ASSESSMENT PACK

Awards/Certificates in Mathematics Skills (3847-21/22/23)

July 2013 Version 2.0

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Contents

1 Introduction

This assessment pack should be read in conjunction with the Awards/Certificates in Mathematics Skills (3847) Qualification Handbook for centres, which contains the following important information:

- Who the qualifications are for
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- Centre requirements
- Approval
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1.1 Qualifications and qualification pathways

The Awards and Certificates in Mathematics Skills (3847) have been developed to provide learners with a flexible approach to developing and demonstrating the skills in Mathematics which will enable them to build confidence and provide a foundation for further study towards a GCSE A*-C in Mathematics, a Functional Skill in Mathematics at level 2 or to move into employment or higher level study.

The qualifications are available with different credit values to ensure learners have a highly flexible route towards these aims. The qualifications are built by combining an appropriate blend of units which meet the needs of a learner. The qualifications available at entry 1, entry 2, entry 3, level 1 and level 2 are:

- Single Unit Awards
- Certificates in Mathematics Skills

In addition, some learners may wish to focus on developing a discrete skill area, eg number. To meet this need, we have also developed a range of themed awards (4-7 credits) which cover each of the three skill areas in Mathematics at entry 1, entry 2, entry 3, level 1 and level 2.

- Award in Mathematics Skills - Number
- Award in Mathematics Skills - Handling Data
- Award in Mathematics Skills - Measure, Shape and Space

The Qualification Handbook provides further guidance on the structures for each qualification.

1.2 Units

There are 55 units available in the Mathematics Skills (3847) suite. The units align to the National Standards for Adult Numeracy and have been mapped to the Adult Numeracy Core Curriculum and the Functional Skills subject criteria. Where appropriate, they are also signposted to GCSE subject criteria for Mathematics.

Units can be taken as stand-alone assessments or form part of any of the qualification pathways described above.

The list of available units is as follows:

Unit No.	Level	Title	GLH	Credit Value
010	Entry 1	Number - whole numbers to 10	20	2
011	Entry 1	Number - addition	20	2
012	Entry 1	Number - subtraction	20	2
013	Entry 1	Measure, shape and space - money	10	1
014	Entry 1	Measure, shape and space - time	10	1
015	Entry 1	Measure, shape and space - size, length, width and height	10	1
016	Entry 1	Measure, shape and space - weight and capacity	8	1
017	Entry 1	Measure, shape and space - common shapes and positional vocabulary	10	1
018	Entry 1	Handling data - extract and sort data	13	2
019	Entry 1	Handling data - represent information	20	2
110	Entry 2	Number - whole numbers to 100	19	2
111	Entry 2	Number - addition	10	1
112	Entry 2	Number - fractions	10	1
113	Entry 2	Number - subtraction	10	1
114	Entry 2	Number - multiplication	10	1
115	Entry 2	Measure, shape and space - money	19	2
116	Entry 2	Measure, shape and space - time	10	1
117	Entry 2	Measure, shape and space - length	10	1
118	Entry 2	Measure, shape and space - weight, capacity and temperature	10	1
119	Entry 2	Measure, shape and space - shapes and positional vocabulary	10	1

Unit No.	Level	Title	GLH	Credit Value
120	Entry 2	Handling Data - extract and sort data	20	2
121	Entry 2	Handling Data - collect and represent information	16	2
210	Entry 3	Number - whole numbers to 1000	19	2
211	Entry 3	Number - addition and subtraction	10	1
212	Entry 3	Number - fractions	10	1
213	Entry 3	Number - multiplication	10	1
214	Entry 3	Number - division	10	1
215	Entry 3	Number - decimals	9	1
216	Entry 3	Measure, shape and space - money	10	1
217	Entry 3	Measure, shape and space - temperature and time	10	1
218	Entry 3	Measure, shape and space - length, weight, capacity and shapes	18	2
219	Entry 3	Handling Data - extract and use data	19	2
220	Entry 3	Handling Data - represent information	16	2
310	Level 1	Number - positive and negative numbers	20	2
311	Level 1	Number - fractions, ratio and proportion	18	2
312	Level 1	Number - decimals	10	1
313	Level 1	Number - percentages	10	1
314	Level 1	Measure, shape and space - money, time and temperature	10	1
315	Level 1	Measure, shape and space - length, weight and capacity	10	1
316	Level 1	Measure, shape and space - calculate using shape and space	17	2
317	Level 1	Handling data - extract and interpret data	9	1
318	Level 1	Handling data – collect, organise and represent data	6	1
319	Level 1	Handling data - mean and range	10	1
320	Level 1	Handling data - probability	10	1
410	Level 2	Number - number and formulae	10	1
411	Level 2	Number - fractions, ratio and proportion	18	2
412	Level 2	Number - decimals	10	1
413	Level 2	Number - percentages	14	2
414	Level 2	Measure, shape and space - money, time and temperature	10	1
415	Level 2	Measure, shape and space - length, weight and capacity	9	1
416	Level 2	Measure, shape and space - shape and space	16	2
417	Level 2	Handling data - extract and interpret data	7	1
418	Level 2	Handling data -collect and use data	9	1
419	Level 2	Handling data - statistics	9	1
420	Level 2	Handling data - probability	10	1

Initial assessment and induction

Initial and diagnostic assessment of each learner should be conducted before the start of their programme to ensure they are working at the correct level, and that specific skills in need of development are clearly identified.

We recommend that centres provide an induction programme so that learners fully understand:

- the units/qualifications they will be working towards and how these relate to any identified skills in need of development
- the requirements of the units/qualifications
- their responsibilities as a learner
- the responsibilities of the centre
- any possible progression routes.

This information can be recorded on a learning contract.

Learners also need to understand relevant centre policies and procedures, including health and safety and equality and diversity statements.

2 Delivery

2.1 Learning programmes

A learning programme must ensure that for every learner there is an opportunity for progression.

Learning programmes are not prescribed by City & Guilds. Centres are free to design their own and are encouraged to draw as widely as possible on resources both within and outside the centre.

Units are designed to allow active learning by learners. The training and learning style adopted within a centre will depend on the maturity of the learners and the stage in the programme. At the start of a programme, it is likely that learners will need more guidance on how to meet the requirements. Some learners will need specialised tuition to overcome specific learning difficulties.

If attainment of Mathematics Skills (3847) qualifications is to be effective in developing the skills which learners have, as well as recording the level(s) they have reached, it is important that learning activities are both realistic and challenging.

Effective Learning for Mathematics Skills (3847) Qualifications

- learning programmes should relate to the learners, reflecting a variety of life and work experiences appropriate to adult learners
- theory and practice components should be sequenced carefully to help learners learn the techniques and knowledge underpinning the units
- explicit tuition and practice in using learning strategies within a wide range of contexts
- careful structuring of tasks that promote the ability to think by creating problems of sufficient challenge to stretch, but not deter, the learners
- systematic variation of tasks in order that learners can see how, and to what extent, existing skills can be applied to good effect in less familiar tasks and identify when new learning is required
- opportunities to work with others (eg reciprocal teaching, discussion groups, pair problem solving) so that learners are encouraged to express their reasons for adopting particular approaches and thus learn from each other what works and what doesn't work
- providing learners with precise feedback, not only on how they are doing, but also on what to do to improve
- encouraging self-assessment and reflection by learners (to think about their own thinking)
- where appropriate, the introduction of problem solving strategies and techniques to experiment with skills in real life task-based situations.

3 Assessment

At all levels, learners must complete a portfolio of evidence, demonstrating they have met the outcome(s) of each unit they have completed. This could be a paper based or electronic portfolio.

Role of the Assessor

The assessor is responsible for judging the learners' evidence against the assessment requirements. Assessors help learners identify opportunities for assessment and can provide guidance of the nature of evidence that can be produced. It is possible that a learner may have more than one assessor, each assessing different units or aspects of units.

The assessor is responsible for:

- managing the assessment process
- agreeing, recording and reviewing assessment plans with the learner
- judging the evidence against the assessment requirements
- using appropriate assessment methods
- ensuring that assessments are fair
- recording the assessment process and all assessment outcomes
- providing feedback to the learner following each assessment
- passing all assessment records, with recorded outcomes, to the internal quality assurer
- contributing to continuous improvements within the assessment process
- maintaining own subject specialist knowledge and competence
- contributing to the evaluation of the assessment process
- contributing to standardisation meetings.

Assessment planning

Effective planning for assessment by the learner and their assessor is essential if the learner is to succeed within an appropriate timescale. The purpose of assessment planning is to help learners identify how and when they will provide the evidence required to demonstrate their competence. Planning should be a joint activity between the learner and assessor.

Assessment plans are successful when they:

- specify the units being assessed
- include agreements about the learning activities to be created/used in the learning programme
- give an outline of the settings in the programme which prove the most appropriate contexts for assessment
- provide a relatively detailed breakdown of where and when assessments will take place
- include the method of assessment that will be undertaken
- make clear the types of evidence to be collected
- make note of others who need to be informed of or involved in the planned assessment
- contain space to review each assessment
- include signatures of learners and assessors.

When planning assessments, the assessor should aim to identify opportunities for holistic assessment, that is, to assess across elements of a unit, a full unit or clusters of units. They should also include on-going and continuous assessment as appropriate.

Preparing for assessment

Before starting work towards the qualification, learners will need support and guidance to enable them to:

- identify which units and which route through the qualification is best suited to their needs
- understand what the selected units cover
- understand what will be required of them
- understand the assessment process and identify the people who will be involved
- understand how to identify suitable evidence
- understand how to compile their portfolio of evidence
- understand the appeal process
- understand any alternative assessment arrangements
- understand the support they can access during the learning and assessment process.

Marking assessments and providing feedback to learners

When marking assessments, assessors should consider whether evidence is:

- valid – Does evidence demonstrate what is claimed? Does evidence meet the minimum assessment requirement?
- authentic – Is evidence the real work of the learner?
- currency – Is the evidence current?
- sufficient – Does the evidence cover all of the assessment criteria? Is the evidence of good quality?

Feedback should be provided to learners following an assessment. Feedback should support learners to improve the quality of their work. This is an important part of the assessment process and should be provided whether the learner has been successful or unsuccessful in meeting the assessment criteria.

Evidence requirements

This Assessment Pack explains the types, and minimum amount, of evidence learners must produce to demonstrate they have met the assessment requirements.

Building a portfolio of evidence

The term portfolio is used to describe the organised collection of a learner's evidence for assessment. Although learners are generally responsible for gathering the evidence to demonstrate their competence, centres will need to provide guidance and support to help learners develop the necessary skills to produce/gather evidence, particularly at lower levels where learners could require considerable support. During induction, learners should be taken through the process of building a portfolio of evidence, including the documentation that the centre is using.

As well as the evidence, the portfolio must contain full learner details and those of other people involved in the assessment process.

City & Guilds has developed a separate Candidate Logbook for this suite of qualifications. This is downloadable from the City & Guilds website **www.cityandguilds.com**. It contains evidence recording and summary sheets. Centres may develop and use an alternative logbook, but it must include information equivalent to that recorded in the Candidate Logbook.

The learner owns the portfolio throughout the assessment and quality assurance process and after certification. Assessors may review the portfolio at the centre following an assessment, returning it later to the learner. It will be held at the centre for internal quality assurance purposes.

To safeguard portfolios and remove the risk of them becoming mislaid, centres should consider a system of portfolio management during the assessment and verification process.

Portfolios of evidence may be returned to learners after certification, but may sometimes need to be retained to be viewed as part of a visit by a City & Guilds Qualification Consultant. Further details are provided in the document 'Our Quality Assurance Requirements'.

Quality assurance

To meet the quality assurance criteria for these qualifications, the centre must ensure that the following internal roles are undertaken:

- Quality Assurance Co-ordinator
- Trainer/Tutor
- Assessor (for internally assessed components)
- Internal Quality Assurer(s) (for internally assessed components).

These roles are defined more fully in the document 'Qualification and Systems Consultant Roles'.

Further supporting quality assurance documents can be found here:
http://www.cityandguilds.com/Provide-Training/Centre-Support/Centre-Document-Library/Policies-and-Procedures/Quality-Assurance-Documents

4 Specimen unit guidance

This section of the assessment pack provides guidance to support those working with and/or assessing the Mathematics Skills (3847) units.

It includes:

- City & Guilds unit title and number
- UAN
- Level
- Unit credit value
- Recommended guided learning hours
- Learning outcomes with related assessment criteria
- Explanation of evidence and assessment criteria
- Evidence requirements
- How does this unit go beyond requirements at this level?

Unit 010 Number – whole numbers to 10

UAN:	**D/504/5093**
Level:	Entry 1
Credit value:	2
GLH:	20
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and is fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in reading, writing and ordering numbers up to ten.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to count up to 10 items (N1/E1.1)
2. be able to read and write numbers up to 10 (N1/E1.2)
3. be able to compare numbers up to 10 (N1/E1.3)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **20** hours should be allocated for this unit.

Unit 010 Number – whole numbers to 10

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to count up to 10 items
The learner can:
1.1 state numbers 0 - 10 in order
1.2 count items up to 10
1.3 count on up to 10

2. Outcome 2 be able to read and write numbers up to 10
The learner can:
2.1 write numbers 0 – 10
2.2 read numbers 0 - 10

3. Outcome 3 be able to compare numbers up to 10
The learner can:
3.1 arrange numbers in order of value
3.2 compare numbers

Unit 010 Number – whole numbers to 10

Guidance

To meet the assessment criteria for learning outcome one learners need to know how to count on and back from any number and understand that if items are rearranged the number remains the same.

Learners might:

- say the numbers from 0 to 10 in order
- count up to 10 items which are relevant to their personal circumstances at home or work eg cups or nails
- count items, re-arrange them and count them again
- count the number of people and count sufficient chairs for them
- count the number of dots on a dice and move a counter the same number of spaces
- count on in 1p coins starting from any number less than 10 eg counting on from 3p up to 10
- count on from a given number of pencils or other item up to the required number eg learner has 4 pencils and needs to count on up to 9 so each member of the group has a pencil.

To meet the assessment criteria for outcome 2 learners need to understand that numerals can be represented in writing and recognise Arabic numerals up to 10 written in different fonts and styles.

Learners might:

- write or copy the numbers from 0 to 10 in order
- write down a telephone number
- match numbers in words and numerals
- play matching games using numbers 0 to 10
- read numbers up to 10 from a rule or measuring tape
- read numbers in everyday contexts eg signs and adverts
- input digits using a numeric key pad eg a telephone or calculator.

To meet the assessment criteria for outcome 3 learners need to understand and use the vocabulary of comparing numbers and arrange numbers in order of value.

Learners might:

- sort number cards into order of value
- fill in missing numbers in a sequence
- arrange piles of pennies according to their value
- use ordinal numbers first, second and third in everyday contexts such as using a lift or following instructions.

- use ‘more than’ and ‘less than’ to compare amounts
- pick two number cards and state the relationship between the two cards eg 5 is more than 3 or 3 is less than 5.

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions

Unit 011 Number – addition

UAN:	**H/504/5094**
Level:	Entry 1
Credit value:	2
GLH:	20
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and is fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in addition with totals up to ten.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to add single digit numbers with totals to 10 (N1/E1.4)
2. be able to interpret + and = in practical situations for solving problems (N1/E1.6)
3. be able to use a calculator to check addition calculations using whole numbers (N1/E1.7)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **20** hours should be allocated for this unit.

Unit 011 Number – addition

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to add single digit numbers with totals to 10

The learner can:
1.1 add number of given objects
1.2 state number bonds

2. Outcome 2 be able to interpret + and = in practical situations for solving problems

The learner can:
2.1 write signs + and =
2.2 work out problems that include signs + and =

3. Outcome 3 be able to use a calculator to check addition calculations using whole numbers

The learner can:
3.1 use a calculator to check addition answers

Unit 011 Number – addition

Guidance

To meet the assessment criteria for learning outcome one learners need to understand the operation of addition and related vocabulary eg add, sum of, total, plus.

Learners might:

- use a number line to practice addition by counting on
- use objects to add single digit numbers eg 2 cups for tea and 5 for coffee – how many are needed?
- use coins to add single digit numbers eg cost in pence of two 3p sweets
- state number bonds for addition ie pairs of numbers with totals to 10

To meet the assessment criteria for outcome 2 learners need to understand that + represents the operation of addition and = represents equality.

Learners might:

- write or copy the signs + and = use in place of different words for addition
  (eg add, sum of, total, plus and equals, is equal to , is the same as. For example 2 plus 2 equals 4 or 2 add 2 is the same as 4)
- match cards with equivalent addition problems eg 5 + 3 or 5 add 3 or 5 plus 3
- write given problems using symbols + and = then calculate the answer
- make number sentences including answers from cards with numbers 0-9 and symbols + and =
- work out given addition problems
- identify the symbols + and = on a calculator or keyboard

To meet the assessment criteria for outcome 3 learners need to recognise the numbers 0-9 and know the signs + and =. They need to understand how to key in numbers and operators, read different calculator displays and clear the display.

Learners might:

- use a variety of hand-held and on-screen calculators to check answers
- use a calculator to check given answers to addition problems
- use a calculator to check their answers to addition problems in learning outcome 2

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions

Unit 012 Number – subtraction

UAN:	**K/504/5095**
Level:	Entry 1
Credit value:	2
GLH:	20
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in subtraction with single digit numbers.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to subtract single digit numbers from numbers up to 10 (N1/E1.5)
2. be able to interpret – and =in practical situations for solving problems (N1/E1.6)
3. be able to use a calculator to check subtraction calculations using whole numbers (N1/E1.7)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **20** hours should be allocated for this unit.

Unit 012 Number – subtraction

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to subtract single digit numbers from numbers up to 10

The learner can:
1.1 take away number of given objects
1.2 state subtraction facts

2. Outcome 2 be able to interpret – and = in practical situations for solving problems

The learner can:
2.1 write the signs – and =
2.2 work out problems that include signs – and =

3. Outcome 3 be able to use a calculator to check subtraction calculations using whole numbers

The learner can:
3.1 use a calculator to check subtraction answers using whole numbers

Unit 012 Number – subtraction

Guidance

To meet the assessment criteria for learning outcome one learners need to understand the operation of subtraction and related vocabulary.

Learners might:

- use a number line to practice subtraction by counting back
- know how to add back to check
- use objects or coins to subtract single digit numbers from numbers up to10
- calculate the shortfall in numbers eg eggs for a recipe, cups for tea
- state number bonds for subtraction ie pairs of numbers with totals to 10
- subtract zero from different numbers

To meet the assessment criteria for outcome 2 learners need to understand that - represents the operation of subtraction and = represents equality.

Learners might:

- write or copy the signs – and = then find different words for subtraction
  (eg take away, difference, less than and equals, is equal to , is the same as. For example 4 take away 3 equals 1 or 4 minus 1 is 3)
- match cards with equivalent subtraction problems eg 5 – 3 or 5 take away 3 or 5 minus 3
- write given problems using symbols – and = then calculate the answer
- make number sentences including answers from cards with numbers 0-9 and symbols - and = recognizing that the larger number is written first
- work out given subtraction problems
- identify the symbols – and = on a calculator or keyboard

To meet the assessment criteria for outcome 3 learners need to recognise the numbers 0-9 and know the signs – and =. They need to understand how to key in numbers and operators, read different calculator displays and clear the display.

Learners might:

- use a variety of hand-held and on-screen calculators to check answers
- use a calculator to check given answers to subtraction problems
- use a calculator to check their answers to subtraction problems in learning outcome 2

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions

Unit 013 Measure, shape and space – money

UAN:	**M/504/5096**
Level:	Entry 1
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in recognising and selecting coins and notes.

Learning outcomes

There are **two** learning outcomes to this unit:

1. be able to recognise coins (MSS1/E1.1)
2. be able to recognise notes (MSS1/E1.1)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 013 Measure, shape and space – money

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to recognise coins
The learner can:
1.1 identify 1p, 2p, 5p and 10p coins
1.2 identify £1 and £2 coins
1.3 select coins for different contexts

2. Outcome 2 be able to recognise notes
The learner can:
2.1 identify £5 and £10 notes
2.2 select notes for different contexts

Unit 013 Measure, shape and space – money

Guidance

To meet the assessment criteria for learning outcome one learners need to recognise and select coins in different contexts for each

Learners might:

- pick out 1p, 2p, 5p and 10p coins from a petty cash box
- match 1p, 2p, 5p and 10p coins with their value
- pick out £1 and £2 coins from a petty cash box
- select coins to buy a drink from a vending machine
- select coins to pay for a parking at a parking meter
- select coins to pay a bus fare.

To meet the assessment criteria for outcome 2 learners need to recognise and select notes in different contexts for each

Learners might:

- pick out £5 and £10 notes from a petty cash box
- match £5 and £10 notes coins with their value
- select notes to pay for a meal
- select two £5 notes when requested – give me two £5 notes in exchange for a £10 note.

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least two occasions

Unit 014 Measure, shape and space – time

UAN:	**T/504/5097**
Level:	Entry 1
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in working with time. Learners will relate familiar events to the time of day, days of the week and seasons.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to relate familiar events to times of the day (MSS1/E1.2)
2. be able to relate familiar events to days of the week (MSS1/E1.2)
3. be able to relate familiar events to seasons of the year (MSS1/E1.2)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 014 Measure, shape and space – time

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to relate familiar events to times of the day
The learner can:
1.1 state something usually done in the morning
1.2 state something usually done in the afternoon
1.3 state something usually done in the evening
1.4 give an o'clock time for an activity

2. Outcome 2 be able to relate familiar events to days of the week
The learner can:
2.1 state the days of the week
2.2 order the days of the week
2.3 state the day of the week an activity occurs

3. Outcome 3 be able to relate familiar events to seasons of the year
The learner can:
3.1 state the seasons of the year
3.2 state the season in which an event occurs

Unit 014 Measure, shape and space – time

Guidance

To meet the assessment criteria for learning outcome one learners need to relate familiar events and activities to different times of day.

Learners might:

- discuss their own day
- fill in a simple day plan – morning, afternoon, evening
- enter an appointment in a diary
- match activities to appropriate o'clock times

To meet the assessment criteria for outcome 2 learners need to relate familiar events and activities to different days of the week.

Learners might:

- state the days of the week in order
- arrange cards to order the days of the week
- fill in a simple week plan
- use a diary
- match activities to appropriate days of the week
- discuss their college timetable, work activities or favourite television programmes in relation to particular days of the week.

To meet the assessment criteria for outcome 3 learners need to relate familiar events and activities to seasons of the year.

Learners might:

- state the seasons of the year in order
- match given events and activities to different seasons eg a snowstorm, religious festivals, their birthday
- state the season in which a particular event occurs.

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions

Unit 015 Measure, shape and space – size, length, width and height

UAN:	**A/504/5098**
Level:	Entry 1
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in describing and comparing the size, length, width and height of items.

Learning outcomes

There are **four** learning outcomes to this unit:

1. be able to compare sizes of items (MSS1/E1.3)
2. be able to compare length of items (MSS1/E1.4)
3. be able to compare width of items (MSS1/E1.4)
4. be able to compare height of items (MSS1/E1.4)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 015 Measure, shape and space – size, length, width and height

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to compare sizes of items
The learner can:
1.1 use words to describe size
1.2 compare items in terms of size

2. Outcome 2 be able to compare length of items
The learner can:
2.1 use words to describe length
2.2 compare items in terms of length

3. Outcome 3 be able to compare width of items
The learner can:
3.1 use words to describe width
3.2 compare items in terms of width

4. Outcome 4 be able to compare height of items
The learner can:
4.1 use words to describe height
4.2 compare items in terms of height

Unit 015 Measure, shape and space – size, length, width and height

Guidance

To meet the assessment criteria for learning outcome one learners need to use words to describe size and compare items in terms of size.

Learners might:

- describe the size of familiar objects eg small spoon, large box
- ask for items by size eg smallest slice of cake
- respond to requests for items by size eg a large drink
- sort objects in order of size and make comparisons eg larger than.

To meet the assessment criteria for outcome 2 learners need to use words to describe length and compare items in terms of length.

Learners might:

- describe the length of familiar objects eg long piece of wood, a short nail
- ask for items by length eg longest ribbon
- respond to requests for items by length eg longest
- sort objects in order of length and make comparisons eg longer than.

To meet the assessment criteria for outcome 3 learners need to use words to describe width and compare items in terms of width.

Learners might:

- describe the width of familiar objects eg a wide piece of material, a narrow gap between two cupboards
- ask for items by width eg widest ribbon
- respond to requests for items by width eg widest
- sort objects in order of width and make comparisons eg wider than.

To meet the assessment criteria for outcome 4 learners need to use words to describe height and compare items in terms of height.

Learners might:

- describe the height of familiar objects eg a tall person, a small child
- ask questions eg who is the tallest in the group?
- make comparisons eg Jo is taller than Sam.

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions

Unit 016 Measure, shape and space – weight and capacity

UAN:	**F/504/5099**
Level:	Entry 1
Credit value:	1
GLH:	8
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in describing and comparing the weight and capacity of items.

Learning outcomes

There are **two** learning outcomes to this unit:

1. be able to compare weight of items (MSS1/E1.5)
2. be able to compare capacity of items (MSS1/E1.6)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **8** hours should be allocated for this unit.

Unit 016 Measure, shape and space – weight and capacity

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to compare weight of items
The learner can:
1.1 use words to describe weight
1.2 compare items in terms of weight

2. Outcome 2 be able to compare capacity of items
The learner can:
2.1 use words to describe capacity
2.2 compare items in terms of capacity

Unit 016 Measure, shape and space – weight and capacity

Guidance

To meet the assessment criteria for learning outcome one learners need to use words to describe weight and compare items in terms of weight. Learners should understand that weight is independent of size.

Learners might:

- describe the weight of familiar objects eg a feather is light, a sack of potatoes is heavy
- ask for items by weight eg the heaviest bag
- respond to requests for items by weight
- sort objects in order of weight and make comparisons eg lighter than.

To meet the assessment criteria for outcome 2 learners need to use words to describe capacity and compare items in terms of capacity. Learners should understand that capacity is a measure of volume and that shapes of containers can be deceptive.

Learners might:

- describe the capacity of familiar objects eg full bottle, empty jug
- choose a container by capacity
- sort objects in order of capacity and make comparisons eg holds more than, holds less than.

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least two occasions

Unit 017 Measure, shape and space – common shapes and positional vocabulary

UAN:	**K/504/5100**
Level:	Entry 1
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in recognising common shapes and using simple positional vocabulary.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to name common 2D shapes (MS2/E1.1)
2. be able to name common 3D shapes (MS2/E1.1)
3. be able to use everyday positional vocabulary (MS2/E1.2)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 017 Measure, shape and space – common shapes and positional vocabulary

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to name common 2D shapes
The learner can:
1.1 name common 2D shapes in a range of orientations

2. Outcome 2 be able to name common 3D shapes
The learner can:
2.1 name common 3D shapes in a range of orientations

3. Outcome 3 be able to use everyday positional vocabulary
The learner can:
3.1 recognise words that explain position
3.2 use words that explain position for given situations

Unit 017 Measure, shape and space – common shapes and positional vocabulary

Guidance

To meet the assessment criteria for learning outcome one learners need to know the names of common 2-D shapes eg rectangle, square, circle and recognise these flat shapes in different orientations and sizes.

Learners might:

- label shapes on a worksheet
- identify shapes around the room
- find shapes in designs
- classify objects by shape.

To meet the assessment criteria for outcome 2 learners need to know the names of common 3-D shapes eg cube, cuboid and recognise these solid or container shapes in different orientations and sizes.

Learners might:

- label 3-D shapes on a worksheet
- identify a cube from a collection of objects
- Identify shapes around the room
- classify objects by shape.

To meet the assessment criteria for outcome 3 learners need to recognise and use everyday positional vocabulary eg between, inside, near to.

Learners might:

- match written instructions to pictures eg the sweets are inside the box
- follow directions that use positional vocabulary eg directions to the library
- give directions that use positional vocabulary eg hang the picture between the door and the window.

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions

Unit 018 Handling data – extract and sort data

UAN:	**M/504/5101**
Level:	Entry 1
Credit value:	2
GLH:	13
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in extracting simple information and sorting objects using a single criterion.

Learning outcomes

There are **two** learning outcomes to this unit:

1. be able to extract simple information from lists (HD1/E1.1)
2. be able to sort objects using a single criterion (HD1/E1.2)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **13** hours should be allocated for this unit.

Unit 018 Handling data – extract and sort data

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to extract simple information from lists
The learner can:
1.1 select information from lists ordered numerically
1.2 select numerical information from lists ordered in different ways

2. Outcome 2 be able to sort objects using a single criterion
The learner can:
2.1 sort given objects by single criterion

Unit 018 Handling data – extract and sort data

Guidance

To meet the assessment criteria for learning outcome one learners need to extract simple information from lists that are ordered numerically, eg product numbers, or contain numerical information, eg telephone numbers.

Learners might:

- find what is on floor 3 in a shop directory
- find the product code to order an item
- find the number of eggs needed for a recipe
- find an emergency telephone number
- find quantities on a shopping list.

To meet the assessment criteria for outcome 2 learners need to know how to sort and classify objects using a single criterion eg colour or shape.

Learners might:

- sort items for recycling eg by paper, glass or plastic
- sort clothes by size or colour
- arrange books by subject
- find all the square plates
- sort screws by size.

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least two occasions

Unit 019 Handling data – represent information

UAN:	**T/504/5102**
Level:	Entry 1
Credit value:	2
GLH:	20
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in presenting information in different formats including simple lists and pictograms.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to construct simple lists (HD1/E1.3)
2. be able to represent information numerically (HD1/E1.3)
3. be able to construct pictorial representations (HD1/E1.3)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **20** hours should be allocated for this unit.

Unit 019 Handling data – represent information

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to construct simple lists
The learner can:
1.1 create simple list

2. Outcome 2 be able to represent information numerically
The learner can:
2.1 present information numerically

3. Outcome 3 be able to construct pictorial representations
The learner can:
3.1 represent information pictorially
3.2 create a simple pictogram

Unit 019 Handling data – represent information

Guidance

To meet the assessment criteria for learning outcome one learners need to understand how to construct a list to present information.

Learners might:

- prepare a shopping list with multiple items eg 5 apples, 6 eggs, 2 cauliflowers
- prepare a menu with prices
- prepare a list of equipment.

To meet the assessment criteria for outcome 2 learners need to know how to present numerical information.

Learners might:

- complete a simple order form eg 3 rulers, 4 pens
- complete a simple stock check eg 2 spades, 1 rake
- present results of a simple survey eg 5 people drink tea and 4 drink coffee.

To meet the assessment criteria for outcome 3 learners need to know how to construct pictorial representations eg simple pictogram, diagram.

Learners might:

- construct an equipment list using pictures
- construct a simple pictogram eg to show the number of people travelling by car and bus
- put a cross on a diagram eg to show where they would like to sit at the cinema
- construct a simple diagram eg to show where to hang a picture, for example between the door and the window.

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions

Unit 110 Number – whole numbers to 100

UAN:	**A/504/5103**
Level:	Entry 2
Credit value:	2
GLH:	19
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in reading, writing and comparing whole numbers up to 100. Learners will also count up to 20 and round numbers to the nearest 10.

Learning outcomes

There are **five** learning outcomes to this unit:

1. be able to count up to 20 items (N1/E2.1)
2. be able to read numbers up to 100 (N1/E2.2)
3. be able to write numbers up to 100 (N1/E2.2)
4. be able to order numbers up to 100 (N1/E2.2)
5. be able to approximate numbers to the nearest 10 (N1/E2.6)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **19** hours should be allocated for this unit.

Unit 110 Number – whole numbers to 100

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to count up to 20 items
The learner can:
1.1 state numbers 0 - 20 in order
1.2 count items up to 20
1.3 count on up to 20

2. Outcome 2 be able to read numbers up to 100
The learner can:
2.1 read numbers 0-100

3. Outcome 3 be able to write numbers up to 100
The learner can:
3.1 write numbers 0-100 in numerals

4. Outcome 4 be able to order numbers up to 100
The learner can:
4.1 arrange numbers in order of value
4.2 compare numbers

5. Outcome 5 be able to approximate numbers to the nearest 10
The learner can:
5.1 round numbers to the nearest 10

Unit 110 Number – whole numbers to 100

Guidance

To meet the assessment criteria for learning outcome one learners need to know how to count items singly or in batches and count on from any number less than 20.

Learners might:

- say the numbers from 0 to 20 in order
- count up to 20 items which are relevant to their personal circumstances at home or work such as cups or nails
- count the value of a pile of 2p coins, counting in twos
- count the value of a pile of 10p coins, counting in tens
- count items in a delivery singly or in batches
- count on from a whole number when giving change
- count on from a given number of pencils or other item up to the required number.

To meet the assessment criteria for outcome 2 learners need to understand that the position of a digit signifies its value and that zero is used as a place holder. Learners are able to recognise Arabic numerals up to 100 written in different fonts and styles.

Learners might:

- read speed limits on signs
- read prices in pennies or whole pounds
- match numbers in words and numerals
- play bingo using numbers 0 to100
- read numbers up to 100 from a rule or measuring tape
- read numbers in everyday contexts eg signs and adverts
- input digits using a numeric key pad eg a calculator.

To meet the assessment criteria for outcome 3 learners need to understand that the position of a digit signifies its value and that zero is used as a place holder. Learners are able to write numerals up to 100.

Learners might:

- fill in missing numbers in a sequence
- write quantities up to 100 on a simple list
- write prices in pennies or whole pounds
- write measurements using numbers up to 100 from a rule or measuring tape
- write weights up to 100g
- write numbers in everyday contexts eg signs and adverts

To meet the assessment criteria for outcome 4 learners need to understand and use the vocabulary of comparing numbers and arrange numbers in order of value.

Learners might:

- sort number cards into order of value
- fill in missing numbers in a sequence
- arrange piles of pennies according to their value
- compare prices
- compare measurements

To meet the assessment criteria for outcome 5 learners need to understand place value for units and tens and approximate by rounding to the nearest 10.

Learners might:

- round prices in pence to the nearest 10p
- round prices in pounds to the nearest £10
- round measurements to the nearest 10cm
- round numbers of items to the nearest 10

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions
Outcome 5: at least two occasions

Unit 111 Number – addition

UAN:	**F/504/5104**
Level:	Entry 2
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in addition including two digit numbers.

Learning outcomes

There are **four** learning outcomes to this unit:

1. know addition facts to 10 (N1/E2.4)
2. be able to interpret + and = in practical situations to solve problems (N1/E2.7)
3. be able to add two digit whole numbers (N1/E2.3)
4. be able to use a calculator to check addition calculations using whole numbers (N1/E2.8)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 111 Number – addition

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 know addition facts to 10

The learner can:

1.1 state pairs of numbers that add up to 10

2. Outcome 2 be able to interpret + and = in practical situations to solve problems

The learner can:

2.1 write the signs + and =

2.2 list words that mean addition

2.3 work out problems including signs + and =

3. Outcome 3 be able to add two digit whole numbers

The learner can:

3.1 add together single digit numbers with two digit whole numbers

3.2 add together whole numbers with two digits

4. Outcome 4 be able to use a calculator to check addition calculations using whole numbers

The learner can:

4.1 use a calculator to check answers in addition calculations

Unit 111 Number – addition

Guidance

To meet the assessment criteria for learning outcome one learners need to recall addition facts to 10 and identify pairs of numbers that add up to 10 to help with mental addition.

Learners might:

- state number bonds ie pairs of numbers with totals up to 10
- break down numbers eg 13 + 7 = 10 + 3 + 7 = 20
- partition numbers and recombine eg 37 + 16 = 37 + 3 + 13 = 40 + 13

To meet the assessment criteria for outcome 2 learners need to understand that + represents the operation of addition and = represents equality.

Learners might:

- write or copy the signs + and = then find different words for symbols in given addition problems
  (eg add, sum of, total , plus and equals, is equal to , is the same as. For example 50 plus 30 equals 80 or 40 add 40 is the same as 80)
- match word problems to written calculations and find the answer
- write given addition problems and calculate answers using symbols + and =
- translate single-step word problems into symbols and solve
- identify the symbols + and = on a calculator or keyboard

To meet the assessment criteria for outcome 3 learners need to understand the operation of addition and related vocabulary eg add, sum of, total, plus. They are able to add single digit numbers with totals up to 20 and two digit whole numbers with totals up to 100.

Learners might:

- add similar items eg 5 cakes in one box and 9 cakes in another box to find the total number of cakes
- calculate the cost of two items at £6 each
- calculate the cost in pence of two items eg 38p and 55p
- calculate the total length of edging needed to cut one piece 50cm long and one piece 35cm long

To meet the assessment criteria for outcome 4 learners need to understand the order to enter two digit numbers and the order to key in numbers and operators.

Learners might:

- use a variety of hand-held and on-screen calculators to check answers
- use a calculator to check given answers to addition problems
- use a calculator to check their answers to addition problems in learning outcome 3

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions

Unit 112 Number – subtraction

UAN:	**J/504/5105**
Level:	Entry 2
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in subtraction including two digit numbers.

Learning outcomes

There are **four** learning outcomes to this unit:

1. know subtraction facts to 10 (N1/E2.4)
2. be able to interpret – and = in practical situations to solve problems (N1/E2.7)
3. be able to subtract from two digit whole numbers (N1/E2.3)
4. be able to use a calculator to check subtraction calculations using whole numbers (N1/E2.8)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 112 Number – subtraction

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 know subtraction facts to 10

The learner can:

1.1 state subtraction facts for numbers with totals to 10

2. Outcome 2 be able to interpret – and = in practical situations to solve problems

The learner can:

2.1 write the signs – and =

2.2 list words that mean subtraction

2.3 work out problems using – and =

3. Outcome 3 be able to subtract from two digit whole numbers

The learner can:

3.1 subtract single digit numbers from two digit numbers

3.2 subtract two digit numbers from whole numbers with two digits

4. Outcome 4 be able to use a calculator to check subtraction calculations using whole numbers

The learner can:

4.1 use a calculator to check answers for given subtraction calculations

Unit 112 Number – subtraction

Guidance

To meet the assessment criteria for learning outcome one learners need to recall subtraction facts to 10 and identify pairs of numbers up to 10 to help with mental subtraction.

Learners might:

- state number bonds for subtraction ie pairs of numbers with totals up to 10
- break down numbers eg 18 – 7 = 10 + 8 – 7 = 10 + 1 = 11
- partition numbers 98 – 43 = 98 – 40 – 3 = 58 – 3

To meet the assessment criteria for outcome 2 learners need to understand that - represents the operation of subtraction and = represents equality.

Learners might:

- write or copy the signs – and = then find different words for symbols in given subtraction problems eg take away, difference, less than and equals, is equal to , is the same as
- match word problems to written calculations and find the answer
- write given subtraction problems and calculate answers using symbols – and =
- translate single-step word problems into symbols and solve
- identify the symbols – and = on a calculator or keyboard

To meet the assessment criteria for outcome 3 learners need to understand the operation of subtraction and related vocabulary eg take away, difference, less than. They are able to subtract single digit numbers from two digit numbers and two digit whole numbers from numbers up to 100.

Learners might:

- calculate the change from £15 after buying a book costing £8
- calculate the change in pence after buying a newspaper costing 55p
- calculate the length of wood left after cutting a piece 85cm long from a length of wood 100cm long

To meet the assessment criteria for outcome 4 learners need to understand the order to enter two digit numbers and the order to key in numbers and operators.

Learners might:

- use a variety of hand-held and on-screen calculators to check answers
- use a calculator to check given answers to subtraction problems
- use a calculator to check their answers to subtraction problems in learning outcome 3

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions

Unit 113 Number – fractions

UAN:	**L/504/5106**
Level:	Entry 2
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in working with halves and quarters of quantities and shapes.

Learning outcomes

There are **four** learning outcomes to this unit.

1. be able to read and write halves and quarters of quantities (N2/E2.1)
2. be able to find halves and quarters of shapes (N2/E2.1)
3. be able to compare halves and quarters of quantities (N2/E2.1)
4. be able to find halves and quarters of small numbers of items (N2/E2.1)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 113 Number – fractions

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to read and write halves and quarters of quantities
The learner can:
1.1 convert fractions to words
1.2 write fractions as numbers and symbols

2. Outcome 2 be able to find halves and quarters of shapes
The learner can:
2.1 state the number of halves it takes to make one whole
2.2 state the number of quarters it takes to make one whole
2.3 find halves of shapes
2.4 find quarters of shapes

3. Outcome 3 be able to compare halves and quarters of quantities
The learner can:
3.1 find halves of given quantities
3.2 find quarters of given quantities
3.3 compare halves and quarters of given quantities

4. Outcome 4 be able to find halves and quarters of small numbers of items
The learner can:
4.1 work out halves of given amounts
4.2 work out quarters of given amounts

Unit 113 Number – fractions

Guidance

To meet the assessment criteria for learning outcome one learners need to understand simple fractions and read and write half and quarter.

Learners might:

- find the symbol ½ in different contexts eg adverts
- find the symbol ¼ in different contexts eg recipes
- match words with symbols eg ½ and half
- write ½ eg on a poster

To meet the assessment criteria for outcome 2 learners need to understand simple fractions in relation to parts of a whole shape.

Learners might:

- match fractions in symbols with statements eg four quarters make one whole
- match shaded fractions of shapes to ¼, ½ or ¾
- state the number of halves in given shapes eg square cake, round pizza
- state the number of quarters in given shapes eg square cake, round pizza
- find halves of a shape by folding, drawing or cutting
- find quarters of a shape by folding, drawing or cutting

To meet the assessment criteria for outcome 3 learners need to understand and compare halves and quarters of quantities

Learners might:

- divide a pint or litre of water into two halves
- divide a pizza into quarters
- relate halves and quarters to positions on a clock face
- compare half a pint of water with a quarter of a pint
- compare half a pizza with a quarter of a pizza
- compare half an hour with a quarter of an hour

To meet the assessment criteria for outcome 4 learners need to understand and find halves and quarters of small numbers of items.

Learners might:

- work out sale discount eg find half of £6
- put aside half of a batch of small cakes to save for tomorrow
- make half the group's sandwiches with white bread and half with brown bread eg work out half of 12
- divide a tray of plants equally so each person plants the same number

- divide a charge equally so each person pays a quarter of the bill eg a quarter of £8 (coins can be used)
- work out how many sweets there are in a quarter share of sweets

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: 2.1 at least one occasion
2.2 at least one occasion
2.3 at least two occasions
2.4 at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions

How does this unit go beyond the requirements of Entry 1?

Fractions are not assessed at Entry 1. The topic is introduced at Entry 2.

The Adult Numeracy (Number, Handling Data, Measure, Shape and Space) progression overview shows how a learner makes progress through the National Standards for Adult Numeracy and the five levels of the Adult Numeracy Core Curriculum.
http://www.excellencegateway.org.uk/node/14938

Unit 114 Number – multiplication

UAN:	**R/504/5107**
Level:	Entry 2
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in simple multiplication using single digit numbers.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to interpret x and = in practical situations to solve problems (N1/E2.7)
2. be able to multiply single-digit whole numbers (N1/E2.5)
3. be able to use a calculator to check multiplication calculations using whole numbers (N1/E2.8)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 114 Number – multiplication

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to interpret x and = in practical situations to solve problems

The learner can:
1.1 write the signs x and =
1.2 list words which mean 'multiplication'
1.3 work out given problems including the signs x and =

2. Outcome 2 be able to multiply single-digit whole numbers

The learner can:
2.1 multiply single digit whole numbers

3. Outcome 3 be able to use a calculator to check multiplication calculations using whole numbers

The learner can:
3.1 use a calculator to check answers for given multiplication calculations

Unit 114 Number – multiplication

Guidance

To meet the assessment criteria for learning outcome one learners need to understand and use the vocabulary of multiplication.

Learners might:

- list words which mean multiplication eg multiplied by, times, lots of, product
- express a given multiplication problem in words eg 3 x 2 = 6 could be expressed as three lots of two equals six
- write the signs x and = to represent words in given multiplication problems
- work out given multiplication problems using single digit numbers
- write their own multiplication problems and answers

To meet the assessment criteria for outcome 2 learners need to multiply single digit whole numbers.

Learners might:

- calculate the total number of items eg three boxes of cakes with four cakes in each
- the total cost eg for five pens costing £2 each
- the number of players in four 5-a-side teams

To meet the assessment criteria for outcome 3 learners need to understand the order to key in numbers and operators.

Learners might:

- use a variety of hand-held and on-screen calculators to check answers
- use a calculator to check given answers to multiplication problems
- use a calculator to check their answers to multiplication problems in learning outcome 2

Evidence requirements

Outcome 1: 1.1 at least two occasions
1.2 at least one occasion
1.3 at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions

Unit 115 Measure, shape and space – money

UAN:	**Y/504/5108**
Level:	Entry 2
Credit value:	2
GLH:	19
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in working with money.

Learning outcomes

There are **five** learning outcomes to this unit:

1. be able to add amounts of money up to £1 (MSS1/E2.1)
2. be able to calculate the cost in pence of more than one item (MSS1/E2.2)
3. be able to calculate the change in pence from transactions (MSS1/E2.2)
4. be able to calculate the cost in whole pounds of more than one item (MSS1/E2.2)
5. be able to calculate the change in whole pounds from a transaction (MSS1/E2.2)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **19** hours should be allocated for this unit.

Unit 115 Measure, shape and space – money

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to add amounts of money up to £1
The learner can:
1.1 count out coins to make amounts up to £1

2. Outcome 2 be able to calculate the cost in pence of more than one item
The learner can:
2.1 work out the cost in pence of more than one item

3. Outcome 3 be able to calculate the change in pence from transactions
The learner can:
3.1 work out the change in pence from different transactions

4. Outcome 4 be able to calculate the cost in whole pounds of more than one item
The learner can:
4.1 work out the cost in whole pounds of more than one item

5. Outcome 5 be able to calculate the change in whole pounds from a transaction
The learner can:
5.1 work out the change in whole pounds from different transactions

Unit 115 Measure, shape and space – money

Guidance

To meet the assessment criteria for learning outcome one learners need to make amounts of money up to a pound using 1p, 2p, 5p, 10p, 20p and 50p coins in different combinations.

Learners might:

- count out coins to pay the exact cost of a magazine
- count out coins to pay the exact cost of a drink from a vending machine
- count out coins to show how to make 50p in different ways

To meet the assessment criteria for outcome 2 learners need to understand that the same strategies used with number can be applied in practical situations and use this knowledge to add sums of money expressed as pence.

Learners might:

- work out the cost in pence of two items with the same cost eg two drinks costing 47p each
- work out the cost in pence of three items with the same cost eg three pencils costing 20p each
- work out the cost in pence of any two items with a total less than 100p eg a drink costing 40p and a snack costing 35p
- work out what they can afford to buy from a price list

To meet the assessment criteria for outcome 3 learners need to understand that the same strategies used with number can be applied in practical situations and use this knowledge to subtract sums of money to calculate the change from a purchase expressed as pence.

Learners might:

- work out the change in pence after buying an item eg by counting on from 38p to 50p
- work out the change in pence after buying an item and paying with a pound coin eg using subtraction 100p - 65p
- work out how much they will have left after choosing different items to buy from a price list

To meet the assessment criteria for outcome 4 learners need to understand that the same strategies used with number can be applied in practical situations and use this knowledge to add sums of money expressed as pounds.

Learners might:

- work out the cost in pounds of two items with the same cost eg two cinema tickets costing £6 each
- work out the cost in pounds of any two items with a total less than £100 eg a coat costing £78 and a hat costing £7
- work out what they can afford to buy from a price list

To meet the assessment criteria for outcome 5 learners need to understand that the same strategies used with number can be applied in practical situations and use this knowledge to subtract sums of money to calculate the change from a purchase expressed as pounds.

Learners might:

- work out the change in pounds after buying an item eg £70 – £66
- work out the change in pounds after buying an item and paying with two £20 notes
- work out how much they will have left after choosing different items to buy from a price list

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions
Outcome 5: at least two occasions

Unit 116 Measure, shape and space – time

UAN:	**L/504/5316**
Level:	Entry 2
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in working with time. Learners will order the months of the year and record time in common date formats as well as reading time on analogue and digital clocks in half and quarter hours.

Learning outcomes

There are **four** learning outcomes to this unit:

1. be able to order the months of the year
2. be able to record time in common date formats (MSS1/E2.3)
3. be able to read time displayed on analogue clocks (MSS1/E2.4)
4. be able to read time displayed on 12-hour digital clocks (MSS1/E2.4)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 116 Measure, shape and space – time

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to order the months of the year
The learner can:
1.1 state the months of the year in order
1.2 match month of year to numerical position

2. Outcome 2 be able to record time in common date formats
The learner can:
2.1 read dates in different formats
2.2 write dates in different formats

3. Outcome 3 be able to read time displayed on analogue clocks
The learner can:
3.1 read time displayed on analogue clocks in hours
3.2 read time displayed on analogue clocks in half hours
3.3 read time displayed on analogue clocks in quarter hours

4. Outcome 4 be able to read time displayed on 12-hour digital clocks
The learner can:
4.1 read time displayed on 12 hour digital clocks in hours
4.2 read time displayed on 12-hour digital clocks in half hours
4.3 read time displayed on 12-hour digital clocks in quarter hours

Unit 116 Measure, shape and space – time

Guidance

To meet the assessment criteria for learning outcome one learners need to know the months of the year in words and in sequence.

Learners might:

- state the months of the year in order starting with January
- state the months of the year in order starting with any month eg November
- rearrange months to give correct sequence
- match the months of the year to their numerical position
- state the relevant month in response to questions eg what is the third month?

To meet the assessment criteria for outcome 2 learners need to understand and use the UK convention for writing dates

Learners might:

- match dates written in different British formats eg 3 February 2012 with 3/2/12 , 03-02-12 and 3 Feb. 2012
- read 'use by' dates on food labels
- read dates in different contexts eg holiday brochures
- write a date of birth eg 18/09/85 or 18th September 1985
- write today's date on their work
- complete a holiday request form giving the dates of their holiday

To meet the assessment criteria for outcome 3 learners need to understand that analogue clock faces can be marked in different ways and use a clock face to read time in whole hours, half hour and quarter hour divisions.

Learners might:

- tell the time in hours using different clock faces eg hours marked using Arabic or Roman numerals, dots or lines
- tell the time in hours and half hours using different clock faces eg hours marked using Arabic or Roman numerals, dots or lines
- tell the time in hours quarter hours using different clock faces eg hours marked using Arabic or Roman numerals, dots or lines
- set the time for an alarm on an analogue alarm clock.

To meet the assessment criteria for outcome 4 learners need to understand that the 12-hour digital clock shows hours and minutes and know that :15 on a digital clock is 'quarter past', :30 is 'half past', :45 is 'quarter to'.

Learners might:

- tell the time in hours on different clock faces using 'o'clock'
- tell the time in hours and half hours on different clock faces eg eleven thirty
- tell the time in hours and quarter hours on different clock faces eg eleven fifteen
- set the time for an alarm on a digital alarm clock.

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions

Unit 117 Measure, shape and space – length

UAN:	**R/504/5110**
Level:	Entry 2
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in estimating and measuring length using standard and non-standard units.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to measure length (MSS1/E2.9)
2. be able to compare length using standard and non-standard units (MSS1/E2.5)
3. be able to write units of measurement (MSS1/E2.6)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 117 Measure, shape and space – length

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to measure length
The learner can:
1.1 use measuring instruments with simple scales
1.2 measure length in common standard units
1.3 record measurements

2. Outcome 2 be able to compare length using standard and non-standard units
The learner can:
2.1 estimate length
2.2 compare length in common standard units with non-standard units

3. Outcome 3 be able to write units of measurement
The learner can:
3.1 write units of measurement in full
3.2 recognise units of measurement written in abbreviated form

Unit 117 Measure, shape and space – length

Guidance

To meet the assessment criteria for learning outcome one learners need to understand that standard measures are fixed and know that metres (m) and centimetres (cm) are metric units of length.

Learners might:

- use different measuring instruments eg a rule, a tape measure, a metre stick
- measure length of items to the nearest labelled division in centimetres eg choose a tape measure to measure a table
- measure a room to the nearest metre
- record measurements writing units abbreviated or in full eg 90cm.

To meet the assessment criteria for outcome 2 learners need to understand that non-standard units eg paces are not agreed measures and may vary.

Learners might:

- estimate the size of a room in metres using paces
- estimate the length of a line in centimetres using finger width
- measure the room with reasonable accuracy in metres
- measure the line with reasonable accuracy in centimetres
- compare the lengths measured in standard units with the estimates

To meet the assessment criteria for outcome 3 learners need to recognise and write units of measurement in full and abbreviated form.

Learners might:

- find examples of measurements written in abbreviated form and write these out in full eg 15 cm as 15 centimetres
- match abbreviations to measurements written in full eg 10 mm is 10 millimetres
- write measurements in full and abbreviated form eg from own measurements in 2.2.

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions

Unit 118 Measure, shape and space – weight, capacity and temperature

UAN:	**Y/504/5111**
Level:	Entry 2
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in estimating and measuring weight capacity and temperature.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to compare weight using common standard units (MSS1/E2.6)
2. be able to compare capacity using common standard and non-standard units (MSS/E2.7)
3. be able to compare positive temperatures(MSS1/E2.8)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 118 Measure, shape and space – weight, capacity and temperature

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to compare weight using common standard units

The learner can:
1.1 estimate weight in kilograms
1.2 measure weight to the nearest kilogram
1.3 compare weight in kilograms
1.4 recognise kilogram in abbreviated form
1.5 record weight

2. Outcome 2 be able to compare capacity using common standard and non-standard units

The learner can:
2.1 estimate capacity in litres and non-standard units
2.2 measure capacity in litres
2.3 compare capacity in litres with non-standard units
2.4 recognise litre in abbreviated form
2.5 record capacity

3. Outcome 3 be able to compare positive temperatures

The learner can:
3.1 identify units used for measuring temperature
3.2 write units used for measurement of temperature
3.3 compare temperatures

Unit 118 Measure, shape and space – weight, capacity and temperature

Guidance

To meet the assessment criteria for learning outcome one learners need to understand that standard measures are fixed and know that a kilogram (kg or kilo) is a metric unit of weight.

Learners might:

- estimate weight of different items in kg eg parcels
- weigh items to the nearest kg
- compare weight of different items
- record measurements writing units abbreviated or in full eg 90cm.

To meet the assessment criteria for outcome 2 learners need to understand that non-standard units eg a cupful, tablespoon are not agreed measures and may vary whereas a litre is a standard metric unit.

Learners might:

- estimate the capacity of a container in cupfuls or litres eg bucket
- measure the capacity with reasonable accuracy in litres
- compare the capacity of different containers in litres and non- standard units eg cupfuls
- compare the capacity of non-standard units eg cupfuls and tablespoons with standard units
- read capacity of different containers eg cans and bottles
- record capacity in full and abbreviated form

To meet the assessment criteria for outcome 3 learners need to understand that temperature is a measure of heat or cold and that weather temperature is measured in degrees Celsius in the UK but different scales exist eg degrees Fahrenheit.

Learners might:

- find examples of measurements written in abbreviated form, eg 21 degrees Celsius
- match abbreviations to measurements written in full
- compare the recommended room temperature with the actual room temperature eg the actual temperature is lower, it is too cold
- compare temperatures in different places in UK eg London is warmer today than Manchester
- compare temperatures at different destinations.

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions

Unit 119 Measure, shape and space – shapes and positional vocabulary

UAN:	**D/504/5112**
Level:	Entry 2
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in recognising shapes and using positional vocabulary.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to recognise 2D shapes (MSS2/E2.1 & MSS2/E2.2)
2. be able to recognise 3D shapes (MSS2/E2.1 & MSS2/E2.2)
3. be able to use positional vocabulary (MSS2/E2.3)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 119 Measure, shape and space – shapes and positional vocabulary

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to recognise 2D shapes
The learner can:
1.1 identify common 2D shapes in a range of orientations
1.2 describe properties of common 2D shapes

2. Outcome 2 be able to recognise 3D shapes
The learner can:
2.1 identify common 3D shapes in a range of orientations and sizes
2.2 describe properties of common 3D shapes

3. Outcome 3 be able to use positional vocabulary
The learner can:
3.1 write words that explain position
3.2 give directions using positional words

Unit 119 Measure, shape and space – shapes and positional vocabulary

Guidance

To meet the assessment criteria for learning outcome one learners need to know the properties of common 2-D shapes, eg rectangle, square, triangle, circle, and understand that shape is independent of orientation.

Learners might:

- label shapes on a worksheet
- identify shapes around the room eg a clock face
- find shapes in designs
- classify objects by shape
- describe properties of common 2-D shapes eg the number of sides and corners.

To meet the assessment criteria for outcome 2 learners need to know the properties of common 3-D shapes eg cube, cuboid, pyramid, cylinder, and understand that shape is independent of orientation.

Learners might:

- label 3-D shapes on a worksheet
- Identify shapes around the room eg a cabinet
- classify objects by shape
- describe properties of common 3-D shapes eg number of edges, corners and faces.

To meet the assessment criteria for outcome 3 learners need to recognise and use everyday positional vocabulary eg on the left, on the right, above, below, behind.

Learners might:

- match written instructions to pictures eg the table is below the mirror
- give directions that use positional vocabulary eg directions to the library
- give directions that use positional vocabulary eg hang the picture above the desk.

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions

Unit 120 Handling data – extract and sort data

UAN:	**H/504/5113**
Level:	Entry 2
Credit value:	2
GLH:	20
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in extracting data and comparing numerical information. The learner will also classify objects using two criteria.

Learning outcomes

There are **four** learning outcomes to this unit:

1. be able to extract information from lists and tables
2. be able to extract information from diagrams
3. be able to make numerical comparisons from block graphs (HD1/E2.1 & HD1/E2.2)
4. be able to sort objects using two criteria (HD1/E2.3)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **20** hours should be allocated for this unit.

Unit 120 Handling data – extract and sort data

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to extract information from lists and tables
The learner can:
1.1 select information from lists and tables

2. Outcome 2 be able to extract information from diagrams
The learner can:
2.1 select information from simple diagrams

3. Outcome 3 be able to make numerical comparisons from block graphs
The learner can:
3.1 select information from block graphs
3.2 compare numerical information obtained from block graphs

4. Outcome 4 be able to sort objects using two criteria
The learner can:
4.1 sort given objects by two criteria

Unit 120 Handling data – extract and sort data

Guidance

To meet the assessment criteria for learning outcome one learners need to extract information from lists and tables.

Learners might:

- select information from fixture lists
- select information from price lists
- select information from league tables
- select information from size tables

To meet the assessment criteria for outcome 2 learners need to extract information from diagrams.

Learners might:

- read measurements from a simple floor plan
- describe the layout of a room
- arrange items as represented in a drawing

To meet the assessment criteria for outcome 3 learners need to know how to extract information from block graphs and make numerical comparisons.

Learners might:

- extract information from block graphs in a holiday brochure eg average hours of sunshine, average daily rainfall
- extract information from block graphs in newspapers
- make numerical comparisons eg average hours of sunshine in different locations, temperatures.

To meet the assessment criteria for outcome 4 learners need to know how to sort and classify objects using two criterion eg colour and shape.

Learners might:

- sort items for recycling eg clear glass
- sort clothes for a charity shop by size and colour
- sort screws by type and size

Evidence requirements

Outcome 1: at least one occasion for each
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions

Unit 121 Handling data – collect and represent information

UAN:	**K/504/5114**
Level:	Entry 2
Credit value:	2
GLH:	16
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in collecting and representing information including the construction of simple diagrams and bar charts.

Learning outcomes

There are **two** learning outcomes to this unit:

1. be able to collect numerical information (HD1/E2.4)
2. be able to represent information (HD1/E2.5)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **16** hours should be allocated for this unit.

Unit 121 Handling data – collect and represent information

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to collect numerical information
The learner can:
1.1 collect numerical information
1.2 record information

2. Outcome 2 be able to represent information
The learner can:
2.1 construct a simple table of information
2.2 construct a simple diagram
2.3 construct a simple bar chart

Unit 121 Handling data – collect and represent information

Guidance

To meet the assessment criteria for learning outcome one learners need to understand what information is required and how to record this information.

Learners might:

- collect information by observation eg number of customers in a village shop at different times of the day
- collect information by carrying out a survey eg preferred food for a party
- record information eg in a list or simple tally chart.

To meet the assessment criteria for outcome 2 learners need to know how to present numerical information so that it makes sense to others.

Learners might:

- construct a simple table eg to show number of cups of hot and cold drinks needed
- construct a simple diagram eg a simple sketch of the room showing the location of the door and window
- construct a simple bar chart eg to show number of customers at different times of the day using one square to represent one customer

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least one occasion

Unit 210 Number – whole numbers to 1000

UAN:	**M/504/5115**
Level:	Entry 3
Credit value:	2
GLH:	19
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in reading, writing and comparing whole numbers up to 1000. Learners will also count and round numbers to the nearest 10 and 100.

Learning outcomes

There are **five** learning outcomes to this unit:

1. be able to count up to 1000 (N1/E3.1)
2. be able to read numbers up to 1000 (N1/E3.1)
3. be able to match numbers in figures and words up to 1000 (N1/E3.1)
4. be able to compare numbers up to 1000 (N1/E3.1)
5. be able to approximate by rounding (N1/E3.7)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **19** hours should be allocated for this unit.

Unit 210 Number – whole numbers to 1000

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to count up to 1000
The learner can:
1.1 state numbers 0-1000 given in digit form
1.2 count in tens from any number below 1000
1.3 count in hundreds from any number below 1000

2. Outcome 2 be able to read numbers up to 1000
The learner can:
2.1 read numbers written in numerical form

3. Outcome 3 be able to match numbers in figures and words up to 1000
The learner can:
3.1 match numbers in figures to numbers in words

4. Outcome 4 be able to compare numbers up to 1000
The learner can:
4.1 arrange numbers in order of value
4.2 compare numbers

5. Outcome 5 be able to approximate by rounding
The learner can:
5.1 round numbers to the nearest 10
5.2 round numbers to the nearest 100

Unit 210 Number – whole numbers to 1000

Guidance

To meet the assessment criteria for learning outcome one learners need to know how to count items singly or in batches of ten or hundred up to one thousand.

Learners might:

- count items in a delivery singly or in batches
- count money in batches eg piles of 10p
- count items in batches eg packs of 10 nails
- count items in batches eg books of 100 tickets
- count on from a whole number in tens when giving change

To meet the assessment criteria for outcome 2 learners need to understand that the position of a digit signifies its value and that zero is used as a place holder. Learners are able to recognise Arabic numerals up to 1000 written in different fonts and styles.

Learners might:

- read prices in whole pounds eg £750
- play matching games using numbers 0 to1000
- read numbers in everyday contexts eg signs and adverts
- input digits using a numeric key pad eg a calculator

To meet the assessment criteria for outcome 3 learners need to understand that the position of a digit signifies its value and that zero is used as a place holder. Learners are able to match numbers in figures and words up to 1000.

Learners might:

- match numbers in words and numerals
- complete a cheque

To meet the assessment criteria for outcome 4 learners need to understand and use the vocabulary of comparing numbers and arrange numbers in order of value.

Learners might:

- arrange product numbers into order of value eg product number 357 followed by product number 765
- sort price cards into order of value
- fill in missing numbers in a sequence
- compare quantities
- compare prices
- compare measurements

To meet the assessment criteria for outcome 5 learners need to understand place value for units and tens and approximate by rounding to the nearest 10 and nearest 100.

Learners might:

- round prices in pounds to the nearest £10 eg budget
- round prices in pounds to the nearest £100 eg car prices
- round measurements to the nearest 100g eg weight of flour
- round numbers of items to the nearest 10 eg customers
- round numbers of items to the nearest 100 eg attendance figures at a match.

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions
Outcome 5: at least two occasions

Unit 211 Number – addition and subtraction

UAN:	**T/504/5116**
Level:	Entry 3
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in addition and subtraction of whole numbers with up to three digits.

Learning outcomes

There are **eight** learning outcomes to this unit:

1. know addition facts up to 20 (N1/E3.3)
2. be able to add three-digit whole numbers (N1/E3.2)
3. be able to use + and = in practical situations to solve problems
4. know subtraction facts (N1/E3.3)
5. be able to subtract whole numbers (N1/E3.2)
6. be able to use – and = in practical situations to solve problems (E1/E3.9)
7. be able to use a calculator to solve problems
8. be able to approximate answers to calculations

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 211 Number – addition and subtraction

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 know addition facts up to 20
The learner can:
1.1 state addition facts up to 20

2. Outcome 2 be able to add three-digit whole numbers
The learner can:
2.1 add together three-digit whole numbers without the use of a calculator

3. Outcome 3 be able to use + and = in practical situations to solve problems
The learner can:
3.1 list words that mean addition
3.2 use symbols to record whole number calculations when solving addition problems

4. Outcome 4 know subtraction facts
The learner can:
4.1 state pairs of subtraction facts for numbers with totals to 20

5. Outcome 5 be able to subtract whole numbers
The learner can:
5.1 subtract single digit numbers from three digit whole numbers
5.2 subtract two digit numbers from three digit whole numbers
5.3 subtract three digit whole numbers from three digit whole numbers

6. Outcome 6 be able to use – and = in practical situations to solve problems
The learner can:
6.1 list words that mean subtraction
6.2 use symbols to record whole number calculations when solving subtraction problems

7. Outcome 7 be able to use a calculator to solve problems
The learner can:
7.1 use a calculator to find answers to addition problems
7.2 use a calculator to find answers to subtraction problems
7.3 use a calculator to check calculations

8. Outcome 8 be able to approximate answers to calculations
The learner can:
8.1 use approximation in calculations to estimate answers

Unit 211 Number – addition and subtraction

Guidance

To meet the assessment criteria for learning outcome one learners need to recall addition facts to 20 and identify pairs of numbers up to 20 to help with mental addition.

Learners might:

- state number bonds for addition ie pairs of numbers with totals up to 20

To meet the assessment criteria for outcome 2 learners need to understand that the position of a digit signifies its value and zero can be used as a place holder. They know how to add three digit numbers to three digit numbers with answers up to 1000.

Learners might:

- calculate the cost of several items eg £275 + £430 + £98
- calculate the total production or sales for a day from given figures
- calculate the total weight of ingredients
- calculate the total length of material required

To meet the assessment criteria for outcome 3 learners need to understand that + represents the operation of addition and = represents equality.

Learners might:

- find different words that mean addition
- use symbols in given addition problems eg add, sum of. total, plus
- write given addition problems and calculate answers using symbols + and =
- identify the symbols + and = on a calculator or keyboard

To meet the assessment criteria for outcome 4 learners need to recall subtraction facts to 20 and identify pairs of numbers up to 20 to help with mental subtraction.

Learners might:

- state number bonds for subtraction ie pairs of numbers with totals to 20 eg 20 – 6 = 14

To meet the assessment criteria for outcome 5 learners need to understand the operation of subtraction and related vocabulary eg take away, difference, less than. They are able to subtract three digit numbers from numbers up to 1 000.

Learners might:

- calculate with money eg the change from £995 after buying furniture costing £799
- calculate with measure eg the length of wood left after cutting a piece 850mm long from a length of wood 1000mm long
- calculate with items eg the number of tickets left if 420 tickets have been sold and the theatre holds 650 people.

To meet the assessment criteria for outcome 6 learners need to understand that - represents the operation of subtraction and = represents equality.

Learners might:

- find different words that mean subtraction
- use symbols in given subtraction problems
- write given subtraction problems and calculate answers using symbols – and =
- identify the symbols – and = on a calculator

To meet the assessment criteria for outcome 7 learners need to understand the order to enter three digit numbers and the order to key in numbers and operators.

Learners might:

- use a variety of hand-held and on-screen calculators to check answers
- use a calculator to check given answers to addition and subtraction problems
- use a calculator to check their answers to addition and subtraction problems in learning outcomes 2 and 5.

To meet the assessment criteria for outcome 8 learners need to know how to approximate numbers by rounding and use in approximate calculations or to check if an answer is sensible.

Learners might:

- round numbers to estimate a rough total cost
- round numbers to estimate the amount of money left
- round numbers to estimate the quantity to be ordered

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: 3.1 at least one occasion
3.2 at least two occasions
Outcome 4: at least two occasions
Outcome 5: at least two occasions
Outcome 6: 6.1 at least one occasion
6.2 at least two occasions
Outcome 7: at least one occasion
Outcome 8: at least two occasions

Unit 212 Number – fractions

UAN:	**A/504/5117**
Level:	Entry 3
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in identifying and using equivalent fractions.

Learning outcomes

There are **two** learning outcomes to this unit:

1. be able to read and write common fractions (N2/E3.1)
2. be able to use equivalent fractions (N2/E3.2)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 212 Number – fractions

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to read and write common fractions
The learner can:
1.1 read common fractions
1.2 write common fractions
1.3 define the term denominator
1.4 define the term numerator

2. Outcome 2 be able to use equivalent fractions
The learner can:
2.1 identify equivalent fractions
2.2 find equivalent fractions in everyday contexts

Unit 212 Number – fractions

Guidance

To meet the assessment criteria for learning outcome one learners need to understand that the bottom number (denominator) indicates the number of equal parts in the whole and the top number (numerator) indicates how many parts of a whole. Learners will read, write and understand common fractions eg $^{3}/_{4}$, $^{2}/_{3}$, $^{1}/_{10}$

Learners might:

- read fractions in different contexts eg sale signs, discounts
- write common fractions to name shaded area of different fractions
- define the term denominator in a discussion with their tutor or in writing
- define the term denominator in a discussion with their tutor or in writing.

To meet the assessment criteria for outcome 2 learners need to understand that equivalent fractions look different but have the same value.

Learners might:

- match equivalent fractions eg for a half
- recognise equivalent forms in different contexts eg 5mm is half a centimetre, 50cm is half a metre, 500g is half a kilo, 500ml is half a litre

Evidence requirements

Outcome 1: 1.1 at least two occasions
1.2 at least two occasions
1.3 at least one occasion
1.4 at least one occasion
Outcome 2: at least two occasions

How does this unit go beyond the requirements of Entry 2?

The Adult Numeracy (Number, Handling Data, Measure, Shape and Space) progression overview shows how a learner makes progress through the National Standards for Adult Numeracy and the five levels of the Adult Numeracy Core Curriculum.
http://www.excellencegateway.org.uk/node/14938

Unit 213 Number – multiplication

UAN:	**F/504/5118**
Level:	Entry 3
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in multiplication including multiplying two digit whole numbers by single digit whole numbers.

Learning outcomes

There are **four** learning outcomes to this unit:

1. know multiplication facts (N1/E3.5)
2. be able to multiply whole numbers without the use of a calculator (N1/E3.4)
3. be able to use x and = in practical situations to solve multiplication problems (NZ/E3.9 / N1/E3.4)
4. be able to estimate answers to multiplication calculations (N1/E3.8)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 213 Number – multiplication

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 know multiplication facts
The learner can:
1.1 state multiplication facts

2. Outcome 2 be able to multiply whole numbers without the use of a calculator
The learner can:
2.1 multiply two digit whole numbers by single digit whole numbers without the use of a calculator

3. Outcome 3 be able to use x and = in practical situations to solve multiplication problems
The learner can:
3.1 list words that mean multiplication
3.2 use symbols to record whole number calculations when solving multiplication problems
3.3 solve multiplication problems using a calculator
3.4 check solutions to problems using a calculator

4. Outcome 4 be able to estimate answers to multiplication calculations
The learner can:
4.1 use approximation in multiplication calculations to estimate answers

Unit 213 Number – multiplication

Guidance

To meet the assessment criteria for learning outcome one learners need to know multiplication facts eg multiples of 2, 3, 4, 5 and 10.

Learners might:

- recite times tables eg 2, 3, 4, 5 or 10 times tables
- complete gapped handout based on times tables
- answer questions based on times tables
- work out given multiplication problems using single digit numbers

To meet the assessment criteria for outcome 2 learners need to multiply two digit whole numbers by single digit numbers without the use of a calculator.

Learners might:

- calculate the total number of items in batches eg five crates with twelve boxes to a crate
- calculate the amount of material required eg 10cm x 5
- the number of players in eight 5-a-side teams

To meet the assessment criteria for outcome 3 learners need to understand that x represents the operation of multiplication and = represents equality.

Learners might:

- find different words that mean multiplication
- use symbols in given multiplication problems
- write multiplication problems and calculate answers using symbols x and =
- identify the symbols x (or*) and = on a calculator or keyboard and calculate answers.
- use a variety of hand-held and on-screen calculators to check answers
- use a calculator to check given answers to multiplication problems
- use a calculator to check their answers to multiplication problems in 3.3.

To meet the assessment criteria for outcome 4 learners need to know how to approximate numbers by rounding and use in approximate calculations or to check if an answer is sensible.

Learners might:

- round numbers to estimate a rough total cost
- round numbers to estimate the quantity to be ordered

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: 3.1 at least one occasion
3.2 at least two occasions
3.3 at least two occasions
3.4 at least two occasions
Outcome 4: at least two occasions

Unit 214 Number – division

UAN:	**J/504/5119**
Level:	Entry 3
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in division including dividing two digit whole numbers by single digit whole numbers.

Learning outcomes

There are **four** learning outcomes to this unit:

1. be able to work out whole number calculations which give remainders (N1/E3.6)
2. be able to use ÷ and = in practical situations to solve division problems (N1/E3.9)
3. be able to use a calculator to solve division problems
4. be able to estimate answers to calculations (N2/E3.8)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 214 Number – division

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to work out whole number calculations which give remainders

The learner can:
1.1 divide two digit whole numbers by single digit whole numbers
1.2 interpret remainders

2. Outcome 2 be able to use ÷ and = in practical situations to solve division problems

The learner can:
2.1 list words that mean division
2.2 use symbols to record whole number calculations when solving division problems
2.3 solve division problems without the use of a calculator
2.4 check solutions to problems without the use of a calculator

3. Outcome 3 be able to use a calculator to solve division problems

The learner can:
3.1 use a calculator to find solutions to division problems
3.2 use a calculator to check calculations

4. Outcome 4 be able to estimate answers to calculations

The learner can:
4.1 use approximation in division calculations to estimate answers

Unit 214 Number – division

Guidance

To meet the assessment criteria for learning outcome one learners need to understand division as repeated subtraction and the inverse of multiplication. They need to understand the concept of remainder and that remainders need to be interpreted in context to solve a problem. Learners need to know how to divide two digit whole numbers by single digit whole numbers.

Learners might:

- divide a number of items eg share 16 sweets between four friends
- divide cost eg share £25 between five people
- divide materials eg cut a length of string into three equal pieces
- interpret remainders in different contexts eg you have 13 cakes, how many boxes can you fill with 4 cakes in each box? How many taxis are needed to transport 13 people if there is a maximum of four people in each taxi?

To meet the assessment criteria for outcome 2 learners need to understand different words that mean division and that ÷ represents the operation of division and = represents equality.

Learners might:

- find different words that mean division eg share, equal parts, how many times, split
- use symbols ÷ and = in given division problems
- write division problems and calculate answers using symbols ÷ and =
- check answers to division problems using repeated subtraction or multiplication.

To meet the assessment criteria for outcome 3 learners need to know how to key in calculations and interpret answers on a calculator.

Learners might:

- identify the symbols ÷ (or /) and = on a calculator or keyboard
- divide a number of items
- divide cost
- divide materials
- interpret remainders in different contexts
- use a variety of hand-held and on-screen calculators to check answers
- use a calculator to check given answers to division problems
- use a calculator to check their answers to division problems in 1.1

To meet the assessment criteria for outcome 4 learners need to know how to approximate numbers by rounding and use in approximate calculations or to check if an answer is sensible.

Learners might:

- round numbers to estimate a cost
- round numbers to estimate the quantity in each part.

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: 2.1 at least one occasion
2.2 at least two occasions
2.3 at least two occasions
2.4 at least two occasions
Outcome 3: at least one occasion
Outcome 4: at least two occasions

Unit 215 Number – decimals

UAN:	**A/504/5120**
Level:	Entry 3
Credit value:	1
GLH:	9
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in working with decimal numbers including numbers with two decimal places.

Learning outcomes

There are **two** learning outcomes to this unit:

1. be able to read and write decimals up to two decimal places (N2/E3.3)
2. be able to use a calculator to solve problems using whole numbers and decimals (N2/E3.4)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **9** hours should be allocated for this unit.

Unit 215 Number – decimals

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to read and write decimals up to two decimal places

The learner can:
1.1 read decimals
1.2 write common measures in decimal form
1.3 write money in decimal form
1.4 identify place value in a decimal number

2. Outcome 2 be able to use a calculator to solve problems using whole numbers and decimals

The learner can:
2.1 use a calculator to solve problems with whole numbers and decimals
2.2 use a calculator to check calculations

Unit 215 Number – decimals

Guidance

To meet the assessment criteria for learning outcome one learners need to understand that the decimal point separates pounds and pence or m and cm and zero can be used as a place holder eg in £1.05 or leading zero eg 35p can be written as £0.35.

Learners might:

- read decimal numbers in adverts and prices
- read decimal numbers for measurements
- write measurements as decimal numbers eg their height. For example 1.6m
- write money as decimal numbers eg listing what they have spent in the canteen
- match decimal numbers with amounts in words eg 3.5m and three and a half metres, £3.50 and three pounds fifty pence, £3.05 and three pounds and five pence

To meet the assessment criteria for outcome 2 learners need to know how to key in calculations, eg 35p as 0.35, and interpret answers on a calculator eg 8.2 as £8.20. They need to understand that a calculator will sometimes display a string of digits after the decimal point and that it is only necessary (at this level) to read the first two.

Learners might:

- use a variety of hand-held and on-screen calculators to solve problems and check answers
- use a calculator to add measurements expressed as a decimal eg 6.5m and 1.2m
- use a calculator to subtract measurements expressed as a decimal eg 6.5m – 1.2m
- use a calculator to add money expressed as a decimal eg total cost for food
- use a calculator to subtract money expressed as a decimal eg amount of discount
- use a calculator to check given answers to problems
- use a calculator to check their answers to problems

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least two occasions

Unit 216 Measure, shape and space – money

UAN:	**F/504/5121**
Level:	Entry 3
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in adding, subtracting and rounding amounts of money expressed as pounds and pence.

Learning outcomes

There are **four** learning outcomes to this unit:

1. be able to use decimal notation to express monetary value
2. be able to add amounts of money expressed as pounds and pence (MSS1/E3.1)
3. be able to subtract amounts of money expressed as pounds and pence (N2/E3.4)
4. be able to round sums of money (MSS1/3.2)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 216 Measure, shape and space – money

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to use decimal notation to express monetary value
The learner can:
1.1 read prices written as decimals
1.2 record money using decimal notation
1.3 identify place value in a decimal number

2. Outcome 2 be able to add amounts of money expressed as pounds and pence
The learner can:
2.1 add amounts of money without the use of a calculator
2.2 add amounts of money using a calculator

3. Outcome 3 be able to subtract amounts of money expressed as pounds and pence
The learner can:
3.1 subtract one amount of money from another without the use of a calculator
3.2 subtract one amount of money from another using a calculator
3.3 check calculations using a calculator

4. Outcome 4 be able to round sums of money
The learner can:
4.1 round sums of money to the nearest pound
4.2 round sums of money to the nearest 10 pence

Unit 216 Measure, shape and space – money

Guidance

To meet the assessment criteria for learning outcome one learners need to understand that the decimal point separates pounds and pence and zero can be used as a place holder eg in £1.05 or leading zero eg 35p can be written as £0.35.

Learners might:

- read decimal numbers on menus and price lists
- write money as decimal numbers eg listing what they have spent in the canteen
- match decimal numbers with amounts in words eg £3.50 and three pounds fifty pence, £3.05 and three pounds and five pence.

To meet the assessment criteria for outcome 2 learners need to know how to align decimal points and figures in column addition, key in calculations, eg 35p as 0.35, and interpret answers on a calculator eg 8.2 as £8.20.

Learners might:

- find the total cost of items without using a calculator
- use a calculator to work out their weekly budget
- use a variety of hand-held and on-screen calculators to solve problems and check answers
- use a calculator to check given answers to problems
- use a calculator to check their answers to problems.

To meet the assessment criteria for outcome 3 learners need to know how to align decimal points and figures in column subtraction, key in calculations, eg 35p as 0.35, and interpret answers on a calculator eg 8.2 as £8.20.

Learners might:

- find out how much money they will have left after paying a bill without using a calculator
- check a bank statement
- use a calculator to check deductions on a pay slip
- use a variety of hand-held and on-screen calculators to solve problems and check answers
- use a calculator to check given answers to problems
- use a calculator to check their answers to problems.

To meet the assessment criteria for outcome 4 learners need to understand the use of approximation to estimate costs and recognise when to round up.

Learners might:

- look at price lists and round prices to the nearest pound
- use rounding to estimate the cost of a shopping trip

- look at menus and round prices to the nearest 10p
- use rounding to estimate the cost of a meal.

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions

Unit 217 Measure, shape and space – temperature and time

UAN:	**J/504/5122**
Level:	Entry 3
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in recording and comparing temperature and recording time.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to record temperature (MSS1/E3.9)
2. be able to compare temperatures (MSS1/E3.9)
3. be able to record time (MSS1/3.3)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 217 Measure, shape and space – temperature and time

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to record temperature
The learner can:
1.1 state unit of measurement of temperature
1.2 read temperatures using measuring instruments
1.3 record temperatures

2. Outcome 2 be able to compare temperatures
The learner can:
2.1 compare the temperatures of different places

3. Outcome 3 be able to record time
The learner can:
3.1 read times written in am and pm
3.2 measure time in common time and date formats
3.3 record time in common time and date formats

Unit 217 Measure, shape and space – temperature and time

Guidance

To meet the assessment criteria for learning outcome one learners need to know how to read and record temperatures and understand that temperatures can be measured on different scales.

Learners might:

- find temperatures in different contexts eg holiday brochures, weather forecasts, recipes
- read temperature on a variety of recording instruments
- take and record own temperature
- measure and record room temperature
- set the oven temperature for cooking.

To meet the assessment criteria for outcome 2 learners need to know how to compare temperatures.

Learners might:

- compare the room temperature at different times of the day
- compare temperature at different holiday destinations
- compare oven temperatures for different recipes.

To meet the assessment criteria for outcome 3 learners need to understand am and pm and common time and date formats.

Learners might:

- find out the time a film starts
- read a simple timetable
- read the time on different analogue and digital clocks
- set an alarm on an analogue or digital clock
- use a calendar to find different days or dates
- record appointment times in a diary
- write the date on a letter or form

Evidence requirements

Outcome 1: 1.1 at least one occasion
1.2 at least two occasions
1.3 at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions

Unit 218 Measure, shape and space – length, weight, capacity and shapes

UAN:	**R/504/5320**
Level:	Entry 3
Credit value:	2
GLH:	18
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in measuring and recording length, weight and capacity. The learner will also recognise the properties of 2D and 3D shapes.

Learning outcomes

There are **six** learning outcomes to this unit:

1. know units of measurement
2. be able to compare length using standard and non-standard units
3. be able to compare weight using common standard units
4. be able to compare capacity using common standard and non-standard units
5. be able to recognise the properties of 2D shapes
6. be able to recognise the properties of 3D shapes

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **18** hours should be allocated for this unit.

Unit 218 Measure, shape and space – length, weight, capacity and shapes

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 know units of measurement
The learner can:
1.1 list standard and non-standard units of measurement for length
1.2 list standard and non-standard units of measurement for weight
1.3 list standard and non-standard units of measurement for capacity

2. Outcome 2 be able to compare length using standard and non-standard units
The learner can:
2.1 read measurements on measuring instruments
2.2 record measurements of length
2.3 approximate measurements of length in standard and non-standard units
2.4 compare length

3. Outcome 3 be able to compare weight using common standard units
The learner can:
3.1 read measurements of weight
3.2 approximate measurements of weight
3.3 measure weight using an appropriate measuring instrument
3.4 compare weight

4. Outcome 4 be able to compare capacity using common standard and non-standard units
The learner can:
4.1 read measurements of capacity
4.2 approximate measurements of capacity
4.3 measure capacity using an appropriate measuring instrument
4.4 record capacity
4.5 compare capacity

5. Outcome 5 be able to recognise the properties of 2D shapes
The learner can:
5.1 describe the properties of 2D shapes
5.2 sort 2D shapes to solve practical problems

6. Outcome 6 be able to recognise the properties of 3D shapes

The learner can:

6.1 describe the properties of 3D shapes

6.2 sort 3D shapes to solve practical problems

Unit 218 Measure, shape and space – length, weight, capacity and shapes

Guidance

To meet the assessment criteria for learning outcome one learners need to know metric units and non-standard units of length, weight and capacity.

Learners might:

- find and list units of measurements for length eg kilometre, metre, centimetre, miles, paces
- look at a range of recipes and list units of measurements for weight eg kilogram, gram, pound, ounce
- look at a range of recipes and list units of measurements for capacity eg litre, millilitre, pint, teaspoon, cupful

To meet the assessment criteria for outcome 2 learners need to know how to use measuring instruments for length and read, record and compare length.

Learners might:

- estimate the size of a room using paces then choose a 5m tape to measure it
- estimate the size of a piece of card and then choose a rule to measure it
- compare their estimated and actual measurements
- compare the measurements of their window with the printed size on a packet of curtains
- compare distances between towns

To meet the assessment criteria for outcome 3 learners need to know how to use measuring instruments for weight and read, record and compare weight.

Learners might:

- estimate the weight of a parcel then choose a postage scale to measure weight
- estimate the weight of a person and then choose a bathroom scale to weigh them
- compare their estimated and actual measurements
- compare the weight of a parcel with information on postage prices
- weigh out ingredients for a recipe
- compare weight of two different packets

To meet the assessment criteria for outcome 4 learners need to know how to use measuring instruments for capacity and read, record and compare capacity.

Learners might:

- estimate the capacity of a bowl then choose a measuring jug to measure capacity
- estimate the capacity of a spoon and then choose a 5ml spoon to compare
- compare their estimated and actual measurements
- measure liquid for a recipe
- measure a dose of medicine
- compare capacity of two different containers

To meet the assessment criteria for outcome 5 learners need to understand and use vocabulary related to 2-D shapes eg side length, angle, line of symmetry and identify right angles.

Learners might:

- describe at least two 2-D shapes to another person eg square, rectangle, triangle, circle
- match descriptions to shapes
- arrange tiles on a worktop

To meet the assessment criteria for outcome 6 learners need to understand and use vocabulary related to 3-D shapes eg side length, angle, line of symmetry and identify right angles.

Learners might:

- describe at least two 3-D shapes to another person eg cylinder, cuboid, pyramid
- match descriptions to shapes
- stack boxes on a shelf

Evidence requirements
Outcome 1: at least one occasion
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions
Outcome 5: at least two occasions
Outcome 6: at least two occasions

Unit 219 Handling data – extract and use data

UAN:	**R/504/5124**
Level:	Entry 3
Credit value:	2
GLH:	19
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in extracting data and making numerical comparisons from bar charts and pictograms.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to extract numerical information from a range of sources (HD1/E3.1)
2. be able to make numerical comparisons from bar charts (HD1/E3.2)
3. be able to make numerical comparisons from pictograms

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **19** hours should be allocated for this unit.

Unit 219 Handling data – extract and use data

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to extract numerical information from a range of sources
The learner can:
1.1 obtain information from lists and tables
1.2 obtain information from diagrams
1.3 obtain information from simple charts

2. Outcome 2 be able to make numerical comparisons from bar charts
The learner can:
2.1 identify title and labels on bar charts
2.2 extract required information from bar charts
2.3 compare information obtained from bar charts

3. Outcome 3 be able to make numerical comparisons from pictograms
The learner can:
3.1 state the meaning of the 'key' on pictograms
3.2 extract required information from pictograms
3.3 compare information obtained from pictograms

Unit 219 Handling data – extract and use data

Guidance

To meet the assessment criteria for learning outcome one learners need to extract information from a range of sources. They need to understand that the title, labels and key provide information and they can use a scale to extract numerical values

Learners might:

- obtain information from tables in price lists, catalogues and brochures
- obtain information from a parts or catalogue database
- interpret a room plan
- extract numerical information from a diagram(s) to make an item
- follow a map to locate a given building
- obtain information from simple charts eg a pie chart or bar chart in a newspaper or leaflet

To meet the assessment criteria for outcome 2 learners need to need to understand that the title, labels and key provide information and they can use a scale on the bar chart to extract numerical values

Learners might:

- match title and labels to appropriate parts of a bar chart
- extract information from a bar chart eg hours of sunshine in May
- compare information obtained from another bar in the same bar chart eg hours of sunshine in May and September
- compare information obtained from similar bar charts eg hours of sunshine in different locations.

To meet the assessment criteria for outcome 3 learners need to understand that the title and key provide information.

Learners might:

- discuss the meaning of the 'key' with their tutor or write down the meaning
- extract information from pictograms eg the department with the highest proportion of customers
- compare information obtained from a pictogram eg the beauty department had almost twice as many customers as the men's department.
- compare information from two similar pie charts eg the proportion of customers choosing red cars this year is smaller than the proportion last year.

Evidence requirements

Outcome 1: 1.1 at least one occasion for each
1.2 at least two occasions
1.3 at least two occasions
Outcome 2: 2.1 at least one occasion
2.2 at least two occasions
2.3 at least two occasions
Outcome 3: 3.1 at least one occasion
3.2 at least two occasions
3.3 at least two occasions

Unit 220 Handling data – represent information

UAN:	**Y/504/5125**
Level:	Entry 3
Credit value:	2
GLH:	16
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in recording and representing numerical information including the construction of tables, diagrams, charts and pictograms.

Learning outcomes

There are **two** learning outcomes to this unit:

1. be able to collect and record numerical information (HD1/E3.3)
2. be able to represent information in a range of different formats (HD1/E3.4)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **16** hours should be allocated for this unit.

Unit 220 Handling data – represent information

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to collect and record numerical information
The learner can:
1.1 collect numerical information
1.2 use a tally chart to record information

2. Outcome 2 be able to represent information in a range of different formats
The learner can:
2.1 construct a table
2.2 construct a diagram
2.3 construct a chart
2.4 construct a pictogram

Unit 220 Handling data – represent information

Guidance

To meet the assessment criteria for learning outcome one learners need to understand the importance of defining categories prior to collecting data and know that tally marks are counted up to give a frequency.

Learners might:

- design a tally chart and collect information by observation eg a traffic survey of the number of cars, lorries and bicycles passing the Centre during one hour
- design a tally chart and collect information by carrying out a survey eg how learners travelled to the centre

To meet the assessment criteria for outcome 2 learners need to know how to present data in tables, charts and diagrams and understand the different elements in charts eg the title, axis, scale and key.

Learners might:

- represent own or given data in a table eg a table with headings showing price of two items at different shops
- represent own or given data in a diagram eg plan of room (not to scale) showing dimensions
- represent own or given data in a bar chart using a suitable scale eg information from traffic survey where one labelled division represents two, five or 10 cars
- represent own or given data in a pictogram with a key eg hours of sunshine

Evidence requirements

Outcome 1: at least two occasions

Outcome 2: at least one occasion for each

How does this unit go beyond the requirements of Entry 2?

The Adult Numeracy (Number, Handling Data, Measure, Shape and Space) progression overview shows how a learner makes progress through the National Standards for Adult Numeracy and the five levels of the Adult Numeracy Core Curriculum
(**http://www.excellencegateway.org.uk/node/14938**)

Unit 310 Number – positive and negative numbers

UAN:	**R/504/5219**
Level:	Level 1
Credit value:	2
GLH:	20
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in working with positive numbers up to seven digits and recognising negative numbers. This includes addition, subtraction, multiplication, division and rounding.

Learning outcomes

There are **eight** learning outcomes to this unit:

1. be able to compare numbers up to seven digits (N1/L1.1)
2. be able to identify negative numbers in everyday situations (N1/L1.2)
3. be able to add and subtract whole numbers up to seven digits (N1/L1.3)
4. be able to multiply whole numbers (N1/L1.3)
5. know multiplication facts (N1/L1.5 & N1/L1.6)
6. be able to divide whole numbers (N1/L1.4)
7. be able to approximate by rounding (N1/L1.8)
8. be able to estimate answers to a range of calculations (N1/L1.9)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **20** hours should be allocated for this unit.

Unit 310 Number – positive and negative numbers

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to compare numbers up to seven digits
The learner can:
1.1 recognise numbers up to seven digits written in digit form and in words
1.2 write numbers up to seven digits in digit form and in words
1.3 arrange numbers in order of value
1.4 use > to describe two different numbers up to seven digits
1.5 use < to describe two different numbers up to seven digits

2. Outcome 2 be able to identify negative numbers in everyday situations
The learner can:
2.1 define negative numbers
2.2 state the everyday situations when negative numbers are used

3. Outcome 3 be able to add and subtract whole numbers up to seven digits
The learner can:
3.1 add whole numbers up to seven digits using written and calculator methods
3.2 subtract whole numbers up to seven digits using written and calculator methods
3.3 check calculations using a calculator

4. Outcome 4 be able to multiply whole numbers
The learner can:
4.1 multiply whole numbers up to six digits by 10 without the use of a calculator
4.2 multiply whole numbers up to five digits by 100 without the use of a calculator
4.3 multiply two digit whole numbers by two digit whole numbers without the use of a calculator
4.4 check calculations using a calculator
4.5 check calculations without the use of a calculator

5. Outcome 5 know multiplication facts
The learner can:
5.1 state multiplication facts up to 10 x 10
5.2 state multiples of 2 to 9 up to 100
5.3 state multiples of 10, 50, 100 and 1000
5.4 state square numbers up to 10 x 10

6. Outcome 6 be able to divide whole numbers

The learner can:

6.1 divide whole numbers up to seven digits by 10 without the use of a calculator

6.2 divide whole numbers up to seven digits by 100 without the use of a calculator

6.3 divide whole numbers up to seven digits by whole numbers of any value using written and calculator methods

6.4 check calculations using a calculator

6.5 check calculations without the use of a calculator

7. Outcome 7 be able to approximate by rounding

The learner can:

7.1 round whole numbers up to seven digits to the nearest:

- 10
- 100
- 1000
- 1 000 000

8. Outcome 8 be able to estimate answers to a range of calculations

The learner can:

8.1 use approximation in addition calculations to estimate answers without the use of a calculator

8.2 use approximation in subtraction calculations to estimate answers without the use of a calculator

8.3 use approximation in multiplication calculations to estimate answers without the use of a calculator

8.4 use approximation in division calculations to estimate answers without the use of a calculator

Unit 310 Number – positive and negative numbers

Guidance

To meet the assessment criteria for learning outcome one learners need to know what each digit represents in a number up to seven digits, including the use of zero as a place holder and understand the symbols for greater than and less than.

Learners might:

- read prices in whole pounds eg £759 000
- read numbers in everyday contexts eg attendance at football match
- read numbers in words and write these numbers in digit form
- read numbers in digit form and write these in words
- write a cheque
- arrange numbers in order of size eg attendances at football matches
- use greater than and lesser than to compare numbers eg attendances

To meet the assessment criteria for outcome 2 learners need to understand the words positive and negative and know that temperatures below freezing point are negative temperatures.

Learners might:

- define negative numbers orally or in writing
- state when negative numbers are used eg temperatures

To meet the assessment criteria for outcome 3 learners need to know how to use written and calculator methods to add and subtract whole numbers.

Learners might:

- total the cost of items purchased using a calculator
- calculate the change from a given amount using written methods
- work out total expenses to see what amount of money is left using a calculator
- total the daily attendance to find the number of people attending in the week using written methods
- check calculations using a calculator

To meet the assessment criteria for outcome 4 learners need to know how to multiply whole numbers with and without a calculator.

Learners might:

- multiply numbers by 10 without a calculator eg I need 250g for one person, how much do I need for 10 people
- multiply numbers by 100 without a calculator eg to find the number of pennies in £564 or centimetres in 69 metres
- multiply 2 digit numbers by 2 digit numbers without a calculator eg if I save £28 each month how much will I save in a year?
- check own or given calculations using a calculator
- check own or given calculations without using a calculator.

To meet the assessment criteria for outcome 5 learners need to know multiplication facts.

Learners might:

- recite times tables for multiples of 2, 3, 4, 5, 6, 7, 8, 9 and 10 up to 100
- complete gaps on a handout for a variety of times table questions
- record multiples of 10 up to 100
- record multiples of 50 and 100 up to 1 000
- record multiples of 1 000 up to 1 000 000
- record square numbers up to 10 x10.

To meet the assessment criteria for outcome 6 learners need to know how to divide whole numbers.

Learners might:

- divide whole numbers by 10 without the use of a calculator eg share a bill between 10 people
- divide whole numbers by 100 without the use of a calculator eg 546923cm divided by 100 to find the number of metres
- divide whole numbers using written methods eg dividing annual costs to find monthly cost
- divide whole numbers using calculator methods eg dividing annual salary to find daily pay
- check own or given calculations using a calculator
- check own or given calculations without using a calculator.

To meet the assessment criteria for outcome 7 learners need to understand that numbers can be rounded to different degrees of accuracy.

Learners might:

- round prices to the nearest £10 eg budget
- round prices to the nearest £100 eg car prices
- round prices to the nearest £1 000 eg house prices
- round figures to the nearest 1 000 000 eg population figures

To meet the assessment criteria for outcome 8 learners need to know how to make approximate calculations to estimate answers.

Learners might:

- approximate answers to their own or given addition calculations without the use of a calculator
- approximate answers to their own or given subtraction calculations without the use of a calculator
- approximate answers to their own or given multiplication calculations without the use of a calculator
- approximate answers to their own or given division calculations without the use of a calculator

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least one occasion
Outcome 3: 3.1 at least one occasion for each
3.2 at least one occasion for each
3.3 at least two occasions
Outcome 4: 4.1 at least two occasions
4.2 at least two occasions
4.3 at least two occasions
4.4 at least one occasion
4.5 at least one occasion
Outcome 5: at least two occasions
Outcome 6: 6.1 at least two occasions
6.2 at least two occasions
6.3 at least two occasions
6.4 at least one occasion
6.5 at least one occasion
Outcome 7: at least one occasion for each
Outcome 8: at least one occasion - This should be interpreted as one addition, one subtraction, one multiplication and one division altogether

Unit 311 Number – fractions, ratio and proportion

UAN:	**L/504/5221**
Level:	Level 1
Credit value:	2
GLH:	18
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in comparing fractions and mixed numbers and using equivalencies between common fractions, percentages and decimals. The learner will also work out simple ratio and direct proportion.

Learning outcomes

There are **five** learning outcomes to this unit:

1. be able to read mixed numbers
2. be able to write mixed numbers (N2/L1.1)
3. be able to compare fractions and mixed numbers (N2/L1.1)
4. know equivalencies between common fractions, percentages and decimals (N2/L1.3)
5. be able to work out simple ratio and direct proportion (N1/L1.9)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **18** hours should be allocated for this unit.

Unit 311 Number – fractions, ratio and proportion

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to read mixed numbers
The learner can:
1.1 read **common fractions** in digit form
1.2 read mixed numbers in digit form
1.3 state the everyday situations when **common fractions** and mixed numbers are used

Range
Common fractions
Halves, quarters, thirds, fifths, tenths

2. Outcome 2 be able to write mixed numbers
The learner can:
2.1 write common fractions in digit form
2.2 write mixed numbers in digit form

3. Outcome 3 be able to compare fractions and mixed numbers
The learner can:
3.1 arrange common fractions and mixed numbers in digit form in order of value
3.2 use > to describe common fractions and mixed numbers in digit form
3.3 use < to describe common fractions and mixed numbers in digit form

4. Outcome 4 know equivalencies between common fractions, percentages and decimals
The learner can:
4.1 state the equivalent percentages and decimals of given **fractions**
4.2 state the equivalent decimals and **fractions** of given percentages
4.3 state the equivalent percentages and **fractions** of given decimals
4.4 calculate fractions of whole numbers

Range
Fractions
Halves, quarters, fifths, tenths

5. Outcome 5 be able to work out simple ratio and direct proportion
The learner can:
5.1 use simple ratio expressed in the form of three parts to one part in calculations
5.2 scale quantities by a factor of two

Unit 311 Number – fractions, ratio and proportion

Guidance

To meet the assessment criteria for learning outcome one learners need to understand that in unit fractions, the larger the denominator the smaller the fraction, but that is not true of non-unit fractions

Learners might:

- read common fractions in different contexts eg sale signs, discounts
- read mixed numbers in different contexts eg 2¾m
- list situations where common fractions and mixed numbers are used

To meet the assessment criteria for learning outcome 2 learners need to understand that in unit fractions, the larger the denominator the smaller the fraction, but that is not true of non-unit fractions

Learners might:

- write common fractions eg results of a survey ¾ preferred brand Z
- write mixed numbers eg 4½ miles
- arrange common fractions and mixed numbers in order of value eg distances
- use > and < to describe common fractions and mixed numbers eg measurements

To meet the assessment criteria for learning outcome 3 learners need to understand that in unit fractions, the larger the denominator the smaller the fraction, but that is not true of non-unit fractions

Learners might:

- arrange common fractions and mixed numbers in order of value eg distances
- use > and < to describe common fractions and mixed numbers eg measurements

To meet the assessment criteria for outcome 4 learners need to know common fraction equivalents eg half, quarters, fifths and tenths

Learners might:

- match equivalent percentages and decimals of common fractions eg for a half
- match equivalent decimals and fractions of given percentages eg 75%
- match equivalent percentages and fractions of given decimals eg 0.8
- state equivalent percentages and decimals and common fractions in different contexts eg measurements
- calculate fractions of whole numbers eg 10cm is one-tenth of a metre.

To meet the assessment criteria for outcome 5 learners need to understand simple ratio as the number of parts and direct proportion as the same rate of increase or decrease.

Learners might:

- dilute a liquid in a given ratio
- double the quantities of ingredients in a recipe to make twice as much
- half the quantities of ingredients in a recipe to make half as much

Evidence requirements

Outcome 1: 1.1 at least two occasions
1.2 at least two occasions
1.3 at least one occasion
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions
Outcome 5: at least two occasions

Unit 312 Number – decimals

UAN:	**R/504/5222**
Level:	Level 1
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in working with decimals. This includes addition, subtraction, multiplication and division with decimal numbers up to 2 places.

Learning outcomes

There are **seven** learning outcomes to this unit:

1. be able to read decimal numbers up to three places (N2/L1.4)
2. be able to write decimals up to three places (N2/L1.4)
3. be able to compare decimals up to three places (N2/L1.4)
4. be able to add and subtract decimals up to two places (N2/L1.5)
5. be able to multiply decimals up to two places (N2/L1.6)
6. be able to divide decimals up to two places (N2/L1.6)
7. be able to approximate decimals by rounding (N2/L1.7)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 312 Number – decimals

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to read decimal numbers up to three places
The learner can:
1.1 recognise decimals in everyday situations
1.2 read decimals

2. Outcome 2 be able to write decimals up to three places
The learner can:
2.1 write decimals in digit form

3. Outcome 3 be able to compare decimals up to three places
The learner can:
3.1 arrange decimals in digit form in order of value
3.2 use > to describe different decimals in digit form
3.3 use < to describe different decimals in digit form

4. Outcome 4 be able to add and subtract decimals up to two places
The learner can:
4.1 add decimals using written and calculator methods
4.2 subtract decimals using written and calculator methods

5. Outcome 5 be able to multiply decimals up to two places
The learner can:
5.1 multiply decimals by up to two digit whole numbers using written and calculator methods
5.2 multiply decimals by 10 and 100 without the use of a calculator

6. Outcome 6 be able to divide decimals up to two places
The learner can:
6.1 divide decimals by single digit whole numbers using written and calculator methods
6.2 divide decimals by 10 and 100 without the use of a calculator

7. Outcome 7 be able to approximate decimals by rounding
The learner can:
7.1 round decimals to whole numbers
7.2 round decimals to two decimal places

Unit 312 Number – decimals

Guidance

To meet the assessment criteria for learning outcome one learners need to understand that the position of a digit signifies its value, the decimal point separates whole numbers from decimal fractions and zero can be used as a place holder eg in £1.05 or leading zero eg 35p can be written as £0.35.

Learners might:

- find and read decimal numbers in adverts and prices eg petrol prices
- read decimal numbers for measurements eg 4.275m
- read decimal numbers in newspapers eg 2.6 million

To meet the assessment criteria for outcome 2 learners need to understand that the position of a digit signifies its value, the decimal point separates whole numbers from decimal fractions and zero can be used as a place holder eg in £1.05 or leading zero eg 35p can be written as £0.35.

Learners might:

- write measurements as decimal numbers eg their height
- write money as decimal numbers eg listing what they have spent in the canteen
- write decimal numbers to match with amounts in words eg 3.5m and three and a half metres, £3.50 and three pounds fifty pence, £3.05 and three pounds and five pence.

To meet the assessment criteria for outcome 3 learners need to understand that the position of a digit signifies its value.

Learners might:

- compare amounts written as decimals and arrange in order of value
- compare prices written as decimals and arrange in order of value
- compare measurements written as decimals and arrange in order of value
- use > and < to describe different decimal numbers

To meet the assessment criteria for outcome 4 learners need to know how to use written and calculator methods to add and subtract decimal numbers up to two places.

Learners might:

- use a calculator to total the cost in pounds and pence of items purchased
- calculate the change in pounds and pence from a given amount using written methods
- work out total expenses to see what amount of money is left using a calculator
- check calculations using a calculator

To meet the assessment criteria for outcome 5 learners need to know how to multiply decimal numbers with and without a calculator.

Learners might:

- multiply numbers by 10 without a calculator eg I need 1.75 litres for one person, how much do I need for 10 people?
- multiply numbers by 100 without a calculator eg to find the number of pennies in £564 or centimetres in 69 metres
- multiply decimal numbers by 2 digit whole numbers without a calculator eg if I save £22.80 each month how much will I save in a year?
- check own or given calculations using a calculator
- check own or given calculations without using a calculator

To meet the assessment criteria for outcome 6 learners need to know how to divide decimal numbers.

Learners might:

- divide decimal numbers by 10 without the use of a calculator eg share a bill between 10 people
- divide decimal numbers by 100 without the use of a calculator eg 363.5cm divided by 100 to find the number of metres
- divide decimal numbers by a single digit whole number using written methods eg sharing the cost of a meal between eight people
- divide decimal numbers using calculator methods eg dividing a quarterly gas bill by 3 to find the monthly charge

To meet the assessment criteria for outcome 7 learners need to understand that numbers can be rounded to different degrees of accuracy.

Learners might:

- round decimal numbers to the nearest whole number eg whole pound
- round decimal numbers to two decimal places eg pounds and pence

Evidence requirements

Outcome 1: at least two occasions in different
Outcome 2: at least two occasions in different
Outcome 3: at least two occasions in different
Outcome 4: 4.1 at least one occasion for each
4.2 at least one occasion for each
Outcome 5: 5.1 at least one occasion for each
5.2 at least one occasion for each
Outcome 6: 6.1 at least one occasion for each
6.2 at least one occasion for each
Outcome 7: at least two occasions in different

Unit 313 Number – percentages

UAN:	**D/504/5224**
Level:	Level 1
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in finding percentages and calculating whole number percentage increase and decrease.

Learning outcomes

There are **seven** learning outcomes to this unit:

1. be able to recognise percentages
2. be able to write percentages (N2/L1.8)
3. be able to compare whole number percentages (N2/L1.8)
4. be able to recognise simple percentage increase and decrease (N2/L1.8)
5. be able to find whole number percentage parts of quantities and measurements (N2/L1.9)
6. be able to find whole number percentage increases (N2/L1.10)
7. be able to find whole number percentage decreases (N2/L1.10)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 313 Number – percentages

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to recognise percentages
The learner can:
1.1 define percentages
1.2 recognise the everyday situations when percentages are used

2. Outcome 2 be able to write percentages
The learner can:
2.1 write whole number percentages in digit form

3. Outcome 3 be able to compare whole number percentages
The learner can:
3.1 arrange percentages in order of value
3.2 use > to describe different percentages in digit form
3.3 use < to describe different percentages in digit form

4. Outcome 4 be able to recognise simple percentage increase and decrease
The learner can:
4.1 state the everyday situations when a percentage increase is used
4.2 state the everyday situations when a percentage decrease is used

5. Outcome 5 be able to find whole number percentage parts of quantities and measurements
The learner can:
5.1 calculate percentage parts of quantities using written and calculator methods
5.2 calculate percentage parts of measurements using written and calculator methods

6. Outcome 6 be able to find whole number percentage increases
The learner can:
6.1 calculate a percentage increase using a written and calculator method

7. Outcome 7 be able to find whole number percentage decreases
The learner can:
7.1 calculate a percentage decrease using a written and calculator method

Unit 313 Number – percentages

Guidance

To meet the assessment criteria for learning outcome one learners need to understand percentage as the number of parts in every 100.

Learners might:

- define percentages orally or in writing
- read percentages in adverts eg discounts
- read percentages in newspapers eg 30% of people …

To meet the assessment criteria for outcome 2 learners need to understand percentage as the number of parts in every 100.

Learners might:

- write whole number percentages in relation to money eg discounts
- write whole number percentages in relation to numbers eg survey results

To meet the assessment criteria for outcome 3 learners need to understand percentage as the number of parts in every 100.

Learners might:

- compare percentages and arrange in order of value
- use > and < to describe different percentages in digit form.

To meet the assessment criteria for outcome 4 learners need to understand that 100% is the whole and although a 10% increase is more than a 5% increase the actual amount depends on the original number.

Learners might:

- state situations when a percentage increase is used eg pay rise
- state situations when a percentage decrease is used eg discount

To meet the assessment criteria for outcome 5 learners need to understand that there are different ways of calculating percentages eg to find 10% divide by 10 or use 10p in every £

Learners might:

- calculate percentage parts of quantities using written methods eg 10% of 30
- calculate percentage parts of quantities using a calculator eg 15% of £38
- calculate percentage parts of measurements using written methods eg 25% as a discount
- calculate percentage parts of measurements using a calculator eg 12% as an increase in size

To meet the assessment criteria for outcome 6 learners need to understand that a percentage increase can be found by finding the percentage part and adding on.

Learners might:

- calculate a percentage increase using written methods eg 5% pay rise on £8 an hour
- calculate percentage increase using a calculator eg 7% increase in charges on £84

To meet the assessment criteria for outcome 7 learners need to understand that a percentage decrease can be found by finding the percentage part and subtracting.

Learners might:

- calculate a percentage decrease using written methods eg 10% discount off a £76 coat
- calculate percentage decrease using a calculator eg 7% reduction in staffing hours from a current total of 975

Evidence requirements

Outcome 1: at least one occasion
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions
Outcome 5: 5.1 at least one occasion for each
5.2 at least one occasion for each
Outcome 6: at least one occasion for each
Outcome 7: at least one occasion for each

Unit 314 Measure, shape and space – money, time and temperature

UAN:	**K/504/5226**
Level:	Level 1
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in calculating with money and measuring and recording time and temperature.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to calculate amounts of money expressed in pounds and pence (MSS1/L1.1)
2. be able to record time (MSS1/L1.2)
3. be able to record temperature (MSS1/L1)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 314 Measure, shape and space – money, time and temperature

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to calculate amounts of money expressed in pounds and pence

The learner can:
1.1 add amounts of money
1.2 subtract amounts of money
1.3 multiply amounts of money in pounds and pence by one and two digit numbers
1.4 divide amounts of money in pounds and pence by one and two digit numbers

2. Outcome 2 be able to record time

The learner can:
2.1 record time in standard British formats
2.2 select measuring instruments to measure and record time
2.3 measure time in seconds and minutes
2.4 add time in hours and minutes using 24 hour clock format
2.5 subtract time in hours and minutes using 24 hour clock format
2.6 record time using a 24 hour clock format
2.7 record time using a 12 hour clock format

3. Outcome 3 be able to record temperature

The learner can:
3.1 list units of measurement for temperature
3.2 select measuring instruments to measure and record temperature
3.3 measure temperature
3.4 record temperature in different units of measurement

Unit 314 Measure, shape and space – money, time and temperature

Guidance

To meet the assessment criteria for learning outcome one learners need to know that, for column addition and subtraction, decimals should be aligned by the decimal point.
Learners might:

- work out the total cost of a number of items on a shopping list
- work out the cost of a holiday including transport and insurance
- work out how much money is left in a bank account after paying some bills
- work out the cost of tickets for 4 adults and 2 children
- work out the total cost of ingredients for 12 small cakes
- work out the cost per small cake from the total cost of ingredients

To meet the assessment criteria for outcome 2 learners need to understand the relationship between units of time.

Learners might:

- use a stopwatch to measure and record time taken to complete an activity
- complete a time sheet
- plan an event
- read a timetable and calculate how long a journey takes
- calculate what time to start cooking dinner
- record appointment times in a diary
- send an email to book a meeting room showing the date, time and duration of the meeting

To meet the assessment criteria for outcome 3 learners need to know how to read and record temperatures and understand that temperatures can be measured on different scales.
Learners might:

- list units of measurement for temperature
- select appropriate measuring instruments to measure a child's temperature, the temperature in a fridge, the temperature outside the building
- measure and record own temperature
- measure and record room temperature

Evidence requirements

Outcome 1: 1.1 at least one occasion
1.2 at least one occasion
1.3 at least one occasion for each
1.4 at least one occasion for each
Outcome 2: 2.1 at least two occasions
2.2 at least one occasion
2.3 at least one occasion for each
2.4 at least two occasions
2.5 at least two occasions
2.6 at least two occasions
2.7 at least two occasions

Outcome 3: 3.1: at least one occasion
3.2, 3.3 and 3.4 are likely to be covered by the same activity but should be shown on at least two occasions.

How does this unit go beyond the requirements of Entry 3?

The Adult Numeracy (Number, Handling Data, Measure, Shape and Space) progression overview shows how a learner makes progress through the National Standards for Adult Numeracy and the five levels of the Adult Numeracy Core Curriculum.

http://www.excellencegateway.org.uk/node/14938

Unit 315 Measure, shape and space – length, weight and capacity

UAN:	**M/504/5227**
Level:	Level 1
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in measuring and recording length, weight and capacity and perform calculations within the same system.

Learning outcomes

There are **four** learning outcomes to this unit.

1. be able to record length (MSS1/L1.4)
2. be able to record weight (MSS1/L1.4)
3. be able to record capacity (MSS1/L1.4)
4. be able to carry out calculations within the same system of measurement (MSS1/L1.6)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 315 Measure, shape and space – length, weight and capacity

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to record length
The learner can:
1.1 select instruments for measuring length
1.2 measure length in a range of different contexts
1.3 record length using appropriate units
1.4 convert units of measurement within the same system of measurement

2. Outcome 2 be able to record weight
The learner can:
2.1 select instruments for measuring weight
2.2 measure weight in a range of different contexts
2.3 record weight using appropriate units
2.4 convert units of measurement within the same system of measurement

3. Outcome 3 be able to record capacity
The learner can:
3.1 select instruments for measuring capacity
3.2 measure capacity in a range of different contexts
3.3 record capacity using appropriate units
3.4 convert units of measurement within the same system of measurement

4. Outcome 4 be able to carry out calculations within the same system of measurement
The learner can:
4.1 add within the same system of measurement
4.2 subtract within the same system of measurement

Unit 315 Measure, shape and space – length, weight and capacity

Guidance

To meet the assessment criteria for learning outcome one learners need to know metric units (km, m, cm, mm) of length and read scales to the nearest labelled and unlabelled division.
Learners might:

- select appropriate measuring instruments for measuring length in different situations
- select a measuring instrument for measuring a room and record the measurements
- select a measuring instrument to measure a mobile phone and record the measurements
- convert measurements from metres to cm and mm
- convert measurements from cm to m and mm.

To meet the assessment criteria for outcome 2 learners need to know metric units (kg, g) of weight and read scales to the nearest labelled and unlabelled division.
Learners might:

- select appropriate measuring instruments for measuring weight in different situations
- select a measuring instrument for measuring the weight of a parcel and record the weight
- select a measuring instrument to measure the weight of a person and record the weight
- select a measuring instrument to measure the weights of ingredients for a cake
- convert measurements from kg to g
- convert measurements from g to kg.

To meet the assessment criteria for outcome 3 learners need to know metric units (litre and millilitre) of capacity and read scales to the nearest labelled and unlabelled division.
Learners might:

- select appropriate measuring instruments for measuring capacity in different situations
- select a measuring instrument for measuring the capacity of a bucket and record this
- select a measuring instrument to measure the capacity of a glass beaker and record this
- select a measuring instrument to measure 10ml of medicine
- convert measurements from litres to millilitres
- convert measurements from millilitres to litres.

To meet the assessment criteria for outcome 4 learners need to know the relationship between metric units.
Learners might:

- work out the total weight of ingredients for a recipe
- work out the total length of cable required from given lengths
- work out how much is left from a length of pipe after cutting off a given amount
- work out how much is left in a one litre bottle after removing a given amount.

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: at least two occasions

How does this unit go beyond the requirements of Entry 3?

The Adult Numeracy (Number, Handling Data, Measure, Shape and Space) progression overview shows how a learner makes progress through the National Standards for Adult Numeracy and the five levels of the Adult Numeracy Core Curriculum.

http://www.excellencegateway.org.uk/node/14938

Unit 316 Measure, shape and space – calculate using shape and space

UAN:	**R/504/5317**
Level:	Level 1
Credit value:	2
GLH:	17
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in solving problems using shape and space including finding area, perimeter and volume of simple shapes.

Learning outcomes

There are **five** learning outcomes to this unit:

1. be able to solve problems using the mathematical properties of regular 2D shapes (MSS2/L1.1)
2. be able to draw 2D shapes in different orientations using grids (MSS2/L1.1)
3. be able to calculate the perimeters of simple shapes (MSS1/L1.2 & MSS1/L1.8)
4. be able to calculate the areas of rectangles(MSS1/L1.9)
5. be able to calculate volumes of simple shapes(MSS1/L1.10)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **17** hours should be allocated for this unit.

Unit 316 Measure, shape and space – calculate using shape and space

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to solve problems using the mathematical properties of regular 2D shapes

The learner can:
1.1 identify the properties of 2D squares and rectangles
1.2 solve problems using properties of squares and rectangles

2. Outcome 2 be able to draw 2D shapes in different orientations using grids

The learner can:
2.1 use grids to draw squares and rectangles in different orientations

3. Outcome 3 be able to calculate the perimeters of simple shapes

The learner can:
3.1 define perimeter
3.2 list common units of measurement for perimeter
3.3 describe the methods used to calculate the perimeters of **simple shapes**
3.4 calculate perimeters of rectangles
3.5 calculate perimeters of triangles
3.6 calculate perimeters of squares

Range
Simple shapes
Rectangles, squares, triangles

4. Outcome 4 be able to calculate the areas of rectangles

The learner can:
4.1 list common units of measurement for area
4.2 state the formula in words for calculating the area of a rectangle
4.3 calculate areas of rectangles

5. Outcome 5 be able to calculate volumes of simple shapes

The learner can:

5.1 list common units of measure for volume

5.2 list cuboid shapes used in everyday situations

5.3 label dimensions of a cuboid

5.4 state the formula in words for finding out the volume of a cuboid

5.5 calculate the volume of a cuboid

Unit 316 Measure, shape and space – calculate using shape and space

Guidance

To meet the assessment criteria for learning outcome 1 learners need to understand and use vocabulary related to 2-D shapes eg side length, angle, line of symmetry and identify right angles.
Learners might:

- describe a 2-D shape using vocabulary listed
- plan a tiling pattern using rectangular tiles
- plan a tiling pattern using different sizes of tile.

To meet the assessment criteria for outcome 2 learners need to know the properties of 2-D shapes
Learners might:

- draw a tiling pattern for a floor or wall area
- draw a floor plan to show a room layout
- draw a plan of a garden.

To meet the assessment criteria for outcome 3 learners need to know that perimeter is the boundary of a shape and it is measured in units of length.
Learners might:

- define perimeter orally or in writing and list units of measure for perimeter
- describe in words a method to calculate the perimeter of a rectangle
- calculate the perimeter of a rectangle eg a rectangular room to order coving
- calculate the perimeter of a triangle eg a triangular flower bed to order edging
- calculate the perimeter of a square eg a square cushion to order trimming.

To meet the assessment criteria for outcome 4 learners need to know that area is a measure of surface and it is measured in square units.
Learners might:

- define area orally or in writing and list units of measure for area
- describe in words a method to calculate the area of a rectangle
- calculate the area of a rectangle eg a rectangular room to order flooring

To meet the assessment criteria for outcome 5 learners need to know that volume is a measure of space and it is measured in cubic units.
Learners might:

- define volume orally or in writing and list units of measure for volume
- list cuboid shapes in their place of work or study
- label a cuboid using length, height and width or depth) eg a cupboard
- describe in words a method to calculate the volume of a cuboid
- calculate the volume of a cuboid eg a rectangular room to calculate the size of radiator required.

Evidence requirements

Outcome1: 1.1: at least one occasion
1.2 at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least one occasion for each
Outcome 4.1: at least one occasion
Outcome 4.2: at least one occasion
Outcome 4.3: at least two occasions
Outcome 5.1: at least one occasion
Outcome 5.2: at least one occasion
Outcome 5.3: at least one occasion
Outcome 5.4: at least one occasion
Outcome 5.5: at least two occasions

Unit 317 Handling data – extract and interpret data

UAN:	**M/504/5230**
Level:	Level 1
Credit value:	1
GLH:	9
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in extracting and interpreting data from tables, diagrams, charts and line graphs.

Learning outcomes

There is **one** learning outcomes to this unit:

1. be able to interpret information from a range of sources (HD1/L1.1)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **9** hours should be allocated for this unit.

Unit 317 Handling data – extract and interpret data

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to interpret information from a range of sources
The learner can:
1.1 extract information from different sources
1.2 interpret information from tables
1.3 interpret information from diagrams
1.4 interpret information from bar charts and pie charts
1.5 interpret information from single line graphs

Unit 317 Handling data – extract and interpret data

Guidance

To meet the assessment criteria for learning outcome one learners need to know how to extract and interpret information from tables, diagrams, pie and bar charts and single line graphs including use of decimal numbers.

Learners might:

- extract and interpret information from tables eg a holiday brochure to find the cost of a 7-day holiday on a particular week
- extract and interpret information from diagrams eg a floor plan to find where to place items
- extract and interpret information from charts eg a bar chart to find the best selling items
- extract and interpret information from line graphs eg a conversion graph to find out how much 650€ is worth in £.

Evidence requirements

Outcome 1: 1.1 at least two occasions
1.2 at least two occasions
1.3 at least two occasions
1.4 at least two occasions for each
1.5 at least two occasions

Unit 318 Handling data – collect, organise and represent data

UAN:	**T/504/5231**
Level:	Level 1
Credit value:	1
GLH:	6
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum (HD1/L1.2, HD1/L1.3
Aim:	The aim of this unit is to develop the learner's skills in collecting, organising and representing discrete data.

Learning outcomes

There are **two** learning outcomes to this unit:

1. be able to record discrete data (HD1/L1.2)
2. be able to represent discrete data (HD1/L1.2)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **6** hours should be allocated for this unit.

Unit 318 Handling data – collect, organise and represent data

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to record discrete data
The learner can:
1.1 select methods for collecting discrete data
1.2 select methods for recording discrete data
1.3 record collected discrete data

2. Outcome 2 be able to represent discrete data
The learner can:
2.1 organise data for representation
2.2 select scales to represent data
2.3 construct tables
2.4 construct charts
2.5 construct diagrams

Unit 318 Handling data – collect, organise and represent data

Guidance

To meet the assessment criteria for learning outcome one learners need to know how to collect and record data.

Learners might:

- select method for collecting data eg a survey
- select a method of recording eg a tally chart
- record data collected eg record data from survey on the tally chart.

To meet the assessment criteria for outcome 2 learners need to know how to organise and represent data in tables, charts and diagrams and use a suitable title, axis, scale and key.

Learners might:

- represent own or given data in a table eg price of several items at different shops
- represent own or given data in a bar chart eg information from traffic survey
- represent own or given data in a diagram eg plan of room

Evidence requirements

Outcome 1: at least one occasion

Outcome 2: at least one occasion for each

How does this unit go beyond the requirements of Entry 3?

The Adult Numeracy (Number, Handling Data, Measure, Shape and Space) progression overview shows how a learner makes progress through the National Standards for Adult Numeracy and the five levels of the Adult Numeracy Core Curriculum.
http://www.excellencegateway.org.uk/node/14938

Unit 319 Handling data – mean and range

UAN:	**A/504/5232**
Level:	Level 1
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in finding the arithmetical mean and range for sets of data.

Learning outcomes

There are **two** learning outcomes to this unit:

1. be able to find the arithmetical average (mean) for sets of data (HD1/L1.3)
2. be able to find the arithmetical range for sets of data (HD1/L1.4)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 319 Handling data – mean and range

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to find the arithmetical average (mean) for sets of data
The learner can:
1.1 define the term 'average'
1.2 state the everyday contexts when the term 'average' is used
1.3 calculate the means for different sets of given data
1.4 identify the factors that can distort the mean value

2. Outcome 2 be able to find the arithmetical range for sets of data
The learner can:
2.1 define the term 'range'
2.2 state the everyday contexts in which the term 'range' is used
2.3 calculate the ranges for different sets of given data

Unit 319 Handling data – mean and range

Guidance

To meet the assessment criteria for learning outcome one learners need to know that mean is one sort of average and if one or two values are much higher or lower than the other values this can give a distorted average.

Learners might:

- define the term 'average' orally or in writing and state where the 'average' is used
- calculate the mean eg average salary
- identify why the average they have calculated may be distorted eg high salary of managing director.

To meet the assessment criteria for outcome 2 learners need to know that the range measures the spread of a set of data.

Learners might:

- define the term 'range' orally or in writing and state where the term 'range' is used
- calculate the range eg spread of salary payments.

Evidence requirements

Outcome 1.1: at least one occasion
Outcome 1.2: at least one occasion
Outcome 1.3: at least two occasions
Outcome 1.4: at least one occasion
Outcome 2.1: at least one occasion
Outcome 2.2: at least one occasion
Outcome 2.3: at least two occasions

Unit 320 Handling data – probability

UAN:	**T/504/5228**
Level:	Level 1
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in working with probability. Learners will express the likelihood of events in different ways.

Learning outcomes

There are **two** learning outcomes to this unit:

1. be able to show that some events are more likely to occur than others (HD2/L1.1)
2. be able to express the likelihood of an event occurring (HD2/L1.2)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 320 Handling data – probability

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to show that some events are more likely to occur than others

The learner can:
1.1 provide examples of events that are certain to happen
1.2 provide examples of events that are impossible
1.3 provide examples of events that are more likely to occur than others

2. Outcome 2 be able to express the likelihood of an event occurring

The learner can:
2.1 plot the likelihood of events occurring on a probability scale of 0 to 1
2.2 describe the methods used to calculate the probability of an event occurring
2.3 express the probability of given events occurring as a fraction
2.4 express the probability of given events occurring as a decimal
2.5 express the probability of given events occurring as a percentage

Unit 320 Handling data – probability

Guidance

To meet the assessment criteria for learning outcome one learners need to understand that probability is an expression of likelihood and some events are more likely to occur than others.

Learners might:

- provide examples of events that are certain to happen eg night follows day
- provide examples of events that are impossible eg you are older than your mother
- provide examples of events that are more likely to occur than others eg if you have four white socks and two black socks you are more likely to pull out a white sock than a black sock.

To meet the assessment criteria for outcome 2 learners need to know that likelihood of an event is measured on a scale from 0 (impossible) to 1 (certain) and can be written as a fraction, decimal or percentage.

Learners might:

- plot the likelihood of events occurring on a probability scale
- describe the methods used to calculate the probability of an event occurring
- express the probability of given events occurring as a fraction eg ¼ .
- express the probability of given events occurring as a decimal eg 0.25
- express the probability of given events occurring as a percentage eg 25%

Evidence requirements

Outcome 1: at least two occasions
Outcome 2.1: at least one occasion
Outcome 2.2: at least one occasion
Outcome 2.3: at least two occasions
Outcome 2.4: at least two occasions
Outcome 2.5: at least two occasions

Unit 410 Number – number and formulae

UAN:	**R/504/5236**
Level:	Level 2
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in working with positive and negative numbers of any value and using formulae.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to compare positive and negative numbers of any value in practical contexts (N1/L2.1)
2. be able to carry out calculations with numbers of any value (N1/L2.10)
3. be able to make substitutions in given formulae to produce results (N1/L2.4)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 410 Number – number and formulae

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to compare positive and negative numbers of any value in practical contexts

The learner can:
1.1 record positive numbers of any value in digit form
1.2 record negative numbers of any value in digit form
1.3 arrange positive and negative numbers in order of value
1.4 compare positive and negative numbers of any value

2. Outcome 2 be able to carry out calculations with numbers of any value

The learner can:
2.1 carry out calculations involving two or more operations in a sequence using written and calculator methods
2.2 check calculations using a calculator
2.3 use memory functions of a calculator in two step calculations

3. Outcome 3 be able to make substitutions in given formulae to produce results

The learner can:
3.1 substitute numerical values for words and symbols in a given formula without brackets
3.2 carry out operations within calculations in the correct order
3.3 multiply when there is no operator between a number and one or more variables
3.4 evaluate simple formulae using brackets
3.5 evaluate simple expressions involving more than one variable

Unit 410 Number – number and formulae

Guidance

To meet the assessment criteria for learning outcome one learners need to know what each digit represents in a number of any size, including the use of zero as a place holder.

Learners might:

- write prices in whole pounds eg £827 235 000
- write numbers in everyday contexts eg attendance at football match
- write negative numbers eg temperatures below freezing
- read positive and negative numbers in words and write these numbers in digit form
- arrange positive numbers in order of size eg attendances at football matches
- arrange positive and negative numbers in order of size eg temperatures
- compare positive and negative numbers of any size eg temperatures.

To meet the assessment criteria for outcome 2 learners need to know how to use written and calculator methods to add, subtract, multiply and divide whole numbers.

Learners might:

- carry out calculations involving addition and subtraction eg total the cost of items purchased and work out the change using written methods
- carry out calculations involving addition and division eg work out total expenses for the year and then find the monthly cost using a calculator
- carry out calculations involving multiplication and multiplication eg work out area of a room and then find the cost of carpet using a calculator
- check own calculations using a calculator
- demonstrate how they use the memory function for two step calculations

To meet the assessment criteria for outcome 3 learners need to understand that words and symbols in expressions and formulae represent variable quantities not things and the contents of brackets must be worked out first.

Learners might:

- match expressions in words and symbols eg area is length multiplied by width a = l x w
- calculate cooking time eg of a turkey
- multiply when there is no operator eg calculate volume = lwh
- evaluate formulae using brackets eg perimeter = 2(l + w)

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions

Unit 411 Number – fractions, ratio and proportion

UAN:	**Y/504/5237**
Level:	Level 2
Credit value:	2
GLH:	18
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in working with fractions and direct proportion. Learners will identify equivalencies, evaluate one number as a fraction of another and add and subtract amounts and quantities.

Learning outcomes

There are **five** learning outcomes to this unit:

1. be able to use fractions to compare amounts and quantities (N2/L2.1)
2. be able to use equivalences between fractions, decimals and percentages (N2/L2.2)
3. be able to evaluate one number as a fraction of another (N2/L2.3)
4. be able to use fractions to add and subtract amounts and quantities (N2/L2.4 & N2/L2.10)
5. be able to calculate ratio and direct proportion (N1/L2.3)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **18** hours should be allocated for this unit.

Unit 411 Number – fractions, ratio and proportion

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to use fractions to compare amounts and quantities

The learner can:

1.1 use factors to reduce a fraction to its simplest form
1.2 use fractions with the same denominators to order amounts
1.3 use fractions with different denominators to order quantities
1.4 use fractions to compare amounts
1.5 use fractions to compare quantities

2. Outcome 2 be able to use equivalences between fractions, decimals and percentages

The learner can:

2.1 convert a given fraction to a decimal and a percentage
2.2 convert a given decimal to a fraction and a percentage
2.3 convert a given percentage to a fraction and a decimal
2.4 arrange fractions, decimals and percentages in order of value
2.5 calculate parts of whole numbers

3. Outcome 3 be able to evaluate one number as a fraction of another

The learner can:

3.1 calculate a number as a fraction of another giving the answer in its simplest form

4. Outcome 4 be able to use fractions to add and subtract amounts and quantities

The learner can:

4.1 use fractions to add amounts without a calculator
4.2 use fractions to subtract quantities without a calculator
4.3 use a calculator to add and subtract fractions
4.4 use a calculator to check fraction calculations

5. Outcome 5 be able to calculate ratio and direct proportion

The learner can:

5.1 calculate the number of parts in a given ratio
5.2 calculate quantities using ratio in the form of a:b:c
5.3 calculate direct proportion

Unit 411 Number – fractions, ratio and proportion

Guidance

To meet the assessment criteria for learning outcome one learners need to know how to change fractions to equivalent fractions.

Learners might:

- reduce a fraction to its simplest form eg $^{24}/_{36} = {}^{2}/_{3}$
- order fractions with the same denominator in different contexts eg $^{3}/_{32}$, $^{25}/_{32}$, $^{1}/_{32}$, $^{17}/_{32}$
- order fractions with different denominators eg $^{3}/_{5}$, $^{3}/_{4}$, $^{5}/_{7}$, $^{2}/_{3}$
- compare amounts eg $^{5}/_{8}$ of a room and $^{3}/_{4}$
- compare quantities eg results of a survey $^{2}/_{3}$ preferred x and $^{1}/_{5}$ chose y

To meet the assessment criteria for outcome 2 learners need to understand that fractions, decimals and percentages are different ways of expressing the same thing.

Learners might:

- convert a given fraction to a decimal and a percentage eg $^{3}/_{5}$
- convert a given decimal to a fraction and a percentage eg 0.38
- convert a given percentage to a fractions and a decimal eg 64%
- arrange fractions, decimals and percentages in order of size eg $^{2}/_{3}$, 0.75, 80%
- calculate fractions of whole numbers eg $^{5}/_{6}$ of 186.

To meet the assessment criteria for outcome 3 learners need to know how to reduce a fraction to its simplest form and understand that quantities must be in the same units to evaluate one as a fraction of the other.

Learners might:

- change minutes to fractions of an hour
- express results of a survey as fractions in their simplest form.

To meet the assessment criteria for outcome 4 learners need to know how to change fractions to equivalent fractions for the purpose of adding and subtracting.

Learners might:

- add fractions without a calculator eg add fractions of an hour for a time sheet
- subtract fractions without a calculator eg subtract fractions of a metre to find the length of material left
- use a calculator to add fractions eg find total distance from 2 ½ miles, ¾ mile and 3 ¾ miles
- use a calculator to subtract fractions eg weight of material left
- use a calculator to check own or given fraction calculations.

To meet the assessment criteria for outcome 5 learners need to understand how to work out the number of parts in a given ratio and the value of one part.

Learners might:

- calculate the number of parts in a given ratio eg to mix mortar
- calculate the number of parts in a given ratio eg to mix compost
- calculate the quantities of sand needed in a ratio eg to mix mortar or compost
- use direct proportion to scale down eg exchanging currency
- use direct proportion to scale up eg calculate actual measurements from a scale drawing.

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: at least two occasions
Outcome 4: 4.1 at least two occasions
4.2 at least two occasions
4.3 at least one occasion for each
4.4 at least one occasion
Outcome 5: at least two occasions

Unit 412 Number – decimals

UAN:	**J/504/5234**
Level:	Level 2
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in working with decimal numbers up to three places. Learners will make comparisons, add, subtract, multiply and divide decimal numbers.

Learning outcomes

There are **three** learning outcomes to this unit:

1. be able to compare decimals (N2/L2.5 & N2/L2.10)
2. be able to add and subtract decimals up to three places (N2/L2.6)
3. be able to multiply and divide decimals to three places (N2/L2.6 & N2/L2.10)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 412 Number – decimals

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to compare decimals
The learner can:
1.1 round numbers with three decimal places to two decimal places
1.2 round numbers with two decimal places to one decimal place
1.3 round numbers with one decimal place to a whole number
1.4 round answers from a calculator to an appropriate degree of accuracy
1.5 order decimals up to three places
1.6 compare decimals up to three places

2. Outcome 2 be able to add and subtract decimals up to three places
The learner can:
2.1 add decimals using efficient written methods
2.2 subtract decimals using efficient written methods
2.3 add decimals using efficient calculator methods
2.4 subtract decimals using efficient calculator methods

3. Outcome 3 be able to multiply and divide decimals to three places
The learner can:
3.1 multiply decimals by numbers of any value using efficient written methods
3.2 divide decimals by numbers of any value using efficient written methods
3.3 multiply decimals by numbers of any value using efficient calculator methods
3.4 divide decimals by numbers of any value using efficient calculator methods

Unit 412 Number – decimals

Guidance

To meet the assessment criteria for learning outcome one learners need to understand place value for whole numbers and up to three decimal places and decimals can be rounded to different degrees of accuracy depending on the purpose.

Learners might:

- round decimal lengths eg 3 decimal places to two decimal places
- round decimal weights eg 2 decimal places to one decimal place
- round decimal prices eg 1 decimal place to a whole number
- round answers from a calculator eg answer resulting from division of total cost rounded to 2 decimal places
- order decimals eg capacities of different containers
- compare decimals eg measurements.

To meet the assessment criteria for outcome 2 learners need to know how to use written and calculator methods to add and subtract decimal numbers up to three places.

Learners might:

- use efficient written methods to add decimals eg total cost
- use efficient written methods to subtract decimals eg capacity
- use efficient calculator methods to add decimals eg time expressed as whole hours and decimal fractions
- use efficient calculator methods to subtract decimals eg weight

To meet the assessment criteria for outcome 3 learners need to know how to multiply decimal numbers with and without a calculator.

Learners might:

- use efficient written methods to multiply decimals eg calculating volume
- use efficient written methods to divide decimals eg sharing cost
- use efficient calculator methods to multiply decimals eg converting between currencies
- use efficient calculator methods to divide decimals eg dividing total budget for an item by the cost of one item to find how many can be bought.

Evidence requirements

Outcome 1: at least one occasion
Outcome 2: at least two occasions
Outcome 3: at least two occasions

Unit 413 Number – percentages

UAN:	**F/504/5233**
Level:	Level 2
Credit value:	2
GLH:	14
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in working with percentages of any size, including decimals. Learners will order and compare percentages, calculate percentage increase and decrease and find percentage parts of quantities and measurements.

Learning outcomes

There are **four** learning outcomes to this unit:

1. be able to compare percentages (N2/L2.7)
2. be able to calculate percentage increases and decreases (N2/L2.7)
3. be able to find percentage parts of quantities and measurements (N2/L2.8 & N2/L2.10)
4. be able to evaluate one number as a percentage of another (N2/L2.9)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **14** hours should be allocated for this unit.

Unit 413 Number – percentages

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to compare percentages
The learner can:
1.1 order percentages for different situations
1.2 compare percentages for different situations

2. Outcome 2 be able to calculate percentage increases and decreases
The learner can:
2.1 calculate percentage increases for different situations
2.2 calculate percentage decreases for different situations
2.3 calculate results of percentage changes in different situations

3. Outcome 3 be able to find percentage parts of quantities and measurements
The learner can:
3.1 calculate percentage parts of quantities and measurements using efficient written methods
3.2 calculate percentage parts of quantities and measurements using efficient calculator methods
3.3 calculate percentage parts of quantities and measurements using quick methods

4. Outcome 4 be able to evaluate one number as a percentage of another
The learner can:
4.1 calculate one number as a percentage of another

Unit 413 Number – percentages

Guidance

To meet the assessment criteria for learning outcome one learners need to understand percentage as the number of parts in every 100.

Learners might:

- order percentages for different situations eg interest rate on savings
- compare percentages for different situations eg discount

To meet the assessment criteria for outcome 2 learners need to understand that one way a percentage increase can be found is by finding the percentage part and adding on and that one way a percentage decrease can be found is by finding the percentage part and subtracting.

Learners might:

- calculate a percentage increase using written methods eg 2.5% pay rise
- calculate percentage increase using a calculator eg price including VAT
- calculate a percentage decrease using written methods eg 15% discount
- calculate percentage decrease using a calculator eg 3.5% reduction
- calculate results of percentage changes eg calculating the amount owed at different percentage charges when working out the rate of interest on a loan.

To meet the assessment criteria for outcome 3 learners need to understand that percentages can be worked out in different ways.

Learners might:

- calculate percentage parts using efficient written methods eg 2.5% is 1% + 1% + half of 1%
- calculate percentage parts using a calculator eg for the price after a 20% discount, use % key to calculate 80% of the original cost
- calculate percentage parts using quick methods eg 50% is half.

To meet the assessment criteria for outcome 4 learners need to understand that a fraction may need to be changed to a percentage.

Learners might:

- calculate the results of a survey as a percentage.

Evidence requirements

Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3: 3.1 at least one occasion for each
3.2 at least one occasion for each
3.3 at least one occasion for each
Outcome 4: at least two occasions

Unit 414 Measure, shape and space – money, time and temperature

UAN:	**H/504/5239**
Level:	Level 2
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in performing calculations with money including conversion between currencies. Learners will also calculate durations of time in different formats and temperature using conversion tables.

Learning outcomes

There are **four** learning outcomes to this unit:

1. be able to calculate amounts of money of any value expressed in pounds and pence (MSS1/L2.1)
2. be able to convert between currencies (MSS1/L2.1)
3. be able to record time in different formats (MSS1/L2.2)
4. be able to record temperature (MSS1/L2.4)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 414 Measure, shape and space – money, time and temperature

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to calculate amounts of money of any value expressed in pounds and pence

The learner can:

1.1 calculate amounts of money involving two or more operations in a sequence using efficient written and calculator methods

2. Outcome 2 be able to convert between currencies

The learner can:

2.1 convert from sterling to different currencies

2.2 convert to sterling from different currencies

3. Outcome 3 be able to record time in different formats

The learner can:

3.1 state the different **units of time**

3.2 state the relationship between **units of time**

3.3 calculate durations of time in hours and minutes for a series of events using 12 hour and 24 hour clock formats

3.4 calculate durations of time using a calendar

3.5 record durations of time in different formats

Range

Units of time

Seconds, minutes, hours, days, weeks, months, years

4. Outcome 4 be able to record temperature

The learner can:

4.1 select units for measurement of temperature

4.2 measure temperature

4.3 record temperature in different units of temperature

4.4 calculate temperature differences within the same system

4.5 calculate temperature differences between different systems using conversion tables and scales

Unit 414 Measure, shape and space – money, time and temperature

Guidance

To meet the assessment criteria for learning outcome one learners need to know how to add, subtract, multiply and divide amounts of money.
Learners might:

- work out the cost of an item after discount
- work out the cost of a holiday including transport and insurance with a £15 deduction for early booking.

To meet the assessment criteria for outcome 2 learners need to understand that exchange rates of currencies are not fixed.
Learners might:

- calculate how many euro they will receive for a given amount of sterling at different exchange rates
- calculate the price of an item quoted in dollars on a website
- calculate the value of currency brought back from a holiday

To meet the assessment criteria for outcome 3 learners need to understand the relationship between units of time.
Learners might:

- state orally or in writing the different units for measuring time and the relationship between these units eg number of seconds in an hour
- use train and airline timetables to plan a journey
- calculate cooking times by weight
- produce a project plan to cover several weeks
- use a stopwatch to measure and record time taken to complete an activity
- set timers on appliances.

To meet the assessment criteria for outcome 4 learners need to know how to read and record temperatures on different scales.
Learners might:

- measure and record the temperature eg check storage temperatures for a fridge or freezer against the actual temperature of a fridge or freezer
- calculate temperature differences in the same system eg compare outside and inside temperatures
- calculate temperature differences in different systems eg compare temperatures in different countries quoted in Celsius and Fahrenheit.

Evidence requirements

Outcome 1: at least two occasions for each

Outcome 2: at least two occasions for each

Outcome 3: at least two occasions for each

Outcome 4: 4.1: at least one occasion
4.2 and 4.3 and are likely to be covered by the same activity but should be shown on at least two occasions
4.4 at least one occasion
4.5 at least one occasion

Unit 415 Measure, shape and space – length weight and capacity

UAN:	**Y/504/5240**
Level:	Level 2
Credit value:	1
GLH:	9
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in measuring and comparing length, weight and capacity using metric and imperial units.

Learning outcomes

There are **three** learning outcomes to this unit.

1. be able to compare lengths of any size (MSS1/L2.3 & MSS1/L2.6)
2. be able to compare weight (MSS1/L2.3, MSS1/L2.5 & MSS1/L2.6)
3. be able to compare capacity (MSS1/L2.3, MSS1/L2.5 & MSS1/L2.6)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **9** hours should be allocated for this unit.

Unit 415 Measure, shape and space – length weight and capacity

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to compare lengths of any size

The learner can:

1.1 select degree of accuracy for measuring length in different contexts
1.2 measure length using metric units
1.3 compare length using metric units
1.4 carry out calculations involving units within the same system
1.5 carry out calculations involving units between imperial and metric systems using conversion tables and scales
1.6 use conversion factors

2. Outcome 2 be able to compare weight

The learner can:

2.1 select degree of accuracy for measuring weight in different contexts
2.2 measure weight using metric units
2.3 compare weight using metric units
2.4 carry out calculations involving units within the same system
2.5 carry out calculations involving units between imperial and metric systems using conversion tables and scales
2.6 use conversion factors

3. Outcome 3 be able to compare capacity

The learner can:

3.1 select degree of accuracy for measuring capacity in different contexts
3.2 measure capacity using metric units
3.3 compare capacity using metric units
3.4 carry out calculations involving units within the same system
3.5 carry out calculations involving units in imperial and metric using conversion tables and scales
3.6 use conversion factors

Unit 415 Measure, shape and space – length weight and capacity

Guidance

Explanation of criteria and examples of evidence

To cover the assessment criteria for **outcomes 1 to 3** learners will need to be presented with requirements to solve problems related to measurement of length, weight and capacity. Each measurement should require learners to address different scales. For example, measuring distance between two points and length of an every day item. The following need to be completed by the learner for length, weight and capacity:

- State a degree of accuracy for measuring that is appropriate for the context given
- Carry out and record measurements
- Compare two measurements taken
- Carry out at least one calculation related to the two measurements eg add the two measurements, subtract one measurement from the other
- Working from scales and/or conversion tables, convert the metric units to imperial
- Use conversion factors to carry out calculations

Learners might work in contexts that are relevant to work, training or leisure interests.

Evidence requirements

Outcome 1: at least one occasion
Outcome 2: at least one occasion
Outcome 3: at least one occasion

Across all evidence for this unit, there should be at least one addition and one subtraction calculation

How does this unit go beyond the requirements of Level1?

The Adult Numeracy (Number, Handling Data, Measure, Shape and Space) progression overview shows how a learner makes progress through the National Standards for Adult Numeracy and the five levels of the Adult Numeracy Core Curriculum.

http://www.excellencegateway.org.uk/node/14938

Unit 416 Measure, shape and space – shape and space

UAN:	**D/504/5238**
Level:	Level 2
Credit value:	2
GLH:	16
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in working with shape and space including using formulae, working out dimensions from scale drawing and solving problems involving 2D shapes.

Learning outcomes

There are **four** learning outcomes to this unit:

1. be able to use given formulae expressed in letters and symbols (MSS1/L2.7, MSS1/L2.8 7 MSS1/L2.9)
2. be able to work out dimensions from scale drawings (MSS1/L2.10)
3. be able to use common 2D representations of 3D objects (MSS2/L2.1 & MSS2/L2.2)
4. be able to solve problems involving 2D shapes and parallel lines

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **16** hours should be allocated for this unit.

Unit 416 Measure, shape and space – shape and space

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to use given formulae expressed in letters and symbols
The learner can:
1.1 calculate perimeters of **regular shapes** using given formulae
1.2 calculate areas of **regular shapes** using given formulae
1.3 calculate areas of composite shapes using given formulae
1.4 calculate volumes of cuboids and cylinders using given formulae

Range
Regular shapes
Rectangles, circles, triangles

2. Outcome 2 be able to work out dimensions from scale drawings
The learner can:
2.1 use scales on drawings to calculate actual measurements

3. Outcome 3 be able to use common 2D representations of 3D objects
The learner can:
3.1 list 3D objects represented in 2D form
3.2 use 2D representations of 3D objects

4. Outcome 4 be able to solve problems involving 2D shapes and parallel lines
The learner can:
4.1 identify parallel lines on common 2D shapes
4.2 use the properties of parallel lines to solve problems

Unit 416 Measure, shape and space – shape and space

Guidance

To meet the assessment criteria for learning outcome 1 learners need to know what is meant by perimeter, circumference, diameter and radius and recognise the symbol for *pi*.

Learners might:

- calculate perimeter eg of a circular rug
- calculate area eg the surface area of a pond
- calculate area eg of an L-shaped room
- calculate volume eg of a cylinder

To meet the assessment criteria for outcome 2 learners need to understand scale written as a ratio.

Learners might:

- calculate actual measurements from a scale drawing eg 1:20
- calculate actual distance from a map.

To meet the assessment criteria for outcome 3 learners need to understand that 3-D objects can be represented in 2-D.

Learners might:

- list orally or in writing a range of 3-D objects that can be represented in 2-D form
- use a map to plan a route
- use a scale drawing of a room to find a measurement
- use a diagram to find out how to build a flat pack unit

To meet the assessment criteria for outcome 4 learners need to understand the meaning of parallel and recognise parallel lines.

Learners might:

- mark parallel lines on a plan of a room
- use parallel lines to hang wallpaper
- use a room plan to find the measurements of a parallel wall.

Evidence requirements
Outcome 1: at least two occasions
Outcome 2: at least two occasions
Outcome 3.1: at least one occasion
Outcome 3.2: at least two occasions
Outcome 4: at least two occasions

Unit 417 Handling data – extract and interpret data

UAN:	**H/504/5242**
Level:	Level 2
Credit value:	1
GLH:	7
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in extracting and interpreting discrete and continuous data.

Learning outcomes

There is **one** learning outcomes to this unit:

1. be able to interpret discrete data and continuous data (HD1/L2.1)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **7** hours should be allocated for this unit.

Unit 417 Handling data – extract and interpret data

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to interpret discrete data and continuous data
The learner can:
1.1 define discrete data
1.2 define continuous data
1.3 extract discrete and continuous data from different sources
1.4 interpret information from complex tables
1.5 interpret information from diagrams
1.6 interpret information from composite bar charts
1.7 interpret information from line graphs with more than one line

Unit 417 Handling data – extract and interpret data

Guidance

To meet the assessment criteria for learning outcome one learners need to know how to extract and interpret discrete and continuous data from tables, diagrams, pie and bar charts and line graphs including use of decimal numbers.

Learners might:

- extract and interpret information from tables eg a holiday brochure to find dates, flight times, costs, supplements, reductions and insurance.
- extract and interpret information from scale diagrams eg a planning application
- extract and interpret information from charts eg a bar chart showing sales income by region for two years
- extract and interpret information from line graphs eg a line graph showing population trends in two countries over the last 100 years.

Evidence requirements

Outcome 1.1: at least one occasion
Outcome 1.2: at least one occasion
Outcome 1.3: at least two occasions
Outcome 1.4: at least two occasions
Outcome 1.5: at least two occasions
Outcome 1.6: at least two occasions
Outcome 1.7: at least two occasions

Unit 418 Handling data – collect and use data

UAN:	**T/504/5259**
Level:	Level 2
Credit value:	1
GLH:	9
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in collecting and representing discrete and continuous data.

Learning outcomes

There are **two** learning outcomes to this unit:

1. be able to represent discrete data (HD1/L2.2)
2. be able to represent continuous data (HD1/L2.2)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **9** hours should be allocated for this unit.

Unit 418 Handling data – collect and use data

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to represent discrete data
The learner can:
1.1 collect discrete data from a range of sources
1.2 organise discrete data for representation
1.3 construct complex tables
1.4 construct pie charts
1.5 construct composite bar charts
1.6 construct scale diagrams
1.7 describe the effects of using different scales in representations

2. Outcome 2 be able to represent continuous data
The learner can:
2.1 collect continuous data from a range of sources
2.2 represent continuous data in a line graph
2.3 identify trends from an analysis of the slope of the line

Unit 418 Handling data – collect and use data

Guidance

To meet the assessment criteria for learning outcome one learners need to know how to collect and represent discrete data using appropriate scales.

Learners might:

- select method for collecting data eg a survey
- collect and group data eg by age group
- represent own or given data in a complex table eg showing own results and results from other students with totals
- represent own or given data in a pie chart with at least four segments
- represent own or given data in a composite bar chart eg showing two years
- represent own or given data in a scale diagram
- describe orally or in writing the effect of using different scales using their own or a given representation.

To meet the assessment criteria for outcome 2 learners need to understand that continuous data is collected through measurement and can only be collected to a certain degree of accuracy.

Learners might:

- select method for collecting data eg observation such as recording temperature at set intervals
- represent own or given data in a line graph eg temperature
- identify trends eg decreasing temperature levels.

Evidence requirements

Outcome 1.1: at least two occasions
Outcome 1.2: at least two occasions
Outcome 1:3 at least one occasion
Outcome 1:4 at least one occasion
Outcome 1:5 at least one occasion
Outcome 1:6 at least one occasion
Outcome 1:7 at least one occasion
Outcome 2.1: at least one occasion
Outcome 2.2: at least one occasion
Outcome 2.3: at least one occasion

Unit 419 Handling data – statistics

UAN:	**K/504/5243**
Level:	Level 2
Credit value:	1
GLH:	9
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in comparing the mean, median and mode and using the range to describe the spread within two sets of data.

Learning outcomes

There are **two** learning outcomes to this unit:

1. be able to compare the mean, median and mode (HD1/L2.3)
2. be able to use the range to describe the spread within two sets of data (HD1/L2.3 & HD1/L2.4)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **9** hours should be allocated for this unit.

Unit 419 Handling data – statistics

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to compare the mean, median and mode

The learner can:

1.1 find the mean for sets of data
1.2 find the median for sets of data
1.3 find the mode sets of data
1.4 compare the mean, median and mode for different sets of data
1.5 state the different purposes for which the mean, median and mode can be used

2. Outcome 2 be able to use the range to describe the spread within two sets of data

The learner can:

2.1 calculate the range of sets of data
2.2 compare the ranges of sets of data

Unit 419 Handling data – statistics

Guidance

To meet the assessment criteria for learning outcome one learners need to find the mean, median and mode, and use them as appropriate to compare sets of data.

Learners might:

- find the mean for collected or given data and compare this with the mean for a similar set of data eg mean house prices in two locations
- find the median for collected or given data and compare this with the median for a similar set of data eg median house prices in two locations
- find the mode for collected or given data and compare this with the mode for a similar set of data eg modal house prices in two locations
- compare the mean, median and mode for sets of data and say which is the most useful eg house prices
- state orally or in writing the different purposes for which the mean, median and mode can be used eg when each might be useful. This may be related to the data they have collected or be unrelated.

To meet the assessment criteria for outcome 2 learners need to be able to find the range and use it to describe the spread within sets of data.

Learners might:

- calculate the range for collected or given data and compare this with the range for a similar set of data eg house prices in two locations.

Evidence requirements

Outcome 1.1: at least two occasions
Outcome 1.2: at least two occasions
Outcome 1.3: at least two occasions
Outcome 1.4: at least two occasions
Outcome 1.5: at least one occasion
Outcome 2: at least two occasions

Unit 420 Handling data – probability

UAN:	**D/504/5241**
Level:	Level 2
Credit value:	1
GLH:	10
Relationship to other standards:	This unit is based on the National Standards for Adult Numeracy and fully referenced to the Adult Numeracy Core Curriculum.
Aim:	The aim of this unit is to develop the learner's skills in identifying the range of possible outcomes for both independent and combined events.

Learning outcomes

There are **two** learning outcomes to this unit:

1. be able to identify the range of possible outcomes of independent events (HD2/L2.1)
2. be able to identify the range of possible outcomes of combined events (HD2/L2.1)

Guided learning hours

Although patterns of delivery are likely to vary, it is recommended that **10** hours should be allocated for this unit.

Unit 420 Handling data – probability

How is this unit assessed?
Assessment is by a learner portfolio.

1. Outcome 1 be able to identify the range of possible outcomes of independent events

The learner can:
1.1 state the possible outcomes when events are independent
1.2 record the outcomes of an independent event

2. Outcome 2 be able to identify the range of possible outcomes of combined events

The learner can:
2.1 state the possible outcomes when events are combined
2.2 record the possible outcomes of combined events in tables
2.3 record the possible outcomes of combined events in tree diagrams

Unit 420 Handling data – probability

Guidance

To meet the assessment criteria for learning outcome one learners need to understand that events are independent when the outcome of one does not influence the outcome of another.

Learners might:

- state the possible outcomes of independent events eg the gender of a baby does not influence the gender of a second one
- record the outcomes of independent events eg in table or diagram

To meet the assessment criteria for outcome 2 learners need to understand that events are combined when the outcome depends on the separate outcome of each independent event.

Learners might:

- state the possible outcomes when events are combined eg tossing two coins
- record the possible outcomes of combined events in tables eg tossing two coins
- record the possible outcomes of combined events in tree diagrams eg tossing two coins

Evidence requirements

Outcome 1: at least one occasion

Outcome 2: 2.1 at least two occasions
2.2 at least one occasion
2.3 at least one occasion

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Published by City & Guilds, a registered charity established to promote education and training

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