Science: Interdisciplinary Project

Proposal

Candidate name									
SCN									
Centre name									
Assessor name									
Project title	To Sit Or To Stand?								

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

Based upon the small amount of research that I have already conducted I believe that sitting for 8+ hours a day is having a negative impact on our longevity. The aim I have set myself within my project is to find out whether or not this is true and to find out if the negative impacts of sitting over an extended period can be negated or even reversed by standing.

In order to find out what the answers to these questions are, I shall consult with researchers who have already studied the effects of sitting on health and how standing affects health (over a protracted period of time say 8 hours a day.) I will then proceed to amalgamate all of my findings, both for and against my argument to reach my own conclusion to be presented at the end of my project.

In addition to studying the way in which health is affected by 8+ hours of sitting a day. I will also look into how it affects people's rights and the sustainable development of the workforce in the United Kingdom. From an economic point of view I wish to investigate how sitting impacts the amount of time lost from work, as a result of time having to be taken off due to back pain. In addition to time lost from companies and thus reduced GDP, I also want to look into the amount of money that is spent by the NHS on helping people to relieve back pain. From an environmental standpoint I hope to look into the viability of replacing office chairs with "standing desks".

Finally in relation to the Citizenship aspect of my project, I plan to look into how workers are being treated and if they are being offered the option of alternative working arrangements to alleviate their health problems, mainly back pain.

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

The reason I have chosen to pursue this project over other projects is that it plays to my interests. It involves elements of, Biology which I've come to be deeply interested in through my Biology studies to date.
Additionally the project will feature aspects of physiotherapy and physiology and this links the project to my future career plans.

All three of the areas to be covered by my project: Biology, physiotherapy and physiology are all areas I am interested in studying at university, possibly in a Sports Science course.

The broad contexts this project will cover are

Economic development Sustainable development

Economic development: I will investigate what the potential costs are from conditions that may be caused by long periods of sitting. As well as this I will investigate how the NHS and other healthcare providers are covering the cost of helping people with their musculoskeletal problems that are potentially linked to long periods of sitting.

Sustainable development: I will research the potential for mass adoption of sitting desks, if they prove to be beneficial from a healthcare point of view. This helps with sustainable development in that there could be many jobs created in manufacturing standing desks. Additionally more researchers will be needed to fine tune our approach to physical activity in the workplace as well as the rest of our non working lives.

Learning environments I will access are

- NHS Grampian
- Aberdeen City Council
- GCU physiotherapy department
- RGU physiotherapy department
- Local physiotherapy practice
- Council workers (for surveys)
- Books such as Kelly Starett's "Sitting is the new smoking"
- Aberdeen University Library to review various white papers and research journals looking into my area of research

How I will use my knowledge of science/technology

I will use my knowledge of biology from the Higher Human Biology course I am studying this year and also of scientific procedures to evaluate and analyse the data I gather.
Using my understanding of the body's systems I will research how a seated posture affects the various systems such as the respiratory, musculoskeletal and digestive systems.
By utilising my knowledge of technology I will create a presentation to share my results with an audience at the end of my project.

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)

- *Application of subject knowledge and understanding*- I will use my understanding of biological concepts and principles to evaluate sources and justify my conclusions.

- *Research skills – analysis and evaluation* - Using my research skills I will gather results from various studies (along with my own) and then evaluate their credibility and reliability before deciding whether or not to include them in my final presentation

- *Interpersonal skills – negotiation and collaboration*- I have limited experience collaborating with others on this kind of research task. This is one of the main skills I will develop through my project, contacting and meeting people as part of the research stage.

- *Planning: time, resource and information management*- My time management skills are not a very strong area and could do with some work, I do however feel that they are developed enough to complete the project to a high standard if I plan my time and stick to deadlines.

- *Independent learning – autonomy and challenging own learning*- I enjoy the autonomy of self study as it allows me to look deeper into subjects that are only "briefly" skimmed over in class. I think this skill will stand me in good stead in the future and during my research.

- *Problem solving – critical thinking*: logical and creative approaches- My problem solving skills are, "outside the box". That being said I do believe I have a good ability to switch between both "creative" problem solving and logical solutions.

- *Presentation skills*- I enjoy presenting to my peers and have been part of the Association of Speakers Club for almost a year. In this time I have presented several speeches on areas of interest (such as biology and health). With these skills I believe that my final presentation should be of a very high standard.

- *Self-evaluation – recognition of own skills development and future areas for development* -Over the years there have been several opportunities for me to develop areas of weakness and evaluate myself to look for areas in which I could make improvements. I have in the most part used these opportunities to their full potential. I feel that throughout the project I will be able to evaluate myself as I progress and complete the project with a wider and more developed skill set. One skill I hope to develop is my ability to take feedback from others and then present the gathered information in such a way that the scientific principles can be understood by those with limited to no scientific background.

Assessor feedback to candidate

This is an unusual topic clearly of great personal interest and based on the reading you have already done that makes you want to know more – always a good start! You have suggested a varied range of possible sources and in discussion it was clear that you have spoken to some sources already to help you decide if this is a viable topic. You have linked it clearly to the two broad contexts and also to your studies in school, using your knowledge from your courses, and future plans.
You have thought about the skills you will develop and areas of strength and for improvement. You have considerable public speaking experience, which will be a great help with the final presentation, just take care that you keep this factual and have good supporting evidence.

Proposal approved	√	**Further work required**	No
Candidate signature		**Date**	03.09.15
Assessor signature		**Date**	03.09.15

Science: Interdisciplinary Project

Plan

Candidate name	
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Assessor name	
Project title	To Sit Or To Stand?

Is this a group project? **No**

Timescales:

See Gantt chart

Planning

- I will collect information from my various sources; I will then evaluate the data and file it for later reference.
- I will create a survey to gather information on workforce opinion.
- After this I will analyse the data from my survey and combine it with my initial research.
- I will contact and question my contacts and create a cohesive presentation that brings together all of my results from my various sources.
- I will carry out the tasks listed in my timeline and check in on this at the weekly meetings to ensure that I am on target.

Resources

- RGU Physiotherapy Department
- Sports Physiotherapists
- GCU Physiotherapy
- ACC Workforce
- ACC Health In The Workplace Department
- Experts in the field of sitting and its effects on health
- NHS Grampian
- Local Physiotherapy practice
- Aberdeen University Library as well as various internet resources to access research journals
- Various books such as Kelly Starret's "Becoming a supple leopard" and "Deskbound."

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

- I will have to contact the local Physiotherapy practice to either arrange a date to meet them or to ask for information via e-mail. This will be information relating to the injuries and problems they often see in office workers.
- I will create a survey for City Council workers asking their opinions around the subject of back pain, sitting standing and how it affects work.
- I will use resources from the library at Aberdeen University to find information on physiology and potentially how seated postures affect the body's systems.

Presentation

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

- Office workers who are looking to stay pain free and improve their general wellbeing.
- Managers will hopefully see the benefits of standing desks and will hopefully modify working environments to suit help their workers, perform their daily tasks in a healthier fashion.

What methods are appropriate to my audience(s) *(eg demonstration, presentation software, websites, oral, report, piece of theatre, dvd, wiki/blog or any combination)*

- A presentation with the addition of a handout. This is what I think will be the most appropriate way to present to an audience of council workers. The reason I believe this is the most effective way to present council worker is due to consulting with my mother who is a continuous improvement officer. The way in which she presents her workshops to her colleagues is through a combination of PowerPoints, handouts and demonstrations.

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)*

- Physiotherapists willing to provide me with information about back injuries.
- RGU-GCU and other professional research institutes providing me with information on how general health is affected by sitting/standing.
- Workers willing to complete my questionnaire.

Contingencies	
Any anticipated problems	**My plans for overcoming the anticipated problems.**
Aberdeen City Council not willing to work with me on my project.	I will find another company willing to work with me. This could be done through my leadership class as I have links to the chamber of commerce through this class.

Physiotherapists unable to meet with me due to lack of time	I will send the physiotherapists email questionnaires to complete if they are unable to meet with me as well as using other sources to gather my information.
Pre existing commitments make it difficult for me to get my Baccalaureate finished.	I will follow my timeline closely and check up on it at least twice a week.

Method for recording my skills development and future areas for improvement

I will do a simple analysis of my skills at the start of the project and repeat this after the presentation to be able to compare them and use this for the evaluation.
I will also look at the feedback I receive at different stages. This will help target the weaker areas and help me develop my skills further.
The weekly meetings will let me discuss how things are going with teachers and the others doing projects and compare notes.
My log book will help to analyse the progress I am making with the different skills and target areas needing more attention.

Assessor feedback to candidate

Your plan has added more detail to the original proposal and you have set yourself a clear timeline which is realistic and allows for other commitments throughout your project.
You have thought of different angles to explore to help you reach a conclusion and have a long list of possible contacts.
You have looked at different ways to complete your research, using the internet, University library and personal contacts, allowing for possible problems along the way and suggesting solutions.
Completing a skills analysis at the start will help you to review your skills development in the evaluation along with the feedback you receive from staff, peers and contacts.

Plan approved	Yes	**Further work required**	No
Candidate signature		**Date**	29.09.15
Assessor signature		**Date**	29.09.15

Month	August				September				October				November				December				January				February				March			
Week	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Proposal																																
Plan																																
Initial Research																																
Complete Templates																																
Research into:																																
Current methods of dealing with backpain and absenteeism in the workplace																																
Standing desks and proposed future developments																																
October Holiday																																
Benefits and downsides to sitting from a biological point of view. Do either affect risk factors for cardiovascular and other diseases																																
Economic aspects and potential for mass adoption of standing desks																																
Christmas holiday																																
Evaluate and analyse the data I have gathered																																
Interim review																																
Gather list of any final potential contacts																																
Change findings to fit new information from contacts if necessary																																
Prelims																																
Create final presentation																																
Rehearse presentation																																
Present to peers and take feedback. Asapt final presentation if needed																																
Select date, time and audience for final presentation, confirm these.																																
Present final presentation																																
Complete evaluation of project																																
Complete evaluation of project																																

Science: Interdisciplinary Project

Presentation of Project Findings/Product

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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))*

For my final presentation I created a powerpoint presentation. I planned to do a presentation because I have good level of experience in creating and presenting powerpoints, so I felt that a powerpoint would allow me to present my findings to the best of my abilities, using my strengths.

To begin with I thought that I should present to a group of office workers or healthcare professionals such as GP's or physiotherapists and possibly some researchers from the field of physiology or other related disciplines.
However I was unable to do this as it was clear it would be too difficult to coordinate different healthcare professionals when their schedules are so busy.

So given all the commitments people have, as well as my other commitments out with my project I decided on presenting my final findings to my peers in my Higher Human Biology class.

The reason I chose this group as my audience was because there was a clear overlap in my research and certain aspects of the Human Biology course such as the 'Physiology and Health' unit. As they were studying a similar area to me via their course work, I knew that they had the knowledge and understanding needed and would gain the most from watching my presentation versus any of my other peers groups. Also I thought that as they were studying Human Biology and spend most of their days sitting down in class they would be interested in this topic!

My powerpoint clearly explained the background to my project and how it can affect everyone at work in sedentary jobs as well as the economic impact on the NHS and on companies due to days lost with related conditions.

I tried to limit the facts and figures and give the overall data about work days lost and NHS costs here in the UK.

Discussions at the weekly meetings and with others in the class as well as the interim review had all given me useful feedback which I used to help me complete the final presentation to a high standard.

I described standing desks and how they can help but explained that the research into this is partly funded by manufacturers of standing desks and therefore needs independent research to support the outcomes further. One interesting piece of independent research that I felt was important had found that short periods of intensive exercise e.g. at the gym are not able to solve the problem and we need regular short breaks throughout the day.

I then asked for questions and answered these as well as taking written feedback from staff and our Researcher in Residence after the presentation.

Assessor feedback to candidate

This was an interesting and engaging presentation with a lot of interesting facts and figures about the costs of extended periods sitting down which clearly surprised everyone.
You carefully illustrated the potential benefits of standing desks (including a slide of your own inexpensive solution!) and highlighted the need for independent research to corroborate the findings so far.
You had chosen your audience well as they were clearly interested in the topic, had the appropriate level of background understanding and asked several questions afterwards. You were able to answer these in detail, showing the depth of your research and there was an interesting discussion of whether standing desks are a practical solution or simply regular short breaks would be the most practical answer.
It would have helped your evaluation if you had given out a written feedback form rather than relying on the question/answer session but you did have some written feedback from the staff.

Interesting and entertaining presentation with a lot of things to think about and simple suggestions to help avoid problems at a personal level. You were relaxed and confident and your own interest in the topic and the need to address the problems on a much wider scale shone through. The lack of scientific supporting research was highlighted and the need to treat marketing research with caution until there is supporting evidence.

Candidate signature	**Date**	15.03.16
Assessor signature	**Date**	15.03.16

Science: Interdisciplinary Project

Evaluation of project

Candidate name									
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Project title	To sit or to stand?								

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)*

There were a lot of challenges in completing my project. However I was able to deal with them all and find alternative ways of working to complete certain parts of my project so overall I met my objectives.

For example when I initially contacted the local physiotherapy practice I did not even receive acknowledgement that they had received my query. I then followed up with further emails and again got nothing back.

So I contacted Robert Gordon University Wellness centre and within hours got a reply. By the end of the week I had met with the head of the Wellness Clinic and discussed my project with him.

Next I was able to meet two more members of RGU. These two researchers were able to help me look at my project from a different angle than the one I had initially considered. This was a definite strength of my project as it made me look deeper into the biological processes that were in my project.

Another strength was in the actual final presentation. I was very comfortable presenting to my class as I had practiced my presentation numerous times to ensure that it was as relaxed and as clear as possible for when I had to actually present it.

Time management was another issue I had to deal with in that there were a lot of deadlines to be met not just within my project but in other subjects and my life outwith school. I was able to deal with this to by planning out my weeks in advance and allowing time for unexpected delays to ensure that I met all my targets.

In terms of weaknesses I did not manage to meet as many people as I had initially planned on meeting. This meant that I had to get more of my information from online resources and didn't spend as much time interacting with other people.
As a result I may have not been able to develop my interpersonal skills as much as there was potential for in this type of project.

In my plan and proposal I mentioned the idea of doing my own research and doing this though council workers in Aberdeen City Council. When I started looking into this I realised that this would not be practical in my time frame but needed to be part of a much bigger project.

I was also unable to reach anyone within the NHS to find out their viewpoint on the sitting vs standing debate for longevity.

As well as the above obstacles, the Aberdeen University Library did not have any resources that were particularly useful for my project as it is a very specialised and specific area but there were other books I thought I could use as references. One book 'The posture theory' was impossible to get a hold of. Another book that I had planned on using for my research 'Sitting is the new smoking' had not actually been released in time for me to use it as part of my project but there were articles in online journals that I could use.
I think this actually strengthened my project in that it forced me to look at a wider variety of sources as opposed to just 1 or 2 different books. This meant that I was able to gather more data both for and against my personal stance on the issue.

I was unable to meet with or talk to anyone who was actually researching my project from the angle I was looking at it from. To begin with I thought that this was a bad thing but then I realised that it would make my project a lot more interesting as not a lot of work had been done on what I was investigating and what little work had been done was not very well publicised.

Throughout the project there were a lot of different things I learned. My key learning points came from the people I met as a result of my project and not any of the online resources I used.

From the head of the Wellness Clinic and the two professors I learned about the value of listening and let someone say what they have to say as opposed to continually interrupting the conversation. I found that when I listened more and talked less I got more information and the conversations I had met the objectives more effectively. What I mean by that is when I spoke with head of the Wellness Clinic and the two researchers I had a very specific outcome that I wanted to have reached by the end of the conversation. When I listened more I was able to reach my objectives a lot more easily.

When I started my research I was convinced that spending the majority of my time seated was going to have a net negative effect on my health over the long term. Through my studies I found this to be true based on what I found out.

Another key point I leaned from my project was the difficulty in trying to prove causation, meaning there are so many factors that come into play when we talk about human longevity that it is very hard to say definitively whether or not a certain factor such as daily sitting time is having a definite harmful impact on our health and longevity.

In terms of implementation I managed to complete most of my tasks on time, everything that was necessary to the success of my project though a few extras that I wanted to make part of my project were not able to be completed. This was mainly due to me not managing my time effectively and not realising the need to do several things over the same time instead of one thing at a time.

How effective were my communication methods throughout the project?

From start to finish I was able to communicate rather well with new people. At first I was nervous to meet my contacts in person. To begin with I looked for people in the local area who could potentially help me with my project. Then I sent out emails to all of the contacts that I felt were appropriate for my project. With my emails I let my contacts know what my project was, how I thought they could help me, my name and my school.

When I went to meet my contacts I was again nervous to start with but once the conversation started I was able to speak with a pretty good degree of understanding on my project and the science it entails.

At the end of each of my conversations I was, as I said above, able to meet all the objectives of my conversations. This meant that I was able to get the best information possible from my contacts because I was able to listen more and not talk as much as I normally would have. Since I was able to get good quality information from my contacts I was able to create a good presentation as a result of my improved communication skills.

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

I think that the next steps of my project could be larger research projects on the long term effects of sedentary, sitting like behaviour. This is needed to confirm my conclusions and so that we can create a plan that is based on what the science has found to be true based with independent supporting evidence.

With this new information I think that the other big thing that is needed is a way of educating the public and employers of office workers and other individuals who spend a lot of their day seated and highlighting simple, cost effective solutions.

As well as these two things I think that it is important to find ways that standing desks can be made more affordable. The reason I think this is so important is that when I was going through my project I found that cost of purchasing and replacing the traditional desks was too high to make it a realistic solution for businesses.

Candidate signature	**Date**	24.03.16
Assessor signature	**Date**	24.03.16

Science: Interdisciplinary Project

Self evaluation of generic and cognitive skills development

Candidate name	
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Assessor name	
Project title	To sit or to stand?

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 science you have learned. How did you use your knowledge of science/technology effectively to help you carry out various aspects of your project and how it related to your chosen broad context(s)?)

From my understanding of biology I was able to make sense of complicated research papers and extrapolate what the papers findings meant for my project. I was then further able to use my understanding of Biology to explain principles and ideas to people with no previous knowledge in this particular field.

While a lot of the science that was discussed in the papers I read was above the level of my school work I was still able to understand it because I have spent a lot of time and years interested in Biology. As a result I was able to create a presentation that took into account some of the most advanced principles in the field of cardiology while not making the presentation so academic that it couldn't be understood by my peers.

As for technology I used a wide variety of media to collect data and examine research findings. I was able to find exactly what I was looking for on the web and was not distracted by the information overload that I was presented with when I started my project. I also used the technology to collate and store information throughout my project.

My findings were clearly related to the broad contexts of Citizenship and Sustainable Development.

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 had originally planned on carrying out my own research but I found that it would not be possible to do this. There were simply too many things that I would have needed to do in order to make the research possible and good enough to draw some sound conclusions from it. So since I couldn't do my own research I focused on evaluating other research to the best of my abilities.
The way I evaluated my research was by making sure that it had come from reputable sources such as The Lancet and the British Academy for Sports and Exercise Science.
Once I had checked my sources I looked to see how many times they had been cited and by whom. I knew from discussions with our Researcher in Residence and the University Library Research Skills workshop that the more often a paper had been cited the more reliable it's findings would be. If the information seemed to be incorrect or deeply flawed then it wouldn't be frequently cited.
Overall I then selected information to give a balanced presentation of findings and support my conclusions.

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.)

During my conversations with my contacts I had to think about other people's viewpoints and consider how their viewpoints impacted on my project. The head of the Wellness Clinic was a prime example of someone who challenged me to think differently about my project. The biggest thing that I took away from my conversation with the head of the Wellness Clinic was the difficulty in proving causation because there are so many different factors that affect people's health and it is very difficult to pin down exactly what is happening and what is causing particular symptoms.
To begin with I thought that the project would be pretty clear cut but later I realised that there was a whole lot more factors which needed to be considered.
As I was able to adjust my approach based on my findings I felt I was able to create a better end presentation.

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 made a list each Sunday of what I had to do over the coming week. Then I ranked each task 1,2 or 3 and made sure that each of my number 1 priorities got done during the week.
There were inevitably certain obstacles that cropped up in my plan and because I left time in my plan to deal with these problems I was able to do this effectively when they came up.
An example would be when went to meet the head of the Wellness Clinic for the first time. To get to his place of work I had to take a 45 minute bus ride across town and to make the bus I had to ensure that I got home and had dinner in time and was ready to go in good time so that I didn't miss my meeting.

Weekly meetings and keeping a log book were a key part of good time management.

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.)

While I was going through my evaluation of my research I had to work hard to find which journals and papers actually had reliable data. While it would have been easier to find some infographics and just copy figures straight from them I went a bit deeper with my project.

I went out of my way to find the very best information that I could. I looked at countless white papers, read more google scholar articles than I care to count and made sure that while I was looking for reliable data I also looked into alternative approaches to the debate and how those ideas could potentially impact my project.

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?)

For my project I looked at a very wide variety of theories to uncover exactly what was going on with the whole sitting versus standing debate.

I looked at the debate from more than one angle. I looked at the facts from the point of view of the NHS, Physiotherapists, GPs, companies and corporations and the companies that actually manufacture the standing desks.

This gave me a much clearer picture of the opposing views so that I could figure out what was fact and what was opinion.

There were a few occasions during my project that I came across or was told of something that had the potential to have a large impact on my project. At the beginning of my project I was pretty sure that what I had as my angle was a solid foundation for my research moving forwards. When I met with the physiotherapist from RGU. I learned about something that I had yet to even consider. The difficulty in proving causation, was the problem that the physiotherapist raised.

This made me think a whole lot deeper about the research I was reading and to what degree the researchers had controlled all the variables in their studies.

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?)

In the lead up to my presentation I had been reading Carmine Gallows “Talk like TED”. This book gave me insights into how I could make my presentation flow more

smoothly and ensure that my audience actually retained and learned something from the presentation.

Additionally before my project I was good at presenting my ideas to audiences but now I am even better at doing so. I think that this was because I had to get comfortable in situations that I found uncomfortable. This forced me to get better at doing things like presenting to an audience. The reason being that since I have been in that uncomfortable situation before I am now better at dealing with it and I have less nerves when having to get up in front of a group of people and present to them and answer questions.

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 have gotten a lot better at looking at research and other people's ideas in general and being able to separate the facts from opinion. I have had a good level of praise on my presentation and on my ability to take ideas that may seem a little bit complex like executive function of the brain and telomeres and make these ideas simple to understand.

All the feedback I was given by my peers and contacts has helped me to improve not only the way I looked at my project and presented but also myself. What I mean is that I am now a whole lot better at taking feedback or criticism on board with a positive attitude and making a change to something without taking it as personal criticism.

This will be very useful in future studying and presenting. A lot of the things that I learned via my project I believe will help me later on in life. Firstly reaching out to new people I have never met or talked to before will help me later on in life when I have to go meet new people such as employers for interviews or just making new friends. Secondly the project taught me about how valuable it is to listen to people as opposed to just spending all my time talking. This will help me when I am trying to have difficult

conversations with people or talking about complicated ideas because I will be better able to understand what they are talking about and how if at all a solution could be reached.

Lastly it made me a lot better at taking on other people's points of view and trying to figure out what the truth is as opposed to just what someone thinks.
On the flipside of that, the project also made me realise that it is important to respect that everyone has an opinion and you don't have to verbally or otherwise attack them because they don't agree with what you have to say.

Science: Interdisciplinary Project

Assessor Report

Candidate name

Candidate number

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 science 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	
The candidate chose an unusual topic with great future potential applications in the modern workforce who are largely sedentary. The proposal was well thought through with some strands and opportunities to develop a deeper knowledge and understanding of a challenging area of biological research as well as his personal skills, however more links could have been made. The project links well to his interests, current studies and future plans.	

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	
The candidate put together a detailed development of the original proposal and also a realistic and achievable timescale with clear targets and deadlines. Possible sources of information were identified and some of the potential setbacks considered. He described ways he could develop his personal skills and the best way to deliver his findings using his existing public speaking skills.	

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.	✓
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 An interesting presentation, well rehearsed and delivered with great confidence. A simple description of the underlying biology was included which could have been expanded as his audience was made up of AH and Higher Biology students. A clear description of the economic and health implications was given and possible solutions proposed. Questions were answered clearly and confidently and verbal feedback taken.	

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	
This is a detailed and well balanced evaluation of the all the stages of the project and the outcomes along with suggestions for further research. The candidate made a good choice of presentation method and delivered his findings effectively to his chosen audience. Communication methods have been considered but are very narrow in their scope and so meet the C criteria.	

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 given a very detailed evaluation of his personal skills using the simple analysis at the start and the feedback received	

throughout the project to help with this. He has improved his research skills and time management and appreciates the value of these in future studies.	

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	**B**

Additional Comments/Overview

The candidate chose a project that had caught his imagination and interest and this certainly motivated him to investigate it further. As this is a very specialised area he found it difficult to source scientific evidence of the impact of sitting for long periods. He built on his prior learning with a lot of background research to help him understand the biology and technology involved which were new to him but he struggled to find local contacts with the expertise to discuss the various issues with him.
He was creative in the contacts he did make and evaluated them effectively, recognising and highlighting the difficulties with marketing rather than scientific research. He also developed his personal skills, particularly independent working and time management, meeting all deadlines ahead of time

Assessor signature _____ **Date** _____

Internal verifier signature _____ **Date** _____