

Candidate guide to the Scottish Baccalaureate in Science Interdisciplinary Project

Introduction

The aim of this guide is to give you some advice and broad guidelines for the Scottish Baccalaureate in Science Interdisciplinary Project. You may find it helpful to refer to this guide at various times throughout the course of your project.

The Science Interdisciplinary Project Unit (often referred to as the IP) offers you a challenging yet rewarding opportunity to develop your knowledge of science or technology at Advanced Higher level and, at the same time, to develop the learning skills needed for future studies, employment and life. The IP encourages you to develop as an independent learner through taking ownership of, and responsibility for, your Project. It will help you broaden your experience outside school life and help you make the transition from school or college into higher or further education and employment.

What makes the Interdisciplinary Project different is that you choose:

- ◆ the theme
- ◆ how best to carry out the Project
- ◆ the contacts and the links to make
- ◆ the presentation method
- ◆ the audience for your presentation

It is important for you to realise from the outset that the IP is not like another Advanced Higher Science Investigation. The skills you develop and the process you go through as you complete the project are as important as the theme or topic of your research. Among these cognitive and generic skills are research skills, interpersonal skills, planning time and information management, independent learning, problem solving and critical thinking.

How to make these choices and get started

A successful Interdisciplinary Project is likely to be in an area in which you have a genuine interest from a personal, study or career point of view. You may like to consider the following questions from the outset:

- ◆ Does your theme or topic apply knowledge of science or technology and have relevance to the wider world?
- ◆ Does it bring together knowledge from other areas of the curriculum and work outside your normal school environment and routine?
- ◆ Does it fit in with one or more of the following areas, referred to as the Broad Contexts: Employability, Citizenship, Enterprise, Economic Development or Sustainable Development?
- ◆ Does it involve partnerships or team working?

- ◆ Would it be of interest and value to other people?
- ◆ What would you need in terms of expertise, resources and equipment?

Have a look at the Assessment Exemplars on the Baccalaureate section of SQA's website (the link to the page is <http://www.sqa.org.uk/baccalaureates>) to get a flavour of past projects. You may also look at the video clips on the website to hear the views of previous candidates and teachers. Discuss your ideas with your teacher/lecturer. The Assessment Support Pack (ASP) on the website is a lengthy document but it is divided into 11 sections and you may find some of these sections very useful to get an idea of things such as generic and cognitive skills, definitions of the Broad Contexts, and also how the assessment process is structured.

From the beginning to the end of the project you should keep a reflective diary which will help you greatly with all, but particularly with the final two, stages of the project. To guide you, there is a reflective diary template on the Baccalaureate pages of SQA's website.

Prior to beginning your project you should spend time learning and thinking about the range of generic and cognitive skills. You will have the opportunity to evaluate your skill set at the beginning of the project. This will be really useful as it will help you to monitor your progress with regard to your skills development. It is important you remember that demonstrating your skills development is critical for the success of your Interdisciplinary Project. Document evidence as you go along — and don't leave it until the last minute!

During this initial skills development phase, you should be looking at potential project ideas. Use newspapers, magazines, the internet and other resources to come up with ideas. Take the time to discuss your thoughts and ideas with others, including fellow students/pupils and teachers/lecturers. Will the ideas you have give you the scope to achieve all the requirements of the Interdisciplinary Project?

Group Projects

You may decide to do a group project, but each individual involved must demonstrate an appropriate level of participation at all stages and meet all the criteria necessary to achieve an award. This will begin with a detailed project proposal and plan which will feature your individual role and contribution to the project in relation to other members of the group. It will also include an analysis of your own skills at the beginning of the project and how you plan to improve these and develop new skills. This is personal to you and will be different from other members of your group. You may present your findings as a group but you must make a significant individual contribution to the preparation and delivery of the presentation to enable you to fulfil all the assessment criteria. After you have presented your findings you will evaluate the project from your own perspective and then evaluate yourself in terms of the skills you have improved and developed. Detailed information on the five stages of the project are provided later in this guide and are just as valid for group projects as for individual projects.

How to record your project

You will also be expected to set up an information management system in order to organise the references and information you gather for your project. This could take the form of a hand-written or manual system, an e-portfolio, electronic office, web-hosting and/or a referencing system. As mentioned before, it is expected that you maintain a log of your activities, updated perhaps on a weekly basis, which should be helpful to you when evaluating your project and skills development.

You will be required to produce a folio of five pieces of evidence for SQA:

- ◆ a project proposal
- ◆ a project plan
- ◆ the presentation of your project findings/product
- ◆ an evaluation of your project
- ◆ a self-evaluation of your generic/cognitive skills development

Another key stage is the Interim Review, where you will have an opportunity to update your teacher/lecturer on your progress with the IP, to discuss difficulties/issues, and obtain valuable feedback. Templates for each of these steps are in Section 10 of the Assessment Support Pack (Section 10 is available in Word format to allow you to record your work electronically). Please note that the Interim Review is between you and your teacher/lecturer and is not submitted to SQA.

The proposal

This first piece of evidence will be a clear, detailed outline of your project including your main objectives, the reasons you have chosen it, the learning environments you will access and the skills you hope to develop. Also, explain in what ways the theme is relevant to one or more of the Broad Contexts. Explain in what ways the project will allow you to use your knowledge of science and/or technology.

Early discussion should take place with your teacher/lecturer to ensure that your proposal is both practical and realistic. To assist with this, there is a Proposal Audit Tool template on the Baccalaureate web page. Your teacher/lecturer must acknowledge agreement of your proposal before you proceed to the planning stage.

At this stage you can also think about the skills you will hope to develop in the course of your project and record your thoughts on the template. This is probably the first time you have actually done this exercise in a formal way and it should be very interesting and thought provoking as you realise the important roles these skills can play in so many aspects of your life.

The plan

This should be a fairly comprehensive and detailed plan as to how you will go about carrying out the objectives of your project. You must include a timeline — you choose the timeline method to suit your style of working — but make sure that it is as detailed as possible and includes key milestones/deadlines as well as other commitments on your time, such as prelims, school activities, UCAS applications and so on.

Also give details of the range of research methods you will use and resources, human and otherwise, that you will access in the course of your project.

Please be aware that not everything will run smoothly as you carry out your project. Think about potential pitfalls and try to anticipate problems and how you might overcome them. Remember that planning continues throughout the project — you should make amendments and adjustments as you go along. You will have to overcome obstacles and problem solve. This contingency planning is important and should be included. You should also consider what is required for your project to go ahead (reliance on other people or resources, steps in the plan which must be completed before you start on the next step) and include these dependencies in the plan.

As your project will involve work outside the school environment, you should seek guidance on issues such as health and safety, welfare, ethics and confidentiality.

Include in your plan a detailed description of the presentation method(s) you have chosen and why. Also, give details of your intended audience and why you have chosen this particular audience.

Additionally, think about how you intend to evaluate your presentation/product, for example with a feedback form, with a survey, comments on a web page, discussion and oral feedback, etc. Remember you can choose whichever method of presentation you prefer as long as it is suitable for your chosen theme and for your audience. Your presentation may take the form of an oral and/or written report. However, past methods also include the following:

- ◆ an e-magazine
- ◆ a film/video/DVD
- ◆ a play
- ◆ an Open Day/Debate/Seminar
- ◆ learning activities
- ◆ a poster
- ◆ an information leaflet
- ◆ a web page
- ◆ a computer game

Your proposal and plan must get approval following discussion with your teacher/lecturer. Either or both of these documents can be re-submitted if it is felt that they do not meet the criteria on first submission.

Interim Review

Once your proposal and plan have been negotiated and approved, you will be expected to work fairly independently and take the initiative through the different project stages. Effective management of time, resources, links and relationships will be your responsibility. You will come across problems that will need to be overcome — and you will have to be resilient and be responsible for working your way through these. However, there should be occasional meetings with your teacher/lecturer and there will also be an Interim Review. This is between you and your teacher/lecturer and would normally take place half way through the project. This is not one of the pieces of mandatory evidence but it is a very valuable opportunity for you to discuss your project, any problems or obstacles, successes and targets, positives and negatives, and to obtain essential feedback. It is also a chance to look at your cognitive and generic skills and to see how they are already developing. It is also an opportunity for you to discuss your next steps for the project with your teacher/lecturer.

Presentation of findings/product

Your teacher/lecturer will be submitting an assessor report which will include a section on the presentation of your project findings/product, whatever form it may take. Ask to see a copy of this checklist to help you to take into account the criteria you will be assessed on. These will include:

- ◆ evidence of effective use of such things as resources, research, time management, and problem solving
- ◆ how you have applied science or technology and interdisciplinary subject knowledge within the broad contexts you have chosen
- ◆ how clear the presentation of your main findings and outcomes was
- ◆ how well your presentation was received from your audience and whether the feedback received was positive and helpful to you

Evaluation of the Project

Use your reflective diary and your progress log to help you with this section and include an evaluation of your proposal/planning stage as well as your implementation and findings. While your presentation should show the results of your project and how your subject knowledge has improved, it should also demonstrate what you have learned in terms of your skills development, for example in terms of communication skills, information management skills, independent thinking skills and collaborative working skills, as well as your self-confidence.

Avoid just giving a description, although there will be an element of description. Give examples to back up what you are saying.

Try to relate at all times to what went well, what went not so well, what you might have done differently, what you learned, how you dealt with feedback, what you are proud of, what surprised/disappointed you, and what you might have done differently.

Try at all times to be honest, reflective, insightful and self-critical and be as succinct as possible. You can refer back to other stages of your folio if you feel you have dealt with the issues there, rather than just repeating yourself. Remember that the assessors will be looking and grading your project as a whole and will look for evidence elsewhere in your folio.

Self-evaluation

Again use your reflective diary and your diary/log to help you. Here it is important that you adhere closely to the SQA template for your self-evaluation, dealing individually with each of the skills as listed. Try to avoid just giving a description and support what you are saying with evidence and examples from the different stages of the project. Relate your evidence/examples to your skills development. Again try to be as succinct as possible. This is an important section but do not feel you have to repeat things in detail which you think you have covered well at other stages of your project.

How your Project will be assessed

The Science Interdisciplinary Project will be graded A, B or C. In order to pass the Unit, you must achieve at least a grade C.

Section 10 of the Assessment Support Pack contains an assessor report to allow you to check that all criteria have been met before you submit each piece of evidence.

Possible links and contacts:

- ◆ Universities/colleges
- ◆ Learned Bodies such as the Institutes of Chemistry, Physics, Biology
- ◆ The Glasgow Science Centre/Our Dynamic Earth
- ◆ STEMnet
- ◆ Businesses/organisations
- ◆ Scottish Government
- ◆ Scottish Enterprise
- ◆ Voluntary organisations
- ◆ Teachers/lecturers and fellow pupils/students

On the SQA Baccalaureate in Science web page

(<http://www.sqa.org.uk/sqa/35858.1826.html>) you will find all the documents relating to the qualification, ie the Arrangements document, the Interdisciplinary Project Unit specification and the Assessment Support Pack. The Assessment Support Pack (ASP) contains two exemplar projects (Section 9) and Interdisciplinary Project templates for the five mandatory stages of the project, an interim review template, progress log and assessor report (Section 10).

There are also the following useful documents:

- ◆ Assessment Exemplars — real projects from previous sessions with External Verifier commentaries.
- ◆ Video case studies.
- ◆ An audit tool to guide both teachers and pupils with the proposal stage of the project.
- ◆ A reflective diary template — this may be helpful to encourage and guide you to keep a reflective diary.