



JOHN EDMONDSON HIGH SCHOOL

Assessment Notification

Faculty: Science Course: Biology Year: 11

Assessment Task: Depth Study

Assessment Weighting: 30% Due: Term 2 Week 8 Date: Friday 14/6/23

Task Type: Hand in Task In Class Task Practical Task

Outcomes assessed (NESA)

BIO11/12-1 develops and evaluates questions and hypotheses for scientific investigation

BIO11/12-3 conducts investigations to collect valid and reliable primary and secondary data and information

BIO11/12-6 solves scientific problems using primary and secondary data, critical thinking skills and scientific processes

BIO11/12-7 communicates scientific understanding using suitable language and terminology for a specific audience or purpose

BIO11-9 explains the structure and function of multicellular organisms and describes how the coordinated activities of cells, tissues and organs contribute to macroscopic processes in organisms

Task Description/Overview

This task consists of **TWO** components:

Section 1 - 3D Model: 20 MARKS

Section 2 - Depth Study Report: 30 MARKS

TOTAL MARKS: 50

In this task, students are required to **create a model** of the digestive system of **ONE** of the following animals:

- Cow
- Koala
- Lion
- Human

Students need to **write a Depth Study Report** about their chosen animal.

Your Report should include:

1. The process of digestion such as
 - physical digestion
 - chemical digestion
 - absorption of nutrients, minerals, and water
 - elimination of solid waste

2. The suitability of chosen animal's digestion system to its diet.

A copy of the ALARM Matrix and scaffold with accompanying questions has been provided to ensure that students address all components of the task.

3. Evaluation of the model

4. Bibliography

Detailed Assessment Task Description

Student is to:

1. Develop an Inquiry question for the investigation.
2. Investigate the digestive tract of chosen animal.
3. Construct a 3D model of the digestive tract of the chosen animal. This model must be fixed to a board no larger than 60cm X 84cm (equivalent to 2 x A3) and should include all structures, organs and accessory organs involved in the digestion process. Model should also be labelled and have an appropriate key included.
4. Evaluate how the digestive tract is specialised to cope with their diet. Use the ALARM scaffold to plan your answer.
5. Discuss the benefits and limitations of your model.
6. Include an extensive bibliography list (of at least 5 sources), according to JEHS website.

You will be **allocated 6 lessons** of class time between the dates of Week 5 and Week 6 .You may use these lessons to construct your model or conduct research. You must provide the resources to construct your model.

SUBMISSION DETAILS

Submit your completed 3D model and a printed copy of your report on Wednesday 14th **June 2023 from 8:00am and no later than 8:20am in D04.**

You MUST also submit your Depth Study report on CANVAS prior to 8:20am on the same day.

A Learning & Responding Matrix (ALARM)

JEHS acknowledges M.Woods (2009) as the creator of ALARM ©

				CRITICALLY EVALUATE		
		ANALYSE		CRITICALLY ANALYSE	EVALUATE / ASSESS / JUSTIFY	
EXPLAIN / DISCUSS / COMPARE						
DESCRIBE / DEFINE						
IDENTIFY / OUTLINE						
<p>Identify – recognise and name.</p> <p>Outline – state in general terms; indicate the main features.</p> <ul style="list-style-type: none"> - What are the main components/elements of the topic/unit/subject under consideration? - Give a name and definition of EACH of these areas. 	<p>Describe – provide characteristics and features.</p> <p>Define – state meaning and identify essential qualities.</p> <ul style="list-style-type: none"> - What are the characteristics and features pertaining to EACH component/element of the topic/unit/subject under consideration? 	<p>Explain – relate cause and effect; make the relationships between things evident.</p> <p>Discuss – identify issues and provide points for and / or against.</p> <p>Compare – show how things are similar or different.</p> <ul style="list-style-type: none"> - For EACH area or feature covered, what is its function or purpose? - What problem/issue is it addressing; or what is its impact/effect? - What is the cause/effect of EACH area or feature covered? 	<p>Analyse – identify components and the relationship between them; draw out and relate implications.</p> <ul style="list-style-type: none"> - Once the function/purpose or impact/effect is established, Explain How and/or Why the intention is carried out. - How did it achieve its purpose/effect? - What is the relationship between the various components/features and/or the impact/effect 	<p>Critically Analyse – add a degree or level of accuracy, depth, knowledge and understanding, logic, questioning, reflection and quality to <i>analyse</i>.</p> <ul style="list-style-type: none"> - Explain how EACH area/feature is beneficial or unbeneficial, even through implication or suggestion, in relation to set criteria. - Explain How and/or Why EACH function/step, stage/impact or cause/effect is positive and/or negative. 	<p>Evaluate - make a judgement based on criteria; determine the value of.</p> <p>Assess – Make a judgement of value, quality, outcomes, results or size.</p> <p>Justify – support an argument, opinion or conclusion.</p> <ul style="list-style-type: none"> - To what extent is the impact/effect effective, its value/quality? - To what extent has the object of consideration, the feature or impact, served its purpose, carried out what it was intended to accomplish? - To what extent, by how much, was the impact/effect successful? - By how much do the positives outweigh the negatives & vice versa? 	<p>Critically Evaluate – add a degree or level of accuracy, depth, knowledge and understanding, logic, questioning, reflection and quality to <i>evaluate</i>.</p> <ul style="list-style-type: none"> - After establishing the extent of success/effectiveness of each individual feature or function/purpose, compare and contrast all areas covered. - To what extent is one more effective than another? - Therefore, to what extent; come to a final judgement, were ALL features/impacts/effects, the whole process, successful or effective?

Assessment Criteria		
Grade	Description	Mark Range
Outstanding (O)	The student has an extensive knowledge and understanding of the content and can readily apply this knowledge. In addition, the student has achieved a very high level of competence in the processes and skills and can apply these skills to new situations.	79.5-100
High (H)	The student has a thorough knowledge and understanding of the content and a high level of competence in the processes and skills. In addition, the student is able to apply this knowledge and these skills to most situations	69.5-79
Sound (S)	The student has a sound knowledge and understanding of the content and has achieved a good level of competence in the processes and skills	49.5-69
Basic (B)	The student has a basic knowledge and understanding of the content and has achieved a basic level of competence in the processes and skills.	19.5-49
Limited (L)	The student has an elementary knowledge and understanding in a few areas of the content and still requires further work to achieve competence in the processes and skills	0-19

Satisfactory completion of courses

A course has been satisfactorily completed, when the student has:

- Followed the course developed/endorsed by the NSW Educational Standards Authority (NESA)
- Applied himself/herself with diligence and sustained effort to the set tasks and experiences provided in the course.
- Achieved some or all of the course outcomes

Total Marks

/ 20

Model- Marking Criteria

Student Name: _____

	5	4	3	2	1-0
Model: Scientific Concept	Model shows all necessary organs and structures of the chosen animals' digestive system. Model accurately reflects the scientific concept.	Model shows all necessary organs and structures of the chosen animals' digestive system. Model accurately reflects the scientific concept.	Model shows most organs and structures of the chosen animals' digestive system. Model mostly reflects the scientific concept.	Model shows some organs and structures of the chosen animals' digestive system. Model reflects the basic scientific concept.	Model reflects a limited understanding of the scientific concept.
Model: Detail and Scaling	Model is detailed, accurate and to scale. Structures are in proportion to each other.	May lack some detail or have minor errors. Some structures are relatively proportionate.	May lack some accuracy, detail, or have a few errors. Some structures are somewhat proportionate.	May lack some accuracy, detail, or have a several errors.	Attempts to model a digestive system. Major errors present
Labelling	Labels & keys are correct and easy to read. Labels and keys add an extensive understanding of the model.	Labels & keys are correct and easy to read. Labels and keys add a thorough understanding of the model.	Labels or keys are mostly correct but may be difficult to read. Labels and keys add a sound understanding of the model.	Labels &/or keys are missing. Labels and keys add basically to an understanding of the model.	Labels & keys are difficult to read or missing. Labels and keys add limitedly to an understanding of the model.
Creativity	Model is eye catching, highly creative, sophisticated, and original in design. Model is two or three-dimensional. Materials & shapes are appropriate to the represented concept.	Model is creative, sophisticated, and original in design. Model is two or three-dimensional. Materials & shapes are appropriate to the represented concept.	Model is creative and original in design, has some sophistication. Model is two-dimensional. Materials & shapes are mostly appropriate to the represented concept.	Model lacks sophistication and is missing some finishing touches, structure is compromised. Model is two-dimensional. Materials & shapes are appropriate to the represented concept.	Model lacks sophistication and does not appear finished, structure is compromised. Insufficient evidence

Student Name _____

Depth Study Report Marking Criteria

<p>Total Marks</p> <p>/30</p>

	5	4	3	2	1-0
Developing Inquiry Question			Develops an appropriate inquiry question suitable to the investigation.	Develops an appropriate inquiry question that is related to the investigation but requires further refinement	Requires teacher assistance to develop a question for an investigation. OR No inquiry question included.
Introduction of the chosen animal			Names a species of animal using scientific binomial nomenclature . Outlines diet of chosen animal. Identifies abundance and distribution of chosen animal as well as type of environment .	ONE component missing or incorrect from: Names a species of animal using scientific binomial nomenclature. Outlines diet of chosen animal. Identifies abundance and distribution of chosen animal as well as type of environment.	TWO or more component missing or incorrect from: Names a species of animal using scientific binomial nomenclature. Outlines diet of chosen animal. Identifies abundance and distribution of chosen animal as well as type of environment.
Structure and Function of organs			Detailed description of all structures and organs present in the chosen animals' digestive system. A well labelled diagram included.	Sound description of all structures and organs present in the chosen animals' digestive system. A Labelled diagram is missing.	Identifies most structures and organs present in the chosen animals' digestive system. No labelled diagram included.
			Thoroughly explains the function of each structure and organ present in the digestive system.	Describes the function of each structure and organ present in the digestive system.	Identifies the function of each structure and organ present in the digestive system.
The process of digestion – physical digestion – chemical digestion – absorption of nutrients, minerals, and water – elimination of solid waste	Thorough description of each process given. The type of digestion taking place at each appropriate structure and organ. Correctly identifies ALL enzymes or chemicals present in chemical digestion and their function.	Detailed description of each process given. The type of digestion taking place at each appropriate structure and organ. Correctly identifies enzymes or chemicals present in chemical digestion and their function.	Sound description of each process given. The type of digestion taking place at each appropriate structure and organ. Correctly identifies some enzymes or chemicals present in chemical digestion and their function.	A basic description of each process given OR some processes missing. The type of digestion taking place at each appropriate structure and organ. Correctly identifies enzymes or chemicals present in chemical digestion and their function.	Identifies the type of digestion taking place at some structures and organs.

Adaptation	Evaluates how well the animals' digestive system is suited to its diet. Uses thorough evidence and data to support the judgement made.	Analyses how well the animal's digestive system is suited to its diet. Uses some evidence and data to support the judgement made.	Explains how well the animal's digestive system is suited to its diet. Limited evidence and data used to support explanation. No judgement is made.	Describes how well the animal's digestive system is suited to its diet. No judgement is made.	Identifies how well the animal's digestive system is suited to its diet.
Referencing			Correct JEHS referencing has been used to acknowledge more than 5 sources. Sources include a variety of resources , including a website, journal article and textbook.	JEHS referencing has been used to acknowledge at least 5 sources, with some errors. OR 3-4 sources referenced correctly.	Sources are not acknowledged correctly.
Overall Presentation	Report is set out neatly in a clear and logical order with headings and subheadings. Ideas are coherently expressed with correct sentence structure, grammar, and spelling. Sophisticated language used. Correct scientific terminology used.	Report is clearly set out. Ideas are expressed with correct sentence structure. Use of scientific language. Minimal grammatical & spelling errors.	Report is clearly set out. Some grammatical and spelling errors.	Report formatting is basic. Basic use of scientific language. Contains grammatical and spelling errors.	Report is poorly set out. Minimal use of scientific language. Contains multiple grammatical and spelling errors.
Teacher FEEDBACK					

STUDENT PLANNING SHEET

Week 4	Monday 15/5/23	Tuesday 16/5/23	Wednesday 17/5/23	Thursday 18/5/23	Friday 19/5/23	Weekend 20/5/23- 21/5/23
	Receive notification! Researching and planning at home					Start planning the Model
Week 5	Monday 22/5/23	Tuesday 23/5/23	Wednesday 24/5/23	Thursday 25/5/23	Friday 26/5/23	Weekend 27/5/23 and 28/5/23
	Animal must be decided. <u>The Process of digestion</u> LESSONS allocated in class: 1. 2. Teacher to check progress and sign off					Finalise at home Working on The Model
Week 6	Monday 29/5/23	Tuesday 30/5/23	Wednesday 31/5/23	Thursday 1/6/23	Friday 2/6/23	Weekend 3/6/23 and 4/6/23
	<u>2. The suitability of digestion system to its diet</u> LESSONS allocated in class: 1. 2. Teacher to check progress and sign off					Finalise Report at home Working on The Model
Week 7	Monday 5/6/23	Tuesday 6/6/23	Wednesday 7/6/23	Thursday 8/6/23	Friday 9/6/23	Weekend 8/6/23 and 9/6/23
	<u>3. Evaluation of the Model and 4. Bibliography</u> LESSONS allocated in class: 1. 2. Teacher to check progress and sign off					Finalising Scientific Report and the model

Week 8	Monday 12/6/23	Tuesday 13/6/23	Wednesday DUE DATE 14/6/23		Friday	
			REPORT DUE ON CANVAS before 8.20 am Hand- IN Model and Printed copy of report before roll cal(no later than 8.20am) in D04			