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Level 3 Biology 2021

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 (). This area may be cut off when the booklet is marked.

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QUESTION ONE: BIPEDALISM

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.

An East African savannah landscape.

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

Discuss selection pressures that acted upon named early hominid species that resulted in bipedalism.

In your answer:

- describe environmental conditions that selected for bipedalism
- explain how a named change to the cranium and the spine allowed successful bipedal locomotion
- using an *Australopithecine* species, link TWO bipedal features of the leg (including the foot) to the success and survival of that species.

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

QUESTION TWO: *HOMO ERECTUS*

Source: 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.

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

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 page.

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

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