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90927M



909275



NEW ZEALAND QUALIFICATIONS AUTHORITY  
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD  
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

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## Koiora, Kaupae 1, 2019

**90927M Te whakaatu māramatanga ki ngā ariā koiora e pā ana ki te moroiti**

9.30 i te ata Rāhina 11 Whiringa-ā-rangi 2019  
Whiwhinga: Whā

Paetae	Kaiaka	Kairangi
Te whakaatu māramatanga ki ngā ariā koiora e pā ana ki te moroiti.	Te whakaatu māramatanga hōhonu ki ngā ariā koiora e pā ana ki te moroiti.	Te whakaatu māramatanga matawhānui ki ngā ariā koiora e pā ana ki te moroiti.

Tirohia mēnā e rite ana te Tau Ākonga ā-Motu (NSN) kei runga i tō puka whakauru ki te tau kei runga i tēnei whārangi.

**Me whakamātau koe i ngā tūmahi KATOĀ kei roto i tēnei pukapuka.**

Mēnā ka hiahia whārangi atu anō koe mō ō tuhinga, whakamahia ngā whārangi wātea kei muri o tēnei pukapuka, ka āta tohu ai i te tau tūmahi.

Tirohia mēnā e tika ana te raupapatanga o ngā whārangi 2–15 kei roto i tēnei pukapuka, ka mutu, kāore tētahi o aua whārangi i te takoto kau.

**ME HOATU RAWA KOE I TĒNEI PUKAPUKA KI TE KAIWHAKAHAERE Ā TE MUTUNGA O TE WHAKAMĀTAUTAU.**

TAPEKE

MĀ TE KAIMĀKA ANAKE

E mōhiotia ana ngā hekaheka me ngā huakita he kaiwhakapopo. Mā te whakahaere i ngā tukanga ora, he wāhanga ō ēnei i roto i te whakapopo me te hurihanga waro.

<https://stlawrencelowlands.wordpress.com/2014/11/26/turkey-tail-fungi-natures-recycling-enthusiasts/>

- whakaahua me te whakamārama he pēhea te whakahaere a te hekaheka, te huakita RĀNEI i ngā tukanga ora o te kai/taioranga, tukupūngao, me te tukupara
- hono i ngā tukanga ora o te kai/taioranga, tukupūngao, me te tukupara i roto i te hekaheka, huakita RĀNEI, ki te hiranga o ēnei i roto i te hurihanga waro.

**He wāhi anō mō tō tuhinga mō  
tēnei tūmahi kei te whārangi 4.**

Fungi and bacteria are known as decomposers. By carrying out their life processes, they have an important role in decomposing and in the carbon cycle.

<https://stlawrencelowlands.wordpress.com/2014/11/26/turkey-tail-fungi-natures-recycling-enthusiasts/>

- describing and explaining how fungi OR bacteria carry out the life processes of feeding/nutrition, respiration, and excretion
- linking the life processes of feeding/nutrition, respiration, and excretion in fungi OR bacteria, to their importance in the carbon cycle.

**There is more space for your answer to this question on page 5.**





## TŪMAHI TUARUA: TE WHAKATIPU MOROITI

I tūhuratia te pānga o te paemahana ki te whakatipu moroiti e tētahi rōpū ākonga Tau 11. I whakatipu rātou i ngā papa pia whakatipu mā aua papanga anō, ā, ka whakaawhitia ngā papa pia mō te 96 hāora, ki ngā paemahana rerekē e toru.

E whakaaturia ana ki raro ko ngā whakaahua o ngā papa pia e toru i muri i te 96 hāora.

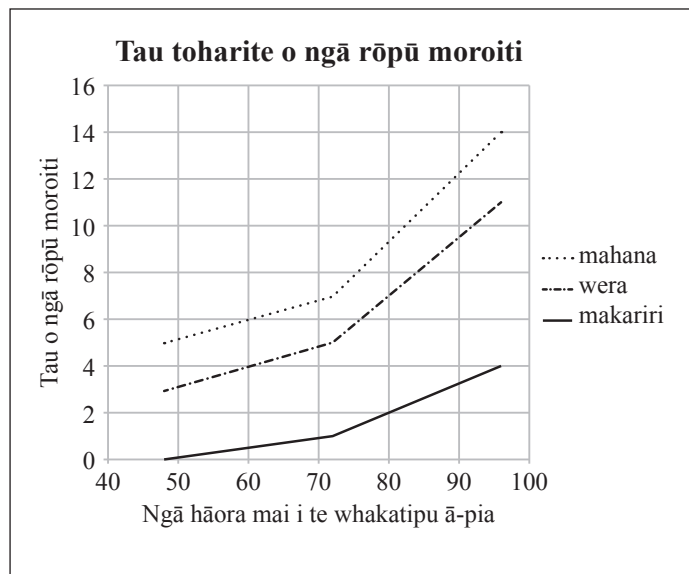


**Papa A**  
paemahana wera

**Papa B**  
paemahana mahana

**Papa C**  
paemahana makariri

<https://www.stevespanglerscience.com/lab/experiments/growing-bacteria/>



Matapakitia te pānga o ngā āhuatanga ā-taiao ki te whakatipu me te tipuranga o ngā moroiti mā te:

- whakaahua me te whakamārama i te hanganga me te mahi a ngā moroiti e tipu ana i runga i ngā papa
- whakamārama i te mahi a te pia i roto i te whakatipu moroiti
- matapaki i te pānga o ngā paemahana rerekē ki ngā tukanga ora o ngā moroiti, mā te whakamahi i te kauwhata me ngā whakaahua i runga ake.

**He wāhi anō mō tō tuhinga mō  
tēnei tūmahi kei te whārangi 8.**

## QUESTION TWO: CULTURING MICROBES

An investigation into the effect of temperature on culturing microbes was carried out by a group of Year 11 students. They inoculated agar plates with the same material, and then incubated the agar plates for 96 hours, at three different temperatures.

Photographs of three plates after 96 hours are shown below.

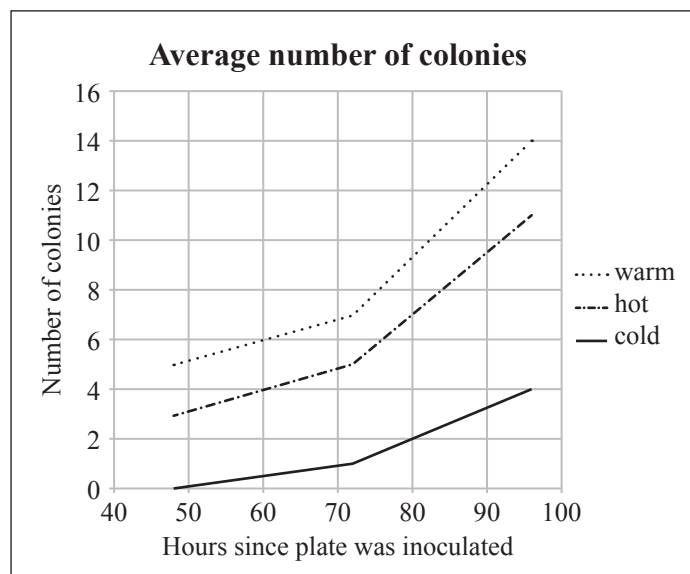


**Plate A**  
hot temperature

**Plate B**  
warm temperature

**Plate C**  
cold temperature

<https://www.stevespanglerscience.com/lab/experiments/growing-bacteria/>



Discuss the impact of environmental factors on the culturing and growth of microbes by:

- describing and explaining the structure and function of the microbes that are growing on the plates
- explaining the role of the agar in the culturing of microbes
- discussing the effect of different temperatures on the life processes of microbes, referring to the graph and photographs above.

**There is more space for your answer to this question on page 9.**







## TŪMAHI TUATORU: KOROPUTA HEI

He mate te koroputa hei ka pūpū ake i te huaketo koroputa hei, ā, ka hōrapa noa. E whakaaturia ana ngā tohumate o te koroputa hei ki te hoahoa kei te taha matau. Ahakoa he pai tonu ngā rongoā paturōpi mō te whakamaimoa i ngā tahumearo huakita, kāore he take mō te whakamaimoa i ngā huaketo pērā i te koroputa hei. Ko te tino whakamaimoa mō te koroputa hei ko te whakaiti i te kirikā me te mangleo.

Matapakitia ngā pūtake, ngā pānga me te whakamaimoa o tētahi tahumaero huaketo pērā i te koroputa hei mā te:

- whakaahua me te whakamārama i te hanganga me te mahi a te huaketo
- whakamārama he pēhea te whakaputa uri a ngā huaketo, ā, he pēhea te hōrapa
- whakataurite i ngā pānga o ngā rongoā paturōpi ki ngā huakita, huaketo hoki.

<https://www.verywellhealth.com/symptoms-of-chicken-pox-2634340>

He wāhi anō mō tō tuhinga mō  
tēnei tūmahi kei te whārangi 12.

**QUESTION THREE: CHICKENPOX**

Chickenpox is a disease that is caused by the chickenpox virus, and is easily spread. The symptoms of chickenpox are listed in the diagram on the right. Although antibiotics can be an effective treatment for bacterial infections, they are not an effective treatment for viruses such as chickenpox. Treatment for chickenpox focuses on reducing the fever and itching.

Discuss the causes, effects and treatment of a viral disease such as chickenpox by:

- describing and explaining the structure and function of a virus
- explaining how viruses reproduce and how they are spread
- comparing the effects of antibiotics on bacteria and viruses.

<https://www.verywellhealth.com/symptoms-of-chicken-pox-2634340>

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**There is more space for your  
answer to this question on page 13.**





**He whārangi anō ki te hiahiatia.  
Tuhia te (ngā) tau tūmahi mēnā e tika ana.**

TAU TŪMAHI

MĀ TE  
KAIMĀKA  
ANAKE

**Extra paper if required.**  
**Write the question number(s) if applicable.**

QUESTION  
NUMBER

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*English translation of the wording on the front cover*

## **Level 1 Biology, 2019**

### **90927 Demonstrate understanding of biological ideas relating to micro-organisms**

9.30 a.m. Monday 11 November 2019  
Credits: Four

<b>Achievement</b>	<b>Achievement with Merit</b>	<b>Achievement with Excellence</b>
Demonstrate understanding of biological ideas relating to micro-organisms.	Demonstrate in-depth understanding of biological ideas relating to micro-organisms.	Demonstrate comprehensive understanding of biological ideas relating to micro-organisms.

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

**You should attempt ALL the questions in this booklet.**

If you need more space for any answer, use the space provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–15 in the correct order and that none of these pages is blank.

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

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