MOUNT ANNAN HIGH SCHOOL

ASSESSMENT TASK NOTIFICATION

FACULTY	Science			**COURSE**	**Investigating Science**	**YEAR**	12
TASK NUMBER	2	**TASK NAME**	Data Analysis				
TASK WEIGHT	25%			**MARKS AWARDED**	**45**		
DATE OF NOTIFICATION	**Thursday 29th February, (Term 1 - Week 5)**						
DUE DATE	**Friday 15th March, (Term 1 - Week 7)**						

TASK DESCRIPTION / INSTRUCTIONS

Inquiry question: How have developments in technology led to advances in scientific theories and laws that, in turn, drive the need for further developments in technology??

Students will individually conduct research to assess the impact that developments in technologies have had on the accumulation of evidence for scientific theories, laws and models. Additionally, students will assess the impact that the developments of new technologies have had on scientific theories, laws and models. Students are to choose from **ONE (1)** of the following technologies.

- computerised simulations and models of the Earth's geological history.
- X-ray diffraction and the discovery of the structure of deoxyribonucleic acid (DNA).
- technology to detect radioactivity and the development of atomic theory.
- the Hadron collider and discovery of the Higgs boson.
- the laws of refraction and reflection on the development of microscopes and telescopes
- radioactivity and radioactive decay on the development of radiotherapy and nuclear bombs.
- the discovery of the structure of DNA and the development of biotechnologies to genetically modify organisms.
- Newton's laws and the technology required to build buildings capable of withstanding earthquakes.

As part of your research, you will need to collate and process information on:

- ***outline how the technology works, including at least one annotated diagram***
- ***describe how the technology has developed over time using an annotated timeline***
- ***explain the underlying scientific principles of the technology***
- ***assess the impact that the technology has had on society***

(Max 500 words for each component- Additionally see appendix materials.)

Students research is to be submitted by 3:00 pm on 15/3/24. Submission can be either electronically via GC or submitted to Mr Watkins

Assessment Policy- ***This is a brief outline, you must check your assessment booklet for further details. Assessment task must be submitted on the due date.***

- **Failure to complete an assessment task will result in a zero mark.**
- Late submission of assessment items **will be awarded zero** unless there are very extenuating circumstances (Doctor's Certificate, etc.)

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- Students found guilty of malpractice will be awarded a zero mark. If a piece of work is incomplete at the time of submission, it should be submitted as is, and you will be given a mark on what has been completed.
- See your teacher or the Head Teacher of Science on the **first day you return** back to school.

HOW DOES THIS TASK LINK TO MY LEARNING

The task will test your skills and understanding for the methodology behind selecting and extracting information from a wide range of reliable secondary sources and acknowledge them using an accepted referencing style. Students will demonstrate their ability to select and use suitable forms of digital, visual, written and/or oral forms of communication.

OUTCOMES

Students will be demonstrating their understanding of the following outcomes from ***Module 6- Technologies.***

INS12-4	Selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media
INS12-5	Analyses and evaluates primary and secondary data and information
INS11-7	Communicates scientific understanding using suitable language and terminology for a specific audience or purpose
INS12-12	Develops and evaluates the process of undertaking scientific investigations
INS12-13	Describes and explains how science drives the development of technologies

Appendix material

SECTION	Research Criteria
Outline how the technology works, including at least one annotated diagram	• Correct outline of how the technology works, including; *materials used; processes within the technology; the data retrieved from the technology; how this data is/was used*
	• Diagram is; *created and hand-drawn or digitally created by the student, neat; correctly labelled; shows all the steps from the outline*
Describe how the technology has developed over time using an annotated timeline	• Annotated timeline that accurately chronicles at least five key milestones in the technology's history
	• Effectively explains the technological advancements and innovations that have occurred over time related to the changes in science
Explain the underlying scientific principles of the technology	• Clearly explains the fundamental scientific concepts and principles that underlie the technology
	• Demonstrates an understanding of the relationship between these principles and the technology
Assess the impact that the technology has had on society	• Analyses and evaluates the technology's impact on society, including its positive and negative effects
	• Assesses the potential future impact of the technology on society
Infographic	• Infographic is easy to read; including the text on the background; images are clear. information well organised and easy to follow; correct spelling and grammar

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A student in this band is able to demonstrate:	Marks/Grade
• Selected and **processed** appropriate qualitative and quantitative data and information from a range of appropriate media to comprehensively **discuss** a technological development. • Comprehensively **evaluated** primary and secondary data and information to **analyses** the assess the impact of named technology. • Communicated scientific understanding utilising a variety of named sources to **analyse** and **evaluate** interrelationships in scientific theories, laws, and models. • Succinctly **communicates** concepts, information, ideas, and issues effectively, using an appropriate presentation form.	45 – 37 A (Extensive)
• Selected and **processed** qualitative and quantitative data and information from a range of appropriate media to effectively **discuss** a technological development. • Effectively **evaluated** primary and secondary data and information to **analyses** the assess the impact of named technology. • Communicated scientific understanding utilising a variety of named sources to **analyse** and **discuss** interrelationships in scientific theories, laws, and models. • Thoroughly **communicates** concepts, information, ideas, and issues effectively, using an appropriate presentation form.	36 – 28 B (High)
• Processed appropriate data and information from a range of appropriate media to soundly **explain** a technological development. • Discussed data and information to **explain** the impact of technology. • Communicated understanding utilising sources to **explain** the interrelationships in scientific theories, laws and models. • Soundly **communicates** concept, information, ideas and issues, using an appropriate presentation form.	27 – 19 C (Sound)
• **Presented** data from a limited range of media to describe a technology • Stated data to **describe** an impact • Communicated basic understanding to **state** links between scientific theories, laws or models. • Poorly **communicates** biological information, ideas and issues.	18 - 10 D (Basic)
• Attempted to use data from a limited range of media to identify a technology • **Stated** an impact • **Communicated** minor understanding to describe a scientific theories, laws or models. • Poorly communicates information or ideas.	9 – 1 E (Elementary)
Non Attempt – Non Submission – Non Serious Attempt	0