



# ORANGE HIGH SCHOOL

## ASSESSMENT TASK NOTIFICATION

<b>Subject</b>	Biology
<b>Year</b>	12 (Higher School Certificate)
<b>Task</b>	Number 2 (Research Task- In Class Analysis and Podcast)
<b>Weighting</b>	10% Knowledge 30% Skills
<b>Teacher</b>	Mrs Boardman, Ms Huggett
<b>Head Teacher</b>	Ms Huggett
<b>Date given</b>	Week 7A Term 2 2023
<b>Date and school week</b>	Monday 26 <sup>th</sup> of June 2023 – Week 10B Term 2 -Part 1. Completed in class: HSC style questions -Part 2. Submission of research Submission of Podcast

### Assessment Outline

#### **Class Test**

##### 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- answering in class questions.
- Students will need to submit a podcast- on google classroom

#### **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. If you are away on the day of the examination, you must catch up with your classroom teacher on the first day you return to make alternate arrangements to catch up on this task.

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

### HSC outcomes to be assessed

BIO 12-1	Develops and evaluates questions and hypotheses for scientific investigation
BIO 12-2	Designs and evaluates investigations in order to obtain primary and secondary data and information
BIO12 – 3	Conducts investigations to collect valid and reliable primary and secondary data and information
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 an in the classroom assessment given 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?***

#### ***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

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

- 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?)

### ***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

### ***How can the spread of infectious diseases be controlled?***

Describe the factors that can affect the local and regional transmission of this disease  
 Identify two strategies that could be employed to prevent the spread of the disease. Evaluate the effectiveness of these strategies  
 Investigate a pharmaceutical treatment strategy for the disease  
 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.

### ***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)

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

Outcome and content addressed	Extensive (A)	Thorough (B)	Sound (C)	Basic (D)	Limited (E)
PART 2.					
BIO 12-7 Podcast	<p>4</p> <ul style="list-style-type: none"> <li>Clarity of speech is extensive and includes all below.                             <ul style="list-style-type: none"> <li>Logical and coherent delivery</li> <li>Clear structure, information well organised. Includes a clear introduction and conclusion</li> <li>Length is engaging</li> <li>Sound/volume enhance presentation</li> <li>No background noise</li> <li>Smooth delivery/ well-rehearsed in a conversational style</li> <li>Expression and rhythm engaging</li> <li>Highly effective enunciation and presenters speech is intelligible.</li> </ul> </li> </ul>	<p>3</p> <ul style="list-style-type: none"> <li>Clarity of speech is thorough and includes most below.                             <ul style="list-style-type: none"> <li>Logical and coherent delivery</li> <li>Clear structure, information well organised. Includes a clear introduction and conclusion</li> <li>Length is engaging</li> <li>Sound/volume enhance presentation</li> <li>No background noise</li> <li>Smooth delivery/ well-rehearsed in a conversational style</li> <li>Expression and rhythm engaging</li> <li>Highly effective enunciation and presenters speech is intelligible</li> </ul> </li> </ul>	<p>2</p> <ul style="list-style-type: none"> <li>Clarity of speech is sound and 3-4 of below                             <ul style="list-style-type: none"> <li>Clear structure, information well organised. Includes a clear introduction and conclusion</li> <li>Length is engaging</li> <li>Sound/volume enhance presentation</li> <li>No background noise</li> <li>Smooth delivery/ well-rehearsed in a conversational style</li> <li>Expression and rhythm engaging</li> <li>Highly effective enunciation and presenters speech is intelligible</li> </ul> </li> </ul>	<p>1</p> <ul style="list-style-type: none"> <li>Clarity of speech is sound and 1-2 of previous criteria for a sound</li> </ul>	<p>0</p> <ul style="list-style-type: none"> <li>Limited or no attempt</li> </ul>
	<p>2</p> <ul style="list-style-type: none"> <li>Extensive articulation of scientific knowledge                             <ul style="list-style-type: none"> <li>Demonstrated understanding of endemic, pandemic, epidemic</li> <li>Demonstrates extensive knowledge of how disease is transmitted</li> <li>Concepts presented are accurate and succinct.</li> <li>Science terminology is extensive, well explained and appropriate to audience</li> </ul> </li> </ul>	<p>1</p> <ul style="list-style-type: none"> <li>Thorough articulation of scientific knowledge                             <ul style="list-style-type: none"> <li>Demonstrated understanding of endemic, pandemic, epidemic</li> <li>Demonstrates extensive knowledge of how disease is transmitted</li> <li>Concepts presented are accurate and succinct.</li> <li>Science terminology is extensive, well explained and appropriate to audience</li> </ul> </li> </ul>			
	<p>4</p> <ul style="list-style-type: none"> <li>Demonstrated extensive knowledge of key stakeholder.                             <ul style="list-style-type: none"> <li>Applies own knowledge to view of stakeholder</li> <li>Demonstrates clear understanding of the role of stakeholder would play in reducing the risk to population</li> </ul> </li> </ul>	<p>3</p> <ul style="list-style-type: none"> <li>Demonstrated thorough knowledge of key stakeholder.                             <ul style="list-style-type: none"> <li>Applies own knowledge to view of stakeholder</li> <li>Demonstrates clear understanding of the role of stakeholder would play in reducing the risk of the population.</li> </ul> </li> </ul>	<p>2</p> <ul style="list-style-type: none"> <li>Demonstrated sound knowledge of key stakeholder.                             <ul style="list-style-type: none"> <li>Applies own knowledge to view of stakeholder</li> <li>Demonstrates understanding of the role of stakeholder would play in reducing the risk of the population.</li> </ul> </li> </ul>	<p>1</p> <ul style="list-style-type: none"> <li>Demonstrated sound knowledge of key stakeholder.                             <ul style="list-style-type: none"> <li>Attempts to apply own knowledge to view of stakeholder or</li> <li>Attempts to demonstrate understanding of the role of stakeholder would play in reducing the risk of the population.</li> </ul> </li> </ul>	<p>0</p> <ul style="list-style-type: none"> <li>Demonstrated limited knowledge of key population.</li> </ul>

BIO 12-7 Submission of research	<ul style="list-style-type: none"> <li>Student have extensive information on each syllabus dot point. Students have included references for all sources. Within page limit 2 x double sided A4</li> </ul>	<ul style="list-style-type: none"> <li>Student have thorough information on each syllabus dot point. Students have references for all sources. Within page limit 2 x double sided A4</li> </ul>	<ul style="list-style-type: none"> <li>Student have sound information on each syllabus dot point. Students have references for all sources. Within page limit 2 x double sided A4</li> </ul>	<ul style="list-style-type: none"> <li>Student have basic information on each syllabus dot point. Students have references for some sources. Less than a page of information</li> </ul>	<ul style="list-style-type: none"> <li>Student have limited information on each syllabus dot point. Students a references for all sources. Some information provided</li> </ul>
<b>Grade</b>	<b>Outstanding</b>	<b>High</b>	<b>Sound</b>	<b>Basic</b>	<b>Limited</b>
<b>Mark</b>	15-14 (A)	13-10 (B)	9-7 (C)	6-3 (D)	3-0 (E)

Part 2. Total: / 15

**Comment:**

- BIO12-1 Develops and evaluates questions and hypotheses for scientific investigation
- BIO 12-2 Designs and evaluates investigations in order to obtain primary and secondary data and information
- BIO 12-3 Conducts investigations to collect valid and reliable primary and secondary data and information
- BIO 12-4 Selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media
- BIO 12-5 Analyses and evaluates primary and secondary data and information.
- BIO 12-6 Solves scientific problems using primary and secondary data, critical thinking skills and scientific processes
- BIO 12-7 Communicates scientific understanding using suitable language and terminology for a specific audience or purpose