



## WEEKLY HOME STUDY PACKAGE - WEEK 5 (02/08/21 – 06/08/21)





<b>Subject</b>	<b>BIOLOGY</b>	<b>Year/Level</b>	<b>13</b>
<b>Strand</b>	B13.1.2 - EVOLUTION		
<b>Sub-strand</b>	B13.1.2.1 – HUMAN EVOLUTION		
<b>Content Learning Outcome</b>	Describe the primate features and explain the evolution of modern man from ancestral primates, and the events leading to cultural, then agricultural and technological revolutions.		

### Sub-Order: ANTHROPOIDS [continued]

**Lesson Objectives:** (i) Describe and compare the general features of Anthropoids.

**Lesson Notes:**

Anthropoids include the three main groups: (1) New world monkeys (2) Old world monkeys and (3) Hominoids.

<p><b>Group I: New world monkeys (Platyrrhini)</b> Eg. Howler monkey, Squirrel monkey, Capuchin monkeys Uakaris, Sakis, Titi monkey</p> <ul style="list-style-type: none"> <li>• Most have a <b>prehensile tail</b>. A prehensile tail acts like a fifth limb and can wrap around branches.</li> <li>• Are exclusively <b>arboreal</b> (tree dwellers).</li> <li>• <b>Noses are flat</b> with <b>nostrils situated wide apart</b> and their <b>opening face outwards</b>.</li> <li>• First digit (thumb) is either small or does not exist. If present it is non-opposable.</li> <li>• Do <b>not</b> have menstrual bleeding.</li> <li>• Facial musculature is simple, so less communication by expression.</li> <li>• There are three premolars.</li> <li>• Less advanced than Old world monkeys.</li> </ul>	 
<p><b>Group II: Old world monkeys (Catarrhini)</b> Eg. Proboscis monkeys, Langurs, Macques and Colobus.</p> <ul style="list-style-type: none"> <li>• Do <b>not</b> have a prehensile tail. Some even lack tails.</li> <li>• Are arboreal except for baboons &amp; macaques.</li> <li>• <b>Nostrils are close together</b> and <b>open downwards</b>.</li> <li>• Have thumbs that are fully opposable.</li> <li>• In most species, there is menstrual bleeding.</li> <li>• Facial muscle highly developed, allows communication by facial expression.</li> <li>• Only two premolars in each half of each jaw.</li> <li>• Brain and social behaviour more elaborate than in new world monkeys.</li> <li>• Many old world monkeys are <b>sexually dimorphic</b>. This means that the males and females look different and are different in size.</li> </ul>	 

**Group III: Hominoids** – includes **Apes** (pongids) and **Humans** (homonids).

- Have no tails.
- Are larger than the New world and Old world monkeys.

- Larger brain thus, more complex system of social behaviour.
- Less pronounced muzzles. Rely more on sight than the sense of smell.

(a) **Modern Apes:** Eg. Gibbons, Orangutans, Gorillas and Chimpanzees.

- Very acrobatic and move by brachiating
- **Arms are longer than legs** and reach the ground when standing upright.
- Gibbons are monogamous-having only one mating partner.
- Chimpanzees are **quadrupeds** (walk on four limbs). Can also walk upright (**bipedal**) for short distances. Gorillas use their knuckles to walk although, sometimes walk bipedally for short distances.

(b) **Hominids (Hominidae)**

- Hominids consist of early humans and their ancestors – *Ramapithecus* (the oldest hominid fossil), *Australopithecus*, and *Homo*.
- They are large primates with an upright stance and bipedal locomotion.
- They have a locking knee joint. The big toe is not opposable unlike in apes where big toe is opposable.
- The limbs are equal in length.
- The pelvis of humans is shorter and they are not pot-bellied like apes.
- Human legs are longer than apes with the thighbone angling towards the knee placing the feet closer together and therefore directly under the center of gravity of the body.
- Human have arched feet. Apes tend to be flat footed (have **plantigrade** feet).
- Human hands are flatter and broader and the fingertips flatter with sensitive nerve endings in the tips.
- The human brain size of 1350 cc is larger than the apes at 400 cc.
- The dental arch in gorillas is U-shaped while in humans it is a parabolic arch.
- Ape teeth have thin enamel while humans have thick tooth enamel.
- Humans have s-shaped spine (backbone) while apes have a slightly curved spine.
- In humans the eyebrow ridges are reduced and less pronounced. Apes have prominent brow ridges.

### Activity Questions

- Which of the primates named below is **not** a hominoid? **(1 mark)**  
 A. Gibbon                      B. Baboon                      C. Orangutan                      D. Chimpanzee
- The possession of a prehensile tail and widely separated nostrils is a feature of a **(1mark)**  
 A. tarsier.                      B. gibbon.                      C. sacred langur.                      D. spider monkey.
- State **two** differences between Old World monkeys and New World monkeys. **(2 marks)**
- Name the primate group that possesses each of the following features:  
 (i) Can make Vitamin C in their bodies.  
 (ii) Insensitive pads of tough skin on their rump.  
 (iii) Prehensile tail and nostrils are well separated and face outwards.  
 (iv) Knuckle walker with no tail and rib cages and are flattened from front to the back. **(2 marks)**
- Using as examples of a human being and an ape, describe the **difference** in their:  
 (i) backbone.                      (ii) foot. **(2 marks)**

**THE END**