**Why is cultural evolution dependent on biological evolution?**

**Trends in human evolution:**

**What is the advantage of using mtDNA when comparing the sequences of *denisovans*, *Neanderthals* and modern humans?**

**Evidence shows people in Asia & Europe have about 1 – 4% Neanderthal DNA. How is this possible?**

**Define and give supporting evidence on the following human origin models**

1. Multiregional evolution (continuity) model
2. Out of Africa (replacement) model
3. Assimilation (partial replacement) model

**Hominin Evolution:**

|  |  |  |
| --- | --- | --- |
| **Species & Geographic range** | **Structural characteristics** | **Cultural characteristics** |
| Genus: *Australopithecus* (~2 – 4.2 million years ago)Range: Eastern Africa | Flat nose, protruding chin, small braincase, long arms, long curved fingers adapted for trees | Lived in large family groups. Shorter gestational period than modern humans  |
| Genus: *Paranthropous*(~1.2 – 2.7 million years ago)Range: South-eastern Africa |  |  |
| *Homo habilis* |  |  |
| *Homo rudolfensis* |  |  |
| *Homo erectus* |  |  |
| *Homo heidelbergensis* |  |  |
| *Homo neanderthalensis* |  |  |
| *Homo denisovans* |  |  |
| *Homo floresiensis*  |  |  |
| *Homo sapiens*  |  |  |

*How was bipedal motion a driving force for evolution??*

**Bipedal motion**

**Structural traits associated with bipedal motion:**

**3 advantages:**

**Hominoid**

**Hominin**

**Primate:**

**Primate:**

**Hominoid:**

**Hominin:**

**Shared Characteristics that define Primates, Hominoids and Hominins**

Pentadactlyism; Grasping limbs; finger nails on digits (not claws); differentiated teeth; large cranial capacity to body size ratio; social organisation; long gestation; bipedal motion; V-shaped jaw; S-curved spine; enlarged heel bone; shorter & wider pelvis; ability to make fire; ability to use complex tools; development of stable settlements

Key Knowledge 13 –

Human change over time