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91606M



916065

Tuhia he (☒) ki te pouaka mēnā
kāore koe i tuhi kōrero ki tēnei puka

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NZQA

Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Te Mātai Koiora, Kaupae 3, 2023

91606M Te whakaatu māramatanga ki ngā ia i te kunenga tangata

Ngā whiwhinga: E whā

Paetae	Kaiaka	Kairangi
Te whakaatu māramatanga ki ngā ia i te kunenga tangata.	Te whakaatu māramatanga ki ngā ia i te kunenga tangata, kia hōhonu.	Te whakaatu māramatanga ki ngā ia i te kunenga tangata, kia tōtōpū.

Tirohia kia kitea ai 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.

Ki te hiahia wāhi atu anō koe mō ō tuhinga, whakamahia ngā whārangi wātea kei muri o tēnei pukapuka.

Tirohia kia kitea ai e tika ana te raupapatanga o ngā whārangi 2–19 kei roto i tēnei pukapuka, ka mutu, kāore tētahi o aua whārangi i te takoto kau.

Kaua e tuhi ki tētahi wāhi e kitea ai te kauruku whakahāngai (A E PUHII I TE KĀREHE TŪHIA I TE PUKAPUKA). Ka poroa taua wāhi ka mākahia ana te pukapuka.

HOATU TĒNEI PUKAPUKA KI TE KAIWHAKAHAERE HEI TE MUTUNGA O TE WHAKAMĀTAUTAU.

TE TŪMAHI TUATAHI: NGĀ TAPUWAE LAETOLI

Ko ngā tapuwae o ngā tāngata onamata i kitea tuatahitia i te tau 1977 i Laetoli, i Tanzania, e whakapaetia ana kei tōna 3.66 miriona tau te tawhito, koia te taunaki tōmua katoa, e mārama pū ana hoki, o te waerua i ngā mauhanga tangata onamata / mātātoka tangata. E whakaaro whānuitia ana i puta ēnei tapuwae i a *Australopithecus afarensis*.

I whakatairitea ngā tapuwae Laetoli, ngā tapuwae o tētahi tangata nō nāianei, me ngā tapuwae makimaki.



Te whakatairitenga tapuwae i ngā tāngata o nāianei, i ngā tapuwae tangata onamata o Laetoli, i ngā makimaki o nāianei hoki (i te mauī ki te matau)

Matapakina te awenga o te kunenga o te waewae e taea ai te neke ā-waerua.

I tō tuhinga, me kōrero mō:

- ngā rerekētanga E RUA i waenga i ngā tapuwae e toru, ā, me whai whakaahuatanga
- ngā panonitanga i te hanga o te waewae, tērā pea i hua ake i te taiao, i taea ai te whāomo ake o te neke ā-waerua
- ngā panonitanga i ngā kai o ngā tāngata onamata, tērā pea i hua ake i te waerua, me te āhua o te whai wāhitanga o aua āhuatanga ki tō rātou angitu.

*He wāhi anō mō tō tuhinga
mō tēnei tūmahi kei ngā
whārangī e whai ake nei.*

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 hominin/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.
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*There is more space for
your answer to this question
on the following pages.*

TE TŪMAHI TUARUA: NGĀ TAPUTAPU

Ara ngā taunaki me ngā whakaahuatanga o ngā ahurea taputapu o ngā tāngata onamata, mai i te wā i whakamahia ai e *Homo habilis* ngā taputapu Oldowan. I whai mai te ahurea taputapu Acheulian, e tohu ana i ētahi panonitanga i ngā taputapu. Kua whai hononga ēnei panonitanga ki ngā panonitanga kāore e kore i puta i ngā roro.

He rite tonu te whakaaturia o te piringa kaha i ngā ringa o ngā tāngata onamata i ngā tautuhinga o te whakamahinga o ngā taputapu Oldowan, ā, he rite tonu te whakaaturia o te piringa pū i ngā tautuhinga o ngā taputapu o muri mai, pērā i te Acheulian me te Mousterian.



Te piringa pū



Te piringa kaha

Matapakina te āhua o te whakaawenga o te kunenga tangata onamata nā te whakamahinga taputapu.

I tō tuhinga, me kōrero mō:

- ngā painga E RUA i puta ai i tā ngā tāngata onamata **whakamahinga** o ngā taputapu kōhatu
- tētahi huapai o te piringa kaha, o te piringa pū hoki ki te whakamahinga o ngā taputapu
- ngā panonitanga E RUA ka whakaingoatia i ngā taputapu mai i te ahurea taputapu o te Oldowan, ki te ahurea taputapu o te Acheulian, me te āhua o tā aua panonitanga tuku huapai ki a *Homo erectus*, ki a *Homo ergaster* rānei.

*He wāhi anō mō tō tuhinga
mō tēnei tūmahi kei ngā
whārangī e whai ake nei.*

QUESTION TWO: TOOLS

There is evidence and description of many hominin tool cultures since *Homo habilis* used Oldowan tools. Acheulian tool culture came later, depicting a number of changes in tools. These changes have been linked to likely changes in the brain.

A power grip in hominin hands is often demonstrated when depicting Oldowan tool use, while a precision grip is often demonstrated when depicting later tools, such as Acheulian and Mousterian.



Precision grip



Power grip

Discuss how hominin evolution was influenced as a result of tool use.

In your answer, include discussion of:

- TWO benefits resulting from early hominins' **use of** stone tools
 - an advantage of both the power grip and the precision grip to the use of tools
 - TWO named changes to tools from the Oldowan tool culture to the Acheulian tool culture, and how these changes gave advantages to *Homo erectus* or *Homo ergaster*.
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your answer to this question
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TE TŪMAHI TUATORU: TE HORAPA

I heke ngā tāngata o nāianei i Āwherika i tōna 60 000 tau ki muri. Kei te whakaatu tēnei mahere i tā rātou heke.



Matapakina ngā take i puta ai ngā ihu o ngā *Homo sapiens*.

I tō tuhinga, me kōrero mō:

- te wāhi me te wā o te pūtake o ngā *Homo sapiens* i te whakapae o Atu i Āwherika me te whakapae o ngā takiwā-maha o te horapa tangata
- te take i māmā ake ai pea, i tere ake ai hoki pea te heke i Rāwhiti Waenga ki Āhia, tēnā i te heke i Āwherika ki Úropi
- te wāhi ki ngā panonitanga i te whakaaro tūrehurehu me te whanaketanga ā-roro i te huanga o ngā maru pai ake me te pai ake o te kohi kai a ngā *Homo sapiens* e heke ana.

**He wāhi anō mō tō tuhinga
mō tēnei tūmahī kei ngā
whārangī e whai ake nei.**

QUESTION THREE: DISPERSAL

Modern humans migrated out of Africa around 60 000 years ago. This map shows their migration.



Discuss reasons for the success of *Homo sapiens*.

In your answer, include discussion of:

- the place and timing of the origin of *Homo sapiens* in both the Out of Africa hypothesis and the multiregional hypotheses of human dispersal
 - why migration from the Middle East to Asia may have been easier and faster than the migration from Africa to Europe
 - how changes in abstract thought and brain development would have led to better shelter and food gathering for the migrating *Homo sapiens*.
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*There is more space for
your answer to this question
on the following pages.*

**He whārangi anō ki te hiahiatia.
Tuhia te tau tūmahī mēnā e hāngai ana.**

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

QUESTION
NUMBER

**He whārangi anō ki te hiahiatia.
Tuhia te tau tūmahi mēnā e hāngai ana.**

TE TAU
TŪMAHI

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

QUESTION
NUMBER

Ngā Mihi

He mea whakahāngai ngā kōrero i ngā mātāpuna e whai ake nei hei whakamahinga i tēnei whakamātautau:

Te whārangī 2

Te whakaahua: <https://royalsocietypublishing.org/doi/10.1098/rspb.2016.0235>

Te whārangī 8

Te whakaahua: https://www.researchgate.net/figure/A-precision-grip-left-and-a-power-grip-right-based-on-Napier-1956_fig2_51586020

Te whārangī 14

Te mahere: <https://education.nationalgeographic.org/resource/global-human-journey/>

Acknowledgements

Material from the following sources has been adapted for use in this assessment:

Page 2

Image: <https://royalsocietypublishing.org/doi/10.1098/rspb.2016.0235>

Page 8

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Page 14

Map: <https://education.nationalgeographic.org/resource/global-human-journey/>

English translation of the wording on the front cover

Level 3 Biology 2023

91606M Demonstrate understanding of trends in human evolution

Credits: Four

91606M

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 2–19 in the correct order and that none of these pages is blank.

Do not write in any cross-hatched area (). 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.