MANILLA CENTRAL SCHOOL - ASSESSMENT TASK NOTIFICATION

Year 12 - 2021
Biology
Lawrence

Task Number: 2 **Notification Date: 25/10/2021**
Weight: 30% **Due Date: By 3.20pm 11/03/2022**

OUTCOMES ASSESSED

BIO12-1 develops and evaluates questions and hypotheses for scientific investigation
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
BIO12-7 communicates scientific understanding using suitable language and terminology for a specific audience or purpose
BIO12-13 explains natural genetic change and the use of genetic technologies to induce genetic change

TASK DESCRIPTION

DEPTH STUDY: CRISPR
Key Content:

- describe techniques and applications used in recombinant DNA technology
- evaluate the benefits of using genetic technologies in agricultural, medical and industrial applications (ACSBL086)

interpret a range of secondary sources to assess the influence of social, economic and cultural contexts on a range of biotechnologies

Your task is to create an infographic on CRISPR-Cas9 as a Genetic Technology.

The infographic needs to:

- Define 'CRISPR'
- Outline how the Cas-9 enzyme is involved in gene editing
- Describe the importance of the guide RNA in starting the editing process
- Provide a diagram of how the technology is used to modify DNA structure
- Explain how CRISPR could be used as a cure against genetic diseases
- Give an example of a disease, including current treatments and the possible impacts of CRISPR
- Tabulate the PROs and CONs of CRISPR use

TASK INSTRUCTIONS

Include in the presentation of your assessment task:

- Hardcopy printed A3 infographic
- Citations within the infographic and a separate reference list according to Harvard guidelines

Teacher's signature: _____ HT Admin signature: _____

Deputy Principal's signature: _____

Subheading	Criteria	Possible Mark	Mark
Introduction	Define ‘CRISPR’ (2) including a labelled diagram (1) and a further explanation in your own words (1).	4	
How it works	Outline how the Cas-9 enzyme is involved in gene editing (3) Describe the importance of the guide RNA in starting the editing process (3) Provide a diagram of how the technology is used to modify DNA structure (1)	7	
Treating Diseases	Explain how CRISPR could be used as a cure against genetic diseases (2) Consider the short-term impacts to society (4) Consider the long-term impacts to society (4)	10	
Case Study Comparison	Identifies an appropriate genetic disease (1) Includes a relevant image (1) Outlines the typical symptoms (2) Describes current treatments (2) Evaluates the impact of CRISPR on the future treatment of this disease (2)	8	
Ethics of CRISPR	Tabulate the PROs (3) and CONs (3) of CRISPR use	7	
Presentation	Hardcopy printed A3 infographic includes citations within the infographic (2) and a separate reference list (2).	4	
TOTAL		40	

Teacher Comments:

Teacher Signature: _____ Date: _____

Task Mark	Task Rank	Accumulative Rank