

National 5 Mathematics

This Course provides learners with opportunities to continue to acquire and develop the attributes and capabilities of the four capacities, helping them to develop as successful learners, confident individuals, effective contributors and responsible citizens. As well as skills for learning, skills for life and skills for work, in this Course there will be an emphasis on skills development and the application of those skills.

COURSE OUTLINE

The Course consists of 3 Units:

Mathematics: Expressions and Formulae (National 5)

This Unit aims to develop skills linked to 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 number, algebra, geometry and reasoning.

Mathematics: Relationships (National 5)

This Unit aims to develop skills linked to mathematical relationships. These include solving and manipulating equations, working with graphs and carrying out calculations on the lengths and angles of shapes. The Outcomes cover aspects of algebra, geometry, trigonometry and reasoning.

Mathematics: Applications (National 5)

This Unit aims to develop skills linked to applications of mathematics. These include using trigonometry, geometry, number processes and statistics within real-life contexts. The Outcomes cover aspects of these skills and also skills in reasoning.

ASSESSMENT

To gain the Course award the learner must pass the SQA Course assessment. The Course assessment will provide the basis for grading attainment in the Course award (100% of the marks available for grading are from the SQA examination).

SQA Examination

Component 1 — question paper: Paper 1 (Non-Calculator) 45 marks

Component 2 — question paper: Paper 2 65 marks

Total marks 110 marks

Numerical skills underpin all aspects of the Course, and the ability to use these without the aid of a calculator will also be assessed.

ENTRY TO THE COURSE

Learners would normally be expected to have attained the skills, knowledge and understanding required by the following or equivalent qualifications and/or experience: BGE 3rd & 4th Level achieved or National 4 Mathematics Course and National 4 Extended Assessments.

In terms of prior learning and experience, relevant experiences and outcomes may also provide an appropriate basis for doing this Course.

PROGRESSION

On successful completion of this Course, the learner could progress to:

- Higher Mathematics

National 4 Mathematics

This Course provides learners with opportunities to continue to acquire and develop the attributes and capabilities of the four capacities, helping them to develop as successful learners, confident individuals, effective contributors and responsible citizens. As well as skills for learning, skills for life and skills for work, in this Course there will be an emphasis on skills development and the application of those skills.

COURSE OUTLINE

The Course consists of 3 Units and an Added Value Unit

Mathematics: Expressions and Formulae (National 4)

This Unit develops 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.

Mathematics: Relationships (National 4)

This Unit develops 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.

Numeracy (National 4)

This Unit develops numerical and information handling skills to solve straightforward, real-life problems involving number, money, time and measurement. As learners tackle real-life problems, they will decide what numeracy skills to use and how to apply them. Learners will also interpret graphical data and use their knowledge and understanding of probability to identify solutions to and make decisions about straightforward real-life problems involving money, time and measurement.

Mathematics Test (National 4)

This is the Added Value Unit of the National 4 Mathematics Course. This Unit aims to enable the learner to provide evidence of added value through the successful completion of a test, demonstrating breadth and challenge through the use and integration of mathematical ideas and strategies linked to straightforward mathematical expressions, formulae and relationships. This will include the application of algebraic, geometric, trigonometric, statistical and reasoning skills. **This unit can be considered as the internal examination of the National 4 Course.**

ASSESSMENT

To gain the Course award the learner must pass all of the Units, *including* the Added Value Unit. National 4 Courses are not graded.

On-going assessment is used throughout Expressions and Formulae, Relationships and Numeracy.

Added Value Unit Assessment

Paper 1 - 20 minute non-calculator test

Paper 2 – 40 minute calculator allowed test

ENTRY TO THE COURSE

This Course would be suitable for learners who have experienced breadth and depth of learning across mathematics experiences and outcomes, or who have attained the National 3 Applications of Mathematics Course, or have equivalent qualifications or experience.

PROGRESSION

On successful completion of this Course, the learner could progress to:

- National 5 Numeracy Unit
- National 5 Applications of Maths

National 3 Applications of Mathematics (previously known as Lifeskills Mathematics)

Applications of Mathematics Courses at National 3 will help learners to develop and apply Numerical and Mathematical skills which learners may use in their lives and in work related environments.

COURSE OUTLINE

The Course consists of 3 Units

Applications of Mathematics: Manage Money and Data (National 3)

This Unit aims to enable learners to apply their skills, knowledge and understanding of mathematics and numeracy to manage money and data in real-life contexts. Learners will build on their mathematical and numerical skills to determine factors affecting income and expenditure, budgeting and saving. Learners will also organise, present and interpret data based on real-life contexts.

Applications of Mathematics: Shape, Space and Measures (National 3)

This Unit aims to enable learners to apply their skills, knowledge and understanding of shape, space and measures in real-life contexts. Learners will build on their mathematical and numerical skills by using measures and elementary geometry to tackle real-life situations.

Numeracy (National 3)

This Unit aims to develop learners' numerical and information handling skills to solve simple, real-life problems involving number, money, time and measurement. As learners tackle real-life problems, they will use their knowledge of number processes, information handling and probability to make informed decisions.

ASSESSMENT

To achieve the National 3 Applications of Mathematics Course, learners must pass all of the required Units, including the Numeracy Unit. National 3 Courses are not graded.

ENTRY TO THE COURSE

The Course would be suitable for learners who have experienced breadth and depth of learning across the Mathematics experiences and outcomes.

PROGRESSION

On successful completion of this Course, the learner could progress to:

- National 4 Mathematics Course
- Numeracy (National 4) Unit

National 5 Applications of Mathematics (previously known as Lifeskills Mathematics)

Applications of Mathematics Courses at National 5 will help learners to develop and apply Numerical and Mathematical skills which learners may use in their lives and in work related environments.

COURSE OUTLINE

The course consists of 6 broad areas. Topics include:

Finance:

- Factors affecting income – rates of pay, commission, tax, national insurance
- Budgeting
- Determining best deals
- Savings and borrowing
- Foreign currency conversions

Geometry:

- Gradient, coordinates
- Pythagoras' Theorem

Measurement:

- Scale drawing
- Planning a navigation course
- Container packing

Graphical Data & Probability:

- Extracting and interpreting data from different graphical forms - comparative/compound bar charts, pictogram, stem & leaf, scatter graphs
- Probability of combined events, predicted outcomes
- Making and justifying decisions based on probability

Numeracy:

- General arithmetic calculations
- BIDMAS
- Rounding – decimals, sig figs
- Fractions & Percentages
- Compound % increase and decrease
- Calculating Speed, Distance and Time
- Calculating Volume
- Calculating Area (triangles and composite shapes)
- Calculating perimeter and circumference
- Calculating ratio from scale drawings
- Calculating direct and indirect proportion

Statistics:

- Constructing and interpreting boxplots, scatter graphs and pie charts,
- Statistical calculations: mean, mode, median, range, interquartile range, standard deviation
- Drawing a line of best fit

- Problems with composite shapes
- Volume of composite solids

- Planning tasks using precedence tables
- Time management
- Tolerance

ASSESSMENT

To gain the Course award the learner must pass the SQA Course assessment. The Course assessment will provide the basis for grading attainment in the Course award (100% of the marks available for grading are from the SQA examination).

SQA Examination

Component 1 — question paper: Paper 1 (Non-Calculator)	1hr 5mins	45 marks
Component 2 — question paper: Paper 2 (Calculator)	2hrs	65 marks

Total marks 110 marks

Numerical skills underpin all aspects of the Course, and the ability to use these without the aid of a calculator is a fundamental element of the course.

ENTRY TO THE COURSE

Pupils who have achieved 3rd and 4th level within the BGE, but who prefer the content of this course to the N5 Maths Course. The Course would be suitable for learners who have experienced breadth and depth of learning across the Mathematics experiences and outcomes.

PROGRESSION

On successful completion of this Course, the learner could progress to:

- National 5 Mathematics Course