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Pearson Edexcel Level 2 NVQ Diploma in Laboratory Science

Specification

Competence-based qualification

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Issue 2

Pearson

Edexcel, BTEC and LCCI qualifications

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This specification is Issue 2. Key changes are listed in summary table on next page. We will inform centres of any changes to this issue. The latest issue can be found on the Pearson website: qualifications.pearson.com

This qualification was previously known as:

Level 2 NVQ Diploma in Laboratory Science (QCF)

The QN remains the same.

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Summary of Pearson Edexcel Level 2 NVQ Diploma in Laboratory Science Issue 2 changes

Summary of changes made between previous issue and this current issue	Page number
All references to QCF have been removed throughout the specification	
Definition of TQT added	1
Definition of sizes of qualifications aligned to TQT	2
TQT value added	6
Guided learning definition updated	12
QCF references removed from unit titles and unit levels in all units	15-185

Earlier issue(s) show(s) previous changes.
If you need further information on these changes or what they mean, contact us via our website at: qualifications.pearson.com/en/support/contact-us.html.

Contents

Introducing Pearson Edexcel NVQ qualifications

What are NVQ qualifications?

National Vocational Qualifications (NVQs) are work-based qualifications that give learners the opportunity to develop and demonstrate their competence in the area of work or job role to which the qualification relates.

NVQs are based on the National Occupational Standards (NOS) for the appropriate sector. NOS define what employees, or potential employees, must be able to do and know, and how well they should undertake work tasks and work roles. At Level 2 and above, these qualifications are recognised as the competence component of Apprenticeship Frameworks. Qualifications at Level 1 can be used in Traineeships, which are stepping-stones to Apprenticeship qualifications. NVQs qualifications can also be delivered as stand-alone for those who wish to take a work-based qualification.

NVQs qualifications are outcomes-based with no fixed learning programme – allowing flexible delivery that meets the individual learner's needs. They are suitable for those in employment or those who are studying at college and have a part-time job or access to a substantial work placement so that they are able to demonstrate the competencies that are required for work.

Most learners will work towards their qualification in the workplace or in settings that replicate the working environment as specified in the assessment requirements/strategy for the sector. Colleges, training centres and/or employers can offer these qualifications provided they have access to appropriate physical and human resources.

Sizes of NVQ/Competence-based qualifications

For all regulated qualifications, Pearson specify a total number of hours that is estimated learners will require to complete and show achievement for the qualification – this is the Total Qualification Time (TQT). The TQT value indicates the size of a qualification.

Within the TQT, Pearson identifies the number of Guided Learning Hours (GLH) that we estimate a centre delivering the qualification might provide. Guided learning means activities, such as lessons, tutorials, online instruction, supervised study and giving feedback on performance, that directly involve tutors and assessors in teaching, supervising and invigilating learners. Guided learning includes the time required for learners to complete external assessment under examination or supervised conditions.

In addition to guided learning, other required learning directed by tutors or assessors will include private study, preparation for assessment and undertaking assessment when not under supervision, such as preparatory reading, revision and independent research.

As well as TQT and GLH, qualifications can also have a credit value – equal to one tenth of TQT, rounded to the nearest whole number.

TQT and credit values are assigned after consultation with users of the qualifications.

NVQ/Competence-based qualifications are available in the following sizes:

- Award – a qualification with a TQT value of 120 or less (equivalent to a range of 1–12 credits)
- Certificate – a qualification with a TQT value in the range of 121–369 (equivalent to a range of 13–36 credits)
- Diploma – a qualification with a TQT value of 370 or more (equivalent to 37 credits and above).

Qualification title covered by this specification

This specification gives you the information you need to offer the Pearson Edexcel Level 2 NVQ Diploma in Laboratory Science:

Qualification title	Qualification Number (QN)	Regulation start date
Pearson Edexcel Level 2 NVQ Diploma in Laboratory Science	600/1730/2	01/06/11

You should use the Qualification Number (QN), when you wish to seek public funding for your learners. Each unit within a qualification will also have a unique reference number, which is listed in this specification.

The qualification title and unit reference numbers will appear on the learners' final certification document. Learners need to be made aware of this when they are recruited by the centre and registered with Pearson.

Key features of the Pearson Edexcel Level 2 NVQ Diploma in Laboratory Science

This qualification:

- is nationally recognised
- is based on the Level 2 Laboratory Science National Occupational Standards (NOS). The NOS, assessment requirements/strategy and qualification structure(s) are owned by SEMTA.

The Pearson Edexcel Level 2 NVQ Diploma in Laboratory Science have been approved as components for the Level 2 Laboratory Technicians Apprenticeship framework.

What is the purpose of this qualification?

The Pearson Edexcel Level 2 NVQ Diploma in Laboratory Science provides recognition of the skills and knowledge of individuals who work in a laboratory. It covers health and safety; effective working relationships; dealing with laboratory specimens/samples and communicating information. It contains two Pathways: Clinical Analysis and Compound Analysis.

Who is this qualification for?

This qualification is for all learners aged 18 and above who are capable of reaching the required standards.

Pearson's policy is that the qualification should:

- be free from any barriers that restrict access and progression
- ensure equality of opportunity for all wishing to access the qualification(s).

What are the potential job roles for those working towards this qualification?

- Analytical scientist
- Biochemist
- Biomedical scientist
- Biologist
- Biotechnologist
- Clinical scientist
- Microbiologist
- Physicist
- Research scientist
- Education laboratory technician
- Laboratory technician

- Medical laboratory assistant
- Scientific laboratory technician

What progression opportunities are available to learners who achieve this qualification?

Progression from this qualification can be to other relevant level 2 and/or level 3 qualifications, for example:

- Pearson Edexcel Level 2 NVQ Certificate in Laboratory and Associated Technical Activities
- Pearson Edexcel Level 3 NVQ Diploma in Laboratory and Associated Technical Activities.
- Pearson Edexcel Level 3 NVQ Diploma in Laboratory Science

What is the qualification structure for the Pearson Edexcel Level 2 NVQ Diploma in Laboratory Science?

The Total Qualification Time (TQT) for this qualification is 370.

The Guided Learning Hours (GLH) for this qualification is 331.

Within the Pearson Edexcel Level 2 NVQ Diploma in Laboratory Science learners may achieve one of the following pathways: Clinical Analysis or Compound Analysis.

For the Clinical Analysis pathway learners must achieve a minimum of 37 credits by completing four common mandatory units, one pathway specific mandatory unit and two optional units, one of which should be taken from Group A – Optional Units.

For the Compound Analysis pathway learners must achieve a minimum of 50 credits by completing four common mandatory units, one pathway specific mandatory unit and two optional units, one of which must be taken from Group A – Optional Units.

Unit	Title	Credit	Level
Common Mandatory units			
Unit 1:	Maintaining health and safety in a laboratory environment	5	2
Unit 2:	Maintaining effective and efficient working relationships in the laboratory	5	2
Unit 3:	Receiving, sorting, transporting and storing laboratory specimens/samples under supervision	9	2
Unit 4:	Communicating laboratory information to authorised personnel under supervision	6	2

Unit	Title	Credit	Level
Clinical Analysis Pathway Must complete the following unit plus two more optional units (one must come from Group A).			
Unit 5:	Accessing, registering and inputting patient data in a LIMS under supervision	6	2
Group A - Optional units			
Unit 6:	Assisting with the preparation of biopsy specimens for laboratory investigations	3	2
Unit 7:	Assisting with the preparation of microbiological specimens/samples for laboratory investigations	11	2
Unit 8:	Assisting with the processing of liquid clinical specimens using automated laboratory equipment	10	2
Unit 9:	Assisting with the processing of liquid clinical specimens using manual laboratory techniques	6	2
Unit 17:	Assisting with the processing of diagnostic cytology specimens in the laboratory	3	2
Group B - Optional units			
Unit 10:	Assisting with the maintenance of stocks of reagents and consumables for laboratory use	3	2
Unit 11:	Drawing blood samples from patients for laboratory investigations	3	2
Unit 18:	Assisting with the routine maintenance, cleaning, disinfecting and calibration of laboratory equipment	6	2

Unit	Title	Credit	Level
Compound Analysis Pathway Must complete the following unit plus two more optional units (one must come from Group A).			
Unit 16:	Measuring, weighing and preparing compounds and solutions for laboratory use	16	3
Group A - Optional Units			
Unit 7:	Assisting with the preparation of microbiological specimens/samples for laboratory investigations	11	2
Unit 12:	Assisting with the processing of liquid compounds/samples using automated laboratory equipment	10	2
Unit 13:	Assisting with the processing of liquid compounds/samples using manual laboratory techniques	6	2
Group B - Optional Units			
Unit 10:	Assisting with the maintenance of stocks of reagents and consumables for laboratory use	3	2
Unit 14:	Accessing, registering and inputting batch/sample data in a LIMS under supervision	6	2
Unit 15:	Assisting with the preparation of solutions for laboratory use	9	2
Unit 17:	Assisting with the processing of diagnostic cytology specimens in the laboratory	3	2
Unit 18:	Assisting with the routine maintenance, cleaning, disinfecting and calibration of laboratory equipment	6	2
Unit 19:	Preparing culture media and solutions for laboratory use	3	2
Unit 20:	Following aseptic procedures in the laboratory environment	9	2

How is the qualification graded and assessed?

The overall grade for the qualification is a 'pass'. The learner must achieve all the required units within the specified qualification structure.

To pass a unit the learner must:

- achieve **all** the specified learning outcomes
- satisfy **all** the assessment criteria by providing sufficient and valid evidence for each criterion
- show that the evidence is their own.

The qualifications are designed to be assessed:

- in the workplace or
- in conditions resembling the workplace, as specified in the assessment requirements/strategy for the sector, or
- as part of a training programme.

Assessment requirements/strategy

The assessment strategy for this qualification has been included in *Annexe C*. It has been developed by SEMTA in partnership with employers, training providers, awarding organisations and the regulatory authorities. The assessment strategy includes details on:

- criteria for defining realistic working environments
- roles and occupational competence of assessors, expert witnesses, internal verifiers and standards verifiers
- quality control of assessment
- evidence requirements.

Evidence of competence may come from:

- **current practice** where evidence is generated from a current job role
- a **programme of development** where evidence comes from assessment opportunities built into a learning/training programme whether at or away from the workplace
- the **Recognition of Prior Learning (RPL)** where a learner can demonstrate that they can meet the assessment criteria within a unit through knowledge, understanding or skills they already possess without undertaking a course of learning. They must submit sufficient, reliable and valid evidence for internal and standards verification purposes. RPL is acceptable for accrediting a unit, several units or a whole qualification
- a **combination** of these.

It is important that the evidence is:

Valid	relevant to the standards for which competence is claimed
Authentic	produced by the learner
Current	sufficiently recent to create confidence that the same skill, understanding or knowledge persist at the time of the claim
Reliable	indicates that the learner can consistently perform at this level
Sufficient	fully meets the requirements of the standards.

Types of evidence (to be read in conjunction with the assessment strategy in Annexe C)

To successfully achieve a unit the learner must gather evidence which shows that they have met the required standard in the assessment criteria. Evidence can take a variety of different forms including the examples below. Centres should refer to the assessment strategy for information about which of the following are permissible.

- direct observation of the learner's performance by their assessor (O)
- outcomes from oral or written questioning (Q&A)
- products of the learner's work (P)
- personal statements and/or reflective accounts (RA)
- outcomes from simulation, where permitted by the assessment strategy (S)
- professional discussion (PD)
- assignment, project/case studies (A)
- authentic statements/witness testimony (WT)
- expert witness testimony (EPW)
- evidence of Recognition of Prior Learning (RPL).

The abbreviations may be used for cross-referencing purposes.

Learners can use one piece of evidence to prove their knowledge, skills and understanding across different assessment criteria and/or across different units. It is, therefore, not necessary for learners to have each assessment criterion assessed separately. Learners should be encouraged to reference the assessment criteria to which the evidence relates.

Evidence must be made available to the assessor, internal verifier and Pearson standards verifier. A range of recording documents is available on the Pearson website: qualifications.pearson.com. Alternatively, centres may develop their own.

Centre recognition and approval

Centre recognition

Centres that have not previously offered Pearson qualifications need to apply for and be granted centre recognition as part of the process for approval to offer individual qualifications. New centres must complete both a centre recognition approval application and a qualification approval application.

Existing centres will be given 'automatic approval' for a new qualification if they are already approved for a qualification that is being replaced by the new qualification and the conditions for automatic approval are met. Centres already holding Pearson approval are able to gain qualification approval for a different level or different sector via Edexcel online.

Approvals agreement

All centres are required to enter into an approvals agreement which is a formal commitment by the head or principal of a centre to meet all the requirements of the specification and any linked codes or regulations. Pearson will act to protect the integrity of the awarding of qualifications, if centres do not comply with the agreement. This could result in the suspension of certification or withdrawal of approval.

Quality assurance

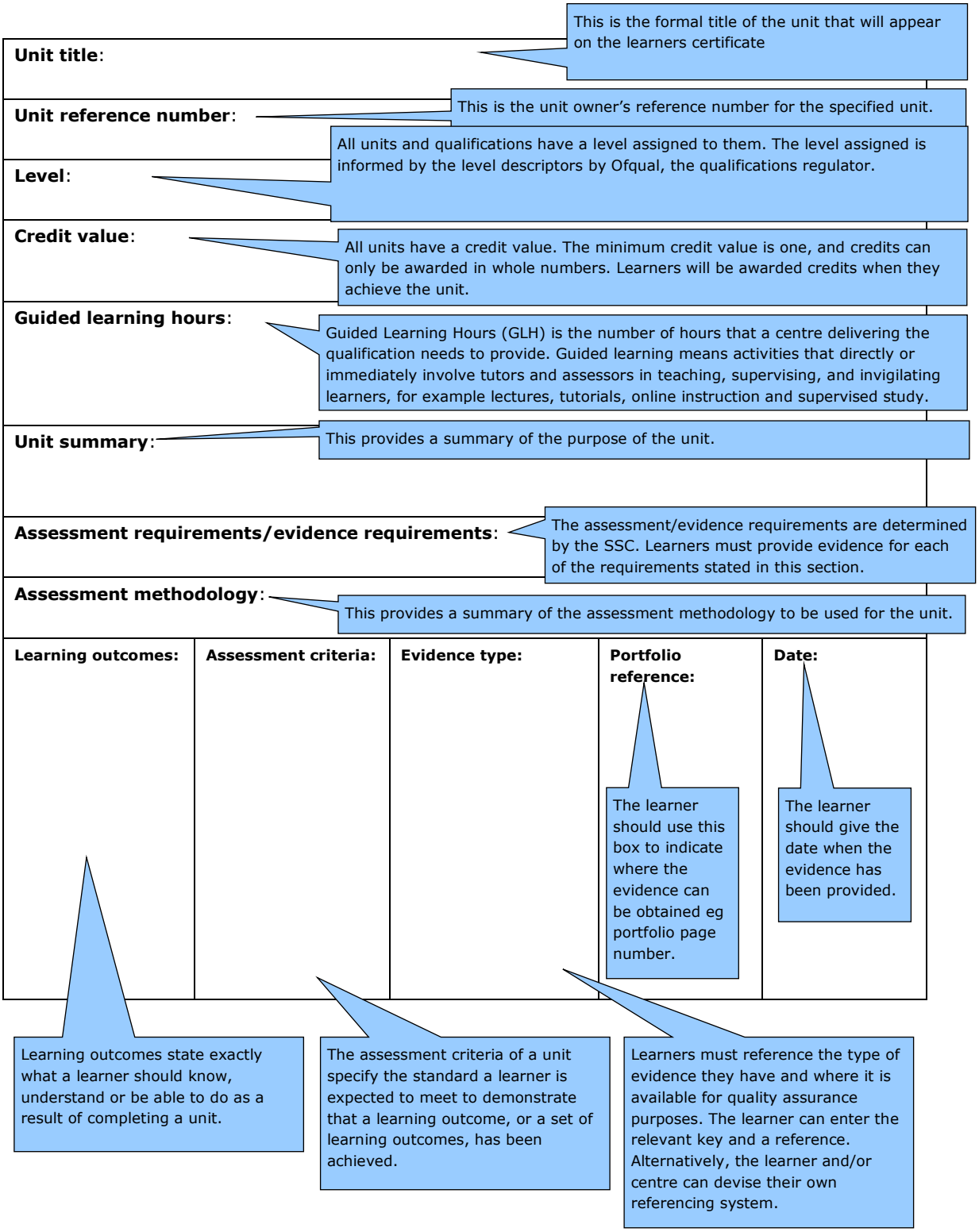
Detailed information on Pearson's quality assurance processes is given in *Annexe A*.

What resources are required?

This qualification is designed to support learners working in the Laboratory Science sector. Physical resources need to support the delivery of the qualifications and the assessment of the learning outcomes and must be of industry standard. Centres must meet any specific resource requirements outlined in *Annexe C: Assessment strategy*. Staff assessing the learner must meet the requirements within the overarching assessment strategy for the sector.

Unit format

Each unit in this specification contains the following sections.



Units

Unit 1: Maintaining health and safety in a laboratory environment

Unit reference number: K/601/1703

Level: 2

Credit value: 5

Guided learning hours: 35

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to maintain health and safety in the laboratory. The learner is required to observe all legal, statutory and organisational requirements, and the learner must be able to identify any potential hazards and risks to health and safety. The learner must also know what actions to take in case of an emergency and, as well as ensuring their own safety, they must show responsibility towards their colleagues and others. The learner will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

The learner's responsibilities will require them to comply with health and safety requirements and organisational policy and procedures for the laboratory work that is undertaken. The learner must be able to recognise the limitations of their own competence with the laboratory work, and ask for appropriate help and advice in when it is needed. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide an understanding of their laboratory work, in order to apply safely the appropriate scientific principles and practices. The learner will be competent in the safe use of the materials, equipment, consumables and instruments used to perform the laboratory investigations, and with the procedures appropriate to their job. The learner's depth of knowledge will be sufficient to provide a sound basis for safely carrying out the laboratory activities, to a level that will allow the department to meet any agreed targets.

The learner will understand the safety precautions required when carrying out the laboratory activities for scientific operations and processes. The learner will be required to demonstrate safe working practices throughout, and will understand their responsibility for taking the necessary safeguards to protect themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Maintain health and safety in a laboratory environment	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Accurately assess health and safety in relation to their work and the laboratory 1.3 Identify health and safety standard operating procedures for all of the following: – laboratory hazards – manual handling – unsafe practices – VDU & RSI policies – spillages – other (please specify) 1.4 Use the appropriate personal protective clothing and equipment for the work 1.5 Make safe any health and safety hazards, and report them to the appropriate person as soon as possible 1.6 Maintain the security of the laboratory, in accordance with organisational requirements 1.7 Ensure that they maintain their work area to a standard of health and safety which is consistent with local policies and legal requirements			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.8 Maintain and use equipment and materials in accordance with manufacturers' instructions and local safety regulations			
2 Maintain health and safety in a laboratory environment (continued)	2.1 Dispose of hazardous materials, waste and waste containers, safely and correctly 2.2 Dispose of, safely, seven of the following, in accordance with approved procedures: – sharps – biological materials – metal – chemical (solid and liquid) – plastics – glass – cleaning wipes/tissues – aerosol containers – confidential records – domestic waste			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.3 Dispose of waste in three the following types of container, in accordance with approved practices: – sharps containers – colour-coded plastic bags – autoclave bins – solvent drums – proprietary containers 2.4 Prepare, use and dispose of disinfectants, safely and correctly 2.5 Carry out decontamination of work surfaces and floors effectively 2.6 Take the appropriate precautions to protect themselves and others during working 2.7 Handle safely three of the following hazardous substances, in accordance with approved procedures: – flammables – corrosive chemicals – toxic chemicals – biological materials 2.8 Follow the correct procedure, without delay, if an emergency arises or is suspected			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.9 Follow established procedures for all of the following emergencies: – laboratory fire – spillage of hazardous substances – gas escapes – other emergencies (please specify)			
3 Know how to maintain health and safety in a laboratory environment	3.1 Describe the health and safety requirements of the area in which the learner is carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the standard operating procedures, as set down in local laboratory operating manuals 3.4 Describe the importance of following manufacturers' instructions 3.5 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.6 Describe the importance of wearing protective clothing, gloves and eye protection when handling specimens/samples			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.7 Describe the specific safety precautions to be taken when working with laboratory equipment and computer-based systems (to include such things as safety guidance relating to the use of visual display unit (VDU) equipment and work station environment (such as lighting, seating, positioning of equipment), and repetitive strain injury (RSI))			
	3.8 Describe the identity of health and safety representatives (such as the Laboratory Safety Officer, Staff Health & Safety Representatives and First-Aiders)			
	3.9 Describe the location and correct use of emergency equipment (such as fire extinguishers, including the situations in which different types of fire extinguishers are used)			
	3.10 Describe the organisational requirements for maintaining the security of the workplace			
	3.11 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation			
	3.12 Describe the limits of the learner's own authority and to whom they should report if they have problems that they cannot resolve			
	3.13 Explain why risks in the laboratory should be assessed, and the correct action to be taken			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Know how to maintain health and safety in a laboratory environment (continued)	4.1 Explain how to prevent infection in laboratories 4.2 Describe local procedures for escape (including escape routes and assembly points) 4.3 Describe the location of fire alarms, and how to operate them 4.4 Describe the location of spillage kits, and the procedures to follow in the event of spillages of chemicals and/or biological fluids 4.5 Describe the control of substances hazardous to health (COSHH) regulations, and their application in the laboratory 4.6 Describe the types of hazards which may occur in the laboratory setting, and how these can be minimised 4.7 Describe the correct storage and disposal procedures for hazardous materials (including: flammables, corrosive, harmful and toxic chemicals) 4.8 Describe the hazards associated with disinfectants and other chemicals (including toxicity) 4.9 Explain the meaning of the terms 'disinfection' and 'decontamination', and the use of disinfectants 4.10 Describe the reasons for disinfecting/decontaminating laboratory surfaces and equipment			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.11 Explain why it is important to differentiate and segregate categories of waste (such as using waste colour-coding) 4.12 Describe the correct procedures for the storage, transport and disposal of waste			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 2: Maintaining effective and efficient working relationships in the laboratory

Unit reference number: M/601/1895

Level: 2

Credit value: 5

Guided learning hours: 25

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to work effectively and efficiently in the laboratory, in accordance with approved procedures and practices. Prior to undertaking the laboratory activity, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition for the intended activities, and ensuring that any materials, equipment and other resources required are available and are in a safe and usable condition. They will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work requirements. This may involve placing completed work items in the correct location, returning and/or storing any materials and equipment in the correct condition/area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials and equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory investigations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to working efficiently and effectively in a laboratory environment. The learner will understand the need to work efficiently and effectively, and will know about the things that they need to consider when preparing and tidying up the work area. The learner will also need to know how to contribute to improvements, deal with problems, maintain effective working relationships, and how to agree and achieve their development objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Maintain effective and efficient working relationships in the laboratory	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Work safely at all times, complying with health and safety and other relevant regulations and guidelines 1.3 Establish and maintain effective working relationships 1.4 Sustain positive working relationships by all of the following: – working in teams – supporting others – being cooperative and flexible – providing clear and accurate information 1.5 Maintain effective working relationships with two of the following: – colleagues in their own working group – supervisors/managers – more senior professionals/scientists – colleagues outside their normal working group – persons external to their organisation 1.6 Meet organisational standards for appearance and behaviour			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Maintain effective and efficient working relationships in the laboratory (continued)	2.1 Deal with disagreements in an amicable and constructive way, so that good relationships are maintained 2.2 Maintain communication with others, to ensure that they are kept informed about any work plans or activities which may affect them 2.3 Be aware of the limits of their skills, and seek assistance from others in a polite and courteous way without causing undue disruption to normal work activities 2.4 Review their personal performance and development, with the appropriate people, at regular intervals 2.5 Review personal development objectives and targets, to include one of the following: – dual or multi-skilling – training on new equipment/technology – understanding of company working practices, procedures, plans and policies – increased responsibility – other specific requirements			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.6 Record details of work done, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			
3 Know how to maintain effective and efficient working relationships in the laboratory	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the standard operating procedures, as set down in local laboratory operating manuals 3.4 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.5 Describe the purpose of the speciality of the department in which they are employed, and how it fits into the other specialities of the larger organisation			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.6 Describe the interactions which take place between the department and other specialities in the same organisation 3.7 Describe the interactions which take place between the speciality in which they are employed and others in the same speciality elsewhere 3.8 Explain how their work activities affect others within the department, organisation and the community 3.9 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.10 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve			
4 Know how to maintain effective and efficient working relationships in the laboratory (continued)	4.1 Describe the lines of accountability within the department 4.2 Describe the general function and purpose of all the relevant laboratories 4.3 Describe the reasons why good working relationships are important 4.4 Explain how to create and maintain good working relationships 4.5 Describe the methods of working effectively with others			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.6 Describe the problems that can affect relationships in the workplace 4.7 Describe the procedures for dealing with disagreements within the workplace 4.8 Describe the departmental performance review process, and their role in this process 4.9 Describe the reasons why effective communication is important, and the methods used for communicating effectively			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 3: Receiving, sorting, transporting and storing laboratory specimens/samples under supervision

Unit reference number: T/601/1896

Level: 2

Credit value: 9

Guided learning hours: 51

Unit summary

This unit covers the skills and knowledge needed to receive, sort, transport and store specimens/samples in the laboratory, in accordance with approved procedures and practices. Prior to undertaking the laboratory activity, the learner will be required to carry out all the necessary preparations within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. The learner will be required to work to the relevant standard operation procedures, legislation and organisational policy and follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work requirements. This may involve placing specimens/samples in the correct location, returning and/or storing any materials and equipment in the correct condition/area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials and equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory investigations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to receiving, sorting, transporting and storing specimens/samples in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after receiving, sorting, transporting and storing activities. The learner will also know how to deal with problems, and how to

achieve their work objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Receive, sort, transport and store laboratory specimens/samples under supervision	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment (PPE) when handling specimens 1.3 Use three the following types of protective clothing and equipment when operating automatic equipment: – laboratory coat – face mask – gloves – safety glasses – other (please specify) 1.4 Confirm that specimens/samples received are in the correct packaging/container and are labelled accurately			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.5 Take appropriate action for unsuitable specimens/samples in all of the following categories: – insufficient volume – incorrect handling – incorrect container – incorrect labelling – incorrect storage – incorrect sample 1.6 Correctly unpack, label, prepare and sort specimens/samples ready for analysis 1.7 Prepare specimens that may require storage, transport or further processing on more than one analyser, site or laboratory 1.8 Process accompanying documentation for the specimen/sample correctly 1.9 Ensure that any high risk specimens/samples received are dealt with according to agreed local policies and procedures			
2 Receive, sort, transport and store laboratory specimens/samples under supervision (continued)	2.1 Identify any specimens/samples that need tests to be fast tracked, and notify the appropriate staff 2.2 Place received specimens/samples in the correct storage location(s), and direct the specimens/samples to appropriate specialities			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.3 Prepare and package specimens/samples for transportation, according to local and national guidelines 2.4 Arrange transportation of specimens/samples to other locations, and amend the laboratory information management system accordingly 2.5 Store specimens/samples in the appropriate manner for the department processing them 2.6 Store specimens/samples by two of the following methods: – freezing – ambient – refrigerating – incubating 2.7 Communicate the required information about laboratory specimens/samples to authorised people, in accordance with departmental and organisational procedures			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.8 Record details of work done, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record			
3 Know how to receive, sort, transport and store laboratory specimens/samples under supervision	3.1 Describe the health and safety requirements of the area in which you are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.4 Describe the standard operating procedures, as set down in the local laboratory operating manuals 3.5 Describe the importance of wearing protective clothing, gloves and eye protection when handling clinical specimens 3.6 Explain how the laboratory specimen/sample collection and reception system works			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.7 Explain how specimens/samples are received in the laboratory, and where typical specimens/samples originate from 3.8 Describe the importance of correct identification, and any unique organisation and laboratory numbers 3.9 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.10 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.11 Describe the pre-analytical procedures used for specimens/samples undergoing investigation in the laboratory 3.12 Describe the range of hazard labels used on specimens/samples, and what each label means			
4 Know how to receive, sort, transport and store laboratory specimens/samples under supervision (continued)	4.1 Explain why it is important to ensure that specimens/samples are properly labelled and stored 4.2 Describe the minimum size/volume of specimens/samples required for the investigations conducted by the laboratory 4.3 Describe the types of specimen/sample and specimen/sample container used in the laboratory, and those that are needed for each investigation			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.4 Describe the procedures to be followed when dealing with routine and urgent specimens/samples 4.5 Describe the procedure to be followed when specimens/samples do not match up with the investigation request forms 4.6 Describe the procedure to be followed when a broken or leaking specimen/sample is identified in the laboratory 4.7 Describe the procedure to be followed when a high risk specimen/sample is received by the laboratory 4.8 Describe the methods used for numbering and labelling specimens/samples received by the laboratory 4.9 Describe the factors which might adversely affect the integrity of the specimen/sample material during storage or transit 4.10 Describe the risks and hazards associated with the preparation of the specimen/sample, and how these can be minimised 4.11 Describe the methods used for packaging and despatching specimens/samples 4.12 Describe the procedures to be followed and the transportation to be used when despatching specimens/samples			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 4: Communicating laboratory information to authorised personnel under supervision

Unit reference number: A/601/1897

Level: 2

Credit value: 6

Guided learning hours: 34

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to communicate laboratory information to authorised personnel, in accordance with approved procedures. The learner will be able to access data from the laboratory information management system (LIMS), from the appropriate files, and to communicate accurately the information to authorised personnel. They will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

The learner's responsibilities will require them to provide laboratory data on specimens/samples to authorised personnel, in accordance with organisational procedures. The learner work under a high level of supervision, whilst taking responsibility for their actions and for the quality and accuracy of the work they carry out.

The learner's underpinning knowledge will be sufficient to provide an understanding of the specimen, sample and test requirements for the speciality that they work in. The learner will understand the importance of the Data Protection Act and the need to maintain security and integrity of the laboratory records.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to communicating laboratory information to authorised personnel, in a laboratory environment. The learner will understand the need to work efficiently and effectively, and will know what to consider when communicating laboratory information, how to deal with problems, and how to achieve their work objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Communicate laboratory information to authorised personnel under supervision	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Exchange laboratory information with customers effectively and efficiently, which must include all of the following types: – instructions/directions – test results – progress report 1.3 Ensure the integrity of the laboratory information management system (LIMS) by all of the following: – using the correct startup/shutdown procedures – following good practice for logging on/off – information is passed to authorised people only 1.4 Follow procedures correctly to ensure the security and confidentiality of laboratory information and resolve all of the following specimen/sample problems: – incomplete labelling – no specimens/samples received – incorrect specimens/samples – incorrect labelling – incorrect handling/transport – failure to meet targets			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Communicate laboratory information to authorised personnel under supervision (continued)	2.1 Receive and record the information from customers, in the appropriate manner, which must include searching and accessing data from the LIMS for all of the following: – specimen/sample information – laboratory process information 2.2 Forward messages and information to the appropriate people, in accordance with procedures, and communicate to three of the following customers: – other department – clinician/scientist – team members – other laboratories – members of the public – other (please specify) 2.3 Confirm the identity and authorisation of callers before you communicate laboratory information, in accordance with departmental and organisational procedures			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.4 Record details of work done, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			
3 Know how to communicate laboratory information to authorised personnel under supervision	3.1 Describe the health and safety requirements of the area in which you are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.4 Describe the standard operating procedures, as set down in the local laboratory operating manuals 3.5 Describe the data security requirements for different computer applications 3.6 Explain how to access and store data, in accordance with standard operating procedures and organisational practices			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.7 Explain why it is important to maintain accurate specimen/sample and departmental records 3.8 Describe the specific safety precautions to be taken when working with computer systems (to include such things as safety guidance relating to the use of visual display unit (VDU) equipment and workstation environment (such as lighting, seating, positioning of equipment), repetitive strain injury (RSI); the dangers of trailing leads and cables; how to spot faulty or dangerous electrical leads, plugs and connections) 3.9 Explain why it is important to maintain good housekeeping arrangements (such as putting disks, manuals and unwanted items of equipment into safe storage; leaving the work area in a safe and tidy condition)			
4 Know how to communicate laboratory information to authorised personnel under supervision (continued)	4.1 Describe the importance of correct identification, and any unique organisation and laboratory numbers 4.2 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 4.3 Describe the limits of your own authority and to whom you should report if you have problems that you cannot resolve			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.4 Describe the basic set-up and operation of the laboratory records system and the peripheral devices that are used (such as mouse, keyboard, VDU, printer and barcode reader) 4.5 Describe the correct startup and shutdown procedures to be used for the computer system 4.6 Explain how to access the specific computer Laboratory Information Management System (LIMS) database to be used, and the use of software manuals and related documents to aid efficient operation of the relevant laboratory records system 4.7 Explain how to deal with system problems (such as error messages received, peripherals which do not respond as expected, obvious faults with the equipment or connecting leads) 4.8 Explain how to communicate effectively, and how to identify key information when recording and forwarding messages accurately 4.9 Explain how to recognise when a customer is angry and/or confused, and the procedures for handling the situation			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 5: Accessing, registering and inputting patient data in a LIMS under supervision

Unit reference number: J/601/1899

Level: 2

Credit value: 6

Guided learning hours: 34

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to access, register and input patient data in a Laboratory Information Management System (LIMS). Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. They will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work requirements. This may involve putting processed paperwork in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials and equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory investigations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to accessing, registering and inputting data into a patient records system in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after work on the patient records system. The learner will also know how to deal with problems, and how to

achieve their work objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Access, register and input patient data in a LIMS under supervision	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Use correct passwords to access the relevant laboratory databases, and maintain the security and integrity of information 1.3 Use correct search procedures to confirm that the patient demographic data on specimens received are correct with existing data on the laboratory record system			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.4 Establish data requirements for ten of the following: – patient name – patient date of birth – patient gender – database code – patient address/ location – details of the specimen sent and received – client's location – laboratory code – laboratory test results – client sending the specimen (eg, doctor, vet, scientist) – patient species (eg, human, animal, marine) – destination(s) for returning the results 1.5 Follow the correct protocols for registering new patients onto the Laboratory Information Management System (LIMS)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.6 Complete all of the following departmental specimen identification activities: – writing a specimen code – adding a barcode – scanning a barcode with barcode reader – checking the specimen code against database records 1.7 Select the correct laboratory and patient data, and accurately input patient and clinical details with the requested tests for their specimen			
2 Access, register and input patient data in a LIMS under supervision (continued)	2.1 Access and input patient data for all of the following: – patient number (eg, NHS number) – hospital/organisation number – laboratory number – laboratory test being done – details for tracking any third party testing 2.2 Resolve the problems that arise when the required patient information and data cannot be found or matched			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.3 Resolve two of the following data problems associated with specimens: – incorrect labelling – poor/unclear labelling – damaged/missing labelling 2.4 Perform these tasks in a timely manner, compatible with the laboratory schedules 2.5 Request help from appropriate people when you are unable to resolve problems with mismatched or incomplete specimen details 2.6 Record details of work done, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Know how to access, register and input patient data in a LIMS under supervision	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.4 Describe the standard operating procedures, as set down in the local laboratory operating manuals 3.5 Describe the data security requirements for different computer applications 3.6 Explain how to access and store data, in accordance with standard operating procedures and organisational practices 3.7 Explain why it is important to maintain accurate patient and department records for specimens 3.8 Describe the policies and procedures for the accurate registration of new patients on the Laboratory Information Management System (LIMS)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.9 Describe the specific safety precautions to be taken when working with computer systems (to include such things as safety guidance relating to the use of visual display unit (VDU) equipment and workstation environment (such as lighting, seating, positioning of equipment), repetitive strain injury (RSI); the dangers of trailing leads and cables; how to spot faulty or dangerous electrical leads, plugs and connections) 3.10 Explain why it is important to maintain good housekeeping arrangements (such as putting disks, manuals and unwanted items of equipment into safe storage; leaving the work area in a safe and tidy condition)			
4 Know how to access, register and input patient data in a LIMS under supervision (continued)	4.1 Describe the importance of correct identification, and any unique organisation and laboratory numbers 4.2 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 4.3 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 4.4 Describe the basic set-up and operation of the laboratory records system and the peripheral devices that are used (such as mouse, keyboard, VDU, printer and barcode reader)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.5 Describe the correct startup and shutdown procedures to be used for the computer system 4.6 Explain how to access the specific computer Laboratory Information Management System (LIMS) database to be used, and the use of software manuals and related documents to aid efficient operation of the relevant laboratory records system 4.7 Explain how to deal with system problems (such as error messages received, peripherals which do not respond as expected, obvious faults with the equipment or connecting leads) 4.8 Explain how to communicate effectively, and how to identify key information when recording and forwarding messages accurately 4.9 Describe the test codes, coded comments, requestor and location codes, and specimen comment codes required to accurately input and request patient/laboratory data, appropriate to their area of work			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 6: Assisting with the preparation of biopsy specimens for laboratory investigations

Unit reference number: L/601/2018

Level: 2

Credit value: 3

Guided learning hours: 17

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to assist with preparation of biopsy specimens for laboratory investigations. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and that any materials, equipment or other resources required are available and are in a safe and usable condition. They will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work requirements. This may involve putting processed paperwork in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials and equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory investigations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to the preparation of specimen biopsies in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after specimen biopsy preparation activities. The learner will also know how to deal with problems, and how to achieve their work objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Assist with the preparation of biopsy specimens for laboratory investigations	1.1 Ensure that your work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment (PPE) when handling specimens 1.3 Use three of the following types of protective clothing and equipment as appropriate for the specimens being handled: – laboratory coat – face mask – gloves – safety glasses – other (please specify) 1.4 Receive and label the biopsy samples, removed by a competent person, and store in a cassette for further processing 1.5 Take appropriate action for unsuitable specimens, in all of the following categories: – insufficient volume – incorrect handling – incorrect container – incorrect labelling – incorrect storage – incorrect sample			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.6 Trim excess wax block from biopsy samples before micrometry			
2 Assist with the preparation of biopsy specimens for laboratory investigations (continued)	2.1 Remove cross-sections of waxed biopsy samples, and prepare plates for microscopic analysis 2.2 Carry out all of the following biopsy operations: – store specimen biopsies in correctly labelled cassette – process specimen biopsy cassettes through the paraffin wax machine – remove biopsy sections, using microtome machines – separate specimen biopsy sections, using water baths – remove wax from sections, and process through the staining machine – mount cover slips, label stained biopsy plates, and despatch for clinical analysis 2.3 File prepared slides and blocks for microscopic analysis, in the appropriate location 2.4 Communicate the required information about prepared specimens to authorised people, in accordance with departmental and organisational procedures			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.5 Record details of work done, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			
3 Know how to assist with the preparation of biopsy specimens for laboratory investigations	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Explain the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.4 Explain the importance of wearing protective clothing, gloves and eye protection when handling clinical specimens 3.5 Describe the laboratory specimen reception system 3.6 Describe the types of handling and sorting systems, and the procedures used for clinical specimens undergoing investigation in the laboratory			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.7 Explain the importance of correct identification, and any unique organisation and laboratory numbers 3.8 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.9 Explain the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.10 Explain the minimum size/volume of specimen required for the investigations conducted by the laboratory			
4 Know how to assist with the preparation of biopsy specimens for laboratory investigations (continued)	4.1 Describe the location for each category of specimen that can be received by the laboratory 4.2 Describe the types of specimen and specimen container used in the laboratory, and those that are needed for each investigation 4.3 Explain the procedures to be followed when dealing with routine and urgent specimens 4.4 Explain the procedure to be followed when specimens do not match up with the investigation request forms 4.5 Explain the procedure to be followed when a broken or leaking specimen/sample is identified in the laboratory 4.6 Explain the procedure to be followed when a high risk specimen is received by the laboratory			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.7 Describe the methods used for numbering and labelling specimens received by the laboratory, and the samples taken during investigations 4.8 Explain the factors which might adversely affect the integrity of the specimen material or sample during storage or transit 4.9 Explain the risks and hazards associated with the preparation of the sample and how these can be minimised 4.10 Describe the methods used for packaging and despatching specimens			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 7: Assisting with the preparation of microbiological specimens/samples for laboratory investigations

Unit reference number: R/601/2019

Level: 2

Credit value: 11

Guided learning hours: 63

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to assist with the preparation of microbiological specimens/samples for laboratory investigations in the laboratory. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. They will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work requirements. This may involve placing microbiological specimens/samples in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory investigations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to preparing microbiological specimens/samples in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after specimen/sample preparation activities. The learner

will also know how to deal with problems, and how to achieve their work objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Assist with the preparation of microbiological specimens/samples for laboratory investigations	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment (PPE) when handling specimens/samples 1.3 Use four of the following types of protective clothing and equipment for the specimens/samples being handled: – laboratory coat – face mask – gloves – safety glasses – exhaust protective cabinet – other (please specify) 1.4 Ensure that any high risk specimens/samples received are handled in accordance agreed local policies and procedures			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.5 Take appropriate action for unsuitable specimens/samples in all of the following categories: – insufficient volume – incorrect handling – incorrect container – incorrect labelling – incorrect storage – incorrect sample 1.6 Prepare specimens/samples in correctly labelled Petri dishes and bottles with biological growth medium 1.7 Prepare specimens/samples for biological growth, using eight of the following: – bunsen burner – wire loop/disposable loop – automated pipettes – manual pipettes – Petri dishes with biological growth medium – bottles with biological growth medium – incubators – freezers – refrigeration			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Assist with the preparation of microbiological specimens/samples for laboratory investigations (continued)	2.1 Correctly label Petri dishes and bottles, and maintain accurate laboratory records 2.2 Transport Petri dishes and bottles safely around the laboratory, and store them appropriately 2.3 Store prepared specimens/samples in the correct incubators, to the approved manner for biological growth 2.4 Remove Petri dishes and bottles from incubators, ready for the identification of colonised specimens/samples by competent staff 2.5 Communicate the required information on laboratory activities to authorised people, in accordance with departmental and organisational procedures 2.6 Record details of preparation work, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Know how to assist with the preparation of microbiological specimens/samples for laboratory investigations	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.4 Describe the standard operating procedures, as set down in local laboratory operating manuals 3.5 Describe the importance of wearing protective clothing, gloves and eye protection when handling specimens/samples 3.6 Describe the importance of correct identification, and any unique organisation and laboratory numbers 3.7 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.8 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.9 Explain why it is important to ensure that specimens/samples are properly labelled and stored			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.10 Describe the minimum size/volume of specimen required for the investigations conducted by the laboratory 3.11 Describe the types of specimen/sample and specimen/sample container used in their speciality, and those that are needed for each investigation			
4 Know how to assist with the preparation of microbiological specimens/samples for laboratory investigations (continued)	4.1 Describe the types of incubator used in the laboratory for biological growth 4.2 Describe the types and range of growth media used for the analysis of microbiological colonies 4.3 Describe the procedures to be followed when dealing with routine and urgent specimens/samples 4.4 Describe the procedure to be followed when specimens/samples do not match up with the investigation request forms 4.5 Describe the procedure to be followed when a broken or leaking specimen/sample is identified in the laboratory 4.6 Describe the procedure to be followed when a high risk specimen/sample is received by the laboratory 4.7 Describe the methods used for numbering and labelling specimens/samples received by the laboratory, and the samples (aliquots) taken during preparation			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.8 Describe the factors which might adversely affect the integrity of the specimen/ sample during storage or transit 4.9 Describe the risks and hazards associated with the preparation of specimens/samples, and how these can be minimised 4.10 Describe the methods used for packaging and despatching specimens/samples			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 8: Assisting with the processing of liquid clinical specimens using automated laboratory equipment

Unit reference number: J/601/2020

Level: 2

Credit value: 10

Guided learning hours: 57

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to prove the competences required to assist with the processing of liquid clinical specimens for laboratory investigation, using automated equipment. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and that any materials, equipment or other resources required are available and are in a safe and usable condition. The learner will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work requirements. This may involve putting liquid clinical specimens in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials or equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory investigations undertaken, and to report any problems with the activities, material or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to processing liquid clinical specimens in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after specimen/sample processing activities. The learner will also know how to deal with problems, and how to achieve their work objectives and

targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Assist with the processing of liquid clinical specimens using automated laboratory equipment	1.1 Ensure their work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment when handling clinical specimens 1.3 Use three of the following types of protective clothing and equipment when operating automatic equipment: – laboratory coat – face mask – gloves – safety glasses – other (please specify) 1.4 Confirm that the laboratory equipment is set up and ready for operation 1.5 Process clinical specimens, using one of the following: – analysers using direct sampling – analysers using prepared samples 1.6 Follow the defined procedures for starting and running the laboratory equipment			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.7 Carry out all of the following processing operations: – transport liquid clinical specimens around the laboratory and store them appropriately – seek any necessary instruction/training on the operation of the equipment, when appropriate – check that equipment guards are in place and are correctly adjusted – ensure that liquid clinical specimens have been loaded correctly and are held securely – check that the operating program for the analyser/equipment is at the correct start point, and that the specimens are at the correct location in the analyser/equipment – follow the defined operating procedures for the analyser/equipment, and apply safe working practices and procedures at all times – confirm with a qualified professional that equipment settings are adjusted, as and when required, to maintain the required accuracy – confirm with a qualified professional that the analyses produced meet the required specification for quality and accuracy			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Assist with the processing of liquid clinical specimens using automated laboratory equipment (continued)	2.1 Load and unload specimens/samples from laboratory equipment in accordance with procedures and analyser/equipment specifications 2.2 Deal promptly and effectively with error messages or equipment faults that are within their control and report those that cannot be solved 2.3 Monitor the equipment process and ensure that the output readings are to the required specification 2.4 Shut down the equipment to a safe condition on conclusion of the activities 2.5 Communicate the required information laboratory activities to authorised people in accordance with departmental and organisational procedures 2.6 Record details of preparation work, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Know how to assist with the processing of liquid clinical specimens using automated laboratory equipment	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the standard operating procedures, as set down in local laboratory operating manuals 3.4 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.5 Describe the importance of wearing protective clothing, gloves and eye protection when handling clinical specimens 3.6 Describe the laboratory specimen reception system 3.7 Describe the types of handling and sorting system, and the procedures used for clinical specimens undergoing investigation in the laboratory 3.8 Describe the importance of correct identification, and any unique organisation and laboratory numbers 3.9 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.10 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.11 Describe the minimum size/volume of specimen required for the investigations conducted by the laboratory 3.12 Describe the types of specimen and specimen container used in the laboratory, and those that are needed for each investigation 3.13 Explain how to assess if a clinical specimen is suitable for analysis 3.14 Explain how to start and shut down the analyser/equipment, including what to do in an emergency			
4 Know how to assist with the processing of liquid clinical specimens using automated laboratory equipment (continued)	4.1 Explain why is it important that pre-run checks are carried out, and that they identify the status of the analyser/equipment 4.2 Explain how to load clinical specimens for the analyser/equipment, and how to initiate sample analysis 4.3 Describe the appropriate action to take when specimen sampling or equipment errors occur 4.4 Explain how to unload clinical specimens from the analyser/equipment, and how to store them after analysis			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.5 Describe the procedures to be followed when dealing with routine and urgent clinical specimens 4.6 Describe the procedure to be followed when clinical specimens do not match up with the investigation request forms 4.7 Describe the procedure to be followed when a broken or leaking specimen/sample is identified in the laboratory 4.8 Describe the procedure to be followed when a high risk specimen is received by the laboratory 4.9 Describe the methods used for numbering and labelling clinical specimens received by the laboratory, and the samples taken during investigations 4.10 Describe the factors which might adversely affect the integrity of the specimen or sample during storage or transit 4.11 Describe the risks and hazards associated with the preparation of the samples, and how these can be minimised 4.12 Describe the methods used for packaging and despatching clinical specimens 4.13 Describe the procedures to be followed and the transportation to be used when despatching clinical specimens			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 9: Assisting with the processing of liquid clinical specimens using manual laboratory techniques

Unit reference number: L/601/2021

Level: 2

Credit value: 6

Guided learning hours: 40

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to assist with the processing of liquid clinical specimens for laboratory investigations, using manual techniques. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. The learner will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work requirements. This may involve putting liquid clinical specimens in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials or equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory investigations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to processing liquid clinical specimens manually in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after specimen/sample processing activities. The learner will also know how to deal with problems, and how to achieve their work objectives

and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Assist with the processing of liquid clinical specimens using manual laboratory techniques	1.1 Ensure their work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment (PPE) when handling clinical specimens 1.3 Use three of the following types of protective clothing and equipment, as appropriate for the clinical specimens being handled: – laboratory coat – face mask – gloves – safety glasses – other (please specify) 1.4 Obtain the appropriate equipment and materials for the manual tests required 1.5 Use two of the following materials for the manual tests: – clinical specimens – reagents – other (please specify) 1.6 Conduct manual laboratory tests on liquid clinical specimens, using the correct procedures and techniques			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Assist with the processing of liquid clinical specimens using manual laboratory techniques (continued)	2.1 Conduct three of the following manual laboratory tests: – urine dip sticks (dip stix) – making blood films and staining slides – ELISA testing – urine volume/pH measurement – blood glucose – electrophoresis gels – urine pregnancy test – preparation of immuno-fluorescence slides – other (please specify) 2.2 Record the results of manual tests, in accordance with standard operating procedures 2.3 Dispose of waste items from manual laboratory tests, in accordance with standard operating procedures 2.4 Return equipment and materials that can be used for testing to the correct storage location 2.5 Communicate the required information laboratory activities to authorised people in accordance with departmental and organisational procedures			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.6 Record details of preparation work, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			
3 Know how to assist with the processing of liquid clinical specimens using manual laboratory techniques	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the standard operating procedures, as set down in local laboratory operating manuals 3.4 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.5 Describe the importance of wearing protective clothing, gloves and eye protection when handling clinical specimens 3.6 Describe the laboratory specimen reception system			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.7 Describe the types of handling and sorting system, and the procedures used for clinical specimens undergoing investigation in the laboratory 3.8 Describe the importance of correct identification, and any unique organisation and laboratory numbers 3.9 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.10 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.11 Describe the minimum size/volume of specimen/samples required for the investigations conducted by the laboratory 3.12 Describe the location for each category of specimen/samples that can be received by the laboratory 3.13 Describe the types of specimen/sample and specimen/sample container used in the laboratory, and those that are needed for each investigation			
4 Know how to assist with the processing of liquid clinical specimens using manual laboratory techniques (continued)	4.1 Explain how to assess if a clinical specimen is suitable for analysis 4.2 Explain how to use and take a reading from manual test kits used in the laboratory			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.3 Explain how to take blood prick samples for a handheld tester, to measure glucose levels and take readings 4.4 Describe the procedures to be followed when dealing with routine and urgent clinical specimens 4.5 Describe the procedure to be followed when clinical specimens do not match up with the investigation request forms 4.6 Describe the procedure to be followed when a broken or leaking specimen/sample is identified in the laboratory 4.7 Describe the procedure to be followed when a high risk specimen/sample is received by the laboratory 4.8 Describe the methods used for numbering and labelling clinical specimens received by the laboratory, and the samples taken during investigations 4.9 Describe the factors which might adversely affect the integrity of the specimen or sample during storage or transit 4.10 Describe the risks and hazards associated with the preparation of the samples, and how these can be minimised 4.11 Describe the methods used for packaging and despatching clinical specimens			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.12 Describe the procedures to be followed and the transportation to be used when despatching clinical specimens			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 10: Assisting with the maintenance of stocks of reagents and consumables for laboratory use

Unit reference number: R/601/2022

Level: 2

Credit value: 3

Guided learning hours: 17

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to assist with the maintenance of stocks of reagents and consumables for laboratory use. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. They will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work requirements. This may involve putting processed paperwork in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials or equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory investigations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to the maintenance of stocks of reagents and consumables used in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after work on stock maintenance. The learner will also know how to deal with problems, and how to achieve their work objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Assist with the maintenance of stocks of reagents and consumables for laboratory use	1.1 Ensure their work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment (PPE) when handling stock items 1.3 Count stocks and confirm that they are with the maximum/minimum levels required for the laboratory activities 1.4 Check stock levels for both of the following: – reagents – consumables 1.5 Check the packaging information on individual stock items, and confirm that critical details are within acceptable limits 1.6 Check packaging for all of the following information: – batch numbers – expiry dates – delivery dates – hazard labels – volumes – weights 1.7 Identify, record and communicate requirements to replenish stocks at specified re-order levels			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.8 Check new stocks received against delivery notes, label and store items in the correct environment and location			
2 Assist with the maintenance of stocks of reagents and consumables for laboratory use (continued)	2.1 Check stock items held in four of the following storage environments: – ambient temperature locations – refrigerators/freezers – zero or low light locations – hazardous chemical locations – automatic equipment – consumable item locations 2.2 Correctly handle and transport stock items, using the appropriate methods and techniques 2.3 Handle and transport all of the following types of material: – solids – liquids – other (please specify) 2.4 Dispose, in the appropriate manner and locations, of stock or items that are damaged or outside acceptable limits for laboratory use 2.5 Access and update records for stock levels in the laboratory information management system (LIMS)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.6 Access and update information on the LIMS for all of the following: – booking items out from stock – booking items into stock – stock check levels 2.7 Communicate the required information to authorised people, in accordance with departmental and organisational procedures 2.8 Record details of stock control, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			
3 Know how to assist with the maintenance of stocks of reagents and consumables for laboratory use	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the standard operating procedures, as set down in local laboratory operating manuals			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.4 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.5 Describe the importance of wearing protective clothing, gloves and eye protection when handling reagents and consumables 3.6 Describe the importance of correct identification, and any unique organisation and laboratory numbers 3.7 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.8 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.9 Explain why it is important to maintain accurate laboratory records for stocks of reagents and consumables			
4 Know how to assist with the maintenance of stocks of reagents and consumables for laboratory use (continued)	4.1 Describe the meaning of the various notations which are used in the laboratory for weights and volumes 4.2 Describe the types and range of reagents and consumables used in the laboratory, and how they have to be checked			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.3 Explain how to check the packaging information on reagents and consumables (such as batch numbers and expiry dates) 4.4 Explain how and why it is important to identify materials that should not be stored together 4.5 Describe the range of storage environments used to store reagents and consumables for laboratory use 4.6 Explain how to label new stock items correctly, and how to record the information in the laboratory information management system 4.7 Explain where and how stock items should be stored so they remain suitable for laboratory use 4.8 Explain how to monitor and control stock levels for laboratory reagents and consumables 4.9 Explain how to dispose of waste or damaged stock items, in accordance with standards operating procedures			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 11: Drawing blood samples from patients for laboratory investigations

Unit reference number: Y/601/2023

Level: 2

Credit value: 3

Guided learning hours: 17

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to draw blood specimens from patients for laboratory investigations. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. They will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work requirements. This may involve putting processed paperwork in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory investigations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to the drawing of blood specimens in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after blood specimen taking. The learner will also know how to deal with problems, and how to achieve their work objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Draw blood samples from patients for laboratory investigations	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment (PPE) and apply standard precautions for infection control, together with any other relevant health and safety measures 1.3 Use two of the following types of protective clothing and equipment when extracting blood: – laboratory coat – face mask – gloves – safety glasses – other (please specify)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.4 Carry out all of the following blood extraction operations: – welcome and reassure the patient, prior to blood extraction – explain and check the patient's understanding of the procedure, especially if undertaking a prolonged procedure such as a Glucose Tolerance Test – place the patient in the best position for blood extraction – insert the needle safely and correctly in the median cubital vein on the patient – obtain the blood in the correct volume, using collection/vacuum tubes – obtain the blood in the correct order of tubes when taking multiple samples – safely remove the needle, apply pressure with cotton ball, ensure that bleeding from the arm has stopped, and apply a temporary dressing – dispose of needle safely, in accordance with standard operating procedures – identify and deal with any adverse patient reaction to the blood extraction process – transport blood specimens around the laboratory and store them appropriately			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.5 Positively and correctly confirm the person's identity, and obtain/confirm their consent, prior to blood extraction 1.6 Select the appropriate blood tubes for the tests requested 1.7 Prepare the correct equipment and materials required to extract the blood specimen from the patient			
2 Draw blood samples from patients for laboratory investigations (continued)	2.1 Draw blood specimens from patients, using the correct procedures and techniques 2.2 Deal with any adverse patient reactions following the blood drawing process, in accordance with established procedures and practices 2.3 Label and package blood specimens, in accordance with standard operating procedures 2.4 Dispose of waste items from the blood specimen extraction process, in accordance with standard operating procedures 2.5 Transport and store the blood specimen in the correct location for laboratory processing 2.6 Communicate the required information to authorised people, in accordance with departmental and organisational procedures			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.7 Record details of blood taking, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			
3 Know how to draw blood samples from patients for laboratory investigations	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the standard operating procedures, as set down in local laboratory operating manuals 3.4 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.5 Describe the importance of wearing protective clothing, gloves and eye protection when handling clinical specimens			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.6 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.7 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.8 Describe the importance of seeking positive confirmation of each patient's identity and consent, and effective ways of doing this 3.9 Describe the methods used for the collection of blood from patients 3.10 Describe the aspects of blood taking, and the requirements for different sample tubes and labelling protocols			
4 Know how to draw blood samples from patients for laboratory investigations (continued)	4.1 Describe the anatomical and physiological locations used on the patient's body for the extraction of blood 4.2 Explain how to reassure patients when taking venous blood, and how to seek assistance when needed 4.3 Explain how to extract blood from patients, using vacuum tubes 4.4 Describe the health and safety precautions to be taken when handling blood			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.5 Describe the procedure to be followed in an emergency situation (such as when blood flow cannot be stopped or when a patient has fainted) 4.6 Describe the procedures to be followed when dealing with routine and urgent specimens 4.7 Describe the procedure to be followed when a broken or leaking specimen/sample is identified in the laboratory 4.8 Describe the importance of labelling and numbering blood samples correctly for investigation by the laboratory 4.9 Describe the factors which might adversely affect the integrity of a blood specimen during storage or transit 4.10 Describe the methods used for packaging and transporting blood specimens			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 12: Assisting with the processing of liquid compounds/samples using automated laboratory equipment

Unit reference number: D/601/2024

Level: 2

Credit value: 10

Guided learning hours: 57

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to assist with the processing of liquid compounds/samples for laboratory investigation, using automated equipment. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. They will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work requirements. This may involve putting liquid compounds/samples in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials and equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory investigations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to processing liquid compounds/samples in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after liquid compound/sample processing activities. The learner will also know how to deal with problems, and how to achieve their work

objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Assist with the processing of liquid compounds/samples using automated laboratory equipment	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment (PPE) when handling liquid compounds/samples 1.3 Use three of the following types of protective clothing and equipment when operating the automatic equipment: – laboratory coat – face mask – gloves – safety glasses – other (please specify)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.4 Carry out all of the following processing operations: – transport liquid compounds/samples around the laboratory, and store them appropriately – confirm that the processing equipment is ready for the analysis activity – where appropriate, seek any necessary instruction/training on the operation of the equipment – check that any equipment guards are in place and are correctly adjusted – ensure that liquid compounds/samples have been loaded correctly and are held securely – check that the operating program for the analyser/equipment is at the correct start point, and that the liquid compounds/samples are at the correct location in the analyser/equipment – follow the defined operating procedures for the analyser/equipment, and apply safe working practices and procedures at all times – ensure that analyser/equipment settings are adjusted as and when required (either by themselves or the competent person) to maintain the required accuracy – ensure that the analyses produced meet the specification for the required quality and accuracy			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.5 Load and unload liquid compounds/samples from laboratory equipment, in accordance with procedures and analyser/equipment specifications 1.6 Follow the defined procedures for starting and running the laboratory equipment 1.7 Load reference standards and perform calibration checks on laboratory equipment, in accordance with procedures			
2 Assist with the processing of liquid compounds/samples using automated laboratory equipment (continued)	2.1 Confirm that the laboratory equipment is set up and ready for operation 2.2 Process liquid compounds/samples through the analyser, in accordance with operating procedures 2.3 Deal promptly and effectively with error messages or equipment faults that are within your control, and report those that cannot be solved 2.4 Monitor the equipment process and ensure that the output readings are to the required specification 2.5 Shut down the equipment and return the work area to a safe condition on conclusion of the activities 2.6 Communicate the required information to authorised people, in accordance with departmental and organisational procedures			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.7 Record details of the liquid compound/sample processing, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			
3 Know how to assist with the processing of liquid compounds/samples using automated laboratory equipment	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the standard operating procedures, as set down in local laboratory operating manuals 3.4 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.5 Describe the importance of wearing protective clothing, gloves and eye protection when handling liquid compounds/ samples			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.6 Describe the laboratory liquid compound/sample reception system 3.7 Describe the types of handling and sorting system, and procedures used for liquid compounds/samples undergoing investigation in the laboratory 3.8 Describe the importance of correct identification, and any unique organisation and laboratory numbers 3.9 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.10 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.11 Describe the minimum size/volume of liquid compound/sample required for the investigations conducted by the laboratory 3.12 Describe the location for each category of liquid compound/sample that can be received by the laboratory 3.13 Describe the types of liquid compound/sample and container used in the laboratory, and those that are needed for each investigation 3.14 Explain how to assess if a liquid compound/sample is suitable for analysis			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Know how to assist with the processing of liquid compounds/samples using automated laboratory equipment (continued)	4.1 Explain how to start and shut down the analyser/equipment (including what to do in an emergency) 4.2 Explain how to carry out daily pre-run checks, and how to identify the status of the analyser/equipment 4.3 Explain how to load a liquid compound/sample into the analyser/equipment, and how to initiate the sample analysis 4.4 Describe the appropriate action to take when liquid compound/sample sampling or equipment errors occur 4.5 Explain how to unload liquid compounds/samples from the analyser/equipment, and how to store them after analysis 4.6 Describe the procedures to be followed when dealing with routine and urgent liquid compounds/samples 4.7 Describe the procedure to be followed when a liquid compound/sample does not match up with the investigation request forms 4.8 Describe the procedure to be followed when a broken or leaking liquid compound/sample is identified in the laboratory 4.9 Describe the procedure to be followed when a high risk liquid compound/sample is received by the laboratory			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.10 Describe the methods used for numbering and labelling liquid compounds/samples received by the laboratory, and the samples taken during investigations (such as hand written or bar-coded labels) 4.11 Describe the factors which might adversely affect the integrity of the liquid compound/sample material or sample during storage or transit 4.12 Describe the risks and hazards associated with the preparation of the samples, and how these can be minimised 4.13 Describe the methods used for packaging and despatching a liquid compound/sample 4.14 Describe the procedures to be followed, and the transportation to be used, when despatching a liquid compound/ sample			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 13: Assisting with the processing of liquid compounds/samples using manual laboratory techniques

Unit reference number: H/601/2025

Level: 2

Credit value: 6

Guided learning hours: 40

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to assist with the processing of liquid compounds/samples for laboratory investigation, using manual techniques. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. They will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work requirements. This may involve putting liquid compounds/samples in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials and equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory investigations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to processing liquid compounds/samples manually in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after specimen/sample processing activities. The learner will also know how to deal with problems, and how to achieve their work objectives

and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Assist with the processing of liquid compounds/samples using automated laboratory equipment	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment (PPE) when handling liquid compounds/samples 1.3 Use three of the following types of protective clothing and equipment as appropriate for the compounds/samples being handled: – laboratory coat – face mask – gloves – safety glasses – other (please specify)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.4 Carry out all of the following processing operations: – transport liquid compounds/samples around the laboratory, and store them appropriately – select a suitable work area for the manual tests – select and set up the necessary equipment correctly – use the necessary materials for the manual tests – follow the defined procedures, and apply safe working practices and procedures – dispose of waste safely and correctly – ensure that the analyses produced meet the specification for the required quality and accuracy 1.5 Obtain the appropriate equipment and materials for the manual tests required 1.6 Conduct manual laboratory tests on liquid compounds/samples, using the correct procedures and techniques 1.7 Use two of the following materials for the manual tests: – compound samples – reagents – other (please specify)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Assist with the processing of liquid compounds/samples using automated laboratory equipment (continued)	2.1 Use three of the following work areas for the manual tests: – fume cupboard – positive pressure cabinet – laboratory bench – safety cabinet – other (please specify) 2.2 Conduct three of the following manual laboratory tests: – pH of solution – specific gravity – colour of solution – clarity of solution – refractive index – other (please specify) 2.3 Record the results of the manual tests, in accordance with standard operating procedures 2.4 Dispose of waste items from the manual laboratory tests, in accordance with standard operating procedures 2.5 Return equipment and materials that can be used for testing, to the correct storage location			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.6 Record details of the liquid compound/sample processing, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			
3 Know how to assist with the processing of liquid compounds/samples using automated laboratory equipment	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the standard operating procedures, as set down in local laboratory operating manuals 3.4 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.5 Describe the importance of wearing protective clothing, gloves and eye protection when handling compounds/samples			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.6 Describe the laboratory sample reception system 3.7 Describe the types of handling and sorting systems, and the procedures used for compounds/samples undergoing investigation in the laboratory 3.8 Describe the importance of correct identification, and any unique organisation and laboratory numbers 3.9 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.10 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.11 Describe the minimum size/volume of specimen/samples required for the investigations conducted by the laboratory 3.12 Describe the location for each category of specimen/samples that can be received by the laboratory			
4 Know how to assist with the processing of liquid compounds/samples using automated laboratory equipment (continued)	4.1 Describe the types of specimen/samples and specimen/samples container used in the laboratory, and those that are needed for each investigation 4.2 Explain how to assess if a compound/sample is suitable for analysis 4.3 Explain how to use and take a reading from manual test kits used in the laboratory			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.4 Describe the procedures to be followed when dealing with routine and urgent compounds/samples 4.5 Describe the procedure to be followed when liquid compounds/samples do not match up with the investigation request forms 4.6 Describe the procedure to be followed when a broken or leaking sample is identified in the laboratory 4.7 Describe the procedure to be followed when a high risk sample is received by the laboratory 4.8 Describe the methods used for numbering and labelling compounds/samples received by the laboratory, and the samples taken during investigations 4.9 Describe the factors which might adversely affect the integrity of the sample during storage or transit 4.10 Describe the risks and hazards associated with the preparation of the samples, and how these can be minimised 4.11 Describe the methods used for packaging and despatching liquid compounds/samples 4.12 Describe the procedures to be followed and the transportation to be used when despatching liquid compounds/samples			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 14: Accessing, registering and inputting batch/sample data in a LIMS under supervision

Unit reference number: K/601/2026

Level: 2

Credit value: 6

Guided learning hours: 34

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to access, register and input batch/sample data in a Laboratory Information Management System. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. They will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work requirements. This may involve putting processed paperwork in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials or equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory investigations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to accessing, registering and inputting data into a batch/sample records system in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after work on the batch/sample records system. The learner will also know how to deal with problems, and how to achieve their work objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Access, register and input batch/sample data in a LIMS under supervision	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Use correct passwords to access the relevant laboratory databases, and maintain the security and integrity of information 1.3 Use correct search procedures to confirm that batch demographic data on samples received are correct with existing data on the laboratory record system 1.4 Follow the correct protocols for registering new batch/sample data onto the Laboratory Information Management System (LIMS) 1.5 Select the correct laboratory data files, and accurately input batch details with the requested tests for each sample 1.6 Access and input batch/sample data for all of the following: – batch number – organisation number – laboratory number – laboratory test being done – details for tracking any third party testing – other (please specify)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.7 Establish data requirements for six of the following: – sample description – date of sample – batch source – LIMS number – details of the batches/samples sent and received – client sending batches/samples – client's location – destination(s) for results			
2 Access, register and input batch/sample data in a LIMS under supervision (continued)	2.1 Complete two of the following department batch/sample identification activities: – writing codes on the batch/sample – adding barcodes to the batch/sample – checking batch/sample codes against LIMS database – scanning barcodes and checking LIMS database 2.2 Resolve the problems that arise when the required batch/sample information and data cannot be found or matched			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.3 Resolve two of the following data problems associated with batches/samples: – incorrect labelling – poor/unclear labelling – damaged/missing labelling 2.4 Perform these tasks in a timely manner, compatible with the laboratory schedules. 2.5 Request help from appropriate people when you are unable to resolve problems with mismatched and incomplete batch/sample details 2.6 Communicate laboratory information to authorised people, in accordance with departmental and organisational procedures 2.7 Record details of work done, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Know how to access, register and input batch/sample data in a LIMS under supervision	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.4 Describe the standard operating procedures, as set down in the local laboratory operating manuals 3.5 Describe the data security requirements for different computer applications, and the accessing and storage of data 3.6 Explain how to access and store data, in accordance with standard operating procedures and organisational practices 3.7 Explain why it is important to maintain accurate batch and department records for samples 3.8 Describe the policies and procedures for the accurate registration of new batches/samples on the Laboratory Information Management System (LIMS)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.9 Describe the specific safety precautions to be taken when working with computer systems (to include such things as safety guidance relating to the use of visual display unit (VDU) equipment and workstation environment (such as lighting, seating, positioning of equipment), repetitive strain injury (RSI); the dangers of trailing leads and cables; how to spot faulty or dangerous electrical leads, plugs and connections) 3.10 Explain why it is important to maintain good housekeeping arrangements (such as putting disks, manuals and unwanted items of equipment into safe storage; leaving the work area in a safe and tidy condition)			
4 Know how to access, register and input batch/sample data in a LIMS under supervision (continued)	4.1 Describe the importance of correct identification, and any unique organisation and laboratory numbers 4.2 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 4.3 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve. 4.4 Describe the basic set-up and operation of the laboratory records system, and the peripheral devices that are used (such as mouse, keyboard, VDU, printer and barcode reader)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.5 Describe the methods used for numbering and labelling liquid compounds/samples received by the laboratory, and the samples taken during investigations (such as hand written or barcoded labels) 4.6 Describe the correct startup and shutdown procedures to be used for the computer system 4.7 Explain how to access the specific computer Laboratory Information Management System (LIMS) database to be used, and the use of software manuals and related documents to aid efficient operation of the relevant laboratory records system 4.8 Explain how to deal with system problems (such as error messages received, peripherals which do not respond as expected, obvious faults with the equipment or connecting leads) 4.9 Explain how to communicate effectively, and how to identify key information when recording and forwarding messages accurately 4.10 Describe the test codes, coded comments, requestor and location codes, and batch/sample comment codes required to accurately input and request batch/sample and laboratory data, appropriate to their area of work			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 15: Assisting with the preparation of solutions for laboratory use

Unit reference number: M/601/2027

Level: 2

Credit value: 9

Guided learning hours: 51

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to assist with preparation of solutions for laboratory investigations. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. They will be required to work to the relevant standard operation procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work requirements. This may involve putting processed paperwork in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory investigations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to the preparation of solutions in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after solution preparation activities. The learner will also know how to deal with problems, and how to achieve their work objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Assist with the preparation of solutions for laboratory use	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment (PPE) when handling solutions 1.3 Use three of the following types of protective clothing and equipment during the preparation of solutions: – laboratory coat – face mask – gloves – safety glasses – other (please specify) 1.4 Confirm that equipment and materials are fit for purpose			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.5 Confirm that all of the following equipment and instruments are fit for purpose: – weighing/balance equipment – pipettes – magnetic stirrer – measuring cylinders – volumetric flasks – pH meter – mixers – hotplate 1.6 Correctly measure the mass and volume of materials, as set down in laboratory instructions 1.7 Measure mass and volume, with all of the following equipment: – laboratory electronic weighing equipment – volumetric equipment – laboratory balance and weights – containment equipment 1.8 Mix materials, in the correct order and at the temperature set down in laboratory instructions			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Assist with the preparation of solutions for laboratory use (continued)	2.1 Correctly measure and mix both of the following materials: – solids – liquids 2.2 Transfer the solution to the required container, and make up to the volume specified in laboratory instructions 2.3 Measure the pH of made-up solutions accurately, and label the containers correctly 2.4 Accurately label storage containers of made-up solution with all of the following information: – batch numbers – expiry dates – volumes – safety information – concentration 2.5 Store made-up solutions in the correct storage locations 2.6 Dispose of waste, as specified in laboratory instructions 2.7 Communicate the required information to authorised people, in accordance with departmental and organisational procedures.			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.8 Record details of the preparation work done, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			
3 Know how to assist with the preparation of solutions for laboratory use	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace. 3.4 Describe the standard operating procedures, as set down in the local laboratory operating manuals 3.5 Describe the importance of wearing protective clothing, gloves and eye protection when handling solutions			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.6 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.7 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve. 3.8 Explain why it is important to maintain accurate laboratory records 3.9 Describe the meaning of the various notations used in the laboratory for weights and volumes 3.10 Describe the types and range of materials that have to be measured in the laboratory 3.11 Explain why it is important that materials are accurately measured 3.12 Describe the potential errors or mistakes that can be made in measuring materials			
4 Know how to assist with the preparation of solutions for laboratory use (continued)	4.1 Explain how to use weighing/balance and measuring equipment correctly 4.2 Describe the range of volumes and masses of materials that are required for laboratory use 4.3 Describe the types of solution that have to be prepared in the laboratory 4.4 Describe the equipment that is needed for preparing solutions, and how to use it			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.5 Explain why it is important to add materials together in the correct sequence to produce laboratory solutions 4.6 Describe the range of temperatures at which specific solutions must be prepared 4.7 Explain why it is important that solid materials are completely dissolved in a solution 4.8 Explain how to make up solutions from dry powders 4.9 Explain how to use graduated volumetric containers 4.10 Explain how to label solutions correctly 4.11 Explain where and how to store solutions correctly 4.12 Explain how to dispose of waste safely, in accordance with standard operating procedures			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 16: Measuring, weighing and preparing compounds and solutions for laboratory use

Unit reference number: H/601/8195

Level: 3

Credit value: 16

Guided learning hours: 66

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to measure, weigh and prepare compounds and solutions for laboratory investigations. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. The learner will be required to work to the relevant standard operating procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP). The learner will also be required to present records and details of their laboratory work to the appropriate people.

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work. This may involve putting processed paperwork in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials and equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the measuring, weighing and preparations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve or that are outside their permitted authority, to the relevant people. The learner will work with a minimum of supervision, either on their own or as part of a team, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to measuring, weighing and preparing compounds and solutions in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after the measuring, weighing and preparation activities. The learner will also know how to deal with problems, and how to

achieve their work objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Measure, weigh and prepare compounds and solutions for laboratory use	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment (PPE) when handling materials 1.3 Use three of the following types of protective clothing and equipment: – laboratory coat – face mask – gloves – safety glasses – other (please specify) 1.4 Use laboratory scales for accurately weighing out materials, using metric/imperial measures 1.5 Carry out weighing activities using balances (scales), using two of the following accuracies: – grams – milligrams – micrograms			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.6 Measure out aliquots of solutions, using four of the following: – automated pipettes – graduated/bulb pipettes – syringes – graduated cylinders/beakers/tubes – burettes – volumetric flasks – other (please specify) 1.7 Accurately measure pH and conductivity of solutions in the laboratory, using correctly calibrated meters 1.8 Measure out aliquots of liquids into tubes and microtrays for laboratory use and analysis			
2 Measure, weigh and prepare compounds and solutions for laboratory use (continued)	2.1 Measure liquids and solids for laboratory use and analysis 2.2 Measure pH and/or conductivity, using two of the following: – handheld pH meter – bench top pH meter – combined pH/conductivity meter			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	– conductivity meter – other (please specify) 2.3 Calibrate or check the calibration for two of the following: – pH meter – balance – conductivity meter – pipettes – other(please specify) 2.4 Calculate the concentrations of solutions, the amounts and volumes required, using four of the following: – moles per litre – grams per litre – parts per million – mass percent – other (please specify) 2.5 Make up known volumes of solutions to a specified concentration, using both of the following: – by measuring and dissolving the correct amount of solute in the correct volume of diluent/solvent – by dilution from a concentrated stock solution			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.6 Weigh and prepare three of the following types of compound or solution: – powders/granulations that do not readily lose or gain weight (moisture or solvent) – solids that readily lose or gain weight (moisture or solvent) – liquid samples (by difference) – liquid samples (direct) 2.7 Communicate the required information about the work done, to authorised people, in accordance with departmental and organisational procedures. 2.8 Record details of work done, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report (e.g. laboratory notebook) – specific company documentation – computer-based record – electronic mail			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Know how to measure, weigh and prepare compounds and solutions for laboratory use	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.4 Describe the importance of wearing protective clothing, gloves and eye protection when handling specimens/samples 3.5 Describe the importance of correct identification, and any unique organisational or laboratory numbers 3.6 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.7 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.8 Explain how to calculate mass/mole calculations in metric and/or imperial measures			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.9 Explain how to select the appropriate balance and scale for less than 100mg, 100mg to 5g, and 5g and above 3.10 Explain how to check that a pipette is clean, dry, free of chips and ready for use			
4 Know how to measure, weigh and prepare compounds and solutions for laboratory use (continued)	4.1 Explain how to check the calibration on a pipette 4.2 Explain how to calibrate and check the calibration on a pH meter 4.3 Explain how to calibrate and check the calibration on a balance 4.4 Explain how to calibrate and check the calibration on a conductivity meter 4.5 Explain how to measure and weigh solids and liquids for laboratory use 4.6 Explain how to convert between different units of concentration (such as moles/litre, grams/litre, percent mass per volume and parts per million) 4.7 Explain how to calculate dilution factors and dilution volumes to make solutions from concentrated stock solutions			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.8 Describe the pH scale as a logarithmic scale for the measurement of the acidity of aqueous solutions, and the importance of pH to biological systems and processes 4.9 Explain how to choose the appropriate measuring equipment for the scale, accuracy and precision required for the task 4.10 Explain how to clean and maintain the pipettes, balances, pH meter probes and conductivity meter probes			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 17: Assisting with the processing of diagnostic cytology specimens in the laboratory

Unit reference number: T/601/2028

Level: 2

Credit value: 3

Guided learning hours: 17

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to assist with the processing of diagnostic cytology specimens/samples for laboratory investigations. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. They will be required to work to the relevant standard operating procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work. This may involve putting cytology specimens/samples in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials or equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory processing undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to processing diagnostic cytology specimens/samples manually in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after specimen/sample processing activities. The learner will also know how to deal with problems, and how to achieve their

work objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Assist with the processing of diagnostic cytology specimens in the laboratory	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment (PPE) when handling specimens/samples 1.3 Use three of the following types of protective clothing and equipment: – laboratory coat – face mask – gloves – safety glasses – other (please specify)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.4 Carry out all of the following processing operations: – transport liquid specimens/samples around the laboratory, and store them appropriately – select a suitable work area for the specimen/sample processing – select and set up the necessary equipment correctly – use the necessary materials for the specimen/sample processing – sort and stain the slide preparations – follow and apply safe working practices and procedures – dispose of waste safely and correctly – produce slide preparations to the required quality and accuracy – place the slide preparations in the appropriate location for microscopic analysis – store slide preparations in the correct location following analysis			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.5 Use three of the following for the specimen/sample preparation: – clinical specimens – reagents – microscope slides – filters for cell concentration – other (please specify) 1.6 Assist with the preparation of three of the following specimen/sample types: – urine – semen – fine needle aspirates – pleural/ascitic fluids – sputum – synovial fluid – bronchial aspirate/lavage – endoscopic brush sample – other (please specify)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.7 Take appropriate action for unsuitable specimens/samples in all of the following situations: – insufficient volume – incorrect container – incorrect labelling – incorrect sample – incorrect storage			
2 Assist with the processing of diagnostic cytology specimens in the laboratory (continued)	2.1 Prepare samples and slides in a suitable work area, with the appropriate equipment and materials 2.2 Store the prepared slides in the correct location for screening 2.3 Return the equipment and work area to the correct condition following specimen/sample preparation 2.4 Archive slides following analysis and store sample remains appropriately 2.5 Retrieve archived samples and slides, and return to storage when required 2.6 Communicate the required information on laboratory work done, to authorised people, in accordance with departmental and organisational procedures accordance with standard operating procedures			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.7 Record details of the preparation work done, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			
3 Know how to assist with the processing of diagnostic cytology specimens in the laboratory	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the standard operating procedures, as set down in local laboratory operating manuals 3.4 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.5 Describe the importance of wearing protective clothing, gloves and eye protection when handling specimens/samples			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.6 Describe the laboratory specimen/sample reception system 3.7 Describe the types of handling and sorting system, and the procedures used for specimens/samples undergoing investigation in the laboratory 3.8 Describe the importance of correct identification, and any unique organisational or laboratory numbers 3.9 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.10 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.11 Describe the minimum size/volume of specimens/samples required for the investigations conducted by the laboratory 3.12 Describe the types of specimen/sample and specimen/sample container used in the laboratory, and those that are needed for each investigation			
4 Know how to assist with the processing of diagnostic cytology specimens in the laboratory (continued)	4.1 Explain how to assess if a specimen/sample is suitable for analysis 4.2 Describe the procedures to be followed when dealing with routine and urgent specimens/samples			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.3 Describe the procedure to be followed when specimens/samples do not match up with the investigation request forms 4.4 Describe the procedure to be followed when a broken or leaking specimen/sample is identified in the laboratory 4.5 Describe the procedure to be followed when a high risk specimen/sample is received by the laboratory 4.6 Describe the methods used for numbering and labelling specimens/samples received by the laboratory, and the samples taken during processing/investigations 4.7 Describe the factors which might adversely affect the integrity of the specimen/sample during storage or transit 4.8 Describe the risks and hazards associated with the preparation of the specimens/samples, and how these can be minimised 4.9 Describe the methods used for packaging and despatching of specimens/samples 4.10 Describe the procedures to be followed, and the transportation to be used, when despatching specimens/samples 4.11 Describe the procedures to be followed for the storage and disposal of specimens/samples			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.12 Describe the procedures to be followed for the long term storage of samples/slides taken during processing/ investigations			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 18: Assisting with the routine maintenance, cleaning, disinfecting and calibration of laboratory equipment

Unit reference number: A/601/2029

Level: 2

Credit value: 6

Guided learning hours: 34

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to assist with the routine maintenance, disinfecting, cleaning and calibration of equipment used for laboratory investigations. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. They will be required to work to the relevant standard operating procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work. This may involve putting processed paperwork in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials and equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory maintenance, disinfecting and cleaning undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to the maintenance, disinfecting and cleaning of equipment in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after the maintenance, disinfecting and cleaning

activities. The learner will also know how to deal with problems, and how to achieve their work objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Assist with the routine maintenance, cleaning, disinfecting and calibration of laboratory equipment	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment (PPE) when handling specimens/samples 1.3 Use three of the following types of protective clothing and equipment: – laboratory coat – face mask – gloves – safety glasses – other (please specify)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.4 Carry out all of the following operations: – adhere to procedures or systems in place for risk assessment, COSHH, personal protective equipment and other relevant safety regulations – ensure the safe isolation of laboratory equipment (such as electrical and fluids supply) – follow manufacturers' instructions, drawings and procedures for routine maintenance – check that the tools and equipment used are in a safe and usable condition – ensure that the laboratory equipment is kept free from foreign objects, dirt or other contamination – carry out disinfection of laboratory equipment, in accordance with standard operating procedures – carry out auditory and visual checks on the operation of laboratory equipment – confirm that the laboratory equipment is calibrated correctly and is ready for use – return all tools, equipment and waste to the correct locations on completion of the maintenance activities – ensure that accurate, complete and legible records are kept of the maintenance activities			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.6 Confirm that the laboratory equipment is in a safe and usable condition, according to established procedures 1.7 Identify and report any laboratory equipment faults accurately to the team leader 1.8 Carry out maintenance, disinfection and cleaning on five of the following types of equipment: – weighing and measuring equipment – water purification system – pH meter – temperature-controlled apparatus – centrifuges – laboratory analyser/testing equipment – slide staining machine – tissue processor – culture media preparator – safety cabinet/fume cupboard – other (please specify)			
2 Assist with the routine maintenance, cleaning, disinfecting and calibration of laboratory equipment (continued)	2.1 Perform routine maintenance in accordance with manufacturers' instructions and relevant health and safety legislation 2.2 Adhere to the set-down hygiene regulations during the cleaning and disinfecting of laboratory equipment			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.3 Confirm the correct operation and calibration of the laboratory equipment, in accordance with established procedures 2.4 Record details of maintenance and calibration, according to departmental procedures 2.5 Test the equipment to confirm that it functions correctly, and record the equipment status 2.6 Communicate the work done, to authorised people, in accordance with departmental and organisational procedures 2.7 Record details of the preparation work done, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			
3 Know how to assist with the routine maintenance, cleaning, disinfecting and calibration of laboratory equipment	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.3 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.4 Describe the importance of wearing protective clothing, gloves and eye protection when handling specimens/samples 3.5 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.6 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.7 Describe the manufacturers' specifications and recommendations for the maintenance and calibration of the laboratory equipment 3.8 Describe the methods used for visually checking, and cleaning, of laboratory equipment			
4 Know how to assist with the routine maintenance, cleaning, disinfecting and calibration of laboratory equipment (continued)	4.1 Describe the different types, condition and quantities of consumables required for the range of laboratory equipment maintained 4.2 Describe the methods for maintaining personal health and safety during the maintenance of equipment 4.3 Describe the methods for maintaining personal hygiene			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.4 Describe the organisational and departmental infection control policy, as applied to maintenance activities in the laboratory 4.5 Explain how to check that the laboratory equipment is working correctly and in accordance with the manufacturer's specifications 4.6 Describe the common types of equipment fault, and how these must be dealt with 4.7 Describe the department or person to whom equipment faults should be reported 4.8 Describe the methods used for keeping records of the maintenance, cleaning, disinfection and calibration of laboratory equipment, and why this is important			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 19: Preparing culture media and solutions for laboratory use

Unit reference number: M/601/2030

Level: 2

Credit value: 3

Guided learning hours: 18

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to assist with preparing culture media and solutions for laboratory use. Prior to undertaking the laboratory activity, and in accordance with approved procedures and practices, the learner will be required to carry out all the necessary preparations, within the scope of their responsibility. This may include preparing the work area and ensuring that it is in a safe condition to carry out the intended activities, and ensuring that any materials, equipment or other resources required are available and are in a safe and usable condition. They will be required to work to the relevant standard operating procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

On completion of the laboratory activity, the learner will be required to return their immediate work area to an acceptable condition before undertaking further work. This may involve putting processed paperwork in the correct location, returning and/or storing any materials and equipment in the correct area, identifying any waste and arranging for its disposal, and reporting any defects or damage to the materials and equipment used.

The learner's responsibilities will require them to comply with organisational policy and procedures for the laboratory preparations undertaken, and to report any problems with the activities, materials or equipment that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will work under a high level of supervision, whilst taking responsibility for their own actions and for the quality and accuracy of the work that they carry out.

The learner's underpinning knowledge will provide a good understanding of their work, and will provide an informed approach to the preparation of culture media and solutions in a laboratory environment. The learner will understand the importance of doing this work efficiently and effectively, and will know what to consider when preparing and tidying up the work area before and after the preparation activities. The learner will also know how to deal with problems, and how to achieve their work objectives and targets, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Prepare culture media and solutions for laboratory use	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Wear the appropriate personal protection equipment (PPE) when handling specimens/samples 1.3 Use three of the following types of protective clothing and equipment, as appropriate for the media/solution being handled: – laboratory coat – face mask – gloves – safety glasses – other (please specify) 1.4 Maintain stocks of media, dry powder and other reagents for the preparation of culture media and solutions			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.5 Carry out all of the following operations in the preparation of culture media/solutions: – store dry powder media and other reagents correctly – correctly reconstitute dry powder media – fortify media with appropriate reagents, according to formulae – maintain, set up and shut down media preparations according to SOPs and manufacturers' instructions – carry out sterility checks on prepared culture media/solutions – carry out quality control checks on prepared culture media/solutions 1.6 Make up culture media/solutions for use, according to formulae			
2 Prepare culture media and solutions for laboratory use (continued)	2.1 Use equipment according to standard operating procedures (SOPs) and manufacturers' instructions 2.2 Ensure that prepared culture media/solutions are sterile and fit for purpose 2.3 Take appropriate action when dealing with media components in all of the following situations: – sensitive to light – heat labile – heat stable			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.4 Communicate the required information about prepared culture media/solutions to authorised people, in accordance with departmental and organisational procedures 2.5 Record details of the preparation work done, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			
3 Know how to prepare culture media and solutions for laboratory use	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.4 Describe the importance of wearing protective clothing, gloves and eye protection when handling specimens/samples 3.5 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.6 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.7 Describe the minimum batch size/volume of culture media/solutions required for the investigations being conducted by the laboratory			
4 Know how to prepare culture media and solutions for laboratory use (continued)	4.1 Describe the location for each type of culture media/solution that can be used by the laboratory 4.2 Describe the storage conditions for the various reagents and components of culture media/solutions 4.3 Describe the stock control and rotation of culture media/solutions 4.4 Describe the correct sterilising requirements of the different types of culture media/solutions 4.5 Describe the health and safety risks involved with media preparations and pressurised vessels 4.6 Describe the factors which might adversely affect the integrity of the culture media/solution during storage or transit			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.7 Describe the risks and hazards associated with the preparation of the culture media/solutions, and how these can be minimised			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 20: Following aseptic procedures in the laboratory environment

Unit reference number: T/601/2031

Level: 2

Credit value: 9

Guided learning hours: 51

Unit summary

This unit covers the skills and knowledge needed to prove the competences required to identify and follow aseptic or clean room protocols in the laboratory, in accordance with approved procedures and practices. Prior to undertaking the laboratory activity, the learner will be required to carry out all the necessary preparations within the scope of their responsibility. The learner will be required to work to the relevant standard operating procedures, legislation and organisational policy, and to follow Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

The learner's responsibilities will require them to comply with any policies of their organisation in respect of preparing for work and working in aseptic or clean rooms and clean work areas. The learner will be required to report any problems with clean room procedures that they cannot personally resolve, or that are outside their permitted authority, to the relevant people. The learner will be expected to work to verbal/written instructions and standard operating procedures, with a high level of supervision, taking personal responsibility for their own actions and for the quality and accuracy of the work that they carry out. On completion of laboratory activities, the learner will be expected to discard personal protective equipment in the correct location, and in accordance with established policies and procedures.

The learner's underpinning knowledge will be sufficient to provide a sound basis for their work, and will enable them to adopt an informed approach to preparing for and working in aseptic or clean rooms. The learner will have an understanding of the attribute and behaviours required for clean room working, in adequate depth to provide a sound background for carrying out the laboratory activities to the required specification.

The learner will understand the safety precautions required when carrying out laboratory activities. The learner will be required to demonstrate safe working practices throughout, and will understand the responsibility they owe to themselves and others in the workplace.

Assessment requirements

Assessment requirements are set down in Annexe C: Assessment strategy.

Assessment methodology

This unit is assessed in the workplace. Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Follow aseptic procedures in the laboratory environment	1.1 Ensure that their work is carried out in accordance with standard operating procedures 1.2 Dress in the appropriate personal protection equipment (PPE) required for the clean room or clean work area environment, in accordance with the correct procedure 1.3 Use three of the following types of personal protective equipment for clean room working: – body suit – face mask – gloves – respirator – air supply – other (please specify)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.4 Prior to entering clean room, carry out all of the following: – use the correct issue of job instructions and specifications – follow risk assessment procedures and COSHH regulations – ensure that they are appropriately dressed and uncontaminated before entering the area – carry out their activities in line with organisational procedures – store accurate records of their activities, in accordance with appropriate procedures 1.5 Carry out visual quality checks on their personal protection equipment prior to entering the working environment			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.6 Satisfy all the following company clean room/clean work area requirements: – use appropriate clothing/personal protective equipment (PPE) (such as suits, gowns, coats, hoods, hats, caps, helmets, other headwear, boots, overshoes, other forms of footwear, safety goggles, visors, gloves) – comply with hazard protection (such as breathing apparatus, gloves, apron/smock, other forms of PPE or clothing required) – deal appropriately with damaged or dirty clothing/PPE (such as reporting damage, replacement, safe removal and cleaning or disposal, subjected to acid/hazardous substance spills, damaged/dirty labelling) – store specified clothing/PPE correctly when not in use – ensure the proper cleaning/laundering/maintenance of clothing/PPE – dispose of single-use clothing and equipment in the correct location – report any hazards or breaches of protocol 1.7 Follow the correct procedures for entering and exiting the clean room or clean work area			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Follow aseptic procedures in the laboratory environment (continued)	2.1 Use personal protective equipment in one of the following clean room environments: – health/disease screening – biochemical processing – biotechnology processing – drug development – agro-biotech research – other (please specify) 2.2 Follow aseptic techniques in the laboratory 2.3 Identify and follow protocol methods and procedures that satisfy all of the following: – the safety of people – containment/integrity of the specimen/product – containment/integrity of the clean room/work area – appropriate industry standards and protocols 2.4 Remove personal protection equipment on completion of clean room or clean work area activities, and dispose/store in line with the correct procedure 2.5 Communicate the required information about the work done, to authorised people, in accordance with departmental and organisational procedures			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.6 Record details of the work activity, and communicate the details to the appropriate people, using: – verbal report Plus one method from the following: – written or typed report – specific company documentation – computer-based record – electronic mail			
3 Know how to follow aseptic procedures in the laboratory environment	3.1 Describe the health and safety requirements of the area in which they are carrying out the laboratory activities 3.2 Describe the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities 3.3 Describe the principles of Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace 3.4 Describe the importance of wearing protective clothing, gloves and eye protection when handling materials (such as biochemical substances, biological pathogens and/or antigens), and the equipment used to contain and process them			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.5 Describe the manufactured materials and batch process tracking and records system 3.6 Describe the types of handling and sorting system, and the procedures used for materials undergoing processing in the laboratory facilities 3.7 Describe the importance of correct identification, and any unique organisational or laboratory numbers 3.8 Describe the organisational requirements for maintaining the security of the workplace 3.9 Describe the lines of communication and responsibilities in their department, and their links with the rest of the organisation 3.10 Describe the limits of their own authority and to whom they should report if they have problems that they cannot resolve 3.11 Describe the specific safety precautions to be taken when working in a clean room or clean work area environment 3.12 Describe the correct fitting and use of clothing and personal protective equipment that must be worn in a clean room or clean work area (such as for body, hands, eyes, ears, feet, mouth and face)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Know how to follow aseptic procedures in the laboratory environment (continued)	4.1 Describe the hazards associated with working in a clean room or clean work area, with laboratory equipment (such as heat, radiation, chemicals, static electricity, high voltages, trapping points on equipment) 4.2 Explain how to put on clean room clothing and footwear correctly 4.3 Describe the procedures for entering and exiting the clean room or clean work area, and the authority needed to do so 4.4 Describe the classification of the relevant clean room or clean work area, and how this impacts upon you 4.5 Describe the industry standards/classifications for clean rooms and clean work areas 4.6 Describe the company requirements for clothing and personal protective equipment, and the reasons why such clothing and equipment must be used 4.7 Describe the procedures and methods for maintaining issued clothing and personal protective equipment 4.8 Explain how to apply procedures for dealing with damaged or dirty clothing and personal protective equipment 4.9 Explain how to store clothing and personal protective equipment correctly			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.10 Describe the laundering/cleaning/maintenance procedures relating to the issued clothing and personal protective equipment 4.11 Describe the aseptic techniques that are applied and used in the laboratory 4.12 Explain how to dispose correctly of single-use personal protective equipment 4.13 Describe the policy and procedures relating to personal items (such as body lotions, makeup, jewellery, contact lenses, footwear, own clothing)			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Further information

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- Edexcel, BTEC and Pearson Work Based Learning contact details: qualifications.pearson.com/en/support/contact-us.html
- books, software and online resources for UK schools and colleges: www.pearsonschoolsandfecolleges.co.uk

Key publications

- *Adjustments for candidates with disabilities and learning difficulties, Access and Arrangements and Reasonable Adjustments, General and Vocational qualifications* (Joint Council for Qualifications (JCQ))
- *Supplementary guidance for reasonable adjustments and special consideration in vocational internally assessed units* (Pearson)
- *General and Vocational qualifications, Suspected Malpractice in Examination and Assessments: Policies and Procedures* (JCQ)
- *Equality Policy* (Pearson)
- *Recognition of Prior Learning Policy and Process* (Pearson)
- *UK Information Manual* (Pearson)
- Pearson Edexcel NVQs, SVQs and competence-based qualifications – Delivery Requirements and Quality Assurance Guidance (Pearson)

All of these publications are available on our website: qualifications.pearson.com

Further information and publications on the delivery and quality assurance of NVQ/Competence-based qualifications are available at our website on the Delivering BTEC pages. Our publications catalogue lists all the material available to support our qualifications. To access the catalogue and order publications, please go to the resources page of our website.

Useful publications

Related information and publications include:

- *Centre Handbook for Pearson NVQs and Competence-based Qualifications* published annually
- functional skills publications – specifications, tutor support materials and question papers
- *Regulatory Arrangements for the Qualification and Credit Framework* (published by Ofqual, August 2008)
- the current Edexcel publications catalogue and update catalogue.

Pearson publications concerning the Quality Assurance System and the internal and standards verification of vocationally related programmes can be found on the Pearson website.

NB: Some of our publications are priced. There is also a charge for postage and packing. Please check the cost when you order.

How to obtain National Occupational Standards

To obtain the National Occupational Standards for Laboratory Science please go to:

SEMTA
www.semta.org.uk

Professional development and training

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The support we offer focuses on a range of issues including:

- planning for the delivery of a new programme
- planning for assessment and grading
- developing effective assignments
- building your team and teamwork skills
- developing student-centred learning and teaching approaches
- building functional skills into your programme
- building effective and efficient quality assurance systems.

The national programme of training we offer can be viewed on our website (qualifications.pearson.com). You can request customised training through the website or by contacting one of our advisers in the Training from the Pearson team via Customer Services to discuss your training needs.

The training we provide:

- is active
- is designed to be supportive and thought provoking
- builds on best practice
- may be suitable for those seeking evidence for their continuing professional development.

Annexe A: Quality assurance

Key principles of quality assurance

- A centre delivering Pearson qualifications must be an Pearson recognised centre and must have approval for qualifications that it is offering.
- The centre agrees, as part of gaining recognition, to abide by specific terms and conditions relating to the effective delivery and quality assurance of assessment. The centre must abide by these conditions throughout the period of delivery.
- Pearson makes available to approved centres a range of materials and opportunities to exemplify the processes required for effective assessment and provide examples of effective standards. Approved centres must use the guidance on assessment to ensure that staff who are delivering Edexcel qualifications are applying consistent standards.
- An approved centre must follow agreed protocols for: standardisation of assessors; planning, monitoring and recording of assessment processes; internal verification and recording of internal verification processes and dealing with special circumstances, appeals and malpractice.

Quality assurance processes

The approach to quality assured assessment is made through a partnership between a recognised centre and Pearson. Pearson is committed to ensuring that it follows best practice and employs appropriate technology to support quality assurance processes where practicable. The specific arrangements for working with centres will vary. Pearson seeks to ensure that the quality-assurance processes it uses do not inflict undue bureaucratic processes on centres, and works to support them in providing robust quality-assurance processes.

The learning outcomes and assessment criteria in each unit within this specification set out the standard to be achieved by each learner in order to gain each qualification. Pearson operates a quality-assurance process, designed to ensure that these standards are maintained by all assessors and verifiers.

For the purposes of quality assurance, all individual qualifications and units are considered as a whole. Centres offering these qualifications must be committed to ensuring the quality of the units and qualifications they offer, through effective standardisation of assessors and internal verification of assessor decisions. Centre quality assurance and assessment processes are monitored by Pearson.

The Pearson quality-assurance processes will involve:

- gaining centre recognition and qualification approval if a centre is not currently approved to offer Pearson qualifications
- annual visits to centres by Pearson for quality review and development of overarching processes and quality standards. Quality review and development visits will be conducted by an Pearson quality development reviewer
- annual visits by occupationally competent and qualified Pearson Standards Verifiers for sampling of internal verification and assessor decisions for the occupational sector
- the provision of support, advice and guidance towards the achievement of National Occupational Standards.

Centres are required to declare their commitment to ensuring quality and appropriate opportunities for learners that lead to valid and accurate assessment outcomes. In addition, centres will commit to undertaking defined training and online standardisation activities.

Annexe B: Centre certification and registration

Pearson Standards Verifiers will provide support, advice and guidance to centres to achieve Direct Claims Status (DCS). Pearson will maintain the integrity of Pearson NVQs through ensuring that the awarding of these qualifications is secure. Where there are quality issues identified in the delivery of programmes, Pearson will exercise the right to:

- direct centres to take action
- limit or suspend certification
- suspend registration.

The approach of Pearson in such circumstances is to work with the centre to overcome the problems identified. If additional training is required, Pearson will aim to secure the appropriate expertise to provide this.

What are the access arrangements and special considerations for the qualifications in this specification?

Centres are required to recruit learners to Pearson qualifications with integrity.

Appropriate steps should be taken to assess each applicant's potential and a professional judgement should be made about their ability to successfully complete the programme of study and achieve the qualification. This assessment will need to take account of the support available to the learner within the centre during their programme of study and any specific support that might be necessary to allow the learner to access the assessment for the qualification. Centres should consult Pearson's policy on learners with particular requirements.

Pearson's policy on access arrangements and special considerations for Pearson qualifications aims to enhance access to the qualifications for learners with disabilities and other difficulties (as defined by the 2010 Equality Act) without compromising the assessment of skills, knowledge, understanding or competence. Please refer to *Access Arrangements, Reasonable Adjustments and Special Consideration for General and Vocational Qualifications* for further details. qualifications.pearson.com

Annexe C: Assessment requirements/strategy

Introduction

Semta, the Sector Skills Council for the Science Engineering Manufacturing Technologies

Sector, has produced this QCF Unit Assessment Strategy to:

- assist Assessors, Internal Verifiers and External Verifiers
- encourage and promote consistent assessment of NVQ units
- promote cost effective assessment plans

This document also provides definitions for:

- the qualifications and experience required for Assessors and Verifiers
- the assessment environment and notes on simulation/replication.
- access to units

and requirements relating to:

- carrying out assessments
- performance evidence
- assessing knowledge and understanding

The importance and value in which employers and learners place on undertaking NVQ units will provide a key measure of [Semta's] success with this unit assessment strategy. Another key success factor will be [Semta's] partnership with the relevant Awarding Organisations.

Assessor Requirements to Demonstrate Effective Assessment Practice

Assessment must be carried out by competent Assessors that as a minimum must hold the QCF Level 3 Award in Assessing Competence in the Work Environment. Current and operational Assessors that hold units D32 and/or D33 or A1 and/or A2 as appropriate to the assessment being carried out, will not be required to achieve the QCF Level 3 Award as they are still appropriate for the assessment requirements set out in this Unit Assessment Strategy. However, they will be expected to regularly review their skills, knowledge and understanding and where applicable undertake continuing professional development to ensure that they are carrying out workplace assessment to the most up to date National Occupational Standards (NOS)

Assessor Technical Requirements

Assessors must be able to demonstrate that they have verifiable, relevant and sufficient technical competence to evaluate and judge performance and knowledge evidence requirements as set out in the relevant QCF unit learning outcomes and associated assessment criteria.

This will be demonstrated either by holding a relevant technical qualification or by proven industrial experience of the technical areas to be assessed. The assessor's competence must, at the very least, be at the same level as that required of the learner(s) in the units being assessed.

Assessors must also be:

Fully conversant with the Awarding Organisation's assessment recording documentation used for the QCF NVQ units against which the assessments and verification are to be carried out, other relevant documentation and system and procedures to support the QA process.

Verifier Requirements (internal and external)

Internal quality assurance (Internal Verification) must be carried out by competent Verifiers that as a minimum must hold the QCF Level 4 Award in the Internal Quality Assurance of Assessment Processes and Practices. Current and operational Internal Verifiers that hold internal verification units V1 or D34 will not be required to achieve the QCF Level 4 Award as they are still appropriate for the verification requirements set out in this Unit Assessment Strategy. Verifiers must be familiar with, and preferably hold, either the nationally recognised Assessor units D32 and/or D33 or A1 and/or A2 or the QCF Level 3 Award in Assessing Competence in the Work Environment.

External quality assurance (External Verification) must be carried out by competent External Verifiers that as a minimum must hold the QCF Level 4 Award in the External Quality Assurance of Assessment Processes and Practices**.** Current and operational External Verifiers that hold external verification units V2 or D35 will not be required to achieve the QCF Level 4 Award as they are still appropriate for the verification requirements set out in this Unit Assessment Strategy. Verifiers must be familiar with, and preferably hold, either the nationally recognised Assessor units D32 and/or D33 or A1 and/or A2 or the QCF Level 3 Award in Assessing Competence in the Work Environment.

External and Internal Verifiers will be expected to regularly review their skills, knowledge and understanding and where applicable undertake continuing professional development to ensure that they are carrying out workplace Quality Assurance (verification) of Assessment Processes and Practices to the most up to date National Occupational Standards (NOS).

Verifiers, both Internal and External, will also be expected to be fully conversant with the terminology used in the QCF NVQ units against which the assessments and verification are to be carried out, the appropriate Regulatory Body's systems and procedures and the relevant Awarding Organisation's documentation, systems and procedures within which the assessment and verification is taking place.

Specific technical requirements for internal and external verifiers

Internal and external verifiers of this qualification must be able to demonstrate that have verifiable, sufficient and relevant industrial experience, and must have a working knowledge of the processes, techniques and procedures that are used in the relevant sector/occupation.

The tables on the following page show the recommended levels of technical competence for assessors, internal verifiers, and external verifiers.

Technical Requirements for Assessors and Verifiers

Position	Prime activity requirements	Support activity requirements	Technical requirements (see notes)
Assessor	Assessment Skills	IV Systems	Technical competence in the areas covered by the units being assessed
Internal Verifier	Verification Skills	Assessment Knowledge	Technical understanding of the areas covered by the qualifications
External Verifier	Verification skills	Assessment Understanding	Technical awareness of the areas covered by the qualifications

Notes

1 Technical competence is defined here as a combination of practical skills, knowledge, and the ability to apply both of these, in familiar and new situations, within a real working environment.

2 Technical understanding is defined here as having a good understanding of the technical activities being assessed, together with knowledge of relevant Health & Safety implications and requirements of the assessments.

3 Technical awareness is defined here as a general overview of the subject area, sufficient to ensure that assessment and portfolio evidence are reliable, and that relevant Health and Safety requirements have been complied with.

4 The competence required by the assessor, internal verifier and external verifier, in the occupational area being assessed, is likely to exist at three levels as indicated by the shaded zones in the following table.

Technical Competence / Required by:	An ability to discuss the general principles of the competences being assessed	An ability to describe the practical aspects of the competence being assessed	An ability to demonstrate the practical competences being assessed
Assessor			
Internal Verifier			
External Verifier			

Assessment Environment

The evidence put forward for this unit can only be regarded valid, reliable, sufficient and authentic if achieved and obtained in the working environment and be clearly attributable to the learner. However, in certain circumstances, simulation/replication of work activities may be acceptable.

- The use of high quality, realistic simulations, which impose pressures which are consistent with workplace expectations, should only be used in relation to the assessment of the following:-
  - rare or dangerous occurrences, such as those associated with health, safety and the environment issues, emergency scenarios and rare operations at work;
  - the response to faults and problems for which no opportunity has presented for the use of naturally occurring workplace evidence of learners competence;
  - aspects of working relationships and communications for which no opportunity has presented for the use of naturally occurring workplace evidence of learner's competence.
- Simulations will require prior approval from the specific Awarding Organisation and should be designed in relation to the following parameters: -
  - the environment in which simulations take place must be designed to match the characteristics of the working environment;
  - simulations which are designed to assess competence in dealing with emergencies, accidents and incidents must be verified as complying with relevant health, safety and environmental legislation by a competent health and safety/environmental control officer before being used;
  - simulated activities should place learners under the same pressures of time, access to resources and access to information as would be expected if the activity was real;
  - simulated activities should require learners to demonstrate their competence using real plant and equipment;

- simulated activities which require interaction with colleagues and contacts should require the learner to use the communication media that would be expected at the workplace;
- for health and safety reason simulations need not involve the use of genuine substances/materials. Any simulations which require the learner to handle or otherwise deal with materials substances/should ensure that the substitute take the same form as in the workplace

Simulations/replications should be designed in relation to a realistic work environment, having an acceptable level of appropriate equipment and operating to Good Laboratory Practice (GLP)/Good Control Laboratory Practice (GCLP) and/or Good Manufacturing Practice (GMP)/Current Good Manufacturing Practice (CGMP) standards. It may involve the use of inert substitutes for dangerous compounds or microbiological materials.

Access to Assessment

There are no entry qualifications or age limits required by learners to undertake the NVQ units unless this is a legal requirement of the process or the environment. Assessment is open to any learner who has the potential to achieve the assessment criteria set out in the units.

Aids or appliances, which are designed to alleviate disability, may be used during assessment, providing they do not compromise the standard required.

Carrying Out Assessment

The NVQ units were specifically developed to cover a wide range of activities. The evidence produced for the units will, therefore, depend on the learners choice of "bulleted items" listed in the unit assessment criteria.

Where the assessment criteria gives a choice of bulleted items (for example 'any three from five'), assessors should note that learners do not need to provide evidence of the other items to complete the unit (in this example, two) items, particularly where these additional items may relate to other activities or methods that are not part of the learners normal workplace activity or area of expertise.

Minimum Performance Evidence Requirements

Performance evidence must be the main form of evidence gathered. In order to demonstrate consistent, competent performance for a unit, performance evidence must be provided, and must be sufficient to show that the performance requirements of the unit have been carried out to the prescribed standards. It is possible that some of the scope items may be covered more than once. The assessor and learner need to devise an assessment plan to ensure that performance evidence is sufficient to cover all the specified scope items and which maximises the opportunities to gather evidence. Where applicable, performance evidence maybe used for more than one unit.

The most effective way of assessing competence, especially for the performance statements in relation to scope items, is through direct

observation of the learner. Assessors must make sure that the evidence provided reflects the learner's competence and not just the achievement of a training programme.

Evidence that has been produced from team activities, for example, cleaning equipment, is only valid when it clearly relates to the learners specific and individual contribution to the activity, and not to the general outcome(s).

Each example of performance evidence will often contain features that apply to more than one unit, and can be used as evidence in any unit where appropriate.

Performance evidence must be a combination of:

- outputs of the learner's work, such as items that have been processed or worked on, and documents produced as part of a work activity

together with:

- evidence of the way the learner carried out the activities such as witness testimonies, assessor observations or authenticated learner reports, records or photographs of the work/activity carried out, etc.

Competent performance is more than just carrying out a series of individual set tasks. Many of the units contain statements that require the learner to provide evidence that proves they are capable of combining the various features and techniques. Where this is the case, separate fragments of evidence would not provide this combination of features and techniques and will not, therefore, be acceptable as demonstrating competent performance.

If there is any doubt as to what constitutes valid, authentic and reliable evidence, the internal and/or external verifier should be consulted.

Assessing knowledge and understanding

Knowledge and understanding are key components of competent performance, but it is unlikely that performance evidence alone will provide enough evidence in this area. Where the learner's knowledge and understanding (and the handling of contingency situations) is not apparent from performance evidence, it must be assessed by other means and be supported by suitable evidence.

Knowledge and understanding can be demonstrated in a number of different ways. Semta expects oral questioning and practical demonstrations to be used, as these are considered the most appropriate for these units. Assessors should ask enough questions to make sure that the learner has an appropriate level of knowledge and understanding, as required by the unit.

Awarding Organisations may choose other methods, which must be supported by a suitable rationale

Evidence of knowledge and understanding will not be required for those bulleted items in the assessment criteria that have not been selected by the learner.

The achievement of the specific knowledge and understanding requirements of the units cannot simply be inferred by the results of tests or assignments

from other units, qualifications or training programmes. Where evidence is submitted from these sources, the assessor must, as with any assessment, make sure the evidence is valid, reliable, authentic, directly attributable to the learner, and meets the full knowledge and understanding requirements of the unit.

Where oral questioning is used the assessor must retain a record of the questions asked, together with the learner's answers.

Awarding Organisations may choose other methods, which must be supported by a suitable rationale.

Witness testimony

Where observation is used to obtain performance evidence, this must be carried out against the unit assessment criteria. Best practice would require that such observation is carried out by a qualified Assessor. If this is not practicable, then alternative sources of evidence may be used.

For example, the observation may be carried out against the assessment criteria by someone else that is in close contact with the learner. This could be a team leader, supervisor, mentor or line manager who may be regarded as a suitable witness to the learner's competency. However, the witness must be technically competent in the process or skills that they are providing testimony for, to at least the same level of expertise as that required of the learner. It will be the responsibility of the assessor to make sure that any witness testimonies accepted as evidence of the learner's competency are reliable, auditable and technically valid.

Quality Control of Assessment

General

There are two major points where an Awarding Organisation interacts with the Centre in relation to the External Quality Control of Assessment and these are:

- Approval - when a Centre take on new qualifications/units, the Awarding Organisation, normally through an External Verifier (EV) ensures that the Centre is suitably equipped and prepared to deliver the new units/qualification
- Monitoring - throughout the ongoing delivery of the qualification/units the Awarding Organisation, through EV monitoring and other mechanisms must maintain the quality and consistency of assessment of the units/qualification

Approval

In granting Approval, the Awarding Organisation, normally through its External Verifiers (EV) must ensure that the prospective Centre:

- Meets the requirements of the Qualification Regulator
- Has sufficient and appropriate physical and staff resources
- Meets relevant health and safety and/or equality and access requirements

- Has a robust plan for the delivery of the qualification/units

The Awarding Organisation may visit the Centre to view evidence or may undertake this via other means.

The Awarding Organisation must have a clear rationale for the method(s) deployed

Monitoring

The Awarding Organisation, through EV monitoring and other mechanisms must ensure:

- that a strategy is developed and deployed for the ongoing Awarding Organisation monitoring of the Centre. This strategy must be based on an active risk assessment of the Centre. In particular the strategy must identify the learner's, assessors and Internal Verifier sampling strategy to be deployed and the rationale behind this
- that the Centre's internal quality assurance processes are effective in learner's assessment
- that sanctions are applied to a Centre where necessary and that corrective actions are taken by the Centre and monitored by the Awarding Organisation/EV
- that reviews of Awarding Organisation's external auditing arrangements are undertaken

Awarding Organisations are required to provide to SEMTA, on request, details of the strategies, rationales and reviews detailed above.

Notes:

a) It is recognised that some Awarding Bodies provide supplementary guidance and documentation to centres to support the quality of assessment and verification practice of N/SVQs.

Annexe D: Additional requirement for qualifications that use the term 'NVQ' in a QCF qualification title

Please go to www.ofqual.gov.uk to access the document *'Operating rules for using the term 'NVQ' in a QCF qualification title'*.

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