90928M

909285

1

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NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

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

Koiora, Kaupae 1, 2015

90928M Te whakaatu māramatanga ki ngā ariā koiora e pā ana ki te hurihanga ora o ngā tipu whaipua

2.00 i te ahiahi Rāmere 20 Whiringa-ā-rangi 2015
Whiwhinga: Whā

Paetae	Kaiaka	Kairangi
Te whakaatu māramatanga ki ngā ariā koiora e pā ana ki te hurihanga ora o ngā tipu whaipua.	Te whakaatu māramatanga hōhonu ki ngā ariā koiora e pā ana ki te hurihanga ora o ngā tipu whaipua.	Te whakaatu māramatanga matawhānui ki ngā ariā koiora e pā ana ki te hurihanga ora o ngā tipu whaipua.

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 KATOA kei roto i tēnei pukapuka.

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

Tirohia mēnā e tika ana te raupapatanga o ngā whārangi 2–17 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

© Mana Tohu Mātauranga o Aotearoa, 2015. Pūmau te mana.
Kia kaua rawa he wāhi o tēnei tuhinga e whakahuatia ki te kore te whakaaetanga tuatahi a te Mana Tohu Mātauranga o Aotearoa.

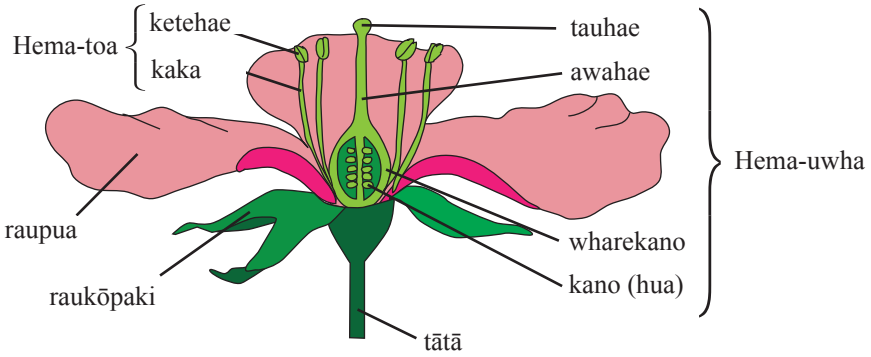
TŪMAHI TUATAHI: RUINGAHAE, WHAKATŌNGA, KĀKANO, ME TE HUA

Ko te pūriri tētahi o ngā rākau ruarua o Aotearoa he kanapa ngā pua. Ko ngā manu pēnei i te tūī, ka whakahaehae i ngā pua o te pūriri.

I muri i te ruingahae, ko te whakatōnga, ā, ka tipu ngā hua tuawhiti me ngā kākano i roto.

I runga i ngā here manatārua, kāore e whakaaetia te whakaaturanga o tēnei rauemi i konei.	*I runga i ngā here manatārua, kāore e whakaaetia te whakaaturanga o tēnei rauemi i konei.*
Ngā pua pūriri https://farm5.staticflickr.com/4084/5050412356_8e85e09524.jpg	Ngā hua pūriri http://ketenewplymouth.peoplesnetworknz.info/image_files/0000/0001/3929/Vitex_lucens_fruit__Puriri-2.JPG

Hoahoa pua arowhānui



Matapakitia te take he hira te tukanga o te ruingahae me te whakatōnga i roto i te mataora o tētahi tipu whaipua, ā, me te huri o ētahi wāhanga rerekē o te pua ki te kākano me te hua i roto i ngā tipu pēnei i te pūriri.

I tō tuhinga me:

- whakamārama i te āhua o te ruingahae me te whakatōnga i roto i tētahi pua
- whakamārama he aha i hira ai te ruingahae me te whakatōnga ki te tipu
- whakamārama he pēhea te whanake o ngā wāhanga o te pua hei kākano. Whakaingoatia ngā wāhanga o ngā pua kei roto i tēnei tukanga
- whakamārama he pēhea te puta o tētahi hua i muri i te whakatōnga o tētahi pua. Whakamāramahia mai he aha i hira ai te whakaputa o ngā kākano me ngā hua ki te tipu.

Ka taea e koe te whakamahi hoahoa whai tapanga hei tautoko i ō tuhinga.

MĀ TE KAIMĀKA ANAKE

He wāhi anō mō tō tuhinga mō tēnei tūmahi kei te whārangi 6.

QUESTION ONE: POLLINATION, FERTILISATION, SEEDS, AND FRUIT

The pūriri is one of the few New Zealand native trees with colourful flowers. Birds, like the tūī, pollinate the flowers of the pūriri.

After pollination, followed by fertilisation, fleshy fruits develop with seeds inside.

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Pūriri flowers
https://farm5.staticflickr.com/4084/5050412356_8e85e09524.jpg

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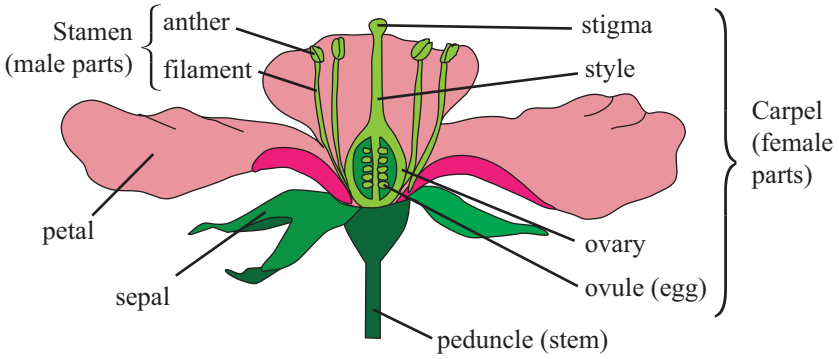
Pūriri fruit
http://ketenewplymouth.peoplesnetworknz.info/image_files/0000/0001/3929/Vitex_lucens_fruit__Puriri-2.JPG

Generalised flower diagram



Discuss why the processes of pollination and fertilisation are important in the life cycle of a flowering plant, and how different parts of the flower develop into the seed and the fruit in plants such as the pūriri.

In your answer you should:

- explain how the processes of pollination and fertilisation occur in a flower
- explain why the processes of pollination and fertilisation are important to the plant
- explain how the parts of the flower develop into a seed. Include names of parts of the flowers that are involved in this process
- explain how a fruit forms once fertilisation has occurred in a flower. Explain why seed and fruit formation are important to the plant.

You may use labelled diagrams to help you explain your answers.

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There is more space for your answer to this question on page 7.

MĀ TE KAIMĀKA ANAKE

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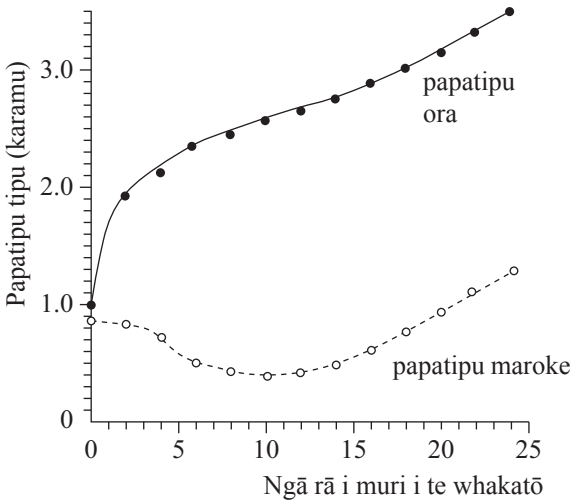
MĀ TE KAIMĀKA ANAKE

TŪMAHI TUARUA: TE TINAKUTANGA

E whakaatu ana te pikitia i raro i tētahi kākano pīni e tinaku ana, ā, e whakaatu ana te kauwhata i tana taha i te āhua o te huri o te papatipu maroke me te papatipu ora o te kākano i roto i te wā.

I runga i ngā here manatārua, kāore e whakaaetia te whakaaturanga o tēnei rauemi i konei.

http://garden.lovetoknow.com/image/138556~lifecyclebeanplant.jpg



Matapakitia he pēhea te mahi tahi a ngā take taiao me ngā wāhanga o te kākano kia tutuki ai te tinakutanga.

I tō tuhinga me:

- whakaahua te tinakutanga
- whakaingoa ngā take taiao e hiahiatia ana mō te tinakutanga
- whakamārama he aha i hiahiatia ai ēnei take taiao mō te tinakutanga
- whakamārama he pēhea te whai wāhi mai o ngā wāhanga o te kākano kua whakaingoatia ki te tinakutanga
- matapakitia ngā huringa i roto i te papatipu maroke me te papatipu ora o te kākano i a ia e tinaku ana me te tipu mai i te Rā 0 ki te Rā 25.

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QUESTION TWO: GERMINATION

The picture below shows a bean seed germinating, and the graph next to it shows how the dry mass and the live mass of the seed change over time.

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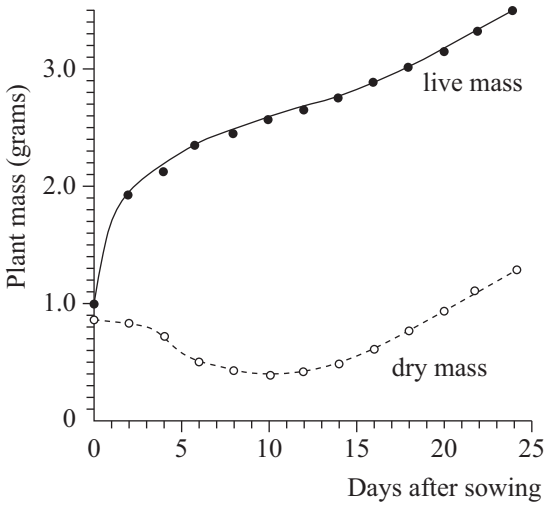
http://garden.lovetoknow.com/image/138556~lifecyclebeanplant.jpg



Discuss how environmental factors and the parts of the seed work together to allow germination to occur.

In your answer you should:

- describe the process of germination
- name the environmental factors required for germination to occur
- explain why these environmental factors are required for germination to occur
- explain how named parts of the seed are involved in the process of germination
- discuss the changes in the dry mass and the live mass of the seed as it germinates and grows from Day 0 to Day 25.

MĀ TE KAIMĀKA ANAKE

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MĀ TE KAIMĀKA ANAKE

TŪMAHI TUATORU: TE AHOTAKAKAME ME TE TIPUNGA

Ko te pūngao e hiahiatia ana mō ngā tipu kia tipu ai ka ahu mai i te ahotakakame. E whakaatu ana te hoahoa i raro nei i ngā hanganga i roto i tētahi rau e whai wāhi ana ki te ahotakakame. Whakamahia te hoahoa nei hei āwhina i a koe ki te whakaoti i ngā tūmahi i raro.

I runga i ngā here manatārua,
kāore e whakaaetia te
whakaaturanga o tēnei
rauemi i konei.

Matapakitia he pēhea te whakamahi a ngā wāhanga rerekē o te tipu i ngā rawa me ngā rauemi o te taiao kia taea ai te ahotakakame me te tipunga.

I tō tuhinga me:

- whakaahua i te tukanga whānui o te ahotakakame
- whakamārama he pēhea te whai wāhi o ngā wāhanga rerekē o te rau i roto i te ahotakakame
- whakamārama he pēhea te whakamahi i ngā rawa māori o te taiao e te tipu i te wā o te ahotakakame
- whakamārama ka ahatia ngā hua o te ahotakakame
- whakamārama i te hono i waenga i te ahotakakame me te tipuranga o tētahi tipu.

[1] kiriwaho
[2] tautiaki
[3] pūkāriki

MĀ TE KAIMĀKA ANAKE

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QUESTION THREE: PHOTOSYNTHESIS AND GROWTH

The energy required for plants to grow comes from the process of photosynthesis. The diagram below shows the structures inside a leaf that are involved in photosynthesis. Use this diagram to help you answer the questions below.

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Discuss how different parts of the plant use materials and resources from the environment to allow for photosynthesis and growth.

In your answer you should:

- describe the overall process of photosynthesis
- explain how the different parts of the leaf are involved in the process of photosynthesis
- explain how raw materials from the environment are used by the plant during photosynthesis
- explain what happens to the products of photosynthesis
- explain the link between photosynthesis and the growth of a plant.

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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, 2015

90928 Demonstrate understanding of biological ideas relating to the life cycle of flowering plants

2.00 p.m. Friday 20 November 2015
Credits: Four

90928M

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of biological ideas relating to the life cycle of flowering plants.	Demonstrate in-depth understanding of biological ideas relating to the life cycle of flowering plants.	Demonstrate comprehensive understanding of biological ideas relating to the life cycle of flowering plants.

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 page(s) provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–17 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.