



SCIENCE ASSESSMENT TASK NOTIFICATION 2020 YEAR 12 BIOLOGY

Task Number: 1

Topic/s: Module 5 Heredity

Weightings: 20%

Due Date: MONDAY 17th February, Week 4 Term 1 2020

Time: **Part A:** Model submitted before 8:45am
Part B: Written questions to be completed in class (45min) Monday Week 4 period confirmed when 2020 timetable is available.

Outcomes to be Assessed: Outcomes below may be different from the assessment handbook

BIO11/12-2: Designs and evaluates investigations in order to obtain primary and secondary data and information

BIO11/12-4: Selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media

BIO11/12-5: analyses and evaluates 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

BIO12-12: Explains the structures of DNA and analyses the mechanisms of inheritance and how processes of reproduction ensure continuity of species

Task: HI + IC

Details:

PART A: 25 marks: You are to create a Digital mp4 model of protein synthesis (how a cell makes a protein) with the amino acid sequence:

Met-Cys-Lys-Asp-STOP

PART B: 25 marks: On the due date in class, you will be required to answer written HSC style questions related to DNA, transcription, translation and mutation and evaluate your model.

Electronic Submission of Task:

Model = Yes Written Questions = No

Format of Electronic Submission:

STILE EDUCATION

Please Note:

1. The College policy regarding malpractice, including cheating and plagiarism, late submission and absenteeism will apply. Please refer to moodle.pmaclism.catholic.edu.au (Assessment Tasks – Rules and Procedures). Stage 6 students should also refer to their *2020 Assessment Handbooks*.
2. Email is NOT an accepted form of assessment task submission.
3. If you are going to be away for any reason, including school based activities, you must fill in a “Planned Absence Notification” form and submit to the Assistant Principal Curriculum or the Leader of Curriculum. This form can be found at <http://moodle.pmaclism.catholic.edu.au/mod/page/view.php?id=17637>.

Electronic Submission Specifications:

STEP 1: Save your completed digital model to your computer/ device as **one file in MP4 format**. Using a movie maker program of your choice e.g. iMovie, movie maker or PowerPoint.

STEP 2: Upload digital mp4 model to Stile education

- Open Stile
- Select HSC BIOLOGY 2020
- Select assessments
- Select assessment task 1
- Click on the files and media icon under question 1
- Select upload file
- Select your completed video presentation
- Click open
- Select done
- Check to ensure your file is playable and fully functioning

STEP 3: Hand in for marking

- If you are happy with your assessment, **select Hand in for marking** in the bottom right corner. Once this is selected you cannot change your submission, unless you personally see **Mr Harvey** prior to the due date.

Reminder(s):

1. You will complete PART A of this assessment at home. If you are absent on the due date, you will be required to upload/submit PART A of the task from home.
2. You must ensure you click the hand in for marking button to submit your task.
3. No technological assistance for this task will be provided after 3:15pm on Friday 14th February 2020.

PART A: Model Rubric - total 25 marks

	Extensive 4 marks	Thorough 3 marks	Sound 2 marks	Basic 1 mark
Product(Model)		Product is an accurate model of the following aspects of protein synthesis: <ul style="list-style-type: none"> • DNA • mRNA • ribosome • tRNA • amino acids 	Product includes the following aspects of protein synthesis: <ul style="list-style-type: none"> • DNA • mRNA • ribosome • tRNA • amino acids 	Product includes some aspects of protein synthesis: <ul style="list-style-type: none"> • DNA • mRNA • ribosome • tRNA • amino acids
DNA Structure	Accurately represents the Watson and Crick DNA model, including, nucleotide composition, base pairing and hydrogen bonding Accurately represents the 5' and 3' ends of the DNA molecule	Accurately represents the Watson and Crick DNA model, including, nucleotide composition, base pairing and hydrogen bonding	Accurately represents the Watson and Crick DNA model, including, nucleotide composition and base pairing	Accurately represents the Watson and Crick DNA model, including double helix and nucleotide composition
DNA Sequence		DNA Sequence is correct	DNA Sequence has 1-2 errors	DNA Sequence has >2 errors
Transcription	mRNA represented accurately in both nucleus and cytoplasm Identifies where transcription happens Identifies the 4 bases of RNA The role of RNA polymerase is included	mRNA represented accurately in both nucleus and cytoplasm Identifies where transcription happens Identifies the 4 bases of RNA	mRNA molecule is represented as a sequence of bases in at least one accurate location Identifies where transcription happens Identifies the 4 bases of RNA	mRNA molecule is present Identifies where transcription happens
mRNA sequence		mRNA sequence is correct	mRNA sequence has 1-2 errors	mRNA sequence has >2 errors
Translation	Identifies where translation happens The polypeptide chain is formed accurately and shows location of peptide bonds Identifies the two main parts of tRNA Shows how a ribosome makes a protein, including how it knows where to start and stop “translating” the mRNA.	Identifies where translation happens The polypeptide chain is formed accurately Identifies the two main parts of tRNA Shows how a ribosome makes a protein.	Identifies where translation happens The polypeptide chain is present with small errors	Identifies where translation happens An attempt at polypeptide chain
tRNA molecules	The process of translation is represented with one tRNA per amino acid in the correct sequence (4 total)	The process of translation is represented with multiple tRNAs in the correct sequence (2-3)	The process of translation is represented with at least one tRNA in the correct sequence	tRNA is represented