Could your poo be in my dinner?

Key Stage 4 Programme

Pupil Name	Name
Handbook Designed by	Dr. Esther Sample

Timetable and Assignment Submission

Timetable – Tutorials

Tutorial	Date	Time	Location
1	Monday 26th November	14:00	St John's College, Cambridge
2	Monday 7th January 2019	15:35	Maths dept – Tracy's classroom
3	Monday 14th January 2019	15:35	Maths dept – Tracy's classroom
4	Monday 21st January 2019	15:35	Maths dept – Tracy's classroom
5	Monday 28th January 2019	15:35	Maths dept – Tracy's classroom
6 (Feedback)	Monday 11th February 2019	15:35	Maths dept – Tracy's classroom
7 (Feedback)	Monday 18th March, 2019	15:35	Maths dept – Tracy's classroom

Timetable – Homework Assignments

Homework Assignment	Description	Due Date
Tutorial 1	Essays	Monday 7th January 2019
Tutorial 2	Essays	Monday 14th January 2019
Tutorial 3	Essays	Monday 21st January 2019
Tutorial 4	Essays	Monday 28th January 2019
Tutorial 5	Essays	

Assignment Submission – Lateness and Plagiarism

Lateness	
Submission after midnight on due dates shown	10 marks deducted
Plagiarism	
Some plagiarism	10 marks deducted
Moderate plagiarism	20 marks deducted
Extreme plagiarism	Automatic fail

Uni Pathways – Pupil Feedback Report

Grade	Marks	What this means
1st	70+	Performing to an excellent standard at A-level
2:1	60-69	Performing to a good standard at A-level
2:2	50-59	Performing to an excellent standard at GCSE
3rd	40-49	Performing to a good standard at GCSE
Working towards a pass	0-39	Performing below a good standard at GCSE
Did not submit	DNS	No assignment received by The Brilliant Club

Lateness	
Any lateness	10 marks deducted
Plagiarism	
Some plagiarism	10 marks deducted
Moderate plagiarism	20 marks deducted
Extreme plagiarism	Automatic fail

Name of RIS teacher			
Title of Assignment			
Name of Pupil			
Name of School			
ORIGINAL MARK / 100		FINAL MARK / 100	
DEDUCTED MARKS		FINAL GRADE	

If marks have been deducted (e.g. late submission, plagiarism) the PhD tutor should give an explanation in this section:

Knowledge and Understanding

Enter feedback here

Critical Evaluation/Problem Solving

Enter feedback here

Structure and Presentation

Enter feedback here

Resilience Comment

Enter feedback here

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Course Rationale

The way in which germs in poo moves in our environment is an essential factor for the spread of pathogens from human poo (faeces). These pathogens are responsible for causing some of the indirect killer diseases like diarrhoea. Sanitation systems like toilets are designed and built to help collect poo and all the pathogens in it to prevent it from spreading and causing people to become sick. However, it is the behaviour of the users of sanitation systems that combines with its technical efficiency to protect people from exposure to pathogens.

This course will provide insights into how faecal contamination can move from its source to a new host and how human sanitation behaviour impact of this transmission. It will also look at professionals whose roles contribute to reducing the impact of faecal contamination in our environments hence keeping us safe from diseases.

The final assignment of this course aims to provide insight into faecal contamination hotspots that are plausible with a regular school building and suggest sanitation behaviour change strategies that could help reduce exposure to pathogens from poo.

Mark Scheme

STEM Mark Scheme

Skills	1st (70-100)	2:1 (60-69)	2:2 (50-59)
Knowledge and Understanding	• All content included is relevant to the general topic and to the specific question/title • Good understanding of all the relevant topics. • Scientific terms are defined and used accurately throughout • Clear justification on how the content included is related to the specific issues that are the focus of the assignment	• Most of the content included is relevant to the general topic and to the specific question/title • Good understanding of most the relevant topics • Scientific terms are used accurately but not always clearly defined. • Adequate justification on how the content included is related to the specific issues that are the focus of the assignment	• Some of the content included is relevant to the general topic and to the specific question/title • Good understanding on some of the relevant topics but occasional confusion on others. • Scientific terms are used mostly accurately with occasional confusion and often not defined. • Some justification on how the content included is related to the specific issues that are the focus of the assignment
Critical Evaluation/ Problem solving	• Moved beyond description to an assessment of the value or significance of what is described • Evaluative points are consistently explicit/systematic/reasoned/justified • Effective critiques on the reliability of sources provided	• Mostly description but some assessment of the value or significance of what is described • Evaluative points are mostly explicit/systematic/reasoned/justified • Some evidence of critiques on the reliability of sources provided	• Only description with minimal assessment of the value or significance of what is described • Evaluative points are at times explicit/systematic/reasoned/justified • Limited evidence of critiques on the reliability of sources provided

Structure and Presentation	• Ideas are presented in paragraphs and arranged in a logical structure that is appropriate for the assignment • The introduction clearly outlines how the essay/report will deal with the issues • The conclusion summarises all the main points clearly and concisely • All sources are referenced correctly in an agreed format	• Ideas are presented in paragraphs and arranged in a structure that is mostly appropriate for the assignment • The introduction adequately describes how the essay/report will deal with the issues • The conclusion summarises most of the main points clearly • Most sources are referenced correctly in an agreed format	• Ideas are presented in paragraphs and arranged in a structure • The introduction mentions how the essay/report will deal with the issues • The conclusion summarises some of the main points clearly • Some sources are referenced correctly in the agreed format with occasional errors
Critical thinking Critical Evaluation	• Moved beyond description to an assessment of the value or significance of what is described • Evaluative points are consistently explicit/systematic/reasoned/justified • Effective critiques on the reliability of sources provided	• Mostly description but some assessment of the value or significance of what is described • Evaluative points are mostly explicit/systematic/reasoned/justified • Some evidence of critiques on the reliability of sources provided	• Only description with minimal assessment of the value or significance of what is described • Evaluative points are at times explicit/systematic/reasoned/justified • Limited evidence of critiques on the reliability of sources provided

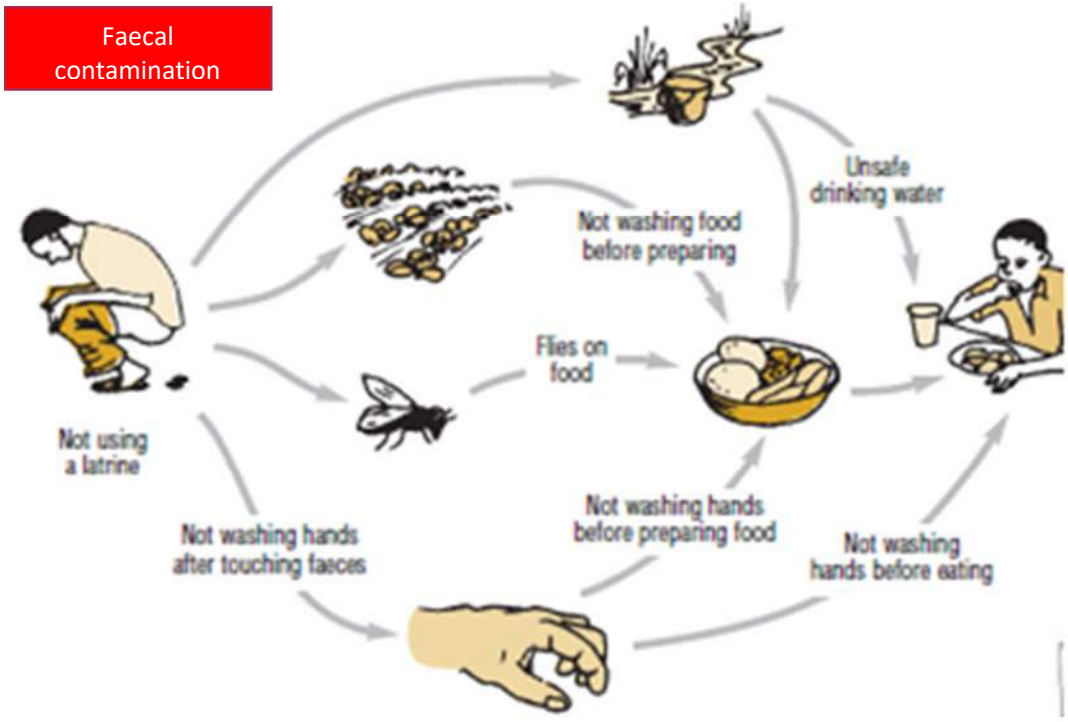
Written communication	Structure and Presentation	• Ideas are presented in paragraphs and arranged as a logical sequence of ideas • The introduction clearly outlines how the essay will deal with the issues • The conclusion summarises all the main points clearly and concisely • All sources are referenced correctly in the agreed format	• Ideas are presented in paragraphs with some structure • The introduction adequately describes how the essay will deal with the issues • The conclusion summarises most of the main points clearly • Most of the sources are referenced correctly in the agreed format •	• Ideas are presented in paragraphs and are loosely structured • The introduction mentions how the essay will deal with the issues • The conclusion summarises some of the main points clearly • Some sources are referenced correctly in the agreed format with occasional errors
	Language and Style	• No spelling, grammar or punctuation errors • Writing style consistently clear, tone appropriate and easy to follow • Accurate and consistent use of technical language and vocabulary	• Minimal spelling, grammar or punctuation errors • Writing style mostly clear, tone appropriate and easy to follow • Some attempts of using technical language and vocab alary, but not always accurate	• Some spelling, grammar or punctuation errors • Writing style moderately clear, tone appropriate and easy to follow • Use of simple language and vocabulary effectively but struggles to use technical language

Subject Vocabulary

Word	Definition	In a sentence
Behaviour change	This is a range of activities and approaches which focus on the individual, community, and environmental influences on a behaviour of interest	
Contact	Touch (anywhere on the body)	
Contamination	The action or state of making or being made impure by polluting	
Disease	A disorder of structure or function in a human, especially one that produces specific symptoms or that affects a specific location and is not simply a direct result of physical injury	
Exposure	The state of having no protection from something harmful, in this case faecal matter	
Faecal	Relating to or resembling faeces	
Host	A person who has or could have pathogens living in their body.	
Indicator Bacteria	Indicator bacteria are types of bacteria used to detect and estimate the level of faecal contamination in environmental samples like water and swaps	
Mapping	It is a representation of the route which faecal contamination goes from its source to a new host (new person)	
Pathogens	These are bacteria, viruses and other microorganisms that cause disease	
Pathways	This is the route through which faecal contamination goes from its source to a new host	
Sanitation	This relates to public health in terms of the disposal of faeces.	

Sanitation systems	Facilities that help us collect, transport and treat faecal waste safely to prevent faecal contamination	
Transmission	This is the process by which faeces move from source to other surfaces and possibly a new host	

Tutorial 1 – What is faecal contamination and why is it important?



What is the Purpose of Tutorial 1?

- To learn historical background to current advancement in sanitation systems
- To understand the concept of faecal contamination

Let us begin by watching Dr. Snow's Cholera Dot Map of London to give as a little history on faecal contamination and its impact.

Link to video - https://www.youtube.com/watch?v=753XHXPLrn4

Activity 1 – The concept of faecal contamination

1. Watch the short video and write down at least 3 main points of interest for you.

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2. What steps did Dr. John Snow take to reach his findings?

Discussions

3. Feedback to group and explain your point

Activity 2: Faecal contamination indicators

How do we know that faecal contamination has taken place?

Working with the person next to you, think of ways in which we can know that faecal contamination has taken place. Write down your thoughts

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Share your thoughts with the group

Why do we need faecal indicator bacteria?

What are the commonly used indicator bacteria and why?

Summary

Could you highlight the key things we have learnt today about faecal contamination?

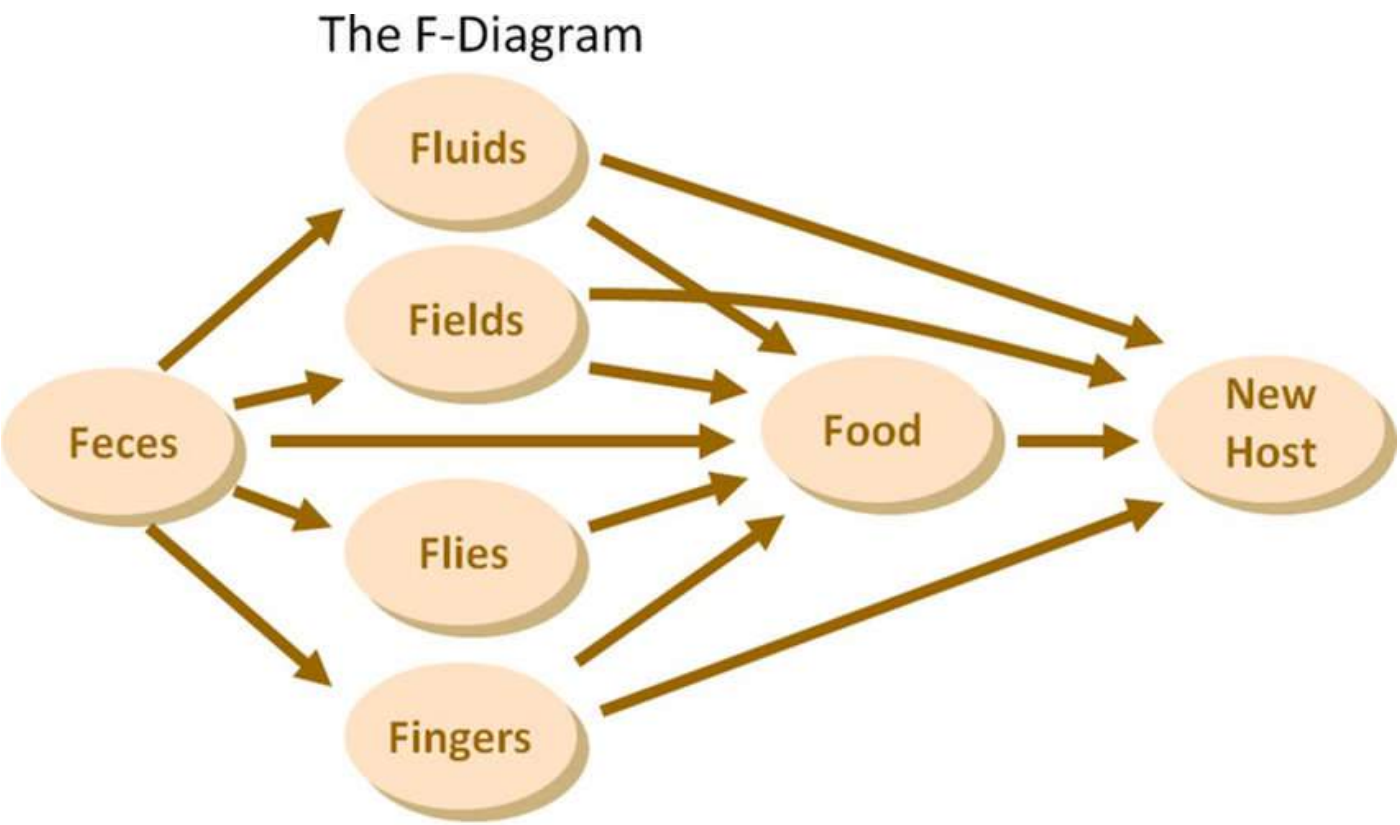
Notes

Homework 1 – Baseline assignment

In 300 words, describe what you understand by faecal contamination. Why is it important? What professionals could be involved in preventing faecal contamination? Does any of such profession appeal to you? Justify your answer.

You should use appropriate vocabulary you have learned. You can use online resources but do not forget to reference this and NEVER COPY AND PASTE. See Appendix 1 for more guidance on referencing.

Tutorial 2 – Faecal contamination transmission pathways



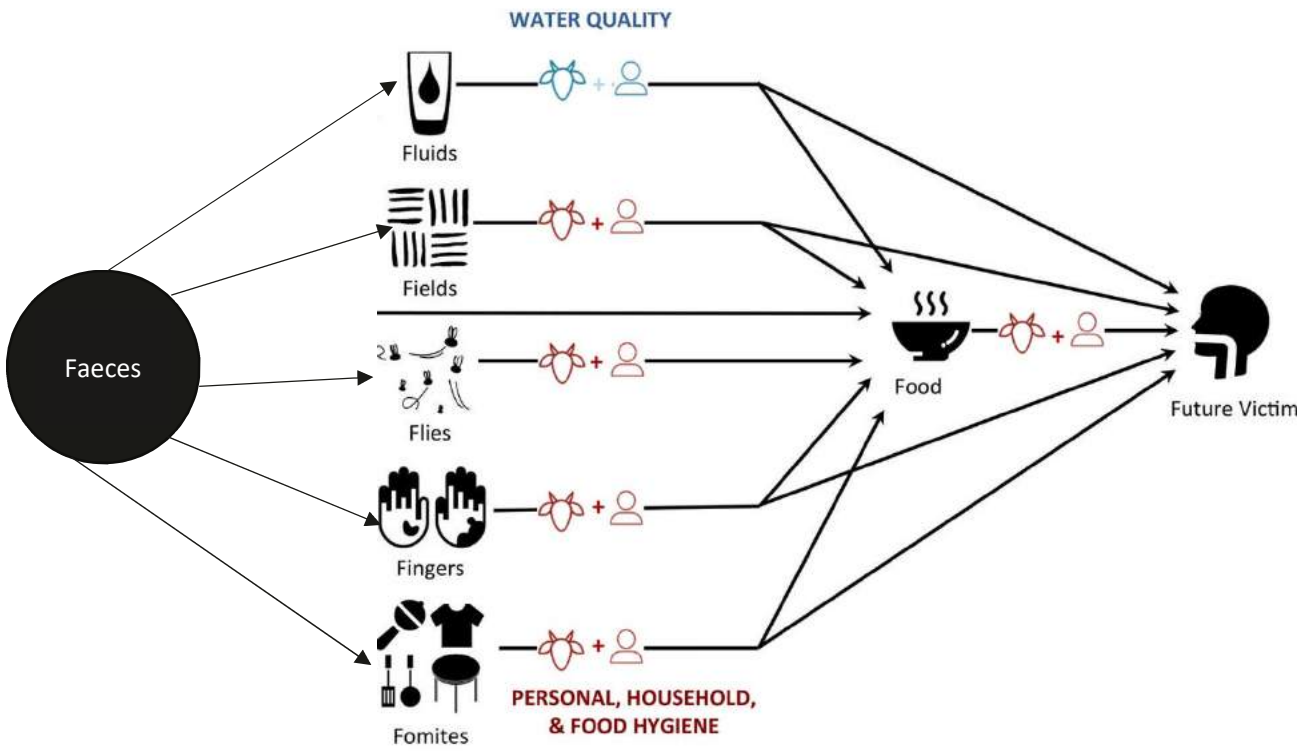
Source: Wagner and Lanois, 1958

What is the Purpose of Tutorial 2?

- To understand key pathways for transmission of faecal contamination
- To identify critical points on the transmission pathway

What are faecal transmission pathways?

It describes a particular route through which faeces or faecal matter moves from its source (one person) to the mouth of another person.



Activity 1 – A practical description of faecal contamination pathways

Looking at Fingers and Fomites in the figure above, describe ways in which they can become contaminated by human faeces.

Activity 2 – Critical points on a faecal contamination pathway.

Think about the faecal contamination pathways we have discussed today. Identify points that are most critical in the transmission of faecal contamination from source to a future victim.

Notes

Homework 2

In 200 words, discuss possible transmission pathways in a fast-food restaurant of your choice.

Tutorial 3 – Sanitation behaviour and impact on contamination transmission

Source: Water Sanitation and Hygiene Advocacy

What is the Purpose of Tutorial 3?

- Understand how sanitation behaviour impact on exposure to faecal contamination
- Learn about different sanitation systems

Following presentation

Activity 1- sanitation systems and human behaviour

Think about the different sanitation systems you have ever used. In using these, what behaviours could lead to faecal contamination?

In pairs, discuss your points

Share with the group

Behaviour and exposure to faecal contamination

We all have a responsibility to behave in a way that ensures others and ourselves are not exposed to faecal contamination. This would ensure that pathogens in faeces are safely contained and transported safely away from people.

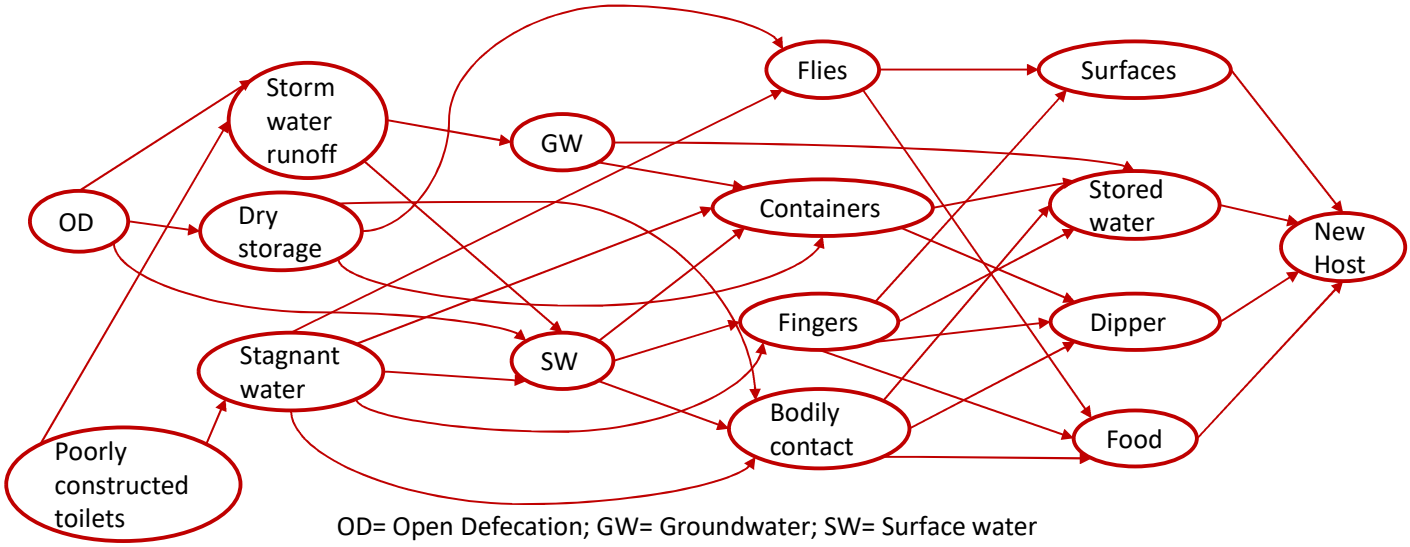
Activity 2 – Design of sanitation systems and impact on faecal contamination

Following our discussion so far today, how do you think the design of our sanitation systems prevent faecal contamination transmission

Homework 3

In 200 words, discuss the impact of sanitation behaviour on the transmission of faecal contamination.

Tutorial 4 – Mapping faecal contamination pathways



Example faecal contamination map -Author's own

What is the Purpose of Tutorial 4?

- To learn how to map faecal contamination in a setting

Following the presentation

Activity 1 – Practical mapping of faecal contamination – chose scenario

Working in pairs, choose a local community space and map plausible faecal contamination for it. List behaviours that can potentially lead to the transmission of faecal contamination in your chosen space.

Activity 2 – Practical mapping of faecal contamination – given scenario

Dave has been out walking his dog in the park. His dog did a poo but almost at the same time he had a phone call from his best mate Isaac who wants to see him straight away. Dave leaves without cleaning up his dogs mess. Map out possible ways in which the dog poo can go from that field to a human mouth.

How would this be different if Dave cleaned the poo but did not wash his hands?

Homework 4

In your own words, is it necessary to map faecal contamination? Justify your answers.

Tutorial 5 – Professionals involved in reducing impact of faecal contamination and course recap

What is the Purpose of Tutorial 5?

- To learn the role of key professionals in the interception of faecal contamination
- Understand how careers in the selected professions are developed

Activity 1 – Professionals involved in intercepting faecal contamination

Looking back at all we have done on the course so far, discuss in pairs, professionals that are involved in careers that help intercept faecal contamination transmission pathways and make a list

Share and discuss your list with the group.

Activity 2 – Careers and university education

Working independently, think which of the identified professions require a university education.

Share your thought with the group.

What career are you looking to follow in the future? Share with the group.

Homework 5 - Final assignment

This assignment is your opportunity to show all the new shills you have gained and practiced over the past few weeks. It will be marked following the mark scheme shown on page 6. Your commitment throughout the course will be taken into consideration too. You will have plenty of time to complete this assignment and will receive feedback to help you improve and aim for the top mark at the next tutorial.

In 2000 words, write a report to addressing the points below:

i. Describe the importance of faecal contamination pathways
ii. Choose a building in your school and map plausible faecal contamination pathways and contamination hotspots.
iii. Propose strategies that can be used to reduce exposure to faecal contamination in the school

You should use appropriate vocabulary you have learned. You can use online resources but do not forget to reference this and NEVER COPY AND PASTE. See Appendix 1 for more guidance on referencing.

Tutorial 6 – Feedback tutorial

What is the Purpose of Tutorial 6?

- To receive feedback on final assignments.
- To share examples of best practice with the other pupils in your group.
- To write targets for improvement in school lessons.
- To reflect on the programme including what was enjoyed and what was challenging.

Final assignment feedback

What I did well…	What I could have improved on…
•	•
•	•
•	•

My target for future work is…

Tutorial 7 – Feedback tutorial

What is the Purpose of Tutorial 7?

- To receive feedback on final assignments.
- To share examples of best practice with the other pupils in your group.
- To write targets for improvement in school lessons.

To reflect on the programme including what was enjoyed and what was challenging.

Final assignment feedback

What I did well…	What I could have improved on…

Reflecting on Uni Pathways

What did you most enjoy about Uni Pathways?

What did you find challenging about the programme?	How did you overcome these challenges?

On the computers, complete the post Self Evaluation Forms. This is similar to the one completed at the beginning of the course.

Appendix 1 – Referencing correctly

When you get to university, you will need to include references in the assignments that you write, so we would like you to start getting into the habit of referencing in your Brilliant Club assignment. This is really important, because it will help you to avoid plagiarism. Plagiarism is when you take someone else's work or ideas and pass them off as your own. Whether plagiarism is deliberate or accidental, the consequences can be severe. In order to avoid losing marks in your final assignment, or even failing, you must be careful to reference your sources correctly.

What is a reference?

A reference is just a note in your assignment which says if you have referred to or been influenced by another source such as book, website or article. For example, if you use the internet to research a particular subject, and you want to include a specific piece of information from this website, you will need to reference it.

Why should I reference?

Referencing is important in your work for the following reasons:

- It gives credit to the authors of any sources you have referred to or been influenced by.
- It supports the arguments you make in your assignments.
- It demonstrates the variety of sources you have used.
- It helps to prevent you losing marks, or failing, due to plagiarism.

When should I use a reference?

You should use a reference when you:

- Quote directly from another source.
- Summarise or rephrase another piece of work.
- Include a specific statistic or fact from a source.

How do I reference?

There are a number of different ways of referencing, and these often vary depending on what subject you are studying. The most important to thing is to be consistent. This means that you need to stick to the same system throughout your whole assignment. Here is a basic system of referencing that you can use, which consists of the following two parts:

1. **A marker in your assignment**: After you have used a reference in your assignment (you have read something and included it in your work as a quote, or re-written it your own words) you should mark this is in your text with a number, e.g. [1]. The next time you use a reference you should use the next number, e.g. [2].
2. **Bibliography**: This is just a list of the references you have used in your assignment. In the bibliography, you list your references by the numbers you have used, and include as much information as you have about the reference. The list below gives what should be included for different sources.

    a. **Websites** – Author (if possible), title of the web page, website address, [date you accessed it, in square brackets].

    E.g. Dan Snow, 'How did so many soldiers survive the trenches?', http://www.bbc.co.uk/guides/z3kgjxs#zg2dtfr [11 July 2014].

    b. **Books** – Author, date published, title of book (in italics), pages where the information came from.

    E.g. S. Dubner and S. Levitt, (2006) *Freakonomics*, 7-9.

    c. **Articles** – Author, 'title of the article' (with quotation marks), *where the article comes from* (newspaper, journal etc.), date of the article.

    E.g. Maev Kennedy, 'The lights to go out across the UK to mark First World War's centenary', Guardian, 10 July 2014.

Notes

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Key Stage 4 Programme

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