



ORANGE HIGH SCHOOL

ASSESSMENT TASK NOTIFICATION

Subject	Biology
Task name	Depth Study Research Report
Year	12 (Higher School Certificate)
Weighting	40% (10% Knowledge, 30% Skills)
Teacher	Boardman, Huggett, Loud
Head Teacher	Ms Huggett
Date given	Week 2B Term 2 2024
Date due	Wednesday 3rd of July - Week 10B Term 2 2024 -Part 1. Completed in class: HSC style questions -Part 2. Submission of research (physical copy) Submission of Podcast (Digital via Google Classroom)

Assessment Outline

Part 1:

- Students will complete questions in class based on the syllabus content and skill points from the next page
- Students will be assessed on their knowledge and how they can apply their researched information in given HSC style questions.

Part 2.

- Students will submit their researched information
- Students will need to submit a podcast- on google classroom (speak to teacher prior to submission if issues with updating)

Non-completion of Task:

If you know you are going to be away on the day that the task is due, you must make alternative arrangements with your classroom teacher beforehand. If you are away on the day the task is due, you must contact your classroom teacher or Head Teacher on your return to school make alternate arrangements. Documentation will be required in both cases.

Failure to follow the above procedures may result in a zero award.

Plagiarism:

Plagiarism - using the work of others without acknowledgement - will incur serious penalties and may result in a zero award. Any cheating will also incur penalties.

Failure to follow the above procedures may result in a zero award. The policies and procedures that are outlined in the HSC Assessment Book will be followed regarding the non-completion of assessments.

Outcomes Assessed

BIO 12-1 - Develops and evaluates questions and hypotheses for scientific investigation

BIO12 – 4 - selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media

BIO12 – 5 - Analyses and evaluates primary and secondary data and information

BIO12– 6 - Solves scientific problems using primary and secondary data, critical thinking skills and scientific processes

BIO12 – 7 - Communicates scientific understanding using suitable language and terminology for a specific audience or purpose

BIO12-14 - Analyses infectious disease in terms of cause, transmission, management and the organism's response, including the human immune system

Task Outline

This task will require you to do some research on an infectious disease in a human, animal or plant. You will be allowed to collate your notes and have them with you when you complete the written or online assessment.

You will need to:

- *Research information on how ONE named disease is transmitted. You will also need to research how the spread of this disease can be controlled, and how the immune system responds to this disease.*
- *Develop summary notes that are no longer than 2 double-sided A4 sheets (no smaller than size 10 font) to use during the written part of the assessment. You will be given marks for submitting your summary notes. These will be submitted on the day of the in-class assessment.*
- *Create a podcast about your chosen disease from the viewpoint of a selected stakeholder, based on a given scenario. This will be submitted on the same day as your research notes and in class assessment*
- *Use the information you have researched to answer a series of questions on the transmission and control of diseases. This will be a classroom component completed on the day of task submission.*

Your preparation research will address the following syllabus content and skill statements:

Inquiry question: How are diseases transmitted?

- Describe a variety of infectious diseases caused by pathogens, including microorganisms and non-cellular pathogens, and collect primary and secondary-sourced data and information relating to disease transmission, including:
 - Classifying different pathogens that cause disease in plants and animals
 - Investigating the transmission of a disease during an epidemic
 - Investigate modes of transmission of infectious diseases, including direct contact, indirect contact and vector transmission
- **Investigate the work of Robert Koch and Louis Pasteur, to explain the causes and transmission of infectious diseases, including:**
 - **Koch's postulates**
- Compare the adaptations of different pathogens that facilitate their entry into and transmission between hosts

Inquiry question: How does a plant or animal respond to infection?

- Analyse responses to the presence of pathogens by assessing the physical and chemical changes that occur in the host animal cells and tissues

Inquiry question: How does the human immune system respond to exposure to a pathogen?

- Explain how the immune system responds after primary exposure to a pathogen, including innate and acquired immunity

Inquiry question: How can the spread of infectious diseases be controlled?

- Investigate and analyse the wide range of interrelated factors involved in limiting local, regional and global spread of a named infectious disease
- Investigate procedures that can be employed to prevent the spread of disease, including but not limited to:
 - Hygiene practices
 - Quarantine
 - Vaccination, including passive and active immunity
 - Public health campaigns
 - Use of pesticides
 - Genetic engineering
- Investigate and assess the effectiveness of pharmaceuticals as treatment strategies for the control of infectious disease
- Investigate and evaluate the environmental management and quarantine methods used to control an epidemic or pandemic
- Interpret data relating to the incidence and prevalence of infectious disease in populations, for example:
 - Mobility of individuals and the portion that are immune or immunised

To help you with your research and notes:

The following information may help you collate your summary notes. Use the heading provided as a guide to your note taking.

How are diseases transmitted?

Identify a disease that affects humans/animals/plants

Identify the pathogen that causes this disease

Explain how this disease is transmitted

Describe the features of the pathogen that causes this disease that allow it to affect its hosts (what are its adaptations?)

What are Koch's postulates, could they be applied to your pathogen?

How does a plant or animal respond to infection?

Explain the chemical and physical changes that occur in the host when it is infected with this disease

How does the human immune system respond to exposure to a pathogen?

Explain the human immune response to this disease - in relation to a named human pathogen.

How can the spread of infectious diseases be controlled?

Describe the factors that can affect the local and regional transmission of disease

Identify two strategies that could be employed to prevent the spread of the chosen disease. Evaluate the effectiveness of these strategies

Investigate a pharmaceutical and treatment strategy for the disease in relation to a named human pathogen

Outline one environmental management strategy and one quarantine measure that could prevent the spread of this disease across a region. Justify the use of these strategies.

Collect and analyse data on the prevalence and incidence of this disease. Explain how this information may affect the measures used to prevent and control an outbreak of the disease.

To help with your podcast:

Podcasts are information in entertainment in bite size chunks - right at our fingertips. The format of a podcast allows listeners to delve into a variety of subjects. While many of us may not be inclined to sit and read a 2000 word length article, many will listen to a Podcast while doing other tasks such as commuting to work or completing housework (Forbes, 2018).

Task

You are to create a PODCAST maximum of 4 minutes. It needs to be submitted to your classroom teacher via the shared google classroom. More details to be provided by your classroom teacher.

Your presentation should be given from the viewpoint of the stakeholder you have chosen. In your presentation you need to outline the role you (as the stakeholder) would play in preventing the disease from spreading and becoming a pandemic.

You can invite a guest host onto your podcast - you should ALWAYS be the stakeholder.

Scenario

There has been an outbreak of one of the diseases you have researched in Orange, New South Wales.

There is concern that it will turn into a pandemic. You need to choose one of the following key stakeholders :

- Local council person (politician)
- Scientist
- Farmer
- Veterinarian
- Sale Yard Manager
- Journalist at a media outlet
- Other of your choice (must be approved by your classroom teacher)

Year 12 Depth Research Report- In class analysis and podcast 2024

** The rubric for Part 1- The in class class analysis rubric will not be provided before the task, as this would provide students information about the unseen material.

Outcome and component of task addressed	Extensive (A)	Thorough (B)	Sound (C)	Basic (D)	Limited (E)
BIO 12-7 Podcast	<p>4</p> <ul style="list-style-type: none"> • Clarity of speech is extensive and includes all below <ul style="list-style-type: none"> - Logical and coherent delivery - Clear structure, information well organised. Includes a clear introduction and conclusion. - Length is engaging - Sounds/volume enhance presentation - No background noise - Smooth delivery/well rehearsed in a conversational style - Expression and rhythm engaging - Highly effective enunciation and presented speech is intelligible. 	<p>3</p> <ul style="list-style-type: none"> • Clarity of speech is thorough and includes most below <ul style="list-style-type: none"> - Logical and coherent delivery - Clear structure, information well organised. Includes a clear introduction and conclusion. - Length is engaging - Sounds/volume enhance presentation - No background noise - Smooth delivery/well rehearsed in a conversational style - Expression and rhythm engaging - Highly effective enunciation and presented speech is intelligible. 	<p>2</p> <ul style="list-style-type: none"> • Clarity of speech is sound and 3-4 below <ul style="list-style-type: none"> - Clear structure, information well organised. Includes a clear introduction and conclusion - Length is engaging - Sounds/volume enhance presentation - No background noise - Smooth delivery/well-rehearsed in a conversational style - Expressions and rhythm engaging - Highly effective enunciation and presents speech is intelligible 	<p>1</p> <ul style="list-style-type: none"> • Clarity of speech is sound and 1-2 of Sound criteria are met 	<p>0</p> <ul style="list-style-type: none"> • Limited or no attempt

Year 12 Depth Research Report- In class analysis and podcast 2024

BIO 12-7 Podcast	2	1	0
	<ul style="list-style-type: none"> • Extensive articulation of scientific knowledge <ul style="list-style-type: none"> - Demonstrated understanding of endemic, pandemic, epidemic - Demonstrates knowledge of how disease is transmitted - Concepts presented are accurate and succinct - Science terminology is extensive, well explained and appropriate to audience 	<ul style="list-style-type: none"> • Thorough articulation of scientific knowledge <ul style="list-style-type: none"> - Demonstrated understanding of endemic, pandemic, epidemic - Demonstrates knowledge of how disease is transmitted - Concepts presented are accurate and succinct - Science terminology is extensive, well explained and appropriate to audience 	
BIO 12-7 Podcast	4	3	1
	<ul style="list-style-type: none"> • Demonstrated extensive knowledge of the key stakeholder <ul style="list-style-type: none"> - Applies own knowledge to view of stakeholder - Demonstrates clear understanding of the role of the stakeholder would play in reducing the risk to population 	<ul style="list-style-type: none"> • Demonstrated thorough knowledge of the key stakeholder <ul style="list-style-type: none"> - Applies own knowledge to view of stakeholder - Demonstrates clear understanding of the role of the stakeholder would play in reducing the risk to population 	<ul style="list-style-type: none"> • Demonstrated sound knowledge of key stakeholders. <ul style="list-style-type: none"> - Attempts to apply own knowledge to view of key stakeholder or - Attempts to demonstrate understanding of the role of stakeholder would play in reducing the risk to the population
			0
			Clarity

Year 12 Depth Research Report- In class analysis and podcast 2024

Outcome and component of task addressed	Extensive (A)	Thorough (B)	Sound (C)	Basic (D)	Limited (E)
BIO 12-14 Research Submission	<p>10-9</p> <ul style="list-style-type: none"> • Student has extensive information on each syllabus dot point. • Students have included references for all sources. • Within limit 2 x double sided A4 pages. 	<p>8-7</p> <ul style="list-style-type: none"> • Student have thorough information on each syllabus dot point. • Students have included references for all sources. • Within limit 2 x double sided A4 pages. 	<p>6-4</p> <ul style="list-style-type: none"> • Student have sound information on each syllabus dot point. • Students have included references for all sources. • Within limit 2 x double sided A4 pages. 	<p>3-2</p> <ul style="list-style-type: none"> • Student have basic information on each syllabus dot point • Students have included references for some sources. • Less than a page of information 	<p>1-0</p> <ul style="list-style-type: none"> • Student have limited information on some syllabus dot point • Students have included references for some sources. • Some information provided

BIO 12-7	/10
BIO 12-14	/10
Total	/20

Grade	Outstanding	High	Sound	Basic	Limited
Mark	A 20-19	B 18-16	C 15-9	D 8-4	E 3-0

FEEDBACK: