Assessor's guidelines for the SVQs in Laboratory Science at levels 2, 3 and 4

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About this guide

This guide provides some practical examples of how to assess your candidates for the SVQs in Laboratory Science at levels 2 to 4. You may be able to think of other ways of assessing your candidates and recording your decisions about their competence.

Using assessments based on these examples does not guarantee successful verification — it is still your responsibility to ensure that internal quality assurance procedures are followed.

Introduction

This introduction provides a brief overview of SVQs and how they are assessed in the workplace. If you are already familiar with the concept of SVQs, you may wish to go to the next section.

About SVQs

Scottish Vocational Qualifications (SVQs) are work-based qualifications which set the level of occupational competence for each sector of the economy. The qualifications have been designed by standards-setting bodies made up of experienced practitioners who represent employers, professional bodies, trade unions, education and voluntary organisations.

Each standards-setting body is responsible for developing national standards which define *what* employees (or potential employees) must be able to do, *how well*, and *in what circumstances*, to show that they are competent in their work.

Each SVQ which a standards-setting body develops has to fit into a broad framework which allows qualifications in the UK and throughout Europe to be compared. SVQs are specified at five levels which reflect the various technical and supervisory skills knowledge and experience, which employees should have as they progress in their industry.

Explanation of levels

Level 1 Defines competent performance in a range of activities which are largely routine and predictable.

Level 2 Specifies that competent performance must be shown in a broader range of work activities which are less routine and predictable. The employee will have more autonomy and responsibility, and may have to work as part of a team.

Level 3 Specifies that competent performance must involve the employee in carrying out a broad range of varied work activities, most of which are complex and non-routine. There is considerable autonomy and responsibility, including the possibility of controlling or guiding others.

Level 4 Specifies competence as complex technical or professional work activities which require a substantial degree of personal autonomy or responsibility. Managing staff and other resources is often involved.

Level 5 Specifies competent performance as involving the employee in carrying out a significant range of activities in a wide variety of situations which are often unpredictable. Substantial responsibility and autonomy is involved in the work, which requires decision-making in the allocation of resources and the work of others. This will require complex skills such as analysis, design and evaluation.

How are standards defined in SVQs?

All SVQs consist of standards which can be broken down into various parts.

Units define the broad functions carried out in the sector, and are made up of a number of performance statements. These **performance statements** describe the activities which employees have to perform, and will require candidates to demonstrate certain skills or knowledge and understanding.

The quality of performance in what people must be able to do — how well they have to perform — is described by **Performance Criteria**. These may also be called **statements of competence** or **what candidates should do**.

The section on **knowledge statements** says what candidates must know and understand, and how this knowledge applies to their jobs.

These SVQ standards contain statements on **scope**. These statements could, for example, list the equipment that candidates are expected to be familiar with and use in their occupational area.

Increasingly, you may see changes to this format as standards become more user-friendly and are written in plain English. For example, there may be some standards containing **Range Statements** or **Evidence Requirements**, but over time these should disappear. You may, however, find that information on the context, nature and amount of evidence which is required to prove competence (which used to be given in Range Statements and Evidence Requirements) is now defined in the **assessment guidance** for the qualification. Assessment guidance is drawn up by the awarding body and is packaged along with the standards to form the SVQ.

Who is involved in SVQs?

There are several roles:

- **the candidate:** the person who wants to achieve the SVQ (eg an employee)
- **the assessor*:** the person who assesses the candidates and decides if they are competent (eg supervisor)
- **the internal verifier*:** an individual nominated by the centre (eg a company) who ensures that assessors apply the standards uniformly and consistently (eg supervisor's line manager)

- **the external verifier*:** an individual appointed by SQA who ensures that standards are being applied uniformly and consistently across all centres offering the SVQ

*Assessors and verifiers in centres will be asked by SQA to prove they have the appropriate occupational competence to assess and verify the SVQ. Occupational competence has been defined by the standards-setting body in the assessment strategy for these SVQs — see SQA's website: **www.sqa.org.uk**

Assessors and verifiers are also expected to obtain an appropriate qualification in assessment and verification — this can be the Assessor/Verifier Units (the national standards for assessment and verification), or an alternative qualification which SQA also recognises.

The steps involved in assessing a candidate for an SVQ

In deciding whether a candidate should get an SVQ, you will go through these stages:

- planning for assessment
- generating and collecting evidence of the candidate's competence in the Units
- judging the evidence of the candidate's ability and making an assessment decision based on the evidence
- recording the assessment decision and the candidate's achievement

1: The SVQs in Laboratory Science

The SVQs in Laboratory Science have been developed by SEMTA, the standards-setting body for the science, engineering and manufacturing technologies sector and are intended for people working in the science sector.

These people may be working as Medical Laboratory Assistants, Assistant Technical Officers, phlebotomists or laboratory technicians. They will require skills and knowledge in health and safety, working as part of a team, communicating laboratory information, maintaining stocks of consumables for laboratory use, routine maintenance and calibration of laboratory equipment, preparing, processing and analysing laboratory samples using appropriate equipment to Good Laboratory Practice (GLP) and/or Good Clinical Practice (GCP)/Good Manufacturing Practice (GMP).

The SVQs are designed to be assessed in the workplace, or in conditions of the workplace. Examples of the settings or centres in which the SVQs are likely to be delivered include: microbiology, biochemical and cytology laboratories in the industrial sector, educational sector or National Health Service. Delivery may be supported through partnerships with colleges, particularly with respect to knowledge requirements.

Structure of the SVQs

This section lists the Units which form the SVQs in Laboratory Science at levels 2 to 4.

Level 2
Four common mandatory Units, one mandatory Unit from chosen pathway, and two optional Units including one from Group A.

Common Mandatory Units

SQA Ref	SCQF level	SSC Ref	Title
F7Y9 04		01	Maintaining Health and Safety in a Laboratory Environment
F7Y7 04		02	Maintaining Effective and Efficient Working Relationships in the Laboratory
F80G 04		03	Receiving, Sorting, Transporting and Storing Laboratory Specimens/Samples Under Supervision
F7XJ 04		04	Communicating Laboratory Information to Authorised Personnel Under Supervision

Pathways

Clinical Analysis pathway

Mandatory Unit

SQA Ref	SCQF level	SSC Ref	Title
F7WJ 04		05	Accessing, Registering and Inputting Patient Data in a LIMS Under Supervision

Group A — Optional Units

SQA Ref	SCQF level	SSC Ref	Title
F7X4 04		06	Assisting with the Preparation of Biopsy Specimens for Laboratory Investigations
F7X5 04		07	Assisting with the Preparation of Microbiological Specimens/Samples for Laboratory Investigations
F7X8 04		08	Assisting with the Processing of Liquid Clinical Specimens Using Automated Laboratory Equipment
F7X9 04		09	Assisting with the Processing of Liquid Clinical Specimens Using Manual Laboratory Techniques
F7X7 04		17	Assisting with the Processing of Diagnostic Cytology Specimens in the Laboratory

Group B — Optional Units

SQA Ref	SCQF level	SSC Ref	Title
F7X3 04		10	Assisting with the Maintenance of Stocks of Reagents and Consumables for Laboratory Use
F7XR 04		11	Drawing Blood Samples from Patients for Laboratory Investigations
F7XE 04		18	Assisting with the Routine Maintenance, Cleaning, Disinfecting and Calibration of Laboratory Equipment

Compound Analysis pathway

Mandatory Units

SQA Ref	SCQF level	SSC Ref	Title
F7YH 04		16	Measuring, Weighing And Preparing Compounds And Solutions For Laboratory Use

Group A — Optional Units

SQA Ref	SCQF Level	SSC Ref	Title
F7X5 04		07	Assisting With The Preparation Of Microbiological Specimens/Samples For Laboratory Investigations
F7XA 04		12	Assisting With The Processing Of Liquid Compounds/Samples Using Automated Laboratory Equipment
F7XC 04		13	Assisting With The Processing Of Liquid Compounds/Samples Using Manual Laboratory Techniques

Group B — Optional Units

SQA Ref	SCQF Level	SSC Ref	Title
F7X3 04		10	Assisting with the Maintenance of Stocks of Reagents and Consumables for Laboratory Use
F7WH 04		14	Accessing, Registering and Inputting Batch/Sample Data in a LIMS Under Supervision
F7X6 04		15	Assisting with the Preparation of Solutions for Laboratory Use
F7X7 04		17	Assisting with the Processing of Diagnostic Cytology Specimens in the Laboratory
F7XE 04		18	Assisting with the Routine Maintenance, Cleaning, Disinfecting and Calibration of Laboratory Equipment
F809 04		19	Preparing Culture Media and Solutions for Laboratory Use
F7XY 04		20	Following Aseptic Procedures in the Laboratory Environment

Level 3 Laboratory Science (Analytical & Process Science)
Five mandatory Units and four optional Units including three from Group B.

Mandatory Units

SQA Ref	SCQF level	SSC Ref	Title
F7Y9 04		01	Maintaining Health and Safety in a Laboratory Environment
F7Y7 04		02	Maintaining Effective and Efficient Working Relationships in the Laboratory
F80E 04		03	Providing Leadership for a Laboratory Team
F7YH 04		15	Measuring, Weighing and Preparing Compounds and Solutions for Laboratory Use
F80P 04		22	Using and Communicating Laboratory Information to Authorised Personnel

Group A Optional Units

SQA Ref	SCQF Level	SSC Ref	Title
F7XV 04		04	Encouraging Problem Solving and Innovation in a Laboratory Team
F7YE 04		05	Managing Budgets for Laboratory Projects
F80T 04		24	Using Statistical Process Control (SPC) for Laboratory Measurement Processes

Group B Optional Units

SQA Ref	SCQF level	SSC Ref	Title
F7WY 04		06	Analysing Laboratory Samples Using High Performance Liquid Chromatography (HPLC)
F7WV 04		07	Analysing Laboratory Samples Using Gas Chromatography (GC)
F7WW 04		08	Analysing Laboratory Samples Using Gas Chromatography-Mass Spectrometry (GCMS)
F7WX 04		09	Analysing Laboratory Samples Using Gas Chromatography-Thermal Conductivity (GCTC)
F7WN 04		10	Analysing DNA/RNA Samples Using Polymerase Chain Reaction (PCR) And Quantitative PCR (QPCR)
F7WK 04		11	Amplifying DNA Samples Using Polymerase Chain Reaction (PCR)
F7Y4 04		12	Maintaining Cell Lines for Laboratory Activities Using Cryogenic Storage
F7XM 04		13	Culturing/Fermenting Cells for Laboratory Activities Using Controlled Fed Batch or Continuous Culture Fermentation
F7Y5 04		14	Maintaining Cell Lines for Laboratory Activities Using Sub-Culture
F80K 04		16	Separating Samples for Laboratory Activities Using Centrifugation
F7X0 04		17	Analysing Laboratory Samples Using Light Microscopy
F7X1 04		18	Analysing Laboratory Samples Using Ultraviolet-Visible (UV-Vis) Spectrophotometer
F7WR 04		19	Analysing Laboratory Samples Using Circular Dichroism (CD)
F7WT 04		20	Analysing Laboratory Samples Using Fourier-Transform Infrared (FT-IR) Spectroscopy
F7WP 04		21	Analysing Laboratory Samples Using Chromatography
F7WM 04		23	Analysing DNA Using Gel Electrophoresis

Level 4 Laboratory Science (Toxicological Study) Management
Five mandatory Units and three optional Units

Mandatory Units

SQA Ref	SCQF level	SSC Ref	Title
F7Y9 04		01	Maintaining Health and Safety in a Laboratory Environment
F7Y7 04		02	Maintaining Effective and Efficient Working Relationships in the Laboratory
F7XN 04		07	Designing and Conducting Toxicity Studies and Evaluating Results
F807 04		08	Planning in Vivo Toxicity Studies
F806 04		09	Planning and Scheduling Resources for Toxicity Studies

Optional Units

SQA Ref	SCQF Level	SSC Ref	Title
F7XF 04		03	Assuring Quality Methods and Procedures for Laboratories
F7Y3 04		04	Improving Product and Process Quality in Laboratories
F7YC 04		05	Making Laboratory Development/Research Presentations
F80W 04		06	Writing Laboratory Technical Reports
F80T 04		10	Using Statistical Process Control (SPC) for Laboratory Measurement Processes
F80R 04		11	Using Design of Experiments for Laboratory Measurement Processes
F7X2 04		12	Applying Basic Statistics to the Laboratory Measurement Process

An assessment strategy for the SVQ

As part of its review of the SVQs, SEMTA, the standards-setting body for the Science, Engineering, and Manufacturing Technologies sector has developed an assessment strategy which defines a range of requirements:

- the occupational expertise of assessors and verifiers
- a definition of simulation
- definition of the workplace
- information on a model of independent assessment or external quality control

The relevant parts of the assessment strategy are published on SQA's website (**www.sqa.org.uk**), and both SQA and centres must comply with these requirements.

Why would people be interested in the SVQ?

People will take SVQs for a variety of reasons: to gain promotion, to prove their job competence, or for personal development. There will be other reasons too. One of the first things to do is to find out why your candidates want to do the SVQ, and to advise them of the appropriateness of the qualification. If anyone is acting as a coach or mentor to your candidates, they might help you to do this.

How do candidates begin?

Choosing the SVQ

You should make sure that candidates get guidance before starting out on an SVQ — they need advice to ensure that their existing job remit, skills, experience, and their plans for progression, are matched to the SVQ selected. It does not have to be you as the assessor, who carried out the matching process, but whoever has responsibility for this should ensure that the assessment opportunities available to the candidate are also considered.

An example

Fiona had worked as a medical laboratory assistant for four years but did not possess any formal qualifications. She wanted to do a qualification which would give her national recognition of the skills she already had. As she had a lot of experience in basic laboratory operations, the Education and Training Officer advised her to consider an SVQ in Laboratory Science at level 2.

When the E&T Officer matched Fiona's job remit and existing skills and experience with the SVQ, it emerged that Fiona should be able to generate sufficient evidence to meet the requirements of the following SVQ Units:

- Maintaining Health and Safety in a Laboratory Environment
- Maintaining Effective and Efficient Working Relationships in the Laboratory
- Receiving, Sorting, Transporting and Storing Laboratory Specimens/Samples Under Supervision
- Assisting with the Maintenance of Stocks of Reagents and Consumables for Laboratory Use

The E&T Officer arranged for an assessor within the laboratory to provide Fiona with guidance on how to collect evidence and construct a portfolio to achieve these Units.

Fiona also had some experience in relation to two further Units, however some planning was required in order to provide her with the opportunity to demonstrate competence in these areas.

The Units were:

- Communicating Laboratory Information to Authorised Personnel Under Supervision
- Accessing, Registering and Inputting Patient Data in a LIMS Under Supervision

The E&T Officer arranged for the assessor to accompany Fiona on a tour to observe and assess her for the first of these Units and plans were made to assess the second Unit through a combination of observation, questioning and assessment of work products.

Fiona had no experience of the areas covered by the final Unit, which was:

- Assisting with the Preparation of Microbiological Specimens/Samples for Laboratory Investigations

Since Fiona's job remit would not cover all these areas of the SVQ, the E&T Officer arranged for her to attend a local Further Education college and to shadow a senior member of staff for observation and practice in relation to the laboratory.

All these arrangements were agreed by everyone involved and then written up in an assessment plan for Fiona.

2: Preparing to assess the SVQ

This section offers practical advice on how to begin to go about assessing you candidates for the SVQ. This advice is offered as examples of good practice — you may develop your own approaches to assessing your candidates which also work well.

Your role and your candidate's role

Assessing the SVQ will involve several stages. Both you and the candidate should be clear on your roles in the assessment process before you begin.

Your role

- ensure candidates understand what is to be assessed and how it is to be assessed
- ensure the conditions and resources required for assessment are available
- help candidates to identify and gather evidence
- observe and record candidates carrying out the activities described in the standards — records should say what has been observed, how it was carried out, and what it demonstrates
- assess products of the candidate's own work
- question candidates and record results
- help candidates to present evidence
- authenticate the evidence candidates provide
- judge evidence and make assessment decisions
- identify gaps or shortfalls in candidates' competence
- provide feedback to candidates throughout the assessment process
- record achievement

Candidates' role

- prepare for assessment — become familiar with the standards, what is to be assessed and how it is to be assessed
- help to identify sources of evidence and how these could be assessed
- carry out activities, and/or produce products of own work, and/or answer questions
- gather and present evidence
- receive and act on feedback from the assessor

Planning

In planning for assessment, you will find it helpful to meet with your candidate and plan what is to be assessed, in what way, and when and where the assessment is to take place. This discussion can be confirmed in the form of an agreed assessment plan between you and your candidate.

You should treat assessment plans as working documents — they can be updated and changed as you review progress with your candidate.

As you are planning assessment, don't forget to make the most of opportunities to *integrate* assessment. This means planning to assess an activity which draws on the contents of different Units or Performance Statements. It can be a practical and cost-effective way of assessing your candidate's competence.

If you are a new assessor working towards your A/V Units (the national standards in assessment and verification) you will need copies of completed assessment plans as part of your evidence.

To help you plan for assessment, we have produced an assessment plan which covers Units:

- Maintaining Health and Safety in a Laboratory Environment
- Maintaining Effective and Efficient Working Relationships in the Laboratory

You will notice that we have included spaces to enter dates when the assessment plan has been reviewed. Any gaps identified during these reviews should be discussed with your candidates and noted for action in the assessment plan.

Assessment plan

Units: 01: Maintaining Health and Safety in a Laboratory Environment. 02: Maintaining Effective and Efficient Working Relationships in the Laboratory					
Activities	**Performance Statements**	**Method of assessment/Sources of evidence**	**Date of assessment**	**Evidence already available**	**Links to other Units (Performance Statements)**
Routine laboratory work, including contributions to the team as it covers the daily workload (taking into account current health and safety practices)	01 a, b, c, f, g, h, j, k 02 a, b, c, d, f, g, h	Direct observation and witness testimonies — to demonstrate effective working within health and safety guidelines Personal statement, witness testimony and certification of successful course outcomes — effective working relationships, maintains and improves your performance in the lab, eg participation in job related training and performance review	06/05/09	Direct observation Witness testimony Personal statement	03 a, b, e, 04 a 05 a 10 a, b 03 h, m 04 f 05 h, i 10 j
Questioning for knowledge and understanding not apparent from performance to be identified from 2nd review	01 d, e, i, l 02 e				03 g

Assessor's signature: *Caroline Thompson* 1st review due: 15/05/09

Candidate's signature: *Fiona McLean* 2nd review due: 30/05/09

Date of agreement: 27/04/09 Date of completion:

Selecting methods of assessment

The methods of assessment you use should be valid, reliable and practicable.

- By *valid* we mean that the assessment method should be appropriate to the standards
- By *reliable* we mean that the assessment method should ensure consistent results when used with different candidates, different assessors and on different occasions
- By *practicable* we mean that the method ensures that the assessment makes best use of available resources, equipment and time

Before you assess a candidate, you must make sure that the methods of assessment you have chosen to use, along with any assessment materials (such as questions and sample answers) have been agreed within your centre through its system of internal quality assurance. This system is often called *internal verification* — its purpose is to help to ensure that assessment methods are valid, reliable and practicable.

There are both benefits and challenges when you are assessing SVQs in the workplace, or in conditions in the workplace. When you select methods of assessment, you should try to offer the candidate the benefits of workplace assessment and minimise any potential difficulties.

The benefits might be:

- familiarity/good relationship between candidate and assessor
- candidate's familiarity with the environment and equipment
- can take advantage of rare opportunities to gather evidence, eg spillages
- assessment progresses at candidate's own pace of learning
- flexible planning of assessment to meet the needs of the service

The challenges might be:

- shift work preventing candidate and assessor working at the same time
- confidentiality
- too busy because of pressure of work/heavy workload to carry out assessment
- interruptions
- meeting needs of patients/clients/customers before those of the candidate
- staff shortages

Example

You might agree with a candidate working in a laboratory, who has to demonstrate how to deal with difficult customers, that this will be carried out by **observation** as and when such situations arise. If you are an assessor who is working alongside the candidate you should be well placed to observe the candidate's performance, perhaps using a prepared checklist, and to question the candidate about the situation afterwards.

Methods of assessment

Assessment may involve a range of assessment methods. For SVQs, some of the most commonly used methods are observation, product evidence, and questioning.

Observation

Observation by an assessor is considered to be the most valid and reliable method of assessment. It can be organised in a variety of ways:

- working alongside the candidate
- arranging to visit when naturally-occurring activities are carried out by the candidate
- arranging for activities to take place

Observation by the assessor can often be supplemented by other types of assessment methods such as questioning. For example, it may be appropriate to ask oral questions of candidates as they carry out naturally-occurring activities.

The best way of observing a candidate's competence is by working together, over a period. This allows the assessor to record the consistency of the candidate's performance and not to put too much emphasis on a series of single assessments.

Observation could be used to demonstrate the candidate's competence in decontamination and disposal using safe working practices. This would give the assessor the opportunity to authenticate the candidate's evidence against the performance statements.

Product evidence

As candidates work towards achieving the SVQ, they will produce evidence in the form of products of their work. The nature of this evidence can vary widely depending on what the candidate's job entails, but examples of product evidence include:

- laboratory log book or data sheets
- microbiological stock records

Questioning

Candidates have to show that they can meet the knowledge specifications for the SVQs. For these SVQs, knowledge and understanding is specified for each Unit. Much of a candidate's knowledge and understanding will be apparent from what they do or produce as part of their work, but this will not always be the case, and questioning can be a useful way of confirming what candidates know and understand.

Questions can be asked in a variety of forms, such as oral questions, short answer written questions, and multiple choice.

You should be careful that the method of questioning does not go beyond the competence required for the SVQ and become a barrier to fair assessment. For example, some candidates will feel more comfortable with oral questions than written.

Candidates can be asked questions while they are being observed to show that they have the required knowledge and understanding, if it is not apparent from their performance. Questions can be used to check that candidates understand why they are doing something, or that they know what to do if something unexpected happens. It checks that they can adapt to situations rather than just follow instructions. It shows the background knowledge that should have been acquired during training and identifies gaps that may need to be filled in the training.

Q Why must you wear protective clothing in the laboratory?

A To ensure that personal clothing does not become contaminated, to provide a barrier to infective agents and chemicals, and to protect the specimen/sample.

Q What is the importance of standard operating procedures?

A To ensure that all personnel follow the same procedure and use correct equipment.

Other methods of assessment

These methods, like questioning, are often used for authentication. See section 3 for more about authenticating candidates' evidence.

Personal statements

You might sometimes find it helpful to ask a candidate to give an account of why they did an activity in a certain way or how they produced a product of their work. This is often referred to as a *personal statement*. You should take care to ensure that by asking candidates to produce such statements, you are not asking them to demonstrate competence beyond what is required by the standards. You should also be selective in the use of personal statements, and make sure they have not been produced as a substitute to a more valid, reliable and practical method of assessment.

An example might be where a candidate produces a storyboard about decontamination of work area and disposal of biological material.

Witness testimony

For practical reasons, you may not be able to observe all the activities carried out by your candidates, but might feel that other people may be able to provide a statement on what your candidates have been doing or producing as part of their work. Statements of this kind are called *witness testimony*, and are often used to support other evidence produced by candidates. If witness testimony is used, you should, ideally, identify witnesses and opportunities for using their testimony as part of assessment planning.

You should bear in mind that the weight of the evidence will vary, depending on the knowledge and expertise of the person providing the witness testimony. You will have to take these factors into account as you make your judgement.

Strongest	Someone with considerable occupational expertise in the candidate's area of work and who is familiar with the standards. This person may also be an assessor or internal verifier qualified with the A/V Units or 'D-Units'.
	Someone with considerable occupational expertise in the candidate's area of work and who is familiar with the standards.
	Someone with considerable occupational expertise in the candidate's area of work, but with no knowledge of the standards.
	Someone who may be a colleague of the candidate, but with no knowledge of the standards.
Weakest	Someone with no or little knowledge of the candidate's work or no knowledge of the standards.

Witness testimony is unlikely to be sufficient in itself for a decision about the candidate's competence, and would normally be supplemented by questioning candidates.

Witness testimony might be used if the assessor is unavailable, due to illness, at the time of the planned assessment. A suitable colleague could observe the candidate's performance and offer witness testimony as evidence. The assessor could then question the candidate in order to ensure competence in a particular area.

Simulation

Simulation is any structured assessment exercise involving a specific task which reproduces real-life situations.

On some occasions, it may not be practical to assess a candidate in real work. Examples might be where the standards require candidates to carry out emergency or contingency procedures, or where client confidentiality is an issue, or where a candidate's job role does not cover all aspects of the qualification.

SEMTA has defined what it regards as simulation, and has specified in the standards when simulation is acceptable. The standards also state when candidates must demonstrate competence in the workplace.

For more details on simulation and what constitutes performance in the workplace, look at the SEMTA Science Qualifications Assessment Strategy or on SQA's website: **www.sqa.org.uk**.

Examples where simulation is acceptable include:

- Procedures for a laboratory fire
- Procedures undertaken in the event of a biological spillage
- Procedures undertaken in the event of a colleague collapsing
- Work based project including, for example, an oral presentation

Other sources of evidence

Other sources of evidence can be previous experience or learning, case studies or assignments.

SQA's *Guides to Assessment and Quality Assurance* (see section 5) have more advice on methods of assessment and how to ensure that your assessment is valid, reliable and practicable.

3: Generating evidence

The methods of assessment you use should generate sufficient evidence to demonstrate the candidate's competence.

We described earlier the circumstances in which you might choose to use different methods of assessment. Starting on the next page, this section gives you examples of forms which you can use to record and present evidence of:

- observation (by the assessor)
- questions and candidate responses
- personal statement (produced by the candidate)
- witness testimony

There are blank forms which you can copy and use in assessment in Appendix 1.

Observation

For observation, note that the form asks you to record the skills and activities observed. This helps you to make a judgement on how the activity was carried out and what it demonstrates.

Observation record

Unit: 01 Maintaining Health and Safety in a Laboratory Environment
Candidate: Fiona McLean **Date of observation:** 06/05/09
Evidence index number: 1

Skills/activities observed:	**Performance Statements/Scopes covered:**
The candidate identified all health and safety regulations and guidelines relevant to her area of responsibility. This included internal policy and procedures and the Health and Safety at Work Act. This information was gained by approaching the Health and Safety officer who indicated the correct documentation. The candidate was observed photocopying the relevant pages of policy. The candidate was observed delivering a brief presentation during a health and safety training session to her team. This presentation highlighted the team's duties and responsibilities. This included discussing a variety of issues with team members including how the team can make improvements to the work environment and the procedures for dealing with accidents, eg biological spillages as this was an area that colleagues felt unsure of. It was agreed that the candidate would approach the relevant line manager for clarification and guidance on this process.	01 b f 1.1 1.2 1.3 1.4 1.5

Knowledge and understanding apparent from this observation:
S1,2,3,4,5 O1,2,3,4,5,6,7 E1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

Other Units/Performance Statements to which this evidence may contribute:
02: c d f g h

Assessor's comments and feedback to candidate:
The above evidence was gathered during our routine working day. You have demonstrated competence in the area of maintaining a healthy, safe and productive work environment. However, in order to identify 'sufficiency', we shall need to observe work practices. Nonetheless, you have done extremely well both in practical performance and in backing this up with underpinning knowledge.

I can confirm the candidate's performance was satisfactory.

Assessor's signature: *Caroline Thompson* Date: *28/10/09*

Candidate's signature: *Fiona McLean* Date: *28/10/09*

Questions and candidate responses

This form can be used to record any questions you might ask the candidate to establish what they know and understand. You should note the candidate's responses on this form too.

Note that there is a space near the top of the form for you to record when, where, how and why you asked the questions.

Where you want to give the candidate written questions, this form could also be used.

Record of questions and candidate's answers

Unit: 02 Maintaining Effective and Efficient Working Relationships in the Laboratory	**Performance statement(s):** a b c e g **Scope(s):** 1.1 1.4 2.1 2.2 3.2 3.3
Evidence index number: 2	

Circumstances of assessment:
Ensuring all knowledge and understanding is covered. Much had been covered during direct observation sessions and witness testimony, on previous occasions.
The function of this method of assessment is to ensure that the candidate fully understands (in this case) why it is important to work effectively, with colleagues in their own working group and supervisors/managers.

List of questions and candidate's responses:

Q: What would you do if asked to use a piece of equipment which you felt you were not trained to use?

A: I would not attempt to use the equipment without first approaching my supervisor and asking for help and training according to SOPs.

Q: How would you deal with a conflict between team members?

A: You need to make clear to team members the standards of work and behaviour you expect. You need to be available to discuss and deal with problems as soon as they arise in ways which minimise disruption and bad feeling. You need to be aware of your limitations in dealing with certain situations and know when to refer to your supervisor. In some cases it may be necessary to keep a careful record of conflict situations and how you resolved them.

Assessor's signature:	Caroline Thompson	Date: 29/10/09
Candidate's signature:	Fiona McLean	Date: 29/10/09

Candidate’s personal statement

If a personal statement is being used as evidence, it should be completed by the candidate. The statement should record what they did, how and why they chose to carry out an activity or produce work in a certain way. Where other people may have been present during an activity and they may be able to provide witness testimony, the candidate should record how the statement links to other evidence in the column provided.

Personal statement

Date	Evidence index number	Details of statement	Links to other evidence (enter numbers)	Unit, Performance Statements and Scopes covered
22/08/09	**3**	Before starting my task, I put on my lab coat, and the necessary PPE. I prepared Virkon disinfectant as detailed in the SOP, and used it to prepare the work area. I then collected the patient samples and labeled the Petri dishes appropriately in accordance with the SOP to ensure correct identification. I then aseptically transferred each sample to the appropriate Petri dish which contained the correct growth media. The Petri dishes were all transported to the 37°C incubator using a transport tray. All remaining hazardous biological material was transferred to an autoclave bag which was then sealed and stored appropriately until it could be autoclaved. I disinfected the work area with Virkon and disposed of the contaminated cleaning equipment into an autoclave bag which was then sealed and stored appropriately until it could be autoclaved. The remaining Virkon was stored in an airtight container for later use. I then completed the necessary paperwork, copied it and passed to my supervisor		**01** a c i k 1.1 2.3 2.4 **07** a b d e 2.1 2.3 2.4 **07** d 3.1 3.2 3.5 **07** f g 3.7 **01** h k 4.2 5.3 **01** f j k 4.4 4.7 5.3 5.4 **02** f 4.3 **07** i 4.3

Signed (candidate): *Fiona McLean*

Date: *22/08/09*

Witness testimony

Remember when you begin to use witness testimony that it must be capable of being authenticated — even if the testimony itself is being used to authenticate a candidate's claim to competence.

To make sure the witness testimony is genuine, you must ensure that you have a record of who is acting as a witness, their relationship to the candidate (eg supervisor, client) address, telephone number and the date. There are spaces for this information in the form.

Witness testimony

SVQ title and level:	Laboratory Science
Candidate's name:	Fiona McLean
Evidence index no:	4
Index no of other evidence which this testimony relates to (if any):	
Units(s), Performance Statements, Scope(s):	01: d, h, k (1.1, 1.5, 2.3, 4.4, 4.6) 02: b, f (1.4, 2.2, 3.3, 4.1)
Date of evidence:	19/05/09
Name of witness:	Kevin Armstrong
Designation/relationship to candidate:	Senior Colleague

Details of testimony:

While I was preparing for plating out in the microbiology lab, Fiona dropped a beaker of Virkon disinfectant on to the floor causing spillage and broken glass. She immediately located the slip hazard notice stand to isolate the area and ensure no other staff could enter the area and slip. Fiona also contacted her supervisor to inform her of the hazard. Fiona then located the spillage kit and dealt with the spill appropriately.

I can confirm the candidate's evidence is authentic and accurate.
Signed by witness: *Kevin Armstrong* Date: *22/08/09*

Witness (please tick the appropriate box)**:**

☐ Holds A1 or D32/D33 qualifications

☑ Is familiar with the SVQ standards to which the candidate is working

Filling the gaps

There may come a time when your candidate has provided evidence for most of the Unit (or SVQ), but there are some gaps. For example, you may find that certain situations, such as handling contingencies, have not arisen during assessment. Often these will relate to dealing with health and safety issues, or unexpected problems with workflow like delays in receiving information from another part of the organisation.

In this SVQ, such gaps are likely to occur in generating evidence for:

- Maintaining Health and Safety in a Laboratory Environment
- Assisting with the Maintenance of Stocks of Reagents and Consumables for Laboratory Use

You may be able to overcome these by using:

- simulation
- storyboards written by candidate to confirm their knowledge and understanding of how they would demonstrate competence if these situations arose
- questioning
- secondment to another department

Guidance and support to candidates

At all times during the assessment process — from planning through to making your assessment decision — feedback should be on-going, clear and constructive. Feedback should be given against the national standards by relating it to the evidence provided, including the knowledge specifications.

Where there are any shortfalls in a candidate's competence, you should discuss these with your candidate and make plans for re-assessment.

Judging candidate evidence and making an assessment decision

In judging candidate evidence, you must be satisfied that your candidates can work consistently to the required standard, and that the evidence they have produced is their own. You must consider whether your candidate understands and applies the knowledge evidence and how this links to performance evidence.

Evidence must:

- be relevant to the SVQ

- be authentic
- show current competence
- be sufficient to help you form a decision about the candidate's competence

Insufficient evidence

You have to judge whether the candidate has produced enough evidence required by the standards for you to reach a decision about their evidence.

Where there is insufficient evidence, you should say this to your candidate. You should tell them that it is not that they are not yet competent — there is simply not enough evidence on which to make a decision.

In this situation, your feedback to your candidates must help them produce more evidence and/or plan for further assessment.

Authenticating candidates' evidence

Authentication is required where you have not observed candidates' performance at first hand.

You can check whether a candidate has produced evidence which they claim shows their competence by questioning them or, if this is appropriate, asking them to produce a personal statement, using witness testimony, or seeking peer reports from other colleagues of the candidate.

Example

Your candidate may produce product evidence that is of higher quality than you had either seen them produce before or expected them to be capable of, eg a difficult technique. Whilst you should be reluctant to dismiss the evidence, out of hand, it is not unreasonable to:

- ask a senior colleague for a witness testimony
- use questions and answers to consolidate the candidate's knowledge and understanding of the technique
- ask the candidate to demonstrate the technique again to ascertain whether the result can be reproduced and to indicate sufficiency (of competent behaviour)

4: Recording achievement

You should retain all evidence — clearly referenced — for internal and external verification.

The candidate's evidence is normally kept in a file, often called a *portfolio*. These documents help you and your candidates to collect, present and cross-reference the evidence to the national standards. They are also a means of recording your assessment decisions, and they tell an external verifier what stage a candidate has reached in achieving the SVQ.

Recording documents do not need to be paper-based — it is possible to use an electronic format for collecting and structuring the evidence. Whatever format you and your candidates choose to use, the documents must show what evidence was generated, the assessment decisions you made, how the evidence meets the standards, and where the evidence can be located. You should avoid photocopying items simply to put them in a portfolio — a clear explanation of where the evidence can be found (for example, in a filing cabinet) may be sufficient for the external verifier to follow it up and include it in the visit.

There are various reasons why record-keeping is so important:

- it provides a way of tracking a candidate's progress in achieving an SVQ
- it helps candidates to make claims for certification of their competence
- internal verifiers and external verifiers use the records to sample assessment decisions
- it helps us to monitor the quality assurance of our qualifications

If your candidates' evidence is incomplete, or cannot be located, or if there is inaccurate cross-referencing to the standards, there is a risk that an internal verifier or external verifier will be unable to confirm your assessment decisions.

To help you and your candidate present evidence and record your assessment decision, we have provided examples of the forms which you and your candidate might use to compile the portfolio.

- Completing the Unit progress record
- Using the evidence index
- Completing the Unit achievement record

These forms are also used in SQA's portfolio.

Completing the Unit progress record

You should complete this form each time your candidate achieves a Unit from the SVQ by adding your signature and the date next to the relevant Unit.

At this stage, candidates should make sure they have completed the recording documents correctly and that their evidence can be easily located. Only then should they circle the relevant Unit number at the top of the form. This enables both of you to see at a glance what stage the candidate is at in their SVQ.

Unit progress record

Qualification and level: SVQ Laboratory Science at level 2

Candidate: Fiona McLean

To achieve the whole qualification, you must prove competence in 5 (4 +1) **mandatory** Units and 2 **optional** Units.

Unit Checklist

Mandatory	**01**	**02**	**03**	**04**	**05**							
Optional	**07**	**10**										

Mandatory Units achieved

Unit Number	Title	Assessor's Signature	Date
01	Maintaining Health and Safety in a Laboratory Environment	Caroline Thompson	30/09/09
02	Maintaining Effective and Efficient Working Relationships in the Laboratory		
03	Receiving, Sorting, Transporting and Storing Laboratory Specimens/Samples Under Supervision	Caroline Thompson	01/11/09
04	Communicating Laboratory Information to Authorised Personnel Under Supervision		
05	Accessing, Registering and Inputting Patient Data in a LIMS Under Supervision		

Optional Units achieved

07	Assisting with the Preparation of Microbiological Specimens/Samples for Laboratory Investigations		
10	Assisting with the Maintenance of Stocks of Reagents and Consumables for Laboratory Use	Caroline Thompson	01/06/09

Using the index of evidence

The purpose of the index of evidence is to help you locate and work through the candidate's evidence. It should give you a summary of what evidence the candidate has collected, and where (eg in a portfolio) it can be found.

The index of evidence should be completed by entering:

- the index number for each piece of evidence
- a description of each piece of evidence
- the place or location where it can be found
- the initials of the internal verifier and the date (if they have sampled the candidate's evidence)

Ideally, it should be candidates themselves (with your support and encouragement) who complete the index.

You must make sure that the information in the evidence index is accurate when your candidates' portfolios are presented for assessment and verification — particularly the information about where the evidence can be located. This is important because we suggest that anything which has been produced as day-to-day work is kept in its normal location, but anything which has been produced through assessment for the SVQ, eg observation checklists, is filed in the candidate's portfolio. In this way, your candidate can avoid having to photocopy work products just for the sake of including them in a portfolio. It also means that evidence produced as a result of assessment is kept safely in a central file.

If the index of evidence is not completed with an accurate description and location of the evidence, there is a risk that an internal verifier or external verifier might be unable to confirm your assessment decisions.

Index of evidence

SVQ title and level: SVQ Laboratory Science at level 2

Evidence number	Description of evidence	Included in portfolio (Yes/No) If no, state location	Sampled by the IV (initials and date)
1	Observation	Y	AS 12/06/09
2	Question and Answer	Y	AS 12/06/09
3	Personal Statement	Y	AS 12/06/09
4	Witness testimony	Y	AS 12/06/09

Completing the Unit achievement record

To help you and your candidates cross-reference the evidence to the standards of the SVQs, we have provided records similar to those produced in the SQA portfolio. Use one record for each Unit. The grids should be completed by:

- entering the evidence index number in the first column
- giving a brief description of the evidence in the second
- ticking the relevant boxes for the Performance Statements and Scopes
- entering Knowledge Statements the piece of evidence covers

If integrated assessment is used (linking Performance Statements or Scopes across different Units) the evidence should be cross-referenced back to the relevant Units.

We have provided a completed example to show how to use the record.

Unit achievement record

Unit 02: Maintaining Effective and Efficient Working Relationships in the Laboratory

Evidence Index No	Description of Evidence	Performance Statements								Scope					
		a	b	c	d	e	f	g	h	1.1	1.2	1.3	1.4	2.1	2.2
1	Observation record			x	x		x	x	x						
2	Questions & answers	x	x	x		x		x		x			x	x	x
3	Personal Statement						x								
4	Witness Testimony		x				x						x		x

Unit achievement record (cont)

Unit 02: Maintaining Effective and Efficient Working Relationships in the Laboratory (cont)

Evidence Index No	Description of Evidence	Scope (cont)													Knowledge Statements		
		2.3	2.4	2.5	3.1	3.2	3.3	3.4	3.5	4.1	4.2	4.3	4.4	4.5	S	O	E/P
1	Observation record																
2	Questions & answers																
3	Personal Statement																
4	Witness Testimony									x							

Unit 02: Maintaining Effective and Efficient Working Relationships in the Laboratory

Notes/Comments
Scope still to be covered (1.2 and 1.3) and a separate checklist for Knowledge Statements should be completed to ensure all are covered before being checked off on this record.

The candidate has satisfied the Assessor and Internal Verifier that the performance evidence has been met.

Candidate:	Fiona McLean	Date:	01/11/09
Assessor:	Caroline Thompson	Date:	01/11/09
Internal Verifier:	Amir Shah	Date:	03/11/09

5: Further information

What else should I read?

The publications listed here provide additional information on how to implement SVQs. Details of these and other SQA publications are available on our website at **www.sqa.org.uk** on the 'Publications, Sales and Downloads' section. They can be ordered from SQA's Customer Contact Centre — telephone 0845 279 1000. Please note that there may be a charge for some of these publications.

Assessor/Verifier Units: assessment guidance

External Assessment Moderation in National Qualifications and Higher National Qualifications: a guide for centres

Guide to Assessment and Quality Assurance for Colleges of Further Education

Guide to Assessment and Quality Assurance for Employers and Training Providers

Arrangements for Candidates with Disabilities and/or Additional Support Needs in Examinations and Assessments

Quality Assurance Principles, Elements and Criteria

Operational Help Centre

The Operational Guide for Centres has been replaced by the online Operational Help Centre on **www.sqa.org.uk**

Appendix 1: Blank recording forms

Unit progress record

Qualification and level:

Candidate:

To achieve the whole qualification, you must prove competence in ___ **mandatory** Units and ___ **optional** Units.

Unit Checklist

Mandatory										
Optional										

Mandatory Units achieved

Unit	**Assessor's Signature**	**Date**

Optional Units achieved

Index of evidence

SVQ title and level:

Evidence number	Description of evidence	Included in portfolio (Yes/No) If no, state location	Sampled by the IV (initials and date)

Unit achievement record

Unit:

Performance Statements:

Evidence Index No	Description of Evidence	Performance Statements						Scope												

Unit:

Performance Statements:

Notes/Comments

The candidate has satisfied the Assessor and Internal Verifier that the performance evidence has been met.

Candidate:	**Date:**
Assessor:	**Date:**
Internal Verifier:	**Date:**

Personal statement

Date	Evidence index number	Details of statement	Links to other evidence (enter numbers)	Unit, Performance Statements covered

Signed by candidate:

Date:

Observation record

Unit:

Candidate:

Date of observation:

Evidence index number:

Skills/activities observed:	**Performance Statements covered:**

Knowledge and understanding apparent from this observation:

Other Units to which this evidence may contribute:

Assessor's comments and feedback to candidate:

I can confirm the candidate's performance was satisfactory.

Assessor's signature: **Date:**

Candidate's signature: **Date:**

Witness testimony

SVQ title and level:	
Candidate's name:	
Evidence index no:	
Index no of other evidence which this testimony relates to (if any):	
Units:	
Date of evidence:	
Name of witness:	
Designation/relationship to candidate:	
Details of testimony:	
I can confirm the candidate's evidence is authentic and accurate. **Signed by witness:** **Date:**	

Witness (please tick the appropriate box)**:**

☐ Holds A1/A2 Units or D32/D33 Award

☐ Is familiar with the SVQ standards to which the candidate is working

Record of questions and candidate’s answers

Unit:	**Performance Statements**
Evidence index number:	
Circumstances of assessment:	
List of questions and candidate’s responses:	
Assessor’s signature:	**Date:**
Candidate’s signature:	**Date:**