



**GRACEMOUNT HIGH SCHOOL**  
**DEPARTMENT OF MATHEMATICS**  
**S4 COURSE CHOICE BOOKLET**

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The S3 mathematics course prepares pupils for the transition into the senior phase in S4.

Pupils are once again working on topics appropriate to their ability and building up skills for the relevant S4 course.

Pupils will learn to

- apply their numeracy skills in real life contexts
- increase their algebraic skills
- use reasoning skills in real life contexts
- interpret statistical data
- apply their knowledge of 2 and 3-dimensional shape in real life contexts
- most pupils will also learn how to use basic trigonometry

Assessments will be in early October, December and March. Formative assessment will be used as appropriate in the classroom. Pupils should expect regular homework throughout S3 in addition to any class-work that needs to be completed at home.

Progression from S3 will be into the appropriate S4 course in mathematics

- National 3 Mathematics + National 4 Numeracy
- National 4 Mathematics + National 5 Numeracy
- National 5 Mathematics

### National 3

Applications of Mathematics

This course consists of three mandatory units, each worth 6 SCQF credit points.

**The units are:**

- manage money and data
- shape, space and measures
- numeracy

**The aims of this course:**

Are to enable pupils to:

- interpret real-life situations involving mathematics
- investigate the use of basic mathematical ideas and number processes in real-life contexts
- select and apply basic mathematical and numeracy skills in real-life contexts
- interpret and use the results of calculations, measurements and data to make informed decisions
- communicate mathematical information in an appropriate way

In addition, pupils will have the opportunity to develop generic and transferable skills for learning, skills for life and skills for work.

More information is available here: <https://www.sqa.org.uk/sqa/81287.html>

**Assessment:**

Pupils must show competency in each of the three units. This will be generated in a variety of ways, including problem-solving questions and practical measurement, weight and volume tasks. Real-life contexts are used in assessments.

All assessments in this course are internally assessed in accordance with SQA guidelines. The course is graded on a pass/fail basis.

**Homework:** there will be homework tasks for all topics in the three units, except the practical work.

**Progression:** successful completion of National 3 Applications of Mathematics could provide entry to National 4 Mathematics. Pupils could also progress into employment and/or training.

### **National 4**

This course consists of three mandatory units, each worth 6 SCQF credit points and an added value unit worth another 6 SCQF points.

#### **The units are:**

- expressions and formula
- relationships
- numeracy

#### **Course Aims**

##### **Mathematics | Expressions & Formula**

The general aim of this unit is to develop skills linked to mathematical expressions and formula. These include the manipulation of abstract terms, the simplification of expressions and the evaluation of formula. The outcomes cover aspects of number, algebra, geometry and reasoning.

##### **Mathematics | Relationships**

The general aim of this unit is 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.

##### **Numeracy**

The general aim of this unit is to develop learners' 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 these skills to an appropriate level of accuracy. Learners will also interpret graphical data and use their knowledge and understanding of probability to identify solutions to straightforward real-life problems involving money, time and measurement. Learners will use their solutions to make and explain decisions.

More information is available here: <https://www.sqa.org.uk/sqa/47417.html>

### **Skills for Learning, Life and Work**

Communication: active listening, giving & receiving feedback, presenting

Employability: managing resources and time, teamwork

Leadership: extending the thinking of others, offering encouragement

Learning: remembering, understanding, applying, analyzing, evaluating, information handling, investigating or, problem solving

### **Assessment**

Each of the three mandatory units has an assessment in which pupils must demonstrate competency.

There will be one re-assessment opportunity per assessment.

In addition, the added value unit at the end of the course is another assessment, consisting of two parts:

Part 1 is a non-calculator paper lasting 20 minutes assessing mathematical operational skills. Part 2 is a calculator allowed paper lasting 40 minutes and includes reasoning questions.

All assessments in this course are internally assessed in accordance with SQA guidelines. The course is graded on a pass/fail basis.

### **Homework**

- pupils will be expected to work independently to complete work started
- homework to assist pupils' preparation for assessment will also be given.
- regular formal homework will be given, covering each topic in the course.

### **Progression**

- pupils who successfully pass this course are strongly recommended to progress onto Personal Finance with National 5 Expression and Formula in S5.
- National 5 Application Mathematics or National 5 Mathematics are also a possibility in S5
- skills developed in this course could also support progression into skills for work courses, national progression awards, national certificate group awards and employment.

### **National 5**

#### **There are 3 Units in this course:**

- » Mathematics | Expressions & Formula
- » Mathematics | Relationships
- » Mathematics | Applications

#### **Course aims**

- motivate and challenge pupils by enabling them to select and apply mathematical techniques in a variety of mathematical and real-life situations
- develop confidence in the subject and a positive attitude towards further study in mathematics
- develop skills in the manipulation of abstract terms in order to solve problems and to generalize
- allow pupils to interpret, communicate and manage information in mathematical form; skills which are vital to scientific and technological research and development
- develop the pupil's skills in using mathematical language and to explore mathematical ideas
- develop skills relevant to learning, life and work in an engaging and enjoyable way

#### **Course structure**

##### **Mathematics | Expressions & Formula**

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

##### **Mathematics | Relationships**

The general aim of this Unit is 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**

The general aim of this Unit is 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.

More information is available here: <https://www.sqa.org.uk/sqa/47419.html>

### **External assessment**

Paper 1 is a Non-calculator paper allowing candidates to demonstrate skills and understanding from across the course. Paper 2 is a calculator allowed covering the same skills as paper 1 but allowing more opportunity for application of skills. The external assessment will provide the basis for grading the course award (A, B, C, D).

### **Homework**

- pupils will be expected to work independently to complete work started in class on occasion.
- regular formal homework will be given, covering each topic in the course.
- homework to assist pupils' preparation for assessment will also be given.

### **Progression**

- pupils who achieve a grade A, B or C in this course can progress onto higher mathematics.
- skills developed in this course can also support progression into skills for work courses, national progression awards, national certificate group awards and employment



- » National 4 + National 5 Numeracy
- » Personal Finance Level 5 + National 5 Mathematics Expressions And Formula Unit
- » National 5 Application Mathematics
- » National 5 Mathematics
- » Higher
- » Advanced Higher

### **What Careers Are Available?**

Financial/Accountancy/Banking Sectors

Computing/Software Development/Games Sectors

Joiner/Carpenter/Plumber/Motor Vehicle

Architecture/Construction And Engineering Sectors