

Candidate 3 evidence

Interdisciplinary Project

Proposal

Candidate name	<input type="text"/>
SCN	
Centre name	
Assessor name	
Project title	An investigation into herbal ley as an alternative way to feed livestock
Chosen subject	Sciences

Project outline: *(what it is you want to do and how will you go about it)*

I would like to investigate the use of herbal ley and its benefits as an alternative to traditional grassland pastures.

Definition: "A herbal ley is a **complex seed mixture of grasses, legumes and herbs**, which bring a range of benefits to forage, livestock health and soil fertility. Herbal leys can often include a mixture of up to 17 species, depending on the aims of the ley, location and soil type". – Cotswold seeds

As the owner of a small flock sheep, I have a limited knowledge into the nutritional requirements of my sheep. I have been informed herbal ley could be a more nutritional alternative food source. My aim is to investigate this suggestion and discover the positive and negative qualities not just for the livestock's nutrition and wellbeing but the effects the growth of these seeds could have on the land and its potential as an alternative solution to control parasites affecting livestock.

In order to discover the advantages and disadvantages I aim to consult with experts and researchers who have knowledge in this area of study. I will also seek out local farmers and find out their views and experiences in using this type of grazing for their own livestock and on their own individual farms.

There is the potential to examine my own soil pH and determine the best herbal ley for both my livestock, soil available and Isle of Bute climate. With the results of my whole investigation, I will determine how this could be a sustainable solution for my grassland.

In view of the citizenship element of this project I will summarise the use of herbal ley within my local community (local information found by perhaps a questionnaire), with this information I can then produce a community focussed investigation that will explore the advantages and disadvantages of herbal ley and with my findings I will produce a report which I will pass onto to the local farming community.

Reasons for choosing this project: (eg personal interest, future plans, links to other subjects you are studying/ have studied)

Since an early age I have had an interest in sheep. Starting a small flock of Hampshire Down's in 2020, has allowed me to gain an insight into all areas of sheep care including their nutritional requirements. The ground that my sheep graze on is adequate but I feel it would be beneficial to look at ways to enhance the nutritional quality of the land that they have available to them. With the cost of stored feed, hay and fertilisers etc. rising locally and globally I feel it is imperative that I plan for the future with the option of using herbal ley.

I will be drawing on knowledge already gained in Biology including food sustainability and supply, plant productivity, proteins, parasites, animal welfare and biodiversity. As well as exploring the elements in Chemistry such as the use of Nitrogen fertilisers and the mineral content of different seeds and Herbal Ley mixtures.

I am working towards studying Veterinary Medicine and believe an important source of animal health and wellbeing lies within their feed. This project would allow me to further enhance my knowledge on this area and give me the ability to investigate current trends in alternative methods of feeding livestock.

The broad contexts this project will cover are:

Sustainable development – This research will discuss Herbal Ley as a Sustainable food solution (particularly now as prices of essential items rise) for use in Scottish farming. It will also explore the effect on the livestock's immediate environment and how it will affect their nutritional needs. I hope to highlight the need for less environmentally damaging fertiliser whilst still getting the same required result for the livestock.

Citizenship – I will be gathering information primarily from the local farming community and using the results to compile an educational tool to help both myself and the local farmers to make informed decisions about using Herbal Ley which I hope will benefit their livestock and overall productivity in the future.

Employability – My research into both this area of study and the skills I will attain as I work through this project will use both my scientific (Biology and Chemistry) and mathematical knowledge gained so far in my academic career as well as showing I can look at data analytically and produce research that will be informative to my local community. My research will target a growing area of global concern and will allow me to work with industry experts and farmers who I will have to deal with in my future giving me the experience and skills required.

Learning environments, I will access are:

- – Watson Seeds. Speaking with company at the Royal Highland show they sounded confident that they would be able to provide me with information and support as I undertake my project.
- Watson Seeds – website resources
- – DLF seeds

- (Founder of Forrit) – A family friend passed on her details
- Cotswold Seeds – website resources
- Scotland's Rural University College – online research and potential contact
- University of Edinburgh (perhaps)
- Various articles and research available on-line that is reliable and can be trusted
- Local vets

Speaking and communicating with these industry experts will be a new experience and will be challenging at times, but I will make sure I approach it with confidence and keep notes/journal on everything discussed and what I learned from each encounter.

How I will use my knowledge of my chosen subject area:

Biology

I will use information acquired from my studies during Higher Biology and my continual learning of AH Biology namely my knowledge of photosynthesis, where I will be able to explore the requirements for herbal ley (e.g., light and water) and how the different environments where herbal ley is used may affect its overall growth and end result on the livestock. My understanding of crop protection will help me to explain how herbal ley may not necessarily require traditional protection methods and the benefits this may bring. Also exploring parasitism looking particularly at how it may be prevented by using herbal ley. Using my knowledge of food supply and sustainability I will continue to emphasise, throughout my project, (if proven true) the importance of herbal ley for both the environment and for people. Using my learning of biodiversity, I will be able to explore the use of the range of different species in herbal ley and the effects on the environment. I will also be sure to keep animal welfare as a top priority during my research, particularly looking at animal behaviour, as it is of utmost importance that using this method of herbal ley still ensures the welfare and nutrition of the animals. I also hope to use my knowledge, from both Biology and Chemistry, of protein and its importance to both the plants and animals.

Chemistry

I plan to use elements from my learning of Higher Chemistry and my continual studies of AH Chemistry which includes my knowledge of periodic elements involved in my research into herbal ley to help explain their potential negatives and positives, this will include macronutrients and micronutrients. I also seek to apply my understanding of calculations especially those including moles/mass/volumes/concentrations to overcome any potential problems I may have to face. Lastly, I will use my understanding of the factors influencing the industrial process and any environmental considerations which need to be taken account of.

On top of my knowledge of plant field trials I will also be sure to use all my scientific skills and procedures acquired through my science subjects whilst undertaking practical investigations to make sure factors such as sterility are kept to a high standard. Also prioritizing my own health and safety when it comes to any hazards associated with the field work, I may then have to carry out a risk assessment.

I will also use my technological skills gained from my sciences to help me when dealing with scientific equipment or computer work.

The skills I will develop and/or improve in the course of this project are:

(carry out a short analysis of your current strengths and weaknesses in the skills areas below and how you think your project will allow you to develop and/or improve these skills)

SWOT analysis - strengths, weaknesses, opportunities, and threats

- application of subject knowledge and understanding
 - I will use my strength of gaining my Higher Biology and Chemistry and connect relevant knowledge from my current learning to look into herbal ley in a more in-depth manner, with my ability to make relationships between different subject matters. This will allow me to gain a deeper understanding of the science involved as I will be able to link it to familiar concepts and ideas learned from my studies, as highlighted above. This will also help me to understand the relationship between all of my different subject areas.
 - I will also use my mathematic understanding for numerical problems that I may face to evaluate my findings and help me to justify and determine my conclusions. Allowing me to use skills in everyday scenarios outside of schoolwork.

- research skills – analysis and evaluation
 - Using my scientific knowledge and research skills gained so far in my academic studies I will gather relevant information, feedback and results from various research articles, publications, industry experts and investigations which will include my own.
 - I will use my skill of determining if the information gained is reliable, evaluating credibility before deciding if they are relevant to the research and if they can be presented as a solution to the project's investigation. This will allow me to further develop my understanding of accessing information from reliable recourses.
 - Formulating a questionnaire, which I will ask the local farming community to complete, allowing me to try a different way of gaining information compared to what I am used to in school. This will be good in getting me outside of my comfort zone and allow me to practice my in-person communication skills, which have been a hurdle to practice after the COVID lockdown's.
 - I find this area (research skills) a strength however I will work on ensuring I do not start gathering irrelevant information and take the project off in a tangent!
 - So I am able to achieve all of this I will keep a log of my recourses used and information gained so I can analyse and evaluate it effectively as I go on.

- interpersonal skills – negotiation and collaboration
 - My professionalism is a strength of mine and this study will give me invaluable experience in communicating with third parties and working collaboratively with experts in several different fields of work and taking on any practical suggestions in a positive way.
 - Linking with others will not only help me to form a conclusion to this

investigation it will also help me strengthen my existing communication skills by use of various mediums to a wide variety of people from a range of backgrounds and vocations.

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- planning: time, resource and information management
 - I have decided to start my time plan from day one, compiling and using for the duration a Gantt Chart. Already this has introduced a new tool to my planning remit which I will be able to use in my future studies and provides me with a skill I can easily use to give me an at a glance and adjustable timeline for all aspects of my project and the various areas I need to manage and perhaps adjust in the process.
 - I consider organisation a strength of mine and will endeavour to ensure all areas of this project are in line with my personal deadlines set. If for any reason I am unable to meet these dates I shall not be hard on myself and instead work to achieve them as best as possible by using my skill of being flexible and thinking outside of the box.
- independent learning – autonomy and challenge in own learning
 - The Covid lockdowns gave me a taste of independent learning due to limited access to traditional teacher learning. I rose to the challenge and thrived in this learning environment with a determination to do well.
 - Whilst I am known in school as an inquisitive learner taking the lead on this project will be a challenge as I can be apprehensive about asking questions and dealing with people, I am unsure of. But I want to use this opportunity to face these challenges.
 - I will also need to make sure I keep on track and with my own planning I must not procrastinate, like I admittedly sometimes do, and get on with what needs to be done.
- problem solving – critical thinking: logical and creative approaches
 - Thinking critically is a skill I need for the University course I am working towards and I find this a strength as I have previously looked at several models to help me in understanding these including the Gibbs Reflective cycle and The Borton Model of reflection skills I will utilise further in this project.
 - Thinking 'outside the box' (looking beyond my normal call for help - a textbook!) and using problem solving and logic can sometimes stump me so it will be a great experience to work with autonomy and overcome hurdles I may come across in carrying out this project.
- presentation skills
 - I would happily state that my presentation skills provide an advantage to this project. In my school career I have come first in two debating awards and presented and sold myself to my peers on two occasions to be voted house captain and then vice school captain.
 - I can confidently state that I will make any public facing presentation interesting and any report produced will be of a high standard.
 - To appeal to my target market, I will ensure it is clear and easy to understand and filled with information that will be useful and of interest to the

farming community.

- I also want to make sure that my strength of being approachable and a good speaker will come across when I have to speak and present my ideas to people one on one.
- self evaluation – *recognition of own skills dev and future areas for development*
 - I am confident in being able critique myself on my own personal development. However, it has certainly been a challenge to write down my strengths and weaknesses. I will continue throughout this project to recognise my skill development. I do wish to have more confidence within myself when I hit a hurdle or make a mistake and want to try and overcome these with positivity and develop my skills from any errors made.
 - I will be sure to keep praising myself throughout this project and evaluate my feelings in my log.
 - Particularly more recently, while doing work experience, my communication skills have developed, and I feel I am very confident when it comes to talking to people and in doing this project these skills can only get better.
 - I would say that I am good at working in a team however I excel when working individually and enjoy my own company.
 - I will continue to learn how to manage my time wisely, making sure to balance my studies and important personal time.

Assessor feedback to candidate

Proposal approved		Further work required	
Candidate signature			Date
Assessor signature			Date

Interdisciplinary Project

Plan

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Is this a group project? yes no

If a group project my individual role or responsibilities will be: N/A

Timescales

Please see attached Gantt Chart for further details regarding projects proposed timescales.

June/July/August

- I met with my mentor who advised to spend the summer gathering ideas. I had two potential plans returning to school. With this in mind I had started to gather potential reading/research related to potential Baccalaureate Projects. During August my Herbal Ley proposal was approved by my mentor.

September

- My aim by the start of the October Holidays was to create my project plan.
- I made contact with one of the experts I had found and will have to chase the second as I had not heard back from them after initial email.
- During September I also created a detailed outline of objectives to be tackled over the timeline of the Herbal Ley project.
- I also read up on research from studies carried out by from Edinburgh University and looked into research into Herbal Ley undertaken in New Zealand as suggested by (Founder of Forrit)
- Ensured I updated my timescale, Gantt chart and progress log

October

- Get started on carrying out project plan objectives
- List the positive and negative qualities of Herbal Ley on livestock's nutrition and wellbeing

- Discuss with local farmers when would be the best time to hand out questionnaires/collect questionnaires
- Ensure I update my timescale, Gantt chart and progress log

November

- Contact Watsons seeds and organise for soil sample testing
- Investigate and design a questionnaire to hand out to farmers to obtain their opinions on Herbal Ley. Questions based around feed, soil, land management and parasite control in our local community
- Continue to gather and list the positive and negative qualities of Herbal Ley on livestock's nutrition and wellbeing
- Confirm time to arrange to distribute questionnaires
- Collate information received from farmers
- Ensure I update my timescale Gantt chart and progress log

December

- Prepare a list of questions to ask industry experts highlighting any issues that have come to light from feedback from local farmers.
- Arrange meeting (organise a date) / send an email at start of December to an industry expert who is willing to discuss my findings
- Arrange to have my interim review with mentor
- Ensure I have spoken with Watsons seeds about outcome of my soil sample/chase results up
- Ensure I update my timescale, Gantt chart and progress log

January

- Have meeting with industry expert
- Collate information received from meetings and questionnaires and analyse the data
- Use soil sample results to determine if herbal ley will be the best solution for both my livestock, soil available and Isle of Bute climate
- Revise all feedback/research/images on Herbal Ley and put together first rough draft of report collating these findings and forming a conclusion using the results of my investigation
- Organise a way / date to distribute my report
- Ensure I update my timescale, Gantt chart and progress log

February

- Pull together final draft of report (checked by mentor)
- Distribute final report to the local farming community, also give out feedback form to allow feedback to be received on my report
- Collate all feedback forms/verbal feedback about my report
- Ensure Project findings are complete
- Complete project Evaluation form
- Ensure I update my timescale, Gantt chart and progress log

March

- Complete self-evaluation form on report / project

Planning *(how you are going to meet the agreed objectives of your project)*

- Objective 1 - *Investigate herbal ley and its potential to be a more nutritional alternative food source.*
- Objective 2 – *Investigate sub-topics to determine the advantages and disadvantages of herbal ley including researching its potential as an alternative solution to control particular parasites affecting livestock and also the effects the growth of these seeds could have on the land and the environment.*

To achieve both objectives 1 and 2 I will delve into my research, using the various written sources I have acquired, to enhance my knowledge of herbal ley. Then I will consult with experts and researchers who have knowledge and experience in the area of study (including the sub-topics) through a range of interviews, feedback forms, and discussions (using email as my main form of communication, so I will also need to draft professional emails to these industry experts to ask questions). Knowing this is a busy time of year I will need to take into account the possibility of delays when it comes to replies and potentially inabilities to help. I will use the information acquired as a foundation to come up with a list (most probably saved on a word document) of the positive and negatives of herbal ley on livestock's nutrition, health and wellbeing, also the effects on parasites and the environment, here I will evaluate the information and save it for later use. I will also apply my own knowledge on parasitic relationships from higher biology and any other learnt information that will aid my research and provide answers to my questions.

- Objective 3 - *Seek out local farmers and find out their views and experiences in using this type of grazing for their own livestock and on their own individual farms in the community.*

To initially achieve this, I will need to decide which farmers to ask and if they are willing to help. I will then look into how I intend to supply them with the questionnaire, and also how I will get their responses, be it by email or physical drop off/pick up or an online

form. In addition, I will look in depth into how to plan and write a questionnaire. As well as my own research I will speak to teachers in school who I know have experience in this area. This will ensure the investigation via this method will have maximum impact on information gained and ensure I ask all of the right questions in the correct way to gain the information I require. I will then have to carry out my chosen method of giving the information out and collecting their answers.

- *Objective 4 - Examine my own soil quality e.g., pH and determine if herbal ley is suitable and the best type of herbal ley for both my livestock, soil available and Isle of Bute climate. Also concluding if Herbal Ley could be a sustainable solution for my grassland.*

To gather this information about my soil I may need to test some of my soil qualities myself, to do so I will need to make contact with the school lab technician to check that they are happy for me to use any equipment (like pH probes). I may also need to ask around the community (particularly farmers – perhaps asking when I send over my questionnaire) for other equipment that I require for testing. I will need to make sure that I am carrying out these experiments at the appropriate times in the correct conditions. Additionally, I will look into sending my soil away using a soil analysis service to gain more in-depth details regarding my soil quality. To do so I will need to find a reliable company who can provide me with this information and then send the sample away – giving myself enough time when it comes to waiting on the results. I will also need to use my knowledge and potentially carry out research (using reliable sources online and my own contacts) into my own flocks' nutritional requirements to determine whether herbal ley fulfils their needs. I may also require details on Isle of Bute climate and will access this data online from reliable sources. Finally, I will collate the findings from research and form a conclusion using the results of my investigation.

- *Objective 5 - Using information gained from local farmers and my own soil I will summarise the use of herbal ley within my local community.*

To achieve this, I will use the information gained from objectives 3 and 4.

- *Objective 6 – write a final report on herbal ley and come up with a personal conclusion.*

This will include information/findings from objectives 1, 2 and 5. All of the above information/findings will allow me to then produce a final report and allow me to come up with a solid and reliable conclusion as to whether herbal ley would be an option within our local community. I will then pass on this report to various parties including contacts I have made/acquired through my process.

- *Objective 7 – I will use my time plan to ensure all objectives determined and adjustments made along the way are met.*

To ensure I meet this objective I will make sure to follow my timescale as best I can, however, I will try to not be hard on myself if I cannot meet deadlines for various reasons. I will continually keep up to date with my progress by logging it in my Gantt chart, allowing me to stay aware of what I have done and still have to do. On top of this I will keep a diary of contact details and any sources suggested to me or discovered.

Resources (eg people, materials, places)

- Watson Seeds ([redacted]) Liaise with company to perform tests to determine my soils different qualities
- [redacted] – DLF seeds
- [redacted] (Founder of Forrit) – A family friend passed on her details Permission has been sought to ask questions and to use her expertise in forming my conclusions
- [redacted] has also suggested Massey University in New Zealand and UCD in Ireland for more key information
- Cotswold Seeds – website resources
- Watson Seeds – website resources
- University of Edinburgh ([redacted]'s paper on "Sheep nutrition - what can I feed sheep other than grass, hay and ewe nuts?")
- Various articles and research available on-line that is reliable and can be trusted
- Local vets
- Local Farmers
- Chemistry and Biology teachers at school
- I-pad for photographs
- I-Mac for writing reports

Research methods (eg contacting companies, surveys, focus groups, experimentation)

- To gain my required information I will be reading a variety of research papers available on-line from universities and I will also be investigating various reliable topic related internet sites and articles. I will also follow up on my research and seek any short falls in my research by asking industry experts, vets and seed specialists for advice and opinions to ensure I have gained a fully informed view on Herbal Ley. I will do this through a range of interviews, feedback forms, and discussions (using email as my main form of communication, so I will also need to draft professional emails to these industry experts to ask my questions).
- Having researched a variety of different questionnaire formats I will develop a format that will suit the maximum response rate from the local farming community. This questionnaire will centre around asking farmers their views and opinions on using Herbal Ley as grassland, their past experiences, future plans or if it has never been an option why was this the case. It will also ask them their opinion on what they feel the advantages and disadvantages are. In addition, it will seek to find out if they are aware of the parasitic qualities and ways herbal ley can affect their soil/environment. I will then analyse the feedback from the questionnaires to help me establish how Herbal Ley is being used in the local farming community, what success has been experienced, what has been tried and tested, where gaps in knowledge are and what information from the questionnaire can be used in my final report.
- Once the questionnaire is complete, I will also ask the same community if they would like a copy of my final report, ensuring a high engagement to submit, which is an important aspect of my project.
- If possible, I will arrange a date to discuss the findings from this questionnaire and any other research I have undertaken with an industry expert. This will be a Q & A ensuring all elements of the findings are included and aspects of findings are validated. If an in-person/on-line discussion is not possible I will send over my questions via email. This will allow me to make my final decision on the information I will include in my final report, to be issued to the local farming community.
- To gather any information about my soil I will need to carry out soil quality tests myself, as well as look into sending my soil away using a soil analysis service to gain more in-depth details regarding my soil quality.

Presentation

- **Who do I think will benefit from listening/reading/looking at my presentation of my project findings/product?**
 - I think my completed project report will not only benefit me and my livestock for discovering if herbal ley is a suitable feeding method for me, but it will also

benefit my local farming community. It is hoped that my investigation will help farmers make more informed decisions on the type of grassland that will work best here on the Isle of Bute. With nutrition being an invaluable contribution to the wellbeing of livestock it essential that these decisions are well thought out and considered. It is hoped that this report will help local farmers come to informed conclusions about using this innovative choice of grassland.

- I would also share my findings with the contacts I have made at Watson's seeds and Forrit to help them understand the decisions of farmers in this area of the country. I will also share my findings with any industry experts I have made contact with.
- **What methods are appropriate to my audience(s)** (*eg demonstration, presentation software, websites, oral, report, piece of theatre, dvd, wiki/blog or any combination*)
 - I will write up my investigation in the form of a report. I will ensure it engages the majority of readers (farmers) by using examples to support facts and making the information provided relatable and making sure it is easy to read. The use of images gathered during my investigation and tables / charts produced will provide the reader with essential visuals to help engagement and support the reports main findings.
 - A report allows for reader to digest information presented at their own pace and refer back to it when needed to help with decision making. It can then be shared by the reader with fellow farmers who are interested in finding out more and who may not have been engaged or taken part initially.
 - By writing my project up as a report it will also be of a standard to share with other professionals who would benefit or have voiced an interest in reading more about the investigation.

Dependencies (*what is required for your project to go ahead ie reliance on other people or resources, steps in plan that must be completed before starting the next step*)

- I will need to check the availability of the farmers (as this is a busy time of the year) and how best to ensure a good response rate and completion of questionnaires. This could potentially involve finding out if they meet at a regular time and piggyback on to the pre-scheduled event or contacting friends who are farmers. Without completed questionnaires my research will be lacking a key element, which is how herbal ley is viewed within my local community, and my finished report will not be able to give a true localised perspective.
- My meeting with an industry expert is depended on the completed questionnaires as I need to have this information for our discussion and to clarify any questions.

- I have secured the help of one professional and hope to acquire further information, research, support and feedback from other individuals. Feedback/information from industry experts will be vital in backing up my findings and ensuring the information I provide in my report is correct. Getting timely support and advice from professionals will also be reliant on my organisational skills and ensuring I get the information to them in a clear, concise and timely way. This timely way is important as I need to take into account that they are helping me on the side of their already busy schedule.
- Taking a soil sample and gaining the results/analysis from an outside agency is crucial in helping me decide on my personal conclusions.
- Completion of this interdisciplinary project and all its elements will require me to employ time management skills to juggle these requirements and meet my objectives alongside a very busy final year at school and whilst applying to study veterinary medicine. I will be dependent on my Gantt Chart/timeline to ensure crucial and in-depth planning to aid in project success.

Contingencies

Any anticipated problems

Anticipation of probable and possible factors which may impact on the project

1. Soil sample not arriving on time, issue with sample.
2. Uncertainty of Covid 19's return and increasing inflation effecting community.
3. I am in my sixth year and need good results in my Advanced Highers and Higher exams for a desired place at university. I have various other commitments within school that take up time, so finding time to fit in alongside UCAS applications, potential interviews and prelim exams may mean I feel myself under pressure.

My plans for overcoming the anticipated problems.

1. Send early on in research with a comprehensive note to state what soil sample is for with clear instructions for return of information.
2. Gain email addresses/details of local farmers early in project and if need be come up with safe ways to distribute questionnaires. With increasing inflation, I will make sure to be mindful of the farmers current stresses and not selfishly push for my needs.
3. Take vitamins and stay fit and healthy to ensure I keep a healthy work-life balance during this final year at school. I will build all dates into my Gantt chart from the start allowing me to monitor activities and keep to planned activities, limiting additional activities for my project around times that need my full focus, such as prelims. By keeping a close eye on my timeline and activities I can be flexible and

<p>4. Contacts made are too busy and or unable to provide me with information I require.</p> <p>5. Contacts made do not have time to meet with me.</p> <p>6. Local farmers not willing to complete my questionnaire/filling in incorrectly/forgetting.</p>	<p>make adjustments as required however I will try my best to keep the end date the same to ensure I have plenty of study time for my final exams.</p> <p>4. Use the internet sources I have researched so far to provide me with research and leads to other areas and possible contacts.</p> <p>5. Use e-mail as the main means of communication. Ensure I keep a note of emails sent and when so I can follow up as and when required.</p> <p>6. Try to organise the distribution of the questionnaire at a convenient/organised time so I can explain purpose of questionnaire and get them filled in and returned.</p>
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Method for recording my skills development and future areas for improvement

Throughout the course of this investigation, I will ensure I keep a detailed progress log and regularly update my Gantt chart and timescales
 My progress log will be set out so I can keep track of:

- Key dates and timelines
- Who I spoke to and outcomes / feedback from any meetings
- Adjustments to time plans and reasons why to ensure I meet deadlines and improve on plans when and if required

I will allow time and space in my progress log for self-reflection especially after any feedback and after any key dates or if I need to make adjustments to timescales and why to show how this investigation has affected me and my skills especially those highlighted in the proposal. It will allow me to keep on making improvements in these areas as well as allowing me to set areas for continual development to focus on after the investigation is complete.

Assessor feedback to candidate

Plan approved		Further work required	
Candidate signature	Date		

Interdisciplinary Project

Progress log

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You may use this form to record and reflect on progress with your project. Keeping an ongoing record will help prepare you for progress meetings with your teacher/lecturer, your presentation and final evaluation. Things you might want to record are:

- what you have done (eg from one week to the next)?
- what skills have you used and how you feel they have developed?
- if you are working in a group, what discussions you have had?
- any changes that you have (or will need) to make to your plans and reasons why
- what resources you have found/hope to find?
- any problems you are encountering and how you are resolving them
- what you are going to do next?

STRENGTHS

- Presentation Skills
- Time Management
- Organisational Skills
- Biology, Chemistry and Mathematical knowledge
- Research Skills

WEAKNESSES

- Communicating with professionals
- Thinking 'outside the box'

OPPORTUNITIES

- To develop more confidence within myself when I hit a hurdle
- Continue my communication skills development in a professional environment

THREATS

- Demands of applying to University this year alongside exam and study commitments
- Unable to obtain the information needed for this investigation

Throughout this log I have been mindful of my initial SWOT analysis and the areas I initially felt may be a strength and a weakness and or provide me with an opportunity or a threat.

Date	Comments																																																																								
June 2022	<p>After my initial suggestion that I would like to do a Baccalurett in Science the deputy head of my school spent some time emailing contacts and other schools to see if she could find someone to support me through the process. She fortunately found someone who was willing to be my assessor and support me in the Baccalurette of science process. As he is based on the Isle of Islay our meetings needed to be on-line. I had my first meeting with him in June. Despite being used to on-line meetings/schooling after home learning during Covid I was a little nervous before this first meeting worrying about what he would think of me and how we would work together. However my apprehensions were short lived as he was quick to put my mind to rest explaining how the process worked and we discussed and agreed goals and waork to get started on during the summer.</p>																																																																								
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July 2022	<p>My spare time in the summer was spent investigating a couple of project ideas and think how they would fit into a project plan. My preference and interest always leaned towards the herbal ley investigation. During the initial investigation, groundwork carried out on-line, discussions with farmers and conversations at agricultural shows with seed representatives I made several contacts with experts in this area. This gave me confidence that moving forward I would have industry experts to discuss any issues/questions that I would inevitably have as the project progressed ensuring my investigation could be completed.</p>																																																																								
August 2022	<p>I was delighted that [redacted] approved of and agreed with pursuing my proposal for the herbal ley investigation during our initial discussion on my return to school. I was excited to get approval and to get started on this project as it was an investigation that I felt connected to. I hoped that it would hopefully provide me with an answer to a question on how I can take forward my own small grazing area that is used for five sheep, as well as provide a tool that may be of use to my local</p>																																																																								

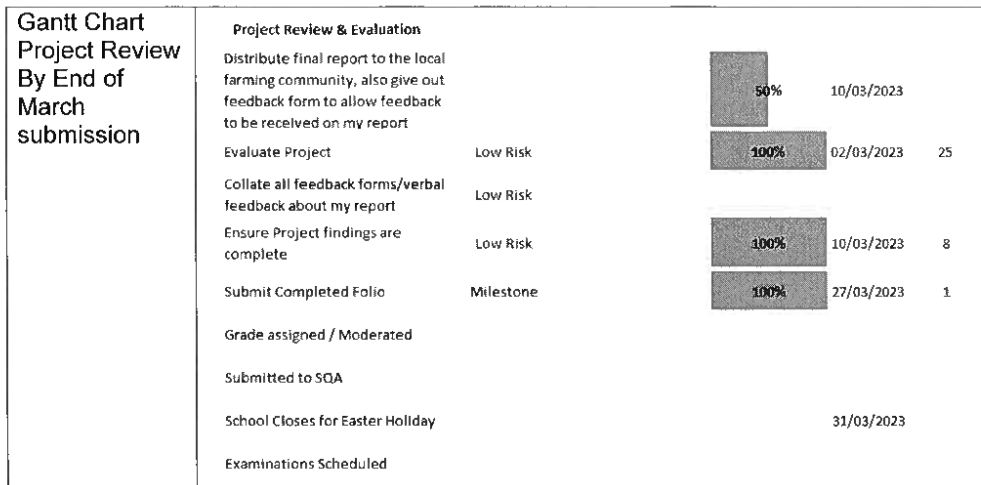
<p>September 2022</p>	<p>farming community.</p> <p>As my UCAS application was my priority at this time I had to really discipline myself to also plan in time to work on the interdisciplinary project plan. I was consumed trying to ensure I got the best personal statement into UCAS for the October deadline to ensure I had the best possible chance of getting into Vet school in 2023. As both pieces of work needed to be submitted at similar times, I had to ensure I stuck to my, Gantt chart planning meticulously and making adjustments to any targets set as and when needed. This planning was essential to ensure both of these essential pieces of work were completed on time whilst also ensuring my school work did not suffer or fall behind. Sticking to these timelines ensured by the end of September / start of the October holidays both my project plan was accepted and my UCAS form submitted.</p>
<p>October 2022</p>	<p>The plans I had made and my discussions with [redacted] proved to be invaluable in giving me the confidence to achieve and meet deadlines. At one point with everything else that was going on it seemed like an enormous never ending to-do-list . By using the Gantt chart and breaking down the process / steps and how I would/could go about achieving this investigation was invaluable as it gave me the confidence to take some time away from the project over the October holidays as I had various university work experience submissions that were required to be completed in the school holiday. This also gave me a small amount of time to enjoy some down time in the school holiday. Ready to get back to work on my interdisciplinary project on my return to school after the holidays.</p>

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<p>November 2022</p>	<p>Despite making contact with Watson seeds at an agricultural show in June my initial email sent in August requesting support was still not answered so I tentatively resent a request for help CCing another employee at Watson seeds. This second email worked and I got an immediate reply and over the course of the next 2 months my communication and emails were always replied to quickly and the help I received was invaluable to undertaking my soil sample. My lesson learnt here was not to be apprehensive about resending an email!</p> <p>During November I made a start on researching types of questionnaires as this was the best delivery method I felt to ensure buy in and results from the local farming community. This was quite time consuming and again I had to juggle this workload, alongside school work and the preparation for interviews which I knew from research would happen before Christmas. I asked a teacher in school for advice on the information I had discovered on questionnaires and they kindly looked over my draft questionnaire and questions asked. I was lucky enough to secure 4 interviews for veterinary courses at 4 universities however this resulted in my project deadlines (as I had predicted on my Gantt chart) not always being met. As a result, my questionnaire was completed and finalised before Christmas however the distribution of questionnaires didn't happen until January which in turn resulted in the late analyse of questionnaires and questioning of industry expert.</p>																																																																						

	<p>This was annoying as I always try to work to deadlines and had initially wanted to get my project finished early January to avoid clashes with revision however my priority was to aim high and to ensure I gained an offer this year from a university. My thinking behind this was I had the support of the teaching team whilst at school, in all aspects of the application process so I knew the only way forward was to reset my goals/deadlines.</p>																																																												
<p>December and into January 2023</p>	<p>4 veterinary interviews 7th, 13th 14th December and 18th January 2 prelim exams 19th December and 3rd February made these 2 months incredibly busy and why as mentioned above planned activities moved into later part of January / February. Whilst this period was incredibly stressful, I learnt a lot about juggling and prioritising workload. I also ensured I allowed a few days downtime at Christmas with visiting family. This time out allowed me to keep my wellbeing on an even keel and refuel after a full-on month (stressful interviews, travel, interview preparation and travel). This proved essential in ensuring I could then focus on distributing the questionnaires at the start of January.</p>																																																												
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<p>January 2023</p>	<p>Whilst the questionnaires had been handed out to farmers at the start of January collecting them in proved to be a bit of a laborious process. After 3 weeks of waiting: 3 questionnaires had been completed in person with the farmer. 6 had been collected back in after being left with the farmer and 3 remained incomplete/uncollected which delayed the start date of my evaluation, review of data and report writing. I decided if several questionnaires were still outstanding by a certain date it would be best to carry on without them.</p>																																																												

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<p>February 2023</p>	<p>During the February break that date arrived and despite phoning, revisiting farms and emailing I had to make a start without this input. This was frustrating as I wanted as much input as possible into my investigation but highlighted to me the hurdles market research brings and why some companies offer prize drawers as a pull to gain completed forms!</p> <p>The half term break allowed me to get my head down and get stuck into my project and the writing of the final report. My questions to the industry expert came back the same day which was amazing and gave me huge amounts of appreciation and a promise to myself if I was ever in the same position and asked for help I would ensure a quick response turnaround as I was so appreciative of this gesture. I really enjoyed pulling together all the information I had gathered and compiling the report and although I felt apprehensive sending a copy away to my tutor on the 13th February it was a relief to actually get this far and to have an almost finished project. My meeting with [] on the 28th February although intense was invaluable in allowing me to assess the report through another set of eyes and finalise/approve the copy that would go out to the local farming community in March. The end of February was also a highlight for me as I received 3 conditional offers, this was a relief and showed that my hard work, commitment and diligence was starting to pay off and my lack of trust in my abilities was evident and unfounded!</p>																																								

Gantt Chart Project Review Progress Feb/March	<table border="1"> <thead> <tr> <th>Milestone description</th> <th>Category</th> <th>Assigned to</th> <th>Progress</th> <th>Start</th> <th>Days</th> </tr> </thead> <tbody> <tr> <td colspan="6">Project Review & Evaluation</td> </tr> <tr> <td>Distribute final report to the local farming community, also give out feedback form to allow feedback to be received on my report</td> <td></td> <td></td> <td></td> <td>27/02/2023</td> <td>3</td> </tr> <tr> <td>Evaluate Project</td> <td>Low Risk</td> <td></td> <td>0%</td> <td>02/03/2023</td> <td>7</td> </tr> <tr> <td>Collate all feedback forms/verbal feedback about my report</td> <td>Low Risk</td> <td></td> <td></td> <td>09/03/2023</td> <td>9</td> </tr> <tr> <td>Ensure Project findings are complete</td> <td>Low Risk</td> <td></td> <td>0%</td> <td>19/03/2023</td> <td>5</td> </tr> <tr> <td>Submit Completed Folio</td> <td>Milestone</td> <td></td> <td></td> <td>24/03/2023</td> <td>1</td> </tr> </tbody> </table>	Milestone description	Category	Assigned to	Progress	Start	Days	Project Review & Evaluation						Distribute final report to the local farming community, also give out feedback form to allow feedback to be received on my report				27/02/2023	3	Evaluate Project	Low Risk		0%	02/03/2023	7	Collate all feedback forms/verbal feedback about my report	Low Risk			09/03/2023	9	Ensure Project findings are complete	Low Risk		0%	19/03/2023	5	Submit Completed Folio	Milestone			24/03/2023	1
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March 2023	<p>I was incredibly proud when it came to the point of saving the final copy of my report and printing it off in a booklet form that I could then hand out to any farmers that had expressed an interest in receiving a copy. Initially my plan had been to hand out the report and collate any feedback on it however after the delay in receiving back the completed questionnaires I decided just to hand out my report with a message and my mobile number in case any of the farmers in receipt of my report wanted to discuss the investigation into herbal ley as an alternative way to feed livestock further. This thinking ahead, changing plans thinking outside the box and avoiding potential frustrations was necessary as the end of March deadline was drawing in and I had two more prelim exams and smaller subject tests ahead of me. Despite having some nerves when I had initially made contact with the farmers and handed out my questionnaire the opposite was the case when I handed them the finalised investigation. I was proud of my work and keen to share the information I had gathered and gained from my reading and communication with experts. This whole process has been a learning experience that has allowed me to challenge myself both academically and personally. It has allowed me to juggle demands of a timeline and yet still meet deadlines. It has been both interesting and at the same time fun liaising with the farming community, getting to know them better and being able to discuss and debate a subject I now feel knowledgeable and passionate about and one that I hope to continue to investigate if I do get the grades and jump the final hurdle and get into veterinary medicine!</p>																																										



Interdisciplinary Project

Presentation of Project Findings/Product

Candidate name	<input type="text"/>
SCN	<input type="text"/>
Centre name	<input type="text"/>
Assessor name	<input type="text"/>
Project title	An investigation into herbal ley as an alternative way to feed livestock

How I presented my project findings *(describe in detail how you presented your project findings and explain the choices you have made with regard to your presentation method(s) and audience(s))*

I presented my investigation in the form of a report.

In my report I discussed the advantages and disadvantages of Herbal ley, this ultimately led me to look into other relevant livestock related areas such as Herbal Ley's positive effect (and potential drawbacks) on livestock nutrition and overall health, soil quality, the environment and the anthelmintic properties it provides. The report also included the results of my soil analysis which discussed whether herbal ley is a viable option here on Bute, also covering the most suitable selection of species for the herbal ley. The information from my questionnaire was also incorporated within the report so that I could relate my findings to the local farming communities' opinions and requirements. The results of this questionnaire, completed by multiple local farmers, gave an insight into the adoption of herbal ley as a livestock feed solution locally. These results provided essential statistical results into the local community mindset and how this report could be of use. After completion, I provided my report to several farmers who had voiced an interest (by filling in a box in my questionnaire, which worked well as it was clear that they were keen to find out more by ticking this box and they thought the report would prove useful to them) in finding out more information about the advantages and disadvantages of herbal ley and its potential growth on the Isle of Bute, with the report providing plenty of information to allow farmers to consider this feeding method. I understood from my questionnaire that local farmers were willing to trial a sustainable alternative.

From living in a rural community, I know the time constraints and busy nature of life on a farm so I felt a report allowed for the information to be digested at a time suitable to the target audience so that herbal ley as a feed option could be considered in their own time. I presented any scientific information (diagrams and

scientific phrases) in wording and format that would be easily understood by farmers allowing them to enjoy the report and not misunderstand information or find the report boring. I also used images in my report so that it was as engaging as possible.

By including the disadvantages of herbal ley this allowed me to be realistic and also allowed farmers to come up with an informed decision as to whether it would be a suitable alternative to them personally. By linking my report to the Isle of Bute added a more personal touch and the information was therefore more suitable and beneficial to my target audience.

By going around to the local farms to distribute the report, in person, allowed farmers to ask me any questions they had, and it also meant I could explain the basic structure of the report. Also, by distributing as a paper copy allowed farmers to easily pass the information on to other interested parties. Personally, I was at first nervous to distribute the paper copies as it involved meeting new people but seeing the farmers reactions and how keen they were to read it really boosted my confidence and it also allowed the farmers to put a face to who wrote the report, which helped to build rapport.

Assessor feedback to candidate

Candidate signature		Date	
Assessor signature		Date	

Interdisciplinary Project

Evaluation of project

Candidate name	<input type="text"/>
SCN	<input type="text"/>
Centre name	<input type="text"/>
Assessor name	<input type="text"/>
Project title	An investigation into herbal ley as an alternative way to feed livestock
<p>How successful has my project been overall? <i>(consider the strengths, weaknesses and learning points of your planning, implementation and findings/outcomes giving examples to support your comments)</i></p> <p>The aim of my project was to investigate the advantages and disadvantages of herbal ley and also investigate whether it could be a viable option on the Isle of Bute in addition to providing local farmers the information that they required to consider this as an alternative livestock feeding method. Personally, I feel as though I have fulfilled the aim of my report by highlighting these advantages and disadvantages of Herbal ley including its effect on livestock nutrition and overall health, soil quality, the environment and the anthelmintic properties it provides. I have also managed to include the results of my soil analysis and questionnaire in my report which discussed whether herbal ley is a viable option here on Bute and whether I could consider it as an option for my own livestock. This therefore provided local farmers with a better understanding of herbal ley allowing for consideration of it as an alternative feeding method. I also feel the structure of my report and the way it was presented was a strength as it allowed for farmers to read it in their own time and the information was easily understood whilst remaining informative. (My time plan really helped me to ensure the aim of my project was achieved.)</p> <p>Communication over emails allowed me to have the response in a documented form which I could easily go back to at a later date. Having the information on a computer also meant that I was less likely to lose it than if I had a written paper copy of the information. A skill of mine is patience and not pushing the experts for a quicker response meant that they had more time to look out resources such as <input type="text"/> who provided me with multiple links for example a link to an informative video by SmartGrass. Another expert came back to me after a period of time and offered to do a free complementary soil analysis of my land and provided me with all the information that allowed me to do this.</p> <p>A weakness during the research stage of my report was that the experts whom I was in contact with were very busy and this meant that I had to sometimes wait a long period of time before receiving a response. I dealt with this weakness productively and used my problem solving to figure out what else I could be doing</p>	

instead of just waiting for them to respond. I used my time management to get ahead of other aspects of my investigation such as researching the advantages and disadvantages of herbal ley. This unexpected set-back was annoying at the start, however, a key learning point was working around the difficulty and not letting it stop me from carrying on. It was worth the wait on each occasion as the experts were great at taking the time out to provide me with in depth information.

I also really enjoyed learning about all the advantages and disadvantages of herbal ley. The research part of this project was definitely challenging as I had to simplify the information, however, I actually really liked this and can see it as a strength in my project as I now have a better understanding of where my subject knowledge from school has come into Herbal Ley and its application to real life.

Another weakness in my report was the fact that some farmers who I had given the questionnaire to (the individuals in my initial plan) were not completing it despite me following it up due to it being a busy time of the year. I was initially frustrated but to overcome this, I adjusted my initial plan and decided on contacting more local farmers to see if they would mind filling it in, this gave me the numbers I required for my report and meant that I actually ended up meeting new farmers who were very interested in my investigation.

Overall whilst on occasion it has been a challenge this year to juggle the demands of my sixth year in school, I am proud of myself for hanging in there and completing this project. Investigating something that I personally have an interest in (due to owning a small flock of sheep and hoping to become a vet) made the process easier and increasing my knowledge by delving into this area of animal nutrition has been extremely rewarding and enjoyable and has acted as a way to make me more determined in completing my investigation to the highest standard. I feel that producing a report into an area of nutrition that many farmers I spoke to wanted to find out more about brought me personal satisfaction in producing something that would be useful to others as well as helping those in my community who read my report make an informed decision on future grazing choices for their livestock.

Using a Gantt chart helped me to plan my time and all the tasks that needed completed for the successful completion of this project. However, despite the fact that adjustments to my timeline were needed due to the input needed to ensure I was ready for my university interviews (which could not be planned in initially) I feel I was able to effectively manage my time despite these demands and readjust the timeline to ensure all aspects of the project were complete by the expected deadlines and also that I could still focus on all of my other commitments such as my school subjects.

How effective were my communication methods throughout the project?

I was initially apprehensive about speaking and communicating with individuals who knew more about herbal ley than me but by showing honest communication and being enthusiastic about what I was doing meant that the farmers and experts that I was interacting with could see I was keen to learn more and therefore they gave up their time and shared their knowledge to help me due to my enthusiastic communication, including [redacted] from DLF seeds taking the time to discuss with me which species of plants would do best on the Isle of Bute and those that

wouldn't and the reasons for this. Overcoming my nerves about speaking to these individuals has allowed me to take my project to the next level by including information that I would not be able to find through my own online research and has definitely given me the confidence to speak to new people and make new contacts in the future.

In regard to my verbal and non-verbal communication when handing out the questionnaire to farmers you could tell I was nervous as I was worried that the farmers would be totally against changing their grazing methods. However, I found that all would 'maybe' or would 'definitely' consider changing their grazing methods and the majority were keen to find out more about herbal ley.

When it came to communicating my questions on the written questionnaire, I had to make sure that the questions were easy to read so minimal misunderstanding so valid information and also that I would receive responses that would benefit me. I also had to get round all the farms in one afternoon to drop the questionnaire off, so this meant that I had to communicate the key points about filling in my questionnaire clearly and concisely to the farmer so that they understood what they had to do but my effective calm communication allowed me to do this without sounding abrupt, meaning I could go round the farms in the limited time I had whilst still remaining professional.

I redrafted the questionnaire and report to ensure it was understood by those reading it and as there was uncertainty surrounding discussing the questionnaire with the farmer at the drop of time in any depth I also included an introductory letter with the aims, reasons of the questionnaire and my contact information.

Despite some delay in gaining the help with project from my experts they always provided me with the information I needed and more to continue with my investigation

I found emailing suited me and my nerves at potentially missing information if it was a video call. With the emails I was able to fully prepare and reread my requests before sending to the expert. It also meant they could answer in their own time and didn't feel put on the spot. Throughout the process I was always aware that my agenda was mindful of other people's time. This was partly manners but also to ensure continued support of me and my endeavours from all parties I was communicating with including my mentor, my experts and the local farming community. As I had limited time with my mentor as our meetings were on-line and organised in advance planning and good communication such as being clear and concise was essential to ensure I was able to take on board all of the feedback and continue with my interdisciplinary project to the highest standard possible.

Is there any aspect of my project that could be taken further? What might my next steps be?

Personally, my next steps are to decide on the way I manage and plant the fields my sheep are using. I will be using all the information researched and advice given to determine a plan of action and the best course of action to ensure the nutritional needs of my flock are met.

When I go to university (if I meet the offer conditions), I would like to continue my investigation into herbal ley and its effects on livestock if the opportunity arises,

definitely taking forward research into the anthelmintic properties of herbal ley as of the current pressing issue of antimicrobial resistance and also due to the fact that this was probably the part, I enjoyed researching the most in my project.

Ultimately, I hope my report has provided the local farming community with information that will be of benefit to their farm and livestock. I hope it provides the information they need to make a change in some way to their traditions in livestock feeding and provides them with a window into an alternative that could help them and their businesses future needs in a world were sustainable solutions, the effects of global warming and the costs of resources are continuing to rise. This will hopefully be achieved with the adoption of Herbal ley providing benefits to the farmers livestock as well as reducing costs (vets and fertilisers) and increasing the biodiversity on the farmers' land.

Candidate signature		Date	
Assessor signature		Date	

Interdisciplinary Project

Self evaluation of generic and cognitive skills development

Candidate name	<input type="text"/>
SCN	<input type="text"/>
Centre name	<input type="text"/>
Assessor name	<input type="text"/>
Project title	An investigation into herbal ley as an alternative way to feed livestock

In evaluating your skills consider the skills analysis which you carried out at the Proposal stage and how you said you would develop and improve these skills. Now refer to your reflective diary/log/blog and feedback you have received and evaluate how you have developed and/or improved these skills through the work on your Interdisciplinary Project.

Application of subject knowledge and understanding

(Think about practical uses for the what you have learned. How did you use your knowledge of your chosen subject area effectively to help you carry out various aspects of your project and how it related to your chosen broad context(s)?)

Academically the studies I had done at N5 and Higher and this year as I work my way through my advanced higher in both Biology and Chemistry has been invaluable in understanding the information I was reading during my research. My knowledge of parasitism has allowed me to look particularly at how it may be prevented by using herbal ley, such as how the parasites are consumed by the livestock and how this can be prevented metabolically and physically by using Herbal leys. My knowledge of food supply and sustainability has allowed me to explore the positive impact herbal ley has for both the environment and for people. Using my learning of biodiversity, I was able to explore the use of the range of different species in herbal ley and the effects on the environment including for pollinators and invertebrates such as worms. I also used my understanding of protein to highlight its why it's so vital and needed by the livestock. Furthermore, I used my knowledge of nitrate leaching to explore the positives that the need for less fertilisers could bring by herbal ley. I also used my learning of Higher Chemistry and my continual studies of AH Chemistry which included my knowledge of periodic elements involved in my research into herbal ley to help explain their potential negatives and positives, this included macronutrients and micronutrients such as calcium. I also used my knowledge to explore the process of nitrogen fixation to explain the benefit of nitrogen-fixing plants within a herbal ley. Lastly, I used my understanding of the factors influencing the industrial process and any environmental considerations which needed to be taken account of to ensure herbal ley would thrive and be a sustainable option.

I also used my technological skills gained from my sciences to help me when dealing with scientific equipment or computer work.

Practically, despite my experience lambing and working with farmers I knew when I acquired my sheep in 2019, I still had a huge amount of learning ahead of me. Experiencing a case of severe mastitis and complications enabled me to gain a unique perspective and the understanding of how vital taking holistic approaches are in livestock management and how vital and essential good nutrition is to ewes especially during lambing. Having this personal experience drove my plight to find out more and to do the best for my sheep. I now have an increased knowledge not just in Herbal ley but in the requirements of sheep. It has also allowed me to gain a breadth of knowledge into the subject area learning about how good nutrition affects the livestock and the difference this can make to sustainable farming. This investigation has provided me with an area of expertise and a passion for nutrition that I didn't have previously. This in-depth study has given me the tools to take to university and tackle the self-study and research, I will need to do there to complete the course.

Research skills – analysis and evaluation

(Think about the research process. How did you plan, carry out, analyse and evaluate your research? You should evaluate your research methodologies, tools, resources and contacts, data recording and referencing, reliability and usefulness of data.)

Plan

My planning for this project started in the summer holidays and I spent a lot of time scouring the internet finding articles and sources to help me in this investigation. I also spent some time talking to farmer friends on their experiences of herbal ley to see if there was the need for this investigation. Once the proposal was accepted, I spent some time planning out step by step all the tasks I would need to complete over the course of the investigation. I also built into this plan upcoming school events and studies for other disciplines that I would need to achieve over the time frame.

Once this timeline was created, I then split the tasks up into main and subcomponents which I used to build my Gantt chart. This proved to be an essential element to ensure I stayed on track and completed my project and all essential elements as I knew exactly what I needed to do by when.

Through discussions with farmers and at agricultural shows during the summer I knew who I wanted to contact to provide me with my experts while I was undertaking this investigation. Despite delays in gaining consent and information I persevered with my initial contacts and plan which was setback slightly on discovering that the time of year I had initially contacted (late summer) them was a particularly busy period and had been the main barrier to a quicker response. All the contacts I made moving forward at all time proved to be helpful and passionate about herbal ley and its benefits. This insight and expertise proved invaluable when it came to analysing my soil quality and providing more detailed information and sources of information, that were personal to my situation.

Despite the fact I had to adjust my initial timeline due to achieving four interviews for university I gained a valuable lesson in time management skills and how even the best laid plans need to have an element of fluidity to ensure success. It did mean that a large chunk of work was moved into February and March however by keeping calm and making the most of the scheduled February holiday from school I was able to get my timeline back on track. On hindsight I would advise anyone embarking on this project to make full use of the time before the summer holidays to get research done and proposal approved so you can get stuck in on return to school in August and allow a buffer should you come across obstacles to your time.

Despite this 'readjustment' my plan was a success, and I found the challenge of completing this Baccalaureate in science easier with time set aside at the start to invest in producing this detailed plan of action / Gantt Chart.

Research/Carried out

Access to the internet was invaluable to get started on this project. The internet provided me access to a variety of articles, websites and research papers that provided me with plenty of background reading to help with the initial investigation into Herbal ley. The contacts I made also pointed me in the direction of further research available on the internet this also meant that the data was reliable and useful as it was from the experts. I was able to find some information in veterinary and farming magazines. Access to email allowed me to communicate thoughtfully and concisely to the experts and contracts I had made during the course of the investigation and allow them to reply in their own time.

Using my computer to file links used and information found, a folder to store questionnaires collected and paper copies of articles found and a log book/diary in which I jotted down my progress and reflections meant through careful filing, planning and organisation I was prepared and ready to write my report.

My report was focussed around the use of herbal ley on the Isle of Bute as my investigation would prove useful not only personally but within the small rural community in which I live.

Through a questionnaire I was able to find out how the community of farmers manage their land and feed their live-stock. As the report suggests many of the farmers have farmed their land the same way for generations and had a basic knowledge of herbal ley. I hope this investigation gives them 'food for thought' and perhaps be the catalyst in making a change in practice that will hopefully improve the conditions and nutrition for livestock on the Isle of Bute as well as proving a sustainable solution to land management.

Analysis/Evaluation

I made a point of ensuring all the facts and information I gathered were from sources that were considered reliable (for example published in last 10 years, from educational/government institutions or written /published by reputable bodies – to ensure valid data).

I also used the websites that the experts were linked to and or recommended. I had to make a point of reading through all the information gained and determine if the content was useful and or relevant to my needs.

For the questionnaire I decided to use Google forms as it would reduce human error and analysis of the information occurs as each form is submitted. However,

this proved to be problematic as there was often no Wi-Fi available on the farms that I could gain access to ensure the questionnaires were completed with my support. With the farmers preferring to take a paper copy of the questionnaire and fill in when they had time it meant the data interpretation was subject to human error on two counts. The farmer not fully reading the questions and not understanding the scales being used. Some questions needed a response on all lines however this was not always picked up on when filling in a paper questionnaire. The inputting of some of the paper questionnaires (by myself) were also open to human error so every care was taken when inputting the data and ensuring the farmers response was true to that farmers experiences and not changed in any way. On a couple of occasions, I had to phone a farmer to confirm choices made to ensure the correct information was input. Which whilst being time consuming ensured data produced was more reliable, true and useful.

As Google forms produced the visual interpretation of data such as the graphs and this ensured the information was analysed and represented correctly.

Interpersonal skills – negotiate and collaborate

(Think about how you considered other peoples' views/feedback, discussed issues of concern, reached a solution where needed, adjusted your approach in response to a situation/environment, showed positive self-belief and had the confidence to offer and ask for support.)

My first experience of developing my interpersonal skills was through my meetings with my assessor. The thought of this was initially daunting as he was from another school, and someone I had never met before and I was going to have to communicate with him either via email or on-line meetings. Whilst daunting I felt well practised after on-line schooling during Covid and after the initial meeting I felt at ease and confident in how we would move forward and work together. I knew he was going to be a busy with other, so I made sure I was organised and scheduled timely meetings and requests for advice and submitted work when promised, by good time-keeping. This way of working ensured we communicated well, had a mutual respect and I took on board any feedback knowing it was well considered and helpful to ensuring I produced my report and project to the high standards I expected of myself. This good communication also meant that I did not shy away from asking for any help if I needed advice on a certain aspect of my investigation or if I had to talk through anything that was concerning me in regard to different parts of my investigation.

This first hurdle gave me the confidence I needed to approach experts and professionals that would prove to be helpful throughout the duration of the Baccalaureate.

I also made a point of having the confidence to speak in person regularly to various people regarding the use of herbal lay for livestock feed to gain any advice or ideas or experiences that they may have had by being open to what they had to say. By being professional I was able to hold a conversation with people such as local farmers, farmers based elsewhere in Scotland, veterinary lecturers, as well as grass and seed experts at trade shows. This communication with others in different fields of work helped to build my confidence not only in the subject matter but in my abilities to discuss and give views on this subject. I think my enthusiasm and

passion for the subject helped me to overcome my nerves and have the self-belief to approach people and start conversations I would not have previously contemplated starting as I can get nervous about approaching new people. However, being prepared and having facts ready ultimately help to overcome my nerves and to start conversations and build relationships.

This professionalism, trust and developing confidence were essential when I had to phone a couple of farmers to ask of certain unclear answers they had submitted on their questionnaires. I always included my telephone number on the questionnaires so if the farmer had any questions, they could call me. Whilst this never happened, I was prepared and willing to take these types of call.

I think chasing the farmers over the course of several weeks proved to be one of the most embarrassing tasks as I felt like I was proving to be annoying. I tried to ensure I interjected humour and good manners whenever I phoned/popped around to see if completed and I always communicated when I would be back next and ensured this was acknowledged and an agreed course of action. A couple of the farmers kindly phoned me to say complete and ready to collect and one even hand delivered to my house! (due to providing my phone number)

Originally it was suggested that I plan a presentation event in which I would deliver the contents of my report to the farmers who had stated they would be interested in finding out more information and the outcome of my investigation. However, with my time constraints, looming exams and trying to plan a date and time slot that suited busy farmers (the best time for me would have been early spring but this is a busy time for farmers with lambing etc.) it was decided that a report could be read in the farmers own time and would mean I could deliver it to farmers when I wasn't swamped with exams.

The local farmer agreed that if after reading it they decided to try herbal ley they would keep me updated by sending on a follow up update.

Planning – time, resource and information management

(Think about your time management. How did you set targets, monitor/record progress, consider any probable barriers to achievement and take steps to minimise them?)

I pride myself in good time management skills and planning my workload. I stepped out of the comfort zone of my usual creation of lists on paper and created a Gantt chart. This was my first time using one however it proved to be a great tool ensuring from the start that I set specific and achievable goals helped to keep me on track for the duration of my investigation and monitor my progress.

However, whilst I was extremely hopeful to gain at least one chance of attending an interview for a vet school the opportunity to attend four meant that the process and the preparation for these interviews extended longer than my initially forecast week and ended up stretching into a five/six-week period. So, whilst there was some time set aside (in my time plan) for interviews more was needed than initially anticipated for preparation as each interview had different agenda and formats and time to travel to and from venues. This quickly ate into any extra time I had allowed myself at a time when I also had preparation to do for pre and post-Christmas prelim exams. Whilst I still stuck to my final deadline, I lost any buffer time and had to think

outside the box and be flexible and use planned holiday and spare time responsibly to keep on top of my project workload. It was important at this point not to become overwhelmed and to not be too hard on myself

By sticking to the tasks and adjusting the detailed timeline set out in my Gantt Chart I felt organised throughout and made steady progress in obtaining all the information I needed to complete my investigation. Even when I was feeling a slight blockage due to the time it took to collect and retrieve questionnaires I could keep going with other areas of my project and simultaneously complete different parts until I was able to move on and start other areas. This practice ensured all objectives were met!

The template provided by the SQA for the Baccalaureate project planning and reflection proved another useful tool which allowed a steady flow of work whilst keeping me on track in all the elements needing completed. Organisation of all elements and taking small chunks and completing tasks over the duration made the completion a satisfying process.

Independent learning – autonomy and challenge in own learning

(Think about how you used your skills to make things happen, took the initiative to establish links with other learning environments/opportunities and looked for challenges rather than taking the easy option.)

Whilst Covid had allowed the chance to work independently and to gain this essential life skill I knew taking this a step further and taking the lead on this project and dealing with people I have never met before would be a challenge. This opportunity certainly allowed me to face this speaking to unfamiliar people / professionals / experts for the first time was always going to be daunting. However just like anything the more I planned/practised what I was going to ask or question them about the more confident I felt (using my organisational and planning skills). It helped that much of the communication was made through email. This meant I would write, read, rewrite to ensure that anything sent was professional and covered all the areas I wanted to address so that I could get all the required information I needed. I was conscious I didn't want to take up too much of people's time or ask for unnecessary information. This approach also took a lot of the stress out of face-to-face contact away and allowed me to focus on the project instead. However, after any initial contact was made, I always felt happier and the second encounter was always easier. This was especially trying with Watson seeds and after not hearing anything back initially I was concerned and apprehensive about sending the second email however once a reply was received the tone received was always friendly, helpful and interested and I knew if I needed help either face to face or via email, I would have no problems asking for it.

I had initially only planned on concentrating on the nutritional aspects of herbal ley however my interest and expanding knowledge in the topic saw me delving into the anthelmintic benefits and biodiversity it brings these have an indirect relationship to livestock's health and wellbeing and therefore relevant to mention, this was challenging and more time-consuming, but I really enjoyed expanding my knowledge and putting my subject specific knowledge into action. Working independently gave me the autonomy to do this.

I made an effort to hand out as many questionnaires as possible to local farmers so

that I could make links with new people and that the information gained was as diverse as possible and also that my research would benefit the most local farmers as possible.

Whilst I had a personal reason to investigate this project my lack of knowledge and amount of information, I needed to fully understand this area meant there was a lot of research and reading needed. This allowed me to use my initiative and challenge my understanding of the subject again and again. I struggled at times to get through the reading I had set aside but I have gained a valuable insight into livestock nutrition that not only will help me in my chosen academic next step but one that will allow me to give relevant advice to not only my local farming community but one that I can build on to help and advice, other farmers in the future.

Problem solving – creative approaches; critical thinking; logical approaches

(Think about your problem solving skills. How did you generate and explore ideas, use logical and creative approaches, analyse source materials in order to support findings, reflect on problems and possible contributory factors and think critically about possible actions/changes?)

problem solving – critical thinking: logical and creative approaches

In regard to generating ideas for my investigation I knew from the get-go that I wanted to explore a topic related to animals (which I could still relate to my school subjects) as this is a genuine interest of mine and my future career goal is to work with animals. I then thought about my own small flock of sheep and how I could choose a project that I could link to them or would actually bring benefit to them. Having experienced a case of severe mastitis in one of my ewes I took great personal interest in researching ways in which this could have been preventive – nutrition being one of these factors. I also knew that I wanted to explore a topic that has sustainable environmental benefit. This led me to discovering the idea of herbal ley which has proven to explore each one of the factors I wished to explore.

Thinking critically is a skill I need for the University course I am working towards and I find this a strength as I have previously looked at several models to help me in understanding, these including the Gibbs Reflective cycle and The Borton Model of reflection skills, which I have utilised further in this project.

Thinking 'outside the box' (looking beyond my normal call for help - a textbook!) and using problem solving and logic can sometimes stump me so it was great to experience working with autonomy and overcoming hurdles I came across in carrying out this project.

Writing a report, I had to ensure I tackled potential problem in advance of producing a report that people will find attractive to pick up and continue to read. One of the projects aims was to "educational tool to help both myself and the local farmers to make informed decisions about using Herbal Ley which I hope will benefit their livestock and overall productivity in the future" so ensuring attractiveness and readability by using my creativity and design skills was a key part of the project's success.

Like any project there is also scope for things to go wrong/be a problem. It was important that I was prepared and thought ahead and came up with contingency plans, back up people to contact and included pockets of time to act as buffers. An example of this was ensuring I had a log of all communications made and ensured I had a date in the diary to follow up an email should I have not received a reply. This helped to ensure nothing was forgotten and deadlines were met.

Due to pre-planning, I also had action plans in case things were to go wrong during my investigation such as COVID returning to be a barrier to my success of the project so to ensure this wouldn't be an issue I gained email addresses/details of local farmers early in project and if need be, I also came up with safe ways to distribute questionnaires.

I analysed the source material by ensuring facts and information I gathered were from sources that were considered reliable (for example published in last 10 years, from educational/government institutions or written /published by reputable bodies – to ensure valid data).

I also used the websites that the experts were linked to and or recommended. I had to make a point of reading through all the information gained and determine if the content was useful and or relevant to my needs.

In writing my report I had to be creative and imagine I was someone who had no experience in this subject area so that those that read the report would fully understand it and gain a well-rounded view of herbal ley that was not biased in any way or lacking essential information.

Presentation skills

(Think about how you presented your findings. Evaluate your presentation method(s), choice of audience(s), layout, structure, degree of formality and choice of content. Did your presentation include information/ideas/reflections with supporting detail in a logical order and reach a reasoned conclusion?)

Local farmers were the correct recipients for my report as they were the ones who it would ultimately benefit by discovering (in some instances as a first) the benefits of Herbal ley and perhaps allowing them to consider it as an alternative grazing method on their own farm – where they could reap the benefits that it brings.

As the target audience where the local farming community I made sure that I used language in my report that was easy to read, avoiding overly scientific phrases. This allowed the farmers to gain as much out of the report as they could and would be more likely to understand the information provided.

I ensured the presentation of the report was colourful and included facts and opinions that would be of interest to the target audience. An image can speak a thousand words, and this philosophy was used to ensure maximum impact was achieved with less words and images of the questionnaire results and useful images I had found were used throughout.

As I included elements from the questionnaire results in the report it would be interesting for the local farmers to see how and if Herbal ley is currently being utilised on the Isle of Bute and other farmer opinions and experiences. Ultimately, I hoped to discover and share if the benefits of herbal ley would suit the soil, climate and farming of the local area and by adding personal and relevant information it

would entice reading further. The logical order of the reports content allowed flow starting with an introduction that provided a definition, rationale and methods used finishing with an in-depth result section that focussed on the impact herbal ley can make on livestock health and wellbeing, how it can affect farmers and the sustainability of their farms and land/soil, all with supporting detail provided. I also provided information I had gained from the soil analysis and suggested herbal ley suitable for Isle of Bute climate essential information in these changing and uncertain times. My final concluding summary gave a case as to why local farmers should try herbal ley. I feel this structure was very successful as it allowed farmers to go to certain sections that they found most interesting. It also allowed me to break down all of my information gained into more manageable chunks for the reader.

Self evaluation – recognition of own skills development and future areas for development

(Think about how you have developed throughout your project. How did you deal with feedback, praise, setbacks and criticism and their impact on your own development of knowledge, skills and understanding? To what extent did you ask for feedback, learn from experiences and how will you use these to inform future progress?)

I was always keen to meet up with and hear back from my mentor regarding any feedback so that I could produce a project that was of the highest quality possible. We developed a good working relationship throughout this process proving to me I can create invaluable relationships with people, not in my immediate surroundings. I had an understanding that any criticism was constructive and I always considered any comments as I knew it would be beneficial to my final investigation as a whole.

Although it was hard to stay on top of my thoughts and feeling throughout this process it proved to be invaluable when it came to writing up my reflection. It also proved to be a useful tool to see how far I had come and reflect on the hurdles I had encountered in this journey. It was an invaluable tool in the reflection process and one that whilst I was working alone allowed me to reflect on how far I had come and the skills I had used and gained along the way. This self-reflection was enlightening and a tool I know I will need to develop as I move forward as it also allowed me the evidence to allow me to praise myself something I needed when I was working alone. As such it was really useful to start this process and understand and see first-hand how useful it is.

Although face to face I am confident in subject/areas I am proficient and knowledgeable in, emailing allowed me to speak to industry experts and ask for help in a controlled and rehearsed way. So, whilst essential due to my location it also served me better as I could come across as more professional as I would check and double check any emails sent and ask exactly the questions that I needed information on. It also allowed the experts to get back to me at their convenience which I felt gave me a better quality, response. Building this confidence in dealing with industry experts gave me a valuable insight into how preparation is essential and it also gave me the confidence to meet face to face in future projects as I realised that there was a genuine passion and desire to help and assist me in this process.

Whilst I worked independently on the project the whole process allowed me to work collaboratively with people I would not normally have come into contact with. I was also proud of myself when a local farmer gave me feedback saying that I was 'really knowledgeable about the subject and came across as both professional and confident during discussions.' (Getting this praise really boosted my confidence and meant that I applied what went well to new situations, taking this good feedback and utilising it as much as possible). Whilst at first meeting new people was definitely a setback for me as I got stressed in the build-up and found it daunting, by the end of the process and with my knowledge in the subject grown, I felt comfortable in my communications with other people from industry experts through to local farmers as with each communication I feel I grew more confident and had a better understanding of what was good and what wasn't when it came to my communication. This whole experience took me out of my comfort zone and challenged me to liaise with people from varying backgrounds, improving both my written and verbal communications, something I felt confident in at the start of the process but now on hindsight realise was a very insular audience I had delivered to in the past.

For feedback, I left my contact number with the local farmers who received my final report and whilst I have received some feedback I am still waiting on a few more so I look forward to their praise and any criticism which will allow me to further develop my own knowledge of herbal ley but also enable me to apply this new learning to new situations in the future.

This section is not mandatory. It has been included to allow you the opportunity to undertake an overall reflection of your project.

Reflection on my experiences throughout this project (eg things you feel you have achieved, things you have done that you feel particularly proud of, anything you would do differently were you to do something similar in future)

Self-reflection

Gaining self-confidence through emailing and approaching industry experts at trade shows was an essential step towards personal growth. I ensured any communication was read and re read before sending. This ensured I sounded and came across as professional and someone worthy of the industry expert's time. This reaped rewards on several occasions when my questions were answered quickly and with the information I needed to progress.

With the demands on my time the application process to university brought I was glad I was working independently on this project and not as part of a team. This allowed me to redefine and extend deadlines to suit me and my often-unexpected workload without upsetting others or letting people down something on reflection I would have found hard to deal with. However, on the flip side working on my own meant I needed huge amounts of self-discipline and commitment to keep going and complete what I had set out to do. Handing out my finished project to the farmers in my local community and being able to have deep and meaningful conversations on the topic made me reflect on how far I had come and how proud I was of my

finished project.

I was so glad I had made a start on my project in the summer holidays this extra month or two allowed for essential time contingency which proved to be invaluable in completing this project in a year. On reflection and if I was to advise future students on how to tackle a Baccalaureate I would advise to investigate and agree your proposal before the summer. This would allow the summer to start sounding out contacts and to start gathering information for your report. Looking back and reflecting on the process this extra month would have perhaps allowed me to complete the majority of the work by Christmas which in turn would have allowed me to focus on my studies from December through to March as well as gain the feedback I had initially set out to gain after the report was distributed!

Skills that I have used in this project that I would like to develop further (*eg using skills in even more challenging situations, more working on your own, more team working*)

In hindsight and with more time I would have liked to develop my interpersonal skills further by setting aside some time to present my report and findings to the local community. Although I feel I am good at public speaking and presenting information this has only ever been done to my peer group, teachers or in school. Extending this audience to strangers and more adults would have taken me out of my comfort zone and would have allowed me to gain confidence in the knowledge gained throughout this process and in myself in this relatively new to me scientific investigation. Unfortunately, with time constraints and impending exams this was not practical however a challenging situation that I hope to confront at some time as I move from school to university and beyond.

Skills that I have gained that I will be developing further is my drive for scientific knowledge and investigation. It was extremely satisfying to question something and investigate the advantages and disadvantages. It was challenging to keep my focus on the subject matter and not to deviate. However, with a constant drive to stick to the plan and timeline proved to be a skill and the self-discipline to reign myself back in will be essential to continue and develop as my studies move forward.

Lastly building in a contingency buffer for unexpected obstacles is something I will be moving forward with/always building into any future project timelines

Interdisciplinary Project

Assessor Report

Candidate name

Candidate number

Subject area Science

Centre

Project proposal	Tick as appropriate
Grade C criteria	
The title and aims of the project.	✓
Clear aims and reasoned arguments to support the relevance and practicability of the project.	✓
Identification of opportunities for:	
• own skills development	✓
• collaborative working	✓
• accessing less familiar learning environments	✓
• application of subject knowledge in a broad context	✓
• use of knowledge and skills across different disciplines	✓
• making connections between subject knowledge and the wider world	✓
Evidence of the ability to communicate clearly and concisely in advocating the proposal.	✓
Grade A criteria, includes all of above plus	
Well conceived proposal which sets creative and challenging goals which are at the same time realistic, achievable and practicable.	✓
Robust and carefully argued justification of the proposal.	✓
Substantial links and understanding of possible connections across disciplines contributing to the project.	✓
Comments	
A very thorough proposal, well written and there is a clear understanding of what the candidate wants to achieve. There is a good balance between the scientific research and its application to the farming community with a clear understanding of the potential benefits to sheep farmers. The plan outlines an impressive aspiration to be able to inform local farmers, potentially change their practice with benefits to the sheep as well as reduce costs (vets and fertilisers) and increase the biodiversity of the farmland. There is a clear plan to collaborate with experts in this field from farmers themselves, scientists from University and key staff in the agricultural business community. The candidate also demonstrates a high degree of self-awareness.	

Project plan	Tick as appropriate
Grade C criteria	
Development of clear project objectives in line with the project proposal.	✓
Relevant and detailed planning strands to enable the project to be implemented, monitored, presented and evaluated.	✓
Realistic timescales and achievable milestones for each stage of the project.	✓
Clear identification of resources needed, research methodologies to be used, opportunities for support and feedback.	✓
Grade A criteria, includes all of above plus	
Careful selection and effective use of research/investigation techniques.	
Anticipation of probable and possible factors which may impact on the project.	✓
Clear identification of dependencies or reliance on the success of other strands of work and of necessary adjustments to the plan.	✓
Outline the process for achieving own identified development needs.	✓
Comments	
A thorough plan with well-defined objectives. There is a good description of how each of the objectives are going to be achieved and these are laid out in a realistic timeline. There is a clear understanding of the potential barriers to achieving the objectives. For each of these barriers, the candidate has shown what she plans to do to minimise the risks of these barriers coming in to play but also what she would do if they did come in to play. She makes reference to her own development needs outlined in her proposal and although there isn't a specific outline described here on how she intends to develop each of these needs, this is apparent throughout her project. Very comprehensive.	

Presentation of project findings/product	Tick as appropriate
Grade C criteria	
Evidence of effective and critical use of — resources, research methodologies, information and time management, prioritisation, problem solving approach to reach objectives, feedback, collaborative approaches, self monitoring.	✓
Application of specialist and interdisciplinary subject knowledge to establish meaningful connections within the broad context.	✓
Clear presentation of main findings/outcomes.	✓
Grade A criteria, includes all of above plus	
Critical thinking, analysis and reflection used at key stages in the project to construct rigorous arguments, draw convincing, well supported conclusions, identify and resolve issues.	✓
Skillful and creative use of resources, including people, information and learning context to progress the project.	✓

<p>Accurate and deepening of understanding through application of subject knowledge in the chosen context, with meaningful connections well established.</p>	
<p>Comments The candidate has provided a clear explanation for the rationale of using a report to present her findings. There is a good description of the content of the report and she has demonstrated an impressive thought process into the format of the report to ensure it has the maximum impact on her most important target audience, which is the local farming community. The report itself is very thorough, meets all the objectives set out in the proposal. There is a clear description of the different research methods used. The findings from each of these is well written and written from her own perspective. The benefits and disadvantages of using herbal ley as feed for sheep and cattle are clearly explained and I don't doubt this will be a significant piece of research for the local farming community. The structure and layout of the report is very good and there is good use of the bibliography.</p>	

Evaluation of project	Tick as appropriate
Grade C criteria	
A critical and justified evaluation of all stages of the project process — planning, implementation and findings/outcomes in terms of strengths, weaknesses and learning points.	✓
Effective use of chosen communication method(s).	✓
Grade A criteria, includes all of above plus	
Incisive, well balanced evaluation of the project outcome against project aims, supported convincingly by well selected evidence.	✓
Careful choice and skilful use of communication and presentation methods(s).	✓
Comments	
I think this is an excellent piece of work. The project was ambitious but through careful planning, good time management, empathic and professional communication with farmers and experts, the candidate has produced a thorough and objective critique on the use of herbal leys. This has clear benefits to the local farming community.	

Self evaluation of generic/cognitive skills development	Tick as appropriate
Grade C criteria	
A critical evaluation of own skills development against the list of specified generic/cognitive skills.	✓
A reasoned evaluation of own strengths and key goals for development in the specified list of generic/cognitive skills, which takes account of feedback sought and evidenced from others throughout the project.	✓
Grade A criteria, includes all of above plus	
Insightful, balanced and well structured self evaluation of own development.	✓
Assertive and justified use of feedback from others in evaluation and identification of development areas.	✓
Comments	
The candidate has shown a very mature, objective understanding of how she has developed her skills throughout this process. As her assessor, I recognise and agree with all that she has described. She understood at the outset what skills she needed to be successful in this project and she knew it was going to be challenging but over the year, her confidence and self-belief has significantly increased as her skills in planning, time-management, interpersonal communication in particular have developed to a high standard. It's very pleasing to see that she recognises this in her evaluation.	

The overall grade will be:

- A indicative of a highly competent performance which meets the additional Grade A criteria and consistently demonstrated a high degree of autonomy, initiative and effective information management across the five pieces
- B indicative of a competent Grade C performance across the five pieces, but with some aspects of work meeting the criteria for highly competent performance (as outlined by the Grade A criteria)
- C indicative of a competent performance across the five pieces, with all aspects of the work meeting the criteria identified for Grade C performance

Overall Grade Awarded	A
Additional Comments/Overview	
<p>This is an excellent piece of work. The candidate took on an ambitious project but achieved all her objectives in a very mature, professional and objective manner. She has not only gained a tremendous amount of knowledge but also provided an important service to her local community, which could have a significant positive impact for livestock, farmers and the environment on the Isle of Bute. In addition to that, she has developed a wide range of research skills, which will be invaluable to her when she continues her studies in veterinary medicine. Lastly, she has gained a tremendous amount of confidence and self-belief through her dealings with professionals.</p> <p>It has been a pleasure and privilege to have supported her through this and wish her all the very best in her future studies.</p>	

Assessor signature

Date 29/03/2023

Internal verifier signature

Date 29/03/2023