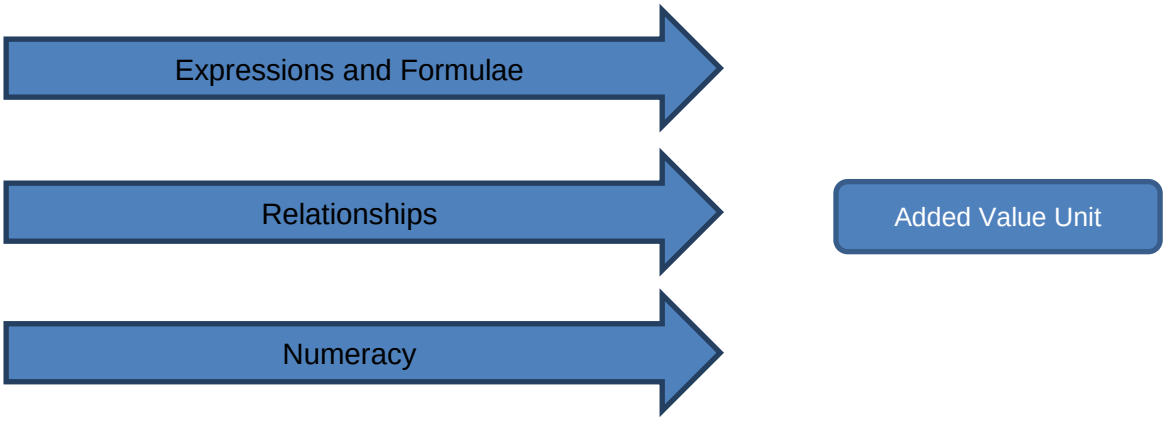
The models which follow exemplify possible approaches which may be adopted. Other combinations are also possible.

Model 1
This model shows the possibility of delivering the *Expressions and Formulae* Unit and *Relationships* Unit sequentially, with the *Numeracy* Unit being delivered throughout. This sequence would allow more time for learning and teaching of skills in the first two of these Units and provide the opportunity to reinforce and consolidate numerical skills throughout the Course. Completion of all three Units would lead on to the assessment of added value which draws on the skills, knowledge and understanding from across the Course.



Model 2

This model shows the possibility of delivering all three Units — *Expressions and Formulae*, *Relationships* and *Numeracy* — concurrently. This approach would be suitable if learning and teaching is organised by grouping skills. This model has the potential of maximising the relevance and transferability of learning and teaching. Completion of all three Units leads to the Added Value Unit which draws on the skills, knowledge and understanding from across the Course.



Skills developed in the Units may be supported through the use of technology such as a calculator or other electronic means. The use of technology is particularly appropriate when this is a naturally occurring feature of the context in which learning is taking place.

Throughout learning and teaching, the ability to process numbers without using a calculator should also be encouraged and developed. Skills associated with mental calculations should be practised and applied wherever possible and appropriate. Learners should be encouraged to develop and improve their skills in completing both written and mental calculations in order to develop a degree of fluency and efficiency. The use of a calculator should complement development of these skills, not replace them.

Developing skills for learning, skills for life and skills for work

Learners are expected to develop broad generic skills as an integral part of their learning experience. The *Course Specification* lists the skills for learning, skills for life and skills for work that learners should develop through this Course. These are based on SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work* and must be built into the Course where there are appropriate opportunities. The level of these skills will be appropriate to the level of the Course. The following skills for learning, skills for life and skills for work are developed in this Course:

2 Numeracy

2.1 Number processes
2.2 Money, time and measurement
2.3 Information handling

5 Thinking skills

5.3 Applying
5.4 Analysing and evaluating

It is suggested that opportunities for developing the above skills for learning, skills for life and skills for work are built into learning and teaching wherever possible.

During the delivery of the Course there will also be opportunities for learners to develop their literacy skills and employability skills.

Literacy skills are particularly important as these skills allow learners to access, engage in and understand their learning and to communicate their thoughts, ideas and opinions. This Course will provide learners with the opportunity to develop their literacy skills by analysing mathematical contexts and communicating their thinking by presenting mathematical information in a variety of ways. This could include the use of formulae, diagrams, graphical forms, symbols and words.

Employability skills are the personal qualities, skills, knowledge, understanding, and attitudes required in changing economic environments. The mathematical operational and reasoning skills developed in this Course aim to enable learners to confidently respond to mathematical situations that can arise in the workplace. It aims to achieve this by providing learners with the opportunity to analyse a situation, decide which mathematical strategies to apply, work through those strategies effectively and make informed decisions based on the results.

Further guidance on the development of skills for life, skills for learning and skills for work can be found in the *Unit Support Notes*.

Approaches to assessment

General guidance on assessment
A wide variety of approaches can be used to assess learners and gather evidence in the National 4 Mathematics Course. The examples given here are not exhaustive.

Assessments must be valid, reliable and fit for purpose for the subject and should fit with the learning and teaching approaches adopted.

Each assessment should therefore:

- be designed to allow learners to produce evidence to show they have achieved the required skills, knowledge and understanding for the Unit or Outcomes being assessed
- allow consistent judgements to be made by all assessors
- be appropriate for the Outcomes and the Assessment Standards in the Unit

Added value
Courses from National 4 to Advanced Higher include assessment of added value. At National 4 the added value will be assessed in the Added Value Unit. At National 5, Higher and Advanced Higher, the added value will be assessed in the Course assessment.

Information given in the *Course Specification* and the *Added Value Unit Specification* about the assessment of added value is mandatory.

The Added Value Unit addresses the key purposes and aims of the Course as defined in the Course Rationale. It will do this by addressing breadth and challenge through the use of mathematical ideas and strategies.

The assessment of added value will be done through a test and include the use of numerical, algebraic, geometric, trigonometric, statistical and reasoning skills.

In preparation for the added value test, it is suggested that learners are the given the opportunity to:

- analyse a range of real-life problems and situations involving mathematics
- select appropriate mathematical skills
- apply mathematical skills with and without the aid of a calculator
- determine solutions
- explain solutions and/or relate them to context

The test will assess a selection of knowledge and skills acquired in the Course and will provide opportunities to apply skills in a wide range of situations, some of which may be new to the learner.

Combining assessment across Units
When the Units are delivered as part of a Course, the assessment of Units can be combined.

The pattern of combined assessment can mirror that for integrated delivery as suggested in models shown in the section on 'Approaches to learning and teaching'.

A combined approach to assessment has the advantage of:

- enriching the assessment process for both learners and teachers/lecturers by bringing together elements of different Units
- avoiding duplication of assessment
- making learning and assessment more coherent and relevant for learners

Suggested approaches to assessment
The skills-based focus of the Course readily lends itself to a variety of approaches to assessment.

The following table gives some suggested approaches to assessment and examples of how they could be used to combine assessment across the Course.

Suggested assessment approach	**An example of how this approach could be used across the Course**
Projects or investigations	A project could be used to combine elements of statistics and data handling from each of the three mandatory Units. For example, learners could be asked to collect data either within mathematics classes or in other subject areas. Learners could be asked to use this data to construct a frequency table, perform calculations to compare the data, represent the data in different graphical forms and use the data to predict or make a decision.
Problem solving tasks or activities	Problem solving tasks could be used to combine elements of geometry, trigonometry and numeracy from each of the three mandatory Units to solve a problem. For example, exploring the relationship that exists between the sides of a right-angled triangle combined with selecting and carrying out calculations to design playground equipment, ramps for access to buildings or design technology joinery problems.
Short/extended response tests	The use of short answer/extended response tests may be appropriate for the combined assessment of algebraic and numerical skills. Online or paper-based tests could be used for example to assess a learner's ability to use percentages, calculate mean, round answers, calculate fractions, solve a linear equation, create and then use a formula.

Whatever assessment approach is used, teachers/lecturers are encouraged to ensure that they are in line with guidance provided in the 'Equality and inclusion' section of this document.

Further guidance on approaches to assessment and gathering evidence for the Units can be found in the *Unit Support Notes*.

Exemplification of assessment is provided in the *National Assessment Resource*.

Gathering evidence

Evidence for assessment purposes could take a variety of forms such as:

- written evidence including calculations and graphs generated during supervised class work or discrete mathematical tests
- oral evidence arising from discussion between learners and the teacher which shows learners' ability and understanding across the Assessment Standard
- computer-generated assessment records or printouts from simulations, eg 'Solar' or online tests
- photographs of project or investigative work
- a product which could be a spreadsheet or computer-generated graphic

This list is not exhaustive and other types of evidence are also possible.

Achievement is on a pass/fail basis for the Outcomes. Learners who fail to achieve all of the Assessment Standards within the Outcomes will only need to be re-assessed on those Assessment Standards not achieved. Re-assessment should only follow after further work or remediation has been undertaken. Centres may consider it appropriate to delay re-assessment until further learning has taken place. Opportunities may exist for this by building it into other tasks within or across Units.

Authentication

For guidance on authentication of evidence which is gathered outwith the direct supervision of the teacher/lecturer responsible for the learner, eg outside the school or classroom, refer to SQA's *Guide to Assessment*.

Equality and inclusion

At all times, teachers/lecturers should use inclusive approaches to assessment, taking into account the needs and experiences of their learners.

The following requirements within the Course may present potential barriers to some disabled learners:

- Making generalisations could be a barrier for autistic learners and those with other cognitive difficulties.
- Practical measurement activities could present barriers to visually impaired learners or those with physical disability, especially where manual dexterity is required.
- Some learners with neurotypical conditions, eg dyscalculia, may have difficulties in performing calculations without recourse to a numerical aid/formula.
- Some learners with communication difficulties may not be able to record, manipulate or present mathematical information, eg those with difficulties in reading and writing text, symbolic representation and diagrams.

If a learner has a disability affecting their ability to engage in learning or generate evidence for the Course, centres could provide support.

It is recognised that centres have their own duties under equality and other legislation and policy initiatives. The guidance given in these *Course Support Notes* is designed to sit alongside these duties but is specific to the delivery and assessment of the Course.

It is important that centres are aware of and understand SQA's assessment arrangements for disabled learners, and those with additional support needs, when making requests for adjustments to published assessment arrangements. Centres will find more guidance on this in the series of publications on Assessment Arrangements on SQA's website: www.sqa.org.uk/sqa/14977.html.

Appendix 1: Reference documents

The following reference documents will provide useful information and background.

- Assessment Arrangements (for disabled learners and/or those with additional support needs) — various publications are available on SQA's website at: www.sqa.org.uk/sqa//14977.html.
- *Building the Curriculum 4: Skills for learning, skills for life and skills for work*
- *Building the Curriculum 5: A framework for assessment*
- Course Specifications
- Design Principles for National Courses
- *Guide to Assessment* (June 2008)
- Principles and practice papers for curriculum areas
- *SCQF Handbook: User Guide* (published 2009) and SCQF level descriptors (to be reviewed during 2011 to 2012): www.sqa.org.uk/sqa/4595.html
- *SQA Skills Framework: Skills for Learning, Skills for Life and Skills for Work*

Appendix 2: Skills, knowledge and understanding with suggested learning and teaching contexts

The following table provides further advice and guidance about skills, knowledge and understanding within the Course.

The first column gives links to the skills contained within the Units.

The second column is the mandatory skills, knowledge and understanding given in the *Added Value Unit Specification* This column describes the standards required to meet the minimum competences of the Assessment Standards for these Units.

The third column gives suggested learning and teaching contexts to exemplify possible approaches to learning and teaching. These also provide examples of where the different skills could be combined into individual activities or pieces of work.

Mathematics (National 4) Expressions and Formulae		
Mathematical operational skills		
1.1 Applying algebraic skills to manipulating expressions and working with formulae		
Sub-skill	**Explanation**	**Suggested learning and teaching contexts**
Using the distributive law in an expression with a numerical common factor to produce a sum of terms	$3(4x+2)$ $5(a-2c)$	Multiply and simplify algebraic terms involving a bracket.
Factorising a sum of terms with a numerical common factor	$7x+21$ $24y-9$	
Simplifying an expression which has more than one variable	$3a+4b-a+6b$	Expressions could be extended to include fractional coefficients. Calculate molecular mass from chemical formula and table of atomic masses. Calculate nutritional content in a meal, from data for ingredients, and weights taken (eg energy, fat, salt).
Evaluating an expression or a formulae which has more than one variable	Evaluate linear expressions for given integer values $4w+6t-3k$	
Extending a straightforward number or diagrammatic pattern and determining its formula	Straightforward sequences such as $4,\ 7,\ 10,\ 13,...$ Patterns in diagram format Evaluate the determined formula for a given value	Establish a number sequence to represent a physical or pictorial pattern. Use this to make evaluations and solve related problems. Extend well known sequences such as Fibonacci sequence and triangular numbers. Patterns which are given in diagram format such as 'fence and posts'. Hydrocarbons CH_4 , C_2H_6, C_3H_8 , general formula C_nH_{2n+2}. Taxi fares, mobile phone contracts, hiring a car — creating a formula. Use Excel or other technology to develop and investigate number patterns.
Calculating the gradient of a straight line from horizontal and vertical distances	Vertical distance over horizontal distance	Also using coordinate axes would allow learners to explore positive and negative gradients and the fact that parallel lines have equal gradients.

1.2 Applying geometric skills to circumference, area and volume		
Sub-skill	**Explanation**	**Suggested learning and teaching contexts**
Calculating the circumference and area of a circle	Given radius or diameter	Investigate the relationship between radius, diameter and circumference and apply findings in related problems. Investigate problems involving the surface area and volume of 3D objects to explore ways to make the most efficient use of materials. Contexts such as sport grounds, design and manufacturing, packaging, landscaping, map reading, construction of ramps could be used. Calculate the area of a pitched roof to be tiled. Include lengths of ridging and guttering needed.
Calculating the area of a parallelogram, kite, trapezium	Approached as composite shapes, eg by splitting into triangles	
Investigating the surface of a prism	♦ Know face, vertex, edge ♦ Draw nets ♦ Calculate surface area	
Calculating the volume of a prism	Triangular prism, cylinder, other prisms given the area of the base	
Using rotational symmetry	With straightforward shapes	Order of symmetry Symmetry in art work, the environment, jewellery, nature and everyday objects eg flowers, 50p coins, some wallpaper patterns, models of simple molecules (eg H_2O, CO_2, C_2H_4). Use appropriate mathematical language to discuss rotational properties of shapes, pictures and patterns. Consider using language of mapping, eg $A(4,3) \rightarrow A'(-4,-3)$ under a half-turn. Apply knowledge of symmetry to complete or create designs.

1.3 Applying statistical skills to representing and analysing data and to probability		
Sub-skill	**Explanation**	**Suggested learning and teaching contexts**
Constructing a frequency table with class intervals from raw data	Using ungrouped data	Evaluate, interpret raw and graphical data using a variety of methods. Comment on relationships observed within the data. Find the mean, median, mode and range of sets of numbers and decide on which average is most appropriate and recognise how using an alternative type of average could be misleading. Display discrete, continuous and grouped data in an appropriate way clearly communicating significant features of the data. Use a variety of contexts such as those drawn from science, health and wellbeing, environmental studies, geography, modern studies, economics, current affairs, factory production, quality assurance, medical statistics, crime rates, government statistical data (food data/climate data/class data). Need to point to a diverse range of sources from which real (or at least realistic) data sets can be accessed: Met Office weather station data is readily available and different kinds of analysis are possible. Health data can be used to link with health and wellbeing. Compare mean and/or range from two different data sets. Discuss the basic ideas behind, interpolation and extrapolation. Colorimeter readings against dye concentration, current in circuit against applied voltage, temperature of kettle against heating time. Use of technology is particularly relevant.
Determining statistics of a data set	♦ mean ♦ median ♦ mode ♦ range	
Interpreting calculated statistics	Using mean, median, mode, range to compare data sets	
Representing raw data in a pie chart	Calculation of sector angles for given categories	
Using probability	Calculation of probability Interpret probability in the context of risk	Use probability to make predictions, risk assessment, informed choices and decisions. Consider chance and predictions in life, environment, risk, insurance, probability computer games. Discuss misleading presentations of probability.

Mathematical reasoning skills		
2.1 Interpreting a situation where mathematics can be used and identifying a valid strategy	Can be attached to a skill of Outcome 1 to require analysis of a situation	This should be a mathematical or real-life context problem in which some analysis is required. The learner should be required to choose an appropriate strategy and employ mathematics to the situation.
2.2 Explaining a solution and/or relating it to context	Can be attached to a skill of Outcome 1 to require explanation of the solution given	The learner should be required to give meaning to the determined solution in everyday language.

Mathematics (National 4) Relationships		
Mathematical operational skills		
1.1 Applying algebraic skills to linear equations		
Sub-skill	**Explanation**	**Suggested learning and teaching contexts**
Drawing and recognising a graph of a linear equation.	Draw a graph for values or chosen values of x For $y = mx + c$, know the meaning of $m\,m$ and c Recognise and use $y = a$, $x = b$	Plot a graph of a straight line from its equation and then answer related questions. Motion under constant acceleration: $v = u + at$ Length of a hanging spring as different weights are suspended. Identify the gradient and y-intercept to form the equation of a straight line. Use of graphing software is encouraged.
Solving linear equations.	$ax + b = c$ $ax + b = cx + d$ where $a,\ b, c, d$ are integers	Learners can progress to creating their own equations by modelling real-life situations. This can be extended to solving straightforward linear inequations of the same form such as $3x + 4 \geq 19$.
Changing the subject of a formula.	Change the subject of the formulae: $G = x + a$ to x $h = \frac{v}{n}$ to n $E = 3w - k$ to w	Use formulae from real-life contexts as well as from other subject areas. This has particular relevance to science, eg Ohm's law $V = IR$ density $\rho = M/V$

1.2 Applying geometric skills to sides and angles of shapes		
Sub-skill	**Explanation**	**Suggested learning and teaching contexts**
Using Pythagoras' theorem	♦ given measurements ♦ given coordinates	Explore the relationship that exists between the sides of a right-angled triangle. Use an appropriate strategy to solve problems in contexts such as joinery, football field, distances from OS map coordinates.
Using a fractional scale factor to enlarge or reduce a shape	Non-regular rectilinear shape	Use the properties of similar figures to solve problems involving length and area. Contexts might be: ♦ Scale drawing of kitchen, fitting units of standard sizes ♦ Fitting to a page of given size (so choose appropriate scale) ♦ Scale drawing of a ship from a lighthouse ♦ Navigation ♦ Effect of linear scaling on areas and volumes
Using parallel lines, symmetry and circle properties to calculate angles	Combination of angle properties associated with: ♦ Intersecting and parallel lines ♦ Triangles and quadrilaterals Circles: ♦ angle in a semi-circle ♦ relationship between tangent and radius	Solve problems involving combinations of angle properties for a variety of 2D shapes including those with parallel lines. Investigate the relationship between a radius and a tangent and explore the size of the angle in a semi-circle.
1.3 Applying trigonometric skills to right-angled triangles		
Sub-skill	**Explanation**	**Suggested learning and teaching contexts**
Calculating a side in a right-angled triangle	Given a side and an angle	Explore the relationship that exists between the sides and angles of a right-angled triangle. Use an appropriate strategy to solve problems in contexts such as joinery. Estimation of height of a steeple from angle measurement. Estimate mean angle of ascent of a hill.
Calculating an angle in a right-angled triangle	Given two sides	
1.4 Applying statistical skills to representing data		
Sub-skill	**Explanation**	**Suggested learning and teaching contexts**
Constructing a scattergraph	Given a set of data	Use graph to answer related questions. Discuss high positive or negative correlation, indicating the connection between the variables. Discuss correlation, interpolation and extrapolation and the high possibilities of errors in interpreting graphs. Health statistics against environmental, social or economic factors.
Drawing and applying a best-fitting straight line	The line should have roughly the same number of data points on either side Use the line of best fit to estimate one variable given the other	

Mathematical reasoning skills		
2.1 Interpreting a situation where mathematics can be used and identifying a valid strategy	Can be attached to a skill of Outcome 1 to require analysis of a situation	This should be a mathematical or real-life context problem in which some analysis is required. The learner should be required to choose an appropriate strategy and employ mathematics to the situation, eg evaluate mobile phone tariffs and reach a decision about the most appropriate for users with different circumstances.
2.2 Explaining a solution and/or relating it to context	Can be attached to a skill of Outcome 1 to require explanation of the solution given	The learner should be required to give meaning to the determined solution in everyday language.

Numeracy (National 4)		
The learner will use numerical skills to solve, straightforward real-life problems involving money/time/measurement		
Standard	**Explanation of standard**	**Suggested learning and teaching notes**
1.1 Selecting and using appropriate numerical notation and units	♦ Numerical notation should include: =, +, –, ×, ÷, /, <, >, ( ), %, decimal point ♦ Units should include: — money (pounds and pence) — time (months, weeks, days, hours, minutes, seconds) — measurement of length (millimetre, centimetre, metre, kilometre, mile); weight (gram, kilogram); volume (millilitre, litre) and temperature (Celsius or Fahrenheit)	A wide range of approaches could be used for learning and teaching numeracy skills. These could include: ♦ discrete numerical exercises using textbooks and worksheets ♦ contextualised short- and extended-response questions ♦ investigative work requiring the selection and application of numerical skills ♦ interdisciplinary activities which involve the selection and use of a range of numerical processes such as art, craft subjects, technology, home economics, physical education and geography ♦ Include decimals of magnitude smaller than 0.1, eg 0.003 ♦ Recognise that a measured value is not simply a
1.2 Selecting and carrying out calculations	♦ add and subtract whole numbers including negative numbers ♦ multiply whole numbers of any size, with up to four-digit whole numbers ♦ divide whole numbers of any size, by a single digit whole number or by 10 or 100 ♦ round answers to the nearest significant figure or two decimal places ♦ find simple percentages and fractions of shapes and	

	quantities, eg 50%, 10%, 20%, 25%, 33⅓%; ½, ⅓, ¼, 1/10, 1/5 ♦ calculate percentage increase and decrease ♦ convert equivalences between common fractions, decimal fractions and percentages ♦ calculate rate: eg miles per hour or number of texts per month ♦ calculate distance given speed and time ♦ calculate time intervals using the 12- and 24-hour clock ♦ calculate volume (cube and cuboid), area (rectangle and square) and perimeter (shapes with straight lines) ♦ calculate ratio and direct proportion	number, but a two component entity: a number with specified units Examples of contexts in which these skills can be applied are given in the Numeracy Unit Support Notes. Express a speed given in mph to other units using a conversion factor or table. Relate scale factor on a map to 'metres or kilometres per centimetre' or similar. Use calorific value of a fuel to calculate consumption. Calculate dose of drug from the data on the composition of a pill.
1.3 Reading measurements using a straightforward scale on an instrument	♦ use measuring instruments with straightforward scales to measure length, weight, volume and temperature ♦ read scales to the nearest marked, unnumbered division with a functional degree of accuracy	Measurement activities can be carried out in a variety of familiar real-life contexts. This can include using common formula and the use of scale drawings. Examples of topics could include: packaging, DIY and cooking.
1.4 Interpreting the measurements and the results of calculations to make decisions	♦ use appropriate checking methods, eg check sums and estimation ♦ interpret results of measurements involving time, length, weight, volume and temperature ♦ recognise the inter-relationship between units in the same family, eg mm↔cm, cm↔m, g↔kg, and ml↔l ♦ use vocabulary associated with measurement to make comparisons for length, weight, volume and temperature	Learners should be aware that exact measurements are not always possible and that the level of accuracy is often dependent on the measuring instrument and the nature of the task. A suitable scale is one where the numbered divisions are marked every 10. Discuss limited precision in a reading — compare liquid volume measurement using kitchen measuring jug or a burette. Emphasise general significance of prefixes m, c, d, k, M, G

1.5 Explaining decisions based on the results of measurements or calculations	♦ give reasons for decisions based on the results of measurements or calculations	Examples of contexts in which these skills can be applied are given in the Numeracy Unit Support Notes (Appendix 3).

The learner will: interpret graphical data and situations involving probability to solve, straightforward real-life problems involving money/time/measurement		
2.1 Extracting and interpretation data from at least two different straightforward graphical forms	Straightforward graphical forms should include: ♦ a table with at least four categories of information ♦ a chart where the values are given or where the scale is obvious, eg pie ♦ a graph where the scale is obvious, eg bar, pie, scatter or line graph ♦ a diagram, eg stem and leaf, map or plan	Draw a pie chart from a set of data, calculating the sector angles.
2.2 Making and explaining decisions based on the interpretation of data	♦ make decisions based on observations of patterns and trends in data ♦ make decisions based on calculations involving data ♦ make decisions based on reading scales in straightforward graphical forms ♦ offer reasons for the decisions made based on the interpretation of data	This aspect of the Numeracy Unit could be delivered at the same time as the statistical Outcomes in Personal Mathematics and Mathematics at Work. Discuss graphs of data related to global warming, such as historic mean global temperature and CO_2 level in the atmosphere.
2.3 Making and explaining decisions based on probability	♦ recognise patterns and trends and use these to state the probability of an event happening ♦ make predictions and use these predictions to make decisions	Learners could use probability as a measure of chance and uncertainty. This could include reference to the likelihood of events happening in familiar contexts such as selecting a holiday destination from seasonal tables of average rainfall, sunshine and temperatures.

Administrative information

Published: May 2014 (version 1.1)

History of changes to Course Support Notes

Course details	Version	Description of change	Authorised by	Date
	1.1	**Appendix 2:** Expressions and Formulae and Relationships: ♦ Skills amended to say sub-skills. ♦ Assessment Standards numbered to assist referencing. Numeracy: ♦ Explanation of Assessment Standard 1.2 — 33% amended to 33⅓% ♦ Explanation of Assessment Standard 1.5 amended to indicate that decisions based on measurements are also included.	Qualifications Manager	May 2014

Unit Support Notes

Unit Support Notes — Mathematics: Expressions and Formulae (National 4)

Please refer to the note of changes at the end of this document for details of changes from previous version (where applicable).

Introduction

These support notes are not mandatory. They provide advice and guidance on approaches to delivering and assessing the *Expressions and Formulae* (National 4) Unit. They are intended for teachers and lecturers who are delivering this Unit. They should be read in conjunction with:

- the *Unit Specification*
- the *Course Specification*
- the *Added Value Unit Specification*
- the *Course Support Notes*
- appropriate assessment support materials

General guidance on the Unit

Aims

The *Expressions and Formulae* (National 4) Unit is a mandatory Unit in the National 4 Mathematics Course. The *Expressions and Formulae* Unit is also available as a free-standing Unit and is designed to meet the needs of a broad range of learners who may choose to study it.

The general aim of this Unit is to develop skills linked to straightforward mathematical expressions and formulae. These include the manipulation of abstract terms, the simplification of expressions and the evaluation of formulae. The Outcomes cover aspects of algebra, geometry, statistics and reasoning.

Progression into this Unit

Entry into this Unit is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by one or more of the following or equivalent qualifications and/or experience:

- National 3 Lifeskills Mathematics Course or its component Units
- Core Skills Numeracy (SCQF level 3)

Prior learning, life and work experiences may also provide an appropriate basis for entry into this Unit. This could include relevant skills, knowledge and understanding and appropriate experiences and outcomes at Third level from the mathematics curriculum area.

Centres wishing to establish the suitability of learners without prior qualifications and/or experiences and outcomes may benefit from carrying out a diagnostic review of prior life and work experiences. This approach may be particularly useful for adults returning to education.

Skills, knowledge and understanding covered in the Unit

Information about skills, knowledge and understanding is given in the National 4 Mathematics Course Support Notes.

If this Unit is being delivered on a free-standing basis, teachers and lecturers are free to select the skills, knowledge, understanding and contexts which are most appropriate for delivery in their centres.

Progression from this Unit

This Unit may provide progression to:

- *Expressions and Formulae* (National 5) Unit
- other Units within National 4 Mathematics

Mathematics has applications in many subject areas, and skills developed in this Unit could support progression in other curriculum areas. These skills can also support progression into Skills for Work Courses, National Progression Awards, National Certificate Group Awards, and employment.

Approaches to learning and teaching

The purpose of this section is to provide advice and guidance on sequencing and integration of approaches to learning and teaching.

Sequencing
The skills linked to the *Expressions and Formulae* Unit can be delivered sequentially or concurrently. Teachers/lecturers can choose to deliver these in any order. There is no specific amount of time allocated to each. This will often depend on the needs of the learners.

Integration — Combining skills within Units
Outcomes could be integrated by combining the reasoning skills Outcome with any of the skills developed in Outcome 1.

- Formulae could be derived from interpreting situations from real-life contexts such as costs for mobile phone contracts or taxi fares.
- Compound shapes could be required to be broken down into simple shapes to enable an area to be calculated. This could be enclosed in a costing problem concerning a choice of floor covering.
- Raw data could be required to be interpreted and analysed as the learner chooses.
- The implications of the result of any calculation, such as in using probability, could be required to be explained in the given situation.

Combining skills across Units
For centres delivering this Unit as part of the National 4 Mathematics Course, Outcomes of this Unit may be integrated with Outcomes in the other Units.

- Expressions of this Unit could be combined with equations of the *Relationships* Unit.
- Gradient of this Unit could be combined with the graph of a linear equation of the *Relationships* Unit.
- Formulae of this Unit could be combined with calculations relevant to Outcome 1 of the *Numeracy* Unit.
- Statistics and probability calculation of this Unit could be combined with interpretation of data in Outcome 2 of the *Numeracy* Unit.

Developing skills for learning, skills for life and skills for work

For this Unit there are significant opportunities to develop the following skills for learning, skills for life and skills for work; examples of some of these opportunities are described in the table below:

SQA skills for learning, skills for life and skills for work framework definition	**Suggested approaches for learning and teaching**
Numeracy is the ability to use numbers to solve problems by counting, doing calculations, measuring, and understanding graphs and charts. This is also the ability to understand the results.	Throughout this Unit learners will have opportunities to use number and to process data, for example in the evaluation of expressions, in using a formulae to calculate a quantity, in calculating statistics.
Applying is the ability to use existing information to solve a problem in a different context, and to plan, organise and complete a task.	Wherever possible, learners could be given the opportunity to apply the skills, knowledge and understanding they have developed to solve mathematical problems in a range of contexts. Learners could be encouraged to think about how they are going to tackle problems, decide which skills to use and then carry out the calculations in order to complete the task. To determine a learner's level of understanding, learners could be encouraged to show and explain their thinking, for example in applying the distributive law to remove brackets or factorise.
Analysing and evaluating is the ability to identify and weigh-up the features of a situation or issue and to use your judgement of them in coming to a conclusion. It includes reviewing and considering any potential solutions.	Wherever possible, learners could be given the opportunity to interpret the results of their calculations and to draw conclusions. This interpretation could be done with calculations the learner has carried out themselves. Conclusions drawn by the learner should be used to form the basis of any reasoning demonstrated by making choices or decisions to solve a given problem, for example in using reasoning to interpret the results and perhaps discuss implications of a contextualised problem in area or volume.

There may also be further opportunities for the development of additional skills for learning, skills for life and skills for work in the delivery of this Unit. These opportunities may vary and are at the discretion of the centre.

Approaches to assessment and gathering evidence

The purpose of this section is to give advice and guidance on approaches to integrating assessment within this Unit.

The *Expressions and Formulae* Unit can be assessed in a variety of ways and could include, for example:

- a project or investigation
- problem solving tasks or activities
- short/extended response tests

These approaches are not exhaustive and other possibilities also exist. The following table gives some examples of how these approaches could be used within the Unit to provide a varied and integrated assessment experience. This approach aims to make the assessment more coherent and meaningful for learners.

The sequencing and integration of assessment for this Unit could mirror the models described in the section on 'Approaches to learning and teaching'.

Approach to assessment	**Examples of approaches to assessment**
Project or investigation	Learners could be given a set of data about lifestyle choices and asked to determine and then interpret suitable statistics to make a comparison. Learners could be asked to represent the given data in a suitable diagram to illustrate differences. Learners could also be asked to use their reasoning skills from the start to identify a valid strategy and explain a conclusion.
Problem solving tasks or activities	For example, learners could be asked to design appropriate 3D packaging or sketch a designed item using nets and perhaps rotational symmetry.
Short/extended response test	Learners could be given a test which consists of short response and possibly extended response questions. This may include factorising a sum of terms, and simplifying or evaluating an expression. The use of extended response questions could also provide opportunities for assessing reasoning skills in combination with the other Outcomes.

It would normally be expected that considerable learning and teaching would have taken place prior to the collection of evidence for assessment purposes.

Further advice and guidance on assessment for the Mathematics Course and its components Units is contained within the *Course Support Notes.*

Exemplification of assessment is provided in the *National Assessment Resource.* When delivering this Unit as part of the National 4 Mathematics Course, reference should be made to the appropriate content statements within the 'Further mandatory information on Course coverage' section in the *Added Value Unit Specification*.

Equality and inclusion

Information about equality and inclusion issues related to this and other Units in Mathematics is given in the National 4 Mathematics *Course Support Notes*.

It is recognised that centres have their own duties under equality and other legislation and policy initiatives. The guidance given in these *Unit Support Notes* is designed to sit alongside these duties but is specific to the delivery and assessment of the Unit.

Alternative approaches to Unit assessment to take account of the specific needs of learners can be used. However, the centre must be satisfied that the integrity of the assessment is maintained and that the alternative approach to assessment will, in fact, generate the necessary evidence of achievement.

Appendix 1: Reference documents

The following reference documents will provide useful information and background.

- Assessment Arrangements (for disabled learners and/or those with additional support needs) — various publications on SQA's website: http://www.sqa.org.uk/sqa/14976.html
- *Building the Curriculum 4: Skills for learning, skills for life and skills for work*
- *Building the Curriculum 5: A framework for assessment*
- Course Specifications
- Design Principles for National Courses
- *Guide to Assessment* (June 2008)
- *Principles and practice papers for curriculum areas*
- *Research Report 4 — Less is More: Good Practice in Reducing Assessment Time*
- *Coursework Authenticity — a Guide for Teachers and Lecturers*
- SCQF Handbook: User Guide *(published 2009)* and SCQF level descriptors (to be reviewed during 2011 to 2012): www.sqa.org.uk/sqa/4595.html
- *SQA Skills Framework: Skills for Learning, Skills for Life and Skills for Work*
- SQA Guidelines on e-assessment for Schools
- SQA Guidelines on Online Assessment for Further Education
- SQA e-assessment web page: www.sqa.org.uk/sqa/5606.html

Administrative information

Published: May 2014 (version 1.0)

History of changes to Unit Support Notes

Unit details	Version	Description of change	Authorised by	Date

Unit Support Notes

Unit Support Notes — Mathematics: Relationships (National 4)

Please refer to the note of changes at the end of this document for details of changes from previous version (where applicable).

Introduction

These support notes are not mandatory. They provide advice and guidance on approaches to delivering and assessing the *Relationships* (National 4) Unit. They are intended for teachers and lecturers who are delivering this Unit. They should be read in conjunction with:

- the *Unit Specification*
- the *Course Specification*
- the *Added Value Unit Specification*
- the *Course Support Notes*
- appropriate assessment support materials

If the *Unit Support Notes* have been developed for a Unit which is not part of a Course, then it is only necessary to read them in conjunction with the *Unit Specification*.

General guidance on the Unit

Aims

The *Relationships* (National 4) Unit is a mandatory Unit in the National 4 Mathematics Course. The *Relationships* Unit is also available as a free-standing Unit and is designed to meet the needs of a broad range of learners who may choose to study it.

The general aim of this Unit is to develop skills linked to straightforward mathematical relationships. These include solving equations, understanding graphs and working with trigonometric ratios. The Outcomes cover aspects of algebra, geometry, trigonometry, statistics and reasoning.

Progression into this Unit

Entry into this Unit is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by one or more of the following or equivalent qualifications and/or experience:

- National 3 Lifeskills Mathematics Course or its component Units
- Core Skills Numeracy (SCQF level 3)

Prior learning, life and work experiences may also provide an appropriate basis for entry into this Unit. This could include relevant skills, knowledge and understanding and appropriate experiences and outcomes at Third level from the mathematics curriculum area.

Centres wishing to establish the suitability of learners without prior qualifications and/or experiences and outcomes may benefit from carrying out a diagnostic review of prior life and work experiences. This approach may be particularly useful for adults returning to education.

Skills, knowledge and understanding covered in the Unit

Information about skills, knowledge and understanding is given in the National 4 Mathematics *Course Support Notes*.

If this Unit is being delivered on a free-standing basis, teachers and lecturers are free to select the skills, knowledge, understanding and contexts which are most appropriate for delivery in their centres.

Progression from this Unit

This Unit may provide progression to:

- Relationships (National 5) Unit
- other Units within National 4 Mathematics

Mathematics has applications in many subject areas, and skills developed in this Unit could support progression in other curriculum areas. These skills can also support progression into Skills for Work Courses, National Progression Awards, National Certificate Group Awards, and employment.

Approaches to learning and teaching

The purpose of this section is to provide advice and guidance on sequencing and integration of approaches to learning and teaching.

Sequencing
The skills linked to the *Relationships* Unit can be delivered sequentially or concurrently. Teachers/lecturers can choose to deliver these in any order. There is no specific amount of time allocated to each. This will often depend on the needs of the learners.

Integration — Combining skills within Units
Outcomes could be integrated by combining the reasoning skills Outcome with any of the other skills from Outcome 1.

- Analysis of a mathematical diagram resulting in the use of two or more angle properties to solve a problem.
- The solution of a problem given as text (and perhaps picture) would involve recognition of the need to use trigonometry and then the skills to complete the task.
- Analysing raw data to construct a mathematical model using line of best fit. Learners would choose axes, label and scale.
- The implications of the result of any calculation, such as in using Pythagoras' theorem, could be required to be explained in the given situation.

Combining skills across Units
For centres delivering this Unit as part of the National 4 Mathematics Course, Outcomes of this Unit may be integrated with Outcomes in the other Units.

- Equations of this Unit could be combined with expressions of the *Expressions and Formulae* Unit.
- The graph of a linear equation of this Unit could be combined with gradient of the *Expressions and Formulae* Unit.
- Using Pythagoras' theorem of this Unit could be combined with calculations relevant to Outcome 1 of the *Numeracy* Unit.
- Using a scale factor of this Unit could be combined with calculations relevant to Outcome 1 of the *Numeracy* Unit.

The National 4 Mathematics Course *Support Notes* provide further advice and guidance on approaches to learning and teaching which are relevant to all component Units of the Course.

Developing skills for learning, skills for life and skills for work

For this Unit there are significant opportunities to develop the following skills for learning, skills for life and skills for work; some of these opportunities are described in the table below:

SQA skills for learning, skills for life and skills for work framework definition	Suggested approaches for learning and teaching
Numeracy is the ability to use numbers to solve problems by counting, doing calculations, measuring, and understanding graphs and charts. This is also the ability to understand the results.	Throughout this Unit learners will have opportunities to use number to solve problems involving geometry and trigonometry by using given measurements to produce scale drawings, calculate angles or actual distances from a map. Learners may also develop their numerical skills through the statistical Outcome which may provide opportunities for learners to handle data in the form of a scattergraph and establishing a line of best fit to estimate one variable given the other.
Applying is the ability to use existing information to solve a problem in a different context, and to plan, organise and complete a task.	Wherever possible, learners could be given the opportunity to apply the skills, knowledge and understanding they have developed to solve mathematical problems in a range of contexts. Learners could be encouraged to think about how they are going to tackle tasks, decide which skills to use and then carry out the calculations in order to complete the task. For example, learners could be asked to apply their ability to change the subject of a formula in a science context.
Analysing and evaluating is the ability to identify and weigh-up the features of a situation or issue and to use your judgement of them in coming to a conclusion. It includes reviewing and considering any potential solutions.	Reasoning skills developed throughout the Unit may provide opportunities for learners to analyse and evaluate. For example, learners could be given various situations which would require them to analyse a given situation, identify a valid strategy to tackle the situation and then explain a possible solution by evaluating their results or conclusions. For example, in using reasoning, learners could interpret the results and perhaps discuss implications of a contextualised problem in trigonometry.

There may also be further opportunities for the development of additional skills for learning, skills for life and skills for work in the delivery of this Unit. These opportunities may vary and are at the discretion of the centre.

Approaches to assessment and gathering evidence

The purpose of this section is to give advice and guidance on approaches to integrating assessment within this Unit. The *Relationships* Unit can be assessed in a variety of ways and could include for example:

- a project or investigation
- problem solving tasks or activities
- short/extended response tests

These approaches are not exhaustive and other possibilities also exist.

The following table gives some example of how these approaches could be used within the Unit to provide a varied and integrated assessment experience. This approach aims to make the assessment more coherent and meaningful for learners.

The sequencing and integration of assessment for this Unit could also mirror the models described in the section on 'Approaches to learning and teaching'.

Approach to assessment	**Examples of approaches to assessment**
Project/ Investigation	Learners could explore the uses of Pythagoras' theorem and the trigonometry of right-angled triangles in calculations rooted in everyday contexts and measurements. They could formulate the distinction on when to use these skills appropriately and illustrate their learning by giving examples and perhaps carrying out practical tasks.
Problem solving tasks or activities	For example, learners could be asked to construct a scattergraph for a data set. Learners would need to apply their reasoning skills by analysing the given task, identifying a suitable strategy to establish the line of best fit. Learners could then be asked to describe any trend, carry out interpolation or extrapolation and evaluate the possibility of any errors in interpreting the graph.
Short/extended response test	Learners could be given a test which includes short response and extended response questions. This may include drawing and recognising a graph of a linear equation, solving linear equations and changing the subject of a formula. Extended response questions may also provide opportunities for learners to integrate the assessment of algebra and reasoning skills, for example forming and then solving simultaneous equations from a problem situation.

It would normally be expected that considerable learning and teaching would have taken place prior to the collection of evidence for assessment purposes.

Further advice and guidance on assessment for the Mathematics Course and its components Units is contained within the *Course Support Notes.*

Exemplification of assessment is provided in the *National Assessment Resource.*

When delivering this Unit as part of the National 4 Mathematics Course, reference should be made to the appropriate content statements within the 'Further mandatory information on Course coverage' section in the *Added Value Unit Specification*.

Equality and inclusion

Information about equality and inclusion issues related to this and other Units in Mathematics is given in the National 4 Mathematics *Course Support Notes*.

It is recognised that centres have their own duties under equality and other legislation and policy initiatives. The guidance given in these *Unit Support Notes* is designed to sit alongside these duties but is specific to the delivery and assessment of the Unit.

Alternative approaches to Unit assessment to take account of the specific needs of learners can be used. However, the centre must be satisfied that the integrity of the assessment is maintained and that the alternative approach to assessment will, in fact, generate the necessary evidence of achievement.

Appendix 1: Reference documents

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- *Building the Curriculum 5: A framework for assessment*
- Course Specifications
- Design Principles for National Courses
- *Guide to Assessment* (June 2008)
- *Principles and practice papers for curriculum areas*
- *Research Report 4 — Less is More: Good Practice in Reducing Assessment Time*
- *Coursework Authenticity — a Guide for Teachers and Lecturers*
- *SCQF Handbook: User Guide (published 2009)* and SCQF level descriptors (to be reviewed during 2011 to 2012): www.sqa.org.uk/sqa/4595.html
- *SQA Skills Framework: Skills for Learning, Skills for Life and Skills for Work*
- SQA Guidelines on e-assessment for Schools
- SQA Guidelines on Online Assessment for Further Education
- SQA e-assessment web page: www.sqa.org.uk/sqa/5606.html

Administrative information

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History of changes to Unit Support Notes

Unit details	Version	Description of change	Authorised by	Date

Unit Support Notes

Unit Support Notes — Numeracy (National 4)

Unit Support Notes for the Numeracy Unit are available on the Literacy and Numeracy page of SQA's website.

Please refer to the note of changes at the end of this document for details of changes from previous version (where applicable).