Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Level 1 Science RAS 2023

91922 Describe features of science that have contributed to the development of a science idea in a local context

EXEMPLAR

Achievement

TOTAL 03

Page 1 – Pilot Assessment

Make sure you have the paper Resource Booklet 91922R.

INSTRUCTIONS

This task is made up of three parts. You must answer ALL three parts.

Choose ONE science idea from the Resource Booklet to complete this assessment.

Science Idea Two: Sampling eel (tuna) numbers in the environment

Read the information in the Resource Booklet for your chosen science idea and use it to answer ALL parts of the task.

TASK

For part (a), focus on the following features of science:

- the development of science ideas in response to new evidence or varied perspectives, such as Māori and Pacific knowledge systems
- responding to needs and opportunities.

(a) Using the information from your chosen science idea, discuss the following:

(i) How has new evidence contributed to the science idea?

New evidence has contributed a "better understanding of their life cycle", different methods of researching, and perspectives to the science idea (Sampling eel numbers in the environment).

(ii) What are the varied perspectives considered in the science idea?

Maori perspectives and scientists perspectives both are different. Maori perspectives are considered in the science idea as eel's are highly important to Maori as they have been an important food source to their culture. Eel's are also considered kaitiaki to the streams, rivers and lakes so it is important they are safe and healthy. Science perspectives have an environmental and knowledge perspective as they carry out studies to better New Zealand's knowledge of the Eels life cycle. Also considering enviromental facotrs to learn more about the eel.

(iii) How has a need OR opportunity led to the development of the science idea?

The National Institute of Water and Atmospheric Research seen a opportunity to learn and build a better understanding about the long fin and short fin eels. This developed the science idea as many more studies were taking place to build more accurate knowledge on eel's and learn more about their life-cycle and immigration.

(iv) Give reasons why the new evidence OR varied perspectives responded to the need or opportunity in the development of the science idea.

The new evidence from studies by NIWA responded to their opportunity by answering their questions and helped achieve the opportunity to get a better understanding of their life cycle and immigration.

For part (b), focus on the following features of science:

- replicable, verifiable data collection
- the attributes of the people who carry out the science such as collaboration, creativity, critical thinking, and curiosity.

(b) Using the information from your chosen science idea, discuss the following:

(i) How has the data information shown in the resource helped in the development of the science idea?

The data shown in the resource (Figure 4) helped the development of the science idea by providing more information and understanding to sampling eel. The data showed the average length of glass eels using fyke-net sampling in the Rangitiaki river between July and October 2019, this is relevant to the science idea of sampling eels as it demonstrates more understanding of eel and data of average lengths.

(ii) Choose one of the following attributes that people who carry out science use:

- (●) collaboration
- ( ) creativity
- ( ) critical thinking
- ( ) curiosity

State with a reason how this attribute has played a significant part in the development of the science idea.

Collabortation is a significant part in the development of the science idea as it considers different perspectives and thoughts.m

(iii) Choose ANOTHER attribute that people who carry out science use:

○ collaboration ○ creativity ○ critical thinking ● curiosity

How has this attribute and the data collection shown in the resource interacted in the development of the science idea?

The attribute of curiosity played a significant part in the development of the science idea as 'curiosity' is the first initial thoughts before carrying out any studies or research. The studies and research created by curiosity is what builds the science idea and provides new methods, perspectives and opportunities to learn more. Curiosity interacted in the development showed in the resource when NIWA wanted to know what enviromental factors caused glass eels to choose which rivers to swim up.

For part (c), focus on the following features of science:

- using specific language, symbols, and conventions
- the development of science ideas in response to new evidence or varied perspectives, such as Māori and Pacific knowledge systems.

(c) Using the information from your chosen science idea, discuss the following:

(i) What are the specific language, symbols, and conventions that have been used in the development of the science idea?

Maori language (Tuna, Kai, Kaitiaki, Iwi and Hinaki)
Units (mm for average lengths)
Dates (17 Oct, etc.)

(ii) Why are specific language, symbols, and conventions important in the development of the science idea?

They are being used as they are relevant to the science idea and needed to explain or understand.

(iii) In what ways has new evidence OR varied perspectives interacted with specific language, symbols, and conventions in the development of the science idea?

New evidence has interacted with specific language, symbols and conventions because they are needed in data and specific language such as the Maori language in needed to consider different perspectives and understand theirs.

Achievement

Subject: Science

Standard: 91922

Total score: 03

Q	Grade score	Marker commentary
1	A3	The candidate has chosen Science Idea Two: Sampling eel (tuna) numbers in the environment. An Achieved grade has been awarded for the candidate's awareness of the science features of replicable, verifiable data collection and the attributes of the people who carry out science. The candidate has outlined how the data around the measurement of eels contributed to the science idea. The candidate has also identified that the attribute of curiosity was involved in this science idea and how it developed the science idea. If the candidate had described how these features of science contributed to the development of the science idea in more detail, they would have obtained an A4.