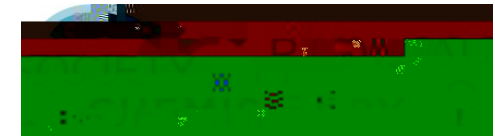


Competency A1 from RSciTech

Apply knowledge of underlying concepts and principles associated with area of work
eg where you have taken theoretical knowledge learnt at college and applied to a work situation

Original example	Commentary on what could be improved	Improved version of the example, with changes highlighted SHARE sections shown for clarity, but would not be part of the submitted example
<p>One of the required practicals in GCSE and A-level Biology is a microbiology experiment testing bacterial resistance to antibacterial agents</p> <p>My responsibility is to prepare a class set of bacterial broth and nutrient agar plates or the plates already inoculated with bacteria for a lesson</p> <p>I use aseptic techniques from college to produce the above</p>	<ul style="list-style-type: none"> x SITUATION is not described; it is helpful to introduce the situation, role and the area of work, in relation to the wording of the competency x Application of knowledge is not described, but that is what this competency is about. Details required: what knowledge is being applied, where was this knowledge gained, and what situation is it being applied to? x ACTION (using aseptic techniques) is very short. It is helpful to have specific detail about what was done – how was knowledge applied to the situation? x There is no RESULT or EVALUATION provided: how has using aseptic technique benefited those involved? What is the impact? 	<p>[SITUATION] In my role, I am required to prepare all equipment and reagents for class practicals, which I apply knowledge that I have gained from college and subsequent training courses to do.</p> <p>[HINDRANCE] One of the required practicals in GCSE and A-level Biology is a microbiology experiment testing bacterial resistance to antibacterial agents. My responsibility is to prepare a class set of bacterial broth and nutrient agar plates or the plates already inoculated with bacteria for a lesson.</p> <p>[ACTION] I use aseptic techniques to produce the above, applying the knowledge that I gained at college while completing my apprenticeship. I shut the door and windows to avoid draughts and I disinfect the working space with VirKon and a lit Bunsen burner. I then prepare sterile nutrient agar by autoclaving it in a pressure cooker. After cooling it to 55°C, I pour it onto sterile petri dishes in the proximity of a roaring Bunsen flame to avoid airborne bacterial contamination. I then prepare sterile nutrient broth by autoclaving and using aseptic techniques such as flaming the neck of the culture while transferring bacteria to the broth with a sterile inoculating loop.</p> <p>[RESULT + EVALUATION] By using aseptic techniques, I minimise the risk of developing unwanted bacteria culture on materials supplied to students; students have appropriate apparatus and materials to gain the skills required to investigate the effect of antiseptics on bacterial growth, and teachers are able to move smoothly through the curriculum without delays caused by inappropriately prepared equipment or reagents.</p>

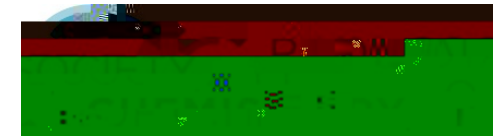


Competency B1 from RSci

Work autonomously while recognising limits of scope of practice

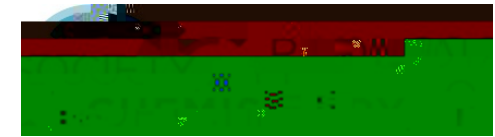
eg where you work independently to follow and/or improve existing methods and procedures

Original example	Commentary on what could be improved	Improved version of the example, with changes highlighted SHARE sections shown for clarity, but would not be part of the submitted example
<p>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.</p> <p>These training surfaces are then swabbed by the operators, analysed and the results are recorded.</p> <p>Training surfaces must be reproducible and consistent in order to determine the swabbing efficiency of the operator.</p> <p>To produce these training surfaces a validated SOP must be adhered to.</p> <p>By following this procedure both my team and I are confident in the quality of the training surfaces we provide.</p>	<ul style="list-style-type: none"> x 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 x Acronyms, eg ETD, need to be expanded when used for the first time x This example would benefit from some more detail regarding exactly what the applicant carries out 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 	<p>x All aspects of the competency should</p>



Competency 3b from CSciTeach
Collaborating with colleagues and the wider professional communities to improve the quality and effectiveness of science education
eg sharing and jointly evaluating teaching practices and methods

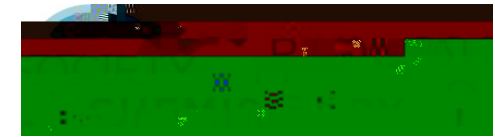
Original example	Commentary on what could be improved	Improved version of the example, with changes highlighted SHARE sections shown for clarity, but would not be part of the submitted example
<p>We were noticing a drop in student engagement and interest in STEM subjects at my school. We were beginning to worry that this could facilitate a drop in uptake of these subjects at a post-GCSE level. Our previous methods to try and encourage student involvement seemed to be having minimal effect.</p> <p>To help solve this issue, we reached out to other teachers that we have met and asked them for their experiences and guidance.</p> <p>Through these discussions we were provided with a range of techniques/activities that they had previously used. We decided on expanding the use of techniques that focus on peer-to-peer learning.</p>		



Competency D2 from CEnv

Take responsibility for personal development and work towards and secure change and improvements for a sustainable future
eg demonstrating that you recognise the value of CPD, have a strong desire to learn and value and actively pursue professional development

Original example	Commentary on what could be improved	Improved version of the example, with changes highlighted SHARE sections shown for clarity, but would not be part of the submitted example
<p>My role as an environmental fate modeller and risk assessor means that I interact with a wide range of clients; from small, family-operated businesses to large national and international companies.</p> <p>To ensure that my knowledge is up to date, my company puts me through a great deal of internal training to develop my professional skills as required. Examples of this training include Data Gap Analysis and Technical Equivalence training.</p> <p>As well as my company's internal training courses, I actively seek opportunities outside of this to develop myself. I have enrolled in, and paid for, five, five-week-long online courses to further my knowledge and CPD. These courses provide me with a broader and deeper view of environmental sustainability issues being faced around the globe.</p>	<ul style="list-style-type: none"> x Examples should be written in the first person. 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 x What is important about these specific training courses? What is their impact? x It is helpful to provide specific detail of the training courses attended. What was special about the external training course? The assessors need to know why training courses are relevant and what their impact would be. x What is the impact of the described activities on personal development? 	<p>[SITUATION] My role as an environmental fate modeller and risk assessor means that I interact with a wide range of clients; from small, family-operated businesses to large national and international companies.</p> <p>[HINDRANCE] So that I am able to provide the highest quality and most environmentally conscious information to my clients, I need to ensure that my knowledge of environmental issues as well statistical analysis and model development skills are up-to-date.</p> <p>[ACTION] Firstly, I do this by attending a great deal of internal training to develop the professional skills required for the work I undertake as a consultant. Examples of this training include Data Gap Analysis and Technical Equivalence training. I use the former to determine what information, data, tests results, or modelling outputs, etc, are missing or lacking as it pertains to thresholds set by national authorities for various regulatory submissions. I use the latter to help me compare and contrast product submissions to allow for alternate sources of products in a competitive free market. As well as my company's internal training courses, I actively seek opportunities outside of this to develop myself. Over the last three years, I have enrolled in, and paid for, five, five-week-</p>



Competency E1 from CSci

Comply with and promote relevant codes of conduct and practice

eg how you have applied and promoted the codes of conduct under which you practice and the outcome

Original example	Commentary on what could be improved	Improved version of the example, with changes highlighted SHARE sections shown for clarity, but would not be part of the submitted example
<p>I have committed to following the code of conduct and to uphold the highest standards when undertaking my professional activities.</p> <p>To ensure that I meet these requirements I take the lead for all laboratory related H&S aspects. I am proactive in developing my skills in H&S.</p> <p>I regularly liaise with all staff to ensure that they understand all associated risk(s) and follow the appropriate laboratory practices described in SOPs and risk assessments. This includes the Head of Operations (who I directly report to) as well as new students/ graduates who join the team.</p> <p>My commitment to ensuring compliance with the RSC code of conduct as well as my proactive mentality, has enabled me to develop and advance my H&S skills and knowledge.</p>	<ul style="list-style-type: none"> x It is not clear which code of conduct is described – it needs to be specifically defined x It would be helpful to know if a specific part of the code is followed e.g. anything that relates directly to the role. If so, why is that section of the code particularly important? x In the ACTION section, specific details about a proactive approach is needed x What is the impact of adherence to this code? How does following this code help colleagues and their work? 	<p>[SITUATION] As a member of the RSC, I have committed to following the code of conduct and to uphold the highest standards when undertaking my professional activities.</p> <p>[SITUATION + HINDRANCE] While I follow the whole code, my role as Head Laboratory Technician means I have to pay particular attention to 'Environment, Health and safety and other legislation'. This states that 'Members must be aware of the general principles of law relating to health and safety and the environment, negligence, discrimination, data protection, and any other law relating to their field of scientific work'. This falls within my professional responsibilities as the Head of Health and Safety (H&S) at my laboratory.</p> <p>[ACTION] To ensure that I meet these requirements I take the lead for all laboratory related H&S aspects, from ensuring COSHH compliance for all laboratory occupants, to preparing risk assessments and standard operating procedures (SOP). I am proactive in developing my skills in H&S and, as such, have attended a number of internal H&S courses and obtained the National Examination Board in Occupational Safety and Health (NEBOSH) Certificate in Occupational Health and Safety. I regularly liaise with all staff to ensure that they understand all associated risk(s) and follow the appropriate laboratory practices described in SOPs and risk assessments. This includes the Head of Operations (who I directly report to) as well as new students/graduates who join the team.</p> <p>[RESULT + EVALUATION] My commitment to ensuring compliance to the RSC code of conduct as well as my proactive mentality, has enabled me to develop and advance my H&S skills and knowledge, receiving a NEBOSH certificate along the way. This benefits my colleagues and me as I am able to ensure that my team has a safe working environment. This means they are able to carry out their roles effectively, comfortably and responsibly.</p>