

# Skull analysis



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We were given eight different skulls and we were required to take measurements and notes on each one, such as recording the maximum braincase length or determining if the specimen has a chin. With these detailed notes, we researched various skulls and matched them with the data we have, therefore leaving us with eight unidentified skulls. This report will thoroughly discuss what we believe each skull is and why we think so.

Firstly, we believe skull number one is *Homo habilis*. *H. habilis* is about 2.4 to 1.5 million years old. This skull has a small supraorbital brow ridge and no sagittal crest. The nasal bones were flat and the facial prognathism is in between. The canines do not jut and a canine diastema is not present. This specimen also had a centered foramen magnum and its facial prognathism was in between. Although the appearance is somewhat apelike, this was the first skull to have a centered foramen magnum, therefore an upright posture. This leads us to believe that it was one of the earlier ancestors of modern humans, the *Homo habilis*.

Secondly, we believe skull number two is *Pan troglodytes*, also known as the modern chimpanzee. *Pan troglodytes* is about one million years old. This specimen has the smallest combined chewing surface and smallest braincase measurements. It did not have a sagittal crest or chin, and the foramen magnum was towards the rear. The facial prognathism was in between and its facial slope was twenty one degrees. These observations lead us to believe that this specimen was a small ape-like creature and it did not walk upright. A modern day chimpanzee seemed to fit these requirements perfectly, which is why we concluded that this skull is *Pan troglodytes*.

Thirdly, we believe skull number three is *Homo sapien*. *H. sapien* is about 200,000 years old to the present day. We believe this is a modern day human because it does not have a canine diastema or a canine

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jut. The foramen magnum is centered, which means that the specimen will have walked upright. Skull number three did not have a sagittal crest, the nasal bones were arched, and the supraorbital brow ridge was small. Flat nasal bones, canine jut/diastema and large brow ridges are more common in ape-like creatures than more human-like ones. The combined chewing surface of this specimen was the smallest of all the skulls, which makes sense because human teeth are relatively smaller than apes. This particular skull's facial prognathism is very minor and it has a chin, which leads us to believe that this is the modern day human or *Homo Sapien*. Next, we believe skull number four is *Australopithecus afarensis*. *A. afarensis* is about three to two million years old. This specimen has flat nasal bones and it doesn't have a chin. The foramen magnum is also in between, which leads us to believe that this was not the common ancestor, but a link in between. This skull also has a fairly pronounced facial prognathism and a large facial slope of thirty degrees. This skull was more ape-like than human, which lead us to believe that it was one of the older skulls. Then, we believe skull number five is *Homo erectus*. *H. erectus* is about 1.39 million to 143,000 years old. This specimen had a fairly vertical face; the facial slope was only fifteen degrees and the facial prognathism was minor. It did not have a sagittal crest and its supraorbital brow ridge was small. Although the foramen magnum was in between and the nasal bones were flat, the underlying human-like traits and skull structure lead us to believe that this specimen was an ancestor of the modern day human. After that, we believe skull number six is *Gorilla gorilla*. *G. gorilla* is about twenty thousand years old. This skull has a very pronounced facial prognathism and its facial slope is thirty one degrees. The foramen magnum was towards the rear, which means that this specimen did

not walk upright. The supraorbital brow ridge was very large and its nasal bones were flat as well. The skull also had a sagittal crest, the braincase measurements large, and the combined chewing surface was quite large, which leads us to believe that this is a modern gorilla. Next, we believe skull number seven is *Australopithecus africanus*. *A. africanus* is about 3.3 million to 2.1 million years old. This skull had a small supraorbital ridge and a sagittal crest. This skull is a little similar to *A. afarensis*, but slightly larger in brain size. This specimen also had the largest combined chewing surface of all the skulls and its nasal bones were in between. The forehead was horizontal and the facial slope was twenty three degrees. This skull also seemed more ape-like than human-like. Some the characteristics were in between, which lead us to believe that this skull had room for change, therefore becoming the common ancestor. Lastly, we believe skull number eight is *Homo Neanderthalensis*. *H. Neanderthalensis* is believed to have originated about 200,000 years ago to 28,000 years ago. This skull had arched nasal bones and a centered foramen magnum, which immediately lead us to believe that this was an ancestor of the modern humans, because ape-like creatures do not have distinct arched nasal bones. The combined chewing surface was similar to the other human-like skulls as well and the facial prognathism was minor. This skull did not have a sagittal crest and there was not a canine diastema or jut. This skull seemed to have fit in the more human-like group of skulls, which lead us to believe that this was a *Homo Neanderthalensis*. In conclusion, we believe we have figured out which skull is which by using distinctive characteristics. Over time, in the modern human perspective, we have noticed that arched nasal bones form and facial prognathism decreases. The foramen magnum is also centered, which allows

us to walk upright. We also gradually develop chins and our canine juts and diastema are not visible. Through the great ape route, their canine juts and diastema are far larger than their ancestors, and their facial prognathism has increased as well. We've learned that we've changed over time and we're curious about how we'll change to adapt to our environment in the future.