# QUALIFICATION HANDBOOK

## SVQ in Laboratory and Associated Technical Activities (Industrial Science) at SCQF Level 6

## Reference GP53 46

## SVQ in Laboratory and Associated Technical Activities (Industrial Science) at SCQF Level 7

## Reference GP54 47

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# 1. Introduction

1.1 These qualifications have been developed to seek to ensure that those in employment as Laboratory Assistants; Technician trainees; Trainee Scientists; Technicians; Scientists; or Technologists within Life Sciences related operations meet minimum requirements of technical competence and health and safety.

1.2 These requirements have been specified in the National Occupational Standards (NOS) developed by the Sector Skills Council (SSC) SEMTA. These NOS and the associated qualification structures were revised by Cogent Skills in 2108. These qualifications are based upon those NOS and incorporates the Qualification Structure approved by SQA Accreditation.

1.3 Successful completion of these qualifications will allow candidates to show they have sufficient knowledge, understanding and skills to demonstrate competence in laboratory and associated technical activities with regards to industrial science.

1.4 This Handbook provides the information required to assist approved centres in delivering these qualifications and preparing candidates for assessment. This includes some template forms that may be used / adapted by centres. Note that you are able to create your own, or use existing forms for this purpose. Alternatively QFI makes its E-Portfolio system available to its approved centres.

This document should be read in conjunction with QFI's policies and the Centre Handbook.

# 2. Qualification objective(s)

2.1 These qualifications are suitable for apprentices / those already in employment that wish to develop their knowledge and skills in in laboratory and associated technical activities with regards to industrial science.

2.2 In order to do this, the qualifications cover technical and health and safety standards, and support roles relating to in laboratory and associated technical activities with regards to industrial science, e.g. Laboratory Assistants; Technician trainees; Trainee Scientists; Technicians; Scientists; or Technologists.

## 3. Progression

3.1 These qualifications are primarily designed to allow candidates to progress to employment in roles relating to industrial science. These qualifications may therefore lead to employment as Laboratory Assistants; Technician trainees; Trainee Scientists; Technicians; Scientists; or Technologists. They are useful for those involved in materials testing in construction and civil engineering.

3.2 Candidates achieving the SVQ in Laboratory and Associated Technical Activities (Industrial Science) at SCQF Level 6 may progress to the SVQ in Laboratory and Associated Technical Activities (Industrial Science) at SCQF Level 7. Achievement of level 6 is not however a prerequisite.

## 4. Entry requirements

4.1 There are no entry requirements or age limits required for these qualifications unless there is a legal requirement of the process or environment.

4.2 Candidates taking these qualifications must be made fully aware of what this entails. Centres must be satisfied that candidates have the experience and skills and will have sufficient assessment opportunities within their job role to provide evidence of competence for either of these qualifications. Where this may not be the immediate case, candidates should check with their employer whether they are able to go out with departmental or immediate job role boundaries to gain the necessary assessment opportunities.

4.5 A sample induction checklist is included at Appendix 1.

## 5. Qualification structures

5.1 The structures for these qualifications are the responsibility of Cogent Skills.
The structures are approved by SQA Accreditation.

# Qualification Structure for SVQ in Laboratory and Associated Technical Activities (Industrial Science) at SCQF Level 6

Mandatory Units - All candidates must complete the following three units

| SSC code | Title of mandatory unit (must complete all three units) | SCQF level | SCQF credits |
|---|---|---|---|
| COGLATA2-01 | Follow Health and Safety Procedures for Scientific or Technical Activities | 5 | 6 |
| COGLATA2-02 | Maintain Effective and Efficient Working Relationships for Scientific or Technical Activities | 6 | 3 |
| COGLATA2-03 | Use Information Recording Systems for Scientific or Technical Activities | 6 | 6 |

Optional units - All candidates must complete three optional units

Group A

Two or three units can be chosen from Group A

| SSC code | Title of optional unit | SCQF level | SCQF credits |
|---|---|---|---|
| COGLATA2-12 | Carry Out Simple Scientific or Technical Tests Using Manual Equipment | 6 | 7 |
| COGLATA2-13 | Carry Out Simple Scientific or Technical Tests Using Automated Equipment | 6 | 10 |
| COGLATA14 | Prepare Scientific or Technical Samples for Testing Activities | 6 | 8 |
| COGLATA2-15 | Carry Out Sampling Operations for Scientific or Technical Tests | 6 | 6 |

Group B

One unit may be chosen form Group B

| SSC code | Title of optional unit | SCQF level | SCQF credits |
|---|---|---|---|
| COGLATA2-04 | Carry Out Routine Maintenance, Cleaning and Checking of Scientific or Technical Equipment | 6 | 9 |
| COGLS205 | Maintain stocks of resources, equipment and consumables in life sciences and related industries | 6 | 4 |
| COGLATA2-06 | Prepare Compounds and Solutions for Scientific or Technical Use | 7 | 15 |

# Qualification Structure for SVQ in Laboratory and Associated Technical Activities (Industrial Science) at SCQF Level 7

Mandatory Units - All candidates must complete the following five units

| SSC code | Title of mandatory unit (must complete all five units) | SCQF level | SCQF credits |
|---|---|---|---|
| COGLATA3-01 | Maintain Health and Safety in a Scientific or Technical Workplace | 6 | 9 |
| COGLATA2-02 | Maintain Effective and Efficient Working Relationships for Scientific or Technical Activities | 6 | 3 |
| COGLATA3-03 | Carry Out Scientific or Technical Testing Operations | 6 | 8 |
| COGLATA3-04 | Assess and Communicate Scientific or Technical Information to Authorised Personnel | 6 | 6 |
| COGLATA3-05 | Provide Technical Advice and Guidance for Scientific or Technical Activities | 7 | 12 |

Optional units - All candidates must complete three optional units

Group A

Two or three units can be chosen from Group A

| SSC code | Title of optional unit | SCQF level | SCQF credits |
|---|---|---|---|
| COGLATA3-06 | Plan Scientific or Technical Sampling and Testing Activities | 7 | 8 |
| COGLATA3-07 | Carry Out Complex Scientific or Technical Testing Operations | 7 | 12 |
| COGLATA3-08 | Carry Out Complex Scientific or Technical Sampling Operations | 7 | 8 |
| COGLATA3-09 | Carry Out Scientific or Technical Investigations | 7 | 9 |
| COGLATA3-10 | Carry Out Small Scale Processing | 6 | 6 |
| COGLATA3-11 | Diagnose Faults, Repair and Maintain Scientific or Technical Equipment for Workplace Activities | 7 | 8 |
| COGLATA3-12 | Measure, weigh and prepare compounds and solutions for laboratory use | 7 | 16 |
| COGLS205 | Maintain stocks of resources, equipment and consumables in life sciences and related industries | 6 | 4 |
| COGLATA2-16 | Follow Aseptic Procedures in the Laboratory Environment | 6 | 9 |
| COGLATA3-21 | Improve the Quality and Reliability of Scientific or Technical Activities in the Workplace | 8 | 10 |

Group B

One unit may be chosen from Group B

| SSC code | Title of optional unit | SCQF level | SCQF credits |
|---|---|---|---|
| COGLATA3-14 | Make Presentations for Scientific or Technical Activities in the Workplace | 8 | 8 |
| COGLATA3-15 | Assess Your Own Scientific or Technical Knowledge and Skills for Workplace Activities | 7 | 4 |
| COGLATA3-16 | Provide Training for Scientific or Technical Activities in the Workplace | 8 | 10 |

All units are included in Appendix 2 of to this document.

## 6. Assessment

6.1 Roles and responsibilities

There are a number of people involved in the assessment process and the role of each needs to be clearly understood by each.

- Candidates – must familiarise themselves with the content of the units that they are taking and how these are to be assessed. They should co-operate with the assessment process, looking for opportunities to evidence the elements and gathering evidence where this arises. Candidates must take on board feedback from their assessor and work with their assessor to develop realistic plans for assessment. An Assessment Plan and Review template is included at Appendix 3.

- Assessors - must familiarise themselves with the content of the units that they are assessing and how these are to be assessed. They must assist candidates in identifying assessment opportunities, gathering, and presenting evidence. Assessors must assess all elements and record these assessments. Templates for recording elements, and for unit achievement, are at Appendix 4. Assessors must feedback and work with candidates to identify any gaps and develop realistic plans for assessment. They must also work with the Internal Verifier and External Verifier to ensure a common standard of assessment.

- Internal Verifiers – sometimes known as Internal Quality Assurers (IQAs), their role is to ensure that the assessment process is appropriate, consistent, fair and transparent; that assessors receive on-going support and that they are assessing to a common standard; and that awards are valid, reliable and consistent. IVs must develop a strategy that includes standardisation activities such as reviewing samples of evidence from each assessor, and countersigning the decisions of unqualified assessors.

- External Verifiers - sometimes known as External Quality Assurers (EQAs), are appointed by QFI and are independent of the centre. Their role is to check that internal processes are in place to ensure robust, consistent assessment. This includes sampling assessment evidence.

6.2 SCQF level descriptors

The SVQ in Laboratory and Associated Technical Activities (Industrial Science) at SCQF Level 6 is pitched at SVQ level 2/ SCQF level 6. The following are descriptions of what a candidate should be able to do or demonstrate at SCQF level 6. These are for guidance only – it is not expected that every point will be covered.

Knowledge and understanding

Demonstrate and/or workwith: An appreciation of the body of knowledge that constitutes a subject/discipline/sector; A range of knowledge, facts, theories, ideas, properties, materials, terminology, practices and techniques about, and associated with, a subject/discipline/sector; Relating the subject/discipline/sectorto a range of practical and/or commonplace applications.

Practice: Applied knowledge, skills and understanding

Apply knowledge, skills and understanding: In known, practical contexts; In using some of the basic, routine practices, techniques and/or materials associated with the subject/discipline/sector; In exercising these in routine contexts that may have non-routine elements; In planning how skills will be used to address set situations and/or problems and adapt these as necessary.

Generic cognitive skills

Obtain, organise and use factual, theoretical and/or hypothetical information in problem solving; Make generalisations and predictions; Draw conclusions and suggest solutions

Communication, IT and numeracy skills

Use a widerange of skills, for example: Produce and respond to detailed and relatively complex written and oral communication in bothfamiliar and unfamiliar contexts; Select and use standard ICT applications to process, obtain and combine information; Use a wide range of numerical and graphical data in routine contexts which may have non-routine elements.

Autonomy, accountability and working with others

Take responsibility for carrying out a range of activities where the overall goal is clear, under non-directive supervision; Exercise some supervisory responsibility for the work of others and lead established teams in the implementation of routine work within a defined and supervised structure; Manage limited resources within defined and supervised areas of work; Take account of roles and responsibilities related to the

tasks being carried out and take a significant role in the evaluation of work and the improvement of practices and processes.

The SVQ in Laboratory and Associated Technical Activities (Industrial Science) at SCQF Level 7 is pitched at SVQ level 3/ SCQF level 7. The following are descriptions of what a candidate should be able to do or demonstrate at SCQF level 7. These are for guidance only – it is not expected that every point will be covered.

Knowledge and understanding

Demonstrate and/or work with: An overall appreciation of the body of knowledge that constitutes a subject/discipline/sector; Knowledge that is embedded in the main theories, concepts and principles of the subject/discipline/sector.; An awareness of the dynamic nature of knowledge and understanding; An understanding of the difference between explanations based on evidence and/or research and other sources, and of the importance of this difference.

Applied knowledge, skills and understanding

Apply knowledge, skills and understanding: In practical contexts; In using some of the basic and routine professional skills, techniques, practices and/or materials associated with the subject/discipline/sector; To practise these in both routine and non-routine contexts.

Generic cognitive skills

Present and evaluate arguments, information and ideas that are routine to a subject/discipline/sector; Use a range of approaches to address defined and/or routine problems and issues within familiar contexts.

Communication, ICT and numeracy skills

Use a wide range of routine skills and some advanced skills associated with a subject/discipline/sector, for example: Convey complex ideas in well-structured and coherent form; Use a range of forms of communication effectively in both familiar and unfamiliar contexts; Select and use standard ICT applications to process and obtain a variety of information and data; Use a range of numerical and graphical skills in combination; Use numerical and graphical data to measure progress and achieve goals/targets.

Autonomy, accountability and working with others

Exercise some initiative and independence in carrying out defined activities at a professional level in practice or in a subject/discipline/sector; Accept supervision in less familiar areas of work; Exercise some managerial or supervisory responsibility for the work of others within a defined and supervised structure; Manage limited resources within defined areas of work; Take the lead in implementing agreed plans in familiar or defined contexts; Take account of own and others' roles and responsibilities when carrying out and evaluating tasks; Work, under guidance, with others to acquire an understanding of current professional practice.

6.3 The assessment process

Assessment for this qualification, and for individual units that comprise the qualification, must take place in accordance with Cogent Skills Assessment Strategy (2018). This document is now the responsibility of Cogent Skills. This document translates the requirements of the assessment strategy and gives guidance to ensure that centres meet these.

Centres delivering the qualification must ensure that assessors and Internal Verifiers are aware of the assessment strategy and how to access this. External Verifiers may check this requirement during monitoring visits to centres.

Assessment involves the following key stages: planning; producing evidence; assessing evidence; recording. Each of these is considered in more detail below.

6.3.1. Planning

It is mandatory that competence is demonstrated in a real work environment.

The assessor must create an Assessment Plan with each candidate that he/ she will be assessing. The Assessment Plan will need to be reviewed as the candidate progresses through the units. A template for assessment planning and review is at Appendix 3 of this document.

A wide range of assessment methods exist that can be used to assess knowledge and skills. Methods of assessment that are commonly used for assessing competence-based qualifications such as N/SVQs include the following:

- Product evidence – this relates to the outcome of the candidate's work, and the actual product that is generated as a result of their work.
- Direct observation – where an assessor (or credible witness) will directly observe the candidate undertaking certain tasks/ creating products that occur as part of their role. Observations must be referenced to the elements covered
- Question/ answer – these will often supplement the methods above, for example the assessor may ask the candidate a number of questions whilst they are undertaking a task. Questioning is a useful way to establish knowledge and to generate evidence of this
- Witness testimony – credible witnesses may be identified who can for example testify that the candidate can successfully undertake certain tasks
- Personal statement – declaration made by the candidate that should be referenced to elements

Centres should ensure that their Assessors use the methods above as appropriate to assess candidates for this qualification. Template assessment documents including an Assessor Report can be found at Appendix 3.

6.3.2 Producing evidence

The methods of assessment must generate evidence to demonstrate the candidates' competence. Evidence produced in the workplace is central to the Assessment Strategy. Workplace evidence is a mandatory requirement and vital to ensuring that the candidate is competent to industry standards. A suitable way of recording this must be used.

In order to demonstrate consistent, competent performance, a minimum of three different examples of performance should normally be provided, and must be sufficient to show that the performance requirements of the unit have been carried out to the prescribed standards.

The following indicates the type of evidence generated by the methods on the section above:

- Product evidence –Photographic or video evidence is often used to record this, or it may also be recorded via the method below. Labelled photographs and/or videos that clearly show the candidate are sources of evidence for this purpose.
- Direct observation –observations must be recorded via an Assessor or other report (e.g. witness statement)
- Question/ answer –both the questions and the candidate's responses to these must be recorded either in writing or via some audio or visual device (e.g. part of a video recording).
- Witness testimony – this may be written, audio or visual recordings[1]
- Personal statement – the declaration made by the candidate must be recorded

All of the above must be referenced to the evidence that they cover. Templates that may be used for recording evidence are at Appendix 3.

Feedback should be given to the candidate on an on-going basis and where there are any gaps or shortfalls in evidence then these should be incorporated into the Assessment Plan.

Assessment must meet the requirements of the performance criteria, knowledge and understanding documented for each unit of assessment. Methods of assessment must ensure coverage of all elements, scope and range, and generate sufficient evidence to demonstrate competence. An holistic approach towards the collection of evidence is encouraged. The focus should be on assessing activities generated by the whole work experience rather than focusing on specific tasks. This would show how evidence requirements could be met across the qualification to make the most efficient use of evidence.

Workplace evidence must be supported by the required evidence of knowledge and understanding. Knowledge and understanding will be demonstrated by the candidate answering a set of questions that must relate to the assessment being undertaken. All questions must be asked by the assessor at appropriate moments throughout the assessment process, preferably linked to observed activity and/or a review of documentary evidence. It will be up to the assessor to determine what questions are asked. All questions and answers must be recorded and made available for verification purposes.

**Realistic work environment and simulation**

This outlines the extent to which a realistic work environment and simulated working conditions may be used to assess competence.

Simulations should only be used in relation to the assessment of very rare and/or dangerous occurrences such as:

[1] 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 candidate.

-emergency scenarios
-health, safety and the environment issues
-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 candidate competence

All simulations should be high quality and designed in relation to a realistic work environment, having an acceptable level of appropriate equipment and operating to professional standards.

Reasons for the use of simulation should be made clear to the external verifier and **pre-approved** before the assessment has been undertaken and should include the following evidence:

-which competence (and standards) the simulation will be designed to assess.
-what equipment, facilities and physical environment will be used for the simulation of performance.
-how the simulated activity relates to the candidate's normal work context in terms of the pressures of time, access to resources and access to information.
-how the simulation will be set up and conducted, preferably supported by physical evidence such as photographs or inspection of a test rig.

You must contact admin@qfi'org.uk with this information in writing via email above prior to undertaking any simulation.

Assessors, internal verifiers and centres should monitor the proportion of evidence generated via simulations to ensure that it is not the primary source of a candidate's claim to competence. QFI's external verifier will check this as part of the sampling process.

Simulation must enable the individual to demonstrate competence in a real or realistic work environment. In this context this means in specialist centres which replicate the workplace in terms of equipment and environment, reflect normal working situations and use relevant industrial or commercial standards and procedures. Short work placements or non-realistic work environments which do not replicate the pressures and requirements of normal commercial or industrial activities will not be acceptable. The bulk of the candidate's evidence should be drawn from their normal working activity and not consist of artificially contrived opportunities for one-off demonstration of competence. Similarly, equipment must be that used in current commercial and industrial contexts. Procedures and standards used should be those which are nationally or internationally recognised or devised by specific companies as standard operating procedure.

6.3.3 Assessing evidence

Evidence must be assessed against the units/ elements to establish whether the candidate is competent with regards to their performance and knowledge. In order to achieve the qualification candidates must achieve a 'pass'. The evidence must show that the candidate consistently (i.e. on more than one occasion) meets all of the elements across the scope/range of each unit.

If there is insufficient evidence to make this judgement then plans must be made as to how the candidate can produce further evidence in order to demonstrate competence.

Assessors must check that the evidence produced is sufficient in volume, relevant and current. They must also be confident that the evidence has been generated by the candidate. Assessors and candidates normally sign documentation to declare that the evidence produced is that of the candidate and no other.

6.3.4 Recording evidence

Evidence (or reference to where certain evidence is located) is normally kept in a portfolio. This may be paper-based or electronic. All evidence contained within the portfolio must be clearly referenced to the units and elements. Candidates' progress can therefore be tracked. Note that certain pieces of evidence can be recorded across more than a single element. Tracking is important to show where this is that case.

It is helpful to give each piece of evidence a number so that this can be mapped across elements. See the template forms at Appendix 4. Assessment decisions made against the evidence must also be recorded so that an IV or an EV can see these. All evidence must be kept for internal and external verification.

6.4 Core Skills

Core Skills are those skills that employers have identified as most likely to be needed in a work environment. The units within these qualifications have been mapped to Core Skills to indicate to centres where evidence might be gathered in a workplace setting.

A copy of this mapping is made available to centres approved to offer these qualifications.

## 7. Assessors

7.1 The occupational competence of assessors is defined in Cogent Skills Assessment Strategy.

7.2 The roles and responsibilities of assessors is outlined in the section above. Assessors must competent to perform their role and either hold the qualifications needed to carry out assessment – or achieve within 18 months of commencing their role:

- D32 or D33
- A1
- Level 3 Award in Assessing Competence in the Work Environment
- Level 3 Award in Assessing Vocationally Related Achievement
- Level 3 Certificate in Assessing Vocational Achievement
- an appropriate Assessor qualification as identified by SQA Accreditation

Assessors must also:

- must be competent in the units they are assessing. This is shown through the assessor having achieved the award they are assessing

OR

- providing supporting evidence that they are able to make valid judgements of the competence of candidates through experience built up by working in the industry.
- must have a working knowledge of awards and a full understanding of that part of the award for which they have responsibility for
- know QFI's requirements for recording assessment decisions and maintaining assessment records

7.3 Holders of A1 and D32/33 must assess to the current National Occupational Standards (NOS) for Learning and Development.

7.4 Assessors must be registered with QFI. The Centre Handbook provides details.

7.5 The assessment decisions of unqualified assessors must be countersigned by the IV.

## 8. Internal verification

8.1 Centres' internal assessment processes and practices must be effective and support the integrity and consistency of the qualification. This is achieved through the internal quality assurance that is undertaken by the approved centre, and the external quality assurance that is undertaken by QFI. Centres must operate explicit, written internal quality assurance procedures to ensure:

- the accuracy and consistency of assessment decisions between assessors operating at the centre
- that assessors are consistent in their interpretation and application of the qualifications or unit(s) learning outcomes

8.2 Centres must appoint IVs who will be responsible for:

- regular sampling evidence of assessment decisions made by all assessors across all aspects of assessment for the qualification. Sampling must include direct observation of assessment practice
- maintaining up-to-date records of IV and sampling activity (what was evidence was sampled or assessors / IV observed where there is more than one) and ensuring that these are available for external quality assurance
- establishing procedures to ensure that all assessors interpret the learning outcomes in the same way
- monitoring and supporting the work of assessors
- facilitating appropriate staff development and training for assessors
- providing feedback to the EV on the effectiveness of assessment

- ensuring that any corrective action required by QFI is carried out within agreed timescales.

8.3 Centres must ensure that the decisions of unqualified IVs are checked, authenticated and countersigned by an IV who is appropriately qualified and occupationally expert. QFI will monitor a centre's compliance with these requirements through monitoring visits and certification claims.

8.4 The IV is also responsible and accountable for arranging the checking and countersigning process. IVs may verify only evidence that they did not assess themselves. Further guidance on internal quality assurance/verification is provided in the Centre Handbook. Appendix 5 of this document indicates suggested content for an IV strategy, and a template for sampling assessment evidence.

## 9. Internal verifiers

9.1 The occupational competence of IVs is defined in Cogent Skills Assessment Strategy. IVs must be either working in the appropriate sector itself OR they must be able to demonstrate they possess practical and up-to-date knowledge of current working practices appropriate to the sector in which they are carrying out verification practices; and have a working knowledge of the awards they are internally verifying.

9.2 The roles and responsibilities of IVs is outlined above. IVs must competent to perform their role and either hold the qualifications needed to carry out internal verification – or achieve within 18 months of commencing their role:

- D34
- V1
- Level 4 Award in the Internal Quality Assurance of the Assessment Process and Practice
- Level 4 Certificate in Leading the Internal Quality Assurance of Assessment Process and Practice
- an appropriate Internal Verifier qualification as identified by SQA Accreditation

9.3 It is strongly recommended that IVs also hold assessor qualifications (see section above).

9.4 Holders of V1/D34 must quality assure to the current National Occupational Standards (NOS) for Learning and Development.

9.5 IVs must be registered with QFI. The Centre Handbook provides details.

## 10. External verification

10.1 External verification of this qualification ensures that the requirements are met for Cogent Skills Assessment Strategy. QFI's appointed External Verifiers meet the requirements of the assessment strategy being familiar with the industry, having an understanding of the technical processes and terminology used, and holding appropriate External Verifier qualifications.

10.2 Centre visits will normally take place on an annual basis, though these could be more frequent if deemed necessary as a result of QFI's risk assessments. The Centre Handbook provides further details on external verification including to prepare for centre visits.

## 11. Certification

11.1 Note that there is a lapsing period of two years for the SCQF level 6, and four years for the SCQF level 7. This means that when the qualifications expire, are withdrawn or replaced by revised versions, candidates registered have two years from the accreditation end date in which to complete the SCQF level 6 qualification, and four years to complete the SCQF level 7 qualification. This will allow sufficient time for candidate's to compete and allow for currency of evidence.

## 12. Equality and diversity

12.1 This qualification must be assessed in English.

12.2 Assessment must be inclusive and where appropriate reasonable adjustments made to ensure equality of access in line with QFI's Equality and Diversity Policy. Full details are included in the QFI Centre Handbook.

12.3 Special consideration is not normally given for competence-based qualifications as it is necessary for candidates to demonstrate that they have the necessary skills and knowledge to achieve the qualification and operate safely in the workplace.

12.4 Equality data will be collected at the point of registration. This is for monitoring purposes only and will include age, gender, ethnicity, and disability.

## 13. Fees

13.1 The current fees for this qualification, and for individual units, are included in the QFI Fees and Invoicing document. This document also details what is/ is not included in fees.

13.2 Fees may be broken down to a reasonable level upon request to QFI.

# APPENDIX 1 - CANDIDATE TEMPLATE DOCUMENTS

## Sample Form
## Induction checklist

This document indicates what may be covered as part of a candidate's induction. This list is not exhaustive.

| | Tick |
|---|---|
| Qualification information:<br>• Units<br>• Structure<br>• Summary of assessment<br>• Awarding body | |
| Roles and responsibilities:<br>• Candidate<br>• Assessor<br>• Internal Verifier<br>• External Verifier | |
| Training and assessment process:<br>• Planning<br>• Collection of evidence (including methods)<br>• Review of evidence<br>• Feedback on evidence<br>• Verification of evidence<br>• Certification | |
| Policies:<br>• Complaints<br>• Appeals<br>• Malpractice<br>• Data protection<br>• Health and safety<br>• Equality (including reasonable adjustments/ additional support) | |
| Forms:<br>• Enrolment<br>• Other | |
| I confirmation that I have received this induction and the associated documents:<br><br>Candidate name: ……..<br><br>Candidate signature: ……..<br><br>Date: …… | |

# APPENDIX 2

## UNITS

### COGLATA2-01
### Follow health and safety procedures for scientific or technical activities

**Overview**

This standard covers the competences you need to follow health and safety procedures for scientific or technical activities in accordance with approved procedures and practices. You will be required to demonstrate your compliance with health and safety requirements, organisational policy and procedures for the work that is undertaken. You must be able to recognise the limitations of your own competence with the work and ask for appropriate help and advice when it is needed, take responsibility for your own actions and for the quality and accuracy of the work that you carry out.
The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 accurately assess health and safety in relation to your work and the workplace
P3 use safe practices and the appropriate personal protective clothing and equipment for the work
P4 identify any breaches to health and safety procedures and report them to the appropriate person as soon as possible
P5 ensure that you maintain and keep tidy your work area to a standard of health and safety which is consistent
P6 prepare, maintain and use equipment and materials in accordance with manufacturers' instructions and local safety regulations
P7 recognise hazardous materials used in your work activities
P8 follow established procedures to protect yourself and others during work activities
P9 follow the correct procedure when an emergency arises or is suspected.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the standard operating procedures, as set down in local operating manuals and schemes of work
K4 the importance of following manufacturers' instructions
K5 the techniques and processes you must use correctly in the workplace
K6 the importance of wearing protective clothing, gloves and eye protection when handling hazardous materials
K7 the specific safety precautions to be taken when working with scientific or technical 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))
K8 the identity of health and safety representatives
K9 the location and correct use of emergency equipment

K10 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K11 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K12 local procedures for emergency evacuation
K13 the location of fire alarms call points and how to operate them
K14 the location of spillage kits, and the procedures to follow in the event of spillages of chemicals and/or biological fluids and materials
K15 the control of substances hazardous to health (COSHH) regulations, and their application in the workplace
K16 the types of hazards which may be present in the workplace and how these can be controlled
K17 the correct storage and disposal procedures for hazardous materials
K18 the hazards associated with chemicals, radioactive substances and biological material
K19 the reasons for cleaning work surfaces and equipment
K20 why it is important to differentiate and segregate categories of waste
K21 the correct procedures for the storage, transport and disposal of waste.

**Scope/ range**
1. identify health and safety standard operating procedures for all of the following: 1.1 workplace hazards 1.2 unsafe practices 1.3 spillages 1.4 manual handling 1.5 VDU & RSI policies 1.6 other (please specify)
2. recognise three of the following workplace hazardous substances: 2.1 flammables (liquid or solid) 2.2 radioactive material 2.3 pyrophoric material 2.4 corrosive material 2.5 water reactive material 2.6 oxidiser 2.7 equipment or tools 2.8 explosive material 2.9 unstable reactive 2.10 toxic/harmful material 2.11 extreme temperature 2.12 sensitising/irritant substance 2.13 biological material 2.14 compressed gas
3. follow established procedures for both of the following: 3.1 workplace emergency (e.g. injury, spillage) 3.2 workplace evacuation (e.g. fire, gas leak)

Developed by: Cogent Version number: 2
Date approved: February 2017 Indicative review date: February 2019
Validity: Current Status: Original
Originating organisation: SEMTA Original URN: O45NLATA2-01
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 2 2010
Key words: laboratory, technical, LATA, workplace hazards, manual handling, unsafe practices, VDU & RSI policies, spillages, flammables.

## COGLATA2-02
## Maintain effective and efficient working relationships for scientific or technical activities

**Overview**
This standard covers the competences you need to work effectively in science related work activities, in accordance with approved procedures and practices. You will be required to demonstrate how you can establish and maintain relationships and how you deal with others. You will demonstrate how to deal with disagreements. The learner will meet organisational standards for behaviour in accordance with the relevant workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection clothing and equipment (PPE) when doing scientific or technical activities
P3 establish and maintain effective working relationships in the workplace
P4 meet workplace standards for timekeeping, appearance and behaviour
P5 deal with disagreements in an amicable and constructive way, so that good relationships are maintained
P6 maintain communication with others, to ensure that they are kept informed about any work plans or activities which may affect them
P7 be aware of the limits of your skills, and seek assistance from others in a polite and courteous way without causing undue disruption to normal work activities
P8 review your personal performance and development, with the appropriate people, at regular interval
P9 communicate the required information about the work done, to authorised people, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the interactions which take place between your scientific or technical speciality and others where the same speciality is used
K7 how your scientific or technical work activities may affect others within the department and the work place
K8 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K9 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K10 the lines of accountability within the department
K11 the reasons why good working relationships are important
K12 how to create and maintain good working relationships
K13 the methods of working effectively with others
K14 the problems that can affect relationships in the workplace
K15 the procedures for dealing with disagreements within the workplace
K16 the departmental performance review process, and your role in this process
K17 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**

1. sustain positive working relationships by all of the following: 1.1 working in teams 1.2 being cooperative and flexible 1.3 supporting others 1.4 providing clear and accurate information
2. maintain working relationships with two of the following: 2.1 colleagues in your own working group 2.2 colleagues outside your normal working group 2.3 supervisors/managers 2.4 persons external to your organisation 2.5 more senior professionals/scientists
3. review personal development objectives and targets, to include one of the following: 3.1 dual or multi-skilling 3.2 increased responsibility 3.3 training on new

equipment/technology 3.4 other specific requirements 3.5 understanding of company working practices, procedures, plans and policies
4. record details of work done, and communicate the details to the appropriate people, using: 4.1 verbal report plus one method from the following: 4.2 written or typed report 4.3 computer-based record 4.4 specific company documentation 4.5 electronic mail.

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Validity: Current Status: Original
Originating organisation: SEMTA Original URN: O45NLATA2-012
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, workplace hazards, manual handling, unsafe practices, VDU & RSI policies, spillages, flammables.

## COGLATA2-03
## Use information recording systems for scientific or technical activities

**Overview**

This standard covers the competences you need to use information recording systems for scientific or technical activities in accordance with approved procedures and practices. You will be required to demonstrate that you can keep information systems up to date, store the information correctly and accurately and retrieve information in accordance with workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 keep information systems up to date and store the information correctly and accurately
P3 maintain the security and confidentiality of information at all times
P4 complete required back-up procedures regularly
P5 retrieve required information and distribute according to deadlines
P6 communicate information to the relevant people when using information systems
P7 take appropriate action in the event of problems, to minimise hazards, waste loss of materials or resources and report to the relevant people
P8 work safely at all times, complying with health and safety, environmental and other relevant regulations and guidelines
P9 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities

K5 the importance of correct identification, and any unique workplace coding system
K6 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K7 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K8 the skills and procedures needed to do the routine tasks and work activities allocated
K9 the importance of completing tasks and procedures to the required organisational standard
K10 what are the different types of information systems that can be used, including recording, filing, retrieval of information and distribution systems
K11 how to use backup systems and why they are important
K12 how to ensure the confidentiality and security of information at all times and why this is important
K13 why it is important to work within given time deadlines
K14 what methods to use for information storage and access
K15 why it is important to establish requirements accurately
K16 what documentation should be used
K17 who are the relevant people
K18 how to identify problems, and what is the appropriate action to take within the limits of your responsibility.

**Scope/ range**

1. use two of the following types of information system: 1.1 paper based 1.2 computer based 1.3 telephone 1.4 fax
2. establish four of the following for work related activity: 2.1 date of request 2.2 scheme of work 2.3 person requesting activity 2.4 work activity requirements 2.5 work location 2.6 materials/resources needed
3. resolve two of the following problems associated with work activity: 3.1 incorrect identification of requirements 3.2 poor/unclear written request 3.3 missing information 3.4 requests exceed available supply
4. communicate information systems data with relevant people to include one of the following: 4.1 supervisor 4.2 team leader 4.3 health and safety officer 4.4 manager 4.5 head of department 4.6 teacher or trainer
5. record details of work activities, and communicate the details to the appropriate people, using: 5.1 verbal report plus one method from the following: 5.2 written or typed report 5.3 computer-based record 5.4 specific workplace document 5.5 electronic mail.

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Originating organisation: SEMTA Original URN: O45NLATA2-03
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 2 2010
Key words: laboratory, technical, LATA, paper based, computer based, telephone, fax, scheme of work.

## COGLATA2-12
## Carry out simple scientific or technical tests using manual equipment

**Overview**

This standard covers the competences you need to carry out simple scientific or technical tests using manual equipment in accordance with approved procedures and practices. You will be required to demonstrate that you can select and obtain the appropriate equipment and materials for the manual tests required. You will conduct the manual tests using the required sample in accordance with the correct practices and procedures. You will record the results of the manual test in accordance with workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities
P3 obtain the appropriate equipment and materials for the manual tests required
P4 conduct manual laboratory tests on samples in accordance with the correct procedures and techniques
P5 record the results of manual tests in accordance with workplace procedures
P6 dispose of waste items from manual laboratory tests in accordance with workplace procedures
P7 return equipment and materials that can be used for future testing to the correct storage location
P8 communicate the required information laboratory activities to authorised people in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K7 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K8 the minimum size/volume of sample required for the scientific or technical tests conducted
K9 the types of sample and container used for transport and scientific or technical testing
K10 how to assess if a sample is suitable for analysis
K11 how to use and take a reading from manual test kits used in the workplace
K12 the procedure to be followed when samples do not match up with the test output specification or accompanying documentation
K13 the procedure to be followed when a broken or leaking sample is identified in the workplace
K14 the procedure to be followed if a hazardous or high risk sample was received in the workplace
K15 the methods used for numbering and labelling samples in the workplace
K16 the procedures for storing tested samples when archiving is required
K17 the factors which might adversely affect the integrity of the sample during storage or transport.

**Scope/ range**

1. carry out all of the following operations for manual equipment: 1.1 transport samples in the workplace, and store them appropriately 1.2 select a suitable work area for the manual tests 1.3 select and set up the necessary equipment correctly 1.4 use the necessary quantity of sample for the manual tests 1.5 dispose of waste safely and correctly 1.6 ensure that the test done meet the specification for the required quality and accuracy
2. use one of the following resources: 2.1 materials 2.2 utilities
3. check two of the following conditions for the scientific or technical test: 3.1 health and safety environment 3.2 time 3.3 recording system 3.4 cleanliness 3.5 external influence giving rise to variations
4. record details of work activities, and communicate the details to the appropriate people, using: 4.1 verbal report plus one method from the following: 4.2 written or typed report 4.3 computer-based record 4.4 specific workplace documentation 4.5 electronic mail.

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Originating organisation: SEMTA Original URN: O45NLATA2-012
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 2 2010
Key words: Laboratory; technical; LATA; scientific; tests; manual; equipment; health and safety; utilities; recording system.

## COGLATA2-13
## Carry out simple scientific or technical tests using automated equipment

**Overview**

This standard covers the competences you need to carry out simple scientific or technical tests using automated equipment in accordance with approved procedures and practices. You will be required to demonstrate that you can follow the defined procedures for starting, running and shutting down the laboratory equipment. You will load and unload samples in accordance with workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities
P3 confirm that the laboratory equipment is set up and ready for operation
P4 check that the laboratory conditions are appropriate for the tests to be done
P5 follow the defined procedures for starting and running the laboratory equipment
P6 load and unload samples from laboratory equipment in accordance with procedures and analyser/equipment specifications
P7 deal promptly and effectively with error messages or equipment faults that are within your control and report those that cannot be solved
P8 monitor the equipment process and ensure that the output readings are to the required specification
P9 shut down the equipment to a safe condition on conclusion of the activities
P10 communicate the required information laboratory activities to authorised people in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K7 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K8 the minimum size/volume of sample required for the scientific or technical tests conducted
K9 the types of sample and container used for transport and scientific or technical testing
K10 how to assess if a sample is suitable for analysis
K11 how to start and shut down the scientific or technical equipment, including what to do in an emergency
K12 why is it important to carry out pre-test checks and identify the status of the equipment before starting tests
K13 how to load samples from the testing equipment and how to initiate sample tests
K14 the appropriate action to take when sampling or equipment errors occur
K15 how to unload samples from the test equipment, and how to store them during the testing process
K16 the procedure to be followed when samples do not match up with the test output specification or accompanying documentation
K17 the procedure to be followed when a broken or leaking sample is identified in the workplace
K18 the procedure to be followed if a hazardous or high risk sample is received in the workplace
K19 the methods used for numbering and labelling samples in the workplace
K20 the procedures for storing tested samples when archiving is required
K21 the factors which might adversely affect the integrity of the sample during storage or transport.

**Scope/ range**

1. carry out all of the following operations for automated equipment: 1.1 transport samples in the workplace and store them appropriately 1.2 seek any necessary instruction/training on the operation of the equipment, when appropriate 1.3 check that equipment guards are in place and are correctly adjusted 1.4 ensure that samples have been loaded correctly and are held securely 1.5 check that the operating program for the automated equipment is at the correct start point, and that the samples are at the correct location the test 1.6 follow the defined operating procedures for the automated equipment, and apply safe working practices and procedures at all times 1.7 confirm with a qualified professional that equipment settings are adjusted, as and when required, to maintain the required accuracy 1.8 confirm with a qualified professional that the test results produced meet the required specification for quality and accuracy
2. carry out two of the following equipment checks: 2.1 calibration 2.2 serviceability 2.3 cleanliness and preparation
3. use one of the following resources: 3.1 materials 3.2 utilities
4. check two of the following conditions for the scientific or technical test: 4.1 health and safety environment 4.2 cleanliness 4.3 time 4.4 external influence giving rise to variations 4.5 recording system

5. record and communicate details of the work done, to the appropriate people, using: 5.1 verbal report plus one method from the following: 5.2 written or typed report 5.3 computer-based record 5.4 specific company documentation 5.5 electronic mail.

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Originating organisation: SEMTA Original URN: O45NLATA2-013
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 2 2010
Key words: laboratory, technical, LATA, scientific, tests, automated, health and safety, calibration, serviceability, recording system.

## COGLATA14
## Prepare scientific or technical samples for testing activities

**Overview**

This standard covers the competences you need to demonstrate that you prepare scientific or technical samples for testing activities in accordance with approved procedures and practices. You will establish which samples are required and confirm the relevant control conditions for sample preparation are present in accordance with the relevant workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities
P3 ensure that you establish the identity of the sample and check its integrity
P4 confirm the relevant controlled conditions for sample preparation are present
P5 prepare samples for scientific or technical testing in accordance with workplace procedures
P6 identify and store test samples correctly until required P
7 deal with any waste material in accordance with workplace procedures
P8 work safely at all times, complying with health and safety, environmental and other relevant regulations and guidance
P9 communicate the required information laboratory activities to authorised people in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K7 the limits of your own authority and to whom you should report if you have problems that you cannot resolve

K8 what methods of sample preparation to use
K9 why the right sample preparation conditions are important
K10 how to control sample preparation conditions
K11 how to check integrity and identity of samples prepared
K12 the types of sample and container used for transport and scientific or technical testing
K13 the types of equipment used to prepare samples
K14 why it is important to carry out pre-use check and identify the status of equipment before it is used to prepare samples
K15 how to load and unload equipment used in sample preparation
K16 the procedure to be followed when samples do not match up with the accompanying documentation
K17 the procedure to be followed when a broken or leaking sample is identified in the workplace
K18 the procedure to be followed if a hazardous or high risk sample was received in the workplace
K19 the methods used for numbering and labelling samples in the workplace
K20 the procedures for storing prepared samples when archiving is required
K21 the factors which might adversely affect the integrity of the sample during storage or transport.

**Scope/ range**
1. Check sample integrity against two of the following factors: 1.1. defects 1.2. damage 1.3. decomposition 1.4. homogeneity 1.5. other (please specify
2. Prepare samples using two of the following methods: 2.1. grinding 2.2. pulverising 2.3. dividing 2.4. mixing 2.5. centrifuging 2.6. filtering/sieving 2.7. diluting 2.8. weighing 2.9. hydrating 2.10. siphoning 2.11. other (please specify)
3. Check two of the following controlled conditions: 3.1. health and safety environment 3.2. time 3.3. recording system 3.4. cleanliness 3.5. external influence giving rise to variations
4. Record and communicate details of the work done, to the appropriate people, using: 4.1. verbal report plus one method from the following: 4.2. written or typed report 4.3. specific workplace documentation 4.4. computer-based record 4.5. electronic mail.

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Originating organisation: SEMTA Original URN: Unit 14
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science; Laboratory Technician
Suite: Laboratory and Associated Technical Activities Suite 2
Key words: 4.2. written or typed report 4.3. specific workplace documentation 4.4. computer-based record 4.5. electronic mail.

## COGLATA1
## Carry out sampling operations for scientific or technical tests

**Overview**
This standard covers the competences you need to carry out sampling operations for scientific or technical tests in accordance with approved procedures and practices. You will be required to demonstrate that you have the correct equipment and materials for the sampling process. You will ensure that samples are identified and labelled correctly in accordance with workplace procedures. The activity is likely to be

undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities
P3 ensure that the correct equipment and materials for the sampling process are available for use
P4 collect samples in the parameters specified in the standard operating procedure
P5 label and identify collected samples correctly
P6 maintain the condition of the samples and store in the correct location
P7 communicate the required information laboratory activities to authorised people in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K7 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K8 the sampling methods and procedures used in the environment where they are taken
K9 the range of equipment and materials used for sampling in the environment where they are taken
K10 the documentation and labelling systems that should be used to ensure sample traceability after sampling
K11 the methods used for keeping records of sampling operations, and why this is important
K12 the principles and techniques of maintaining the sample integrity following collection
K13 how to identify defective sampling equipment, and the actions to be taken
K14 the methods used for the handling, storage and disposal of materials
K15 the materials and methods used in the sampling process.

**Scope/ range**

1. collect samples following all of the following operations: 1.1 adhering to procedures or systems in place for risk assessment, COSHH, personal protective equipment and other relevant safety regulations 1.2 checking that all the equipment is in a safe and usable working condition (such as undamaged, safety devices in place and operational) 1.3 ensuring that sufficient quantities of all required materials are obtained 1.4 obtaining all the necessary data, documentation and specifications for the sampling process 1.5 collecting and labelling samples in the required quantities 1.6 cleaning/disposing of sampling equipment and materials appropriately 1.7 ensuring that the work area is clear and tidy, and that waste is disposed of in the correct manner 1.8 ensuring that safe working practices and procedures are applied at all times

2. collect samples using five of the following parameters: 2.1 location for sampling 2.2 sampling access points 2.3 sampling duration 2.4 sample cycle time 2.5 sampling frequency 2.6 other (please specify)
3. maintain the condition of samples by two of the following methods: 3.1 preservation 3.2 aseptic container 3.3 transportation 3.4 other (please specify)
4. record and communicate details of the work done, to the appropriate people, using: 4.1 verbal report plus one method from the following: 4.2 written or typed report 4.3 computer-based record 4.4 specific workplace documentation 4.5 electronic mail.

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Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 2 2010
Key words: Laboratory And Associated Technical Activities Suite 2 2010; Agricultural Crop Production.

## COGLATA2-04
## Carry out routine maintenance cleaning an checking of scientific or technical equipment

**Overview**

This standard covers the competences you need to demonstrate that you carry out routine maintenance, cleaning and checking of scientific or technical equipment in accordance with approved procedures and practices. You will be required to demonstrate that you can undertake the routine maintenance and cleaning of scientific or technical equipment, identifying and reporting faults and recording maintenance and cleaning procedures undertaken in accordance with the relevant workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities
P3 confirm that the scientific or technical equipment is in a safe and usable condition, according to established procedures
P4 identify and report any equipment faults accurately to the team leader
P5 perform routine maintenance in accordance with manufacturers' instructions and relevant health and safety legislation
P6 confirm the correct operation and operating tolerances of the scientific or technical equipment, in accordance with established procedures
P7 record details of maintenance and operation checks, according to departmental procedures
P8 test the equipment to confirm that it functions correctly, and record the equipment status
P9 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities

K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K7 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K8 the manufacturers' specifications and recommendations for the maintenance and calibration of the scientific or technical equipment
K9 the methods used for visually checking, and cleaning, of scientific or technical equipment
K10 the different types, condition and quantities of consumables required for the range of scientific or technical equipment maintained
K11 the methods for maintaining personal health and safety during the maintenance of equipment
K12 how to check that the scientific or technical equipment is working correctly and in accordance with the manufacturer's specifications
K13 the common types of equipment fault, and how these must be dealt with
K14 the department or person to whom equipment faults should be reported
K15 the methods used for keeping records of the maintenance, cleaning and calibration of scientific or technical equipment, and why this is important
K16 the procedures for disposal of any waste produced or of any equipment beyond repair.

**Scope/ range**

1. carry out all of the following operations: 1.1 adhere to procedures for compliance with risk assessment, COSHH, use of personal protective equipment and other relevant safety regulations 1.2 ensure the safe isolation of laboratory equipment (such as electrical and fluids supply) 1.3 follow manufacturers' instructions, drawings and procedures for routine maintenance 1.4 check that the scientific or technical tools and equipment used are in a safe and usable condition 1.5 ensure that the equipment is kept free from foreign objects, dirt or other contamination 1.6 carry out auditory and visual checks on the operation of scientific or technical equipment 1.7 confirm that the scientific or technical equipment is operating correctly and is ready for use 1.8 return all tools, equipment and waste to the correct locations on completion of the maintenance activities 1.9 ensure that accurate, complete and legible records are kept of the maintenance activities

2 carry out maintenance and cleaning on two of the following scientific or technical categories: 2.1 biological equipment and/or instruments 2.2 chemical equipment and/or instruments 2.3 electronic equipment and/or instruments 2.4 weighing and measuring equipment and/or instruments 2.5 information technology equipment 2.6 engineering machines, equipment and/or instruments 2.7 other technical equipment or instruments

3. record and communicate details of work done, to the appropriate people, using: 3.1 verbal report plus one method from the following: 3.2 written or typed report 3.3 computer-based record 3.4 specific workplace documentation 3.5 electronic mail.

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Originating organisation: SEMTA Original URN: O45NLATA2-04
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science

Suite: Laboratory and Associated Technical Activities Suite 2 2010
Key words: laboratory, technical, LATA, biological equipment, chemical equipment, weighing and measuring equipment, verbal report, engineering machines, COSHH.

## COGLS205 Maintain stocks of resources, equipment and consumables in life sciences and related industries

**Overview**

This standard covers the skills you need to assist with the maintenance and control of stocks of resources, equipment and consumables for scientific or similar uses, in accordance with approved procedures, organisational policy and practices. You will complete tasks and procedures, exercise autonomy and judgement subject to overall direction or guidance. You will report any problems with the activities, materials or equipment that you cannot personally resolve. You will work under a team leader whilst taking responsibility for the quality and accuracy of the work that you carry out.

Maintaining stocks at the right level, within critical limits and in the right environment is important for the smooth running of the workplace. Stock levels should be accurately labeled, recorded, handled, transported, stored and disposed of according to workplace procedures. Failure to do so will result in incorrect stock levels, incorrect labeling and contribute to inefficiency and wastage. You underpinning knowledge will provide a good understanding of scientific or similar facts, procedures, workplace processes and ideas to complete well-defined generally routine tasks and address straightforward problems in the workplace. Who this standard is for: The standard is recommended for new recruits and junior laboratory staff.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures, health and safety, environmental and other relevant regulations and guidelines
P2 count stocks, confirm that they are within the maximum/minimum levels required for the scientific and related activities and update records in the information system
P3 check the packaging information on individual stock items, and confirm that critical details are within acceptable limits
P4 identify, record and communicate requirements to replenish stocks at specified re-order levels
P5 check new stocks received against purchase orders and delivery notes and notify relevant people of any discrepancies or breakages
P6 label and store items in the correct environment and location and update records in the information system
P7 correctly handle and transport stock items, using the appropriate methods and techniques
P8 dispose, in the appropriate manner and locations, of stock or items that are damaged or outside acceptable limits for scientific and related uses
P9 communicate the required information about the work done to authorised people.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety and other legislative requirements of the area in which you are carrying out the scientific or similar activities
K2 the scientific or similar techniques and processes you must use correctly in the workplace
K3 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K4 the importance of correct identification, and any unique workplace coding system
K5 why it is important to maintain accurate records for scientific or similar resources, equipment and consumables

K6 the types and range of scientific or similar resources, equipment and consumables used in the workplace, and how they have to be checked
K7 how to check the packaging information on stock (such as batch numbers and expiry dates), labelling new stock items correctly and recording in the information system
K8 the range of storage environments used to store scientific or similar resources, equipment and consumables for workplace use
K9 how to monitor and control stock levels for scientific or similar uses
K10 how to dispose of waste or damaged stock items, in accordance with workplace procedures
K11 how to resolve issues with delivered damaged or incomplete replacement stock.

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Originating organisation: SEMTA Original URN: COGLS205
Relevant occupations: Associated Professionals and Technical Occupations; Science and Mathematics; Science; Science and Engineering Technicians; Professional Occupations; Science Professionals
Suite: Life Sciences and Related Industries 2
Key words: Laboratory; workplace; analysing; DNA; gel electrophoresis

## COGLATA2-06
## Prepare compounds and solutions for scientific or technical use

**Overview**

This standard covers the competences you need to prepare compounds and solutions for scientific or technical use in accordance with approved procedures and practices. You will be required to demonstrate that you can measure, weigh and prepare compounds and solutions for scientific or technical use in accordance with workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities
P3 use balances for accurately weighing out materials
P4 Measure out required concentrations of liquids for scientific or technical use
P5 measure specific volumes of liquids and weights of solids for scientific or technical use
P6 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities

K5 the importance of correct identification, and any unique workplace coding system
K6 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K7 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K8 how to calculate mass/mole calculations
K9 how to convert between metric and imperial measures and vice versa
K10 how to select the appropriate balance and scale for less than 100mg, 100mg to 5g, and 5g and above
K11 how to check that your equipment is clean, dry, free of chips and ready for use
K12 how to measure and weigh solids and liquids for scientific or technical use
K13 how to convert between different units of concentration
K14 how to calculate dilution factors and dilution volumes to make solutions from concentrated stock solutions
K15 how to choose the appropriate measuring equipment for the scale, accuracy and precision required for the task
K16 how to clean and maintain weighing and measuring equipment.

**Scope/ range**

1. use two of the following types of protective clothing and equipment: 1.1 laboratory coat/apron/overall 1.2 gloves 1.3 full face visor or shield 1.4 dust mask/respirator 1.5 safety glasses or goggles 1.6 fume cupboard
2. carry out weighing activities using balances (scales), using two of the following accuracies: 2.1 grams 2.2 milligrams 2.3 micrograms
3. measure out solutions, using two of the following: 3.1 automated pipettes 3.2 burettes 3.3 graduated/bulb pipettes 3.4 volumetric flasks 3.5 syringes 3.6 other (please specify) 3.7 graduated cylinders/beakers/tubes
4. calculate the concentrations of solutions, the amounts and volumes required, using two of the following: 4.1 moles per litre 4.2 parts per million 4.3 other (please specify) 4.4 grams per litre 4.5 mass percent
5. make up known volumes of solutions to a specified concentration, using both of the following: 5.1 by measuring and dissolving the correct amount of solid in the correct volume of diluent/solvent 5.2 by dilution from a concentrated stock solution
6. weigh and prepare three of the following types of compound or solution: 6.1 solids that do not readily lose or gain weight (moisture or solvent) 6.2 solids that readily lose or gain weight (moisture or solvent) 6.3 solutions (by dilution from a known concentration) 6.4 solutions (at actual molecular weight)
7. record details of the work, and communicate the details to the appropriate people, using: 7.1 verbal report plus one method from the following: 7.2 written or typed report (e.g, laboratory notebook) 7.3 computer-based record 7.4 specific workplace documentation 7.5 electronic mail.

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Originating organisation: SEMTA Original URN: O45NLATA2-06
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 2 2010
Key words: Laboratory; technical; LATA; prepare; automated pipettes; fume cupboard; burettes; solutions; verbal report; safety glasses or goggles.

## COGLATA-01
## Maintain health and safety in a scientific or technical workplace

**Overview**

This standard covers the competences you need to maintain health and safety in science related work activity, in accordance with approved procedures and practices. You will be required to demonstrate that you can use safe working practices throughout and will understand your responsibility for taking the necessary safeguards to protect yourself and others in the work place. You must also know what actions to take in case of an emergency in accordance with the relevant workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 accurately assess health and safety in relation to your work and the workplace
P3 use safe practices and the appropriate personal protective clothing and equipment for the work
P4 identify and rectify any breaches to health and safety procedures and report them to the appropriate person as soon as possible
P5 maintain the security of the workplace, in accordance with organisational requirements
P6 maintain and keep tidy your work area to a standard of health and safety which is consistent with local policies and legal requirements
P7 use equipment and materials in accordance with manufacturers' instructions and local safety regulations
P8 dispose of waste materials and substances safely and correctly
P9 take the appropriate precautions to protect yourself and others during work activities
P10 follow the correct procedure when an emergency arises or is suspected
P11 identify and recommend health and safety improvements to your work area and/or environment
P12 communicate the required information about the work done, to authorised people, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the workplace procedures, as set down in local operating manuals and schemes of work
K4 the importance of following manufacturers' instructions
K5 the techniques and processes you must use correctly in the workplace
K6 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K7 the specific safety precautions to be taken when working with scientific or technical equipment and computer-based systems
K8 the identity of health and safety representatives
K9 the location and correct use of emergency equipment
K10 the organisational requirements for maintaining the security of the workplace
K11 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K12 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K13 why risks in the workplace should be assessed, and the correct action to be taken
K14 local procedures for emergency evacuation
K15 the location of fire alarm call points and how to operate them

K16 the location of spillage kits and the procedures to follow in the event of spillages of chemicals and/or biological fluids and materials
K17 how to identify and recommend health and safety improvements to your work area and/or environment
K18 the control of substances hazardous to health (COSHH) regulations, and their application in the workplace
K19 the range of signs and symbols used for the warning of workplace hazards and prohibited practices
K20 the types of hazards which may be present in the workplace and how these can be minimised
K21 the correct storage and disposal procedures for hazardous materials
K22 the hazards associated with chemicals, radioactive substances and/or biological materials
K23 what constitutes dangerous occurrences and hazardous malfunctions in the workplace and why these must be reported
K24 how to lift and carry loads safely, and use the manual and mechanical aids available in the workplace
K25 the importance of safe storage of tools, equipment and materials
K26 the reasons for cleaning work surfaces and equipment
K27 why it is important to differentiate and segregate categories of waste
K28 the correct procedures for the storage, transport and disposal of waste.

**Scope/ range**
1. identify health and safety workplace procedures for all of the following: 1.1 workplace hazards 1.2 unsafe practices 1.3 spillages 1.4 manual handling 1.5 VDU & RSI policies 1.6 other (please specify) 2. use safe handling practices for three of the following, in accordance with approved procedures: 2.1 flammables (liquid or solid) 2.2 radioactive material 2.3 pyrophoric material 2.4 corrosive material 2.5 water reactive material 2.6 oxidiser 2.7 equipment or tools 2.8 explosive material 2.9 unstable reactive 2.10 toxic/harmful material 2.11 extreme temperature 2.12 sensitising/irritant substance 2.13 biological material 2.14 compressed gas 2.15 manual handling/lifting loads
3. comply with established procedures for both of the following: 3.1 workplace emergency (e.g. injury, spillage) 3.2 workplace evacuation (e.g. fire, gas leak)
4. make recommendations on, or if appropriate, take action on both of the following: 4.1 areas where the work practices do not fully comply with health and safety requirements 4.2 improvements to handling and/or storage of materials, substances or equipment
5. record details of the work activities, and communicate the details to the appropriate people, using: 5.1 verbal report plus one method from the following: 5.2 written or typed report 5.3 computer-based record 5.4 specific workplace documentation 5.5 electronic mail.

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Originating organisation: SEMTA Original URN: O45NLATA3-01
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, workplace hazards, manual handling, unsafe practices, VDU & RSI policies, spillages, flammables.

## COGLATA3-03

## Carry out scientific or technical testing operations

**Overview**

This standard covers the competences you need to carry out complex scientific or technical testing operations in a science related work activity, in accordance with approved procedures and practices. You will be required to demonstrate that you can select the appropriate testing methods from procedures for the testing requirements prepare and carry out the in accordance with the relevant workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when performing scientific or technical activities
P3 identify conditions for scientific or technical tests to be done
P4 establish the requirements for the scientific or technical tests to be done
P5 select the appropriate testing methods from procedures for the testing requirements
P6 prepare the resources needed for the testing operations
P7 prepare the test samples in accordance with the procedures and check their integrity
P8 carry out the required tests in accordance with the procedures
P9 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational requirements for maintaining the security of the workplace (e.g. access or aseptic conditions)
K7 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K9 why it is important to follow safe operating procedures when using equipment and / or materials
K10 the principles and procedures for testing
K11 the purposes of testing, and the specific use to which the test results are to be put
K12 the relevant testing methods that can be used to achieve the purpose of testing
K13 why calibration is important and how to check calibration
K14 how to check the sample identity and it's integrity
K15 the range of methods used to prepare samples
K16 how to identify defective equipment and the appropriate action to take
K17 the methods can be used for controlling test variables
K18 the concepts of repeatability and reproducibility
K19 the range of equipment available for testing, and how to choose the most appropriate equipment

K20 the potential impact of the test on health, safety and the environment
K21 the methods can be used for dealing with the handling, storage and disposal of materials
K22 the cleaning materials and the methods for their use
K23 the methods of safe storage that can be used
K24 the document control and reporting procedures that should be used
K25 the reasons why effective communication is important and the methods used for communicating effectively.

**Scope/ range**

1. identify conditions for scientific or technical test that include two of the following: 1.1 test environment 1.2 time recording system 1.3 test criteria 1.4 cleanliness 1.5 safety factors 1.6 external influence that can variations
2. establish requirements for one of the following types of test: 2.1 plastics/polymers 2.2 petroleum/petrochemical 2.3 product/process quality 2.4 metal/metallurgy 2.5 chemicals/pharmaceuticals 2.6 omissions/leaks/contamination 2.7 material/physical properties 2.8 mechanical properties 2.9 other (please specify)
3. prepare all of the following resources for testing operations: 3.1 consumables 3.2 utilities/facilities 3.3 instruments 3.4 test materials 3.5 equipment 4. carry out two of the following pre-test check on equipment and test instruments: 4.1 calibration 4.2 cleanliness 4.3 serviceability 4.4 setup conditions 5. carry out integrity checks that include three of the following: 5.1 free from subsequent defects 5.2 damage and decomposition 5.3 homogeneity
6. record and communicate details of work done, to the appropriate people, using: 6.1 verbal report plus one method from the following: 6.2 written or typed report 6.3 computer-based record 6.4 specific workplace documentation 6.5 electronic mail.

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Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2008
Key words: Laboratory; technical; LATA; environment; criteria; safety factors; cleanliness; calibration; homogeneity.

## COGLATA3-04
## Assess and communicate scientific or technical information to authorised personnel

**Overview**

This standard covers the competences you need to assess and communicate scientific or technical information to authorised personnel in a science related work activity, in accordance with approved procedures and practices. You will be required to demonstrate that you can access and produce the relevant laboratory information/ reports and circulate the information to the required personnel. You will demonstrate you can maintain security and confidentiality in accordance with approved procedures and practices. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when performing scientific or technical activities
P3 ensure the data integrity of the laboratory information system
P4 follow procedures correctly to ensure the security and confidentiality of laboratory information
P5 assess existing and record new information on the laboratory information system
P6 produce and distribute laboratory information system reports in accordance with procedures
P7 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational policies that exist for the use and application of licensed computer software
K7 the organisational policies that exist for the use of antivirus and antispy software protection
K8 the organisational policies that exist on data protection and the data protection act
K9 the organisational requirements for maintaining the security of the workplace (e.g. access or aseptic conditions)
K10 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K11 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K12 the basic set-up and operation of the laboratory records system and the peripheral devices that are used
K13 the correct startup and shutdown procedures to be used for the computer system
K14 how to access the computer information database and the use of software manuals and related documents to aid efficient operation of the relevant scientific or technical records
K15 how to deal with system problems messages received, peripherals which do not respond as expected
K16 how to access and communicate data effectively, and how to identify key information when recording and forwarding messages accurately
K17 where to obtain the information that you need to carry out your job, the form in which the information is expressed and why it should be up to date
K18 the different forms of communication available to you, and how they are used
K19 why it is important to communicate clearly and to give all of the information necessary to the audience
K20 the organisational and/or workplace procedures for acknowledging and responding to incoming and outgoing information
K21 the organisational and/or workplace procedures for recording scientific or technical information
K22 the document control and reporting procedures that should be used
K23 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**
1. search and access data from the information system for three of the following: 1.1 test/sample information 1.2 output quality information 1.3 work delivery information 1.4 process information 1.5 cost/budget information 1.6 other (please specify)
2. communicate scientific or technical information to three of the following customers: 2.1 other department 2.2 team members 2.3 other (please specify) 2.4 technical expert 2.5 external organisation
3. communicate four of the following types of information: 3.1 instructions 3.2 progress/analysis report 3.3 services available 3.4 test results 3.5 work requirements 3.6 other (please specify)
4. ensure the integrity of the laboratory information system by all of the following: 4.1 using the correct startup/shutdown procedures 4.2 information is passed to authorised people only 4.3 following good practice for logging on/off 4.4 following anti-virus protocols
5. record and communicate details of work done, to the appropriate people, using: 5.1 verbal report plus one method from the following: 5.2 written or typed report 5.3 computer-based record 5.4 specific workplace documentation 5.5 electronic mail.

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Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, test, sample, process, output, quality, cost, team members, technical expert.

## COGLATA3-05
## Provide technical advice and guidance for scientific or technical activities

**Overview**
This standard covers the competences you need to provide technical advice and guidance for scientific or technical activities in science related work activities, in accordance with approved procedures and practices. You will need to ensure you have accurate, up-to-date information, analyse problems and provide appropriate information, advice and guidance to a range of people. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**
P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when performing scientific or technical activities
P3 work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines
P4 ensure that you have accurate and up-to-date information on the scientific or technical activities for which advice and guidance is being sought
P5 determine the extent of the advice and guidance required
P6 Provide valid and up-to-date information, advice and guidance, as necessary
P7 analyse any problems in full and provide effective advice that will maintain the quality and progress of the work
P8 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational requirements for maintaining the security of the workplace
K7 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve You need to know and understand
K9 the regulations and guidelines that are relevant to the work area
K10 how to obtain information on regulations and guidelines
K11 how to obtain and interpret drawings, charts, specifications and other documents that can be used when giving technical advice and guidance
K12 a sound understanding of the activities in which the technical guidance is being given
K13 how to identify opportunities for giving technical advice, guidance and support
K14 how to plan and prepare for providing technical guidance
K15 the methods and techniques involved in problem solving
K16 how to deal with customer complaints and requests
K17 how to review and adjust approaches to the provision of technical guidance, in the light of experience gained
K18 the techniques for offering and providing technical guidance
K19 how to use a variety of communication methods, in appropriate combination
K20 the document control and reporting procedures that should be used
K21 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**

1. provide technical advice and guidance for two of the following groups of people: 1.1 colleagues 1.2 customers (e.g. distributors, end users, clients) 1.3 contractors 1.4 others in related technical activity areas
2. provide technical support for two of the following scientific or technical activities: 2.1 providing technical support 2.2 complex sampling 2.3 demonstration and instruction 2.4 planning sampling and testing 2.5 carrying out investigations 2.6 team leading/coaching 2.7 complex testing 2.8 small scale processing
3. provide technical advice and guidance on four of the following: 3.1 equipment operating detail (function) 3.2 specific or specialist equipment required 3.3 equipment performance parameters 3.4 resource usage 3.5 physical characteristics (dimensions, weight) 3.6 timing/delivery details 3.7 environment considerations/operating conditions 3.8 cost/budget estimation/details 3.9 scientific or technical methods 3.10 quality requirements/control 3.11 processing requirements
3.12 maintenance/cleaning/calibration frequency 3.13 work instructions or procedures 3.14 aseptic procedures 3.15 output volume required 3.16 training required 3.17 resource requirements 3.18 customer interface requirements 3.19 equipment/component interfacing 3.20 safety/regulations/guideline requirements
4. Deal appropriately with all of the following: 4.1 reported problems found during the scientific or technical activity 4.2 recorded deviations from agreed plans and schedules 4.3 customer requests/complaints

5. record and communicate details of work done, to the appropriate people, using: 5.1 verbal report plus one method from the following: 5.2 written or typed report 5.3 computer-based record 5.4 specific workplace documentation 5.5 electronic mail.

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Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, workplace hazards, manual handling, unsafe practices, VDU & RSI policies, spillages, flammables.

## COGLATA3-0
## Plan scientific or technical saling and testing activities

**Overview**

This standard covers the competences you need to plan scientific or technical sampling and testing activities in a science related work activity, in accordance with approved procedures and practices. You will be required to demonstrate that you can perform scientific or technical sampling, establishing which methods are required and what resources are to be used, in accordance with the relevant workplace procedures.
The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when performing scientific or technical activities
P3 collect the information needed to prepare the plan
P4 identify health and safety issues and safe working practices and procedures that must be followed
P5 identify the operations to be carried out and determine their sequence
P6 establish which methods are required and what resources are to be used
P7 identify any special requirements and incorporate them in the plan
P8 deal effectively with problems within your control and report those that cannot be solved
P9 communicate the required information about the work done, to authorised people, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational requirements for maintaining the security of the workplace
K7 the lines of communication and responsibilities in your department, and their links with the rest of the organisation

K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K9 how to access information on health and safety regulations and guidelines relating to the sampling and testing activities to be used and plans being produced
K10 the implications of not taking account of legislation, regulations, standards and guidelines when producing the laboratory plans
K11 how to access and use the appropriate information and documentation systems
K12 the materials, formats, codes and conventions that are used in preparing the plans
K13 the main planning methods and techniques in use, and what problems could occur in them
K14 the factors to be taken into account when preparing the plans, especially those covering working conditions and safety
K15 the main types of resources involved with different types of sampling and testing activity, and the typical timescales for providing them
K16 the normal timescales for carrying out specific sampling and testing activities, and how and why they vary
K17 the development of the sampling and testing plans
K18 how to prepare the plans
K19 the process used in the organisation to validate the plans produced
K20 the control procedure for ensuring that the plans are maintained up to date
K21 the procedures for changing the plans and why control procedures are needed
K22 the importance of maintaining records; what needs to be recorded and where records are kept
K23 problems that can occur during the implementation of the plan and how these problems can be rectified
K24 the document control and reporting procedures that should be used
K25 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**

1. carry out all of the following when determining and producing the plans: 1.1 use the correct issue of workplace information 1.2 check that all essential information and data needed to produce the plans is available 1.3 collect relevant information on the scientific or technical requirements, operations, methods and resources 1.4 determine the availability of resources required 1.5 ensure that the activities to be carried out fall within budget constraints 1.6 ensure that health and safety regulations and safe working practices are taken into account 1.7 ensure that the influence of working conditions is recognised and included in the plans 1.8 present the plans in the appropriate formats
2. produce plans for both of the following scientific or technical activities: 2.1 testing 2.2 sampling
3. provide technical advice and guidance on four of the following: 3.1 space required 3.2 cost/budget 3.3 timescales 3.4 utilities required 3.5 description of the activities to be carried out 3.6 the sequence in which the activities will take place 3.7 the documentation to be used (such as drawings, specifications, quality assurance, surveys)
3.8 people required who have the necessary skills and knowledge 3.9 the raw materials required (such as type of material, form of material, amount of material) 3.10 consumable materials required (such as chemicals, reagents) 3.11 environmental/legislative requirements that must be met 3.12 special/specific safety equipment required (such as fume extraction, fire equipment)
4. carry out all of the following on completion of the planning activities: 4.1 validation and evaluation of the planning systems and procedures used 4.2 suggested improvements to your process of planning 4.3 recommendations for improvements or changes to the scientific or technical activities that were planned

5. record and communicate details of the work done, to the appropriate people, using: 5.1 verbal report plus one method from the following: 5.2 written or typed report 5.3 computer-based record 5.4 specific workplace documentation 5.5 electronic mail.

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Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: Laboratory; technical; LATA; plan; scientific; sampling; testing; utilities; cost; timescales; fume extraction; drawings.

## COGLATA3-0
## Carry out complex scientific or technical testing operations

**Overview**

This standard covers the competences you need to carry out complex scientific or technical testing operations in a science related work activity, in accordance with approved procedures and practices. You will be required to demonstrate that you can prepare and carry out the required scientific or technical tests in accordance with the relevant workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when performing scientific or technical activities
P3 identify conditions for the complex scientific or technical tests to be done
P4 establish the requirements for the tests to be done
P5 identify hazards and assess risks against testing requirements
P6 select the appropriate testing methods from procedures for the testing requirements
P7 prepare the resources needed for the testing operations
P8 prepare the test samples in accordance with the procedures and check their integrity
P9 carry out the required tests in accordance with the procedures
P10 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational requirements for maintaining the security of the workplace
K7 the lines of communication and responsibilities in your department, and their links with the rest of the organisation

K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K9 why it is important to follow safe operating procedures when using equipment and/or materials
K10 the principles and procedures for the scientific or technical testing
K11 the purposes of testing, and the specific use to which the test results are to be put
K12 the hazards/difficulties associated with complex testing
K13 the relevant testing methods that can be used to achieve the purpose of testing
K14 why calibration is important and how to check calibration
K15 how to check the sample identity and its integrity
K16 the range of methods used to prepare samples
K17 how to identify defective equipment and the appropriate action to take
K18 the methods that can be used for controlling test variables
K19 the concepts of repeatability and reproducibility
K20 the range of equipment available for testing, and how to choose the most appropriate equipment
K21 the potential impact of the test on health, safety and the environment
K22 the methods that can be used for dealing with the handling, storage and disposal of materials
K23 the cleaning materials and the methods for their use
K24 the methods of safe storage that can be used
K25 the document control and reporting procedures that should be used
K26 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**

1. carry out testing operations that have two of the following complex components: 1.1 multi stage testing operations 1.2 very cold/hot test temperatures involved 1.3 multitasking testing 1.4 noisy/vibrating/turbulent elements involved 1.5 multi-parameter or control factors 1.6 involves substances hazardous to health 1.7 environmentally sensitive outcomes 1.8 high level of skill/experience needed 1.9 spontaneity/suddenness of test event 1.10 complex sample components
2. identify conditions for the test that include two of the following: 2.1 test environment 2.2 safety factors 2.3 cleanliness 2.4 test criteria 2.5 time recording system 2.6 external influence/factors
3. prepare all of the following resources for the testing operations: 3.1 consumables 3.2 utilities/facilities 3.3 test instruments 3.4 test materials 3.5 equipment
4. carry out two of the following pre-test check on equipment and test instruments: 4.1 calibration 4.2 serviceability 4.3 cleanliness 4.4 setup conditions
5. check three of the following test sample integrity factors: 5.1 free from defects 5.2 arrangement of like parts 5.3 damage and decomposition 5.4 common elements or characteristics
6. record and communicate details of work done, to the appropriate people, using: 6.1 verbal report plus one method from the following: 6.2 written or typed report 6.3 computer-based record 6.4 specific workplace documentation 6.5 electronic mail.

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Validity: Current Status: Original
Originating organisation: SEMTA Original URN: O45NLATA3-07
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, workplace hazards, manual handling, unsafe practices, VDU & RSI policies, spillages, flammables.

## COGLATA3-08
## Carry out complex scientific or technical sampling operations

**Overview**

This standard covers the competences you need to carry out complex scientific or technical sampling operations in a science related work activity in accordance with approved procedures and practices. You will be required to demonstrate that you can prepare and carry out the required scientific or technical sampling in accordance with the relevant workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when performing scientific or technical activities
P3 identify conditions for the scientific or technical sampling to be done
P4 establish the requirements for the sampling to be done
P5 identify hazards and assess risks against sampling requirements
P6 select the appropriate sampling methods from procedures for the sampling requirements
P7 prepare the resources needed for the sampling operations
P8 carry out the required sampling in accordance with the procedures
P9 label, package and store collected samples in accordance with the procedures
P10 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational requirements for maintaining the security of the workplace
K7 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K9 why it is important to follow safe operating procedures when using equipment and/or materials
K10 the principles and procedures for sampling
K11 the purposes of sampling, and the specific use to which the sample results are to be put
K12 the hazards/difficulties associated with complex sampling
K13 the relevant sampling methods that can be used to achieve the purpose of sampling
K14 the range of methods used to collect samples
K15 how to identify defective sampling equipment and the appropriate action to take
K16 the methods that can be used for controlling sample variables

K17 the range of equipment available for sampling, and how to choose the most appropriate equipment
K18 the potential impact of the sample on health, safety and the environment
K19 the range of methods used for labelling, packaging, handling, storage of samples
K20 the sample records database and tracking system
K21 the types of handling and sorting system used, and the procedures and practices used for transferring samples within the workplace
K22 the document control and reporting procedures that should be used
K23 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**
1. carry out sampling operations that have two of the following complex components: 1.1 multi stage sampling operations 1.2 very cold/hot sample temperatures involved 1.3 multitasking sampling 1.4 noisy/vibrating/turbulent elements involved 1.5 multi-parameter or control factors 1.6 involves substances hazardous to health 1.7 environmentally sensitive outcomes 1.8 high level of skill/experience needed 1.9 spontaneity/suddenness of sample event 1.10 complex sample components
2. identify conditions for sample that include two of the following: 2.1 sample environment 2.2 time recording system 2.3 sample criteria 2.4 cleanliness 2.5 safety factors 2.6 external influence that can variations
3. prepare all of the following resources for sampling operations: 3.1 consumables 3.2 sample equipment/instruments 3.3 utilities/facilities
4. record and communicate details of work done, to the appropriate people, using: 4.1 verbal report plus one method from the following:
4.2 written or typed report 4.3 computer-based record 4.4 specific workplace documentation 4.5 electronic mail.

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Validity: Current Status: Original
Originating organisation: SEMTA Original URN: O45NLATA2-08
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 2 2010
Key words: laboratory, technical, LATA, workplace hazards, manual handling, unsafe practices, VDU & RSI policies, spillages, flammables.

## COGLATA3-09
## Carry out scientific or technical investigations

**Overview**
This standard covers the competences you need to carry out scientific or technical investigations in a science related work activity, in accordance with approved procedures and practices. You will be required to demonstrate you can show you have selected and used appropriate scientific or technical skills, methods and procedures. You will use appropriate investigation to inform actions and review how effective these methods have been in accordance with the relevant workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**
P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when performing scientific or technical activities

P3 obtain and collate appropriate scientific or technical information which assists the investigation
P4 analyse the information correctly and evaluate it against the objective of the investigation
P5 prioritise the tasks within the investigation and follow the appropriate procedures
P6 use the specified resources required to complete the investigations
P7 follow set procedures to deal with contingencies arising during investigations
P8 conduct investigations in accordance with the established plans P
9 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**
K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational requirements for maintaining the security of the workplace
K7 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K9 the principles and procedures for investigations
K10 the techniques that are relevant to the scientific or technical investigation
K11 how to source and access relevant standards
K12 the acceptable operating conditions for conducting investigations
K13 the implications of deviations from set procedures
K14 the essential features of an investigation plan and why this must be followed
K15 the range of equipment used for investigations
K16 the procedures for recording and reporting the investigations done
K17 how to identify and deal with contingencies
K18 the limits and constraints for investigations that are done
K19 the procedures used to deal with deviations from investigation plans
K20 what the procedures are for using contingency plans when deviations from investigation plans occur
K21 the document control and reporting procedures that should be used
K22 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**
1. carry out investigations into one of the following: 1.1 a non-compliance problem 1.2 the properties of a new material 1.3 applications of a new material 1.4 identifying a substance 1.5 resolution technical problem 1.6 cost reduction programme 1.7 quality assurance review 1.8 hazard/accident
2. evaluation information from two of the following sources: 2.1 new external standards/regulations 2.2 manufacturer's instructions 2.3 equipment technical reviews 2.4 material technical reviews 2.5 COSHH data sheets 2.6 environmental reports 2.7 in-company archives 2.8 operating procedures 2.9 test reports 2.10 accident reports 2.11 health and safety documentation
3. use two of the following resources to complete the investigations: 3.1 other staff 3.2 equipment 3.3 materials 3.4 allotted time
4. deal with contingencies for one of the following:

4.1 equipment failure 4.2 changes in variables 4.3 delays 4.4 safety/environmental change
5. record and communicate details of work done, to the appropriate people, using: 5.1 verbal report plus one method from the following: 5.2 written or typed report 5.3 computer-based record 5.4 specific workplace documentation 5.5 electronic mail.

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Originating organisation: SEMTA Original URN: O45NLATA3-09
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, scientific, investigations, external standards, regulations, health and safety documentation, test reports.

## COGLATA3-0
## Carry out small scale processing

**Overview**

This standard covers the competences you need to carry out small scale processing in a science related work activity in accordance with approved procedures and practices. You will be required to demonstrate that you can select and produce appropriate small quantities required against specification in accordance with the relevant workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when performing scientific or technical activities
P3 set the conditions for small scale processing and take the appropriate action to maintain them
P4 confirm the calibration status of equipment and prepare it correctly for the processing operation
P5 produce small scale quantities required against specification
P6 maintain the specified controlled conditions for processing and record required information
P7 take specified action in the event of abnormal occurrences and report them to the relevant people
P8 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational requirements for maintaining the security of the workplace

K7 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K9 the principles and procedures for small scale processing
K10 the essential features of a process plan and how to follow it
K11 how to source and access relevant standards
K12 the operating conditions that are necessary to conduct the small scale processing, and how to maintain them
K13 why it is important to follow set procedures
K14 the range of equipment used for small scale processing
K15 why it is important to follow the correct data recording and reporting procedures
K16 the methods that can be used for dealing with the handling, storage and disposal of materials
K17 the cleaning materials and methods that should be used
K18 the range of resources needed for small scale processing
K19 the reporting procedure in the event of deviations from processing plans
K20 the document control and reporting procedures that should be used
K21 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**
1. produce small scale processing qualifies for one of the following: 1.1 testing the viability of a proposed large-scale manufacturing method 1.2 meeting a customer's requirements for a specialist product not required in any great quantity 1.3 producing small quantities of products to be used in sampling 1.4 testing or other investigations such as reference standards or design evaluation
2. maintain two of the following controlled conditions during processing: 2.1 health and safety 2.2 allotted time 2.3 cleanliness & hygiene 2.4 environment 2.5 recording systems
3. record all of the following processing information: 3.1 sample identification 3.2 results of small scale processing 3.3 calculations and data 3.4 conditions of in-process test
4. record and communicate details of work done, to the appropriate people, using: 4.1 verbal report plus one method from the following: 4.2 written or typed report 4.3 computer-based record 4.4 specific workplace documentation 4.5 electronic mail.

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Validity: Current Status: Original
Originating organisation: SEMTA Original URN: O45NLATA3-010
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, processing, testing, viability, cleanliness & hygiene, sample identification, calculations and data.

## COGLATA3-11
## Diagnose faults, repair and maintain scientific or technical equipment for workplace activities

**Overview**
This standard covers the competences you need to maintain and control stocks of all resources, equipment and consumables for workplace scientific or technical activities in accordance with approved procedures and practices.

You will be required to demonstrate that you can accurately identify equipment faults. You will perform repair and maintenance in accordance with manufacturer's drawings/instructions. You will ensure equipment is returned back into service in accordance with the relevant workplace procedures.
The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities
P3 confirm that the scientific or technical equipment is in a safe and usable condition, according to established procedures
P4 identify accurately any equipment faults or problems and report those outside your control to the relevant people
P5 identify and interpret the required information from the manufacturers' instructions and diagrams, in accordance with established operating procedure
P6 employ the appropriate test equipment and measurement to locate the source of the fault
P7 perform repair or maintenance in accordance with manufacturers' instructions, diagrams and relevant health and safety procedures
P8 organise the repair of defective equipment when other specialists are required
P9 dispose of defective equipment that is beyond repair, in accordance with workplace procedures
P10 test and confirm that the equipment is operating correctly, within calibration specifications, in accordance with workplace procedures
P11 maintain records of repairs, maintenance and checks completed in accordance with workplace procedures P
12 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational requirements for maintaining the security of the workplace
K7 the lines of communication and responsibilities in your department, and the links with the rest of the organisation
K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K9 the manufacturers' specifications and recommendations for the maintenance and calibration of the scientific or technical equipment
K10 where to obtain, and how to interpret drawings, circuit diagrams, specifications, manufacturers' manuals and other technical documents needed for the fault-finding or maintenance activities
K11 the methods used for visually checking, and cleaning, of scientific or technical equipment
K12 the different types, condition and quantities of consumables required for the range of scientific or technical equipment maintained

K13 the methods for maintaining personal health and safety during the maintenance of equipment
K14 the methods for maintaining personal hygiene
K15 how to check that the scientific or technical equipment is working correctly and in accordance with the manufacturer's specifications
K16 how to evaluate the different types of equipment fault, and how these must be dealt with
K17 how to use appropriate tools and equipment to locate the source of a fault or carry out maintenance activities
K18 the procedures to be followed to investigate faults or maintenance activities
K19 the department or person to whom equipment faults should be reported
K20 the methods used for keeping records of the maintenance, cleaning and calibration of scientific or technical equipment, and why this is important
K21 the procedure for the disposal of any waste produced and any equipment beyond repair
K22 the document control and reporting procedures that should be used
K23 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**

1. carry out all of the following operations 1.1 adhere to procedures or systems in place for risk assessment, COSHH, use of personal protective equipment, electricity at work and other relevant safety regulations 1.2 ensure the safe isolation of scientific or technical equipment (such as electrical and fluids supply) 1.3 follow manufacturers' instructions, drawings and procedures for repair or maintenance 1.4 check that the tools and equipment used are in a safe and usable condition 1.5 ensure that the scientific or technical equipment is kept free from foreign objects, dirt or other contamination 1.6 carry out auditory and visual checks on the operation of the equipment 1.7 identify fault and isolate components where appropriate to determine the corrective action 1.8 confirm that the equipment is ready for use 1.9 return all repair and maintenance tools, equipment and waste to the correct locations on completion of the activities 1.10 ensure that accurate, complete and legible records are kept of the repair and maintenance activities
2. carry out maintenance and cleaning on two of the following scientific or technical categories: 2.1 biological equipment and/or instruments 2.2 chemical equipment and/or instruments 2.3 electronic equipment and/or instruments 2.4 weighing and measuring equipment and/or instruments 2.5 information technology equipment 2.6 engineering machines, equipment and/or instruments 2.7 other technical equipment or instruments
3. record and communicate details of work done, to the appropriate people, using: 3.1 verbal report plus one method from the following: 3.2 written or typed report 3.3 computer-based record 3.4 specific workplace documentation 3.5 electronic mail.

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Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, diagnose, faults, maintain, scientific, equipment, workplace, biological, chemical, electronic.

## COGLATA3-1

## Measure, weigh and prepare compounds and solutions for laboratory use

**Overview**

Measure, weigh and prepare compounds and solutions for laboratory use in accordance with approved procedures and practices. You will be required to demonstrate that you can measure, weigh and prepare compounds and solutions in a laboratory environment in accordance with the relevant workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with standard operating procedures
P2 wear the appropriate personal protection equipment (PPE) when handling materials
P3 use laboratory scales for accurately weighing out materials, using metric/imperial measures
P4 accurately measure pH and conductivity of solutions in the laboratory, using correctly calibrated meters
P5 measure out aliquots of liquids into tubes and microtrays for laboratory use and analysis
P6 measure liquids and solids for laboratory use and analysis
P7 communicate the required information about the work done, to authorised people, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the laboratory activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting laboratory activities
K3 the principles of Good Laboratory Practice (GLP) and/or Good Clinical practice (GCP)/Good Manufacturing Practice (GMP) applied in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection when handling specimens/samples
K5 the importance of correct identification, and any unique organisational or laboratory numbers
K6 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
K7 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K8 how to calculate mass/mole calculations in metric and/or imperial measures
K9 how to select the appropriate balance and scale for less than 100mg, 100mg to 5g, and 5g and above
K10 how to check that a pipette is clean, dry, free of chips and ready for use
K11 how to check the calibration on a pipette
K12 how to calibrate and check the calibration on a pH meter
K13 how to calibrate and check the calibration on a balance
K14 how to calibrate and check the calibration on a conductivity meter
K15 how to measure and weigh solids and liquids for laboratory use
K16 how to convert between different units of concentration
K17 how to calculate dilution factors and dilution volumes to make solutions from concentrated stock solutions
K18 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
K19 how to choose the appropriate measuring equipment for the scale, accuracy and precision required for the task

K20 how to clean and maintain the pipettes, balances, pH meter probes and conductivity meter probes.

**Scope/ range**

1. use three of the following types of protective clothing and equipment: 1.1 laboratory coat 1.2 gloves 1.3 other (please specify) 1.4 face mask 1.5 safety glasses
2. carry out weighing activities using balances (scales), using two of the following accuracies: 2.1 grams 2.2 milligrams 2.3 micrograms
3. measure out aliquots of solutions, using four of the following: 3.1 automated pipettes 3.2 graduated cylinders/beakers/tubes 3.3 volumetric flasks 3.4 graduated/bulb pipettes 3.5 other (please specify) 3.6 syringes 3.7 burettes
4. measure pH and/or conductivity, using two of the following: 4.1 handheld pH meter 4.2 combined pH/conductivity meter 4.3 conductivity meter 4.4 bench top pH meter 4.5 other (please specify)
5. calibrate or check the calibration for two of the following: 5.1 pH meter 5.2 conductivity meter 5.3 other (please specify) 5.4 balance 5.5 pipettes
6. calculate the concentrations of solutions, the amounts and volumes required, using four of the following: 6.1 moles per litre 6.2 parts per million 6.3 other (please specify) 6.4 grams per litre 6.5 mass percent
7. make up known volumes of solutions to a specified concentration, using both of the following: 7.1 by measuring and dissolving the correct amount of solute in the correct volume of diluent/solvent 7.2 by dilution from a concentrated stock solution 8. weigh and prepare three of the following types of compound or solution:

8.1 powders/granulations that do not readily lose or gain weight (moisture or solvent) 8.2 solids that readily lose or gain weight (moisture or solvent) 8.3 liquid samples (by difference) 8.4 liquid samples (direct)

9. record details of the work, and communicate the details to the appropriate people, using: 9.1 verbal report plus one method from the following: 9.2 written or typed report (e.g, laboratory notebook) 9.3 computer-based record 9.4 specific company documentation 9.5 electronic mail.

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Originating organisation: SEMTA Original URN: O45NLATA3-012
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, measuring, weighing, preparing, compounds, solutions, conductivity, volumetric flasks.

## COGLATA3-16
## Provide training for scientific or technical activities in the workplace

**Overview**

This standard covers the competences you need to provide training for scientific or technical activities in the workplace in accordance with approved procedures and practices. You will be required to demonstrate that you can discuss the training or instructional activities required with the relevant personnel. You will select and prepare relevant training materials/resources. You will monitor and review the trainee's progress adapting and refining to improve the trainee's attainment of the required scientific or technical skills in accordance with the relevant workplace procedures.

The activity is likely to be undertaken by someone whose work role carries out science related work activities. This could include individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities
P3 discuss the training and instruction activities needed with the relevant person or persons
P4 analyse the training needs of the individuals to be trained
P5 assess and manage risks associated with the training and instruction to be delivered
P6 Select and prepare training and instruction resources to deliver these activities
P7 evaluate and review trainee progress during the training process
P8 monitor and refine training activities to improve the trainee's attainment of required scientific or technical skills
P9 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational requirements for maintaining the security of the workplace
K7 the lines of communication and responsibilities in your department, and the links with the rest of the organisation
K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K9 how to assess the scientific or technical skills of new trainees
K10 how to conduct a training needs analysis
K11 the checks to be made to ensure trainees can learn safely and apply job skills in the workplace
K12 how to identify and deliver a training plan for trainees
K13 how to give trainees on-the-job instruction and supervising their work
K14 how to assess the trainee's progress in acquiring and applying job skills and skills in working with others
K15 how to gather trainee feedback on their progress and achievements
K16 the methods used for giving the training feedback on their progress and achievements
K17 the procedures for keeping training records
K18 the procedures for reporting trainees' progress and update performance and development records
K19 how to work with colleagues and make use of unplanned opportunities
K20 how to ensure resources are available for training and timescales are realistic
K21 how to ensure you show fairness, integrity and consistency in your decision making
K22 what is meant by SMART (specific, measurable, achievable, realistic and time-bound) learning objectives
K23 how to evaluate effectiveness of training completed and feedback to the relevant people

K24 the organisational requirements for maintaining the security and confidentiality of any training records kept
K25 the document control and reporting procedures that should be used
K26 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**
1. discuss training activities with: 1.1 trainee plus one of the following: 1.2 supervisor 1.3 team leader 1.4 technical expert 1.5 training coordinator 1.6 manager 1.7 head of department 1.8 training provider 1.9 head teacher
2. carry out training for two of the following people: 2.1 trainee technician 2.2 newly qualified person 2.3 technician 2.4 teacher 2.5 trainer
3. select and prepare four of the following training requirements: 3.1 induction 3.2 appraisal or CPD review 3.3 off site activity 3.4 risk assessment 3.5 resources/worksheets 3.6 curriculum/course modification 3.7 problem solving task 3.8 equipment 3.9 scientific or technical technique 3.10 organisation policy change 3.11 department directives
4. record and communicate details of the work done, to the appropriate people, using: 4.1 verbal report plus one method from the following: 4.2 written or typed report 4.3 computer-based record 4.4 specific workplace documentation 4.5 electronic mail.

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Originating organisation: SEMTA Original URN: O45NLATA3-016
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, provide, scientific, workplace, induction, risk assessment, technician.

## COGLATA3-21
## Improve the quality and reliability of scientific or technical activities in the workplace

**Overview**
This standard covers the competences you need to demonstrate how to improve the quality and reliability of scientific or technical activities in the workplace in accordance with approved procedures and practices. You will be required to demonstrate that you can make recommendations for improvements to working practices or the work area, which are consistent with the objectives of your team and your organisation in accordance with the relevant workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**
P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when performing scientific or technical activities
P3 monitor activities at intervals in order to identify potential improvements in working practices or the work area
P4 obtain views, when appropriate, of relevant people on potential improvements to the working practices or the work area
P5 agree plans for improvements and timescales with relevant people in sufficient detail to allow effective planning

P6 identify any considerations which may affect the implementation of potential improvements
P7 make recommendations for improvements to working practices or the work area which are consistent with the objectives of your team and your organisation
P8 monitor the implementation of improvements to identify any problems and take appropriate action
P9 evaluate the effectiveness of the improvement
P10 work safely at all times, complying with health and safety, environmental and other relevant regulations and guidelines
P11 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**
K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational requirements for maintaining the security of the workplace
K7 the lines of communication and responsibilities in your department, and the links with the rest of the organisation
K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K9 the organisational procedures for determining when and how quality assurance activities should be undertaken
K10 the processes and specifications for the activity being quality assured
K11 how to obtain the quality criteria that could be used for the different types of scientific or technical processes
K12 the current quality assurance methods that are in use
K13 the people who should be involved in the quality assurance process
K14 the impact that quality assurance methods have on the organisation
K15 the people who require information on quality assurance, and the procedures for informing them
K16 how to make recommendations for improvement
K17 how to ensure that the recommendations are consistent with objectives of your team and/or your workplace
K18 how to communicate suggestions for change and improvements
K19 what methods can be used to implement the improvements
K20 how to plan and agree appropriate timescales for improvements
K21 how to identify problems and the actions that are appropriate to take in the event of them
K22 how to evaluate and monitor improvements
K23 how to ensure that quality improvement recommendations are followed up
K24 the importance of making sure that all information used is accurate
K25 the format and procedure for maintaining quality assurance records
K26 the document control and reporting procedures that should be used
K27 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**
1. discuss quality improvements with one of the following people: 1.1 supervisor 1.2 team leader 1.3 health and safety officer 1.4 manager 1.5 head of department 1.6 teacher or trainer

2. consider all of the following for potential quality improvements: 2.1 adherence to COSHH and other relevant safety regulations 2.2 changes required to quality control specifications and related documents 2.3 estimated costs v benefits, implementation timescales and other inputs required 2.4 the approval needed to implement the identified quality improvement activities 2.5 all the personnel and workplace processes that will be effected by quality improvement activities
3. identify potential quality improvements related to two of the following scientific or technical activities: 3.1 biological equipment and/or instruments 3.2 chemical equipment and/or instruments 3.3 electronic equipment and/or instruments 3.4 weighing and measuring equipment and/or instruments 3.5 information technology equipment 3.6 engineering machines, equipment and/or instruments.
3.7 other technical equipment or instruments
4. record and communicate details of work done, to the appropriate people, using: 4.1 verbal report plus one method from the following: 4.2 written or typed report 4.3 computer-based record 4.4 specific workplace documentation 4.5 electronic mail.

Developed by: Cogent Version number: 2
Date approved: February 2017 Indicative review date: February 2019
Validity: Current Status: Original
Originating organisation: SEMTA Original URN: O45NLATA3-21
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, quality, reliability, scientific, workplace, health and safety, trainer.

## COGLATA3-14
## Make presentations for scientific or technical activities in the workplace

**Overview**

This standard covers the competences you need to make presentations for scientific or technical activities in the workplace in accordance with approved procedures and practices. You will be required to demonstrate that you have established the scope of the presentation and how it will need to reflect audience and work practices in accordance with the relevant workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities
P3 work safely at all times, complying with health and safety and other relevant regulations and guidelines
P4 establish the scope and purpose of the development/research presentation to be delivered
P5 determine quality, cost and delivery issues, and the resources needed to deliver the presentation
P6 present the data in an appropriate format and structure for the audience
P7 obtain appropriate equipment, facilities and resources, and verify its fitness for purpose
P8 ensure the venue and equipment are suitable and in good order for the presentation
P9 deliver the prepared presentation in the correct media for the audience

P10 ensure that the audience has the appropriate post-presentation media to support the presentation
P11 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**
K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational requirements for maintaining the security of the workplace
K7 the lines of communication and responsibilities in your department, and the links with the rest of the organisation
K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K9 the different types of audience and their scientific or technical information needs
K10 how to gather relevant and accurate information for the presentation
K11 the purpose of the presentation and the key messages to be delivered
K12 how to ensure the content of the presentation is balanced and accurate
K13 the time available to make presentations
K14 the advantages and disadvantages of different methods of presentation delivery
K15 the materials that are appropriate to support presentations
K16 how to use the presentation equipment correctly
K17 the scientific or technical questions you might expect to receive as a result of the presentation
K18 how to judge the effectiveness of the presentation
K19 factors that can affect or influence the impact of a presentation
K20 the venue health and safety considerations to be taken into account at any presentation
K21 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**
1. complete all of the following for planning and delivering the presentation: 1.1 plan the presentation in a logical and structured way for the brief 1.2 prepare the content to meet the needs of the target audience 1.3 rehearse the presentation and amend as appropriate for the content and delivery timescale 1.4 prepare supporting materials (such as, handouts, copies of slides) 1.5 prepare answers to anticipated questions 1.6 use the equipment correctly to deliver the planned presentation 1.7 answer audience questions 1.8 issue the appropriate handouts to the audience following the presentation
2. deliver presentations to both of the following audiences: 2.1 small groups 2.2 large groups
3. make presentations for two of the following scientific or technical activities: 3.1 providing scientific or technical support 3.2 demonstration of a new/existing process 3.3 demonstration of equipment or a system 3.4 team leading/coaching 3.5 review of skills or techniques 3.6 other (please specify) 3.7 curriculum/training activity or investigation
4. record and communicate details of the work done, to the appropriate people, using: 4.1 verbal report plus one method from the following: 4.2 written or typed report 4.3 computer-based record 4.4 specific workplace documentation 4.5 electronic mail.

Developed by: Cogent Version number: 2
Date approved: February 2017 Indicative review date: February 2019
Validity: Current Status: Original
Originating organisation: SEMTA Original URN: O45NLATA3-14
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, presentations, scientific, workplace, computer-based record, electronic mail, supporting materials.

## COGLATA3-15
## Assess your own scientific or technical knowledge and skills for workplace activities

**Overview**

This standard covers the competences you require to assess your own scientific or technical knowledge and skills for workplace activities in accordance with approved procedures and practices. You will be required to demonstrate that you can identify the scientific or technical requirements of your role and identify any personal knowledge or skills gaps. This will be followed up by you agreeing and following a personal development plan to address any knowledge or skills gaps and reviewing the impact this has had on your performance in accordance with the relevant workplace procedures. The activity is likely to be undertaken by someone in a science related work setting, including individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when performing scientific or technical activities
P3 identify and agree the scientific or technical requirements of your role in the workplace
P4 discuss and agree personal work objectives and how you will measure progress
P5 identify any scientific or technical knowledge, understanding and personal skills gaps for your workplace role
P6 discuss and agree a development plan to address any identified knowledge, understanding and skills gaps
P7 undertake agreed development actions and evaluate how they have contributed to your improved performance
P8 obtain regular feedback on your scientific or technical performance to meet workplace requirements and milestones
P9 work safely at all times, complying with health and safety, environmental and other relevant regulations and guidelines
P10 communicate the required information about the work done, in accordance with departmental and organisational procedure.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities

K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational requirements for maintaining the security of the workplace
K7 the lines of communication and responsibilities in your department, and the links with the rest of the organisation
K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K9 how to identify and assess the scientific or technical requirements of a work role
K10 the different ways in which you are set your agreed personal work objectives
K11 how to assess and identify gaps in your current scientific or technical knowledge, understanding and skills
K12 how to measure your progress against scientific or technical work objectives
K13 the type of development activities that can be undertaken to address identified scientific or technical gaps in knowledge, understanding and skills
K14 how to identify development needs to address any gaps between the requirements of your work role and your current scientific or technical knowledge, understanding and skills
K15 how to identify whether/how development activities have contributed to your performance
K16 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**
1. discuss and agree workplace performance with one of the following people: 1.1 supervisor 1.2 team leader 1.3 health and safety officer 1.4 manager 1.5 head of department 1.6 teacher or trainer
2. agree scientific or technical work objectives that are all the following: 2.1 specific 2.2 achievable 2.3 time-bound 2.4 measurable 2.5 realistic
3. record and communicate details of the work done, to the appropriate people, using: 3.1 verbal report Plus one method from the following: 3.2 written or typed report 3.3 computer-based record 3.4 specific workplace documentation 3.5 electronic mail.

Developed by: Cogent Version number: 2
Date approved: February 2017 Indicative review date: February 2019
Validity: Current Status: Original
Originating organisation: SEMTA Original URN: O45NLATA3-05
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, scientific, knowledge, skills, workplace, measurable, time-bound

## COGLATA3-16
## Provide training for scientific or technical activities in the workplace

**Overview**
This standard covers the competences you need to provide training for scientific or technical activities in the workplace in accordance with approved procedures and practices. You will be required to demonstrate that you can discuss the training or instructional activities required with the relevant personnel. You will select and prepare relevant training materials/resources. You will monitor and review the trainee's progress adapting and refining to improve the trainee's attainment of the required scientific or technical skills in accordance with the relevant workplace procedures.

The activity is likely to be undertaken by someone whose work role carries out science related work activities. This could include individuals working in hospitals, scientific laboratories, schools and universities.

**Performance criteria: You must be able to**

P1 ensure that your work is carried out in accordance with workplace procedures
P2 use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities
P3 discuss the training and instruction activities needed with the relevant person or persons
P4 analyse the training needs of the individuals to be trained
P5 assess and manage risks associated with the training and instruction to be delivered
P6 Select and prepare training and instruction resources to deliver these activities
P7 evaluate and review trainee progress during the training process
P8 monitor and refine training activities to improve the trainee's attainment of required scientific or technical skills
P9 communicate the required information about the work done, in accordance with departmental and organisational procedures.

**Knowledge and understanding: You need to know and understand**

K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
K3 the scientific or technical techniques and processes you must use correctly in the workplace
K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
K5 the importance of correct identification, and any unique workplace coding system
K6 the organisational requirements for maintaining the security of the workplace
K7 the lines of communication and responsibilities in your department, and the links with the rest of the organisation
K8 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
K9 how to assess the scientific or technical skills of new trainees
K10 how to conduct a training needs analysis
K11 the checks to be made to ensure trainees can learn safely and apply job skills in the workplace
K12 how to identify and deliver a training plan for trainees
K13 how to give trainees on-the-job instruction and supervising their work
K14 how to assess the trainee's progress in acquiring and applying job skills and skills in working with others
K15 how to gather trainee feedback on their progress and achievements
K16 the methods used for giving the training feedback on their progress and achievements
K17 the procedures for keeping training records
K18 the procedures for reporting trainees' progress and update performance and development records
K19 how to work with colleagues and make use of unplanned opportunities
K20 how to ensure resources are available for training and timescales are realistic
K21 how to ensure you show fairness, integrity and consistency in your decision making
K22 what is meant by SMART (specific, measurable, achievable, realistic and time-bound) learning objectives
K23 how to evaluate effectiveness of training completed and feedback to the relevant people

K24 the organisational requirements for maintaining the security and confidentiality of any training records kept
K25 the document control and reporting procedures that should be used
K26 the reasons why effective communication is important, and the methods used for communicating effectively.

**Scope/ range**
1. discuss training activities with: 1.1 trainee plus one of the following: 1.2 supervisor 1.3 team leader 1.4 technical expert 1.5 training coordinator 1.6 manager 1.7 head of department 1.8 training provider 1.9 head teacher
2. carry out training for two of the following people: 2.1 trainee technician 2.2 newly qualified person 2.3 technician 2.4 teacher 2.5 trainer
3. select and prepare four of the following training requirements: 3.1 induction 3.2 appraisal or CPD review 3.3 off site activity 3.4 risk assessment 3.5 resources/worksheets 3.6 curriculum/course modification 3.7 problem solving task 3.8 equipment 3.9 scientific or technical technique 3.10 organisation policy change 3.11 department directives
4. record and communicate details of the work done, to the appropriate people, using: 4.1 verbal report plus one method from the following: 4.2 written or typed report 4.3 computer-based record 4.4 specific workplace documentation 4.5 electronic mail.

Developed by: Cogent Version number: 2
Date approved: February 2017 Indicative review date: February 2019
Validity: Current Status: Original
Originating organisation: SEMTA Original URN: O45NLATA3-16
Relevant occupations: Professional Occupations; Science Professionals; Science and mathematics; Science
Suite: Laboratory and Associated Technical Activities Suite 3 2010
Key words: laboratory, technical, LATA, provide, scientific, workplace, induction, risk assessment, technician.

# APPENDIX 3 - ASSESSMENT TEMPLATE DOCUMENTS

## 3A: Sample Form
## Assessment plan and review

| | |
|---|---|
| Candidate name: | |
| Employer/location: | Date: |
| Qualification:<br>Unit(s):<br>Elements: | |
| Assessor: | |
| Period of Review:<br>(should not normally exceed 12 weeks) | Proposed Date for next review: |

| |
|---|
| **Part 1** – **<u>Activities / Tasks / Learning / Training</u>** undertaken since last review: |
| **Part 2a** – '**<u>Progress to date'</u>** specifying units/elements/modules achieved to date (the progress recorded **must** tie in with the associated '**Summary of Achievement Record'**): |

| |
|---|
| **Part 2b** – Identified **barriers** to progress (please detail here any issues relating to the programme delivery, which have impacted negatively on progress e.g. attendance times, learning difficulties, suitability of training/learning materials, physical barriers to participation, health issues, attitude etc): |

*

| **Part 2c** – Solutions proposed to address the above barriers: |
|---|
| |

-

| **Part 3** – Agreed '**assessment planning'** & action required for the next review (proposed methods of evidence collection must be recorded & proposed assessment methods must be selected):<br><br>***N.B.*** *Methods of evidence collection may include: either hard copy records or electronic records such as audio recordings, scanned documents, photographs etc.* | Element:<br><br>Proposed Assessment Methods/Sources of Evidence: | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | CrossRef | RPL | OBS | Questioning | PS | WR | D | WT |
| | | | | | | | | |

**Key: Assessment Methods/Sources of Evidence**

**CrossRef** = Cross Referencing **RPL**= Recognition of Prior Learning

**OBS** = Observation **PS** = Personal Statement

**WR** = Work Record **D** = Discussion

**WT**= Witness Testimony

| |
|---|
| **Part 4** – Additional comments / issues (e.g. health & safety issues): |
| **Part 5** – Candidate comments/feedback/evaluation: |
| **Part 6** – Employer comments on progression and achievement noted in **Part 2a**: |
| **Part 7** – Assessor Feedback/Assessment Judgements/Decisions/Outcome |

Candidate Signature: ..... Date: .....

Assessor Signature: ..... Date: .....

Employer Signature (where present): ..... Date: .....

Employer Name and position: .....

## 3B: Sample Form
## Assessor report

| | |
|---|---|
| **Qualification:** | |
| **Candidate:** | |
| **Assessor:** | |
| **Date:** | |
| **Unit/ element:** | |
| **Location/ circumstance:** | |
| **Details of observation/ question/ answers/ discussion** | **Ref** |
| | |
| **Details of observation/ question/ answers/ discussion** | **Ref** |
| | |
| **Details of observation/ question/ answers/ discussion** | **Ref** |
| | |
| **Assessors comments** (state whether candidate is competent) | |
| **Assessor signature** | |
| **Candidate signature** | |

## 3C: Sample Form
## Witness testimony

Qualification: ……

Unit: ……

Element(s): ……

Candidate Name: ……

Witness Name: ……

Witness Contact Details: ……

……

Describe your technical qualifications/ experience and any assessment qualifications/ experience:

……

……

……

Describe your relationship with the candidate:

……

……

Date of evidence: ……

**Testimony and comment on candidate's performance**

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……

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Witness Signature & Date: ……

Candidate Signature & Date: ……

Assessor Signature & Date: ……

## 3D: Sample Form
## Candidate personal statement

| **Qualification:** | | |
|---|---|---|
| **Candidate name:** | | |
| **Element(s)** | **Date** | **Statement / evidence** |
| | | |
| Candidate's signature: | | |
| Assessor's signature:<br>Date: | | |

# APPENDIX 4 - ASSESSOR TEMPLATE DOCUMENTS

## 4A: Sample Form
## Element achievement record

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Candidate name:** | | | | | | | | | | | | | |
| **Qualification:** | | | | | | | | | | | | | |
| **Unit title:**<br>**Element(s):** | | | | | | | | | | | | | |
| **Assessor:** | | | | | | | | | | | | | |
| **Evidence ref:** | **Evidence description *** | **Location **** | **Performance criteria** | | | | | **Knowledge and understanding** | | | | | |
| | | | | | | | | | | | | | |
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***Key: Assessment Methods/Sources of Evidence**

**CrossRef** = Cross Referencing **RPL**= Recognition of Prior Learning **OBS**= Observation
**Q&A**= Questioning **PS**= Personal Statement **WR** = Work Record **D**= Discussion
**WT**= Witness Testimony

***Should refer to whether the evidence can be found in the portfolio ('PF') or elsewhere, if so state location of evidence*

## 4B: Sample Form
## Unit progress record

| | | |
|---|---|---|
| **Qualification:** | | |
| **Unit title:** | | |
| I confirm that the candidate has been assessed as competent for this unit | | |
| Assessor name | Assessor signature | Date |
| | | |
| I confirm that I have been assessed as competent and that the evidence produced is from work that is all mine | | |
| Candidate name | Candidate signature | Date |
| | | |
| I confirm that I have internally verified this unit and confirm that the candidate is competent (this section must be completed where the assessor is unqualified) | | |
| IV name | IV signature | Date |
| | | |

# APPENDIX 5 - INTERNAL VERIFIER TEMPLATE DOCUMENTS

## 5A: Sample Internal verification Strategy

This document indicates what may be covered as part of an internal verifier's strategy. An effective internal verification strategy ensures:

- A forum for discussion of borderline cases
- Assessor networking and sharing of good practice
- Valid, reliable and consistent training and/or assessment
- Recorded assessment decisions which are appropriate, consistent, fair, transparent and equitable
- Clarity for candidates about assessment requirements
- Effective preparation and presentation for external verification
- Reduction in level of direct external verification scrutiny

To underpin the IV/ verification process a plan of internal activity should be developed indicating

- what will happen
- when it will happen
- who will be involved

New instructors/assessors must:

a) be supplied with assessment and materials
b) clearly understand assessment requirements and procedures

All assessors must:

a) know the name of the person who will manage the IV process and the name of the IV
b) know how IV/ verification will happen, when it will happen and who will be involved
c) be informed about issues raised through previous internal and external quality assurance

**On Course Monitoring**

The IV should:

a) Sample assessments to ensure that:
   - feedback to candidates is clear and constructive
   - teaching and assessment activities are standard and appropriate
   - assessment decisions are fair and consistent
   - teaching and assessment records are clear
b) Undertake standardisation activities
c) Ensure candidates understand assessment requirements

d) Provide advice and support for Assessors and share good practice
e) Identify good assessment practice
f) Record internal verification activities and findings, list action points and report to instructors/assessors and the EV
g) Liaise with the EV as necessary

**End of Course Checking**

The IV should:

a) monitor progress against previous action points
b) ensure assessment records are complete and accurate
c) ensure evidence of achievement is appropriate and standardised
d) record internal verification activities and findings, list action points, and report these to assessors and the EV

**Guidance on Sampling and Record Keeping**

**What do IVs/IVs sample and why?**

IVs are responsible for monitoring the quality of assessment, hence the need for them to sample assessment practices and decisions. It is not usually possible or necessary to verify every aspect of assessment at each internal verification. A properly selected representative sample should identify any issues with assessment practices and decisions.

**Selecting a sample**

To select a representative sample, IVs must take account of factors which may impact on the quality of assessment. These factors are used to define a sampling strategy that determines the size of the sample and enables judgements to be made.

Key factors to consider are:

- Sites of delivery
- Number and experience of Assessors
- Number of courses/assessments
- Previous IV actions/recommendations
- Assessment methods
- Special arrangements
- EV recommendations
- Borderline cases
- Anything else that you think might impact on assessment decisions

The sample should include an element of random selection by the IV. It is not necessary to sample across every aspect of the programme at each event but the plan should seek to cover everything over a period of time, e.g. 3 years.

**Which records should be kept?**

Records of internal quality assurance/ verification must be kept and made available to the EV during monitoring visits. These should demonstrate that the internal verification procedures have been carried out. IVs should record two sets of information:

1. The sample taken by the IV
2. The comments and feedback to the Assessor following the sampling exercise, showing any recommendations or action required and how this was resolved.

There is a sample form shown below that you may use or adapt to suit your own requirement.

## 5B: Sample Form
## Internal verification - sampling assessment decisions

**Unit/qualification:**

**Location:**
**Assessor name:**

| Candidate Name | Sampling element[2] | Was the assessment method appropriate? | Is there sufficient evidence that outcomes have been met? | Is the evidence appropriate for the level? | Comments |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| **Comments** | | | | | |

**Signed:** **(IV)** **Date:**

**Signed:** **(Assessor)** **Date:**

[2] *Was this a learning outcome across candidates, or a whole unit or one method of assessment?*

## 5C: Sample Form
## Internal verification – observation of assessors

Internal Verifier's Name: ……

Assessor's Name: ……

Candidate's Name: ……

Qualification Title: ……

Unit Assessed: ……

Element Assessed: ……

Date of Observation: ……

Location of Assessment: ……

| **Prior to the assessment had the Assessor:** | **Yes** | **No** | **Comments:** |
|---|---|---|---|
| Developed a written Assessment Plan for the candidate | | | |
| Checked that the facilities, resources and information required for the assessment were available and ready for use | | | |
| Briefed the candidate on how the assessment would take place and what would be assessed | | | |

| During the assessment did the Assessor: | Yes | No | Comments: |
|---|---|---|---|
| Conduct the assessment unobtrusively without interfering with the candidate's performance | | | |
| Encourage the candidate to satisfy the specified Assessment Criteria | | | |
| Ask questions clearly in an encouraging tone and manner without leading the candidate | | | |
| Ensure that sufficient questions were asked and that they were justifiable and relevant to the Unit assessed | | | |

| During the assessment did the Assessor (continued): | Yes | No | Comments: |
|---|---|---|---|
| Ensure that the atmosphere created during the assessment was pleasant and conducive | | | |
| Clarify and resolve any concerns that the candidate had during the assessment | | | |
| Clearly inform the candidate of the assessment decision i.e. 'achieved' or 'requires further practice' | | | |
| **After the assessment did the Assessor:** | **Yes** | **No** | **Comments:** |

| | | | |
|---|---|---|---|
| Provide feedback that was clear, constructive, met the candidate's needs and was appropriate to his/her level of confidence | | | |
| Encourage the candidate to comment on the assessment decision and how he/she was assessed | | | |
| Complete the Unit assessment documentation and ensure it was fully signed and dated | | | |

| **Overall feedback to Assessor:** |
|---|
| |

| **Assessor's comments on the IV's feedback:** |
|---|
| |

Assessor's Signature: ……

Date:……

Internal Verifier's Signature: ……

Date:……