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Level 1 Biology, 2019

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

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

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 space provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–8 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.

TOTAL

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QUESTION ONE: KŪMARA

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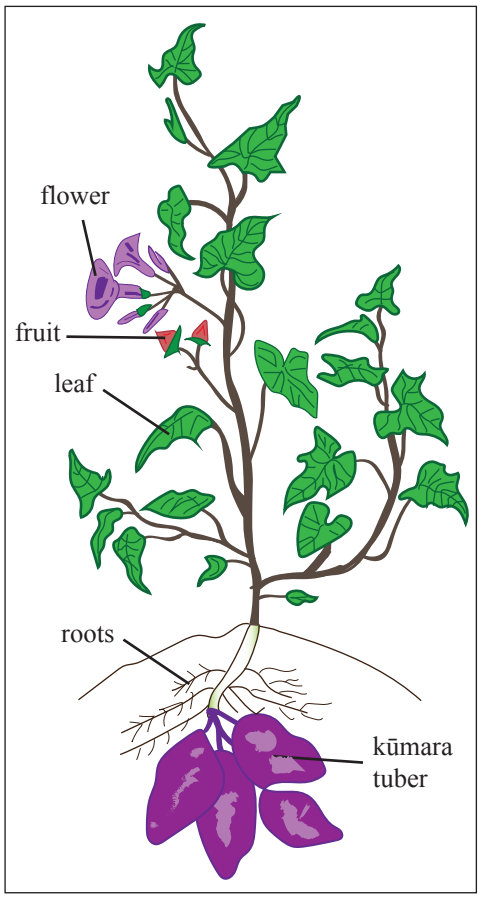
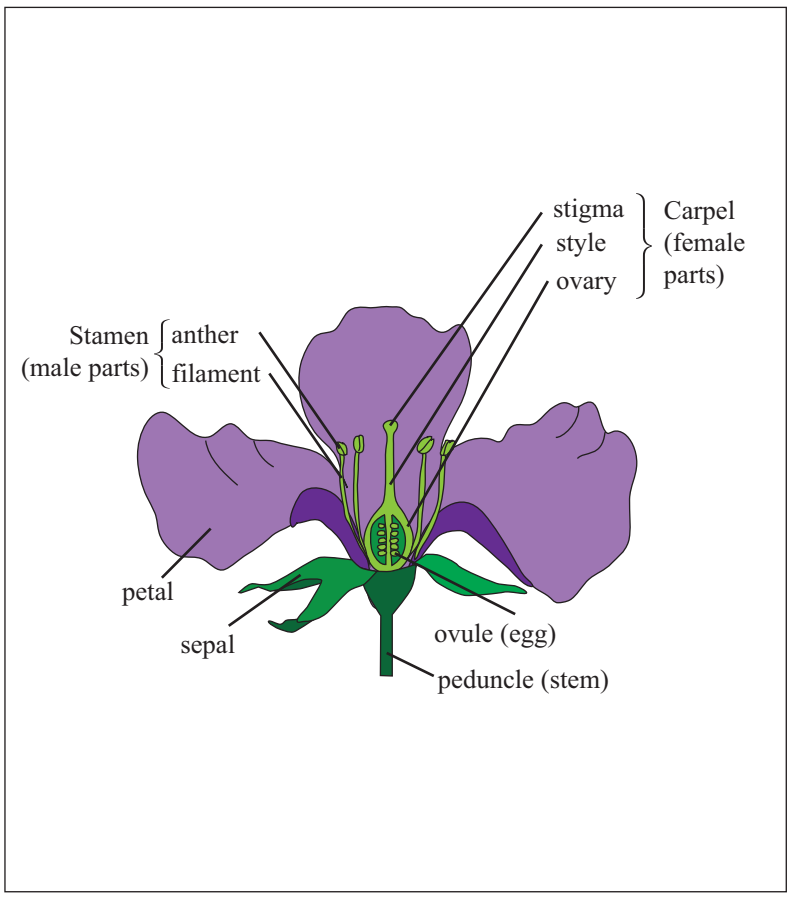
Some flowering plants such as kūmara can reproduce both sexually and asexually, as shown in the diagram below.



The kūmara plant.



Generalised flower diagram.

Compare and contrast sexual and asexual reproduction in a flowering plant, such as kūmara, by:

- describing and explaining how flowering plants like kūmara reproduce sexually and asexually
- discussing the advantages and disadvantages of both sexual and asexual reproduction in flowering plants like kūmara.

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QUESTION TWO: SEED GERMINATION AND PLANT GROWTH

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Seed germination and plant growth increase in spring and summer. Below are diagrams that show parts of a seed, seed germination, and plant growth.

Parts of a seed.
https://pmgbiology.com/tag/seed/

Seed germination and plant growth.
www.vectorstock.com/royalty-free-vector/seed-germination-vector-1035539

Discuss the links between environmental factors, such as temperature and water availability, and the energy sources required for seed germination and plant growth by:

- describing the processes involved in seed germination and growth of a plant
- explaining why seed germination and plant growth increase in the spring and summer months
- comparing and contrasting the energy source for a seed to germinate, with the energy source for further plant growth.

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QUESTION THREE: POLLINATION, FERTILISATION, AND SEED FORMATION

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Pollination, fertilisation, and seed formation are three important processes in the life cycle of a flowering plant.

Mature flower.

https://en.wikipedia.org/wiki/Petal#/media/File:Mature_flower_diagram.svg

Discuss the processes of pollination, fertilisation and seed formation that occur in flowering plants, and the importance of these processes to the life cycle of a flowering plant by:

- describing these processes, and explaining how they occur in a flowering plant
- discussing the importance of the processes of pollination, fertilisation, and seed formation to the life cycle of a flowering plant.

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

QUESTION NUMBER

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