

SUPERVISOR'S USE ONLY

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91606



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Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Level 3 Biology 2023

91606 Demonstrate understanding of trends in human evolution

Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of trends in human evolution.	Demonstrate in-depth understanding of trends in human evolution.	Demonstrate comprehensive understanding of trends in human evolution.

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.

Check that this booklet has pages 2–12 in the correct order and that none of these pages is blank.

Do not write in any cross-hatched area (DO NOT WRITE). This area will be cut off when the booklet is marked.

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

QUESTION ONE: THE LAETOLI FOOTPRINTS

Discovered in 1977 at Laetoli in Tanzania, hominin footprints thought to be approximately 3.66 million years old gave us the earliest, clear evidence of bipedalism in the hominim/human fossil record. These footprints are widely considered to have been made by *Australopithecus afarensis*.

A comparison was made between the Laetoli footprints, those of a modern human, and a chimpanzee.



Footprint comparison for modern humans, Laetoli hominin footprints, and modern chimpanzee (from left to right)

Discuss the influence of the evolution of the leg and foot to allow for bipedal locomotion.

In your answer, include discussion of:

- TWO differences between the three footprints, with descriptions
- how the environment may have led to changes in the structure of the leg and foot, enabling more efficient bipedal locomotion
- how being bipedal could have led to changes in the diet of early hominins and how these contributed to their success.

Lined writing area with horizontal lines.

Vertical text on the right edge, including 'DO NOT WRITE IN THIS AREA' and 'DO NOT WRITE IN THIS AREA' repeated.

