

# Edexcel Mathematics Awards Building proficiency in mathematics

## Number and Measure Algebra

Your guide to our qualifications



# A different way to help your students develop proficiency in mathematics

Edexcel Mathematics Awards are small, stand-alone qualifications designed to help students to develop and demonstrate proficiency in different areas of mathematics. By helping students focus on understanding key concepts and techniques, they can build their mathematical confidence and fluency.

# At a glance

- The **Edexcel Mathematics Awards** focus on developing mathematical skills, targeting a subset of core concepts for **Number & Measure** and **Algebra**.
- They offer a choice of levels to match your students' abilities, with clear progression between the levels. These small, 60-70 guided learning hour qualifications are assessed through one written paper per level.
- These Awards **help students to build confidence and motivation** in mathematics and are designed to:
  - fit into the existing programme of delivery for mathematics in schools and colleges
  - prepare students for GCSE and/or GCE Mathematics
  - support further study in other subjects, training or the workplace.

# How Edexcel Awards can fit int your maths pathways



# Number and Measure

Edexcel Level I and Level 2 Awards in Number and Measure help students to develop thorough **knowledge and understanding** of concepts in **number and measure** and a strong foundation of **mathematical techniques**.



They are designed to help students develop **proficiency** in number and measure to support progression in their studies, the workplace and training.

You can use our Number and Measure Awards to:

- build confidence and motivation in mathematics by building the basic mathematical skills
- give students the opportunity to demonstrate what they can do in mathematics and gain a numeracy qualification

## **Content Overview**

These qualifications contain:

Level I	
Integers	$\checkmark$
Decimals	$\checkmark$
Approximation	$\checkmark$
Fractions	$\checkmark$
Percentages	$\checkmark$
Money	$\checkmark$
Time	$\checkmark$
Measures	$\checkmark$
Area and Perimeter	$\checkmark$
Volume	$\checkmark$
Tables and Charts	$\checkmark$

Level 2	
Integers	<b>√</b>
Decimals	<ul> <li>Image: A second s</li></ul>
Approximation	<ul> <li>Image: A second s</li></ul>
Fractions	<ul> <li>Image: A set of the set of the</li></ul>
Percentages	<ul> <li>Image: A second s</li></ul>
Money	<ul> <li>Image: A set of the set of the</li></ul>
Time	<ul> <li>Image: A second s</li></ul>
Measures	<ul> <li>Image: A second s</li></ul>
Area and Perimeter	<ul> <li>Image: A second s</li></ul>
Volume	<ul> <li>Image: A second s</li></ul>
Tables and Charts	<ul> <li>Image: A second s</li></ul>
Ratio and Proportion	<ul> <li>Image: A second s</li></ul>

## Level 2

Upon completing the course, students should be able to find square, cubes and square roots, and can use common multiples and factors. They can multiply and divide decimals with up to two decimal places, converting between fractions and decimals and percentages. They can work out simple fractions and percentages of quantities, include increase and decrease by a fraction or percentage, sometimes in context. They can use ratio in solving problems, and can use a variety of units of measure for carrying out measurement, and converting between units of measure. They can work out perimeters and area relating to rectangles, triangles and circles, and volumes of cuboids, prisms and cylinders. They can read, write and use everyday tables and charts, including pie charts, and draw simple graphs.

Level 2 Sample Questions

## Level 1

Upon completing the course, students should be able to use multiples, factors, common factors and prime numbers. They can multiply and divide decimals with up to two decimal places, converting between fractions and decimals and percentages. They can work out simple fractions and percentages of quantities, sometimes in context. They can work through problems relating to time, and can use a variety of units of measure for carrying out measurement, and converting between units of measure. They can work out perimeters and area relating to the rectangle, and volumes of cuboids. They can read, write and use everyday tables and charts, and draw simple graphs.

#### Level 1 Sample Questions

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# Algebra

Edexcel Level 2 and Level 3 Awards in Algebra help students develop a thorough **knowledge and understanding** of concepts in **algebra**, and a strong foundation of **mathematical techniques**.

They are also designed to help students develop **proficiency** in algebra that supports progression to studying mathematics at GCSE and/or GCE, and also to further study in other subjects where algebra skills are needed.

You can use our Algebra Awards to:

- build confidence in algebra, a topic many students find challenging
- stretch and challenge more able students, giving them the opportunity to work at a faster pace and keeping them motivated
- motivate students to continue studying mathematics.

## **Content Overview**

These qualifications contain:

Level 2	
Roles of symbols	$\checkmark$
Algebraic manipulation	$\checkmark$
Formulae	$\checkmark$
Linear equations	$\checkmark$
Systematic trial and improvement	$\checkmark$
Linear inequalities	$\checkmark$
Number sequences	$\checkmark$
Gradients of straight line graphs	<ul> <li>Image: A second s</li></ul>
Straight line graphs	$\checkmark$
Graphs for real life situations	$\checkmark$
Simple quadratic functions	<ul> <li>Image: A second s</li></ul>
Distance-time and speed-time graphs	<ul> <li>Image: A second s</li></ul>

Level 3	
Roles of symbols	1
Algebraic manipulation	$\checkmark$
Formulae	1
Distance-time and speed-time graphs	1
Simultaneous equations	1
Quadratic equations	1
Roots of a quadratic equation	1
Inequalities	1
Arithmetic series	1
Coordinate geometry	1
Graphs of functions	1
Graphs of simple loci	1
Graphs of simple loci	1
Direct and inverse proportion	1
Transformations of functions	1
Area under a curve	1
Surds	1



he <i>n</i> th term of a sequence is given by the expression $6n - 5$	
) Write down the first two terms of the sequence.	
	(2)
lere are the first five terms of another sequence	
5 5 15 17 21	
b) Write down an expression, in terms of <i>n</i> , for the <i>n</i> term of the <i>v</i> <sub>1</sub> - <i>v</i>	
	(2)
(Total for Question 3 is	s 4 marks)
Here is a formula $v - u + u$	
(a) Find the value of $v$ when $u = 0$ , $u = 0$ and $v = 0$	
	(2)
(b) Find the value of v when $u = 10$ , $a = -5$ and $t = 3$	
	(2)
(c) Find the value of t when $y = 20$ , $u = 10$ and $a = 2$	
	(3)
	1~/
	ie 7 marks)
(Total for Question 4	is 7 marks)
(Total for Question 4	is 7 marks)
(Total for Question 4	is 7 marks)

## Level 3

Upon completing the course, students should be able to understand and use direct and inverse proportion. They manipulate algebraic formulae, equations and expressions, finding common factors and multiplying two linear expressions. In simplifying algebraic expressions, they use rules of indices for negative and fractional values. In finding formulae that approximately connect data, students express general laws in symbolic form. Students solve quadratic equations and understand the role of  $ax^2 + bx + c = 0$ . They draw and sketch a range of functions and understand tangents and normals. They manipulate and use surds.

Level 3 Sample Question

## Level 2

Upon completing the course, students should be able to find and describe in symbols the next term or the nth term of a sequence, where the rule is linear.

They multiply two expressions of the form (x + n); they simplify the corresponding quadratic expressions. They represent inequalities using a number line. They formulate and solve linear equations with whole number coefficients. They manipulate simple algebraic formulae, equations and expressions. They use trial and improvement to solve cubic equations. They factorise simple expressions. Students draw linear and quadratic graphs. They understand the role of *m* and *c* in y = mx + c. they interpret distance-time graphs from real-life situations.

#### Level 2 Sample Questions



Match the letter of the graph with its equation.

(Total for Question 12 is 3 marks)

# How can the Awards help your students?

#### Supporting progression in Mathematics

These qualifications can be offered to help students master mathematical concepts, helping them progress to GCSE and GCE Mathematics. They can either be offered before students start GCSE and GCE to help students prepare, or offered alongside them to support students needing help to master the techniques.

#### Supporting progression in other subjects that require mathematical skills

The awards can be used to help students learn key mathematical concepts that are needed in studying other subjects. Many subjects require a degree of mathematical knowledge to fully succeed, and these awards can help students gain the skills they need.

#### Supporting progression to further study, training or employment

For students who haven't achieved GCSE or GCE Mathematics, these qualifications can be used to demonstrate their level of mathematical ability and competence for further study or employment.

# **In focus** – piloting Edexcel Mathematics Awards at St Joseph Chamberlain Sixth Form College

In 2011 Joseph Chamberlain Sixth Form College introduced both levels of the Edexcel Award in Number and Measure to a pilot group of 20 students.

#### Chris Huffer (Head of Faculty, Science, Maths and IT) described the experience:

"It was a useful step between level I and level 2 qualifications, filling a gap. The language was accessible with short, sharp questions. The students enjoyed the maths and had a positive experience in the exam."

"I was impressed with the qualification as soon as I was made aware of it. The Award gives students a chance to succeed in Maths, students who have often felt they had failed at GCSE Maths at school. It gives them the opportunity to build skills and confidence to move forward in their understanding of maths."

> Maggie Sheargold, Course Leader, Mathematics (Joseph Chamberlain 6th Form College)

The college will be offering the award to 4 groups of 15-20 students in 2012/13 and may run the course parallel to GCSE Mathematics for some students.

## How we can support you

#### Our Edexcel Mathematics Awards website

Your first port of call for support is our website, so make sure you **bookmark it today**. In addition to downloading the **specifications** and **Sample Assessment Materials**, you'll find **practice papers**, **schemes of work**, **frequently asked questions**, any updates, and links to our other support.

#### Workbooks

We also have workbooks to support each level of the Edexcel Awards. These write-on workbooks give your students level-appropriate practice and are suited to both the classroom and independent study. Endorsed resources from other publishers may also be available, details can be found <u>online</u>. These resources offer support and practice; they are not a pre-requisite for teaching these qualifications.

#### Mathematics Emporium

The Mathematics Emporium contains a rich source of resources. Keep up to date with emails and gain easy access to all the materials you need to teach our Edexcel Awards in Mathematics.

Visit the Maths Emporium.

#### • ResultsPlus

ResultsPlus is our free online service that gives you instant and detailed analysis of your students' performance in exams and mocks.

You can use the mock analysis as a diagnostic tool at the start of the course to target where students need to focus, and can continue using the service throughout teaching when desired. You can also use ResultsPlus to analyse students' final results for the Awards and use the data to help prepare for GCSE assessment.

Find out more.

#### • examWizard

examWizard is a free exam preparation tool containing a bank of past Pearson Edexcel exam questions, mark schemes and examiners' reports for a range of maths qualifications. **Find out more**.

#### Professional Development Academy

Our Professional Development Academy provides access to a wide range of high-quality training courses to support you in delivering Pearson Edexcel Maths and Statistics qualifications with confidence.

We have a range of on-demand, live and self-guided courses available, creating flexible learning options at a time and place that suits you.

To browse our extensive range of training events and courses visit the Professional Development Academy.

Visit the Professional Development Academy.

#### **ResultsPlus**

#### examWizard

# Want to find out more

Make sure you benefit from the planning and delivery support we can provide by letting us know if you're intending to offer any of these Edexcel Mathematics Awards.

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Let us know you're planning to teach our Edexcel Awards.

# Getting in touch

By phone Call our dedicated Maths Teacher support line on 0844 463 293 I

By email Send us your questions at TeachingMaths@pearson.com