

Name \_\_\_\_\_  
ANT 2230 Biological Anthropology  
Lab 6 Hominin origins

This lab assignment introduces hominin evolution using early fossil material from Tchad. Before we analyze the fossil and collect data though, we will make some comparisons among apes and humans. We will be asking the question- what are hominoid features and what is the difference between humans and other apes?

Part 1

Context: Cranial and Dental Anatomy of Living Apes and Humans

| <i>Anatomical Feature</i>  | <i>Ape (Gorilla)</i> | <i>Human</i> |
|--|----------------------|--------------|
| Shape of Dental Arcade<br>(U-shaped/V-shaped/parabola)             |                      |              |
| Anterior Projection of the Lower Face<br>(prognathic/orthognathic) |                      |              |
| Size of Canine Teeth<br>(projecting/not projecting)                |                      |              |
| Position of Foramen Magnum<br>(posteriorly or anteriorly oriented) |                      |              |
| Shape of Frontal Bone<br>(sloping/vertical)                        |                      |              |
| Relative size of Face to Neurocranium<br>(encephalized or not?)    |                      |              |

Name three anatomical features that you would use to classify a mandible as belonging to an ape or a human.

Name \_\_\_\_\_

ANT 2230 Biological Anthropology

Lab 6 Hominin origins

Part II

Aegyptopithecus: A Primitive Oligocene Proto-Ape

At this station, you will find Aegyptopithecus, an Oligocene primate from Egypt (33 mya). At this station you also have a strepsirhine, a Haplorhine primate (tarsier), a catarrhine/Old World Monkey (macaque), and a hominoid/ape (chimp) skull. Compare the skulls for the following traits. Put a star in the column that Aegyptopithecus resembles.

| <i>Trait/feature</i>               | <i>Haplorhine</i> | <i>Catarrhine</i> | <i>Hominoid</i> | <i>Aegyptopithecus</i> |
|------------------------------------|-------------------|-------------------|-----------------|------------------------|
| Overall size                       |                   |                   |                 |                        |
| Relative size of face              |                   |                   |                 |                        |
| Relative size of orbits            |                   |                   |                 |                        |
| Orientation of orbits              |                   |                   |                 |                        |
| Degree of orbital closure          |                   |                   |                 |                        |
| Dental formula                     |                   |                   |                 |                        |
| Size of canine                     |                   |                   |                 |                        |
| Y-5 molar pattern                  |                   |                   |                 |                        |
| Size of cranial muscle attachments |                   |                   |                 |                        |

Name \_\_\_\_\_

ANT 2230 Biological Anthropology

Lab 6 Hominin origins

Part III

Proconsul: The Early Miocene Apes

When did proconsul live? \_\_\_\_\_

Where? \_\_\_\_\_

Part III continued

What cranial and dental features does Proconsul share with contemporary, extant apes?

Draw a picture of Proconsul and the chimp and label these shared, derived hominoid features.

Name \_\_\_\_\_

ANT 2230 Biological Anthropology

Lab 6 Hominin origins

Part IV: Sahelanthropus, the Female Gorilla, and a Male Hominin

|                                   | <i>Sahelanthropus</i> | <i>Female Gorilla</i> | <i>Male Australopithecine</i> |
|-----------------------------------|-----------------------|-----------------------|-------------------------------|
| Subnasal prognathism              |                       |                       |                               |
| Cranial capacity                  |                       |                       |                               |
| Sagittal crest                    |                       |                       |                               |
| Nuchal crest                      |                       |                       |                               |
| Orientation of foramen magnum     |                       |                       |                               |
| Orientation of occipital condyles |                       |                       |                               |
| Frontal bone (forehead)           |                       |                       |                               |
| Interorbital pillar               |                       |                       |                               |
| Shape of dental arcade            |                       |                       |                               |
| Size of canine                    |                       |                       |                               |
| Diastema (present/absent)         |                       |                       |                               |
| C – P3 honing complex             |                       |                       |                               |
| Canine wear                       |                       |                       |                               |
| Enamel thickness                  | Intermediate          | Thin                  | Thick                         |