

See back cover for an English translation of this cover

3

91606M



916065



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

SUPERVISOR'S USE ONLY

Koiora, Kaupae 3, 2013

91606M Te whakaatu māramatanga ki ngā ia o te kunenga mai o te tangata

2.00 i te ahiahi Rātū 12 Whiringa-ā-rangi 2013
Whiwhinga: Whā

| Paetae | Paetae Kaiaka | Paetae Kairangi |
|--|---|---|
| Te whakaatu māramatanga ki ngā ia o te kunenga mai o te tangata. | Te whakaatu māramatanga hōhonu ki ngā ia o te kunenga mai o te tangata. | Te whakaatu māramatanga matawhānui ki ngā ia o te kunenga mai o te tangata. |

Tirohia mehemea e ōrite ana te Tau Ākonga ā-Motu (NSN) kei tō pepa whakauru ki te tau kei runga ake nei.

Me whakautu e koe te KATOA o ngā pātai kei roto i te pukapuka nei.

Ki te hiahia koe ki ētahi atu wāhi hei tuhituhi whakautu, whakamahia te (ngā) whārangi kei muri i te pukapuka nei, ka āta tohu ai i ngā tau pātai.

Tirohia mehemea kei roto nei ngā whārangi 2–15 e raupapa tika ana, ā, kāore hoki he whārangi wātea.

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

TAPEKE

MĀ TE KAIMĀKA ANAKE

Kia 60 meneti hei whakautu i ngā pātai o tēnei pukapuka.

PĀTAI TUATAHI

He tapu tēnei rauemi. E kore taea te tuku atu. Aata tirohia ki ngā kupu kei raro iho i te pouaka nei.

He tapu tēnei rauemi. E kore taea te tuku atu. Aata tirohia ki ngā kupu kei raro iho i te pouaka nei.

Ardi (*Ardipithicus ramidus*) – he tangata waerua onamata.

<http://thedailyomnivore.net/2011/04/21/ardi/>

www.sciencemag.org

I mua noa atu i te kitenga o ngā parawae tangata onamata, i matapaehia i tīmata pea te hīkoi tūtika i **mua** i ētahi atu huringa koioratanga, pēnei i te nui ake o te roro me ngā pūmanawa whakamahi ringa.

Kāore i te whakaae whānuitia te pūtake o te whanaketanga o te waeruatanga i roto i ngā tāngata onamata, engari ko tētahi ariā ko te whai pānga nui o te huringa taiao.

Matapakitia he pēhea te whakawhanake mai o te waerua me te hua mai anō o ētahi atu kunenga koioratanga i roto i ngā tāngata onamata.

I tō whakautu me:

- whakaahua ngā huringa i roto i te angaanga, ringa, me te roro nā te waerua
- whakamārama mai he aha i tohua ai te waerua i roto i te taiao o ngā tāngata onamata
- parahau, me ngā pūtake, he aha i hua mai ai te whanaketanga roro me ngā pūmanawa whakamahi ringa i **muri** i te waerua.

You are advised to spend 60 minutes answering the questions in this booklet.

QUESTION ONE

For copyright reasons, this resource cannot be reproduced here.

For copyright reasons, this resource cannot be reproduced here.

Ardi (Ardipithecus ramidus) – an early bipedal hominin.

<http://thedailyomnivore.net/2011/04/21/ardi/>

www.sciencemag.org

Long before any hominin fossils were ever found, it had been predicted that walking upright must have happened **before** other biological changes, such as brain increase and manipulative ability of the hand.

There is not general agreement on what caused bipedalism to develop in early hominins, but one theory is that environmental change played a critical role.

Discuss how bipedalism may have developed and resulted in further biological evolution in early hominins.

In your answer:

- describe the changes in the skeleton, hand, and brain due to bipedalism
- explain why bipedalism was selected for in the environment of early hominins
- justify, with reasons, why brain developments and manipulative ability of the hand would have occurred **after** bipedalism.

PĀTAI TUARUA

*He tapu tēnei rauemi.
E kore taea te tuku
atu. Aata tirohia ki ngā
kupu kei raro iho i te
pouaka nei.*

Whakanao pāraha kōhatu

He mea urutau mai <http://ars.els-cdn.com/content/image/1-s2.0-S002839320600385X-gr1.jpg>

*He tapu tēnei rauemi. E
kore taea te tuku atu. Aata
tirohia ki ngā kupu kei raro
iho i te pouaka nei.*

Ngā ahurea pāraha o te tangata onamata

He mea urutau mai http://anthro.palomar.edu/homo2/images/Paleolithic_table.gif

Ko ngā ahurea pāraha matua o te tangata onamata ko Oldowan, Acheulean, Mousterian, me Upper Palaeolithic.

Matapakitia he pēhea i tuku ai ia ahurea pāraha kia whakapaitia ake tōna oranga tonutanga e te momo kei te whakamahi.

I tō whakautu me:

- whakaahua kia RUA i te itinga rawa o ngā **ia** (ā-hoahoa, ā-whaihanga, me ngā rawa) i roto i ngā ahurea pāraha i roto i te wā
- whakamārama he pēhea i whakarato ai **ia ahurea pāraha** i tētahi painga urutau ki te momo tangata onamata i whakamahi i aua pāraha
- whakahāngai i ēnei painga urutau ki ngā tikanga tiki kai me te āhua o te noho o te momo.

¹ riwha

QUESTION TWO

*For copyright reasons,
this resource cannot be
reproduced here.*

Stone tool production

Adapted from <http://ars.els-cdn.com/content/image/1-s2.0-S002839320600385X-gr1.jpg>

*For copyright reasons,
this resource cannot be
reproduced here.*

Hominin tool cultures

Adapted from http://anthro.palomar.edu/homo2/images/Paleolithic_table.gif

Four of the main hominin tool cultures are Oldowan, Acheulean, Mousterian, and Upper Palaeolithic.

Discuss how each tool culture has allowed the species using it to improve their survival chances.

In your answer:

- describe at least **TWO** of the **trends** (in design, manufacture, and materials) in the tool cultures over time
- explain how **each tool culture** provided an adaptive advantage to the hominin species that used them
- relate these adaptive advantages to the methods of food gathering and way of life of the species.

QUESTION THREE

Analysis of genetic and fossil evidence (made over a number of years by a number of researchers) has indicated the following information about human dispersal:

1. Non-African males share a common ancestor about 140 000 years ago.
2. All humans share a common ancestor about 200 000 years ago.
3. Fossils (such as “Peking man” dated at about 750 000 years ago in Asia) seem to show a combination of *H. sapiens* and *H. erectus* type features.
4. Africans are more genetically diverse than other races.
5. Non-Africans include small (1–4%) traces of ancient hominin DNA (such as *H. neanderthalensis*).

Use **some or all** of the above evidence to discuss the likely origin of modern humans.

In your answer:

- describe the main competing theories: **Multiregional** and **Out of Africa** (also known as Eve/Replacement/Recent African Origin)
- explain how the above evidence supports each theory
- justify the most likely model of human dispersal.

**He puka anō mēnā ka hiahiatia.
Tuhia te (ngā) tau pātai mēnā e hāngai ana.**

TAU
PĀTAI

MĀ TE
KAIMĀKA
ANAKE

English translation of the wording on the front cover

Level 3 Biology, 2013

91606 Demonstrate understanding of trends in human evolution

2.00 pm Tuesday 12 November 2013

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. |

91606M

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 2–15 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.