SUPERVISOR'S USE ONLY

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Draw a cross through the box (☒) if you have NOT written in this booklet

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NZQA

Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Level 1 Science 2025

91923 Demonstrate understanding of science-related claims in communicated information

Credits: Five

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of science-related claims in communicated information.	Explain science-related claims in communicated information.	Examine science-related claims in communicated information.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

Choose ONE context from the Resource Booklet to answer ALL parts of the task in this booklet.

Pull out Resource Booklet 91923R from the centre of this booklet.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–8 in the correct order and that none of these pages is blank.

Do not write in the margins (). This area will be cut off when the booklet is marked.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

Merit

TOTAL 06

Page 1

Make sure you have the paper Resource Booklet 91923R.

INSTRUCTIONS

This task is made up of two parts. You must answer BOTH parts.

Choose ONE context from the resource booklet and use both resources provided to complete this assessment.

- Context One: **Personality tests**
  - Resource A: ***Scientific American* magazine article**
  - Resource B: **Myers-Briggs website**
- Context Two: **The future of plastics**
  - Resource A: ***Good News Network* article**
  - Resource B: ***BioPak* website**

Context Two: The future of plastics

Use information in the resource booklet for your chosen context to answer ALL parts of the task.

PART ONE

Use Resource A from your chosen context to respond to the following:

(a) Who published this information?

The information is published on the Good News Network website by Andy Corbley.

(b) Why was this information published?

Inform the audience regarding a biodegradable plastic.

(c) What is a science-related claim in this resource?

This biodegradable plastic that is more durable and biodegradable made from a strain of bacteria.

(d) What are the science language or conventions used in support of this claim?

Science Languagage - 'Bascillus subtilis' scientific name of this bacteria, thermosplastic ployurethane, provides definitions and clear language.

Conventions - Authors names and institutuion given, Souce is provided, Peer Reviewed, Fair Tested data, Emperial Evidence

(e) How well do the science language or conventions used in the information support the claim that you identified in part (c)? Use evidence to support your response.

The use of scientific language and conventions use in the information supports the validitiy of the claim that this biodegradable plastic created by a bacterial strain called Bacillus subtilis is more durable and biodegradable than plastic.

language;

Firstly, The author uses a minimal scientific language and provides proper definitions in clear language. Andy Corbley provides information such as the name of bacteria, TPU definitions and how the research was conducted. This means that the audience ould easily research the bacteria 'Bacillus subtilis' to find out if theu have plastic degradable properties and if the claims provided is true. The use of clear definition helps users who cannot understand termonology such as thermosplastic polyrethane and plastic extruder to make the audience understand the article the best as possible. The definitions are as follows : "TPU, a soft but durable commercial plastic and plastic extruder (a machine that reshapes material)" the author also provides info regarding the process of making this plastic proving with clear emperiial evidence on how its done. By understanding the article the audience is more tend to support the claim which is the authors purpose.

Conventions;

This article has a range of scientific conventions that support this claim of biodegradable plastic that is more durable and biodegradable made from a strain of bacteria. The authors names and institutions are given is a main point as the audience could easily reasearch these reasearches and their qualifications regarding the matter. The audience can check past claims the author has made, reputation and if he has the right qualifications to tell the information and make claims. The given source also shows that the audience has the freedom to check if the link is thrustworthy or not.The article provides an institution the reasearches Han Sol Kim and Jon Pokorski are from which is "University of California San Diego" this is a reputable univeristy and gains trust from the audience that the information given is valid. This trust and the flexibility for the audience to reasearch the author leads them to believing the claim and that the information given is true ulimately leading to supporting the claim.

The fact that the article is peer reviewed shows that the information given is accurate and not biased as possible. By having another peer review this content in another perspective the peer could not only fix grammer or spelling misstakes but also reduce bias. Peer reviewd articles have a higher rate of trust as it has gone through another person to make sure the author is not just making any claims. The peer makes sure the information is valid and relevant evidence is provided and the fact that the information is viewed by another person to factcheck the audience feels that the information given is trustworthy ultimately leading to supporting the claim.

Fair testing the data where only one variable is changed while all remains the same is shown in the article providing that the claim is backed up by emperial evidence.The article shows that a experiment was made to test the effectiveness of the biodegradable plastic. Scientists fed TPU pellet into a plastic extruder and melted into thin strips, it is then placed in various compost types some having the microorganisms in it and some not. The results proved that the water and nutrients in the compost degraded the plastic 90% meaning that the experiment was sucessfull. The audience is given on how the results were collected and this makes the claim very belivable ultimately leading to supporting the claim.

Overall the article uses science language and conventions very well to make the audience support the claim of biodegradable plastic that is more durable and biodegradable made from a strain of bacteria.

PART TWO

Use Resource B from your chosen context to respond to the following:

(a) Who published this information?

The information is from BioPak - a company that produces plant-based compostable packaging.

(b) Why was this information published?

To inform the audience about misleading plastic products labeled as "biodegradable" products

(c) What is a science-related claim in this resource?

compostable packaging is more trustworthy and sustainavle option than biodegreadable packaging.

(d) What are the science language or conventions used in support of this claim?

Science Language - Very limited scientific language,

Conventions - Hard to understand graphs, Providing quotes from UNEP, unclear language, not peer reviewed, Biased, author name not provided nor qualifications

(e) How well do the language or science conventions used in the information support the claim that you identified in part (c)?

The article contains a few scientific language and conventions used to make the audience believe and support the claim that **compostable packaging is more trustworthy and sustainabe option than biodegreadable packaging.**

Very limited scientific language;

The article contains little no none scientific language. While the use of scientific language in this claim is not necessary, the lack of scientific language could mean that the evidence is not supported. Even though the article provides a range of quotes of the UNEP to prove their point no imperial evidence is used such as an experiment to see if compostable packaging is more trustworthy and sustainable. This emakes the audience feel that the author is trying to prove that their point is true but doesnt do it scientifitically without providing any evidence. This makes the audience not support the claim.

Conventions;

The article is not peer reviewed meaning that there could be some possible bias is in the provided info. BioPak is a company that produces compostable packaging and by providing the products to the different companies, BioPak earns profit meaning that selling more compostable packaging is beneficial to the organisation. The article not being peer reviewed is a huge downside side as no peer has checked if the information is factchecked and biased. Afterall the intention of this article could be to make the audience believe that compostable packaging is better than biodegradable plastic. Not being peer reviewed makes the audience trust the information less as BioPak may be trying to make their product seem favourable making th claim of compostable packaging is more trustworthy and sustainavle option than biodegreadable packaging less belivable to the audience who noticed no peer review is provided.

The authors name and qualifications not provided is another huge downside. The infromation is from BioPak but the person who wrote the non-peer reviewed info in no provided. This mmeans that the audience doesnt know the author name to research about him to check if he is in a right position to give these claims. No audience or qualifications means that the information is less trustworthy and cannot be fully belived ultimately leading to not supporting the claim.

The information is provided in a nother method using a graph. Upon reviewing it, the graph seems confusing as it doesnt give a full conclution. The graph is not labeled and only shows that types of plastic are Biobased, Compostable, Non-compostable and Fossil Based which doesnt provide a relevant conclution to the claim of "compostable packaging is more trustworthy and sustainavle option than biodegreadable packaging". The graph is both confusing and doesnt provide a relevant conclution meaning that the audience is less likely to support the claim.

Overall Information provided by BioPak is not supported by emperial evidence and no research/evidence has been provided to prove the point that compostable packaging is more trustworthy and sustainavle option than biodegreadable packaging. BioPak could just be focusing on increasing their sales so that they benefit from this article.

However **the scientific language and conventions is not used very well to convince the audience that compostable packaging is more trustworthy and sustainavle option than biodegreadable packaging.**

Merit

Subject: Science

Standard: 91923

Total score: 06

Grade score	Marker commentary
M6	The response explains how peer review and the credibility of the authors impact the validity of the claims. The response also identifies science language and describes science conventions such as empirical evidence, bias, and diagrams. To gain an Excellence grade, the response needs to examine how the science language or conventions impacted the support for the claim. This could have been done by considering factors such as why it is important that authors have the right qualifications or why it's important that peer review decreases bias in a claim.