ROYAL SOCIETY OF CHEMISTRY

Science Council

RSci Registered Scientist

An applicant's guide to becoming a Registered Scientist (RSci)

CONTENTS

1. WHAT IS A REGISTERED SCIENTIST (RSci)?

The RSci register is owned by the Science Council and is a professional award providing recognition for those working in technical scientist roles.

The RSci designation provides recognition in its own right but can also form a part of professional development towards chartered status.

Gaining RSci will prove that you have:
- demonstrated your professionalism to employers, colleagues and clients
- transferable skills that allow you to work across different science sectors
- built on your academic achievements and developed professional skills in a work environment
- gained knowledge and awareness of your chosen area of the sciences
- developed strong scientific skills and are committed to improving them
- shown personal and professional integrity
- committed to developing your career, as well as advancing excellence in the sciences

2. ELIGIBILITY REQUIREMENTS

To be eligible, you will currently be working as a technical scientist, applying chemical science knowledge and skills
Applications to become a Registered Scientist through the Royal Society of Chemistry (RSC) are open to members in any category who demonstrate, through reflective statements, that they satisfy the required competencies set out by the Science Council (see Section 5).

You will be working to, or qualified to, at least level 5 of the Regulated Qualifications Framework (RQF)
Examples of qualifications at this level include Scottish and National Vocational Qualifications at level 4, Higher National Diplomas (HND), Foundation Degrees, NVQ level 5 or SVQ level 4.

If you do not have qualifications at RQF level 5 or above, then your experience gathered through your role is used to determine if you are working at the appropriate level. We call this demonstrating equivalency.

How do I demonstrate equivalency?
In the application form for RSci, your supporter will confirm that you either have a relevant qualification at level 5 or above, or they will confirm that you are working at that level. Someone working at RQF level 5:
- has practical, theoretical or technological knowledge and understanding of a subject or field of work to find ways forward in broadly defined, complex contexts
- can analyse, interpret and evaluate relevant information, concepts and ideas
- is aware of the nature and scope of the area of study or work
- understands different perspectives, approaches or schools of thought and the reasoning behind them
- can determine, adapt and use appropriate methods, cognitive and practical skills to address broadly defined, complex problems
- can use relevant research or development to inform actions
- can evaluate actions, methods and results

A quick check tool from the Science Council is available online to help you determine if you are eligible, based on your education level and experience: **sciencecouncil.org/scientists-science-technicians/which-professional-award-is-right-for-me**

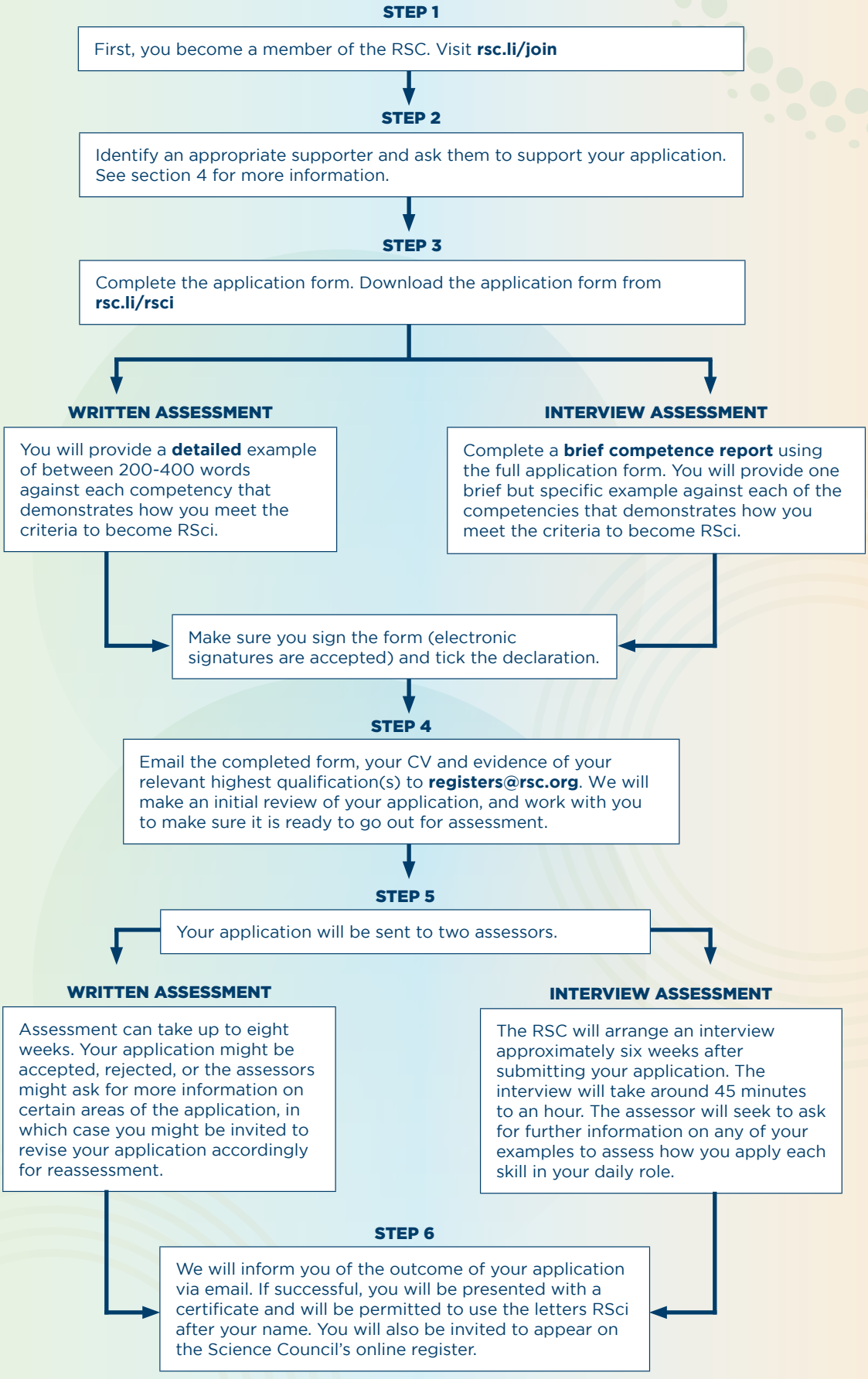
3. THE APPLICATION PROCESS

There are two ways you can apply for a professional award:

1. A written application.

2. An interview with the award assessors.

The interview option may be more accessible for you for a number of reasons, which might include a disability or learning difference, such as neurodivergence (e.g. autism, ADHD, dyslexia). There is no need to provide any evidence of these in order to apply via the interview route, although you are welcome to submit details of any disability-related adjustments or access requirements in advance of the interview.



If you are a current applicant or just considering RSci and would like more information or support, please contact us. Email: **registers@rsc.org**

4. THE ROLE OF YOUR SUPPORTER

Your supporter should be a senior colleague who is very familiar with your work. This person is usually your line manager. The role of your supporter is to provide guidance completing the form and to confirm that you are meeting or exceeding the competencies.

It is vital that your supporter provides a specific comment in support of each of the five competency areas before the completed application is returned to the RSC. They must also sign the declaration.

Guidance is available at any stage of the process, to both applicants and supporters, from a member of our Accreditation and Qualifications team. Please contact **registers@rsc.org** for support.

5. HOW TO WRITE EXAMPLES IN COMPETENCY-BASED APPLICATION FORMS

In general, we encourage the use of the SHARE format when preparing examples in competency-based applications. Each letter in the word 'SHARE' represents a different component of a good competency example. Using this model in both written applications and for a brief competency report for an interview application helps you to make sure that you cover all the key information that the assessors will want to see.

- **S** **Situation:** describe the situation, set the scene
- **H** **Hindrance:** describe the problem or challenge that you needed to overcome, or the task you needed to complete
- **A** **Action:** describe the action that YOU took to overcome the problem
- **R** **Result:** show how the action that you took was the correct one, and describe the outcome
- **E** **Evaluation:** how the situation turned out. You could even contrast it with what would have happened had you taken no action or a different course of action

You may find that you don't need to go through each part of the SHARE format in order. You might also combine some components within your narrative, eg the **result and evaluation**, or the **situation and the hindrance**. This isn't a problem, but it's important that each component part is there.

The key thing is that the assessors need to see **specific examples** from your work and understand **your personal level of responsibility and impact** in your workplace. As a rough guide, you should aim for **somewhere between 200 and 400 words per competency example**. Examples should ideally be from your current job, and no more than two years old.

In the following table is an example answer that could have been given in an application for RSci based on the SHARE format. We've described how it might have been strengthened to give assessors an accurate impression of how the applicant is working at the required competency level. This increases the chances of the application being successful in the first instance.

If you have any questions about your application, please contact **registers@rsc.org**

Competency B1 from RSci
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**.

Original example	Commentary on what could be improved	Improved version of the example, with *changes highlighted*. SHARE sections are shown for clarity, but would not be part of the submitted example
I am part of a team that visits UK airports to evaluate ETD operators. As part of the work, training surfaces contaminated with known quantities of explosives are produced. These training surfaces are then swabbed by the operators, analysed and the results are recorded. Training surfaces must be reproducible and consistent in order to determine the swabbing efficiency of the operator. To produce these training surfaces a validated SOP must be adhered to. By following this procedure both my team and I are confident in the quality of the training surfaces we provide.	• Examples should be written in the first person, not in third person like formal scientific writing. This helps assessors to understand the personal contribution that an applicant has made, and the level of responsibility and autonomy that they are working with. • Acronyms, eg ETD, need to be expanded when used for the first time. • This example would benefit from some more detail regarding exactly what the applicant does to produce training surfaces (the ACTION), and how they are made. The assessors are professional scientists, but may have a different background so the technical aspects should be explained to introduce the principles. • All aspects of the competency should be demonstrated. Here, there is no discussion of the limit of scope of practice. Some thought is required about how this example shows both working autonomously and where additional support has been sought. • Impact of the work on immediate colleagues has been discussed, but the impact on the users of the work could be discussed (the ETD operators).	[SITUATION] I am part of a team that visits UK airports to evaluate ***explosives trace detection systems (ETDs)*** operators. As part of the work ***I produce*** training surfaces contaminated with known quantities of explosives. These training surfaces are then swabbed by the operators, analysed and the results are recorded. [HINDRANCE] Training surfaces must be reproducible and consistent in order to determine the swabbing efficiency of the operator. [ACTION] To produce these training surfaces ***I must strictly adhere to a validated standard operating procedure (SOP). Firstly, I hand clean the test surfaces following a thorough cleaning procedure. The test surfaces are allowed to dry in a clean, non-contaminated area of the trace lab. I use an analytical standard to produce an explosives solution of the correct concentration. To confirm its concentration I analyse the solution by liquid chromatography-mass spectrometry (LC-MS) using a validated method. I check both system suitability and results criteria are acceptable prior to using the solution. If any of these checks fail or are not acceptable, I must then escalate the results to a senior analyst since this is beyond the limit of scope of my practice. The senior analyst will carry out further investigations and maintenance as required and then, when the instrument is confirmed as fit for use, I can continue working autonomously.*** ***I spike the solution onto the clean, dry surfaces using a verified glass airtight syringe. The training surfaces are allowed to dry and I package the surfaces, labelling them appropriately.*** [RESULT + EVALUATION] By following this procedure both my team and I are confident in the quality of the training surfaces we provide. ***By controlling the production of these surfaces we can guarantee that the data we obtain from the ETD operators is reliable, and that results are due to operator performance or the ETD itself.***

6. CONDUCT WITHIN AN APPLICATION

The content of an application for professional registration should be the work of the applicant and we expect all applicants to adhere to our Code of Conduct.

The RSC acknowledges that Artificial Intelligence (AI) tools may appropriately and ethically be employed as aids in composing or enhancing an application. Acceptable uses of AI include:

- translation
- checking and correcting spelling
- checking and correcting grammar
- checking the readability of an application
- generating suggestions for alternative words (online thesaurus)

Applicants bear responsibility for the originality, validity, and integrity of the content of their application, even when employing AI tools for certain elements. Unethical use of AI (for example, generating generic or untrue evidence statements that don't relate to the applicant's personal experiences) or plagiarism may result in applications being rejected.

Applicants who use AI tools in the writing of an application, other than for the acceptable uses outlined above, **must declare this when they submit their application**. Further information on the use of AI can be found in our **Guide to Ethics**.

7. COMPETENCY EXAMPLES

The examples below will help you identify potential topics for you to discuss in your application form. They are designed to serve as inspiration rather than a complete answer. To make sure that you provide sufficient detail, write your answers for each competency (around 200-400 words) in the **SHARE** format.

Registered Scientists work in many different settings. Here, we have provided examples of some industries and fields that previous applicants have been involved in (it is not an exhaustive list). However, many of these examples can apply to more than one sector so you might find it helpful to look over them all.

Competency and description	**Industry/field**			
	Water	**Technician** *This includes examples from teaching, research and industry technicians*	**Pharmaceutical**	**Biochemical**
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.*	*In all these examples, underlying knowledge has been acquired through education, such as college, apprenticeships or university; on-the-job training; training courses; knowledge-based and skills-based assessments and demonstrations.*			
	• Using specific control charts within employer's lab. • Maintaining optimal chromatography performance and troubleshooting any issues. • Identifying whether a particular compound is present in a sample where another compound elutes at the same time with a much larger peak. • Improving instrument performance to ensure the instrument is performing efficiently.	• Managing a range of analytical chemistry facilities. • Synthesising a particular chemical used by first year students as starting material in an experiment. • Assisting students with no background knowledge in a technical subject. • Determining why certain materials migrate between substrates.	• Gaining competency in using technical pieces of equipment. • Troubleshooting an analytical method to identify additional compounds present. • Carrying out routine analysis and adhering to required regulations. • Profiling active pharmaceutical ingredients and related substances while on an industrial placement.	• Implementing an additional process step to ensure contaminating material is fully removed. • Developing new analytical techniques. • When developing a new reaction or chemistry, searching online to study or revise the mechanisms and their capabilities and range.
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.*	• Creating a new reproducibility worksheet for another department, to be more reflective and less biased than the existing form. • Developing an in-house method for analysing complex materials based on one similar, in use at another laboratory. • Responding to a change in accreditation guidelines to adapt the methods of quality checks and standards and make up stock solutions and dilutions as required. • Training to analyse samples in drinking water, having previously gone through the theory and practice in university.	• Helping users to create new quantification methods adapted to their requirements. • Applying experience of complex chemical synthesis to scale up a reaction to produce products for a large class group. • Applying knowledge of spectroscopy in a new application to look at the thickness of coatings on different powders. • Screening prospective materials for a new project and informing the final choice based on physical properties and technical specifications as tested within the lab.	• Analysing active pharmaceutical ingredients, drawing on practical experiences with synthetic chemistry at university. • Developing novel methods for the assay of a drug compound and its related substances. • Applying underlying scientific concepts on specific value measurements as the chemical analysis department remit expanded into other analyses. • Completing a literature survey of available materials for an active pharmaceutical ingredient.	• Investigating the feasibility of using an existing method/ calibration for different substances. • Optimising an experiment for clinical profiling using existing knowledge on the experimental parameters. • Synthesising several substances to provide alternative approaches for compound synthesis.

Competency and description	Industry/field			
	Water	**Technician** *This includes examples from teaching, research and industry technicians*	**Pharmaceutical**	**Biochemical**
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.*	• Solving calibration issues with a lab instrument. • Gathering considerable quality control (QC) data to ensure a particular method is performing well. • Troubleshooting a failed instrument tune to identify a problem with one component, and carrying out maintenance and replacing components. • Reviewing the analytical quality control results for a certain element on one of the instruments which was producing a high bias.	• Conducting a literature review to find the best method of analysis of complex substances, and adapting it to the existing lab equipment. • Proposing an upgrade to an existing, unreliable instrument by testing those from different manufacturers and reporting on cost, efficiency and potential student experience. • Finding an alternative method of analysis for samples which were very small. • Designing experiments to investigate all variables to identify unexpected results.	• Observing low sample resolution and determining the cause as being due to the sample evaporating during scanning due to high volatility. • Conducting an evaluation of pharmacopoeia methods of quantification to profile substances. • Investigating anomalous results in accordance with in-house procedures to ensure reproducibility and reliability. • Testing methodology by seeking out flaws or vague wording, and suggesting improvements for precision and reliability.	• Investigating unexpected variation in specific analysis results by repeating the entire run with fresh reagents. • Improving the procedure for restarting an instrument console which used to bring up a lot of errors when the units were switched on too quickly or the computer was restarted at the wrong point. • Evaluating statistical data to propose suggestions to improve data quality and the data processing software. • Noticing slow performance in a reaction then undertaking a literature review to improve performance.
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.*	• Running an investigation when an instrument failed to produce quality control results – team leader and technical manager had to be consulted on the accreditation of a whole batch of samples. • Managing a large workload, but also samples that have a two week turnaround and the limit of the number of samples that can be analysed in that time. • Analysing drinking water samples and following an analytical method to provide results of a range of metals. If any issues arise during routine testing, the Team Leader and the Public Health and Standards department within the company are notified.	• Configuring a method and adapting to new specific project conditions, together with advice given by an academic colleague to order suitable analytical standards. • Day-to-day management of an analytical instrument in the teaching and research labs, which falls under the remit of the lab manager. • Writing a standard operating procedure (SOP), and escalating the finished document to be uploaded to the online workspace for students and staff to access. • Gathering data for a new project, while managing the new work alongside other higher priority projects.	• Carrying out an impurities test and asking for guidance to run system suitability tests. • Putting together workload schedules for reference, and adapting to equipment breakdowns or extended runtimes. • Working to SOP to avoid moisture getting into a system, and escalating problems when replacement components need to be installed and re-equilibrated. • Undertaking a project on new drug formulation, and finding existing methods were not suitable for the formulation.	• Delivering all analyses as required, and asking for assistance from colleagues during episodes of very high throughput. • Undertaking routine sample preparation and running, and escalating when a set of samples delivered did not contain enough volume. • Testing out an alternative procedure on a small scale to determine effectiveness, before putting it forward to be implemented.

Competency and description	Industry/field			
	Water	**Technician** *This includes examples from teaching, research and industry technicians*	**Pharmaceutical**	**Biochemical**
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.*	• Reviewing all relevant COSHH and risk assessments to identify risk tasks for pregnant staff, and involving the health and safety team. • Reviewing and updating the risk assessment and related appendices for the use of compressed gases. • Highlighting that, due to lab space constraints, an instrument power cable was plugged in next to a sink, so implementing relocation. • Carrying out a review and risk assessment for the preparation of samples, having recently attended a Manual Handling Refresher course in work.	• Undertaking weekly health and safety inspections in a lab, including to check the correct operation of fume hoods, safety showers, first aid boxes and spill kits. • Implementing and coordinating safety measures to ensure strict compliance with College safety policies by being actively involved in all safety related issues arising from teaching labs. • Implementing precautions to control hazards highlighted in a risk assessment eg PAT tests, safe handling. • Disposing of old, unsafe chemicals and providing the appropriate documentation from the safety data sheets and COSHH forms.	• Raising a near-miss event report on observing a piece of equipment being left in an unsafe position. • Producing pharmaceutical level validations for new methods and implementing into routine use within a department. • Fully complying with all current health and safety practises within the workplace and frequently encouraging colleagues to do the same. • Taking an active role in the department's Health and Safety committee and disseminating updated, incidents or new hazards.	• On moving into new premises, taking the opportunity to review and improve safety procedures to ensure each laboratory is set up legally and safely. • Giving an induction presentation on health and safety to all new staff and postgraduate students, describing the facilities, training courses, risk assessments and regulations. • Taking responsibility for maintaining and evaluating all risk assessments and ensuring all relevant documents are in place for a task. • Being a member of a Health and Safety Committee to discuss safe working practices and offer suggestions for improvements or highlight concerns.
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.*	• Ensuring trainees are familiar with SOPs, COSHH forms and risk assessments before undertaking training. • Training new colleagues on proficiency trial schemes, according to ISO17025 accreditation. • Undertaking six-monthly calibrations for all automatic pipettes. • Investigating contaminated QC samples, and carrying out a full system flush and low level control sampling. • Ensuring instrument suitability checks have passed, including blanks, drift checks, and that replicate data is within a set range.	• Revising an out-of-date analytical method which had previously been producing imprecise, varying results, and circulating among students and researchers. • Accurately calibrating a balance to ensure students get reliable results when analysing products obtained from their experiments. • Daily and weekly instrument tuning, and ensuring all students/ researchers are familiar with the daily tune function to take responsibility for the quality of their work. • Ensuring any current or newly improved products comply with strict QC standards, ensuring that the products are certified and able to be sold.	• Upholding current good manufacturing practice (cGMP) standards by highlighting when an incorrect purity value had been used by an analyst for a reference material in the standard solutions. • Making sure chemical reagents, standard materials and prepared solutions are within their respective expiry dates and that there are sufficient amounts to carry out the work in question. • Ensuring analytical system suitability parameters are employed to demonstrate the system setup is fit for purpose and functioning within acceptable limits. • Entering results into an internal lab management system before submitting reports for data checking as an additional checking stage to flag anomalous results as soon as possible.	• Creating quality assurance worksheets for the free amino nitrogen module of a segmented flow analyser, in line with the existing QA worksheets for other modules for consistency. • Producing a template to record which spectra passed quality control initially and which samples needed to be rerun, allowing collaborators to more quickly analyse the data they were given. • Writing an SOP for the quality control of data which is frequently reviewed and updated, and used when training new staff. • Advising colleagues on aspects of GMP and GLP like completing logbooks for balances and blender mixers, resulting in more complete records being kept.

Competency and description	Industry/field			
	Water	**Technician** *This includes examples from teaching, research and industry technicians*	**Pharmaceutical**	**Biochemical**
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.*	• Demonstrating how to complete a new software process when no training time had been allocated. • Communicating to late shift workers about the work done that day using digital recording systems and a shared whiteboard. • Producing prospective costing information for a new method into an Excel spreadsheet and a visual document. • Introducing and conducting weekly meetings to keep analysts up to date with what's happening each week and things to be aware of. • Running instrument demonstrations for lab visitors, going through how the instruments work, capabilities and limitations and offering to answers questions throughout.	• Preparing a presentation for students and staff and later circulating the materials. • Contacting suppliers for quotations and ensure the best price for a product by phoning to request a product sample. • Carrying out an induction for new starters including a tour, a discussion, and instructing staff to read and sign the lab manual. • Compiling a report of trial results for all project stakeholders, ensuring all proposed changes are effectively communicated.	• Preparing a memorandum report to document experimental testing and the results. • Communicating project results to non-analytical colleagues as required to ensure universal understanding. • Keeping team leaders and clients fully posted on the status of ongoing analysis including any problems or setbacks. • Detailing issues with routine lab work via email, with more in-depth discussions as a one-to-one meeting with the team leader.	• Attending weekly team meetings and preparing a set of slides to show progress for the week and allows discussion of any results or potential problems. • Giving a presentation of troubleshooting tips on a metabolic profiling course for external attendees. • Representing other students as a year in industry forum rep at various events. • Staffing a stall at a science festival and explaining scientific concepts to members of the public and of the scientific community.
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.*	• Ensuring fellow colleagues understand what is required of them and the importance of carrying out tasks correctly, through conversations, demonstrations and adapting for different learning styles. • Visiting another laboratory to learn about a particular method to implement an in-house process. • When instrumental breakdowns occur, arranging meetings with external contractors to conduct repair. • Coordinating a number of aspects when an instrument breaks and cannot be repaired by on-site staff.	• Planning lab work for project students through efficient communication and coordinating with a wider group of lab users. • Interacting with a prospective candidate who applied for the post of chemistry technician. • Hosting contractors to clean roof space, and managing negative reactions when the fire alarm was accidentally activated. • Running lab tours for visiting customers and new staff starters.	• Talking a colleague through a procedure they had not undertaken before. • Providing detailed advice to an analyst who was unsure of how to approach a method due to ambiguous wording. • Providing training and making sure to communicate the information clearly and accurately so that the listener fully understands and is content with any instructions received. • Reassuring an analyst who became distressed when a piece of equipment malfunctioned.	• Interacting frequently with external suppliers and engineers for lab maintenance purposes, and maintaining a polite, friendly and professional demeanour. • Networking with others within the NMR community as part of the RSC NMR Discussion Group. • Employing negotiation skills to ensure raw material requests were prioritised by the relevant team so that project critical deadlines were not negatively impacted. • Maintaining a good working relationship with temporary placement students by creating a positive working environment and leading by example.

Competency and description	Industry/field			
	Water	**Technician** *This includes examples from teaching, research and industry technicians*	**Pharmaceutical**	**Biochemical**
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.*	• Offering to demonstrate techniques when official trainers were unable to attend. • Collaborating with an analytical department to identify an unknown substance which was contaminating a standard chemical. • Coordinating with the IT team to upgrade the internal laboratory management system. • Working with a colleague to solve an issue around low sensitivity of an instrument by dividing duties and having the other person double check the findings.	• Being part of a working group to develop the institution's Technician Commitment action plan. • Being part of a team comprising postgraduate demonstrators and academic staff, and working according to a timetable to perform specific tasks. • Pooling knowledge with other technicians and IT colleagues to bring an analytical system back into use within a lab. • Forming a working group to quickly identify issues in the production unit, then collating the data to implement preventative measures and checks to prevent the issue.	• Regularly contacting a development chemist regarding delayed test results because of instrument maintenance. • Keeping the team leader updated on the status of work via prompt and efficient communication. • Consulting with the lab manager and filling in work schedules for both to refer to, and catching up and discussing plans for the working day during morning team meetings. • Making sure staff being trained are comfortable and content with the training received, and actively encouraging questions to avoid any misunderstandings and problems occurring further down the line.	• Maintaining productive working relationships with other members of the health and safety committee and working collaboratively to come up with solutions to health and safety-related issues. • Liaising with other groups to share equipment or knowledge, ensuring clear requests, flexibility and considering all health and safety aspects. • Working with manager, HR and external speakers for a large event for prospective placement students.
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.*	• Applying knowledge of equipment components and internal processes/ methods to diagnose a calibration issue. • Using knowledge of a system, running a series of tests when developing a new method to streamline a process. • Selecting an appropriate method when a customer submitted samples with a specific brief and requirements, and working to a short deadline. • Choosing between four courses of action to identify unknown particulates in a site tank, factoring in time constraints.	• Proposing a more efficient, cost-effective method for determining the content of ions in water. • When a fumehood was out of operation due to overuse, finding a safe alternative for the related stage of an experiment. • Choosing the most efficient method to purify delicate extracts from organic material for a research student. • Researching alternative suppliers of new materials that produce the same mechanical properties as original suppliers.	• Devising an appropriate method for preparing a sample for structural analysis. • Completing a literature survey of available materials for an active pharmaceutical ingredient. • Using industry experience to suggest manual methods over automatic processes. • Following a series of procedures specified in an investigation report process to identify the cause of anomalous results.	• Determining the best method to analyse the content of a large number of samples for a research project, based on budget, how accurate the results need to be and timeframe. • Searching an internal database to check what routes were available to produce requested synthesis targets, based on the available materials. • Performing characteristic tests on new batches of powders with different properties.

Competency and description	Industry/field			
	Water	**Technician** *This includes examples from teaching, research and industry technicians*	**Pharmaceutical**	**Biochemical**
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.*	• When a new pH meter was installed, completing a new equipment file, relevant control charts, and coordinating training. • In anticipation of a new piece of equipment being installed in a lab – arranging quotes and invoices, making sure there is appropriate space and appropriate access to things like water lines. • Managing a group of analysts and arranging how the work is divided to ensure the vital areas are kept running. • Due to illness and annual leave, organising the team to make sure every method had someone to analyse samples.	• Creating log books for all instruments in a lab to present important information clearly and be able to identify problems in future. • Giving induction training and fire safety training to students at the start of the lab courses. • Creating internal web pages to include information on shared equipment, the responsible contact, how to order consumables and how to book instrument training. • Developing and updating a working schedule when multiple projects are running in a lab to ensure the most efficient usage of heavily used equipment.	• Pre-emptively requesting an order for extra consumables to prevent the possibility of a shortage during a period of increased testing. • Making sure required chemical reagents and standards are within their expiry dates and that any relevant equipment can be made available before commencing any work. • During a lengthy test run, scheduling in other tasks to complete during the time.	• Organising a weekly rota for filling complex instruments with liquid nitrogen. • Creating a raw material tracker spreadsheet on the shared online area which contained all the details of the materials such as lot numbers, location and stock levels. • Streamlining the lab chemical inventory by removing unnecessary columns and adding in hyperlinks and colour codes to flag low stock. • Transferring paper-based records to an electronic system to contribute to making lab systems more environmentally friendly.
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.*	• Investigating the cause of sample and QC failures and implementing a change in the cleaning rota to avoid the issue in future. • Reviewing the batch reporting procedure and developing software to automate steps as appropriate to streamline the process. • Improving a calibration standard preparation procedure to increase reliability and accuracy. • Noticing there was a historic issue of certain element results being high from AQC samples so taking the initiative to resolve this by investigating all possible sources in testing processes.	• Troubleshooting issues which arise when transmitting a method from one instrument to another. • Noticing an issue with a vacuum pump so designing a solution with assistance from Estates to minimise exposure to hazardous substances. • Developing an online booking system for shared instruments. • Running multiple experiments and using statistical analysis software to determine the most effective conditions to fully utilise a particular chemical.	• Noticing an issue with low peak response caused by sample residue build up and trialling a long term solution to increase syringe washes. • Implementing the use of a more efficient solvent in a testing process. • Providing clarity on a procedure when a pharmacopoeia method involved some cross referencing between two different methods. • Instigating a method guidance note which contains advice and recommendations on how to approach a particular test and documents acceptable deviations that the analyst can carry out.	• Investigating in-range, but low test results by looking through old reports and adjusting the procedure according to a change in calculation. • Investigating the cause of low resolution in results, after confirming the instrument was performing correctly and samples had sufficient volume. • Getting to grips with new data recording software, and compiling all problems, glitches and fixes into a shared document. • Undertaking a literature review to explain reaction performance and identifying an alternative procedure.
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.*	• Designing a procedure to reduce known negative bias issues with an instrument. • When a component is discontinued by the manufacturer, identifying a replacement. • Due to workload increase, validating another instrument for a specific testing method as priority. • Applying knowledge of an analytical technique to assist the purchase of a new instrument.	• Contributing to a project to determine the impact of using a new product and proposing solutions to problems arising from time being diverted from other responsibilities. • Creating reference materials and operating procedure/instructions to support use of resources in the lab. • Streamlining chemical administration from a paper-based system to an electronic system inputted on a spreadsheet. • Developing a new project based on supplier interest and previous research.	• Producing a new version of a written analytical method to make it more streamlined with less room for misinterpretation. • Developing novel methods for drugs assays, and progressing the methods to pass pharmaceutical level validation. • Developing and implementing a more formal process for reporting non-conformances. • Helping to establish regular, comprehensive training for new starters.	• Developing a new intake process for commercial trials to handle increased number of samples. • Regularly reviewing the SOPs and updating them with new methods and techniques. • Organising and improving the raw material storage system into a more logical, easy to navigate arrangement. • Providing feedback to software developers suggesting improvements and extra features for ease of use.

Competency and description	Industry/field			
	Water	**Technician** *This includes examples from teaching, research and industry technicians*	**Pharmaceutical**	**Biochemical**
E1: 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 (eg. of your professional body) or how you work within and promote all relevant legislative, regulatory and local requirements.*	• Due to working in a UKAS accredited lab, carrying out a health and safety observation regarding bottle disposal to ensure health and safety guidelines are adhered to. • Attending a course on COSHH and creating safety documents as and when necessary. • Adhering to ISO17025 according to UKAS accreditation, including calibrations, maintaining staff competence, circulating any method changes, and preparing for annual audits. • Complying with the company code of conduct and reporting any health, safety or wellbeing flags on a monthly basis.	• Completing a COSHH form for an environmentally toxic chemical so ensuring waste disposal streams were available. • Working to ethics codes as set out by the institution. • Sitting on health and safety boards for the department and wider university through the union. • Attending code of conduct introductory courses and completing other required courses as outlined in the company induction.	• Adhering to company health and safety guidelines, including appropriate use of PPE according to the type of work being carried out. • Adhering to cGMP guidelines. • Complying with the company's confidentiality agreement. • Verifying medications with respect to quality control.	• Abiding by the Royal Society of Chemistry (RSC) code of conduct, demonstrating respect for others, integrity and responsibility. • Reading and understanding all SOPs before undertaking a procedure, and becoming familiar with any updates or changes to these. • Ensuring that all Class 2 laboratory work is carried out in a Class 2 Microbiological Safety Cabinet. • Adhering to any changes or amendments to company policies, procedures and guidelines as a result of the pandemic.
E2: 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 ie 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.*	• Taking part in annual appraisals to discuss goal setting and development over the next year. • Attending training courses on chromatography and using these opportunities to network with workers from other organisations. • CPD recording evidences meeting 16 key points of competence as outlined in the governing body regulations. • Following being trained and signed off to analyse samples for specific contents, continuing to develop the knowledge by undertaking reading around the subject.	• Subscribing to magazines and newsletters to enhance and support knowledge of mass spectrometry. • Undertaking a health and safety course to ensure a safe working environment for students and staff. • Attending a green labs seminar/conference focusing on improving green and sustainable practices in the lab. • Completing project management and planning skills training.	• Attending a series of seminars hosted by a representative of a manufacturer on visiting the site. • Seeking out opportunities to attend internal and external training courses. • Attending comprehensive instrument training on a visit abroad. • Working with colleagues from another site to contribute to a method transfer project.	• Reading *Chemistry World* magazine to learn about the most up-to-date chemistry. • Frequently attending NMR discussion group meetings, such as the RSC's NMR Discussion Group meetings, the London NMR Forum seminars, and instrument manufacturer meetings. • Self-directed learning including books, journals and on-the-job training. • Regularly attending divisional seminars to learn from others with a variety of expertise.

8. MAINTAINING RSci STATUS

Everyone who holds RSci status commits to continuous professional development (CPD) to maintain their registered status – it's a mandatory requirement.

CPD enables you to take charge of your career. By keeping track of your professional development you can identify gaps in your knowledge and opportunities to learn new skills. And in a fast-changing world, keeping your skills up to date is essential. To make this easier, we offer our members a **free CPD recording tool**.

Revalidation

Every year, we also select a random sample of members for revalidation. If you're selected, we'll contact you to explain the process. You'll be asked to describe your relevant learning activities from the past year in at least three of the following five areas:

- Work-based learning (eg, supervising staff/students, reflective practice)
- Professional activity (involvement in a professional body, mentoring)
- Formal/educational (writing articles/papers, further education)
- Self-directed learning (reading journals, reviewing books/articles)
- Other (voluntary work, public service)