

See back cover for an English translation of this cover

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91606M



916065



NEW ZEALAND QUALIFICATIONS AUTHORITY  
MANA TOHU MĀTAURANGA O AOTEAROA

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

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Tohua tēnei pouaka mēnā  
KĀORE koe i tuhituhi i roto i  
tēnei pukapuka

**Koiora, Kaupae 3, 2021**

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

Ngā whiwhinga: Whā

Paetae	Kaiaka	Kairangi
Te whakaatu māramatanga ki ngā ia i roto i te kunenga tangata.	Te whakaatu māramatanga hōhonu ki ngā ia i roto i te kunenga tangata.	Te whakaatu māramatanga matawhānui ki ngā ia i roto i te kunenga tangata.

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

**Me whakamātau koe i ngā tūmahi KATOĀ kei roto i tēnei pukapuka.**

Ki te hiahia koe ki ētahi atu wāhi hei tuhituhi whakautu, whakamahia te wāhi wātea kei muri i te pukapuka nei.

Tirohia mēnā e tika ana te raupapatanga o ngā whārangi 2–15 kei roto i tēnei pukapuka, ka mutu, kāore tētahi o aua whārangi i te takoto kau.

Kaua e tuhi ki roto i tētahi wāhi kauruku whakahāngai (X/X). Ka tapahia pea tēnei wāhi ina mākahia te pukapuka.

**ME HOATU RAWA KOE I TĒNEI PUKAPUKA KI TE KAIWHAKAHAERE Ā TE MUTUNGA O TE WHAKAMĀTAUTAU.**

## TŪMAHI TUATAHI: TE WAERUATANGA

Kapi katoa a Āwherika i ngā ngāherehere i ngā tau 25 miriona ki mua. Nō konei te kunenga mai o ngā makimaki ki ngā momo maha, ā, ko te nuinga kua korehāhā. Nā te huringa āhuarangi ka rerekē anō ngā tipu, ā, i te 5 miriona tau ki mua, he tino rerekē a Āwherika. Ko ngā makimaki i whakawhanake i te waeruatanga kāore e kore i kukune mai i ngā momo tāngata onamata, ā, ko te mutunga atu ko te kunenga mai o te tangata.



He whenua mānia pātītī i Āwherika ki te Rāwhiti.

Mātāpuna: <https://www.livescience.com/15377-savannas-human-ancestors-evolution.html>

Matapakitia ngā pēhanga whiringa i pā ki ngā momo tangata onamata kua whakaingoatia i pā mai ai te waeruatanga.

I tō tuhinga, me:

- whakaahua ngā āhuetanga taiao i puta mai ai te waeruatanga
- whakamārama mai nā te huri kua whakaingoatia o te pakohu roro me te tuaiwi i taea ai te hīkoi tūtika
- whakamahi tētahi momo *Australopithecine*, ka hono i ngā āhuetanga hīkoi tūtika e RUA o te waewae (tae atu ki te taha raro o te waewae) ki te angitu me te ora o taua momo.

He wāhi anō mō tō tuhinga  
mō tēnei tūmahi kei ngā  
whārangi o muri mai.

Africa 25 million years ago was covered in lush forests. It was here that apes evolved to form many species, most of which became extinct. With climate change came a change in vegetation, and 5 million years ago, Africa was quite different. Ape species that developed bipedalism likely evolved to form the hominin species that eventually led to the evolution of humans.

Source: <https://www.livescience.com/15377-savannas-human-ancestors-evolution.html>

In your answer:

- There is more space for  
your answer to this question

Biology 91606, 2021





## TŪMAHI TUARUA: *HOMO ERECTUS*



Mātāpuna: [www.theguardian.com/science/2018/feb/20/homo-erectus-may-have-been-a-sailor-and-able-to-speak](http://www.theguardian.com/science/2018/feb/20/homo-erectus-may-have-been-a-sailor-and-able-to-speak)

Ko te *Homo erectus* he tangata onamata i angitu, ā, i uru ki te whanonga hekeheke. Ko te āhua nei ko *H. erectus* tētahi o ngā rōpū tangata onamata tuatahi ki te wehe i Āwherika ka marara atu ki te ao. Nā ngā mōhiotanga ahurea i tautoko i te angitu o tēnei momo, tae atu ki ngā mōhio ki te hanga utauta, te whakamahi ahi me te whanonga mahi tahi.

Matapakitia ētahi āhuatanga o te ahurea *H. erectus* i tautoko i tō rātau angitu me te hekenga.

I tō tuhinga, me:

- whakaingoa me te whakaahua te ahurea utauta matua o te *H. erectus*
- whakamārama nā tēnei whakamahinga utauta, i te taha o te whakamahi ahi, i angitu ake ai te *H. erectus* i ētahi atu tāngata onamata i taua wā
- matapaki nā tēnei mōhio me ngā whanonga mahi tahi o *H. erectus* i angitu ai tā rātau hekenga ki ngā wāhi hou.

He wāhi anō mō tō tuhinga  
mō tēnei tūmahi kei ngā  
whārangi o muri mai.

**QUESTION TWO: *HOMO ERECTUS***

Source: [www.theguardian.com/science/2018/feb/20/homo-erectus-may-have-been-a-sailor-and-able-to-speak](http://www.theguardian.com/science/2018/feb/20/homo-erectus-may-have-been-a-sailor-and-able-to-speak)

*Homo erectus* was a successful hominin that was able to engage in migratory behaviour. *H. erectus* was likely one of the first hominin groups to leave Africa and spread around the world. Cultural knowledge contributed to the success of this species, including their tool-making ability, use of fire, and cooperative behaviour.

Discuss aspects of the *H. erectus* culture that supported their success and migration.

In your answer:

- name and describe the predominant tool culture of *H. erectus*
- explain how this tool use, along with fire use, enabled *H. erectus* to be more successful than other hominins at the time
- discuss how this knowledge and *H. erectus*'s cooperative behaviours enabled them to successfully migrate to new areas.

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







## TŪMAHI TUATORU: I AHU MAI I ĀWHERIKA

I kukune mai te tangata onamata i Āwherika ka marara ki ngā tōpito katoa o te ao. He 'maha' ngā hekenga mai i Āwherika me ngā tau mano tini mai i tētahi hekenga ki tētahi, nā ngā āhuatanga āhuarangi e whai pānga ana ki ngā tipu me ngā pātaka kai. Nā tēnei hekenga i noho taratahi ngā rōpū tangata onamata, hei tauira, i Uropi, ā, i kukune mai kia rerekē ki ētahi atu tāngata onamata i noho tonu ki Āwherika.

Matapakitia te hekenga o ngā tāngata onamata mai i Āwherika.

I tō tuhinga, me:

- whakaahua tētahi momo tangata onamata kua kunea mai i waho o Āwherika
- whakamārama he pēhea te rerekē o te ariā mararatanga 'I ahu mai i Āwherika' i te ariā 'Rohemaha'
- kōrero mō ngā pūtake ōkiko me te whanonga e angitu ai ngā *Homo sapiens* i a rātou e heke ana mai i Āwherika, whakateraki ki Uropi, whakatetonga ki Te Moananui-a-Kiwa.

He wāhi anō mō tō tuhinga  
mō tēnei tūmahi kei ngā  
whārangi o muri mai.

### QUESTION THREE: MIGRATION OUT OF AFRICA

Hominins evolved in Africa and from there, spread around the world. Migration out of Africa occurred in 'waves' several thousands of years apart, due to climatic factors affecting vegetation and food sources. This migration meant that groups of hominins became isolated, in Europe for example, and evolved to become quite different to the hominins still in Africa.

Discuss hominin migration out of Africa.

In your answer:

- describe a hominin species that evolved outside of Africa
- explain how the 'Out of Africa' theory of dispersal differs from the 'Multiregional' theory
- comment on both physical and behavioural reasons that enabled the success of *Homo sapiens* as they migrated out of Africa, both north to Europe, and south to the Pacific.

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





**He whārangi anō ki te hiahiatia.  
Tuhia te (ngā) tau tūmahi mēnā e tika ana.**

TAU TŪMAHI

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

QUESTION  
NUMBER

*English translation of the wording on the front cover*

## Level 3 Biology 2021

### 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 2–15 in the correct order and that none of these pages is blank.

Do not write in any cross-hatched area (▨). This area may be cut off when the booklet is marked.

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