Qualification specification

NCFE Level 2 Certificate in Maths
QN: 601/1091/0

This qualification is now withdrawn

Qualification summary

The table below provides information on the NCFE Level 2 Certificate in Maths (601/1091/0), which consists of 8 of the 9 units that comprise the level 2 maths suite. For information on the themed awards and single unit awards, please see page 8.

Qualification title	NCFE Level 2 Certificate in Maths		
Ofqual qualification number (QN)	601/1091/0	**Aim reference**	60110910
Guided learning hours (GLH)	170	**Total qualification time (TQT)**	170
Credit value	17		
Minimum age	Pre-16		
Qualification purpose	This qualification has been designed to provide learners with knowledge and understanding of the key areas of maths: using numbers, measures, shapes and space, and handling data.		
Grading	Achieved/not yet achieved		
Assessment method	Internally assessed and externally quality assured portfolio of evidence.		
Work/industry placement experience	This is a knowledge-only qualification. Work/industry placement experience is not required.		

Contents

Summary of changes

Version	Publication date	Summary of amendments
v3.0	September 2021	Repeated statements have been removed from the delivery guidance and collated in section 2: unit content and assessment guidance. Terminology has been updated throughout the qualification specification to include ‘candidate' to ‘learner' and 'verifier' to 'quality assurer'.
v3.1	October 2021	The qualification specification has been updated to remove references to the support handbook, which is not relevant for this qualification.
v3.2	June 2022	Further information added to the ‘how the qualifications are assessed’ section to confirm that unless otherwise stated in this specification, all learners taking this qualification must be assessed in English and all assessment evidence presented for external quality assurance must be in English. Information added to the entry guidance section to advise that registration is at the discretion of the centre, in accordance with equality legislation and should be made on the Portal.

Section 1: introduction

Aims and objectives

These qualifications aim to:

- provide learners with the underpinning knowledge and skills to support development of their understanding of using numbers, measures, shape and space and handling data
- offer breadth and depth of study, incorporating a key core of knowledge
- support progression into GCSE or level 2 Functional Skills qualifications in maths

The objectives of these qualifications are to help learners to:

- work with whole numbers
- work with fractions
- work with decimals and percentages
- use measurement
- work with 2 dimensional (2D) and 3 dimensional (3D) shape and space
- work with statistics
- work with probability
- work with algebra

Entry guidance

The NCFE level 2 maths qualifications are designed for adult learners who have not achieved a GCSE or level 2 Functional Skills qualification in maths and who wish to take their first qualification in the subject. The qualifications will support learners with an identified skills gap in maths and can be used to support progression into GCSE or a level 2 Functional Skills qualification in maths.

However, the NCFE level 2 maths qualifications may also be suitable for those learners still in education, such as 16 to 18 year olds, who have not achieved GCSE or level 2 Functional Skills in maths. The qualifications could also be used by pre-16 learners who are not following a traditional GCSE route in education.

These qualifications can also support learners undertaking a vocational programme to develop their skills in maths. The qualifications could be taken by learners following a GCSE programme of learning who are not yet ready to take GCSE level studies in maths.

Registration is at the discretion of the centre, in accordance with equality legislation, and should be made on the Portal.

There are no specific recommended prior learning requirements for these qualifications. However, learners may find it helpful if they have already achieved a level 1 qualification.
These qualifications are suitable for learners aged pre-16 and above.

Centres are responsible for ensuring that these qualifications are appropriate for the age and ability of learners. They need to make sure that learners can fulfil the requirements of the assessment criteria and comply with the relevant literacy, numeracy and health and safety aspects of these qualifications.

Learners registered on these qualifications should not undertake another qualification at the same level with the same or a similar title, as duplication of learning may affect funding eligibility.

Important: centres are encouraged to utilise diagnostic skills assessments to understand the level of their learners to ensure they are registered on the most appropriate qualification level within the maths suite.

Achieving these qualifications

Please refer to the unit summaries in section 2 for further information.

To achieve these qualifications, learners must successfully demonstrate their achievement of all learning outcomes of the units as detailed in this qualification specification.

The level 2 maths qualification suite offers a number of single unit awards, themed awards and a certificate based on the following units:

- Working with whole numbers (L/505/2752)
- Working with fractions (R/505/2753)
- Working with decimals and percentages (Y/505/2754)
- Working with measurement (D/505/2755)
- Working with 2D and 3D shapes and space (H/505/2756)
- Working with statistics (K/505/2757)
- Working with probability (M/505/2758)
- Working with algebra (T/505/2759)
- Working with mathematical skills (K/505/2760)

Certificate

To be awarded the NCFE Level 2 Certificate in Maths (601/1091/0), learners are required to successfully complete 7 mandatory units and 1 optional unit.

Mandatory units

- Working with whole numbers (L/505/2752)
- Working with fractions (R/505/2753)
- Working with decimals and percentages (Y/505/2754)
- Working with measurement (D/505/2755)
- Working with 2D and 3D shapes and space (H/505/2756)
- Working with statistics (K/505/2757)
- Working with probability (M/505/2758)

Optional units

- Working with algebra (T/505/2759)
- Working with mathematical skills (K/505/2760)

To achieve the NCFE Level 2 Certificate in Maths (601/1091/0), learners must successfully demonstrate their achievement of all learning outcomes and assessment criteria of the units as detailed in this qualification specification. Grades are not awarded.

Themed awards

NCFE Level 2 Award in Maths: Using Number
Qualification number (QN): 601/1180/X
Aim reference: 6011180X
Guided learning hours (GLH): 70
Total qualification time (TQT): 70
Credit value: 7
3 mandatory units:

- Working with whole numbers (L/505/2752)
- Working with fractions (R/505/2753)
- Working with decimals and percentages (Y/505/2754)

NCFE Level 2 Award in Maths: Using Measurement, Shape and Space
Qualification number (QN): 601/1179/3
Aim reference: 60111793
Guided learning hours (GLH): 40
Total qualification time (TQT): 40
Credit value: 4
2 mandatory units:

- Working with measurement (D/505/2755)
- Working with 2D and 3D shapes and space (H/505/2756)

Single unit awards

To be awarded the level 2 unit award in maths, learners are required to successfully complete one of the following units. Grades are not awarded.

NCFE Level 2 Award in Maths: Working with Whole Numbers
Qualification number (QN): 601/1182/3
Aim reference: 60111823
Guided learning hours (GLH): 30
Total qualification time (TQT): 30
Credit value: 3
1 mandatory unit:

- Working with whole numbers (L/505/2752)

NCFE Level 2 Award in Maths: Working with Fractions
Qualification number (QN): 601/1183/5
Aim reference: 60111835
Guided learning hours (GLH): 20
Total qualification time (TQT): 20
Credit value: 2
1 mandatory unit:

- Working with fractions (R/505/2753)

NCFE Level 2 Award in Maths: Working with Decimals and Percentages
Qualification number (QN): 601/1192/6
Aim reference: 60111926
Guided learning hours (GLH): 20
Total qualification time (TQT): 20
Credit value: 2
1 mandatory unit:

- Working with decimals and percentages (Y/505/2754)

NCFE Level 2 Award in Maths: Working with Measurement
Qualification number (QN): 601/1193/8
Aim reference: 60111938
Guided learning hours (GLH): 30
Total qualification time (TQT): 30
Credit value: 3
1 mandatory unit:

- Working with measurement (D/505/2755)

NCFE Level 2 Award in Maths: Working with 2D and 3D Shapes and Space
Qualification number (QN): 601/1200/1
Aim reference: 60112001
Guided learning hours (GLH): 10
Total qualification time (TQT): 10
Credit value: 1
1 mandatory unit:

- Working with 2D and 3D shapes and space (H/505/2756)

NCFE Level 2 Award in Maths: Working with Statistics
Qualification number (QN): 601/1201/3
Aim reference: 60112013
Guided learning hours (GLH): 20
Total qualification time (TQT): 20
Credit value: 2
1 mandatory unit:

- Working with statistics (K/505/2757)

NCFE Level 2 Award in Maths: Working with Probability
Qualification number (QN): 601/1202/5
Aim reference: 60112025
Guided learning hours (GLH): 20
Total qualification time (TQT): 20
Credit value: 2
1 mandatory unit:

- Working with probability (M/505/2758)

NCFE Level 2 Award in Maths: Working with Algebra
Qualification number (QN): 601/1203/7
Aim reference: 60112037
Guided learning hours (GLH): 20
Total qualification time (TQT): 20
Credit value: 2
1 mandatory unit:

- Working with algebra (T/505/2759)

To achieve these qualifications, learners must successfully demonstrate their achievement of all learning outcomes of the units as detailed in this qualification specification.

Progression

Learners who achieve this qualification could progress to the following:

- further education:
  - Level 2 Functional Skills Qualification in Maths
  - GCSE maths

These qualifications may also be useful to those studying qualifications in the following sectors:

- preparation for life and work
- arts, media and publishing
- leisure, travel and tourism
- health, public services and care
- business and administration
- information and communication technology (ICT)

Learners can progress from an award to a certificate, but centres must carefully consider which qualification they want to register the learner onto, as the registration fee will be applied for both qualifications.

Staffing requirements

Centres must provide sufficient numbers of suitably experienced assessors and internal quality assurers to ensure that qualifications are delivered effectively. NCFE cannot be held responsible for any complications that arise in the delivery or assessment process as a result of internal recruitment decisions. Staff recruitment should be made at the discretion of centres, and centres should be aware that it is their responsibility to ensure that all staff involved in the delivery and assessment of NCFE qualifications are suitably qualified.

Resource requirements

There are no mandatory resource requirements for these qualifications, but centres must ensure learners have access to suitable resources to enable them to cover all the appropriate learning outcomes.

Real work environment (RWE) requirement/recommendation

These are knowledge-only qualifications. Experience in the real work environment is not required.

Work/industry placement experience

These are knowledge-only qualifications. Work/industry placement experience is not required.

How the qualifications are assessed

Assessment is the process of measuring a learner's skill, knowledge and understanding against the standards set in a qualification.

These qualifications are internally assessed and externally quality assured.

The assessment consists of one component:

- an internally assessed portfolio of evidence which is assessed by centre staff and externally quality assured by NCFE (internal quality assurance (IQA) must still be completed by the centre as per usual)

The main pieces of evidence for the portfolio could include:

- assessor observation – completed observational checklists and related action plans
- witness testimony
- candidate's proof of work
- worksheets
- assignments/projects/reports
- record of oral and written questioning
- candidate and peer reports
- recognition of prior learning (RPL)

Assessment guidance is provided for each unit. Assessors can use other methods of assessment as long as they are valid and reliable and maintain the integrity of the assessment and of the standards required of these qualifications. Acceptable methods of assessment could be drawn from the list above.

Assessors must be satisfied that the learners have achieved all learning outcomes and assessment criteria related to the unit being assessed prior to deciding if learner have been successful. Assessors are also responsible for supporting the learners through the assessment process.

Unless stated otherwise in this qualification specification, all learners taking this qualification must be assessed in English and all assessment evidence presented for external quality assurance must be in English.

Internal assessment

We have created some sample tasks for the internally assessed units, which can be found on our website. These tasks are not mandatory. You can contextualise these tasks to suit the needs of your learners to help them build up their portfolio of evidence. The tasks have been designed to cover the knowledge learning outcomes for all units and provide opportunities for stretch and challenge. For further information about contextualising the tasks, please contact the curriculum team.

Each learner must create a portfolio of evidence generated from appropriate assessment tasks, which demonstrates achievement of all the learning outcomes associated with each unit. The assessment tasks should allow the learner to respond to a real life situation that they may face when in employment. On completion of each unit, learners must declare that the work produced is their own and the assessor must countersign this. Examples of suitable evidence for the portfolio for each unit are provided in section 2.

A centre may create their own internal assessment tasks. There are 4 essential elements in the production of successful centre-based assessment tasks.

These are:

- ensuring the assessment tasks are meaningful with clear, assessable outcomes
- appropriate coverage of the content, learning outcomes, or assessment criteria
- having a valid and engaging context or scenario
- including sufficient opportunities for stretch and challenge for higher attainers – please see the guidance document for creation of internal assessment tasks on our website

Assessment guidance is provided for each unit. Assessors can use other methods of assessment as long as they are valid and reliable and maintain the integrity of the assessment and of the standards required of these qualifications.

Section 2: unit content and assessment guidance

This section provides details of the structure and content of these qualifications.

The types of evidence listed are for guidance purposes only. Within learners' portfolios, other types of evidence are acceptable if all learning outcomes are covered and if the evidence generated can be internally and externally quality assured. For approval of methods of internal assessment other than portfolio building, please contact your external quality assurer.

Tutors should ensure that all tasks are set within realistic scenarios that are simple to understand.

Instructions to learners should be clear and easy to follow.

Where a learner provides non-written responses, the tutor should make a record of these.

Learners must present accurate solutions to their calculations.

Any questions must be worded to work independently and not require accurate answers from any previous questions.

Learners must achieve a minimum of 75% in assessment tasks in order to successfully achieve each unit/qualification.

Working with whole numbers (L/505/2752)

Unit summary	This unit will develop and consolidate a secure understanding of arithmetic skills and computation associated with working with whole numbers. Learners will also secure appropriate strategies for the use of both mental and assisted methods for calculation. The unit provides a useful basis for further mathematical study at this level. Learners will benefit from achieving the unit Working with whole numbers (Y/505/2740) at level 1 prior to attempting this unit. Learners can also progress to a range of other level 2 units, but most usefully Working with fractions (R/505/2753) and Working with decimals and percentages (Y/505/2754). This unit is part of a series of units offering progression to level 2 Functional Skills qualifications in maths or GCSE maths.
Credit value	3
Guided learning hours	30
Level	2

Learning outcome 1

The learner will:

1 Understand how to compare positive and negative numbers

The learner can:

1.1 Explain the meaning of positive and negative numbers in practical contexts
1.2 Identify the relationship between the place of a digit and its value
1.3 Order and compare positive and negative numbers of any size

Learning outcome 2

The learner will:

2 Be able to carry out calculations using whole numbers

The learner can:

2.1 Define the words:
- multiple
- factor

2.2 Use mental and written methods for calculations
2.3 Break down numbers into prime factors
2.4 Identify the prime numbers up to 20

Learning outcome 3

The learner will:

3 Be able to calculate ratio and direct proportion

The learner can:

3.1 Identify the use of ratio in everyday situations
3.2 Find the number of parts in a given ratio, and the value of one part
3.3 Scale quantities up and down using direct proportion
3.4 Calculate measurements from scale drawings

Learning outcome 4

The learner will:

4 Understand how to work with expressions they have been given

The learner can:

4.1 Explain the relationship between words and symbols in expressions
4.2 Explain the effect of brackets in a formula
4.3 Explain the absence of an operator:
- between a number and a variable
- between a number and a bracket

Learning outcome 5

The learner will:

5 Be able to work with expressions they have been given

The learner can:

5.1 Calculate simple formulae involving:
- use of brackets
- single variable
- 2 variables

5.2 Convert expressions from words to symbols, and vice versa

Assessment guidance

Delivery and assessment
The focus of the unit is to enable the learner to develop strategies for working with positive and negative whole numbers in a range of contexts. Learners will demonstrate their skills and abilities in working with prime numbers, ratio and direct proportion and using given expressions. Learners are expected to be able to carry out calculations with whole numbers using mental and written methods. Learners should be encouraged to show their working for written methods or discuss their workings for mental methods. When they have completed their mental and written methods learners could check their calculations using a calculator, where appropriate. Tutors could incorporate opportunities for learners to complete calculations by mental or written methods throughout the assessment of the unit. Alternatively, tutors could develop separate summative assessment papers that require learners to demonstrate completion of calculations by mental or written methods. **Assessment criteria:** 1.1–1.3 **Additional information:** tutors could provide learners with scenarios of practical contexts where negative whole numbers may be naturally encountered (for example, temperature, money). Learners can use this information provided to demonstrate achievement of these assessment criteria. **Assessment criteria:** 2.1–2.4 **Additional information:** tutors could provide learners with a range of calculations to complete using whole numbers. When covering assessment criterion 2.1, learners may use practical contexts to demonstrate their understanding of the words multiple and factor. Learners must complete some calculations using mental methods – tutors could use multiple-choice questions for this. Learners must complete some questions using written methods – tutors could use short-answer questions for this, and learners must show their workings. Learners may use calculators to support and check their calculations. Tutors could develop short-answer questions that would allow learners to demonstrate achievement of assessment criteria 2.3 and 2.4. **Assessment criteria:** 3.1–3.4 **Additional information:** tutors could provide learners with a range of everyday scenarios where ratio and direct proportion may be used. Tutors should also provide a range of scale drawings for learners to use when calculating measurements. Learners should be able to complete all calculations using a written method and may check their calculations on a calculator. Simple scales should be used on scale drawings, such as 1cm:25cm, 1cm:50cm, 1cm:1m; 1cm:3m, 1cm:5m.

Delivery and assessment
Learners should be able to assess whether their solutions provide reasonable answers, such as whether the quantities of ingredients are correct when scaling up a recipe. **Assessment criteria:** 4.1–4.3 **Additional information:** tutors could provide a range of expressions for learners to work with. Learners are expected to become familiar with expressions and the symbols/operators used in them. Learners may present their explanations in written form (for example, in a short-answer question paper). Alternatively, they could respond to questions from the tutor demonstrating their knowledge and understanding of the expressions they have been given. This learning outcome could be completed in conjunction with learning outcome 5 to ensure that the concepts are fully embedded. **Assessment criteria:** 5.1, 5.2 **Additional information:** tutors should provide a range of expressions, consisting of simple formulae, for learners to work with. Some expressions could be presented in words allowing the learners to convert them to symbols prior to calculating them. Learners should be able to convert the given expressions from words to symbols and vice versa.
Types of evidence
Evidence could include: • learner evidence • multiple-choice and/or short-answer question paper

Working with fractions (R/505/2753)

Unit summary	This unit will develop the learner's skills and build increased confidence in performing calculations with fractions. Learners will be able to use fractions to order and compare amounts, and to add and subtract amounts and quantities. Learners will also understand and be able to work with equivalences between fractions, decimals and percentages. Learners will benefit from achieving the unit Working with fractions (D/505/2741) at level 1 prior to taking this unit. This unit offers progression opportunities at the same level to Working with decimals and percentages (Y/505/2754) and is part of a series of units offering progression to level 2 Functional Skills maths qualifications or GCSE maths.
Credit value	2
Guided learning hours	20
Level	2

Learning outcome 1

The learner will:

1 Be able to use fractions to order and compare amounts and quantities

The learner can:

1.1 Put fractions in order using a common denominator
1.2 Express quantities as fractions

Learning outcome 2

The learner will:

2 Be able to express equivalences between fractions, decimals and percentages

The learner can:

2.1 Recognise equivalent fractions
2.2 Calculate equivalent forms of fractions in decimals and percentages
2.3 Reduce fractions to their simplest form
2.4 Calculate fractions from percentages to their simplest form

Learning outcome 3

The learner will:

3 Be able to use fractions to add and subtract amounts and quantities

The learner can:

3.1 Add and subtract fractions with the same denominator
3.2 Add and subtract fractions with different denominators
3.3 Add and subtract mixed numbers

Learning outcome 4

The learner will:

4 Be able to use a calculator to work with fractions

The learner can:

4.1 Use a calculator to convert:
- improper fractions to mixed numbers
- mixed numbers to improper fractions
- decimal numbers to fractions

Assessment guidance

Delivery and assessment
The focus of the unit is to enable the learner to develop strategies for working with fractions, including ordering and comparing them, equivalences between fractions, decimals and percentages. Learners are expected to be able to carry out calculations with fractions using written methods and with a calculator. Learners should be encouraged to show their workings to demonstrate their grasp of the underpinning knowledge and skills required when working with fractions, decimals and percentages. Learners will use a calculator in learning outcome 4 to convert between fractions, improper fractions, mixed numbers and decimal numbers. **Assessment criteria:** 1.1, 1.2 **Additional information:** tutors should provide learners with a range of fractions with different denominators for learners to put in order. Learners should be able to convert a range of fractions to the same common denominator before ordering them. Tutors should provide a range of quantities for learners to express as fractions.

Delivery and assessment
Assessment criteria: 2.1–2.4 **Additional information:** tutors should provide a range of numbers in fraction, decimal and percentage form. Learners should develop strategies for converting from fractions to decimals and percentages and vice versa. When working with fractions, learners must express them in their simplest form and be able to show their workings for this. **Assessment criteria:** 3.1–3.3 **Additional information:** tutors could provide straightforward addition and subtraction calculations using fractions for learners to complete. Alternatively, tutors could provide a range of scenarios which allow learners to demonstrate their knowledge and skills in working with everyday contexts, calculating amounts and quantities using fractions. Learners must be able to add and subtract fractions with the same and different denominators and mixed numbers. **Assessment criteria:** 4.1 **Additional information:** this learning outcome allows the learner to demonstrate their skills and knowledge in working with fractions and converting between fractions, improper fractions, mixed numbers and decimal numbers. Learners must use a calculator to complete the conversions.
Types of evidence
Evidence could include: • learner evidence • summative multiple-choice and/or short-answer question paper

Working with decimals and percentages (Y/505/2754)

Unit summary	In this unit learners will further develop their skills and build confidence in intermediate level computations involving decimals and percentages. Learners will work with decimals and percentages on paper and using a calculator. Learners will benefit from achieving the unit Working with decimals and percentages (H/505/2742) at level 1 prior to attempting this unit. This unit also offers progression opportunities to the unit Working with fractions (R/505/2753) at level 2 and is part of a series of units offering progression to level 2 Functional Skills maths qualifications or GCSE maths.
Credit value	2
Guided learning hours	20
Level	2

Learning outcome 1

The learner will:

1 Be able to work with decimals

The learner can:

1.1 Identify place value for digits in numbers up to 3 decimal places
1.2 Round decimals to different degrees of accuracy

Learning outcome 2

The learner will:

2 Be able to perform calculations with numbers of up to 3 decimal places

The learner can:

2.1 Add numbers of up to 3 decimal places
2.2 Subtract numbers of up to 3 decimal places
2.3 Multiply numbers of up to 3 decimal places
2.4 Divide numbers of up to 3 decimal places

Learning outcome 3

The learner will:

3 Be able to perform calculations using percentages

The learner can:

3.1 Order and compare percentages
3.2 Calculate percentage increases and decreases
3.3 Calculate one number as a percentage of another

3.4 Calculate decimals and percentages using a calculator

Assessment guidance

Delivery and assessment
The focus of the unit is to enable the learner to develop further strategies for working with decimals and percentages in a range of contexts. Learners are expected to be able to carry out calculations with decimals and percentages using written methods in the first instance. Learners should be encouraged to show their workings to demonstrate their grasp of the underpinning knowledge and skills required when working with decimals and percentages. Whilst developing their skills and knowledge of working with decimals and percentages, learners could use a calculator to check their written calculations. **Assessment criteria:** 1.1, 1.2 **Additional information:** tutors could provide learners with a range of numbers of up to 3 decimal places to work with. Learners must correctly identify the value of digits and be able to present the information orally or in written format. Learners can demonstrate their ability to work with numbers of up to 3 decimal places by rounding to different degrees of accuracy (for example, rounding to 0, 1 or 2 decimal places). **Assessment criteria:** 2.1–2.4 **Additional information:** tutors could provide learners with a range of calculations using numbers up to 3 decimal places. Learners will complete addition, subtraction, multiplication and division calculations. Learners' calculations should be accurate and should be completed using a written method. Learners could use their solutions to calculations completed in this learning outcome and use them to round to 0, 1 and 2 decimal places in assessment criterion 1.2. **Assessment criteria**: 3.1–3.4 **Additional information:** tutors could provide learners with a range of everyday scenarios to allow them to perform calculations using percentages. Learners should be able to order and compare percentages from a range of numbers and calculate percentage increases and decreases and one number as a percentage of another. Learners should be completed to 3 decimal places, rounding where appropriate. Learners' calculations should be accurate and should be completed using a written method. Learners must use a calculator when calculating with decimals and percentages to meet the requirements of assessment criterion 3.4.

Types of evidence
Evidence could include: • learner evidence • summative, multiple-choice and/or short-answer question papers

Working with measurement (D/505/2755)

Unit summary	This unit helps learners to develop skills and build confidence in working with measurement in a range of contexts and units. Learners will use formulae to find measurements of regular shapes and will be able to perform calculations using sums of money. Learners will benefit from achieving the units Working with measurement (K/505/2743) and Working with money (T/505/2745) at level 1 prior to attempting this unit. This unit offers progression opportunities to the unit Working with 2D and 3D shapes and space (H/505/2756) at level 2 and is part of a series of units offering progression to level 2 Functional Skills maths qualifications or GCSE maths.
Credit value	3
Guided learning hours	30
Level	2

Learning outcome 1

The learner will:

1 Be able to work with time in different formats

The learner can:

1.1 Calculate dates and times in different formats
1.2 Measure time accurately using appropriate instruments
1.3 Explain the relationships between units of time

Learning outcome 2

The learner will:

2 Be able to work with different units of measurement

The learner can:

2.1 Describe the relationships between metric units
2.2 Describe the relationships between imperial units
2.3 Calculate units of measure between systems for:
- length
- distance
- weight
- capacity
- temperature

2.4 Read scales accurately

Learning outcome 3

The learner will:

3 Be able to find measurements of regular shapes from given formulae

The learner can:

3.1 Convert measurements into the same units to make calculations
3.2 Find perimeters of regular shapes
3.3 Express pi as a fraction and decimal approximation
3.4 Calculate the following for circles:
- circumference
- area

3.5 Substitute values into given formulae to calculate the volume of:
- cuboids
- cylinders

3.6 Calculate areas of composite shapes

Learning outcome 4

The learner will:

4 Be able to calculate using sums of money

The learner can:

4.1 Calculate percentage changes
4.2 Calculate simple interest
4.3 Use given exchange rates to convert between currencies

Assessment guidance

Delivery and assessment
The focus of the unit is to enable learners to develop strategies for working with measurement in a range of contexts. Learners are expected to be able to work with time, measurement and money. Learners will work with different units of measurement in the contexts listed above and will use common formulae to find measurements of regular shapes. When performing calculations, learners should use written methods to demonstrate their ability to work with units of time, common measures, formulae and money. Learners may use calculators to check their solutions. Learners must ensure that all their calculations and measurements are accurate. **Assessment criteria:** 1.1–1.3

Delivery and assessment
Additional information: learners should be familiar with the 12 and 24 hour formats and be able to calculate dates and times in both formats. Tutors should ensure that learners have access to a range of appropriate instruments (for example, clocks and other timepieces) that will enable the learner to measure time accurately. Learners will use their knowledge of time to explain the relationship between units of time (for example, second, minute, hour, day, week, month and year). **Assessment criteria:** 2.1–2.4 **Additional information:** learners should be familiar with the common units of measure and be able to use common instruments of measurement. Tutors should ensure that appropriate measurement instruments are made available to learners. Learners should also be given maps to use alongside measuring instruments to achieve assessment criterion 2.4. Learners are expected to be able to read between marked divisions on a scale. Learners will use their knowledge of measurement to explain the relationship between units of measurement, both metric, such as millimetre (mm), centimetre (cm), metre (m), kilometre (km), grams (g), kilograms (kg), tonnes, millilitres (ml), litres (l); and imperial, such as inches, feet, yards, miles, ounces, pounds, stones, tons, pints, gallons. Learners will use the knowledge gained when completing assessment criteria 2.1 and 2.2 to support their calculations in assessment criterion 2.3. Calculations should be accurate to 2 decimal places where appropriate. **Assessment criteria:** 3.1–3.6 **Additional information:** tutors should provide measurements in different units that must be converted into the same unit before calculations can be completed. These could be provided as a series of problems to be solved via a multi-step approach. Learners should be able to calculate perimeters of regular shapes. This can be completed by measuring regular shapes by hand or calculating the length of each side of the shape and adding the side lengths together. The measurements should be accurate to one decimal place where appropriate and in the correct units. Learners should be able to draw on their skills and knowledge developed in the level 2 units Working with fractions (R/505/2753) and Working with decimals and percentages (Y/505/2754) when expressing pi (π) as a fraction and decimal approximation. This should be given accurate to 3 decimal places. Learners will be able to use given formula to calculate the circumference ($C = 2\pi r$) and area of a circle ($A = \pi r^2$). Calculations should be accurate to 3 decimal places and in the correct units, such as mm, cm, m, mm^2, cm^2, m^2. Learners will be able to use given formulae to calculate the volume of a cuboid (V = length x width x height) and a cylinder ($V = h\ \pi r^2$ = height x area of circle). Calculations should be accurate to 3 decimal places and in the correct units, such as cm^3, m^3.

Delivery and assessment
Assessment criteria: 4.1–4.3 **Additional information:** learners will use their knowledge of working with decimals and percentages to calculate percentage changes, simple interest and converting between different currencies. Answers should be provided in the correct currency/unit. Tutors should provide a range of exchange rates for learners to work with when completing this learning outcome.
Types of evidence
Evidence could include: • learner evidence • summative, multiple-choice and/or short-answer question papers

Working with 2D and 3D shapes and space (H/505/2756)

Unit summary	This unit will enable consolidation of and further develop the learner's awareness of the properties of 2D shapes and to help learners work with volume. The unit also looks at solving problems using mathematical properties of 2D shapes. Learners will benefit from achieving the unit Working with 2D shapes and space (M/505/2744) at level 1 prior to attempting this unit. This unit also offers progression to the unit Working with measurement (D/505/2755) at level 2 and is part of a series of units offering progression to level 2 Functional Skills maths qualifications or GCSE maths.
Credit value	1
Guided learning hours	10
Level	2

Learning outcome 1

The learner will:

1 Know how to use common 2 dimensional (2D) representations of 3 dimensional (3D) objects

The learner can:

1.1 Describe the properties of 2D and 3D objects
1.2 Explain how 3D objects can be represented using 2D representations
1.3 Describe 3D objects from 2D representations
1.4 Extract measurements from plans and maps for 3D representation

Learning outcome 2

The learner will:

2 Be able to solve problems involving 2D shapes and parallel lines

The learner can:

2.1 Explain what parallel lines are
2.2 Calculate angles from lines dissecting parallel lines, where one angle is given
2.3 Use parallel lines and 2D shapes to solve problems related to regular and irregular shapes
2.4 Use a scale to find dimensions from scale drawings

Assessment guidance

Delivery and assessment
This unit enables learners to further develop strategies for working with 2D shapes and how they can be used to represent 3D objects. Tutors must ensure that learners have access to protractors, rulers and scale drawings to enable them to complete the requirements of this unit. When performing calculations, written methods should be used to enable learners to demonstrate their ability to work with 2D and 3D shapes and space. Learners must ensure that all their calculations and measurements are accurate. **Assessment criteria:** 1.1–1.4 **Additional information:** learners should be familiar with 2D shapes and will develop their understanding of how 3D objects can be represented by 2D shapes. Tutors should provide a range of 2D shapes and 3D objects for learners to use when completing assessment criterion 1.2 and assessment criterion 1.3. **Assessment criteria:** 2.1–2.4 **Additional information:** learners should be familiar with working with parallel lines and calculating angles where lines dissect parallel lines. Learners may explain what parallel lines are verbally or in writing, illustrating their explanations with examples. Learners will apply their knowledge of the properties of 2D shapes when calculating the angles of dissecting lines, where one angle has been provided. Learners may check their answer using a protractor. Tutors could provide a number of everyday problems for learners to solve through application of their skills and knowledge of parallel lines and 2D shapes. Tutors should provide scale drawings in a range of contexts for learners to calculate dimensions which should be provided in the appropriate unit.
Types of evidence
Evidence could include: • learner evidence • summative, multiple-choice and/or short-answer question papers

Working with statistics (K/505/2757)

Unit summary	This unit enables the learner to develop a more complete awareness of how to handle data, retrieve data from a range of sources and to make statements about data sets. Learners will benefit from achieving the unit Working with statistics (A/505/2746) at level 1 prior to attempting this unit. It would also be helpful if learners completed the level 2 units Working with whole numbers (L/505/2752), Working with decimals and percentages (Y/505/2754) and Working with fractions (R/505/2753) prior to attempting this unit. This unit offers progression to the unit Working with probability (M/505/2758) at level 2 and is part of a series of units offering progression to level 2 Functional Skills maths qualifications or GCSE maths.
Credit value	2
Guided learning hours	20
Level	2

Learning outcome 1

The learner will:

1 Know how to work with discrete and continuous data

The learner can:

1.1 Explain the difference between discrete and continuous data
1.2 Describe the limitations of continuous data
1.3 Explain the purpose of scales in charts, diagrams and graphs
1.4 Extract discrete and continuous data from:
- tables
- diagrams
- charts
- line graphs

1.5 Organise discrete and continuous data appropriately
1.6 Represent discrete and continuous data as:
- tables
- diagrams
- charts
- line graphs

Learning outcome 2

The learner will:

2 Be able to find averages to compare 2 data sets

The learner can:

2.1 Explain the difference between mean, median and mode
2.2 Find the:
- mean in data sets
- mode in data sets
- median in data sets

2.3 Use differences in averages to compare data sets

Learning outcome 3

The learner will:

3 Be able to describe the spread within sets of data

The learner can:

3.1 Explain what the range is within a data set
3.2 Find the range within data sets
3.3 Use the range to draw conclusions about different sets of data

Assessment guidance

Delivery and assessment
This unit further develops learners' strategies for working with statistics and handling data. Learners are expected to be able to work with discrete and continuous data from a range of sources and represent this data in a range of ways. Tutors should provide information presented in tables, diagrams, charts and line graphs to enable learners to complete assessment criterion 1.4. Tutors should provide a range of data to work with and learners will be able to choose the most appropriate method to organise and present this data. **Assessment criteria:** 1.1–1.6 **Additional information:** learners should be able to work with discrete and continuous data and be able to extract such data from a range of sources. Achievement of assessment criteria 1.1, 1.2 and 1.3 could be through responding to oral or written questions provided by the tutor. Learners could demonstrate their knowledge of working with discrete and continuous data by illustrating their responses with examples of such data, either collated by the learner or sourced elsewhere.

Delivery and assessment
Learners should be given information in a variety of formats (tables, diagrams, charts and line graphs) from which they must extract and interpret the information obtained. Tutors should provide a variety of information that could relate to everyday contexts that provide discrete and continuous data which should be organised appropriately by the learner (tables, diagrams, charts and line graphs). **Assessment criteria:** 2.1–2.3 **Additional information:** learners must work with 2 separate data sets which can be provided by the tutors or generated by learners from familiar, everyday contexts. Using knowledge of the mean, mode and median, learners should be able to explain the difference between these terms and will find each for both data sets. Learners can then use this information to compare the data sets. **Assessment criteria:** 3.1–3.3 **Additional information:** learners could use the information provided for learning outcome 2 to aid coverage of this learning outcome. Alternatively, tutors could provide new data sets for learners to work with. To ensure learners demonstrate complete coverage of this learning outcome, a minimum of 3 different sizes of data sets should be used. Learners will be able to explain the range within a data set and will find it for the data sets provided to illustrate their answer. Learners should ensure that the range solutions provided are accurate and will use this information to draw conclusions about the different sets of data.
Types of evidence
Evidence could include: • learner evidence • summative, multiple-choice and/or short-answer question paper

Working with probability (M/505/2758)

Unit summary	Learners will develop their understanding of probability and be able to state the likely outcome of events in mathematical terms. The unit allows learners to analyse a given probability problem and draw conclusions from the results obtained. Learners will benefit from achieving the unit Working with probability (F/505/2747) at level 1 before attempting this unit. It would also be helpful if learners completed the level 2 units Working with whole numbers (L/505/2752) and Working with statistics (K/505/2757) before attempting this unit. This unit is part of a series of units offering progression to level 2 Functional Skills maths qualifications or GCSE maths.
Credit value	2
Guided learning hours	20
Level	2

Learning outcome 1

The learner will:

1 Understand the key terms and methods used in probability

The learner can:

1.1 Explain what is meant by probability
1.2 Describe probability as a numerical measure
1.3 Describe the terms:
- independent events
- combined events

1.4 Identify and record the range of possible outcomes of combined events

Learning outcome 2

The learner will:

2 Be able to analyse a given probability problem

The learner can:

2.1 Describe a probability problem
2.2 Generate relevant data sets to quantify a probability problem
2.3 Present the results and mathematical information using appropriate methods and language
2.4 Draw conclusions from the data, presenting the answer in different ways

Assessment guidance

Delivery and assessment
This unit enables learners to develop strategies for working with probability and handling data. Learners are expected to understand the key terms and methods used in probability and be able to use this information to analyse a probability problem. Tutors should provide a range of information to support learners in the completion of this unit. **Assessment criteria:** 1.1–1.4 **Additional information:** learners may cover the assessment criteria through a short oral presentation explaining what probability is and describing it as a numerical measure. Learners should describe the terms independent events and combined events and may find it helpful to illustrate their descriptions with examples. Tutors can support development of knowledge and understanding of independent and combined events in probability by presenting it in familiar everyday contexts. Learners should record the range of possible outcomes of the combined events in an appropriate way. **Assessment criteria:** 2.1–2.4 **Additional information:** learners should collect data about a topic of their choosing in a context that is familiar to them. Tutors should ensure that sufficient data is collected to ensure calculations are meaningful. Learners will generate data sets relevant to the probability problem being solved. Results, including mathematical information, should be displayed using appropriate methods. Results may be presented using electronic word processing or spreadsheet packages or written/drawn by hand. Learners will draw their own conclusions on the data presented and will explore different ways of presenting the information. Learners should ensure that information is logical and makes sense to the intended reader. A minimum of 2 different ways of presenting information should be used.
Types of evidence
Evidence could include: • learner evidence • summative, multiple-choice and/or short-answer question papers

Working with algebra (T/505/2759)

Unit summary	This unit supports learners in developing an understanding of some of the broader maths concepts and content, allowing the learner to progress to GCSE maths. In this unit, the learner is introduced to algebra in the form of linear equations. Learners will find it useful to have completed the level 2 units Working with whole numbers (L/505/2752), Working with 2D and 3D spaces and shape (H/505/2756), Working with measurement (D/505/2755), Working with statistics (K/505/2757) and Working with probability (M/505/2758) before taking this unit. This unit is designed to be taken as part of a wider level 2 maths qualification, where the learner has already built up and secured a range of mathematical knowledge.
Credit value	2
Guided learning hours	20
Level	2

Learning outcome 1

The learner will:

1 Be able to work with algebraic expressions

The learner can:

1.1 Identify the symbols used in inequality equations
1.2 Solve linear equations in different forms
1.3 Solve linear equations that involve inequality
1.4 Simplify algebraic expressions involving brackets

Assessment guidance

Delivery and assessment
This unit builds on knowledge of algebra and develops strategies for working with equations. Learners are expected to be able to carry out calculations using basic algebraic expressions and using common rules for working with them. Learners should use a written method and show their workings for the learning outcome. **Assessment criteria:** 1.1–1.4 **Additional information:** learners must be familiar with the symbols used in inequality equations and should be able to identify them either from a list of symbols, or by writing them. Tutors could provide learners with a range of equations for learners to work with. These should include different forms of linear equations, including those that involve inequality. Tutors should also provide algebraic expressions involving brackets that must be simplified.

Types of evidence
Evidence could include: • learner evidence • summative, multiple-choice and/or short-answer question paper

Working with mathematical skills (K/505/2760)

Unit summary	This unit will help learners to develop a basic understanding of some of the skills standards associated with Functional Skills, allowing them to progress to Functional Skills maths qualifications. Learners will use mathematical skills to solve straightforward practical problems. Learners will benefit from completing the level 2 units Working with whole numbers (L/505/2752), Working with 2D and 3D shapes and space (H/505/2756), Working with measurement (D/505/2755), Working with statistics (K/505/2757) and Working with probability (M/505/2758) prior to attempting this unit. This unit will aid progression to Functional Skills and is designed to be taken as part of a wider level 2 maths qualification, where the learner has already built up and secured a range of mathematical knowledge.
Credit value	2
Guided learning hours	20
Level	2

Learning outcome 1

The learner will:

1 Be able to solve straightforward practical problems using mathematical skills

The learner can:

1.1 Identify practical mathematical problems in everyday contexts
1.2 Find the information needed to tackle the mathematical problems in everyday contexts
1.3 Select the mathematical techniques or methods needed to find solutions to problems in everyday contexts
1.4 Apply mathematical skills to find solutions to practical everyday problems
1.5 Use checking procedures at each stage of the process
1.6 Interpret results
1.7 Communicate solutions using results to support explanations

Assessment guidance

Delivery and assessment
The focus of the unit is to enable the learner to develop strategies for working with mathematical skills to solve straightforward practical problems. The learner will be able to draw on the skills, knowledge and understanding developed throughout the level 2 maths units when undertaking this unit. They will find the level 2 units Working with whole numbers (L/505/2752), Working with 2D and 3D shapes and space (H/505/2756), Working with measurement (D/505/2755), Working with statistics (K/505/2757) and Working with probability (M/505/2758) particularly useful prerequisites to this unit. Learners will be expected to use the written method when solving problems and show all workings completed throughout the unit.

Delivery and assessment
Learners may use a calculator to check their solutions to problems. **Assessment criteria:** 1.1–1.7 **Additional information:** learners must identify practical mathematical problems in everyday contexts. A minimum of 2 problems must be identified. Tutors could provide a range of problems for learners to choose from or learners can identify them from their everyday lives. The problems should be within contexts familiar to learners whilst allowing the demonstration of mathematical skills and knowledge. Learners are expected to find or calculate some of the necessary information to enable them to find a solution to the problem. Learners will select the most appropriate mathematical techniques to tackle the problems and they should be able to explain why they have chosen the particular skill. When tackling the problem, learners must use the appropriate checking procedures at each stage. Learners are expected to interpret the results obtained and communicate the solutions. This could be via a short report or presentation and learners will discuss how they approached the problem and arrived at the solution. They will use their results to support their explanations.
Types of evidence
Evidence could include: • learner evidence • summative assessment paper which allows full coverage and demonstration of the necessary skills and knowledge to find the solutions to the problem

Section 3: support

Support materials

The following support materials are available to assist with the delivery of these qualifications and are available on the NCFE website:

- learner's evidence tracking log (LETL)
- learning resources

Other support materials

The resources and materials used in the delivery of these qualifications must be age-appropriate and due consideration should be given to the wellbeing and safeguarding of learners in line with your institute's safeguarding policy when developing or selecting delivery materials.

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Contact us

NCFE
Q6
Quorum Park
Benton Lane
Newcastle upon Tyne
NE12 8BT

Tel: 0191 239 8000*
Fax: 0191 239 8001
Email: customersupport@ncfe.org.uk
Website: www.ncfe.org.uk

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