DIPLOMA GUIDE

0

0

# Access

Qualification No: QAAQ002892 Aim Code: Validation: Version:

•

40010508 1 August 2019 – 31 July 2024 2.0

...

0

Apprenticeships

English & Math

ESOL

Access to HE Diploma (Science with Mathematics)



This page has been left intentionally blank.



# About this Access to HE Diploma guide

This Access to HE Diploma specification is intended for Tutors, Assessors, Internal Quality Assurers, Quality Managers and other staff within Gateway Qualifications Access to HE approved providers/or prospective providers.

It sets out what is required of the student in order to achieve the Access to HE Diploma. It also contains information specific to managing and delivering the Access to HE Diploma (s) including specific quality assurance requirements.

The guide should be read in conjunction with the Gateway Qualifications Access to HE Provider Handbook and other publications available on the website which contain more detailed guidance on assessment and verification practice.

In order to offer this Access to HE Diploma you must be a Gateway Qualifications recognised centre and approved to offer Access to HE Diplomas.

If your centre is not yet recognised, or diploma approved, please contact our Development Team to discuss

 Telephone:
 01206 911211

 Email:
 enquiries@gatewayqualifications.org.uk

 Website:
 <u>https://www.gatewayqualifications.org.uk/advice-guidance/delivering-our-gualifications/become-recognised-centre/</u>



# Contents

Abo	out this Access to HE Diploma guide	3
1.	Diploma Information	6
1.1	Overview of the Access to Higher Education Diploma	6
1.2	About this Diploma	6
1.3	Purpose	7
1.4	Aims	7
1.5	Objectives	7
1.6	Sector Subject Area	7
1.7	Target groups	7
1.8	Delivery methods	8
1.9	Achievement methodology	8
1.10	Geographical coverage	8
1.11	1 Progression opportunities	8
1.12	2Equality, Diversity and Inclusion	9
2.	Learner Entry Requirements	.10
2.1	Age	.10
2.2	Prior qualifications	.10
2.3	Prior skills/knowledge/understanding	.10
2.4	Access to qualifications for learners with disabilities or specific needs	.10
2.5	Additional requirements/guidance	. 11
2.6	Recruiting learners with integrity	.11
3.	Achieving the Access to HE Diploma	.12
3.1	Qualification specification	.12
3.2	Rules of Combination	.12
3.3	Additional completion requirements	.19
3.4	Recognition of Prior Learning	.19
4.	Access to HE Units of Assessment	.20
4.1	Unit specification	.20
4.2	Academic subject content	.20
4.3	Graded and ungraded units	.20
4.4	Revisions to Access to HE Units of Assessment	.21
5.	Assessment and Quality Assurance	.22
5.1	Provider requirements	.22
5.2	Staffing requirements	.22
5.3	Facilities and resources	.22
5.4	Quality Assurance Requirements	.23

# gateway <sub>qualifications</sub>

5.5	Additional requirements/guidance	23
6.	Unit Details	24
Man	datory Units: Graded Academic Subject Content	24
Gra	ded Research Units	31
Opti	onal Graded Academic Units - Mathematics	37
Opti	onal Graded Academic Units - Science	46
Man	datory Units: Ungraded	62
Opti	onal Units: Ungraded	66
7.	What to do next	75
8.	Gateway Qualifications	75

# **1. Diploma Information**

## **1.1** Overview of the Access to Higher Education Diploma

The Access to Higher Education (HE) Diploma is a nationally recognised qualification with common requirements relating to the description of learner achievement. The Diploma is:

- a level 3 qualification, regulated by the Quality Assurance Agency (QAA) for Higher Education
- a unitised qualification, based on units of assessment which are structured in accordance with the Access to HE unit specification
- a credit-based qualification, operated in accordance with the terms of the Access to HE credit specification
- a graded qualification, as determined by the Access to HE Grading Scheme.

Details of the credit framework and requirements relating to the award of credit are provided within the Quality Assurance Agency Recognition Scheme for Access to Higher Education: The Access to Higher Education Diploma specification 2013.

Individual named Diplomas are identified by separate titles and are validated at by Gateway Qualifications as an Access Validating Agency (AVA) recognised by the Quality Assurance Agency for Higher Education (QAA). Each Diploma has its own approved set of units of assessment, governed by rules of combination, which are appropriate to the subject of the particular Diploma. The common grading requirements apply to all individual Diplomas.

# **1.2 About this Diploma**

The diploma allows learners to undertake study related to Science and Maths. Learners will have the opportunity to develop skills which will enable progression to a range of degree level programmes within the sector. Many learners join these types of degrees after following A level study, so the diploma will place the Access to HE learners on a level with those who have followed A level studies.

Learners will complete mandatory units which cover fundamental physics and chemistry and cell biology and biochemistry unit alongside a mathematics for science unit to develop underpinning skills for the optional units. They will be able to research an area of interest to them in more depth. They will study a range of optional units covering physics, chemistry and biology units. A range of maths units are also available to include calculus, statistics, algebra and geometry.

Ungraded units include units which will support access to higher education whilst supporting academic study and personal skills.



# 1.3 Purpose

The primary purpose of Access to HE Diplomas is to provide higher education progression opportunities for adults who, because of social, education or individual circumstances, may have achieved few, if any, prior qualifications.

# 1.4 Aims

The qualification aims to:

- reintroduce learners to education recognising prior skills and experience and the particular needs of those returning to learn
- offer learners a responsive, supportive return to learn experience at a level appropriate for entry to HE
- develop the appropriate skills such as study skills that are necessary to enable learners to succeed in their HE career
- address issues of widening participation and social inclusion
- raise learner awareness of the opportunities that a return to study and lifelong learning can bring.

# 1.5 Objectives

The objective of the Diploma is to enable learners to:

- satisfy the general academic requirements for entry to Higher Education
- prepare learners for HE level study generally and in subject areas appropriate to an intended HE course destination
- demonstrate appropriate levels of competence in subject specific skills and knowledge
- demonstrate practical, transferable and academic skills
- develop their confidence and ability to cope with a return to education at an advanced level
- enhance personal and career opportunities
- develop as independent and lifelong learners.

# **1.6 Sector Subject Area**

#### 2.1 Science

# 1.7 Target groups

- Adults who, because of social, educational or individual circumstances may have achieved few, if any, prior qualifications and wish to progress to HE
- Adults who have gone straight into industry (perhaps following apprenticeship routes) who wish to progress to HE.



# **1.8 Delivery methods**

Delivery methods for this diploma can include:

- Face to face
- Blended learning including online platforms such as Moodle or Pearl.

It should be noted that if a student is interested in following a Biology pathway, they should undertake the Quantitative Methods – Statistics unit from the mathematics optional group. If the learner is looking at a pathway to Chemistry or Physics, any of the other maths units are applicable.

Assessment methods will include academic posters, exam, controlled assessment, projects e.g. practical experiments, presentations, self-evaluation, SWOT analysis, short answer questions, reports, worksheets.

#### 1.9 Achievement methodology

The Diploma will be awarded to learners who successfully achieve an approved combination of units through a Portfolio of Evidence that has been successfully verified and monitored through Gateway Qualifications' Quality Assurance process.

The qualification is therefore determined by successful achievement of all required unit assessments with no further requirement for additional/terminal assessment.

# **1.10 Geographical coverage**

This qualification has been approved by for delivery in England.

#### **1.11 Progression opportunities**

Progression routes are into a range of degrees including:

- Mathematics BSc (Hons)
- Mathematics MMath (Hons)
- Biological Sciences BSc (Hons)
- Healthcare Science (Life Sciences) BSc (Hons)
- Biology BSc (Hons)
- Molecular Biology BSc (Hons)
- Bioscience BSc (Hons)
- Chemistry BSc (Hons)
- Natural Sciences BSc (Hons)
- Applied Physics BSc (Hons)
- Physics BSc (Hons)
- BSc (Hons) Forensic Science
- BSc Biomedicine



- BSc Biomedical Science
- BSc Medical Biochemistry
- BSc Biochemistry
- BSc Genetics

The qualification does not provide guaranteed entry to UK higher education.

# **1.12 Equality, Diversity and Inclusion**

It is Gateway Qualifications' aim that there shall be equal opportunities and so meet the organisation's legal responsibilities to prevent discrimination.

In accordance it is the organisation's intention that there should be no discrimination on the grounds of a protected characteristic including age, disability, gender assignment, marriage and civil partnership, pregnancy and maternity, race, religion and belief, sex, sexual orientation. It is acknowledged that this is not an exhaustive list.

# 2. Learner Entry Requirements

# 2.1 Age

The course is designed to meet the needs of adults who have been out of full time education for a significant period of time and who have not achieved some or any formal qualifications. This generally would apply to learners over the age of 19.

# 2.2 **Prior qualifications**

There is no requirement for learners to have achieved prior qualifications or units prior to undertaking this qualification.

Learners will probably require a pass in maths and English at GCSE level or a Functional Skills qualification in English and Maths to progress onto a degree course.

Providers may ask learners for GCSEs as a mark of ability at Level 2 as an appropriate entry requirement to a Level 3 course.

# 2.3 Prior skills/knowledge/understanding

There is no requirement for learners to have prior skills, knowledge or understanding. However, learners would be expected to be able to demonstrate the skills and ability to study at Level 3.

# 2.4 Access to qualifications for learners with disabilities or specific needs

Gateway Qualifications and recognised providers have a responsibility to ensure that the process of assessment is robust and fair and allows the learner to show what they know and can do without compromising the rigour of the assessment used to evidence the criteria.

Gateway Qualification has a duty to permit a reasonable adjustment where an assessment arrangement would disadvantage a learner with a disability, medical condition or learning need.

The following adaptations are examples of what may be considered for the purposes of facilitating access, as long as they do not impact on any competence standards being tested:

- adapting assessment materials
- adaptation of the physical environment for access purposes
- adaptation to equipment
- assessment material in an enlarged format or Braille
- permitting readers, signers, scribe, prompter, practical assistant
- changing or adapting the assessment method
- extra time, e.g. assignment extensions
- transcript



- use of assistive software where the software does not influence the learners' ability to demonstrate the skills, knowledge or understanding e.g. use of spellchecker in an English assessment
- using assistive technology
- use of CCTV, coloured overlays, low vision aids
- use of a different assessment location
- use of ICT/responses using electronic devices.

It is important to note that not all of the adjustments (as above) will be reasonable, permissible or practical in particular situations. The learner may not need, nor be allowed the same adjustment for all assessments.

Learners should be fully involved in any decisions about adjustments/adaptations. This will ensure that individual needs can be met, whilst still bearing in mind the specified assessment criteria for a particular qualification.

A reasonable adjustment for a particular learner may be unique to that individual and may not be included in the list of available access arrangements specified above.

Details on how to make adjustments for learners is set out in the Reasonable Adjustment and Special Considerations Policy and Procedures.

# 2.5 Additional requirements/guidance

Learners must have a UK address (including BFO) to be registered on an Access to HE Diploma.

#### 2.6 Recruiting learners with integrity

It is vital that providers recruit with integrity. Providers must ensure that learners have the correct information and advice on their selected qualification(s) and that the qualification(s) will meet their needs.

The recruitment process must include the provider undertaking the assessment of each potential learner and making justifiable and professional judgements about the learner's potential to successfully complete the assessment and achieve the qualification. Such an assessment must identify, where appropriate, the support that will be made available to the learner to facilitate access to the qualification.



# **3. Achieving the Access to HE Diploma**

#### **3.1 Qualification specification**

The generic requirements for the Access to HE Diploma are that learners must achieve a total of 60 credits of which 45 credits must be achieved at level 3 from graded units that are concerned with academic subject and the remaining 15 credits can be achieved at level 2 or level 3 from units which are ungraded. It is recommended you include no more than 6 ungraded 'academic subject content' credits. The ungraded credits can be mandatory or optional within the Diploma. The approved Rules of Combination for this qualification are detailed below.

Where there is a selection of optional units within the permitted rules of combination, the selection of units to be used to form the Diploma course must be made before the learners are registered. Learners must be registered with Gateway Qualifications within 12 weeks of the start of the course or before application to UCAS, whichever is soonest.

#### **3.2 Rules of Combination**

The structure sets out the units required to be achieved the Access to Diploma, comprising of:

- Graded Academic mandatory units Level 3
- Graded Academic optional units Level 3
- Graded Research units Level 3
- Ungraded units Level 2/3.

Learners must achieve a total of 60 credits and meet unit group requirements.

Learners must complete at total of 60 credits of which 45 credits must be achieved at level 3 from graded units which are concerned with academic subject content and the remaining 15 credits must be achieved at level 3 from units which are ungraded.

Learners must complete 21 credits must be taken from the mandatory group. A maximum of 6 credits must be taken from the Research optional group, 6 credits from each of the Optional Grade Units: Science Group and the Optional Grade Units: Mathematics group. The remaining 6 credits can be taken from either the Mathematics or the Science optional groups.



#### Mandatory Units: Graded Academic Subject Content

Learners must achieve 21 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Suggested Assessment methods	Assessment Volume
QU019000	Cell Biology and Biochemistry	3	6	Academic	1, 2, 7	Practical investigation Report Exam	Practical Investigation 750 words 2 hours closed book
QU006301	Fundamental Chemistry	3	6	Academic	2, 3, 4, 7	Investigation, Report Exam	1500 words 1.5 hours open book
QU025282	Fundamental Physics: Theory	3	6	Academic	1, 7	Structured Questions 2 x scientific reports, practical investigations	1000 words 2 x 750 words
QU006176	Mathematics for Science	3	3	Academic	3, 7	Exam	2 hours closed book

#### **Graded Research Units:**

Learners must achieve 6 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Sugeested Assessment methods	Assessment Volume
QU028879	Research: Extended Writing Project for Science	3	6	Academic	1, 2, 3, 4, 7	Practical investigations, scientific report including at least one graph, chart and table Worksheets	1250 word scientific report based on investigations, including at least one graph, chart and table 750 words
QU028882	Research Skills for Science and Mathematics	3	6	Academic	1, 2, 3, 4, 7	Research Diary Research Proposal Report Evaluation	500 words 500 words 1500 words 250 words
QU026078	Research: Practical Investigation Project for Science	3	6	Academic	2, 3, 4, 6, 7	Risk assessment Project diary Project proposal Research review Report Evaluation	250 words 500 words 250 words 500 words 1250 words 250 words



#### **Optional Graded Academic Units: Mathematics**

Learners must achieve a minimum of 6 credits and a maximum of 12 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Suggested Assessment methods	Assessment Volume
QU019995	Alegbra and Trigonometry	3	3	Academic	1, 7	Exam	2 hours closed book
QU007965	Calculus: Integration	3	3	Academic	3, 7	Controlled assessment	1.5 hours open book
QU017259	Geometry	3	3	Academic	3, 7	Exam	2 hours closed book
QU007424	Mathematics: Algebra, Exponentials and Logarithms	3	3	Academic	3, 5, 7	Worksheets	1500 words
QU007941	Matrices	3	3	Academic	2, 3, 7	Controlled assessment	1.5 hours open book
QU007442	Quantitative Methods – Statistics	3	3	Academic	3, 4, 5, 7	Data analysis short answer questions Create charts and	500 words
						graphs	500 words
						Worksheets Case study analysis of	250 words
						data Tree diagrams	250 words
QU007957	Series	3	3	Academic	2, 3, 7	Exam	2 hours closed book



#### **Optional Graded Academic Units: Science**

Learners must achieve a minimum of 6 credits and a maximum of 12 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Suggested Assessment methods	Assessment Volume
QU025703	Chemical Principles: Particles and Forces	3	6	Academic	2, 3, 7	Exam Practical investigation Report Annotated diagram	1 hour closed book Investigation 1000 words 500 words
QU006178	Circulation, Immunity and Homeostasis	3	3	Academic	2, 7	Exam	1.5 hours open book
QU025851	Ecosystems and Human Influences	3	6	Academic	1, 2, 7	Exam Case study Academic poster Experiments and scientific report	1 hour closed book 500 words 500 words 750 words
QU006259	Energetics, Kinetics, Equilibria	3	3	Academic	2, 3, 7	Worksheets	1500 words
QU025284	Fundamental Physics: Practical Investigation	3	3	Academic	3, 5, 7	Practical investigation Report	Practical investigation 1000 Reports
QU006383	Health Physics	3	6	Academic	2, 3, 7	Experiment and scientific report Structured questions Case study	750 words 1500 words 500 words
QU018998	Human Cardiac and Respiratory Systems	3	3	Academic	1, 2, 7	Worksheets	1500 words
QU025630	Human Reproduction and Health Issues	3	3	Academic	1, 2, 7	Structured questions	1500 words
QU006603	Introduction to Organic Chemistry	3	3	Academic	2, 3, 7	Investigation and scientific report Worksheets	750 words 500 words
QU019880	Plant and Soil Science	3	6	Academic	1, 2, 7	Exam Investigation Report	1.5 hour closed book Investigation 1000 words



Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Suggested Assessment methods	Assessment Volume
QU018996	Understanding Genetics	3	6	Academic	1, 2, 4, 5, 7	Investigation, scientific report Exam	Practical investigation, 750 words 1.5 hours open book

#### Mandatory Units: Ungraded

Learners must achieve 9 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	SuggestedAssessment methods	Assessment Volume
QU010772	Practical Science Skills	3	3	Other	Investigation, report and reflective	Practical investigation with 750 word report and 250 word reflection
QU025532	Preparation for Higher Education	3	3	Other	Research, Application form and Personal Statement, Prepared Q&A	Review of research, course and decision 500 words, application form, Personal Statement 750 words, prepared Q&A 250 words
QU026155	Writing reports	3	3	Other	Report plan Presentation of report plan Report	Plan 2-3 minutes 1000 words



#### **Optional Units: Ungraded**

Learners must achieve 6 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Suggested Assessment methods	Assessment Volume
QU007486	Application of Number – Interpreting and Presenting Information	3	3	Other	2 x controlled assessments	2 x 1 hour assessments
QU027084	Presenting Information Using ICT	3	3	Other	Notes from a range of sources Presentation (word processed, spreadsheet, presentation) Presentation lecture notes and handouts	300 words Presentation 200 words
QU028487	Promoting Wellbeing and Building Resilience	3	3	Other	Presentation lecture notes and handouts	1500 words
QU026344	References and Reliability of Sources	3	3	Other	Literature review	1500 words including recognised form of referencing and bibliography
QU011467	Spreadsheets	3	3	Other	Case study analysis and creation of spreadsheets to meet customer needs, manipulation of data within spreadsheets, create graphs, charts and pivot tables, report	500 words
QU033854	Sustainability Project	3	3	Academic	Report, including project plan and reflection	1000 words
QU033880	The Fundamentals of Environmental Sustainability	3	3	Academic	Report	1500 words



# 3.3 Additional completion requirements

Learners will probably require a pass in maths and English at GCSE level or a Functional Skills qualification in English and Maths to progress onto a degree course.

Delivery providers should make learners aware of HEI course entry requirements.

# 3.4 Recognition of Prior Learning

Recognition of prior learning is a process that considers if a learner can meet the specified assessment requirements through knowledge, understanding or skills that they already possess and that can contribute towards the attainment of a qualification for which they are undertaking.

For further information please refer Annex C, Access to HE Diploma Specification, <u>https://www.accesstohe.ac.uk/AboutUs/Publications/Documents/Access-Diploma-Specification.pdf</u>



# 4. Access to HE Units of Assessment

# 4.1 Unit specification

A common unit specification applies to all units with Access to HE Diplomas the unit specification follows a standard template covering the following elements:

- title
- level
- credit value
- unit code
- learning outcomes
- assessment criteria
- grade descriptors
- type of unit (academic subject content or not).

The units of assessment for the Access to HE Diploma (Humanities) are contained within this Access to HE Diploma Guide.

# 4.2 Academic subject content

A unit is classified as having academic subject content, if the unit's knowledge and skills are directly related to the subject of the name of the Access to HE Diploma. Units will not meet the academic subject content requirement if they are principally concerned with personal development, generic English or mathematics, or study skills.

# 4.3 Graded and ungraded units

**Graded units** – grading operates at unit level and only applies to units which have been approved by Gateway Qualifications within a named Access to HE Diploma. Learner achievement for graded units is recorded as Pass, Merit or Distinction for each unit, as set out in the QAA Access to HE Grading Scheme, 2012. Graded units will also satisfy the criteria of academic subject content.

There is a common set of broad generic grade descriptors which are used as the basis for all grading judgements on all courses:

- 1 Understanding the subject
- 2 Application of knowledge
- 3 Application of skills
- 4 Use of knowledge
- 5 Communication and presentation
- 6 Autonomy / Independence
- 7 Quality.

The seven grade descriptors are not subject specific. They can, however, through careful selection and in appropriate combinations, be used on all courses, with all units and for all

assignments. The descriptors to be used with a particular unit are selected with reference to the main aspects of learner performance that need to be taken into account when grading decisions are made for that unit. They are formally assigned to the unit when it is validated.

Each of the seven grade descriptors comprises two sets of components, one which describes characteristics or qualities typical of performance at merit, and a parallel set of components which describes typical performance in the same areas at distinction. (There are no components for pass, because a pass grade is gained when a learner meets the learning outcomes but does not achieve the standard required for merit.) Some of these components are more relevant to certain subjects than others and some particular terms are also more relevant for use with particular types of assessment than others. In order to ensure the grade descriptors are relevant for specific assignments, tutors identify the components of the components of the descriptors (at merit and distinction) are then included in the assignment brief(s).

The grading scheme is not based on an assumed one-to-one relationship between the grade descriptors and learning outcomes (although it is possible that in some units, because of the way the learning outcomes have been structured, something close to a one-to-one relationship may emerge). In general, however, judgements about learner work in relation to grading apply across the work for a unit, whether that unit is assessed through one, or more than one, assignment.

The full Grade Descriptors can be accessed by the following link, which also provides detailed information on grading:

http://www.accesstohe.ac.uk/AboutUs/Publications/Documents/Access-Grading-Scheme-Section-B.pdf

# 4.4 Revisions to Access to HE Units of Assessment

Gateway Qualifications reserves the right to review and amend units of assessment and will issue providers notification of the changes to the units of assessment. Gateway Qualifications undertakes regular unit reviews to ensure currency of units, providers are required to use updated versions where units are replaced.



# 5. Assessment and Quality Assurance

## 5.1 **Provider requirements**

Providers must be approved by Qualifications as centre and are required to ensure that:

- the main base is in the UK
- systems are in place to ensure that only learners with a UK address (including BFO) are registered for an Access to HE Diploma
- there are clear arrangements for the day-to-day operational management and coordination of Access to HE delivery.
- there are appropriate facilities and resources at each site, and for each mode of delivery
- staff have the professional competence and skills to teach and assess necessary to teach and assess the units available on the Diploma
- arrangements are in place to provide pre-course guidance to applicants and criteria for selection and admission to Access to HE Diplomas and are consistent with QAA requirements with respect to admissions.
   <a href="https://www.accesstohe.ac.uk/AboutUs/Publications/Documents/Guidance-admission-of-learners-AHE-07.pdf">https://www.accesstohe.ac.uk/AboutUs/Publications/Documents/Guidanceadmission-of-learners-AHE-07.pdf</a>.
- expertise and resources to provide information, advice and guidance on HE applications and progression opportunities.
- Systems for maintaining secure records of individual learners' registration and achievement
- internal moderation arrangements that meet Gateway Qualification requirements.
- arrangements for internal course monitoring and self-evaluation and feedback
- procedures and criteria for the recognition of prior learning that meet Gateway Qualifications requirements.
- quality assurance procedures relating to the delivery of provision, including transparent processes for handling appeals and complaints.

Providers should refer to the Gateway Qualifications' Access to HE Provider Handbook for further information on centre requirements.

# 5.2 Staffing requirements

Providers are required to ensure that:

- staff have the professional competence and skills to teach and assess necessary to teach and assess the units available on the Diploma
- staff have expertise to provide information, advice and guidance on HE applications and progression opportunities.

# 5.3 Facilities and resources

Access to a science laboratory is required for the delivery of science units and will be checked as part of the provider approval of this Access to HE Diploma



# 5.4 Quality Assurance Requirements

Gateway Qualifications applies a quality assurance model to the Access to HE Diploma of:

- internal assessment and internal verification by the provider
- moderation by Gateway Qualifications comprising of centre moderation and subject moderation.

These processes are set out within Quality Assurance section of the Gateway Qualifications' Access to HE Provider Handbook.

# 5.5 Additional requirements/guidance

There are no additional requirements that Learners must satisfy in order for assessment to be undertaken and the unit/qualification to be awarded.



# 6. Unit Details

# Mandatory Units: Graded Academic Subject Content

## Access to HE Diploma Unit

Unit Code:	QU019000					
Title:	Cell Biology and Bioch	Cell Biology and Biochemistry				
Unit Level:	Level 3 Unit 6 Credit:					
Grading type:	Graded					
Grade Descriptors:	<ul> <li>GD1- Understanding the subject</li> <li>GD-2 Application of knowledge</li> <li>GD7-Quality</li> </ul>					
Academic subject content/other:	Academic subject con	Academic subject content				
Assessment details:	Practical investigation Report - 750 words Exam - 2 hours closed	Practical investigation Report - 750 words Exam - 2 hours closed book				

LEARNING OUTCOMES	ASSESSMENT CRITERIA			
The learner will:	The learner can:			
1. Know the structure of eukaryotic cells.	<ul> <li>1.1 Explain the structure of eukaryotic cells.</li> <li>1.2 Identify from electron micrographs: <ul> <li>the nucleus</li> <li>cell membrane</li> <li>endoplasmic reticulum</li> <li>ribosomes</li> <li>mitochondria</li> <li>Golgi body</li> <li>lysosomes.</li> </ul> </li> <li>1.3 Estimate the size of cells and organelles from microscope study or photographs.</li> <li>1.4 Explain the levels of organisation in multicellular organisms, including the importance of cell specialisation with reference to a specific tissue</li> </ul>			

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
2 Understand the functions of cell organelles.	<ul> <li>2.1 Explain the links between the functions and structure of:</li> <li>the nucleus</li> <li>endoplasmic reticulum</li> <li>ribosomes</li> <li>mitochondria</li> <li>Golgi body</li> <li>lysosomes.</li> </ul>
3 Understand the structure and function of biological molecules.	<ul> <li>3.1 With reference to carbohydrates, proteins and lipids</li> <li>a) recognise the structure of the molecules</li> <li>b) relate the structure of the molecules to their function</li> <li>c) explain formation and breakdown of polymers.</li> </ul>
4 Understand how materials are exchanged across the cell membrane.	<ul> <li>4.1 Analyse the movement of substances across the cell membrane by: <ul> <li>diffusion</li> <li>osmosis</li> <li>active transport</li> <li>pinocytosis.</li> </ul> </li> <li>4.2 Explain how the exchange of materials across the cell membrane is related to its structure.</li> </ul>
5 Understand the mode of action of enzymes.	<ul> <li>5.1 Explain the structure of enzymes, including how their structure is linked to their function.</li> <li>5.2 Explain the concept of activation energy.</li> <li>5.3 Evaluate models of enzyme action: <ul> <li>a) lock and key</li> <li>b) induced fit.</li> </ul> </li> <li>5.4 Explain the effect of external factors on enzyme activity.</li> </ul>



Unit Code:	QU006301		
Title:	Fundamental Chemistry		
Unit Level:	Level 3 Unit 6 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD2-Application of knowledge</li> <li>GD3- Application of skills</li> <li>GD4-Use of information</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic subject content		
Assessment details:	See assessment grid		

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The	e learner will:	The learner can:		
1	Understand chemical nomenclature both inorganic and organic.	1.1	Identify and explain chemicals from chemical formulae and structures.	
2	Understand the techniques of chemical analysis.	2.1 2.2	Explain spectroscopy and chromatography in simple terms. Explain different types of spectroscopy.	
3	Understand how to balance chemical equations.	3.1	Explain chemical equations.	
4	Understand basics of bonding.	4.1	Explain four main types of bonding and relate them to the position of the elements in the periodic table.	
5	Understand how to use chemical equipment.	5.1 5.2	Explain a variety of equipment found in a chemistry lab. Critically analyse the faults in an experiment and suggest ways of improvement.	
6	Understand how to relate chemistry to own life.	6.1 6.2	Explain chemistry in everyday situations such as the home or body. Explain examples of applications of chemistry in everyday life.	



Unit Code:	QU025282		
Title:	Fundamental Physics: Theory		
Unit Level:	Level 3 Unit 6 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD1-Understanding the subject</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic Subject Content		
Assessment details:	1000 words structured questions, 2 x 750 word scientific reports, practical investigations		

LEARNING OUTCOMES	ASSESSMENT CRITERIA		
The learner will:	The learner can:		
1 Understand forces in action.	<ol> <li>1.1 Explain the types of forces acting in given situations.</li> <li>1.2 Find the position of centre and gravity of a uniform body, justifying the answer.</li> <li>1.3 Explain key forces acting on the human body in a given situation.</li> </ol>		
2 Understand static and hydrostatic pressure.	<ul> <li>2.1 Explain situations in which different combinations of forces and areas create different pressures.</li> <li>2.2 Analyse the movement of gases in relation to atmosphere pressure.</li> <li>2.3 Explain how pressure changes are accommodated by biological systems.</li> </ul>		
3 Understand Hooke's law in relation to stretching and compressing.	<ul> <li>3.1 Summarise Hooke's law in relation to stretching and compressing.</li> <li>3.2 Evaluate data from stretching experiments.</li> <li>3.3 Compare and contrast how two different materials behave under stress and strain in the human body.</li> </ul>		
4 Understand the action of levers.	4.1 Explain the Principle of Moments.		

LEARNING OUTCOMES	ASSESSMENT CRITERIA		
The learner will:	The learner can:		
	<ul><li>4.2 Calculate the forces/distance required to achieve equilibrium.</li><li>4.3 Explain the role of levers and joints in achieving a vertical posture in humans.</li></ul>		
5 Understand the concepts of current voltage and resistance.	<ul> <li>5.1 Explain the relationship between current, voltage and resistance.</li> <li>5.2 Calculate the electrical resistance of various components.</li> <li>5.3 Evaluate how electrical concepts are put to use in a given medical device or procedure.</li> </ul>		



Unit Code:	QU006176		
Title:	Mathematics for Science		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul><li>GD3-Application of skills</li><li>GD7-Quality</li></ul>		
Academic subject content/other:	Academic Subject Content		
Assessment details:	See assessment grid		

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The	e learner will:	The learner can:		
1	Understand how to perform calculations with integers, decimals and fractions.	1.1 1.2	Make calculations involving integers, decimals and fractions with or without a calculator. Give answers to calculations correct to a specified number of decimal places or significant figures. Using accuracy appropriate to the nature of the data.	
2	Understand how to perform calculations with percentages.	2.1 2.2 2.3 2.4	With and without a calculator, convert between percentages, decimals and fractions. Express one quantity as a percentage of another. Find a percentage of a quantity. Calculate percentage increase and decrease; direct and inverse problems.	
3	Understand how to use standard form, indices and roots.	3.1 3.2 3.3	Make conversions between ordinary numbers and standard form. Use the exponential key and interpret calculator displays. Make calculations involving indices and roots.	

LEARNING OUTCOMES	ASSESSMENT CRITERIA		
The learner will:	The learner can:		
	3.4 Apply index laws to simplify expressions involving powers and roots.		
4 Understand how to evaluate formulae.	4.1 Evaluate formulae by substitution using the full range of functions on a scientific calculator.		
5. Understand how to calculate area and volume.	5.1 Calculate the surface area of plane geometric figures and the volume of complex geometric figures.		

1

# Graded Research Units

## Access to HE Diploma Unit

Unit Code:	QU028879		
Title:	Research: Extended Writing Project for Science		
Unit Level:	Level 3 Unit 6 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD1-Understanding the subject</li> <li>GD2-Application of knowledge</li> <li>GD3-Application of skills</li> <li>GD4-Use of information</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic Subject Content		
Assessment details:	Refer to assessment grid		

-

LEARNING OUTCOMES	ASSESSMENT CRITERIA		
The learner will:	The learner can:		
<ol> <li>Be able to plan an extended writing project.</li> </ol>	<ol> <li>A Identify and agree an extended writing project located within a knowledge domain relevant to the named Diploma.</li> <li>Develop a project brief.</li> <li>Identify any ethical, practical or safety issues, explaining how these will be managed/overcome.</li> <li>Maintain a record of project progress through all stages of research, development and completion.</li> </ol>		
2 Be able to conduct research.	2.1 Identify and conduct in-depth research from a wide range of sources.		
3 Be able to develop ideas.	<ul> <li>3.1 Select appropriate information and/or evidence.</li> <li>3.2 Analyse findings and develop ideas.</li> <li>3.3 Produce a body of work which meets the brief and includes complex ideas.</li> </ul>		

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The learner will:		The learner can:		
4	Be able to present the project.	<ul> <li>4.1 Write coheren style, appropr domain.</li> <li>4.2 Reference all recommended</li> </ul>	atly in a conventional iate to the knowledge sources using a d style of referencing.	
5	Be able to evaluate own writing project.	<ul><li>5.1 Evaluate own project brief.</li><li>5.2 Identify recomfuture.</li></ul>	writing in relation to mendations for the	

Unit Code:	QU026078		
Title:	Research: Practical Investigation Project for Science		
Unit Level:	Level 3 Unit 6 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD2-Application of knowledge</li> <li>GD3-Application of skills</li> <li>GD4- Use of information</li> <li>GD6-Autonomy/Independence</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic Subject Content		
Assessment details:	Risk assessment ~ 250 words Project diary ~ 500 words Project proposal ~ 250 words Research review ~ 500 words Report ~ 1250 words Evaluation ~ 250 words		

LEARNING OUTCOMES	ASSESSMENT CRITERIA	
The learner will:	The learner can:	
<ol> <li>Be able to plan a practical investigation project.</li> </ol>	<ol> <li>1.1 Identify and agree a practical investigation project, located within a knowledge domain relevant to the named Diploma.</li> <li>1.2 Produce a hypothesis and clear aims for the investigation project.</li> <li>1.3 Identify any ethical, practical or safety issues and how these will be managed/overcome</li> <li>1.4 Produce a risk assessment.</li> <li>1.5 Maintain a record of project progress through all stages of research, development and completion.</li> </ol>	
2 Be able to undertake a practical investigation.	<ul> <li>2.1 Carry out research from a wide range of sources.</li> <li>2.2 Develop an appropriate investigation.</li> <li>2.3 Identify the variables and explain how they can be controlled, where necessary.</li> </ul>	

LEARNING OUTCOMES	ASSESSMENT CRITERIA	
The learner will:	The learner can:	
	<ul><li>2.4 Carry out the investigation safely, using appropriate practical skills and techniques.</li><li>2.5 Analyse the results of the investigation with reference to relevant theory.</li></ul>	
3 Know how to present the project.	<ul> <li>3.1 Present the body of work in a style appropriate to the knowledge domain with clear conclusions.</li> <li>3.2 Use appropriate technical terminology fluently.</li> <li>3.3 Reference all findings using a recommended style of referencing.</li> </ul>	
4 Be able to evaluate own research project.	<ul> <li>4.1 Reflect on the design and methodology of the project.</li> <li>4.2 Evaluate the body of work in relation to aims and hypothesis.</li> <li>4.3 Identify recommendations for the future.</li> </ul>	



Unit Code:	QU028882		
Title:	Research Skills for Science and Mathematics		
Unit Level:	Level 3	Unit Credit:	6
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD1-Understanding the subject</li> <li>GD2-Application of knowledge</li> <li>GD3-Application of skills</li> <li>GD4-Use of information</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic Subject Content		
Assessment details:	Research diary ~ 500 words Research proposal ~ 500 words Report ~ 1500 words Evaluation 250 words		

LE	ARNING OUTCOMES	ASS	ESSMENT CRITERIA
The	e learner will:	The	learner can:
1.	Understand research methods and their uses.	1.1	Evaluate the use of different research methods for a specific research purpose.
2	Be able to plan a research project.	2.1 2.2 2.3	Establish research aims related to the research topic. Produce a detailed research proposal with specific timescales and milestones for completion of the research. Justify its relevance for the subject area.
3	Be able to carry out a research project.	3.1	Carry out research that adheres to: a) the research proposal b) ethical guidelines c) agreed timescales.
4	Be able to produce a report on research using a standard format.	4.1 4.2	Report on research using a standard format. Evaluate findings in relation to the research aims.

LEARNING OUTCOMES	ASSESSMENT CRITERIA	
The learner will:	The learner can:	
	4.3 Use an accepted method of referencing source material.	
5 Be able to evaluate a research project.	<ul><li>5.1 Evaluate a research proposal and its procedures.</li><li>5.2 Evaluate methods used to research the subject area.</li></ul>	
# **Optional Graded Academic Units - Mathematics**

#### Access to HE Diploma Unit

Unit Code:	QU019995			
Title:	Algebra and Trigonom	Algebra and Trigonometry		
Unit Level:	Level 3 Unit 3 Credit:			
Grading type:	Graded			
Grade Descriptors:	<ul> <li>GD1-Understanding the subject</li> <li>GD7-Quality</li> </ul>			
Academic subject content/other:	Academic Subject Content			
Assessment details:	Two hours closed book exam.			

LEARNING OUTCOMES	ASSESSMENT CRITERIA		
The learner will:	The learner can:		
1 Understand algebraic expressions.	<ul> <li>1.1 Distinguish the different roles played by letters, knowing what letter symbols represent in equations, formulae and identities.</li> <li>1.2 Manipulate algebraic expressions by taking out common factors and factorising quadratic expressions</li> <li>This may include the difference of two squares, reciprocal functions and cancelling common factors in rational expressions.</li> <li>1.3 Set up and solve simple equations by using inverse operations or by transforming both sides in the same way.</li> <li>1.4 Solve linear equations.</li> <li>This includes: <ul> <li>a. equations in one unknown, with integer or fractional coefficients, in which the unknown appears on either</li> </ul> </li> </ul>		
	side or on both sides of the equation b. equations that require prior simplification of brackets, including those that have negative signs		

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The learner will:		The learner can:		
		occurring anywhere in the equation, and those with a negative solution		
2	Understand trigonometric functions.	<ul> <li>2.1 Solve problems using Pythagoras' theorem.</li> <li>2.2 Solve problems involving sine, cosine and tangent.</li> <li>2.3 Solve problems involving angles of elevation or depression.</li> <li>2.4 Solve problems involving 3D shapes.</li> <li>2.5 Solve problems involving the sine rule.</li> <li>2.6 Solve problems involving the cosine rule.</li> <li>2.7 Solve problems involving circular functions.</li> </ul>		
3	Understand trigonometric identities and equations.	<ul> <li>3.1 Prove identities using basic identities.</li> <li>3.2 Prove identities using complex identities.</li> <li>3.3 Simplify an expression using trigonometric identities.</li> <li>3.4 Solve a trigonometric equation.</li> </ul>		



Unit Code:	QU007965		
Title:	Calculus: Integration		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul><li>GD3-Application of skills</li><li>GD7-Quality</li></ul>		
Academic subject content/other:	Academic subject content		
Assessment details:	Refer to assessment grid		

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The learner will:		The learner can:		
1	Understand the integration of a function.	<ul> <li>1.1 Integrate a polynomial function.</li> <li>1.2 Integrate a trigonometric function.</li> <li>1.3 Integrate a logarithmic function.</li> <li>1.4 Integrate an exponential function.</li> <li>1.5 Integrate a product using substitution.</li> <li>1.6 Integrate a product by parts.</li> <li>1.7 Integrate a fraction.</li> </ul>		
2	Understand integration in area and volume.	<ul><li>2.1 Solve problems involving area under a curve.</li><li>2.2 Solve problems involving volumes of revolution.</li></ul>		
3	Understand differential equations.	<ul><li>3.1 Solve a first order differential equation.</li><li>3.2 Solve a second order differential equation.</li></ul>		



Unit Code:	QU017259		
Title:	Geometry		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul><li>GD3-Application of skills</li><li>GD7-Quality</li></ul>		
Academic subject content/other:	Academic Subject Content		
Assessment details:	Refer to assessment g	jrid	

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The learner will:		The learner can:		
1 Un	derstand coordinate geometry	<ol> <li>Solve problems involving straight lines</li> <li>Solve problems involving circles</li> <li>Solve problems involving curves</li> <li>Solve problems involving geometric transformations</li> </ol>		
2 Un	iderstand vectors	<ul> <li>2.1 Solve problems involving vector arithmetic</li> <li>2.2 Solve problems involving the Cartesian components of a vector</li> <li>2.3 Solve problems involving the vector equation of a line</li> <li>2.4 Solve problems involving the scalar product</li> </ul>		



Unit Code:	QU007424			
Title:	Mathematics: Algebra, Exponentials and Logarithms			
Unit Level:	Level 3 Unit 3 Credit:			
Grading type:	Graded			
Grade Descriptors:	<ul> <li>GD3-Application of skills</li> <li>GD5-Communication and presentation</li> <li>GD7-Quality</li> </ul>			
Academic subject content/other:	Academic Subject Content			
Assessment details:	See assessment grid			

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The	e learner will:	The learner can:		
1	Understand how to solve equations.	1.1 1.2	Solve simple linear equations involving brackets. Solve quadratic equations using the formula.	
2	Understand how to rearrange formulae.	2.1	Rearrange formulae involving sums, differences, products, quotients, brackets, powers and roots.	
3	Understand how to use log laws.	3.1 3.2	Convert between exponential and logarithmic notation. Use the product, quotient and power laws of logarithms and make calculations.	
4	Understand how to transform to linear form.	4.1	Draw a straight line from data derived from a non-linear law, using logarithms where necessary.	
5	Understand how to use exponential growth and decay.	5.1 5.2	Identify data which can be modelled by an exponential function. Derive an exponential equation from given date and predict values.	



Unit Code:	QU007941		
Title:	Matrices		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD2-Application of knowledge</li> <li>GD3-Application of skills</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic subject content		
Assessment details:	Refer to assessment grid		

LEARNING OUTCOMES	ASSESSMENT CRITERIA		
The learner will:	The learner can:		
1 Understand determinants.	<ol> <li>Evaluate a linear set of equations using Cramer's Rule.</li> <li>Test that a set of equations is consistent.</li> <li>Solve a given problem involving consistency of a set of equations.</li> <li>Evaluate a determinant by using the properties of determinants.</li> </ol>		
2 Understand matrix operations.	<ul> <li>2.1 Perform matrix arithmetic.</li> <li>2.2 Calculate the inverse of a matrix.</li> <li>2.3 Solve a set of linear equations using the determinant and inverse.</li> <li>2.4 Use the Gauss elimination method to solve a given problem.</li> <li>2.5 Determine the eigenvalues of a matrix.</li> <li>2.6 Determine the eigenvectors of a matrix.</li> </ul>		



Unit Code:	QU007442		
Title:	Quantitative Methods - Statistics		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD3-Application of skills</li> <li>GD4-Use of information</li> <li>GD5-Communication and presentation</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic subject content		
Assessment details:	See assessment grid		

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1	Be able to organise and present data.	1.1 1.2 1.3	Identify data as qualitative, quantitative, discrete or continuous. Select the dominant features of data and suggest plausible interpretations. Construct suitable charts and diagrams including histograms and line graphs with suitable scales, state the advantages and disadvantages of a wide range of diagrams.
2	Know how to calculate and use averages.	2.1 2.2	Calculate the mean, median and mode of grouped data. Choose an appropriate average and justify the choice (e.g. Exam marks - mean; Exam grades - median; qualitative data - mode.
3	Know how to calculate and use measures of spread.	3.1 3.2	Calculate standard deviation of raw data and grouped data. Use mean and standard deviation to compare different data sets.
4	Be able to use bivariate data.	4.1	Calculate a coefficient of correlation (e.g. Spearman or Product moment).

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The learner will:		The learner can:		
		4.2	Make statements about the possible causal relationship between variables with strong correlation.	
5	Be able to calculate probability.	5.1	Calculate the probability of combined events.	
		5.2	Construct tree diagrams and use them to solve problems involving combined events.	
		5.3	Identify events which are independent or mutually exclusive.	



Unit Code:	QU007957		
Title:	Series		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD2-Application of knowledge</li> <li>GD3-Application of skills</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic subject content		
Assessment details:	See assessment grid		

LEARNING OUTCOMES	ASSESSMENT CRITERIA		
The learner will:	The learner can:		
1 Understand arithmetic progressions.	<ul> <li>1.1 Find the sum of an arithmetic progression given the first and last terms.</li> <li>1.2 Find the sum of an arithmetic progression given the first term, the common difference and the number of items.</li> <li>1.3 Solve problems involving arithmetic progressions.</li> <li>1.4 Solve problems involving arithmetic mean.</li> </ul>		
2 Understand geometric progressions.	<ul> <li>2.1 Find the sum of a geometric progression given the first term, the common ratio and the number of terms.</li> <li>2.2 Find the sum to infinity of a geometric series.</li> <li>2.3 Solve problems involving geometric progressions.</li> <li>2.4 Solve problems involving geometric mean.</li> </ul>		
3 Understand series.	<ul><li>3.1 Determine whether a series is convergent or divergent.</li><li>3.2 Use Maclaurin series to approximate function.</li></ul>		

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
	3.3 Prove a series expression.

### **Optional Graded Academic Units - Science**

#### Access to HE Diploma Unit

Unit Code:	QU025703		
Title:	Chemical Principles: Particles and Forces		
Unit Level:	Level 3 Unit 6 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD2-Application of knowledge</li> <li>GD3-Application of skills</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic Subject Content		
Assessment details:	Refer to assessment grid		

LEARNING OUTCOMES	ASSESSMENT CRITERIA		
The learner will:	The learner can:		
<ol> <li>Understand the structure of atoms, molecules and ions.</li> </ol>	<ol> <li>Explain the structure of the atom in terms of position, mass and charge of the particles using appropriate symbols to represent them.</li> <li>Explain atomic and mass number, using them to determine the structure of the atom.</li> <li>Describe the formation of ions.</li> <li>Explain the existence of isotopes.</li> </ol>		
2 Understand the arrangement of electron in an atom and the distribution of elements in the Periodic Table.	<ul> <li>2.1 Describe the electronic configuration of atoms in terms of s, p and d orbitals.</li> <li>2.2 Describe the structure of the periodic table in terms of the properties of the elements and their electronic arrangements.</li> </ul>		

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The learner will:		The	The learner can:	
3	Understand the nature of elements, compounds and mixtures.	3.1	Explain the nature of elements, compounds and mixtures.	
4	Understand mass spectrometry.	4.1 4.2	Describe the structure and functions of main parts of a mass spectrometer. Explain why atomic mass values may not be whole numbers.	
		4.3	Calculate relative atomic mass from mass spectra.	
5	Understand bonding and intermolecular forces.	5.1 5.2	Evaluate own writing in relation to project brief. Identify recommendations for the future.	



Unit Code:	QU006178		
Title:	Circulation, Immunity and Homeostasis		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD2-Application of knowledge</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic Subject Content		
Assessment details:	See assessment grid		

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1	Understand the different types of tissues within the human body.	1.1	Differentiate between epithelial, connective, muscle and nervous tissue and relate their structure to function.
2	Understand how the human circulatory system functions and how it may be affected by degenerative conditions.	2.1 2.2	Explain how the structure of blood, the heart and blood vessels relates to their function in transport and metabolic exchange. Explain risk factors associated with coronary heart disease.
3	Understand how the human immune system functions.	3.1 3.2	Explain how the major components of the immune system function and their significance in the immune response. Explain the differences between passive, active and acquired immunity.
4	Understand the concept of homeostasis within the human body.	4.1	Explain what homeostasis entails and explain how it is achieved with reference to suitable homeostatic mechanisms of the body.



Unit Code:	QU025851		
Title:	Ecosystems and Human Influences		
Unit Level:	Level 3 Unit 6 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD1-Understanding the subject</li> <li>GD2-Application of knowledge</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic Subject Content		
Assessment details:	Refer to assessment grid		

LEARNING OUTCOMES		ASS	ESSMENT CRITERIA	
The learner will:		The l	The learner can:	
1	Understand the structure of ecosystems.	1.1 1.2 1.3	Explain the components of ecosystems. Discuss how abiotic factors affect distribution of species. Analyse inter-relationships between species.	
2	Understand the flow of energy in ecosystems.	2.1 2.2 2.3	Explain food chains and food webs. Analyse the flow of energy through a food chain. It is important that assessment tasks allow genuine ANALYSIS of energy flow, e.g. using examples of energy values Explain photosynthesis as a cellular process which introduces energy and food chains.	
3	Know some of the influences of humans on ecosystems.	3.1 3.2 3.3	Discuss causes and effects of global warming. Discuss causes and effects of loss of biodiversity. Discuss one other human influence on ecosystems.	

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
4 Know how to carry out ecologic sampling and understand consetection techniques.	<ul> <li>4.1 Analyse sample data from a habitat to explain distribution of species.</li> <li>4.2 Compare conservation techniques used in more than one habitat.</li> <li>4.3 Explain two ecological sampling techniques.</li> </ul>



Unit Code:	QU006259		
Title:	Energetics, Kinetics, Equilibria		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD2-Application of knowledge</li> <li>GD3-Application of skills</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic subject content		
Assessment details:	See assessment grid		

LE	ARNING OUTCOMES	ASSESSMENT CRITERIA		
The	e learner will:	The learner can:		
1	Understand the mole concept.	<ul><li>1.1 Apply the mole concept to describe quantity of substance.</li><li>1.2 Calculate a mass from a number of moles and vice versa.</li></ul>		
2	Understand the energetics of chemical reactions.	<ul> <li>2.1 Explain that reactions are accompanied by an energy change.</li> <li>2.2 Draw reaction profile diagrams to differentiate between exothermic and endothermic reactions.</li> <li>2.3 Calculate enthalpy changes using bond energies.</li> </ul>		
3	Understand the factors affecting kinetics.	<ul> <li>3.1 Describe the factors influencing reaction rate.</li> <li>3.2 Explain the effect of temperature concentration and surface area using the collision theory.</li> <li>3.3 Define activation energy and explain its influences on rate.</li> <li>3.4 Describe and explain the action of a catalyst.</li> <li>3.5 Use the Maxwell-Boltzman distribution to explain the effect of a catalyst.</li> <li>3.6 Explain the effect of mechanism on rate.</li> </ul>		

LEARN	IING OUTCOMES	ASSESSMENT CRITERIA
The lea	arner will:	The learner can:
4 Be a che	able to apply equilibrium concepts to mical reactions.	<ul> <li>4.1 Explain the characteristics of the equilibrium state.</li> <li>4.2 Define and apply Le Chaterliers principle.</li> <li>4.3 Explain on a simple level the changes that occur when an equilibrium is disturbed.</li> </ul>



Unit Code:	QU025284		
Title:	Fundamental Physics: Practical Investigation		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD3-Application of skills</li> <li>GD5-Communication and presentation</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic Subject Content		
Assessment details:	Practical investigation and 1000 word report		

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The	e learner will:	The learner can:		
1	Be able to plan a practical investigation with due regard to fair testing.	1.1 1.2 1.3	Produce a hypothesis for a practical investigation on a given subject, justifying choice. Design an investigation in a series of logical steps. As part of the design, identify key variables to be controlled.	
2	Be able to follow safety procedures at all times.	2.1 2.2	Comply with laboratory safety procedures. Carry out a risk assessment for the investigation.	
3	Be able to implement a practical investigation.	3.1 3.2 3.3	Carry out an investigation methodically and accurately. Carry out an investigation by handling and organising a range of apparatus competently and safely. Justify the choice of apparatus from a given range.	
4	Be able to make, record and present observations.	4.1 4.2	Take and record accurate measurements and readings of observations. Present measurements and readings in an appropriate format.	

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
	4.3 Justify choice of graphical representation of data.



Unit Code:	QU006383		
Title:	Health Physics		
Unit Level:	Level 3 Unit 6 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD2-Application of knowledge</li> <li>GD3-Application of skills</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic Subject Content		
Assessment details:	See assessment grid		

LE	LEARNING OUTCOMES		ASSESSMENT CRITERIA		
Th	e learner will:	The learner can:			
1	Understand methods used to image the human body for medical diagnosis.	1.1 1.2 1.3 1.4	Explain the principles of imaging using a range of imaging techniques. Summarise and evaluate the advantages and disadvantages of the imaging methods. Carry out a simple experiment modelling the behaviour of X-rays using light. Write a scientific report of the experiment.		
2	Understand methods of medical treatment using ionising radiation, ultrasound and lasers.	2.1	Explain the use of ionising radiation, ultrasound and lasers in medical treatments.		
3	Understand the hazards to staff and patients associated with medical imaging technologies.	3.1 3.2 3.3	Describe and quantify the effects of ionising radiation on tissues and organs. Explain the effect of laser light on living tissues. Explain the hazards of the strong magnetic fields in the vicinity of an MRI scanner.		
4	Understand safety procedures and equipment used to monitor and reduce	4.1	Describe and evaluate methods of measuring the radiation dose		

LE	ARNING OUTCOMES	ASS	ESSMENT CRITERIA
Th	e learner will:	The	learner can:
	the hazards from ionising radiation and laser light.	4.2	received by medical staff and patients. Describe and evaluate equipment and procedures used to minimise the hazards from radiation and lasers in hospitals.
5	Recognise the benefits of modern imaging techniques in treating injuries and diseases.	5.1	Describe and evaluate the use of a given modern imaging technique in a given treatment.



Unit Code:	QU018998		
Title:	Human Cardiac and Respiratory Systems		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD1-Understanding the subject</li> <li>GD2-Application of knowledge</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic subject content		
Assessment details:	Worksheets - 1500 wo	ords	

LEARNING OUTCOMES		ASSESSMENT CRITERIA			
Th	e learner will:	The l	The learner can:		
1	Understand the structure and function of the respiratory system.	1.1 1.2 1.3	Explain the structure of the respiratory system, relating this to the process of ventilation. Evaluate the conditions required for effective gaseous exchange. Explain the role of the nervous system in generating normal breathing rhythm.		
2	Understand the structure and transport function of blood.	2.1 2.2 2.3	Explain the constituents of plasma, including their functions. Explain the structure of a red blood cell, including how this relates to its function. Explain how oxygen and carbon dioxide are transported by the blood.		
3	Understand blood circulation in the human body.	3.1 3.2 3.3	Explain the structure of arteries, veins, arterioles and capillaries, relating this to their functions. Explain the structure of the heart in relation to its function. Explain the cardiac cycle, including the electrical activity of the heart during a heartbeat.		



Unit Code:	QU025630		
Title:	Human Reproduction and Health Related Issues		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD1-Understanding the subject</li> <li>GD2-Application of knowledge</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic subject content		
Assessment details:	See assessment grid		

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
Th	e learner will:	The lea	arner can:	
1	Understand the structures and functions of the male and female reproductive systems.	1.1 A m sy 1.2 R fu	nalyse the major structures of the nale and female reproductive ystems. relate the structures to their unctions.	
2	Understand the biological significance of mitosis and meiosis in sexual reproduction.	2.1 E <sup>v</sup> m re	valuate the biological significance of nitosis and meiosis in sexual eproduction.	
3	Understand the processes of fertilisation, implantation, pregnancy and childbirth.	3.1 Ai in cł	nalyse the processes of fertilisation, nplantation, pregnancy and hildbirth.	
4	Understand issues relating to sexual health.	4.1 E <sup>v</sup> re	valuate and discuss current issues elating to: contraceptive practices sexually transmitted diseases reproductive technology.	



Unit Code:	QU006603		
Title:	Introduction to Organic Chemistry		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD2-Application of knowledge</li> <li>GD3-Application of skills</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic Subject Content		
Assessment details:	See assessment grid	See assessment grid	

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
Th	e learner will:	The learner can:		
1	Understand the importance of carbon chemistry	1.1 Explain the tetravalent bonding of carbon and its ability to bond with itself and other elements.		
2	Understand how to use the accepted conventions of representing organic compounds.	<ul> <li>2.1 Draw structural formulae.</li> <li>2.2 Identify and explain simple molecules using the IUPAC system.</li> <li>2.3 Explain the types of isomerism (skeletal, positional geometric and optical).</li> </ul>	S	
3	Understand how to classify organic compounds in homologous series.	<ul> <li>3.1 Define and explain homologous series and conduct associated experiments.</li> <li>3.2 Recognise and explain general formulae of alkanes.</li> <li>3.3 Identify and explain functional groups and investigate two examples experimentally.</li> </ul>	S	



Unit Code:	QU019880		
Title:	Plant and Soil Science		
Unit Level:	Level 3 Unit 6 Credit:		
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD1-Understanding the subject</li> <li>GD2-Application of knowledge</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic subject content		
Assessment details:	Refer to assessment g	Refer to assessment grid	

LEARNING OUTCOMES	ASSESSMENT CRITERIA		
The learner will:	The learner can:		
1 Understand plant structures and physiology.	<ol> <li>1.1 Explain the function of plant structures.</li> <li>1.2 Explain the process of photosynthesis.</li> <li>1.3 Analyse the factors that can affect photosynthesis.</li> <li>1.4 Explain the principles of plant respiration.</li> <li>1.5 Analyse the processes involved in the uptake, movement and loss of water within a plant.</li> </ol>		
<ol> <li>Understand plant growth and development.</li> </ol>	<ul><li>2.1 Explain a plant life cycle.</li><li>2.2 Evaluate nutrients required by the plant and the symptoms of nutrient deficiency in the plant.</li></ul>		
3 Understand the principles of soil science.	<ul> <li>3.1 Explain soil types and their constituents.</li> <li>3.2 Analyse soil pH.</li> <li>3.3 Explain the effects of soil structure on plants, explaining the impact of cultivation.</li> </ul>		
4 Know ways in which people can influence plant and soil processes.	4.1 Analyse how plant communities and soil formation are affected by people.		



Unit Code:	QU018996		
Title:	Understanding Genetic	CS	
Unit Level:	Level 3 Unit 6 Credit:		6
Grading type:	Graded		
Grade Descriptors:	<ul> <li>GD1-Understanding the subject</li> <li>GD2-Application of knowledge</li> <li>GD4-Use of information</li> <li>GD5-Communication and presentation</li> <li>GD7-Quality</li> </ul>		
Academic subject content/other:	Academic subject content		
Assessment details:	Exam - 1.5 hours open book Practical investigation and 500 word report		

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The	e learner will:	The learner can:		
1	Understand the processes and importance of mitosis and meiosis.	1.1 1.2	Explain the stages of mitosis and meiosis. Explain the significance of the differences between mitosis and meiosis.	
2	Understand the composition, structure and role of nucleic acids in the replication of DNA and the process of protein synthesis.	2.1 2.2	Explain the structure and method of replication of DNA. Explain protein synthesis.	
3	Understand the genetic basis of inheritance.	3.1 3.2	Analyse how genetic problems involving monohybrid, co-dominant and sex linked inheritance may be solved. Discuss specific examples of chromosome mutations, explaining	
4	Know the process of DNA extraction.	4.1 4.2 4.3	Explain the stages involved in extracting DNA from cells. Analyse why it might be necessary to extract DNA. Perform DNA extraction from cells safely and competently.	

## Mandatory Units: Ungraded

#### Access to HE Diploma Unit

Unit Code:	QU010772		
Title:	Practical Science Skills		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Ungraded		
Academic subject content/other:	Academic Subject Content		
Assessment details:	See assessment grid		

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
Th	e learner will:	The learner can:		
1	Be able to use a range of general laboratory equipment.	1.1	Demonstrate how to use equipment safely and effectively within a laboratory.	
2	Be able to use specialised equipment in a laboratory.	2.1	Demonstrate how to carry out a scientific procedure with accuracy.	
3	Know how to work with appropriate regard for safety.	3.1	Demonstrate how to carry out practical science work in a safe manner.	
		3.2	Assess the possible safety issues relating to a practical scientific procedure.	
4	Understand how to report on scientific investigations.	4.1	Produce an experimental report with use of appropriate scientific terminology.	
		4.2	Identify a range of ways in which the work could be improved.	
		4.3	Evaluate the outcomes of the original objective, identifying further steps to be taken in the development of work.	



Unit Code:	QU025532	
Title:	Preparation for Higher Education	
Unit Level:	Level 3 Unit 3 Credit:	
Grading type:	Ungraded	
Academic subject content/other:	Other	
Assessment details:	Refer to assessment grid.	

LEARNING OUTCOMES	ASSESSMENT CRITERIA		
The learner will:	The learner can:		
1 Understand how to identify opportunities for Higher Education.	<ol> <li>Use information sources to research Higher Education courses.</li> <li>Analyse processes and procedures necessary to gain entry to Higher Education.</li> <li>Analyse information on Higher Education courses and make appropriate realistic choices.</li> </ol>		
2 Understand the process of completing a Higher Education application form.	<ul> <li>2.1 Complete an application form with excellent attention to detail, meeting a given deadline.</li> <li>2.2 Summarise and evaluate personal experiences, achievement and goals, communicating these clearly in a personal statement.</li> </ul>		
3 Understand preparation required for the interview process.	<ul> <li>3.1 Conduct further personal research into courses at relevant institutions in preparation for an interview.</li> <li>3.2 Prepare provisional answers to anticipated questions, making excellent use of previous experience and recent study.</li> </ul>		
4 Understand the need to prepare for the transition to Higher Education.	4.1 Analyse the personal and academic qualities needed for successful study in Higher Education.		

LEARNING OUTCOMES	ASSESSMENT CRITERIA	
The learner will:	The learner can:	
	<ul> <li>4.2 Explain likely practical problems and barriers in moving to higher education and seek strategies for overcoming these.</li> <li>4.3 Analyse the nature of study in Higher Education.</li> </ul>	



Unit Code:	QU026155		
Title:	Writing reports		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Ungraded		
Academic subject content/other:	Other		
Assessment details:	Report plan Presentation of report plan ~ 2-3 minutes Report ~ 1000 words		

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The learner will:		The learner can:		
1	Understand the significance of the report title in determining the content.	<ul><li>1.1 Analyse the requirements of the question or task.</li><li>1.2 Analyse the main points which must be covered, omitting irrelevant detail</li></ul>	t I.	
2	Be able to plan and present the plan for a report	<ul><li>2.1 Produce a plan for a report.</li><li>2.2 Present the plan for the report.</li></ul>		
3	Be able to structure a report.	<ul> <li>3.1 Produce an introduction which sets out how the subject will be dealt with in the report.</li> <li>3.2 Use evidence and examples to strengthen information provided in th report.</li> <li>3.3 Use linking sentences in paragraphs to produce a cohesive report.</li> <li>3.4 Provide a conclusion which sums up the main findings of the report.</li> </ul>	ר he s	
4	Be able to write in an appropriate style.	<ul> <li>4.1 Write in a detached, balanced, and objective manner.</li> <li>4.2 Write formal English avoiding emotiv language and colloquialisms.</li> </ul>	ve	
5	Know the conventions for acknowledging sources.	<ul><li>5.1 Acknowledge the work of other authors both during the report and in a list of references.</li><li>5.2 Use recognised approaches for acknowledging sources.</li></ul>	٦	

## **Optional Units: Ungraded**

#### Access to HE Diploma Unit

Unit Code:	QU007486			
Title:	Application of Number - Interpreting and Presenting Information			
Unit Level:	Level 3 Unit 3 Credit:			
Grading type:	Ungraded			
Academic subject content/other:	Academic subject content			
Assessment details:	2 x controlled assessments - 2 x 1 hour assessments			

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
Th	e learner will:	The learner can:		
1	Know how to obtain and interpret mathematical and statistical information.	<ol> <li>1.1 Within a complex task, identify and evaluate possible sources of data, e.g. rate of change, trends, probabilities.</li> <li>1.2 Justify the choice of data collection procedures giving reasons for choosing a particular sample and methods used.</li> <li>1.3 Evaluate actual or possible sources of error in collecting and recording data.</li> <li>1.4 Choose and justify the chosen methods of recording data.</li> <li>1.5 Interpret the main characteristics of the data in relation to the task.</li> </ol>		
2	Be able to present mathematical and statistical data.	<ul> <li>2.1 Choose and use a range of appropriate and effective techniques to present accurately, e.g. the use of probability to describe situations, the presentation and interpretation of upper and lower boundaries of results; statistical diagrams.</li> <li>2.2 Use correct axes, scales and conversions.</li> </ul>		



	2.3 Justify choice and use of presentation techniques and methods for the original purpose of the task.
--	---



Unit Code:	QU027084			
Title:	Presenting Information Using ICT			
Unit Level:	Level 3 Unit 3 Credit:			
Grading type:	Ungraded			
Academic subject content/other:	Other			
Assessment details:	Notes from a range of sources Presentation (word processed, spreadsheet, presentation) Presentation lecture notes and handouts ~ 300 words Presentation ~ 200 words			

LEARNING OUTCOMES	ASSESSMENT CRITERIA		
The learner will:	The learner can:		
1 Understand ways of using ICT to present information.	<ol> <li>Find and analyse examples of information presented through ICT.</li> <li>Explain which forms of presentation suit different types of information.</li> <li>Analyse examples of information presented with clear layout and style.</li> <li>Explain the importance of copyright when presenting information.</li> </ol>		
2 Be able to use a range of ICT software applications to present information.	<ul> <li>2.1 Present text information for a given purpose using a variety of features in word processing software.</li> <li>2.2 Present information for a given purpose using a variety of features in spreadsheet software.</li> <li>2.3 Present information for a given purpose using a variety of features in present information for a given purpose using a variety of features in presentation software.</li> </ul>		
3 Be able to integrate ICT software to present information.	<ul> <li>3.1 Plan how to present integrated information using a range of ICT formats.</li> <li>Range should include presentation, spreadsheet and word processing software.</li> <li>3.2 Present information to meet a specific brief.</li> </ul>		

LEARNING OUTCOMES	ASSESSMENT CRITERIA		
The learner will:	The learner can:		
	3.3 Save information in a structured format so it can be found easily and justify choice.		
E.g. embedding a chart produced in a spreadsheet into a document or presentation.			



Unit Code:	QU028487		
Title:	Promoting Wellbeing and Building Resilience		
Unit Level:	Level 3 Unit 3 Credit:		
Grading type:	Ungraded		
Academic subject content/other:	Other		
Assessment details:	1500 word report		

LE	LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The	e learner will:	The learner can:			
1	Understand the physical and psychological impact of pressure and stress on mental wellbeing.	1.1	Explain the physical and psychological impact of pressure and stress on mental wellbeing.		
2	Understand the connection between mental wellbeing and resilience.	2.1	Analyse the connection between mental wellbeing and resilience.		
3	Understand the factors that can improve wellbeing and build resilience.	<ul><li>3.1</li><li>3.2</li><li>3.3</li><li>3.4</li></ul>	Explain factors that can improve wellbeing. Explain factors that can negatively affect wellbeing and how to avoid them. Explain the behaviours associated with resilience Explain ways to build resilience.		
4.	Understand how to manage an individual's mental wellbeing and the support available to them.	4.1	Evaluate the methods for managing and maintaining mental wellbeing and building resilience. To include practical and theoretical methods such as breathing exercises to reduce stress, mindfulness techniques. Analyse the types of support available from different sources.		



Unit Code:	QU026344			
Title:	References and Reliability of Sources			
Unit Level:	Level 3 Unit 3 Credit:			
Grading type:	Ungraded			
Academic subject content/other:	Other			
Assessment details:	Literature review 1500 words including recognised form of referencing and bibliography			

LEARNING OUTCOMES		ASSESSMENT CRITERIA		
The learner will:		The learner can:		
1	Understand the difference between primary and secondary sources.	1.1	Evaluate the difference between primary and secondary sources.	
2	Understand the value of a variety of primary source materials as evidence.	2.1 2.2	Analyse primary sources for a specific context. Evaluate the primary sources, taking into account: authorship, purpose, audience, and underlying values and beliefs.	
3	Understand the uses and limitations of secondary sources.	3.1	Compare and evaluate secondary sources considering the following: use of sources, 'facts', background material, interpretation.	



Unit Code:	QU011467		
Title:	Spreadsheets		
Unit Level:	Level 3	Unit Credit:	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Assessment details:	Please refer to assessment grid.		

LE	ARNING OUTCOMES	ASSESSMENT CRITERIA		
The learner will:		The learner can:		
1	Know how to design and store a spreadsheet.	<ol> <li>Design a spreadsheet appropriate to a user's requirements.</li> <li>Create and store the spreadsheet.</li> <li>Evaluate the spreadsheet in terms of meeting the user's needs.</li> </ol>	o of	
2	Be able to retrieve and modify an existing spreadsheet.	2.1 Modify the spreadsheet design/content in response to user feedback.		
3	Know how to print a spreadsheet.	3.1 Print or display whole or part spreadsheets/formulae with a variety of print layout options.	y	
4	Be able to enhance user readability.	<ul> <li>4.1 Use suitable formatting options for displaying text and numeric values.</li> <li>4.2 Define and use conditional formatting to limit input error and give suitable messages to users.</li> </ul>	ıg	
5	Understand spreadsheet functions.	5.1 Develop a spreadsheet solution using a range of mathematical functions.		
6	Understand graphical facilities.	<ul><li>6.1 Use an appropriate graph type.</li><li>6.2 Draw pie, bar, line graphs with appropriate labels attached.</li></ul>		
7	Know how to use additional features within the spreadsheet environment.	<ul><li>7.1 Use advanced sorting, protecting and filtering facilities on a spreadsheet.</li><li>7.2 Analyse data using pivot tables.</li></ul>	nd	
## Access to HE Diploma Unit

Title:	Sustainability Project		
Unit Code:	QU033854		
Unit Level:	Level 3	Unit Credit:	3
Grading type:	Ungraded		
Academic subject content/other:	Academic subject content		
Suggested Assessment details:	Report, including project plan and reflection – 1,000 words		

This unit has 3 learning outcomes.

LEA	RNING OUTCOMES	ASSESSMENT CRITERIA	
The	learner will:	The learner can:	
1.	Be able to plan a project to promote sustainability within a specific sector.	<ul> <li>1.1 Identify a project to promote sustainability within a chosen sector, justifying your choice. Produce a project plan for own project including: <ul> <li>Aims and objectives</li> </ul> </li> <li>1.2 Time scales <ul> <li>Methods</li> <li>Resources required</li> <li>Any health and safety considerations.</li> </ul> </li> </ul>	
2.	Be able to carry out a sustainability project.	<ul> <li>2.1 Carry out a sustainability project.</li> <li>2.2 Produce a report on the findings of the sustainability project.</li> </ul>	of
3.	Be able to review the success of a sustainability project.	<ul> <li>3.1 Evaluate the extent to which the project has met the aim and objectives.</li> <li>3.2 Evaluate the extent to which the project has met the aim and objectives.</li> </ul>	

## Access to HE Diploma Unit

Title:	The Fundamentals of Environmental Sustainability	
Unit Code:	QU033880	
Unit Level:	Level 3	Unit 3 Credit:
Grading type:	Ungraded	
Academic subject content/other:	Academic subject content	
Suggested Assessment details:	Report – 1500 words	

This unit has 4 learning outcomes.

LEA	RNING OUTCOMES	ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1.	Know the importance of sustainability within a specific sector.	<ul> <li>1.1 Explain what is meant by sustainability. Explain the importance of supporting</li> <li>1.2 environmental sustainability within a chosen sector.</li> </ul>	
Know how environmental 2. sustainability can be suppo within the chosen sector.	Know how onvironmental	2.1 Describe environmental issues relevant to a chosen sector.	
		2.2 Describe the impact of the chosen sector on the environment.	
	sustainability can be supported within the chosen sector.	<ul><li>Explain how these environmental issues</li><li>2.3 could be minimised within a chosen sector.</li></ul>	
		<ul> <li>Analyse factors to consider when</li> <li>2.4 working towards environmental sustainability in a chosen sector.</li> </ul>	
	Know how the 3 Rs of sustainability	3.1 Explain the 3 Rs of sustainability.	
3.	can be applied within the chosen sector.	3.2 Analyse ways that a chosen sector can implement the 3 Rs of sustainability.	
4.	Understand the importance of waste management within the chosen sector.	<ul> <li>Explain the importance of having a</li> <li>4.1 waste management strategy within a chosen sector.</li> </ul>	
		4.2 that could be caused by poor waste management within a chosen sector.	



## 7. What to do next

For existing centres please contact your named Development Manager or Development Officer.

For organisations, not yet registered as a Gateway Qualifications centre please contact:

Tel: 01206 911211

Email: enquiries@gatewayqualifications.org.uk

## 8. Gateway Qualifications

Gateway Qualifications, a not for profit registered charity, is an Awarding Organisation and authorised Access Validating Agency based in Colchester. We work with learning providers and industry experts to design and develop qualifications that benefit the learner and the employer.

We support flexible, responsive and quality assured learning opportunities whether it's in the classroom, at work, in the community or through distance learning.

We are recognised by Ofqual, to design, develop and submit qualifications to the Regulated Qualifications Framework (RQF) and by the Quality Assurance Agency for the development and approval of Access to Higher Education Diplomas.





enquiries@gatewayqualifications.org.uk www.gatewayqualifications.org.uk Tel: 01206 911 211