

**PENANG SANGAM HIGH SCHOOL  
P.O.BOX 44, RAKIRAKI**

**LESSON NOTES**

**WEEK 13**

**Year/Level:** 13A/B

**Subject:** BIOLOGY

<b>Strand</b>	1 Structure And Life Processes
<b>Sub Strand</b>	1.2 Human Evolution
<b>Content Learning Outcome</b>	Study and understand the main stages of hominid evolution as seen in the genera <i>Homo</i>

**HOMO**

The genus *Homo* appeared in Africa about 2.2 million years ago.

**General characteristics of *Homo***

- Bipedalism with upright walking.
- Central foramen magnum at the base of the skull, directly above the vertebral column.
- Pelvis is short and wide.
- Legs are long in relation to arms; longer femurs for greater stride.
- Short, straight toes; non-opposable big toe; enlarged heel bone; opposable thumb.
- Larger brain with a brain capacity of approximately 600 - 1 400 cm<sup>3</sup>
- Smaller teeth (no protruding canines), no diastema.
- Jaws more rounded with a prominent chin in *Homo sapiens*; older species have protruding jaws.
- Flat face and Wide, curved palate.
- No brow ridges in *Homo sapiens*; older species have large brow ridges.

**Homo habilis**

- ✓ Australopithecus africanus probably gave rise to *Homo habilis*
- ✓ The body of *Homo habilis* was smaller than that of *Australopithecus* and it was ape-like.
- ✓ They also had a larger brain (640 cm<sup>3</sup>) than *Australopithecus*, which meant they had better skills in using their hands to make tools - **OLDOWAN TOOLS**.
- ✓ *Homo habilis* was the first group that used stone tools
- ✓ Fully bipedal, with human like feet and hands

**Homo erectus**

- ✓ Peking Man' 'Java Man' 'Solo Man'
- ✓ *Homo erectus* literally means 'upright man'
- ✓ Teeth more massive than humans but smaller than *H. habilis*
- ✓ Fully bipedal with human like hands and feet.

- ✓ Homo erectus had large bodies, similar to those of modern humans.
- ✓ Their skulls were thick with low, prominent foreheads, heavy brow ridges and no chin.
- ✓ Both jaws were relatively massive with large teeth.
- ✓ Their brain capacity was about 1 000 cm<sup>3</sup>
- ✓ Homo erectus made and used stone and bone tools.
- ✓ **Culture:** There is evidence for the use of fire. There are many firsts associated with *H. erectus*.
  - First evidence of hunting
  - First use of fire
  - Advantage of using fire:

- ♣ Keeping wild animals away at night determined more chances of survival from not being killed and eaten by these animals
- ♣ Fire enable them to cooked food cooked food was more palatable and hygienic ensuring that the bacteria was killed and people did not contract diseases from it. Cooking also enabled preservation of meat- people survived on this preserved food when the hunt was a failure
- ♣ Fire helped them to protect themselves from their enemies who attacked them at night
- ♣ Fire enabled them to make better tools by smelting metals These further enhanced their hunting
- ♣ Fire enabled them to inhabit colder regions as fire would keep them warm and prevent them from dying of cold and frost
- ♣ Fire encouraged social bonding as people would sit around the fire and tell stories, discuss hunting plans
- ♣ Social bonding further encouraged people to live together in a community which further increased their chances of survival since they would look after each other, share their hunting etc

- First systematic tool making (to a set pattern) **ACHEULEAN TOOLS**
- Frequent use of home bases (caves, shelters)

**Activity:**

1. Modern theories about the evolution of modern humans are based on hominid fossils primarily found in Africa. The fossil evidence, however, is not easy to interpret.

- (i) Name the two major Genera classified as hominids.

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- (ii) Give a reason why the fossil evidence is difficult to interpret.

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