**The Association for Science Education**

General Requirements

Registered Science Technician, Registered Scientist and Chartered Science Teacher status

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# Registered Science Technician RSciTech

### All applicants must be ASE members.

### Education

The exemplifying educational requirement for **RSciTech** is a relevant qualification at

QCF level 3. Candidates may also meet the requirement by a combination of work based learning and other qualifications.

## Competence report - advice to applicants and mentors

Applicants for RSciTech will need to demonstrate competence across five areas. Guidance on what the assessors will be looking for under each competence is provided below but the examples are just indicative - there will be many other valid examples you can choose.

Here are some tips you should bear in mind when compiling your application:

* For each competence statement, you will need to give clear examples of the role that you play or the contribution that you make to a particular task or activity.
* To provide your examples with sufficient depth, it might be useful to explain what you did, how you went about it and why you did it.
* You may use the same task or activity more than once but you should ensure you are clear on how it applies to the specific competence you are addressing.
* Most of the examples you provide should be fairly recent [in the last three years] but you can also draw on relevant experience further back in your career.

## A: Application of knowledge and understanding

Identify and use relevant scientific understanding, methods and skills to complete tasks and address well defined problems.

**A1: Apply knowledge of underlying concepts and principles associated with area of work.**

What we are looking for here is an example of how you apply your knowledge in your day to day work.

**A2: Review and select appropriate scientific techniques, procedures and methods to undertake tasks.**

This means that you can explain the underlying reasons for undertaking tasks and why a particular procedure, technique, or process is appropriate.

**A3: Interpret and evaluate data and make sound judgements in relation to scientific concepts.**

This means you can explain how you recognise when your activity appears to have been successfully carried out, or not, and what data, observations, or measurements you are evaluating mean, relating it to the underlying principles. You should also be able describe how you present information in an appropriate manner in order to explain your judgement

**B: Personal Responsibility**

Exercise personal responsibility in planning and implementing tasks according to prescribed protocols

**B1: Work consistently and effectively with minimal supervision to appropriate standards and protocols and know when to escalate appropriately.**

We are looking for an example of how you carry out work with minimal input from your supervisor for certain key tasks, experiments or procedures associated with your role and completing them to the appropriate standards and time frame. We are also looking for evidence that you know when to escalate appropriately and that you are able to make a judgement on when to escalate.

**B2: Demonstrate how you apply safe working practices.**

This means that you can explain the safe working practices applicable to your area of work and describe how you follow them.

**B3: Take responsibility for the quality of your work and the impact on others.**

This means that you can describe how you take responsibility for the quality of the work that you undertake and its impact on others within defined parameters and timelines- including if an activity does not work in the way that you expect.

**C: Interpersonal Skills**

Demonstrate effective communication and interpersonal skills.

**C1: Demonstrate effective and appropriate communication skills.**

What we are looking for here is an example that you are an effective communicator. The example can be through appropriate oral, written or electronic means.

**C2: Demonstrate effective interpersonal and behavioural skills.**

This means that you can demonstrate skills that you use to interact with colleagues in a constructive way within the work setting. In these situations it may be appropriate to discuss these with your supervisor, as an external perspective is often very useful in this regard.

**C3: Demonstrate an ability to work effectively with others.**

This means 'team work', which can be in a large team or on a 1:1 basis. Your example should illustrate how you worked collectively with others, what your specific role was within the team, and what the outcome was.

## D: Professional Practice

Apply appropriate theoretical and practical methods according to protocol

**D1: Recognise problems and apply appropriate scientific methods to identify causes and achieve solutions.**

What we are looking for here is an example of where you have problem solved or attempted to problem solve.

**D2: Demonstrate how you use resources effectively.**

This means that you can give examples of work that you have undertaken where the method, procedure, programme, equipment, or materials used was chosen as the best [or most relevant] to use. Your example should describe how you planned and organised these to complete the task, and also how you reviewed choices - why the one you selected was the best compared to others that are available.

**D3: Participate in continuous process improvement.**

What we are looking for is an example of how you have improved the efficiency of a way of working, for example this could include maintenance of stock levels, improved methods, new ways to increase throughput, health and safety or ways to increase cost-effectiveness.

**E: Professional Standards**

Demonstrate a personal commitment to professional standards.

**E1: Comply with relevant codes of conduct and practice.**

This means that you can give examples of how you comply with a code of conduct [e.g. of your professional Body] or how you work within all relevant legislative, regulatory and local requirements.

**E2: Maintain and enhance competence in own area of practice through professional development activity.**

This means that you can give an example of an activity you have undertaken to enhance your competence in your own area of practice i.e. Continuing Professional Development [CPD] and reflect on its impact on you and others. We are not looking for a list of courses here but evidence of how your CPD benefits your practice and benefits others. Your CPD may include work-based learning, professional activity, formal/educational, self-directed learning.

### Note for all registers there is a common standard for CPD and Code of conduct which appears at the end.

# Registered Scientist RSci

### All applicants must be ASE members.

### Education

The exemplifying educational requirement for **RSci** is a relevant qualification at QCF level 5. Candidates may also meet the competances below.

## Competence report - advice to applicants and mentors

Applicants for RSci will need to demonstrate competence across five areas. Guidance on what the assessors will be looking for under each competence is provided below but the examples are just indicative - there will be many other valid examples you can choose. Here are some tips you should bear in mind when compiling your application:

* For each competence statement, you will need to give clear examples of the role that you play or the contribution that you make to a particular task or activity.
* To provide your examples with sufficient depth, it might be useful to explain what you did, how you went about it and why you did it.
* You may use the same task or activity more than once but you should ensure you are clear on how it applies to the specific competence you are addressing.
* Most of the examples you provide should be fairly recent [in the last three years] but you can also draw on relevant experience further back in your career

## A: Application of knowledge and understanding

Identify and use relevant scientific understanding, methods and skills to complete tasks and address well defined problems.

**A1: Apply extended knowledge of underlying concepts and principles associated with area of work.**

We are looking for an example of how you have used your extended knowledge within the area in which you work. This will include developments within your field and the ability to understand and apply new developments to your area of work.

**A2: Review, evaluate and apply underlying scientific concepts, principles and techniques in the context of new and different areas of work.**

What we are looking for here is how you have taken techniques/principles and reviewed, evaluated and applied them in a new area of work.

**A3: Analyse, interpret and evaluate data, concepts and ideas to propose solutions to problems.**

We are looking for an example of how you observe and interpret the results from your data to draw conclusions and inform your next steps.

**B: Personal Responsibility**

Exercise personal responsibility in planning and implementing tasks according to prescribed protocols

**B1: Work autonomously while knowing when to escalate appropriately and recognising limits of scope of practice.**

We are looking for an example of how you work with no supervision for certain key tasks, experiments or procedures associated with your role within required timeframes. You will also be able to demonstrate your understanding of when you need to seek input from either your supervisor or others and when to escalate.

**B2: Take responsibility for safe and sustainable working practices and contribute to their evaluation and improvement.**

We are looking for an example of how you have taken responsibility for working safely and sustainably.

**B3: Take responsibility for the quality of your work and also enable others to work to high standards.**

This means that you can show how you are aware of the quality standards necessary for the work being carried out by you and others. You should be able to describe an example of how you enable these standards and ensure that they are applied.

**C: Interpersonal Skills**

Demonstrate effective communication and interpersonal skills.

**C1: Demonstrate effective and appropriate communication skills.**

What we are looking for here is an example that you are an effective communicator. The example can be through appropriate oral, written or electronic means.

**C2: Demonstrate effective interpersonal and behavioural skills.**

This means that you can give an example that demonstrates the skills that you use to interact with colleagues in a constructive way within the work setting. In these situations it may be appropriate to discuss these with your supervisor, as an external perspective is often very useful in this regard.

**C3: Demonstrate productive working relationships and an ability to resolve problems.**

This means that you should be able to describe how, when working with others, you are able to demonstrate that you developed positive working relationships and resolved the problem. Your example should demonstrate how those working relationships were effective in resolving problems.

# D: Professional Practice

Apply appropriate theoretical and practical methods.

**D1: Identify, review and select scientific techniques, procedures and methods to undertake tasks.**

This means you can give an example of work that you have undertaken showing where and why the method/procedure used was chosen as the best [or most relevant] to use.

**D2: Contribute to the organisation of tasks and resources.**

This means that you can give examples of how you have contributed to the running of the laboratory/workshop/section or other types of working environment.

**D3: Participate in the design, development and implementation of solutions.**

This means that you can give an example of 'problem solving' that describes your specific role in helping to overcome a specific problem. For instance it might mean that a process, programme, design, assay, or method suddenly stops working and you are involved in finding out the reason why. Your example should show what your role was in understanding the problem and what your contribution achieved.

**D4: Contribute to continuous process improvement.**

This means that you can give an example which shows how you are aware of progress in your area and seek ways of improving the efficiency of your work. It should describe how you seek to discuss with your supervisor the strategy for achieving this. For instance this could include new and improved methods, new ways to increase throughput, or ways to increase cost-effectiveness.

## E: Professional Standards

Demonstrate a personal commitment to professional standards.

**E): Comply with and promote relevant codes of conduct and practice.**

This means that you can give an example of how you comply with a code of conduct [e.g. of your professional Body] or how you work within and promote all relevant legislative, regulatory and local requirements.

**E): Maintain and enhance competence in own area of practice through professional development activity.**

This means that you undertake activities to enhance your competence in your own area of practice i.e. Continuing Professional Development [CPD] and reflect on its impact on you and others. We are not looking for a list of courses here but evidence of how your CPD benefits your practice and benefits others. Your CPD may include work-based learning, professional activity, formal/educational, self-directed learning.

**Chartered Science Teacher CSciTeach**

Key to the development and success of the Chartered Science Teacher (CSciTeach) designation is the establishment of the necessary criteria against which applications will be assessed and, subsequently, awarded to successful candidates. In determining the criteria it is important that they provide an appropriate balance of high, yet attainable, standards and aspirational goals which support and encourage the continuous development of professional expertise and competence through the enhancement of the knowledge, understanding and skills that underpin high quality practice.

### Chartered Science Teachers

Chartered Science Teachers are professional teachers and educators who are practicing and / or advancing science teaching and learning at the full professional level and are individuals for whom knowledge of science education and science are essential elements at that level in their role.

**Requirements for CSciTeach**

For the purposes of the pilot phase of the CSciTeach arrangements qualifying candidates should:

* be members of The Association for Science Education;
* meet the qualifying educational standard of an M-level qualification or equivalent in pedagogy / education together with an honours level qualification in which there is a minimum of 50% of course content in science;
* have a minimum of four years’ experience of teaching science following QTS (or equivalent) of which two should involve an appropriate level of responsibility;
* have engaged in, and reflected on, appropriate professional development during the qualifying period;
* work with colleagues and others in developing science education beyond their own classroom;
* demonstrate their commitment to continually maintaining and updating their professional expertise and competence;
* work within the professional code of conduct for Chartered Science Teachers;
* be able to provide evidence of their professional expertise and competence in relation to Professional Knowledge and Understanding, Professional Practice and Professional Attribute.

**Competence report - advice to applicants and mentors**

Applicants for CSciTeach will need to demonstrate competence across a variety of areas. Guidance on what the assessors will be looking for under each competence is provided below but the examples are just indicative - there will be many other valid examples you can choose.

Here are some tips you should bear in mind when compiling your application:

* For each competence statement, you will need to give clear examples of the role that you play or the contribution that you make to a particular task or activity.
* To provide your examples with sufficient depth, it might be useful to explain what you did, how you went about it and why you did it.
* You may use the same task or activity more than once but you should ensure you are clear on how it applies to the specific competence you are addressing.
* Most of the examples you provide should be fairly recent [in the last three years] but you can also draw on relevant experience further back in your career.

**CSciTeach**

By providing evidence through a combination of recognised qualifications, acknowledged achievements and other supporting material, each candidate qualifying for CSciTeach should:

**A) Meet the qualification standards;**

* By demonstrating the skills of an **M** level qualification in education
* Have an honours degree in science

Those without these formal qualifications can demonstrate meeting the standards through science teaching experience.

**B) Be able to provide evidence of their professional expertise and competence in relation to**

**1) Professional Knowledge and Understanding:**

**a) broad and up to date knowledge and understanding of science and its impact on their work;**

Typically this may include:

* Using information from current developments in science to extend the learning of others.

**b) A broad and up to date knowledge and understanding of teaching, learning and assessment specifically related to science education;**

Typically this may include:

* Evaluating and implementing different approaches to teaching and learning.

**cl Knowledge and understanding of students and how different contextual factors can impact on their learning in science.**

Typically this may include:

* How a learning issue was identified and what steps were taken to mitigate its impact on science learning.

**2) Professional Practice which includes:**

**a) Planning coherent programmes of teaching in science that develop investigative skills and are intellectually challenging, emotionally supportive and physically safe;**

Typically this may include:

* Developing, monitoring and evaluating the schemes of work appropriate to the students that are being taught;
* Maintaining a knowledge of health and safety requirements and enable students to develop the ability to assess risks involved in experimental work;
* Introducing activities and ideas which challenge the students' understanding of scientific concepts and evaluate their impact;
* Creating an inclusive and supportive learning environment.

**b) Engaging students in the collection, analysis and evaluation of evidence to extend their scientific knowledge;**

Typically this may include:

* enabling students to apply ideas to new situations and to suggest alternative interpretations of the evidence available;
* demonstrating ways in which scientific principals underpin new technologies.

**c) Developing students' confidence and their ability to understand and use scientific knowledge and processes in a range of scenarios;**

Typically this may include:

* Engaging students in debates about scientific ideas;
* Helping students to understand the application of science to their everyday life.

**d) Assessing students' learning and providing effective feedback.**

Typically this may include:

* Monitoring students' progress;
* Developing strategies using formative assessment to enhance student learning;
* Using the outcomes of assessment to inform the curriculum.

**3) Professional Attributes which includes:**

1. **Analysing, evaluating and refining teaching to improve student learning;**

Typically this may include:

* Selecting and interpreting evidence to identify ways of improving their own teaching.

**b) Collaborating with colleagues and the wider professional communities to improve the quality and effectiveness of science education;**

Typically this may include:

* Sharing and jointly evaluating teaching practices and methods;
* Supporting the development of others.

**c) Taking responsibility for leadership, management and development of science teaching.**

Typically this may include:

* Leading colleagues in the development of teaching;
* Acting as a mentor to newly qualified colleagues in order to help their professional development.

### Presentation of evidence

In overall terms it might be anticipated that candidates would maintain a portfolio of evidence which might contain:

* *A CPD diary* that details the development opportunities undertaken and a reflection on and how the development outcomes have impacted on their practice;
* *Examples of scholarship* through completion of specific qualifications at an appropriate level, undertaking and reporting of research projects or the production of publications and resources;
* *Leadership and development of others* through activities such as mentoring, presenting CPD, curriculum development activity, or contributions to wider professional activities;
* *Examples of analysis of particular aspects of practice* which may include self-evaluations or peer observation and discussion.

# Continuing Professional Development

In order to retain the RSciTech, RSci, CSci and CSciTeach status, all registrants who wish to renew their registration must make an annual declaration that they comply with the Science Council Continuing Professional Development (CPD) standards. This statement will normally be captured at the time of renewal and in any case, by 31st August each year.

The 4 Standards for CPD revalidation:

# Standard 1

A registrant must maintain a continuous, up-to-date, accurate and reflective record of their CPD activities and be able to provide supporting evidence if requested.

This standard is met if you have provided a record of CPD activities in which you describe and reflect upon those undertaken. You will be keeping this record continuously but your Professional Body may ask to audit a 12 month period. You should be able to submit evidence which supports your participation in your CPD activities in circumstances where it is requested. Such evidence may include but is not limited to certificates, articles, training materials or feedback.

# Standard 2

A registrant must demonstrate that their CPD activities are a mixture of learning activities relevant to current or future practice.

This standard is met if your CPD record includes activities in at least three (exceptionally two) of the following categories. Through your description of these activities you must demonstrate how they are relevant to your current or future practice.

S2.1. Work based learning (e.g. supervising staff / students, reflective practice)

S2.2. Professional activity (e.g. involvement in a professional body, mentoring)

S2.3. Formal / Educational (e.g. writing articles / papers, further education)

S2.4. Self-directed learning (e.g. reading journals, reviewing books / articles)

S2.5. Other (e.g. voluntary work, public service)

# Standard 3

A registrant must seek to ensure that their CPD has benefited the quality of their practice and reflect upon this.

This standard is met if throughout your CPD record you reflect upon the ways in which your CPD activities have or will improve the quality of your work. Be sure to say why you think that your work has been or will be improved by your chosen CPD activities. There might be some cases where you had expected your CPD activities to improve your work but this did not happen as planned, you may discuss these circumstances also. How will you change your approach to planning CPD activities to reduce the chance of this happening in future?

# Standard 4

A registrant must seek to ensure that their CPD has benefited the users of their work (employee, customer, student etc.) and reflect upon this.

This standard is met if throughout your CPD record you reflect upon the ways in which your CPD activities have or will benefit the users of your work. Be sure to say why you think that these activities have already or will provide this benefit. You can provide evidence of a direct benefit, for example feedback from a student. You may also describe indirect benefits, for example your enrolment on a training course may indirectly benefit clients through changes in your approach to interactions with them.

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