

MANILLA CENTRAL SCHOOL - ASSESSMENT TASK NOTIFICATION

Year 11 - 2024

Biology Lawrence



Task Number: 2 Notification Date: Monday 05/02/2024

Weight: 30% Due Date: By 3.20pm to Mrs Lawrence, Friday 02/08/2024 Week 2 Term 3

DEPTH STUDY AND MODEL

OUTCOMES ASSESSED

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

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

BIO11-5 analyses and evaluates primary and secondary data and information

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

BIO11-8 describes single cells as the basis for all life by analysing and explaining cells' ultrastructure and biochemical processes

TASK DESCRIPTION

DEPTH STUDY AND MODEL:

Key Content:

- investigate a variety of prokaryotic and eukaryotic cell structures, including but not limited to:
 - drawing scaled diagrams of a variety of cells 🖨️ 📄
 - comparing and contrasting different cell organelles and arrangements ⚙️
 - modelling the structure and function of the fluid mosaic model of the cell membrane ⚙️ 🖨️
- investigate the way in which materials can move into and out of cells, including but not limited to:
 - examining the roles of active transport, endocytosis and exocytosis
 - relating the exchange of materials across membranes to the surface-area-to-volume ratio, concentration gradients and characteristics of the materials being exchanged 🖨️ 📄
- investigate cell requirements, including but not limited to:
 - matter, including gases, simple nutrients and ions
 - removal of wastes

Students will:

- Develop a model of a eukaryotic cell, including organelles and a section of the cell membrane
- Support the model with a poster outlining the role of each organelle in cell function and its appearance under the electron microscope

TASK INSTRUCTIONS

- Utilise your secondary source research finding to prepare the model and supporting poster.
- Refer to the marking guidelines to ensure that you have addressed all criteria.

Teacher's signature: _____ Mrs A Lawrence

HT Admin signature: _____ Miss M Eagles

Deputy Principal's signature: _____ Mrs R Ferguson

OUTCOMES	MARKING CRITERIA				
	Marks				
	0	1-3	4-6	7-8	9-10
<p>Questioning and Predicting</p> <p>11 -1</p> <p><i>A student develops and evaluates questions and hypotheses for scientific investigation</i></p>	<p>No attempt made</p> <p>OR</p> <p>Non-Serious attempt made</p>	<p>Attempts to develop inquiry questions by clearly identifying that some concepts can be investigated scientifically</p> <p>OR</p> <p>Attempts to develop inquiry questions by clearly identifying that some concepts can be investigated scientifically</p>	<p>Develops inquiry questions and hypotheses by identifying concepts that can be investigated scientifically</p>	<p>Develops inquiry questions and evaluates their relevance and whether they can be investigated scientifically.</p> <p>Recognises that new evidence may require a modification of investigations.</p>	<p>Develops and evaluates inquiry questions and hypotheses by identifying concepts that can be investigated scientifically.</p> <p>Uses new evidence to modify investigations.</p>
<p>Conducting Investigations</p> <p>11-3</p> <p><i>conducts investigations to collect valid and reliable primary and secondary data and information</i></p>	<p>No attempt made</p> <p>OR</p> <p>Non-Serious attempt made</p>	<p>Employs safe work practices</p> <p>Uses appropriate technologies to gather data</p> <p>Selects information from a wide range of reliable secondary sources</p>	<p>Employs safe work practices and manages risks</p> <p>Uses appropriate technologies to ensure accuracy</p> <p>Selects information from a wide range of reliable secondary sources and acknowledges them</p>	<p>Employs and evaluates safe work practices and manages risks</p> <p>Uses appropriate technologies to ensure accuracy</p> <p>Selects and extracts information from a wide range of reliable secondary sources and acknowledges them using Harvard referencing style</p>	<p>Employs and evaluates safe work practices and manage risks</p> <p>Uses appropriate technologies to ensure and evaluate accuracy</p> <p>Selects and extracts information from a wide range of reliable secondary sources and acknowledges them using Harvard referencing style and intext citations</p>
<p>Analysing data and information</p> <p>11-5</p> <p><i>A student analyses and evaluates primary and secondary data and information</i></p>	<p>No attempt made</p> <p>OR</p> <p>Non-Serious attempt made</p>	<p>Analyses data to identify trends and relationships.</p> <p>Identifies that data has some limitations</p> <p>OR</p> <p>Identifies trends in data.</p> <p>Identifies that data has some limitations</p> <p>Acknowledges information sources</p>	<p>Analyses data to identify trends and relationships.</p> <p>Identifies sources of error, uncertainty and limitations in data.</p> <p>Assesses the relevance, accuracy, validity and reliability of data.</p> <p>Acknowledges information sources</p>	<p>Analyses data sets to identify causal and correlational relationships, patterns and trends.</p> <p>Assesses data sources thoroughly and suggest improvements to data.</p> <p>Acknowledges information sources using Harvard referencing</p>	<p>Thoroughly analyses a wide range of data sets and information.</p> <p>Assesses data sources thoroughly and suggest methods to improve data that were not possible to achieve by the student.</p> <p>Acknowledges information sources using Harvard referencing and in text citation</p>

<p>Communicating</p> <p>11-7</p> <p><i>A student communicates scientific understanding using suitable language and terminology for a specific audience or purpose.</i></p>	<p>No attempt made</p> <p>OR</p> <p>Non-Serious attempt made</p>	<p>Communicates scientific understanding in at least two different modes.</p> <p>OR</p> <p>Attempts to communicate scientific understanding in limited range of modes. (One of digital, visual, written and oral forms)</p>	<p>Communicates scientific understanding using suitable language and terminology in a range of modes.</p>	<p>Communicates scientific understanding effectively and is able to construct evidence-based arguments</p>	<p>Communicates scientific understanding effectively and is able to construct evidence-based arguments to evaluate conclusions</p>
<p>Knowledge and Understanding</p> <p>11-8</p> <p><i>describes single cells as the basis for all life by analysing and explaining cells' ultrastructure and biochemical processes:</i></p> <ul style="list-style-type: none"> investigate a variety of prokaryotic and eukaryotic cell structures 	<p>No attempt made</p> <p>OR</p> <p>Non-Serious attempt made</p>	<p>Identifies -trend/pattern in their data</p> <p>drawing diagrams of a variety of cells</p> <p>identifying different cell organelles</p> <p>modelling basic cell structure</p>	<p>Outlines/describes some of the following:</p> <p>drawing diagrams of a variety of cells</p> <p>identifying different cell organelles</p> <p>modelling the structure and function of the fluid mosaic model of the cell membrane</p>	<p>Discusses some of the following in detail:</p> <p>drawing labelled diagrams of a variety of cells, in reference to electron micrographs</p> <p>describing different cell organelles and arrangements</p> <p>modelling the structure and function of the fluid mosaic model of the cell membrane including hydrophobic regions, hydrophilic regions</p>	<p>Discusses in detail:</p> <p>drawing scaled diagrams of a variety of cells, in reference to electron micrographs</p> <p>comparing and contrasting different cell organelles and arrangements</p> <p>modelling the structure and function of the fluid mosaic model of the cell membrane, including hydrophobic regions, hydrophilic regions and ion channels/pumps including labels and annotations</p>
<p>Knowledge and Understanding</p> <p>11-8</p> <p><i>describes single cells as the basis for all life by analysing and explaining cells' ultrastructure and biochemical processes:</i></p> <ul style="list-style-type: none"> investigate the way in which materials can move into and out of cells 	<p>No attempt made</p> <p>OR</p> <p>Non-Serious attempt made</p>	<p>Identifies -trend/pattern in their data</p> <p>examining the roles of:</p> <ul style="list-style-type: none"> active transport <p>relating the exchange of materials across membranes to:</p> <ul style="list-style-type: none"> the surface-area-to-volume ratio 	<p>Outlines/describes some of the following:</p> <p>examining the roles of:</p> <ul style="list-style-type: none"> active transport <p>relating the exchange of materials across membranes to:</p> <ul style="list-style-type: none"> the surface-area-to-volume ratio differences in concentration gradients 	<p>Discusses some of the following in detail:</p> <p>examining the roles of:</p> <ul style="list-style-type: none"> active transport <p>relating the exchange of materials across membranes to:</p> <ul style="list-style-type: none"> the surface-area-to-volume ratio concentration gradients impacting rate of exchange characteristics of the materials 	<p>Discusses in detail:</p> <p>examining the roles of:</p> <ul style="list-style-type: none"> active transport endocytosis exocytosis <p>relating the exchange of materials across membranes to:</p> <ul style="list-style-type: none"> the surface-area-to-volume ratio, including diagrams concentration gradients impacting rate and direction of exchange characteristics of the materials

<p>Knowledge and Understanding</p> <p>11-8</p> <p><i>describes single cells as the basis for all life by analysing and explaining cells' ultrastructure and biochemical processes:</i></p> <ul style="list-style-type: none"> investigate cell requirements 	<p>No attempt made</p> <p>OR</p> <p>Non-Serious attempt made</p>	<p>Identifies -trend/pattern in their data</p> <p>Cell requirements in regarding to matter</p> <p>OR</p> <p>Cell requirements in regards to removal of wastes</p>	<p>Outlines/describes some of the following:</p> <p>Cell requirements in regarding to matter</p> <p>Cell requirements in regards to removal of wastes</p>	<p>Discusses some of the following in detail:</p> <p>Cell requirements in regarding to matter, including gases, simple nutrients and/or ions</p> <p>Cell requirements in regards to removal of wastes</p>	<p>Discusses in detail:</p> <p>Cell requirements in regarding to matter, including gases, simple nutrients and ions</p> <p>Cell requirements in regards to removal of wastes</p>
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TEACHER COMMENTS

Teacher Signature: _____ Date: _____

Task Total		Task Rank		Cumulative Rank	
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