

Mathematics

Points of change and areas of stability across National 4 and National 5

The new National Courses build on the strengths of the Standard Grade and Intermediate 1 and 2 Courses, as well as introducing revised content and revised methods of assessment, increasing personalisation and choice for learners. Mathematics Courses are explored through the following areas of study:

- ◆ Expressions and Formulae
- ◆ Relationships
- ◆ Numeracy (National 4 only)
- ◆ Applications (National 5 only)

Through these areas of study, learners will develop specific skills for learning, skills for life and skills for work. There is an increased focus on developing subject-specific and generic skills. Learners will develop these skills and techniques in context and they should be made aware of the skills they are developing and of their transferability. It is this aspect of skills development that will help learners progress to further study or the world of work.

Course/level	National 3 (SCQF 3)	National 4 (SCQF 4)	National 5 (SCQF 5)
Areas/topics of study	There is no National 3 Mathematics Course.	<p>At National 4, topics that will be new to centres include:</p> <ul style="list-style-type: none"> ◆ changing the subject of the formula <p>There is a greater emphasis on reasoning and the use of questions requiring explanation across the Course.</p> <p>At National 4, centres that have delivered Standard Grade and Intermediate 1 will be familiar with the following topics or areas of study:</p> <ul style="list-style-type: none"> ◆ number, fractions, percentages, proportion ◆ perimeter, area and volume ◆ speed, distance and time ◆ graphs and tables ◆ algebra — simplifying, factorising, equations, substitution, transposition 	<p>At National 5, topics that will be new to centres include:</p> <ul style="list-style-type: none"> ◆ The use of the straight line formula ◆ $y - b = m(x - a)$ ◆ Completing the square for unitary x^2 coefficient ◆ Working with the discriminant in quadratic equations ◆ Introduction to vectors ◆ Also, scientific notation, bearings and inequations <p>There is a greater emphasis on reasoning and the use of questions requiring explanation across the course</p> <p>At National 5, centres that have delivered Standard Grade and Intermediate 2 will be familiar with the following topics or areas of study:</p>

		<ul style="list-style-type: none"> ◆ straight line and gradient ◆ trigonometry — Pythagoras and sohcahtoa ◆ angles in circles, polygons and triangles ◆ statistics and probability 	<ul style="list-style-type: none"> ◆ further fractions and percentages — mixed numbers, appreciation and depreciation ◆ perimeter, area and volume ◆ surds and indices ◆ algebraic operations — brackets, factorising, handling fractions, simultaneous equations, transposition ◆ straight line and gradient ◆ quadratic functions — graphs, equations, quadratic formula ◆ trigonometry — Pythagoras, angle properties, graphs, equations and non-right-angled triangles, bearings, identities ◆ vectors — basic operations (2D and 3D) ◆ statistics ◆ changing the subject of the formula
<p>Added value/Course assessment</p>	<p>There is no National 3 Mathematics Course.</p>	<p>To achieve the National 4 Course, learners must pass all of the required Units, including the Added Value Unit.</p> <p>Unlike Standard Grade and Intermediate 1:</p> <ul style="list-style-type: none"> ◆ National 4 Courses are not graded. ◆ There is no question paper. ◆ There is an Added Value Unit. <p>The Added Value Test is a new method of assessment for this subject. The Added Value Test will be internally marked by centres in line with SQA guidelines, and externally quality-assured by SQA.</p> <p>A formula list based on those used in Standard Grade General and Intermediate 1 will be included within the Added Value assessment.</p>	<p>To achieve the National 5 Course, learners must pass all of the required Units and the Course assessment.</p> <p>The Course assessment will consist of two question papers. Both will be externally assessed.</p> <p>Question papers The question papers will sample the skills, knowledge and understanding from the <i>Course</i>.</p> <p>It will draw on styles of questions used in Standard Grade Credit and Intermediate 2 papers.</p> <p>Paper 1 (non-calculator) will have 40 marks. Paper 2 will have 50 marks.</p>

		<ul style="list-style-type: none"> ◆ The Added Value Unit will allow learners to apply a range of practical and cognitive skills, including: knowledge and understanding, research; interpreting evidence, and organising and presenting findings. ◆ SQA will provide advice and guidance on the degree of support that can be provided for learners, the conditions under which this Unit will be undertaken, and the nature and amount of evidence to be retained for verification purposes. 	<p>A range of algebraic, geometric, trigonometric, numerical and statistical skills will be assessed. Reasoning skills will be assessed within some of these questions.</p> <p>A formula list based on those used in Standard Grade Credit and Intermediate 2 will be included within the question paper.</p>
<p>Further information</p>	<p>There is no National 3 Mathematics Course.</p>	<p>The details above for National 4 should be read in conjunction with the relevant:</p> <p>Mandatory documentation:</p> <ul style="list-style-type: none"> ◆ Course Specification ◆ Unit Specifications ◆ Added Value Unit Specification <p>Advice and guidance:</p> <ul style="list-style-type: none"> ◆ Course and Unit Support Notes <p>Assessment:</p> <ul style="list-style-type: none"> ◆ Unit Assessment Support materials: judging evidence table ◆ Added Value Unit Assessment Support document: judging evidence table 	<p>The details above for National 5 should be read in conjunction with the relevant:</p> <p>Mandatory documentation:</p> <ul style="list-style-type: none"> ◆ Course Specification ◆ Unit Specifications ◆ Course Assessment Specification <p>Advice and guidance:</p> <ul style="list-style-type: none"> ◆ Course and Unit Support Notes <p>Assessment:</p> <ul style="list-style-type: none"> ◆ Unit Assessment Support materials: judging evidence table ◆ question paper: <ul style="list-style-type: none"> — specimen question paper — general marking principles, detailed marking instructions