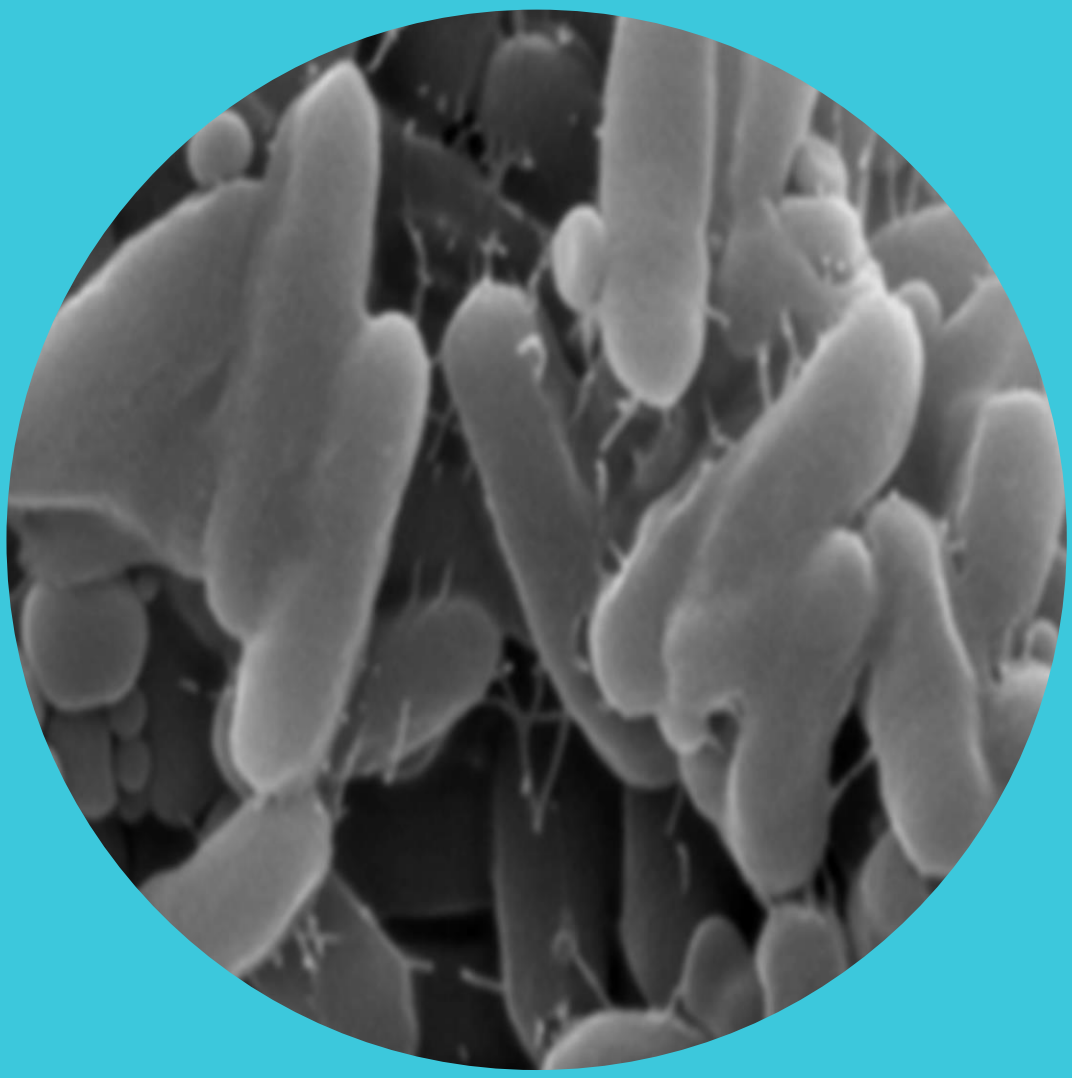
Researchers in Schools



The hysteria about deadly Listeria

Key Stage 4 Programme

Pupil Name

Coursebook Designed by **Dr Ogueri Nwaiwu**

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Cover Photograph: Electron micrograph (x50, 000) of *Listeria monocytogenes* strain 1040S from Dr Nwaiwu collections.

Uni Pathways launch event

Welcome to Uni Pathways! We are delighted to be able to launch the Uni Pathways programme with you. We hope that you are ready to embark on your Uni Pathways journey and that you enjoy the video.
You will be asked to pause the video at times to complete some work in this workbook, so make sure you have a pen / pencil to hand when you start the video.

By the end of the video, you will have

- Learnt about what studying at university means
- Learnt about some of the skills that you will develop during Uni Pathways
- Heard from pupils who have participated in Uni Pathways or The Scholars Programme (which is the same programme!)
- Heard from current university students talking about what life is like at university

If you are in school your teacher will play the video. If you are at home and logged in to a session with your teacher, your teacher will play the video and show it to you. If you are participating independently your teacher will email you the link to the video or the video file. There are opportunities for you to answer some questions, and you will be told when to pause the video to answer them.

Introduction to Uni Pathways

1. Write down what you think a supra-activity is

_____
_____
_____

2. Independent learning is

_____
_____
_____

3. Write down in your own words what resilience means, and come up with a different example to the one mentioned in the PowerPoint.

_____
_____
_____
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4. Why do you think analysis and evaluation skills are useful in your academic career? _____
_____
_____
_____
_____
_____

5. Why do you think analysis and evaluation skills are useful in life in general? _____
_____
_____
_____

6. What are the different types of learning that university students do?

Pupils' experience of Uni Pathways
You will now watch some pupils talk about their experience of learning a PhD topic and producing a final assignment. Some may refer to The Scholars Programme rather than Uni Pathways. As you heard in the introduction PowerPoint, The Scholars Programme is a very similar programme to Uni Pathways. Listen carefully and then respond to the questions below. Be prepared to share some of your responses with your peers.

1. How did the pupils describe talking about writing a long essay for their final assignment?

2. Write down something that one of the pupils mentioned was particularly interesting in their course.

3. What were some challenges that the pupils met?

Virtual campus tours
You will now go on a virtual tour of some universities! Once you have seen some of the university campuses, respond to the questions below.
Note down something that you liked out of any of the campus tours you saw. It may be a particular building, space, city etc.

1. Were there any similarities between the different university campuses? If so, what are the similarities?

2. If you had to pick one of those universities to go and visit in person, which one would it be and why?

3. Note down some of the societies that you could join at different universities

Meet university students!
You are about to virtually meet or hear from some current university students.
If you are virtually meeting them, think about what questions you would like to ask the students, share your questions with a partner and note those questions down in the space below.

If you are not meeting them but watching some videos that they have made, use the space below to note down what else you would like to find out about university. You can then ask your teacher during Uni Pathways tutorials!

Reflection
Congratulations on completing the launch of the Uni Pathways programme. Before you go, take some time to reflect on what you have learnt by answering the following questions:

1. Are there any aspects of university style learning that you would look forward to? If so, what are they?

2. What challenges do you think students face when learning at university? How would you try to overcome these challenges?

3. What skills do you hope to develop during your Uni Pathways course?

4. What part of Uni Pathways seems the most challenging for you?

5. What are you most looking forward to about Uni Pathways?

Timetable and Assignment Submission

Timetable – Tutorials

Tutorial	Date	Time	Location
1	19 March 2021	15.15	Rm S4 D/Academy
2	26 March 2021	15.15	Rm S4 D/Academy
3	April 2 2021	15.15	Rm S4 D/Academy
4	April 9 2021	15.15	Rm S4 D/Academy
5	April 16 2021	15.15	Rm S4 D/Academy
6 (Feedback)	April 23 2021	15.15	Rm S4 D/Academy
7 (Feedback)	April 30 2021	15.15	Rm S4 D/Academy

Timetable – Homework Assignments

Homework Assignment	Description	Due Date
Tutorial 1 (Baseline assignment)	Baseline assignment on overview of *Listeria*.	26.03.2021; 15.30
Tutorial 2	How to identify *Listeria*.	02.04.2021; 15.30
Tutorial 3	Mode of *Listeria* infection.	09.04.2021; 15.30
Tutorial 4	Properties of *Listeria* extracellular polymer.	16.04.2021; 15.30
Final assignment	What can we do to prevent *Listeria* food outbreaks? A written assignment of 1500-2000 words.	23.04.2021; 15.30

Assignment Submission – Lateness and Plagiarism

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

Course Rationale

Listeria is a food bacteria or bug with devastating consequences and affects mainly pregnant women, the elderly, those living with HIV, and neonates (new babies). This course will explore the world of the bacteria *Listeria*. You will learn its history, the important species of the bacteria, how new strains developed, and how to identify the organism. You will also learn the mode of infection and the properties of the bug that enables the survival from farm activities. Another leaning will be to understand how it escapes food-processing plants before colonising food products. How the organism attaches upon surfaces and a wide range of chemical analysis for evaluating the properties of excretions from its surface shall be discussed. Public Health England, the executive agency of the Department of Health and Social Care in the United Kingdom wants the public to be more vigilant and understand how diseases transmit to prevent outbreaks. This course will improve your understanding of disease transmission and will be helpful for those who are considering studying courses like medicine, microbiology, biochemistry epidemiology or life sciences at the University.

Uni Pathways Mark Scheme 2020 – science-based assignments

	Subject Knowledge	Critical Thinking	Written Communication
1st	The work shows a depth of knowledge and understanding of key concepts and scientific methods, through engaging with relevant sources. Knowledge is used to build and support highly effective scientific arguments and explanations.	Analyses key scientific evidence, arguments, and reasoning. Interprets meaning and makes connections. Identifies and critically evaluates key scientific arguments and evidence, deciding on their credibility, strength, and relative significance, drawing convincing conclusions.	The work has a coherent flow and is well structured. The writing style is appropriate; scientific language and key scientific terms are used accurately and effectively to support the arguments and explanations made. There are no, or very few, errors in spelling or grammar. Consistent referencing, appropriate paragraphing and use of correctly labelled tables and graphs matching the style taught in the course.
2:1	The work shows an understanding of key concepts and scientific methods, drawing on relevant sources. Knowledge is used to build and support effective scientific arguments and explanations.	Analyses relevant scientific evidence, arguments, and reasoning. Identifies and critically evaluates relevant scientific arguments and evidence, deciding on their credibility and strength, drawing reasonable conclusions. Shows some understanding of the relative value of evidence and arguments.	The work is well-structured. The writing style is appropriate; scientific language and key terms are used correctly. There are a few errors in spelling or grammar. Mostly consistent referencing and use of tables and figures; matching the style taught in the course.
2:2	The work shows an understanding of key concepts and scientific methods, with no major misconceptions. Beginning to apply this knowledge to build and support effective scientific arguments and explanations.	Identifies and uses basic scientific evidence, arguments, and reasoning. Showing some understanding of the quality of scientific arguments and evidence. Not yet showing an understanding of the relative value of evidence and arguments.	The work has some structure. The writing style can sometimes be informal; occasionally scientific language and key terms are not used when it would be appropriate to do so. There are some errors in grammar and spelling do not get in the way of communicating the content. Referencing has some consistency; matching the style taught in the course Limited use of tables and graphs.
3rd	Shows a developing understanding of key concepts and scientific methods, with some misconceptions. Does not yet apply this knowledge to build and support	Beginning to analyse scientific evidence, arguments, and reasoning. Describes evidence and arguments, while not yet evaluating them.	The grammar, spelling, style, and structure of the work need improving to communicate ideas to the reader. Scientific language, key terms and

	scientific arguments and explanations.		references are not always used correctly. Limited, or no use of tables and graphs.

Baseline Assignment (essay based): Pupil Feedback Report

Name of Pupil	
Name of School	
Name of RIS teacher	
Title of Assignment	

How your assignment is graded:

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

Marks

OVERALL MARK / 100		FINAL MARK / 100 (including any deductions)	
DEDUCTED MARKS		FINAL GRADE	

If marks have been deducted (e.g. late submission, plagiarism) the teacher should explain in this section:

Mark Breakdown and Feedback

Subject knowledge	
	mark
Critical thinking	
	mark
Written communication	
	mark

Final Assignment (essay based): Pupil Feedback Report

Name of Pupil	
Name of School	
Name of RIS teacher	
Title of Assignment	

How your assignment is graded:

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

Marks

OVERALL MARK / 100		FINAL MARK / 100 (including any deductions)	
DEDUCTED MARKS		FINAL GRADE	

If marks have been deducted (e.g. late submission, plagiarism) the teacher should explain in this section:

Mark Breakdown and Feedback

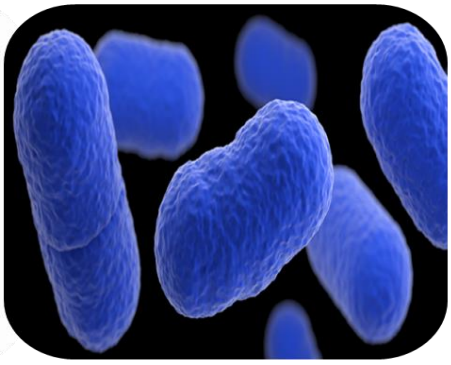
Subject knowledge	
	mark
Critical thinking	
	mark
Written communication	
	mark

Subject Vocabulary

Word	Definition	In a sentence
Listeria	A bacterium that causes an illness called listeriosis	John fell ill because he ate food that contained Listeria
Infection	An infection is the invasion of an organism's body by disease-causing agents	John's was taken to hospital with suspected Listeria infection
Food poisoning	Food poisoning occurs when you consume foods contaminated with bacteria, viruses, or parasites.	It was found that John's food poisoning was due to sandwich contaminated with Listeria
x-ray diffraction	a technique used to determine the atomic and molecular structure of materials	The x-ray image of DNA helped in its discovery
Fourier Transformed Infrared spectroscopy	Another technique used to determine ions and molecules of a material	The material he submitted foe analysis contained hydrogen ions
Cell membrane surface	A very thin membrane, which surrounds the cytoplasm of a cell and controls the passage of substances into and out of the cell.	We found potassium inside Listeria cells because it passed the cell membrane
Stain	Used to differentiate bacteria	Some bacteria turn out red or blue when stained.
Transmission	Transmission is the passing of a disease from an infected host individual or group to a particular individual or group	The bus driver was COVID-19 positive and he transmitted the disease to all passengers when he failed to wear a mask
Species	Different types of an organism	Listeria has many species
Listeriosis	The name of the disease caused by Listeria	John was confirmed with Listeriosis after tests in the hospital

Tutorial 1 – History of Listeriosis

Professor Murray; Source: See ref [1]



https://www.cdc.gov/listeria/index.html

https://www.foodsafety.com.au/blog/a-lesson-in-listeria-everything-you-need-to-know

What is the purpose of Tutorial 1?

Learning outcomes: By the end of Tutorial 1: I will be able to

- Mention the scientist who discovered *Listeria* and the year of discovery
- Explain the discovery of the bug briefly

Starter Activities:

1. Getting to know you. Spend 1 minute each to introduce ourselves

2. Answer the following questions below to test current *Listeria* knowledge (Not graded).

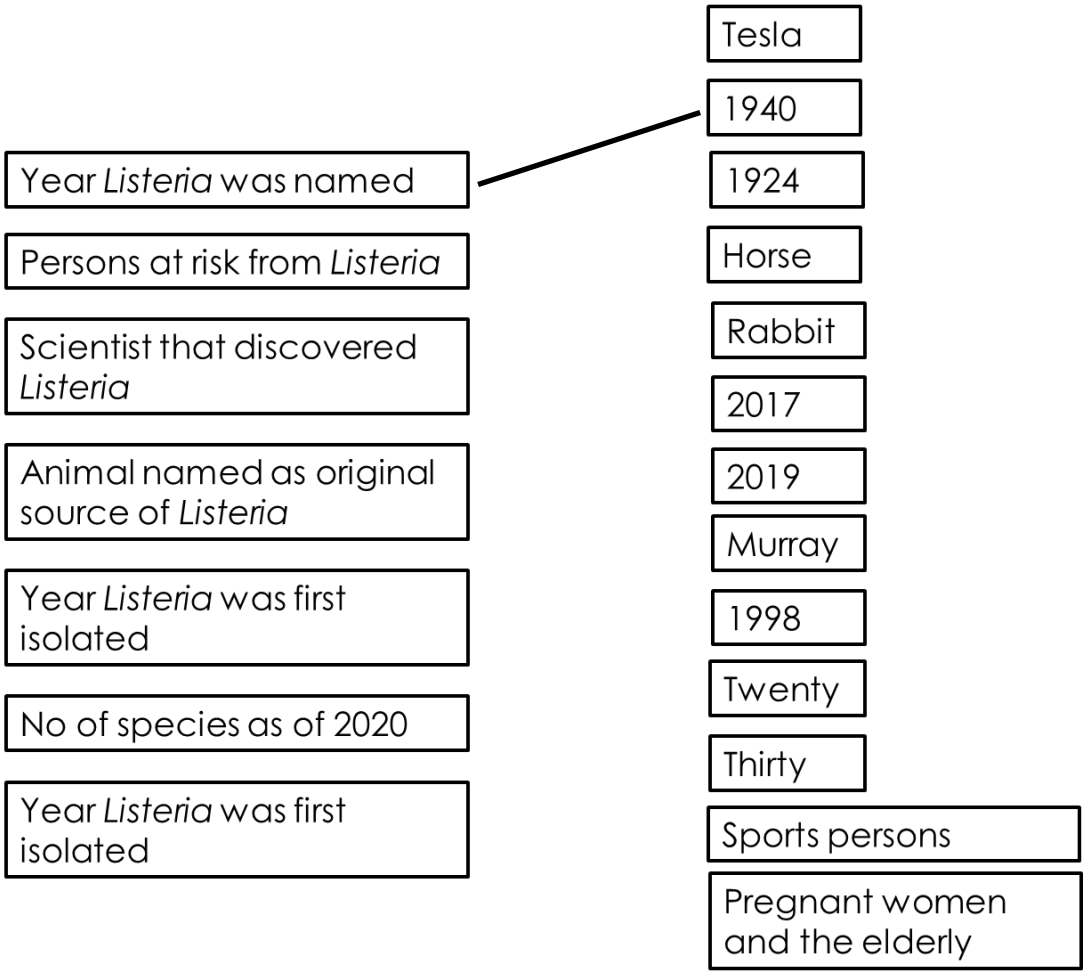
(i) What type of microorganism is Listeria?	(a) Bacteria (b) Yeast (c) Mould (d) Virus *Circle one*
(ii) Is Listeria a super bug?	
(iii) Why should we be bothered about *Listeria?*	
(iv) *Listeria* can grow under refrigeration temperatures. True or False?	
(v) The death rate of *Listeria* is higher than some organisms that occur more in foods. True or False	

Activity 1 – Spend 5 minutes reading the brief history of *Listeria* below and then complete the activity in Figure 1.

In 1924 [1], Murray, a scientist, found bacteria in the blood of laboratory rabbits but he could not assign these to any type of small life known at that time. Hence, he called this new agent Bacterium monocytogenes. Even before Murray, other scientists had already grown these particular bacteria without having a clear classification. In 1940, Pirie [2], another investigator, named it *Listeria*. Over the years, many species of *Listeria* have been discovered. A comprehensive review of the current number of species has been carried out and it was shown [3] that we now have 20 species of the bacteria. The biggest outbreak in human history

occurred in South Africa in 2017 when up to 200 fatalities were recorded from over 1000 infected individuals. In this workbook, *Listeria monocytogenes* shall be regarded as *Listeria*.

Figure 1. Match the boxes on the left with the ones on the right. One example has been done for you.



Activity 2. Time with 'Professor' Dave. Bacteria Infection in Humans
Watch the video and write your understanding of the words listed below.

https://www.youtube.com/watch?v=FeFKAl9KyMg

1. What is Incubation period?	
2. What is Infectious diseases?	
3. Antibiotics	
4. Some bacteria symptoms can last for years	
5. Common cold can last for how long	
6. Can water help spread *Listeria*? Yes or No?	
7. Name two living reservoir of bacteria	

Activity 3 - Group discussion on homework (Baseline assignment -Overview of Listeria: Do a little research online. Everybody is allowed to ask questions.

Write 500 words on important facts about Listeria. Include:

(i) A brief mention of the scientist that discovered *Listeria* and how many species we have now.
(ii) One or more tests to identify the organism
(iii) Foods that may harbour *Listeria* and how it infects humans (mode of infection).
(iv) Listeria's features/structures that helps it attach e.g. extracellular substance, flagella etc.
(v) The precautions for preventing outbreaks.

See mark scheme on page 3 for more success criteria

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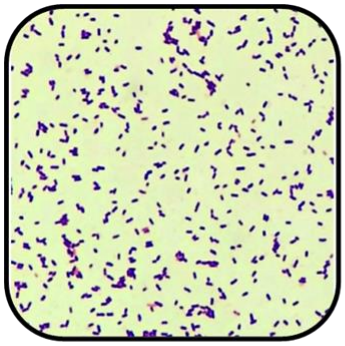
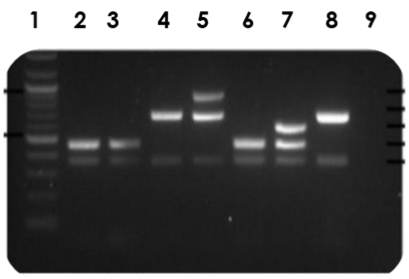
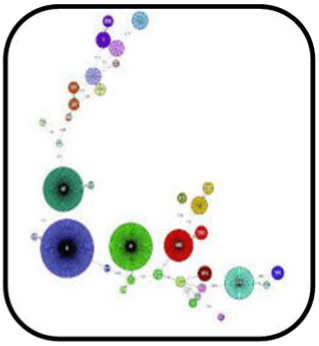
Tutorial 2 – Identification and typing of *Listeria*



Gram stained *Listeria monocytogenes* short rods. Source [4]



Polymerase chain detection of different genes. Source [5]



Grouping by Sequence types. Source [6]

What is the Purpose of Tutorial 2?

Learning outcomes:
By the end of Tutorial 2, I will be able to

- Mention how many species we have now
- List three presumptive biochemical tests for *Listeria*
- Describe one basic test for the organism

Starter

Since the discovery of *Listeria*, many more species and strains have been identified. How did this happen? Everybody will give one reason. No right or wrong answers.

Activity 1 – Spend 5 minutes reading the methods of identification below, and then use the passage to answer the questions that follow.

In the past classical biochemical tests were used to identify *Listeria* like other bacteria. The advent of molecular biology converted biochemical tests like Gram stain, catalase tests etc. to preliminary tests. This is usually performed together with an examination of other morphological characteristics under the microscope. To confirm *Listeria* after the preliminary observations, cells are grown on appropriate media or material after which, DNA is extracted and used for molecular analysis like polymerase chain reaction (PCR) and genome sequencing. Many food-processing plants do not have the facility for PCR and genome sequencing. Hence, they use mainly indicator growth media to test for *Listeria*. If there is a colour change in the medium used for growth, they presume the presence of *Listeria* until confirmation by molecular methods. The health system in the UK has incorporated PCR methods for definitive identification of *Listeria* and other bacteria. Some tests to note are Gram, catalase, black colour in Oxford media, motile (it can move), flagella (a sort of antenna) and ability to digest blood.

1. How many species of listeria do we have?

2. List four tests for identification of *Listeria*.

   i) ……

ii) …….....

iii)……

iv) ……

Activity 2

In pairs, discuss why tests for *Listeria* are important. Think of the pharmaceutical, food and health industry. Individuals in each pair will take turns to inform the outcome of discussions to the class

Activity 3

Watch the following videos. Take notes. What do you notice in the laboratory surroundings? Take note of how biochemical testing is used. How will you describe DNA bands in a gel? Each person will give feedback to the class.

(i) Use of biochemical testing for the identification of pathogenic bacteria https://www.youtube.com/watch?v=RpFnwXMyC-w
(ii) DNA extraction from Blood https://www.youtube.com/watch?v=gmNw6CWtN5k

Notes

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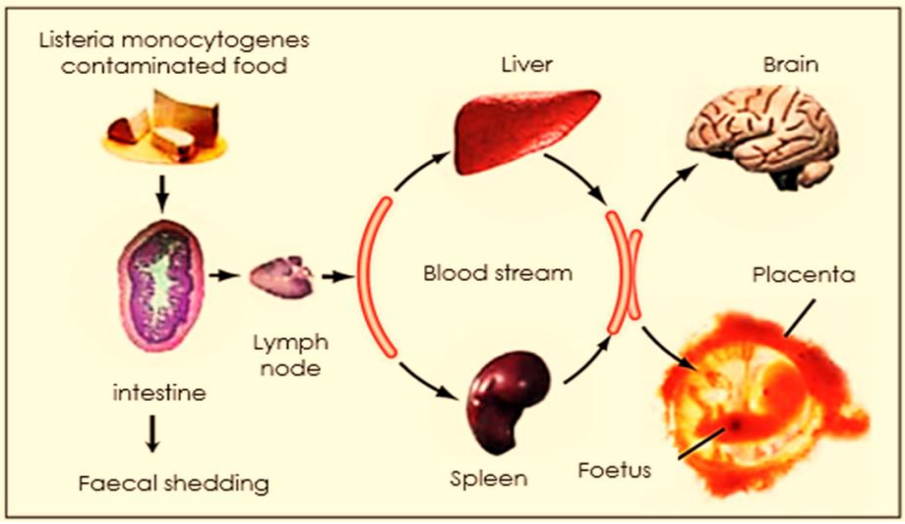
Activity 4: Homework- Test for Listeria; Ask questions – Not more than 200 words

Choose one biochemical test from Activity 1, and write briefly about the science behind it. Success criteria will be the ability to:

i) Mention chemicals involved
ii) Explain what a positive and negative test look like
iii) Explain the chemicals reaction that takes place

Tutorial 3 – *Listeria* Mode of infection



Source: Reference [7]

What is the Purpose of Tutorial 3?

Learning outcomes: By the end of Tutorial 3, I will be able to

- Explain briefly how it infects humans
- Which organs are involved
- Reasons for persistence

Starter Activity

Answer true or false to the following statements. Circle T or F.

1. When Oxford media is used for *Listeria* identification, a colour change shows on the media used. T / F
2. Listeria has a rod shape when stained and viewed under the light microscope. T / F
3. Some genes specific to *Listeria* are identified using the polymerase chain reaction. T / F
4. Sequence typing provides more information than biochemical tests. T / F
5. Gloves are during DNA extraction to prevent contamination. T / F

Occurrence of *Listeria*
Activity 1

In pairs, discuss how *Listeria* infects humans. The expectation is for each person to give a brief narrative to the class in the next five minutes.

Points to help your thoughts.

- Listeria occurs commonly in soils, associated with decaying plant matter
- Can naturally contaminate any plant product in contact with soil
- Some evidence that *Listeria* can become internalized into plant tissue

- Washing will not remove cells
- It can continue to grow in the refrigerator
- Persistent in food processing environments
- Transferred processing equipment to the food product

Activity 2- Watch the following videos and take a few notes on how *Listeria* infects

(i) *Listeria monocytogenes*, a unique model in infection biologyhttps://www.youtube.com/watch?v=dlAPOa_QXAo

(ii) What is *Listeria* infection? (Foodborne Bacterial Illness) https://www.youtube.com/watch?v=LvLT5e31KPQ

Activity 3- In six minutes, describe *Listeria* transmission in humans from farm to fork,

Hint: see points listed in Activity 1 and anything gained from the video

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Activity 4- Homework: Explain how *Listeria* invades human cells to cause infection. It may be helpful to watch the videos in activity 2 again but do not include too many scientific terms. Success criteria will include.

1. Mention of the first organ whose barrier is broken.
2. Naming other organs that could be affected once infection sets in.
3. Explaining why *Listeria* is proposed as an infection model.

Tutorial 4 – Listeria food outbreaks

Picture source: https://www.foodmanufacture.co.uk/Article/2019/06/28/Listeria-linked-sandwich-maker-cleared-to-restart-production

What is the Purpose of Tutorial 4?

Learning outcomes: By the end of Tutorial 4, I will be able to

- Describe how food outbreak occur from processing to symptoms development
- List 3-5 foods implicated in food outbreaks

Starter

In pairs, discuss why Listeria persists in the food-processing environment. Think of ways to stop the infection. Each person will give the class feedback using your ideas or any of the points below as background. Use the next three minutes to think of an answer.

Points to note

- Listeria can grow on cut, minimally processed fruit or vegetables
- It can utilize sugars released from rotting wood
- Sometimes it is localised to an area between ovens and a chill room
- Slamming of doors releases aerosols containing *Listeria*
- Grows on product contact surfaces
- Poor equipment sanitation especially during long production runs
- Unsafe handling after purchase can encourage *Listeria* growth

Poor storage of food products can cause illness. Popular foods that can transmit Listeria include, sandwiches, chicken, pate, vegetables, sausages, meat, fish and most cooked food. **Activity 1** Make one sentence using each word in the rectangle. The sentence must have the word *Listeria* in it.

Example: Poor <u>storage</u> of food can cause *Listeria* Infection

Food Recall	Listeriosis	Storage	Supermarket	Processing facility

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Activity 2.

Link: https://www.youtube.com/watch?v=tgPyzHMiWE4

Watch the video with the link above and listen to a discussion titled 'The reason behind the increase in *Listeria* outbreaks in food'. Make a note of

(i) The cause of the increase in *Listeria* outbreaks
(ii) The preventive strategies suggested.

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Activity 3: In pairs, compare notes made in Activity 2 and add anything you missed to your notes. The plenary session will be another opportunity to add more to your notes.

Activity 4 - Homework. Read the scenarios below and answer the questions that follow.

Scenario 1

Carla Dukeries is pregnant lives near the academy and one day after a walk in the park, she went home and ate leftover sandwich she left in the fridge 3 days ago.

Scenario 2

Ollerton food packaging company received a supply of sausages during a period they were refurbishing the refrigeration units in one of the chill rooms.

Two weeks later

Jane and 26 residents were rushed to Queens Medical Centre with muscle ache, loss of balance, fever, and convulsion.

Questions

Have Jane and other residents contracted Listeria? Yes/No?

If Yes, why? What is the possible cause of Carla's illness and that of the 26 Ollerton residents?

Is this an outbreak? If yes why.

List actions that can prevent *Listeria* infection in scenarios 1 and 2.

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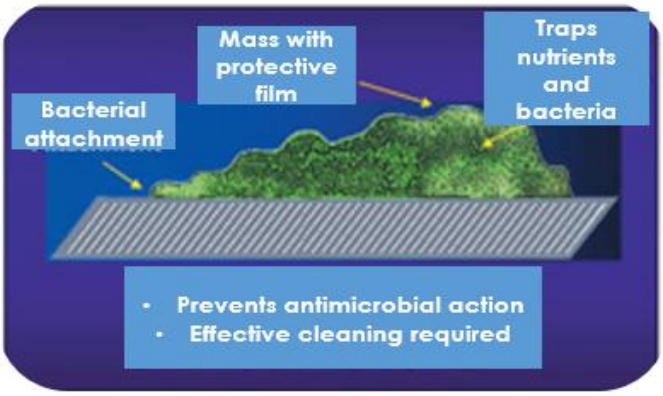
Tutorial 5 – Properties of *Listeria* extracellular polymeric substance (EPS) that enable attachment to surfaces



Source: Richard F. Stier https://www.foodsafetymagazine.com/magazine-archive1/februarymarch-2005/beating-back-biofilms-in-food-processing/

What is the Purpose of Tutorial 5?

Learning outcomes: By the end of Tutorial 5, I will be able to

- List a few biomolecules that make up the surface of *Listeria* EPS
- Describe 3-5 chemical tests to determine its composition
- Know exactly what I need to do for the final assessment

What is EPS?

You have drawn cells in the past and labelled them. You also know the functions of the organelles like cell membrane. Bacteria can make slimy substances on the cell membrane. This is called extra cellular polymeric substance (EPS).

- Listeria can make polymer-like materials on their cell surface that can help attachment to surfaces especially in food processing facilities

- These materials are negatively charged in contrast to processing surfaces which may be positively charged

- The EPS is known as the house of biofilms [8] and helps protect the biofilms. Biofilms form on a surface when bacteria cells attach and accumulate.

- Extraction and characterization of the EPS is normally performed with a wide range of techniques

- Cells can be grown overnight, and then precipitated out. The amino acid, sugar and lipids composition can be quantified using standard methods outlined by kit manufacturers.

- Functional groups, which can help show the type of molecules present in the EPS, can be determined using Fourier Transformed infrared spectroscopy and the crystalline structure could be established using x-ray crystallography [9]

- The EPS is also regarded as the biofilm glue

Activity 1 – Name three biochemical molecules found in *Listeria* EPS

1. .....

2. .....

3. .....

Activity 2 Group Discussion: In pairs, discuss the following. You will give feedback to the class every three minutes.

1. How will EPS affect equipment sanitation in food production facilities?
2. Why is it important to know the components of *Listeria* EPS
3. Is the hysteria over *Listeria* infection justified?

Activity 3 – Plenary: How do we know a surface is clean? Everyone will take a turn to give an answer

Activity 4: *Listeria Game Show*

The class will be divided into 2 teams and the teacher will ask 15-20 questions from previous tutorials. The team with the most answer wins.

Activity 5: Final Assignment Discussion. Ask questions on anything that is not clear.

Notes from discussion:

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.....
.....
.....
.....

Final assignment: What can we do to prevent *Listeria* food outbreaks?

Write an essay of 1500-2000 words responding to this question. Success criteria will include capturing all the elements of the five tutorials. Also, see page 4 for more success criteria.

Assignment Structure

A guided practice on the final assessment shall be given in our Activity 5 discussion to help you capture all the elements of the homework. Take note of the following to help you produce a good draft.

- Organize your work in numbered sections (This will be demonstrated).
- The essay should be written in a formal academic style.
- The expectation is that you shall include a brief introduction on what the essay will contain, and then add all the homework as subsections. This will enable you to get a

draft quickly, which you can build on. Each tutorial has key features that can play a role in preventing *Listeria* outbreaks and these shall be pointed out.

- A short discussion section in the essay may be beneficial.
- Use key words from the glossary to demonstrate that you know what they mean in the context of the tutorial.
- You are free to include material from other sources but make sure you reference them.
- In every section or subsection ensure you include one or more key points, support it with evidence and explain why the point is important.
- You are free to include illustrations or diagrams (Referenced for copyright purposes. We will discuss this).
- Do not forget to carry out a spell check.
- Include a conclusion that summarizes the essay.

References used in this workbook

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9. Nwaiwu, O. (2011). The effect of growth conditions on the surface properties of *Listeria monocytogenes.* PhD thesis, School of Biosciences, University of Nottingham, United Kingdom. https://eprints.nottingham.ac.uk/13341/

Tutorial 6 – Feedback tutorial

What is the Purpose of Tutorial 6?

- To receive feedback on your final assignment
- To respond to the feedback from your Uni Pathways teacher
- To write targets for improvement on your final assignment

Final assignment feedback from your Uni Pathways Teacher

(Remember to look at the mark scheme to help you understand what you have done well so far, and how you can do even better in your final assignment)

Here are three things that my Uni Pathways Teacher thought I did well in my draft assignment
•   •   •

Here are three things that my Uni Pathways Teacher thinks that I could do to get a higher mark in my final assignment
•   •   •

Tasks from my Uni Pathways Teacher to do during the feedback tutorial to help me improve
•   •   •
My response:

Actions I will take to improve my final assignment after this tutorial…
•   •   •

Hand in date for my final assignment:	

Tutorial 7 – Final tutorial

What is the Purpose of Tutorial 7?

- To receive feedback and a grade on your final assignment.
- To reflect on the programme including what you enjoyed and what was challenging.
- To ask any questions you may have about university.

Final assignment feedback from my Uni Pathways Teacher

Final mark:	University style grade:
Feedback: Here are three things that my Uni Pathways teacher thought I did well in my final assignment • • •	

Here are three things that my Uni Pathways teacher thinks I should remember for when I am doing this kind of study in the future
• • •

University

What questions do you still have about University after taking part in Uni Pathways?
•   •   •

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?
• • •	• • •

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 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. 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 from losing marks or failing, due to plagiarism.

When should you 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 several different ways of referencing, and these often vary depending on what subject you are studying. The most important 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 in 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), the 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, the title of the 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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