Candidate evidence

Languages: Interdisciplinary Project

Proposal

Candidate name									
SCN									
Centre name									
Assessor name									
Project title	The future of batteries – progress or ethics first?								
Chosen subject	Languages								

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

Through evaluating various sources, I intend to find out the extent to which modern technologies in material science, nanomaterials, chemistry, and physics will affect the battery market and the livelihood of workers around the globe. While at the same time using linguistic skills to communicate with people, from not only the UK but also France, with the goal to compare their technologies and ambitions for the near future and determine whether progress should come before ethics. I would like to encapsulate the information I find to create a comprehensible document that I will share -in the form of a blog- across the medias.

- Firstly, I plan to gain background information on the different kind of batteries being mass produced and further grasp their inner workings. To achieve that understanding I will carry out research through papers, articles and already well-established liaisons in the physics and chemistry departments. I will further use their help to find extra-scholar connections to ask questions to, and to deepen my comprehension of the subject.

- I will communicate with the people and families whose lives have been affected the most by the battery industry to hear and report their stories and use what I learn from them to ask question to the people making the batteries

- As part of my project, I will contact professors from various universities across the UK – to visit their labs and the people who are developing those technologies – the same will be done in French universities and start-ups. With the aim to talk to individuals who are passionate about what they do; I will use the internet and the contacts of the teachers of the modern languages department to locate and reach these people

- I will contact Charities across the world who focus on the modern-day slavery in mostly the Democratic Republic of Congo get me further information about the consequences of the battery industry, and to get an idea of the actions they are taking to make a change to these people.

- A further part of my project is to write a blog about my findings. To summarise and simplify the words of the scientists I will talk to in the UK and to translate and transcribe the interviews I will conduct in France; to make them available to a monoglot audience. In addition, I will translate my findings from the British academics to a second identical but French blog.

Reasons for choosing this project *(e.g., personal interest, future plans, links to other subjects you are studying/ have studied)*

The idea of this project began at a point where I did not know what I wanted to do with my life. And where I was questioning whether I should work in a field where I could do as much good in the world as I could or a more lambda career that would bring me sufficient joy to live an average life. Just like everybody I was I was looking for a career for which I would have passion for, one that is ethical and pays a fair wage.
 I was struggling.
I concluded that the areas which have the most opened minded people are, language (leaning about diverse cultures) and science (to learn to solve problem you must see the problem). I wanted to choose a career path that walked above bigotry, above war and towards common good.
I would love to study physics or math and this project being a natural extension of my interest of science in the World is leading me in the right direction,

The broad contexts this project will cover are
     Citizenship, Employability
     Economic development, Sustainable development

Learning environments I will access are
 I shall make effective use of the Physics department in my school, as this is a key resource for understanding the working of the batteries. Although batteries are taught on a very rudimentary level some teachers have experience or deep knowledge of them. These are the teacher I shall target. I also intend to utilise the modern languages department as a membrane through which I will be able to communicate with France and find the right words to get them to respond to my demands. Some of my research will be done by reading book and finding information online but it is sometimes difficult to insure the reliability of the internet. So, I will try where it is possible to get my information directly from the source. I will be finding information about the stories of people who have been affected by the rise of the need for technological parts and use the invaluable connections of the teachers of the modern languages department to contact teacher from French speaking African countries who personally know of people who have been in child slavery. I will be going to Leeds university with the purpose to meet the people who are leading the innovation of batteries and ask them question relating to the young people's story that I will have found out, and I hope to make connection with the Lycée Louis le Grand in Paris in hope to talk about the pedagogy of how the school teaches future scientist to think about the injustice that is happening across a few borders.

How I will use my knowledge of languages
 I will use my knowledge of French to contact native speakers and to understand the various accents that I will come across within my research, my French skills will be indispensably important in understanding the stories and the information I will gather. My skills in translation will also be key when comes the time to encapsulate and transcribe the stories and internet stories I learned for my blog. I intend to find some of my information from books and documentaries that I will need to read that have not been translated to English. My French will be especially important while communicating with the professors in France to send them emails back and forth and talk on the phones, my French skills will be constantly challenged. I will also need to use my knowledge of French to produce the questions that I will ask and improvise secondary questions or lead up question to get a deeper understanding of their stories or of their opinions

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)

1. *application of subject knowledge and understanding*

As my current understanding of batteries is limited It is crucial for me to research them before beginning my in-depth research. I can understand their inner workings as I have successfully completed the higher physics course. While in France or contacting France, I will require my French skills which I will further develop to build specialist vocabulary that I can add on top of my fluency.

2. *research skills – analysis and evaluation*

For my research I intend to use the internet and visit websites with French URLs to fasten my knowledge of the subject. I plan to read books and document myself in the form of videos to hear a glance of the stories that some of those people have lived before asking them directly I will be able to build relevant question to ask them from my research. The limited time that I will get talking with those survivors on the phone will be a test of my research abilities and a proof of the work that I had put in before arriving to that interview.

3. *interpersonal skills – negotiation and collaboration*

A big challenge for me will be to communicate and carry out the interviews as I lack confidence and certitude while over the phone. And seem to speak in a tone of voice that portrays that I do not deserve their time. Although I have worked very regularly with the modern languages department over the years, I have never worked with the physics department, never less the chemistry department that is had never put foot in until earlier this year. I have always been quite reserved while talking to people that I do not know and that will have to change to insure the smooth unwinding of this project. Speaking French to those people should not be a problem as a long as I manage to speak at all. I hope to gain these invaluable skills in this project as they will be extremely valuable in the upcoming years

4. *planning: time, resource, and information management*

In the past few years, I was not studying or plan any of my time to succeed in school as I thought that I did not need to and that I would get a proper work ethic when I need one. This year I have successfully implemented a strong work ethic and I hope to keep working effectively under deadlines. The life and success of this project relies on organisation, and I intend to stay organised through all stages of the BAC. I will be writing a blog once I collected all the data, I need This will require the most time so I will need impeccable timing, but it will also allow me to arrange and organise the information in a more comprehensible way

6. *independent learning – autonomy and challenge in own learning*

I have struggled to do independent leaning in the past, but I believe I to this day managed to find the motivation and the joy in challenging myself. I am not very keen on deadlines, but I will follow them to the best of my abilities. A challenge will be to focus on the question I sat for myself as there is so much to talk about surrounding my chosen topic and to resist the temptation to change my project to something else that I find interesting. I should manage.

7. *problem solving – critical thinking: logical and creative approaches*

A big part of this project will be problem solving and although I like to think I am good at it I have never came across people hanging the phone up on me, I will need to find a creative way around the barriers that will be presented along the way but that should not be a problem as I will prepare a solution to every problem I come across in my contingencies, this will further require autonomy and critical thinking to anticipate the problems that will arise.

8. *presentation skills*

Presenting the project in front of people is something that I fear, and I think this will be one of my weak points. This may be unjustified as I have successfully stood up and presented or taught things to my peers before. I still feel an intense sense of uncertainty towards my ability to do it which links to my

interpersonal skills which I will be working on and hopefully I will produce a good presentation.

I also intend to present the stories I find in the form of a blog in which I feel confident in doing, and hopefully get the blog or an article or two of the blogs published I will further my negotiation skills. I lack the confidence to share my project with other people, but it is something I will work on

9. *self-evaluation – recognition of own skills development and future areas for development*

I am optimistic about this project and to try out my newly found time management skills that I will use to insure the completion of this project. I am excited to do the research for my project I find out people stories and although I fear the communication aspect of this project, I am extremely excited for what I will get out of it. I hope that my scientific vocabulary can improve because of this project, and I anticipate my confidence will grow overall, I have great anticipation for this project

Assessor Feedback to Candidate			
Researching new materials for use in modern batteries is an interesting project and I love the fact that you are considering the source of the principal resources and the impact this could potentially have on the local environments and communities – you will take Global Citizenship to a new level!			
Proposal approved	Yes	**Further work required**	No
Candidate signature			June 2021
Assessor signature			June 2021

Plan

Candidate name	
SCN	
Centre name	
Assessor name	
Project title	The future of batteries – progress or ethics first?
Chosen subject	**Languages**

Is this a group project? yes ¨ no ⬚

If a group project, my individual role, or responsibilities will be:

Timescales *(this should be a detailed timeline and any separate spreadsheets or charts should be included as evidence)*

Month	Objective
1.August	**Research and Content**
WEEK 2	Research batteries-materials + nanomaterials
WEEK 3	Exploring topic ideas/ research UK
WEEK 4	Topic decision and research France
2.3. September	**Contact and Chase**
WEEK 1	Further research, start-ups/universities/professors
WEEK 2	Finding potential contacts UK+France
WEEK 3	First phone calls and note taking
WEEK 4	Further contact
4.October	**Organise Findings**
WEEK 1	Analytical research – ethical/trauma contact charities & first hand interviews (Congo)
WEEK 2	Compile and organise all the information from my contact and chase

WEEK 3	Holidays
WEEK 4	Holidays
November	**Prepare Presentation**
WEEK 1	Organise my findings – examine/conclude
WEEK 2	Create my PowerPoint
WEEK 3	Finish my PowerPoint
WEEK 4	Practice my presentation and evaluate any question that could be asked
December	**Presenting findings and getting feedback**
WEEK 1	Presentation – presenting findings to the peers in classroom.
WEEK 2	Feedback – reflection & action points
WEEK 3	Evaluation of Presentation
WEEK 4	Christmas Holidays
January	Writing – self-evaluation of project
WEEK 1	Christmas Holidays
WEEK 2	Prelims
WEEK 3	Prelims
WEEK 4	Writing Blog accounting for the feedback, UK
February	**Gathering paperwork and making sure everything is up to date**
WEEK 1	Writing blog – France, and sending findings to British and French scientists
WEEK 2	Finishing
WEEK 3	Writing – self-evaluation

- **GOALS**
- **1**.Conducting background research to understand the effect of technological development in different countries and materials used
- **2**. Planning and finding the people I will contact and the questions I would ask – start ups and scientists
- **3**. Contacting people and charities involved in ethics – slavery, health, trauma.

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

- **Research and content stage**

This will be a key stage in my project, as it will be crucial to my understanding of materials and causes of the traumas associated with the battery industry across the planet. I intend to watch documentaries and read articles in English and French as most African countries that experience this kind of slavery are French speaking, and to consolidate my scientific vocabulary. It is important that I carry out sufficient research to be

fully aware of what is happening to those people and what has happened to them historically, before conducting research about the stories. I will focus my search on French URLs as I believe this will get the best and fastest results. I would like to understand the key difference between the knowledge and how people are taught about this sort of slavery in schools and how people are treated in the technological advances in the UK and Francophone countries. Finding the books and documentaries will be my first step in research and I will utilise the modern languages department to find this information. I will of course ask the physics and chemistry department as well as their own book recommendation to learn about new developments in batteries.

- **Contact and chase stage**

The most important part of my project is undoubtably the interviews and the stories that I will seek and acquire from people which have experienced tremendous loss due to technological development throughout the third world. I will use the help of the modern languages department to locate those people, and I will use social media to contact outspoken survivors of this slavery in hope that they except for me to ask them a few questions. I will take time throughout my research stage to produce good and adequate questions to ask those survivors to ask relevant questions that will extract the most important aspects of their experiences and some of the entertaining part of it as well for people to be interested in the blog that I will share in the presentation stage. I will also attempt to contact French scientist and businesses that focus on the innovation of the lithium-ion battery as well as a Professor and her team that is currently leading in the UK and other well-established scientists. I will also contact and research charities that focus on child slavery and contact their scientist to see what could be done and what their aspirations are for the future, what they hope to change

- **Organising findings**

To organise my findings, I will focus on producing the one document and make it comprehensible to anyone who reads it, English or French. I will record, transcribe and translate every conversation I must later be able to implement them in my blog. I will bullet point and expand all the points I am making with the survivor's testimonies and the research I will have conducted. I will organise my findings in word documents so I can track every step I take from the research to the final presentation

- **Presentation findings and getting feedback**

I will write a blog which I will publish and share on the Internet for everyone to see to raise awareness of this current issue, informing them whether ethics or progress should come first as we advance. I will send my blog to all the UK scientists and French scientists I will have contacted and more, with the aim to make them further aware of the issues within their industry and to offer a solution around ethics, with the aim to share the stories around ethics.

Resources *(e.g., people, materials, places)*

I intend to contact multiple French native speakers to conduct interviews to understand new developments and views and compare with Britain. I will compare the perspectives of the French native speakers of the countries affected. I will contact charities and gain information about the lives of the people living in slavery. I will utilise websites building resources to make my blog and I will utilise the teachers of the modern languages department and my friends to proofread and check the blog I will have created. I also intend to use the internet to find information about ethics and communities affected by sourcing of new materials required in development of new technologies and find their stories.

Research methods *(e.g., contacting companies, surveys, focus groups, experimentation)*

My research method will primarily consist of contact with English and French professors and people with links to countries involved in the resourcing of new materials. I will record all my conversations to make sure not to miss or forget any crucial details to later concatenate into my blog. I will also use the internet and trusted websites to research the background of the professors I will research and understand the effect of some chemicals within the batteries do to humans and the general workings of such batteries. I will share surveys about the effect about the batteries and the number of people affected by it to build appropriate questions to ask the people affected. To research the value of my presentation to seek improvement and feedback I will present my project to my class in small focus group, to enable me to present the best possible final presentation on my blogs.

Presentation

1. **Who do I think will benefit from listening/reading/looking at my presentation of my project findings/product?**

My project if all goes to plan should benefit a variety of people as I will have made resources permanently available on the world wide web, specifically interested in science to have a broader vision of their impact on the world, as well as people interested in morals or philosophy who might not know what is happening in these or countries or certainly these stories. To record those stories in history to further benefit people wishing to learn about it in the future. My final project will not only include an English version but also a French version, this blog will therefore be beneficial for English speakers who would have never otherwise considered new developments and ethics.

2. **What methods are appropriate to my audience(s)** *(e.g., demonstration, presentation software, websites, oral, report, piece of theatre, DVD, wiki/blog, or any combination)*

Sharing my presentation in the form of a blog is the most appropriate way as it stays a professional yet entertaining manner of sharing information. Any way where I am in some way distant from the information, I am providing is acceptable, a piece of theatre or an oral presentation is therefore not appropriate because I would be not only appropriating their stories but also dramatizing them. A report shared on a website, news article or social media as well as a blog are appropriate and presentation methods I will attempt to execute. Publishing my findings online allows many people to read the stories I collected with that number only being limited by the number of people speaking English or French as I intend to write them both in French and English and target scientists in both countries.

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

I must rely on finding links to new developments and ethical issues, although from previous research have found some issues, therefore I must rely on strangers who have experienced this kind of slavery to want to share their stories with me. I must rely on professors in the UK and France to spend time talking to me about the responsibility someone like them has on the developing world. I must rely on the general public at the very minimum to filling in surveys I will conduct. I must rely on people to share the survey with friends and family on social networks and by email and later share the blog I will have written. I am relying on the many charities to be willing to share information to me about the data they are providing on their website.

Contingencies

Any anticipated problems	My plans for overcoming the anticipated problems.
1: Sending the questionnaire and getting too few responses	**1:** This problem would hold back my research and would make it harder to understand the views of people from both sides of the spectrum care about the most. And it would hold back my presentation as the use of statistic and accurate positions and opinions from people is key.
2: Not being able to verify the validity of my source	**2:** I am relying on anecdotal evidence and stories which are unreliable but in the validity of them do not necessarily need to be checked as I am using them in the context of an opinion and stories or in the form of a professional opinion. The validity and sources of the statistics and facts will be fully checked
3: Having extremely long stories so that it is hard to condense	**3:** I will have to condense them even if it will be hard or I will need to get more stories and translate my longer stories into a different section of my blog so that the more generalised stories can be on the main part of my blog. I will only translate the longer stories if I have the time or if I am lacking shorter stories and accounts.
4: Having stories that would lose their "real" aspect when translated	**4:** The emotion and personal aspect of their accounts is key and will be hard to carry through translation but my French skills being particularly good I should be able to communicate them all, if I do not manage, I will contact other French native to help me write a more emotion-based piece.
5: Finding out that people are not sharing these stories	**5:** If people are not sharing their experiences, I will have to find a way to identify them so I can contact them. Using the 6 degrees of separation theory I should be able to reach them. If I am unable, I will have to summarise journalists accounts as they have been and seen the slavery occur and I will find online accounts of people who have experienced and survived it.
6: The emails I send to professors in France, or the UK are ignored	**6:** If my emails are ignored, I will persist and send more emails in hope they answer. If they still do not, I will try to contact them by telephone. If I am still ignored, I will need to contact other science professionals, not the ones that have the expertise that I originally wanted
7: The emails I sent the charities are ignored	**7:** I would be incredibly surprised if the emails I send the charities are ignored as education and sharing the information they care about is their very purpose. If they are ignored the information provided on their websites should be enough.
8: new materials used have no ethical implications.	8: This is very unlikely, if there was in fact no ethical applications, I will write a conclusion explaining my findings.
9: Start-ups are eco and ethically friendly and have solved the issue	9: similarly, to contingency 8 I will have to do further research into more start-ups, and I will present my findings in accordance to this second level of research.

	If I spot this issue early enough if it occurs, I can always change the focus of my project.
	If I spot this issue early enough if it occurs, I can always change the focus of my project.

Method for recording my skills development and future areas for improvement

I will use the baccalaureate paperwork to record the various stages of the project and a diary on paper to record my struggles and my skills being developed. I will keep a record in the improvement of my specialised scientific knowledge especially during my research stage. I hope to become much more confident; this is currently my main area for improvement, and I will be challenged during my communication stage by exchanging with the professors and charities. These interviews that I will conduct will be recorded on my phone, and Tran scripted in a word document so I can later translate them. My final document will be published on a website where I will create a blog.

Assessor feedback to candidate

Interesting project and I like the ethical and global interest you have applied to your science investigation. You will have a large amount of research to do, especially as you will be looking at new technologies and materials for batteries – don't underestimate how much time this will take you and the issues that may arise as a result.

Plan approved	Yes	Further work required	No
Candidate signature			August 2021
Assessor signature			August 2021

Interdisciplinary Project

Presentation of Project Findings/Product

Candidate name	
SCN	
Centre name	
Assessor name	
Project title	The future of batteries – progress or ethics first?

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

My findings were most appropriately presented in the form of a blog on the internet, reasons being that I was not qualified to write journalism or any piece of formal documenting or translation, but a written format was more appropriate not to create any distracting graphics like in a video the story had to be read plain and clear as it happened. I sent a report to the EU trade comity as I believed they would to pay attention to any other format I had to get straight to the point with compelling data, and with my peer evaluation and presentation to the class I used a power point so that I could effectively talk other and describe what was happening in some pictures.

I created a Power point in which I summarised the impact of EU scientists on the developing world – past and future, with a focus on future objectives. I presented first to my peers to get feedbacks on any and all content provided in my peer presentation, I shared my research about the dangers in different kind of mines, I discussed conflict minerals used in new batteries and the EU policies associated with them as well as the United Kingdom trade regulations, I further discussed alternative materials used in new electrical batteries and components associated with those materials.

Once I received feedback, I acted on, and reorganised the information that I got after my peer review, I sent my final presentation in the form of an email where I summarised the information found in the PowerPoint as I thought my presentation more likely to be read in a shorter and condensed report and I also attached my full presentation to read if they wanted more information. I sent this email to the European trade committee, and to the British government as they oversee Frances's trade policies and Scotland's policies.

I have shared the stories online to reach a wider audience and an audience that would care about this issue as they would only find the blog if they looked up for it, although I did try to promote the blog on social media and by email to new emerging companies that use new batteries, with not much success. I chose to use wix.com to create my blog as it was my only viable option as all other websites seemed to be blocked by the school. Wix took a while to run my blog as I found It hard to run and the website would not let me use my own images without paying. The creation of my blog took longer than expected but was successful.

I have also left my PowerPoint as a link under my blog so that people could have a look at the kind of technologies and materials that have created this situation. I valued the feedback that I may get about this blog and my PowerPoint further than only the feedback I received by peers, so I left my contact information in the footer of the page

Assessor feedback to candidate

You presented your information in a variety of ways. PowerPoint presentation to peers, formal report to the European commission and to the European trade commissioner as well as the British government and also first-hand information and accounts of issues arising from sourcing new materials in The DRC in the form of a blog, in two languages! We learned a lot about the ethics that may compromise new science and emerging industries but your desire to protect the people fist and foremost is commendable and your blog highlights the ethical issues perfectly. I am impressed that you still have the energy to send it on to industry also, well done! The content was really impressive, you even included financial implications linked to international trade and the sourcing of these materials, wow!

Candidate signature		Date	March 2022
Assessor signature		Date	March 2022

Interdisciplinary Project

Evaluation of project

Candidate name	
SCN	
Centre name	
Assessor name	
Project title	The future of batteries – progress or ethics first?

How successful has my project been overall? *(Consider the strengths, weaknesses and learning points of your planning, implementation and findings/outcomes giving examples to support your comments)*

I have learned that in a project it is impossible to develop contingencies for every scenario which leaves space for a little creativity and problem solving which I think I have successfully utilised. Due to the uncertainty which I faced when I could not decide exactly what question I was going to pose and when I later had to unexpectedly change my approach I had to sit, think and considered giving up. Giving myself a challenge is what I was expecting to get out of the bac and in this aspect, I believe I have been successful.

A weakness I demonstrated was my assumption that I would get responses for every email I sent and that people knowing my cause would be compassionate to answer, but I was delusional in this aspect. I had to learn to perceiver and in this aspect, I have learned these valuable skills which is once again a success. A success based on my initial failure but growing is for me something I am proud of.

In my project I managed to gather and understand many subjects not all of which I was able to present but all of which are valuable. And general education is something that I value, and I have managed to study and understand batteries which was one of the main things that I wanted to get out of this project. I achieved tis and more and I have learned how to study and read scientific papers which I did not think about in advance, this was a monumental success.

My project has been successful. I believe I have answered the question I had asked myself. Said as 'The future of batteries – progress or ethics first?'. It seemed clear to me during my research and later in the document I presented that the answer was that yes scientist did indeed develop technologies to improve lives in the developed world. This was clear to me not only from the facts I had gather, concerning the ever-increasing need for batteries during the EV boom and the lack of funding which I found concerning the development of batteries which did not utilise the same dangerous materials as say the common lithium-ion battery. It was also clear from the emails and information which I found directly from the scientists that I contacted. It was clear from all of them that they understood the question I had asked, and they were aware of the consequences in their field of study on the developing world through documentaries that they had mentioned. It was also clear that they did not view this directly as their responsibility, they all distanced themselves.

The success of this project mostly comes from my blog where I shared the stories of those slaves' word for word. Where I have created a beacon in time, on the internet, sharing the less fortunate's story, after translating my first story I no longer felt that I was only doing this project for myself I was starting to see the utility of it, and creating this a useful resource that shares and educates people about the atrocities that occur because of modern technologies in the developing world. Sharing the stories with my friends and family has been extremely gratifying and I intend to continue sharing what I created for the good of others.

How effective were my communication methods throughout the project?

My communication methods throughout this product have been good I have shared my report and power point in the way I wanted in a way that I viewed as effective, and I have shared it with the people that I wished to share it with. I could have communicated with the UK and French scientists better and I could have expanded my questions to have received more valuable information on their behalf. The communication which I failed the most at in the beginning stages was the communication with myself, as I could not understand exactly my area of research and what I would learn. And so, as a result I had to change my plan so that I could go back and understand it better. Overall, I can assert confidently that in the end my communication method was effective, and that I learned from my mistake. I can also assert that I have communicated the information that I indented to the general public in my blog, and this has been the communication part of my project that I am the most proud of.

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

I could extend my research outside of Europe into mass exporters of cobalt to support the EV boom, such as looking at the USA and China, I could do further research and find and translate more accounts of the life of people in artisanal mining to share on the blog I created. This comes along with expanding my knowledge of batteries further as well as learning further words in the French language and other languages concerning the development of technologies and the mining of the materials used within them. As a next step that would expand on this project directly in a less literal way, I could investigate who is funding the research and construction of the technologies themselves to see what their goals are to be able to give a more general prospective for the future.

Candidate signature		April 2022
Assessor signature		April 2022

Interdisciplinary Project

Self-evaluation of generic and cognitive skills development

Candidate name										
SCN										
Centre name										
Assessor name										
Project title	The future of batteries – progress or ethics first?									

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 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)?)

In the beginning stages of my project in my proposal I stated that I needed to learn more about batteries and their workings and that I would require my knowledge of French while contacting France and expanding my scientific and jargonistic vocabulary. I believe I have successfully improved on all I aimed to learn. So much so that I was able to understand the workings of all batteries to at least fundamental level, not just the one I had studied. The other battery I had studied was a sodium battery as well as studying liquid state batteries and their component parts and where that were mined. This related to my chosen broader question as figuring out what materials were used and by who they were used would help me target the right person to contact in the UK and Europe

My progress (describe what you have done so far and how it meets your plan e.g., changes, successes, difficulties encountered, how you resolved issues, targets met)

My contingency number 6 occurred in the beginning stages of my project, I followed my plan and expanded my search to a broader field of scientist, and I also contacted associates of the original scientist. With little success few answered and the majority of which who did gave me names and email addresses of other people to contact, although I did get acknowledgement that they understood the question but could not answer.

I emailed a couple French Lycées and universities, they did not answer so I persisted, I later had to phone one and later phoned a second time. I had to leave this idea and focus on finding relevant information from my French and English scientists and from my translation of French account of the life in the Democratic Republique of Congo.

I got extremely few answers on my questionnaire too few to have any statistical significance, I realised that the questionnaire was not necessary to my project as it is grounded in facts not opinions.

I struggled with my timing/ time management skills; I was falling behind on my plan, but I have managed to catch back up in reasonable time to stray near my planned timing.

My French vocabulary has improved because of doing so much research in French I already spoke French, but I had never come across scientific texts before in that language. I was surprised by the similarities of the two languages which in the end unsurprisingly based most of their scientific words on the same Greek words. In the email that I sent to France I had to be precise in my question to get a concise answer to the question I was meaning to ask. This has improved my confidence in speaking French as I was losing the ability to formulate my thoughts at a fast-enough pace to have conversation to the level that I once could. So, one of the biggest challenges that I faced was calling a university in France in my research stage of my project, as my vocabulary bloomed again, I was able to call with relative ease, and this newfound confidence translated further into English and helped in my presentation stage.

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.)

I have researched and filtered information from the internet to find only to most accurate one, which improved my research skills and I have spent hours compiling, analysing, and extrapolating data from my research which improved my analysis and problem-solving skills.

I sat out to use three different research methods, general online research with videos, blogs and books, quantitative research with the government websites and the founding of data and statistics. And finally interviews with professors and victims of slavery. I have successfully utilised the internet and YouTube videos as well as a book to understand the life of people living in slavery, I used descriptive research to find information and facts about my subjects mostly minerals and the effect of some of them on these slaves and the economy. I then applied some quantitative research to get statistics to back up my facts such as the percentages of the cobalt in the average modern battery and I used analytical research, to compose reasonable questions that I was able to send to the governments and to extrapolate further questions which I then used to deepen my research and repeat the same process. I was unable to achieve my 3rd research goal as I could not find anyone that has experience slavery that was willing to give me time for my research. This was not a problem as I had a contingency 5 ready for this situation which I followed, I found online stories which I was able to translate in English. I could not contact any professors in the UK as every professor I contacted were against all odds-on parental leave, and all my backups answered my emails giving me contacts to some of their colleagues which I all contacted but this lead nowhere. I was despite this able to use some of the very little information given to me through those contacts.

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 confidence has wildly improved I was terrified to phone Lycées in French. After the first time I was much more confident and determined to get the information that I wanted, this improved my communication and negotiation skills.

Through my project I faced many struggles which made me question the question I was posing and so the entire nature of my project. Every time in the beginning where I had to make a phone call I felt like quitting, it went as far as I was extremely anxious to send a simple email. I relied on my contingencies and relied on the faith of my mentor for a while as I did not believe I was capable but this soon changed and I was able to send my emails and I then started seeing the end of the tunnel when realising that my plan was a solid plan which I trusted and sense I had made this plan I now trusted myself. In my contingencies I had only predicted issues with my research not with my motivation or presentation which led to feedback and problems which I had not been prepared for. After my presentation I received feedback on it and, it was said that parts of my presentation were insensitive, I then took the feedback and changed my presentation appropriately before sending it to governments, I received feedback that my time management was off and so I had to change it to stay on track I had to do more work at home to catch up to the plan I had lead-out for myself . At the start of

my project, I had stated that I feared I would struggle with interviewing, and I did, I asked the modern languages department for help with phoning a French university within the first few days of my project, I phoned and was met with terrible service, but I persisted and phoned again, I later phoned again in French with the help of my teacher. I utilised my mentor and the help around me when problems arose which I had not prepared for.

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?)

At the beginning of my project, I stated that I had implemented a strong work ethic into my life. In the beginning of my project my progress had slowed, and I nearly went back to my old habits, I had to regain motivation, I went back after a month or two to better habits which I hold to this day although they can still be improved, I found myself procrastinating a lot and leaving things to the last minutes, I sat targets but I left the work right to the deadline I had set myself. Despite my struggles which could have been detrimental to the success of my project. I have managed to keep myself on target and always kept the work I had to do to a manageable amount. My assessor always reminded me to do my work when appropriate and gave me valuable feedback on the time scale I had left and recommended timelines that lined up with my original plan which I did and am thankful for my mentor's support.

Due to my falling behind I had to catch up to my schedule on my own time outside of school and teaching myself how to work at home which is something which I had never done before. This has improved my independent leaning and autonomy skills and later I noticed an increase in my time management and planning skills

Independent 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.)*

Creating my website and translating the stories I had found was one of the most important things I had done for my research and project to reach a wider audience. I created the template to my website in preliminary stages so I could write and translate, post, and edit the stories as they came. I had to author my stories at home to ensure I stayed on schedule, if it was not for the autonomy, I demonstrated in the begging of my project and I got myself back together. I would have been unable to finish my project on time. Before sending my emails to the French scientists and British scientists I had to do a lot of research, this was a stage of independent learning, so that I could formulate the questions I sent them via email as well worded as I could, and I took the time to briefly explain the goal of my project in hope they would compassionate with my efforts to get information.

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 to support findings, reflect on problems and possible contributory factors and think critically about actions/changes?)

I faced a few issues and a few brick walls along my project which I had reasonable contingencies for, to be able to keep moving forward. My contingencies as stated above were not perfect and as a result I required to problem solve and in so to utilise the people around me. I could not find the exact statistics that I was looking for, as a result I had to extrapolate percentages and so on out of existing data to make my own statistics. The French schools' offices would not give me any information and would not pass me on to anyone I requested. I used multiple phones and changed the wording of my enquiry to get a response or at least an email address, but it never worked and I had to accept this.

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?)

I presented my findings in numerous ways, a blog, a peer prestation/talk, and as emails to the French governments and the EU trade commission

The blog I wrote contained the stories of slavery victims which I translated from French efficiently in the beginning stages of my project. I created a power point which I shared and talked over Infront of an S6 class and my mentor to gain some valuable feedback to prepare for my challenge, sending emails to the Government and trade commission.

My presentation skills have improved I now nearly enjoy presenting and talking Infront of classes, I now value the feedback I receive rather than considering it as an attack. My writing skills and translating skills have also improved as it was imperative that my stories were exact and accurate to the actual story that the survivors shared. I summarised information from my research on my PowerPoint. In my power point I made statements and presented statistics which I then illustrated with pictures which had the key text to read underneath. This form of presentation was chosen to have all the valuable information but to keep the reader entrained and looking at the images as I talked over it and expanded on the key information from the PowerPoint. In the report I had a statement or statistic which I then backed up in the same way with further information, which I found in my deeper analytical research, this time written down instead of talked over as I deemed this method more appropriate and professional for a report. At the end of my report and presentation I was able to conclude with the emails that the scientists had sent me during my research which I explained in my presentations. I was able to conclude that scientist did in fact work of the technologies for the sake of the developed world.

I further posted a bibliography of all the links for my research and a copy of my PowerPoint under the story which I wrote in my blog.

I could have contacted more scientist and have sent my report to the French government but as my research showed their laws were in line with the European laws, so I deemed it enough to contact the source directly. Going back, I would have contacted the French government as well.

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?)

This project has been beneficial to me, it has improved my scientific vocabulary and has taught me to plan my time better and work to deadlines. It has also allowed me to gain my confidence back in my ability to speak the French languages, as I had the personal worry that I was suffering of native tongue abrasion, making phone calls, and contacting people in French has allowed me to gain my confidence back and start seeking and thinking in French like I once done.

Before sending emails, I was stressed about even contacting strangers, I was not even comfortable asking for help when I needed it. But I have learned these valuable skills that I will pursue all the way through my university career and further. I can and will develop this newfound skill even further so that I feel comfortable in asking for things like the criteria and so on, instantly, and instinctively.

I emailed a couple French Lycées and universities, they did not answer so I persisted, I later had to phone one and later phoned a second time. I had to leave this idea and focus on finding relevant information from my French and English scientists and from my translation of French account of the life in the Democratic Republique of Congo. I got extremely few answers on my questionnaire too few to have any statistical significance, I realised that the questionnaire was not necessary to my project as it is grounded in facts not opinions. My confidence has wildly improved I was terrified to phone Lycées in French. After the first time I was much more confident and determined to get the information that I wanted, this improved my communication and negotiation skills. I have researched and filtered information from the internet to find

only to most accurate one, which improved my research skills and I have spent hours compiling, analysing, and extrapolating data from my research which improved my analysis and problem-solving skills.

I have learned to ask for feedback which has been beneficial and has improved the speed which I can produce a second and improved draft of a document I was writing. Similarly, to my peer evaluation where I presented my project Infront of a class and my mentor which I would have never done beforehand. This has been a key component of the success of my project. I can improve on this by asking more for this help like the paragraph above suggests but I am incredibly happy with the improvement I have made.

In my research stage I found that the documents and information which I enjoyed working with the most in my scientific research were proofs and theorems, as the data was presented in a general way so that I did not have to blindly believe what someone was saying without understanding what this person meant. This came most useful when I was researching the functioning of batteries. At the beginning of my project, I was unsure of what I would like to do in my future and the coming years, but this independent research has allowed me to discover that math the best subject for me.

If I were to do a similar project again, which I most likely will, and gladly. I would ask myself a clearer question to begin with and define what I was wanting to find out so that I could look back to my question and know what to do. I had to change my question a few times in this project because of this. I would also email and phone, contact the people I intend to interview much sooner in the process as I believe I could have done it sooner if I had the confidence. I would also ask for more help in the beginning stages to an extent that I would benefit from, but not rely on, and I would slightly tweak my plan as I would work independently at home more.

Overall, this has been a fantastic project which I happy to have completed despite the thing I could have done differently which I will act on the next time I do something similar. Those mistakes and barriers have been a key component in the development of myself and which I see as a necessary step for construction of the abilities I now hold and the ableness to view my strong points and the areas I can improve in to continue my development in the future.

Interdisciplinary Project

Assessor Report

Candidate name ‗

Candidate number ‗

Subject area ‗ Languages

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 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	
As a young scientist with two languages this project encouraged him to explore the 'ethics' question around minerals that is not explored in the science classrooms is taking his studies to the next level by using his language skills he will be able to access information and share information with parties that would usually only have access to information, accounts and evidence in one language.	

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 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	
All relevant contacts and logical timeline for aims of project.	

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, prioritization, 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 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.	✔
Skilful and creative use of resources, including people, information and learning context to progress the project.	✔
Accurate and deepening of understanding through application of subject knowledge in the chosen context, with meaningful connections well established.	✔
Comments	
Candidate does not detail the level of research conducted – new technologies, mining, conflict, economic implications, international trade and relations. I was very impressed! To ensure his project has impact he has tailored his presentation to try to reach the relevant audiences, which was not easy but he shows determination and resilience in his efforts to convince the relevant people that it is our responsibility to make progress in new technologies ethical first.	

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 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	
The candidate acknowledges development of scientific knowledge and evaluates success of project on a personal level. He gives an insightful mention of how the scientists did not take personal responsibility for the ethical implications on the developing world, which has clearly motivated the candidate, demonstrating the success of this project.	

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 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	
Clear identification of skills and growth.	

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

Overall Grade Awarded	**A**
Additional Comments/Overview	
Candidate has produced an excellent project meeting the objectives – progression in science vs ethics. This is an area of interest for young scientists, the more experienced scientists were less likely to acknowledge the implications on others linked to their advances. The financial and economic implications and trade that he highlighted demonstrates how the candidate considered many areas over and above that of his initial project.	

Assessor signature		Date	April 2022
Internal verifier signature		Date	April 2022