Assessment Schedule – 2007

Biology: Describe trends in human evolution (90719)

Evidence Statement

Q	Achievement	Achievement with Merit	Achievement with Excellence
One (a) (i) & (ii)	Correctly identifies and clearly states the nature of ONE difference: • Big toe separated from other toes in chimpanzee / big toe in line with other toes in hominin /opposable toe (not thumb); OR • Presence of an arch in hominin foot. ***Must be qualified if for hominins.s***	Explains the significance of this feature: linked to **bipedalsim** • Toes in line → improved locomotion as big toe acts as a pivot for thrust. • Arch gives extra "spring" in step.	
(b)	Describes TWO **features** of the pelvis that differ in chimp and hominin (must clearly state nature of difference): Pelvic bones in **chimp** are • pelvis overall is longer • narrower than in homin • femur attachment point vertical. OR pelvic bones in **hominins** • pelvis is shorter • broader • more cup/bowl-shaped. • Femur attachment point angled. NOT pelvis is larger or smaller		
(c)	Describes any ONE feature • Muscle attachments **different** or changed • Bowl-shaped pelvic girdle supports internal organs **(A only)** • Changes the carrying angle / valgus angle (or implied) (eg. knock-kneed).	Recognises that the changed shape of the hominin pelvis is **beneficial** in locomotion: • Changes position of **muscle attachment** → more **efficient** locomotion; • Carrying angle – more efficient locomotion because movement not side to side (or implied) / balance / stability when walking. ***NOT just "more efficient movement".***	
(d)	Recognises that the diameter of the pelvic inlet is related to the size of the infant **head/brain**.	Increased diameter of inlet in *sapiens* → modern infants are **<u>born</u>** *(or implied)* with a proportionally larger head (cranial capacity) than *erectus* infants. ***Need to reference to at least 1 hominin.***	
(e)	Identifies at least ONE selection pressure: • Pressure for increased size of inlet – bigger brain/increased intelligence • Pressure for decreased size of inlet – better locomotion. ***Must mention pelvic inlet/girdle.***	Explains BOTH of these: • Human babies born with much larger brains than other primates – must be supported by larger pelvic inlet • Width of inlet affects locomotion. ***Selection must be implied.***	Discusses BOTH to some degree: **Trade-off** between +ve and –ve; • Ability to give birth to larger-brained babies • Impact on locomotion – more efficient with smaller pelvic inlet. ***Must mention selection or selection pressure*** *(not just implied).*

Q	Achievement	Achievement with Merit	Achievement with Excellence
Two (a)	Identifies TWO uses of fire • warmth • defence • cook food • provide light at night • herding animals (not hunting) • making tools.	**Benefits** of using fire (TWO) • at night/in colder areas • anti-predator defences eg. fire scares away predators • easier to digest/destroy parasites/access greater range of food / more palatable / preserve food • for toolmaking/preparing food / planning • to get more food • harden points of wooden tools / weapons.	
(b)	Correctly identifies trend • Increasing cranial capacity in younger / more recent hominin species.		
(c)	*Describe trend in relation to cranial capacity* Cultural development appears to have a link with increasing cranial capacity: • simplest tools made by species (*habilis* or earlier australopiths) with lower cranial capacity. • increasing cranial capacity linked with more sophisticated / refined / complex tools / communication / artwork • domestication must be linked to sapiens with larger cranial capacity • fire / home base / cave art – only if linked to **cranial capacity**.	*Links **ONE or more named species** to give trend* Simplest tools made by earlier species,: • *habilis* and Oldowan tools; *erectus* and Acheulean culture; Mousterian of neandertals and early *sapiens*; extremely complex tool kits of later *sapiens*. • 2 or more specific examples of tool type OR details of tools Language: Broca's OR Wernicke's area linked to development of language w.r.t. ONE named species. AND states link with increased cranial capacity.	*Explains how their brain is linked to trend* Higher cranial capacity implies increased intellectual capacity. ***Must compare 2 named species*** • Examples of 2 or more tools used, eg. scrapers;hand axes; spears OR • How the tools were made, eg. chipping; flaking, perforated OR • ability to develop techniques for increasing number of tools created from one piece of stone OR • ability to plan co-operative group activities (where communication is required) such as hunting / tool making AND • states link with increased cranial capacity.
Three (a)	Migration was relatively rapid / fast / quick.	*H. erectus* in Indonesia around 1.8 mya; oldest African fossils only 1.9 mya: implies relatively rapid migration of popn. ***Evidence w.r.t. Africa. Must state specific m.y.a.***	

NOT just "able to survive

NOT easier to eat

NOT just 'activities' or 'socialising'

This **must** be correct to get an "M".

Q	Achievement	Achievement with Merit	Achievement with Excellence
(b)	Describes changes to habitat. • Less food → needed to migrate for new resources / food NOT just water / cold **These don't have to be linked to migration:** • Habitat change forest → savannah • Drop in sea level → land bridge.	Explain how (ONE) change helps **migration** • change from forest to woodland / grassland areas • Potential for drop in sea level to expose new migration routes (land bridges) • Pressure to expand into new ranges; follow prey / food plants to **reduce competition.**	Links aspects to discuss – considers impact of TWO. • Habitat change with specific example of how this leads to greater survival, eg. new hunting / foraging areas to exploit • Pressure to expand into new ranges; follow prey / food plants to **reduce competition** • Potential for drop in sea level to expose new migration routes (land bridges).
(c)	Identifies tool-making ability and / or social behaviour and / or communication as necessary for boat/raft building. **Need TWO points** • making tools • abstract thought • communication • cooperation • curiosity.	Explains that boatbuilding would require: **Identify TWO points and *explain ONE (from tools or communication).*** • Some degree of abstract thought: *must have recognised that floating objects could make it across straits / what is beyond their shore?* • Communication –are able to communicate *because of* ***speech areas in the brain*** OR ***linked to co-operative behaviour*** • Capable of making the necessary relatively complex tools. *Eg. example of complex tool* • Co-operation – co-operation of **group** / **team** needed to complete task of building boat / raft.	Discusses at least TWO of these points: • Some degree of abstract thought: must have recognised that floating objects could make it across straits • Communication – are able to communicate because of **speech areas in the brain** OR linked to co-operative behaviour • Capable of making the necessary relatively complex tools. Either explanation or example of complex tool.

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
SIX questions answered correctly. Minimum of $6 \times A$	SIX questions answered correctly, including at least FOUR at Merit level. Minimum of $4 \times M + 2 \times A$	SEVEN questions answered correctly, including at least TWO at Excellence level and at least THREE at Merit level. Minimum of $2 \times E + 3 \times M + 2 \times A$