

# 1

90948M



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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## Pūtaiao, Kaupae 1, 2016

### 90948M Te whakaatu māramatanga ki ngā ariā koiora e pā ana ki te rerekētanga ā-ira

9.30 i te ata Rāhina 14 Whiringa-ā-rangi 2016  
Whiwhinga: Whā

Paetae	Kaiaka	Kairangi
Te whakaatu māramatanga ki ngā ariā koiora e pā ana ki te rerekētanga ā-ira.	Te whakaatu māramatanga hōhonu ki ngā ariā koiora e pā ana ki te rerekētanga ā-ira.	Te whakaatu māramatanga matawhānui ki ngā ariā koiora e pā ana ki te rerekētanga ā-ira.

Tirohia mēnā e rite ana te Tau Ākongā 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 tuinga, 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



















## TŪMAHI TUATORU

Ko te Venus flytrap (*Dionaea muscipula*) he tipu ēnei e noho ana i ngā oneone iti te mōmona. He rau ōna i āta urutautia, ā, ka tere kati hei hopu ngārara.

He whakaputa uri tōrua ngā tipu, he whakaputa putiputi.

(a) Matapakitia ngā huapai o te whakaputa uri tōrua.

I tō tuhinga me:

- tautuhi he aha te whakaputa uri tōrua
- whakamārama mai i tētahi tukanga hira KOTAHI i roto i te whakaputa uri tōrua ka āwhina ki te whakaputa uri rerekē
- whakamārama mai he aha i whai hua ai ki te taupori o te Venus flytrap te rerekētanga nā te whakaputa uri tōrua i roto i ngā reanga.

[www.flickr.com/photos/david\\_jones/5256437760](http://www.flickr.com/photos/david_jones/5256437760)

**QUESTION THREE**

Venus flytraps (*Dionaea muscipula*) are plants that live in poor quality soils. They have specially adapted leaves that snap shut to catch insects.

The plants reproduce sexually, involving the production of flowers.

(a) Discuss the advantages of sexual reproduction.

In your answer you should:

- define sexual reproduction
- explain how ONE important process in sexual reproduction helps to produce variation in offspring
- explain how variation as a result of sexual reproduction can benefit the Venus flytrap plant population over generations.

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*English translation of the wording on the front cover*

## Level 1 Science, 2016

### 90948 Demonstrate understanding of biological ideas relating to genetic variation

9.30 a.m. Monday 14 November 2016  
Credits: Four

90948M

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of biological ideas relating to genetic variation.	Demonstrate in-depth understanding of biological ideas relating to genetic variation.	Demonstrate comprehensive understanding of biological ideas relating to genetic variation.

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 room for any answer, use the extra 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.**