

we know it. The problem of growing antibiotic resistance (and lack of developed alternatives to antibiotics) is such an imminent threat and yet it doesn't seem to receive a fitting amount of media coverage. As a result of this, I wanted to learn more about advancements in the area and any progress that is being made, as it is a subject that both captivates and scares me). I first learnt about bacteriophages from a YouTube video, and I have been fascinated by them ever since. By focusing my EPQ on bacteriophages, it gives me the opportunity to conduct direct and thorough research into them and organise the information into an informative project.

Section Three: Activities and timescales

Activities to be carried out during the project (eg, research, development and analysis of ideas, writing, data collection, numerical analysis, rehearsal techniques, production meetings, production of final outcome, administration, evaluation, preparing for the presentation, etc):

- 1) Initial research
 - Consider a variety of sources that can be used (e.g. books, journal articles, websites, experts' views, polls)
 - Gather all appropriate information in preparation to write the literature review.
 - Add limits to the question to reduce the scope of the dissertation if necessary.
- 2) Write the literature review.
 - Consider the most effective structure to inform the reader.
 - Draft each section then go back through and edit
- 3) Write the main discussion.
 - Collect data on public opinion/knowledge of bacteriophages in a poll/survey and then integrate this into the argument for their use.
 - Contact experts for their views and add this.
 - Consider and decide on the subheadings and structure of the discussion
 - Draft the body of each section.
 - Go back through and add to it.
- 4) Write the conclusion.
 - Summarise the key points and answering the question.
 - Evaluate the project.
- 5) Editing
 - Ask others for their feedback on the project and make changes where appropriate.
 - Read through the project and check its readability and grammar etc.
- 6) Preparing for the presentation
 - Make the presentation.
 - Write the script.
 - Practise the presentation and receive feedback to improve.

How long this will take:

- 1)
 - 3-4 weeks for note taking on various sections to gather a body of information.
 - 1-2 sessions of organisation of notes
- 2)
 - 2 weeks adding more information to each section and organising the structure of the literature review.
 - 2 weeks finalising the literature review (editing and redrafting)
- 3)
 - 1-2 hours deciding writing the survey and contacting subject experts for their views.
 - Three weeks to distribute the survey.
 - 2-4 hours analysing the data.
 - 3-4 weeks writing the discussion and including all new data in the writing
 - 1 week editing and making structural and grammar improvements.
- 4) 1 hour writing the conclusion.
- 5) 2 weeks to gather feedback and make the appropriate changes.
- 6) 1 month preparation
 - 1-2 weeks developing a PowerPoint that best represents the project.
 - 1 week writing and finalising what will be said.
 - 1-2 weeks practising

Milestone one: Literature Review submitted.
Target date (set by tutor-assessor): 6th January 2023

Milestone two: Discussion completed.
Target date: April 9th

Milestone three: Conclusion and editing of the main body completed.
Target date: April 30th

Milestone four: Finish receiving feedback from peers and edit the project accordingly.
Target date: May 20th

Milestone five: Full project submitted.
Target date (set by tutor-assessor): 9th June 2023

Milestone six: Write the presentation and script.
Target date: 1st August
- Then receive feedback and practise.

Section Four: Resources

What resources will you need for your research, write up and presentation (e.g. libraries, books, journals, equipment, rehearsal space, technology and equipment, venue, physical resources, finance):

- Access to the internet: to access websites, news articles and electronic journals. Journal articles are important for the body of facts and data in the dissertation, while this can be corroborated and simplified by websites and news articles. News articles also present opinions that can allow me to analyse the perception of the use of bacteriophages and antibiotic resistance. This is important to consider in my conclusion.
- With the help of online public libraries I would be able to access sources that are behind pay walls to gather more information.
- Books: the school or local library. Online extracts from books.
- Video services: e.g. YouTube/BBC iPlayer/Netflix would allow me to access documentaries or further information that is directed towards science communication rather than research.
- The use of social media would allow me to reach a wider audience for my poll on bacteriophages, to reduce the bias of the results.

What your areas of research will cover?

What are bacteriophages?

- Structure
- Abundance
- How they work
- Reasons why they are not widely used.

History of bacteriophages and their initial development alongside antibiotics

How the production of bacteriophages and antibiotics compares

The growing problem of antibiotic resistance

What are antibiotics?

- How they work
- Efficacy
- History

Other alternatives: bacteriocins, predatory bacteria, antibiotic adjuvants and EPIs

Comments and agreement from tutor-assessor

Is the learner taking this project as part of the Diploma? Yes/No

If yes, which Diploma are they taking? _____

Comments (optional):

Is project derived from work which has been/will be submitted for another qualification? Yes/No

Which qualification (title and unit)? _____

Comments (optional):

I confirm that the project is not work which has been or will be submitted for another qualification and is appropriate.

Agreed: (name) (date)

Comments and agreement from project proposal checker

Comments (optional):

I confirm that the project is appropriate.

Agreed: (name) (date)