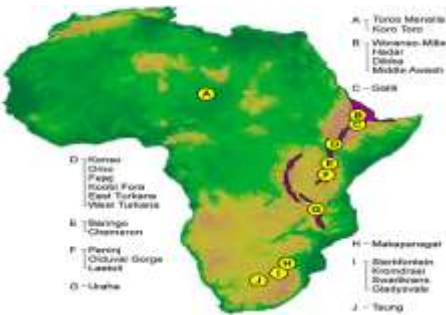




OUT-of-AFRICA HYPOTHESIS



HUMANS EVOLVED IN AFRICA
AND THEN TRAVELLED
TO THE REST OF THE GLOBE.



THE SUGGESTED STORY



- Scientists used DNA from sites to trace movements.
- Fossils of *Australopithecus* and *Homo habilis* have **only** been found in Africa.
- The **Cradle of Humankind** (where human life began) is around the Sterkfontein Caves near Pretoria. ***The world's humans started to evolve in Gauteng!***
- The climate changed over time, and the vegetation changed with it.
- The animals moved with the vegetation, and the humans followed their food.

- So 2 million years ago *Homo erectus* found itself moving out of Africa.
- At the same time, the *Australopithecus* group was not coping , was out-competed, was dying out.
- For a million years the *Homo* group spread across the world. Through Middle East to Europe. Some to Australia. Some through Asia to North America. Then to South America. (Check the map below.)
- In each area **Nature Selected**, and so over time many **different** *Homo* species developed across the world. (Like CaveMan *Neanderthalensis* in EurAsia.)





Meanwhile, back in Africa . . .



- In Africa, while all this was happening across the world, *Homo erectus* evolved into *Homo sapiens*, 150 000 years ago.
- Then, 90 000 years ago, these *Homo sapiens* groups started moving out of Africa.
- They were far more capable than any other *Homo* group in the world, and so out-competed them everywhere.
- Eventually, only *Homo sapiens* was the survivor – the other groups all died out.

And this is where we are today!

QUESTIONS Page 72

Question 1

$$10 \times [2] = [20]$$

1. B 2. A 3. B 4. B 5. A 6. B 7. D 8. A 9. B 10. D



Question 2

$$9 \times [1] = [9]$$

1. StereoScopic
2. Cranium
3. QuadriPedal
4. Transitional Link
5. BiPedalism
6. Foramen Magnum
7. Prognathous
8. Brow Ridge
9. Homo erectus



Question 3

[10]

1. A 2. J 3. F 4. D 5. H 6. B 7. I 8. C 9. G 10. E



Question 4

1. A – small cranium, protruding jaw, foramen magnum very far back. [3]

2. Skull B Skull C [6]

Further back (less bipedal).

More central (more bipedal).

Smaller.

Rounder jaw shape.

Large incisors.

More evenly regular.

3.

<u>SKULL B</u>	<u>SKULL C</u>
Smaller than PreMolars.	Larger than other teeth.
	Smaller
Omnivorous, but more meat.	
4. Bigger cranium housed a bigger brain which would result in better communication, better teamwork, understanding how to use fire for warmth and cooking, how to develop tools, how to protect themselves, how to hunt better ... [4]

Question 5
[8]

<u>FEATURE</u>	<u>SIMILARITIES</u>
1. Brain	Big brain controlling small body.
2. Eyes	StereoScopic = 3-Dimensional vision.
3. Nose	Small noses – not reliant on smell.
4. Teeth	Omnivorous – different kinds of teeth.
5. Shoulder	Arms could do full 360° movement.
6. Hands	Opposable thumbs, nail and prints to grip.



2.
[8]

<u>FEATURE</u>	<u>HUMAN</u>	<u>GORILLA</u>
1. Brain	Bigger.	Smaller.
2. Brow Ridge	Not really there.	Definitely there.
3. Spine	S-shape.	C-shape.
4. Pelvis (hip)	Short and wide.	Long and narrow.
5. Palate (jaw)	Small, circular.	Long, rectangular.
6. Cranial ridge	Not really there.	Definitely there.
7. Foramen Magnum	Very central.	Closer to back of skull.

3. Homo sapiens [1]
4. Shorter, wider hips. S-shaped spine. Longer legs. Central foramen magnum. Shorter arms. [4]
5. Hands are free when walking, so can carry things and use weapons. Can see for greater distances. [4]
6. BiPedalism laid the basics to allow the brain to develop. Cranium size increased, with more space for brain. As skills developed, so brain developed. [3]

Question 6

1. A certain DNA is in the mitochondria of all humans today, passed on from the mother. It came from **one** of the females who lived 150 000 years ago. [5]
2. This DNA is carried in the female ovum, and it is part of her plan that goes across into her child. [3]
3. On their Y-chromosome. [1]



Question 7

1. Humans evolved in the Cradle of HumanKind in Africa. Conditions changed, vegetation changed, animals followed their plant growth. Humans had to follow their food, out of Africa. [3]
2. *Homo erectus* were the first to move out of Africa – all fossil evidence across the rest of the world is only of *Homo*. *ArdePithecus* and *AustraloPithecus* fossils are only found in Africa. So this must be where humans developed. [4]

Question 8

[18]

<u>TURKANA BOY</u>	<u>FLORISBAD MAN</u>	<u>HANDY MAN</u>
Richard Leakey (1984)	T. Dreyer (1932)	Jonathan Leakey (1960)
Lake Turkana (Kenya)		Olduvan Gorge (Tanzania)
	<ul style="list-style-type: none">•Low cranium•Flat cranium•Large brow ridges	<ul style="list-style-type: none">•Short•Long arms, short legs•Small cranium•Prognathous jaw•Smaller brow ridges
<ul style="list-style-type: none">•Fully bipedal•Long legs, short arms•Bigger cranium•Smaller teeth•Variety of teeth	<ul style="list-style-type: none">•Flatter face•Less prognathous•Large cranium	

Question 9

1. F – LittleFoot, Mrs Ples, SterkFontein fossils [4]
2. *Cradle* = where baby sleeps. *HumanKind* = People. This is where the Humans developed. [3]
3. It shows strong links between its *AustraloPithecus* grouping, and its *Homo* descendants. [2]



Question 10

1. (a) 3,1 mya [1]
(b) *Homo sapiens* [1]
2. (a) 500 cm³ (= 500 ml) (b) 850 cm³ (= 850 ml) [2]
3. Genetic evidence. Cultural evidence. [2]

Question 11

1. *A. anamensis* and *A. afarensis* [2]
2. $4,5 - 3,0 = 1,5$ million years later. [3]
3. Cranium became bigger. Brain could get bigger. Could develop ability to use tools. [2]
4. Fire could be used for cooking, so more types of food could be eaten. Omnivorous diet possible, so teeth developed. [2]



Question 12

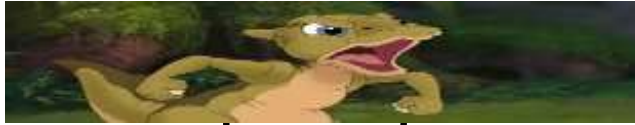
1. (a) B (b) B (c) A (d) A [4]
2. LittleFoot. Mrs Ples. [2]
3. Site 4 [1]

Question 13

1. No matter what your theory, a point is reached where you can only explain it with an intelligent God. Some features show no forms of gradual development. (Eye. Flagellum.) [3]



2. Also called *Religious Evolution*. God's living creations were allowed to adapt to changes in the environment. Otherwise, they'd all die off. [3]

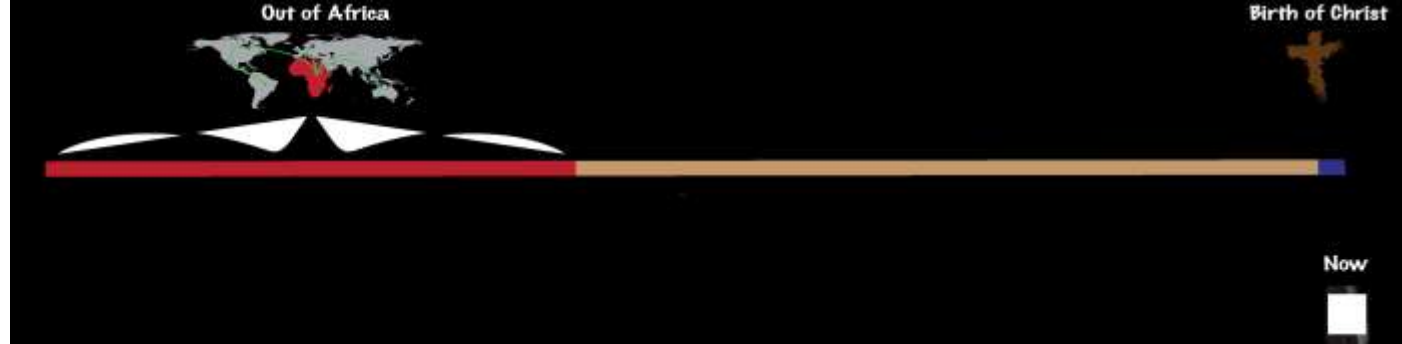


3. There is no place for scientific discussion – it all happened exactly as it states in the religious books. [3]



Question 14

1. 2 mya [1]



2. Climate changed. Vegetation changed. Herbivores moved. Carnivores moved. Humans followed. [3]

3. *Homo sapiens* [1]



4. They were more intelligent and more capable. They out-competed other human species. They survived – others are extinct. [3]