

Unit Title: Mathematics
Level: Two
Credit Value: 9
GLH:
NOCN Unit Code: RB1/2/TE/012
QCA Unit Reference
Grading Descriptors: Not Applicable

This unit has 16 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand the concept of place value	1.1. Read, write and order whole numbers, decimals and fractions of any magnitude given in words or figures 1.2. Round decimals to nearest 10, 100, 1000 etc, whole number, decimal places, significant figures
2. Understand decimals, ratios, fractions and percentages	2.1. Apply the four rules of arithmetic to decimals and fractions 2.2. Use the equivalences between decimals, fractions, ratios, percentages 2.3. Use fractions, decimals and percentages to describe proportions of a whole 2.4. Use simple proportional division 2.5. Apply fractions/percentages to practical problems eg profit and loss, taxation, wages, interest, VAT 2.6. Solve problems using metric or common imperial units, speed, distance and time where appropriate
3. Understand negative numbers	3.1. Add and subtract negative quantities in context 3.2. Multiply and divide with negative numbers
4. Understand index notation, including standard form	4.1. Recognise the meanings of: integer, square, cube, root, reciprocal, rational, irrational, prime, factor 4.2. Apply the rules of indices when using positive, negative and zero indices 4.3. Recognise the use of roots and reciprocals 4.4. Express and use numbers in standard form with positive and negative powers of ten

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LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
5. Use the facilities of a calculator efficiently to evaluate expressions and plan calculations	5.1. Use facilities such as addition, subtraction, multiplication, division, percentage, brackets, memory to calculate answers to given problems 5.2. Use appropriate trigonometric and statistical function facilities of a calculator efficiently, e.g. sin, cos, tan, mean
6. Use letters to represent variables and unknown quantities	6.1. Substitute letters with numbers to evaluate expressions 6.2. Analyse simple patterns
7. Understand graphs that describe real life situations	7.1. Use graphs to illustrate relationships between variables, e.g. conversion graph, travel
8. Understand algebraic expressions, equations or inequalities in order to solve problems	8.1. Manipulate simple equations and inequalities in order to solve problems 8.2. Solve quadratic equations using algebraic and graphical methods 8.3. Solve linear, simultaneous equations in two variables algebraically and graphically 8.4. Change the subject of a formule - subject appears in one term only

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LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
9. Understand the properties of 2D and 3D shapes and objects	9.1. Recognise common geometric terms, e.g. types of angle, parallel lines, 2D shapes and 3D solids 9.2. Classify triangles by knowing their properties - isosceles, equilateral, right angled and scalene 9.3. Classify quadrilaterals by knowing their properties - square, rectangle, parallelogram, rhombus, kite, trapezium 9.4. Recognise similarity and congruence of simple shapes 9.5. Use angle properties of triangles, quadrilaterals and polygons 9.6. Use Pythagoras theorem
10. Understand symmetry and transformations	10.1. Use line and rotational symmetry to solve problems in 2 and 3 dimensions 10.2. Use the transformations - translation, reflection and rotation about the origin and any point
11. Apply standard units of length, mass/weight, capacity and time to everyday situations	11.1. Make sensible estimates when using measurements in everyday situations 11.2. Recognise the relationship between units converting from one metric unit to another 11.3. Use Imperial units and their appropriate metric equivalent 11.4. Select appropriate equipment when making measurements
12. Understand perimeters, areas and volumes of common shapes	12.1. Calculate perimeters and areas of quadrilaterals, triangles and circles 12.2. Calculate volumes and surface areas of cubes, cuboids, cylinders, prisms and cones

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LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
13. Understand trigonometrical relationships in right-angled triangles	13.1. Use sine, cosine and tangent in a right-angled triangle 13.2. Use trigonometrical relationships to solve problems including those involving bearings
14. Classify and represent data required for information as appropriate	14.1. Distinguish between qualitative, quantitative, discrete, continuous data 14.2. Sort, classify and tabulate appropriate data 14.3. Construct appropriate diagrams and graphs to represent data including: pictograms, bar charts, pie charts, histograms, frequency polygons, scatter graphs and cumulative frequency graphs
15. Understand measures of central tendency and spread	15.1. Calculate: mean, median, mode and range for ungrouped frequency distribution 15.2. Estimate mean, median, quartiles and inter-quartile range for grouped (classified) data
16. Understand elementary probability	16.1. Use simple vocabulary of probability, e.g. fair, equally likely and sample space 16.2. Use sample space and tree diagrams as representations of compound events 16.3. Calculate probabilities associated with AND and OR

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ASSESSMENT INFORMATION

Guidance:

This grid gives details of the assessment activities to be used with the unit attached. Please refer to the NOCN Handbook for definitions of each activity and the expectations for assessment practice and evidence for moderation.

The assessment activities for this unit are indicated in the table below:

Key: P = Prescribed – this assessment method *must* be used to assess the unit.
O = Optional – this assessment method *could* be used to assess the unit.

Case study		Project	
Written question & answer/test/exam		Role play/simulation	
Essay		Practical demonstration	
Report		Group discussion	
Oral question and answer		Performance/exhibition	
Written description		Production of artefact	
Reflective log / diary		Practice file	

Signposting Key Skills

This unit offers clear opportunities for learners to provide evidence of achievement in Key Skills achievement in the following skill area/s:

Key Skill		Wider Key Skill	
Communication		Working with others	
Information Technology		Problem solving	
Application of Number		Improving Own Learning and Performance	

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Accredited Start date:
Accredited End date:
Unit Sector/Subject area:
Grading descriptors:
Availability for Use:

Purpose and Aim of the Unit	Free Text
Restrictions on the Availability	Free Text or N/A
Additional Assessment Requirements	Free Text or N/A
Details of relationship between the Unit and the NOS	Free Text or N/A
Details of relationship between the Unit and Standards (not NOS)	Free Text or N/A
Endorsement of the Unit by	Free Text or N/A