

Human Evolution Glossary

Acheulian	Tool culture associated with <i>H. erectus</i> and archaic <i>H. sapiens</i> , the tools called ‘choppers’ were typically ‘tear drop’ in shape and were carefully crafted with a slight bulge on each face (called a ‘bi-face’). ‘Cleavers’ were flatter and more blade-like.
Agriculture and farming	Agriculture is the domestication of animals and the planting of plants as crops for food and increased productivity resulting in a settlement life, building permanent structures, domesticating animals (first dogs then shells and goats), and cultivating crop plants (wheat, barley, lentils, and types of peas).
Archaic Homo sapiens	A group that encompasses the many regional variants of early <i>Homo sapiens</i> with a robust but human skeleton that existed between 400 000 and 100 000 years ago.
Australopithecus	Group of extinct omnivorous bipedal hominins. Including <i>A. anamensis</i> , <i>afarensis</i> , <i>africanus</i> and some others.
Australopithecus afarensis	An early Australopithecine thought to have been a common ancestor to both the later Australopithecines and to the genus <i>Homo</i> .
Biological evolution	Evolution of bone, muscles, physiology and inherited behaviour. Happens slowly as it is passed on through our DNA as we breed
Bipedalism	A habitual upright, walking on two limbs. It is an energy efficient method that favours low speed, long distance movement - walking.
Brachiation	A method of locomotion that involves moving from branch to branch by swinging below the branches rather than moving along the tops of the branches.
Broca's region	An area of the brain that controls the muscles of the lips, jaw, tongue, soft palate and vocal cords during speech. Associated with the creation of speech.
Cultural evolution	Is the transmission of knowledge from generation to generation, not passed on by genetics, that allows enhancements and refinements to accumulate. It includes the development of tools, art, music, rituals, weapons etc and occurs at a quick rate as one person can teach many. <i>Homo habilis</i> is credited as being one of the first hominins to demonstrate this.
Denisovans	According to one theory, Neanderthals, Denisovans, and modern humans are all descended from the ancient human <i>Homo heidelbergensis</i> . Between 300,000 to 400,000 years ago, an ancestral group of <i>H. heidelbergensis</i> left Africa and then split shortly after. One branch ventured north-westward into West Asia and Europe and became the Neanderthals. The other branch moved east, becoming Denisovans. By 130,000 years ago, <i>H. heidelbergensis</i> in Africa had become <i>Homo sapiens</i> —our ancestors.
Dentition	The number, size and arrangement of teeth in the skull and jaw, including the presence or absence of a diastema (a gap between the incisors and canines).
Foramen magnum	Opening on the lower side of the skull where the spinal cord attaches. The large hole the spinal cord goes through in the bottom of the skull.
Gracile	This term is often used to describe the lightly built body of fossils belonging to the genus <i>Australopithecus</i> when comparing them to the genus <i>Paranthropus</i> .

Hip girdle	Long hip bone in quadrupedal animals (to support abdominal organs). Humans have a bowl-shaped girdle to reduce the stress on the part of the hip that transmits body weight.
Hominin	A group that includes humans and pre-humans.
Hominid	Family that includes apes and humans
Homo erectus	The first hominid fossils found outside Africa belong to this widely distributed species of Homo. First to use and maintain fire from a natural source, which they used to cook food, keep warm and exploit new habitats. It also shows a marked increase in brain volume over older hominids.
Homo ergaster	A name which reflects current thinking that the older forms of Homo erectus should be reclassified as a separate group.
Homo habilis	A variable group which has recently been split into two groups, with older forms being reclassified as Homo rudolfensis. Tool used were Oldowan, where they were pebble tools with flat faces at one end and included the use of the flakes from their manufacture.
Homo neanderthalensis	A robust cold-adapted species of Homo confined to Europe and western Asia. Superficially similar to archaic Homo sapiens, this group is characterised by a long, low skull with a reduced brow ridge and a brain volume reaching 1700cc in later individuals.
Homo sapiens	The name given to anatomically modern humans.
Hunter-gatherer	Were most likely nomadic, spending large proportions of their time searching for and collecting plant foods, hunting animals or scavenging carcasses. Groups moved as resources changed, including both seasonal growth and migration of prey species.
Lower Palaeolithic	'Old stone age'. This period refers to the Oldowan and the Acheulian tool cultures. Tools made during this period required fewer flakes to be removed to create the finished tool, and are therefore not as refined as tools made by later tool cultures.
Mesolithic	The transition between the Palaeolithic and Neolithic periods. These tool cultures are characterised by use of 'microliths' – small stone flakes set into wood or bone using resin. This allowed a longer cutting edge for tools such as sickles.
Mousterian	Tools created by Neanderthals and early H. sapiens. More sophisticated and finely worked scrapers, spear tips and axe heads often mounted on wooden shafts and used as spears or perhaps bow and arrow. Produced using the Levallois technique. Required skills to make and techniques taught and learned.
mtDNA	Is the DNA located in mitochondria, mtDNA is inherited from the mother (maternally inherited), as the mitochondria in sperm are usually destroyed by the egg cell after fertilization. This can be used to trace maternal lineage far back in time. It has a relatively slow mutation rates making it useful for studying the evolutionary relationships. Biologists can compare mtDNA sequences among different species and use the comparisons to build an evolutionary tree for the species examined, from this they state that all maternal lineages can be traced back to one individual woman that lived 200,000 years ago (Mitochondrial Eve).

Multiregional Hypothesis	Dispersal hypothesis which states that some of the human species left Africa two million years ago (as <i>H. erectus</i>), spreading into Europe and Asia, and evolved in parallel into their modern forms (<i>H. sapiens</i>) independently throughout with some interbreeding resulting in regional (racial) differences.
Nuchal crest	Ridge at the back of the skull for attachment of neck muscles. Reduced size in bipedal organisms
Oldowan	Tools made by <i>H. habilis</i> . Often called 'pebble tools' because they look like chipped pebbles. The tools consisted of 'choppers' from which several flakes were struck to produce a rough edge. The flakes were probably used for cutting and the 'choppers' used for crushing or digging.
Paranthropus boisei	A very heavily built species of <i>Paranthropus</i> found in eastern Africa and showing marked sexual dimorphism.
Power grip	The high force and low precision movements of the hand which uses the bulk of the hand for force generation rather than the strength of individual fingers. Useful when brachiating or knuckle walking but not good for tool manipulation.
Precision grip	Is the grip of the hand where the intermediate and fingertips and the thumb press against each other allowing for more precise movements but not as much strength. Useful in the ability to produce the fine movements needed to make tools. Examples of a precision grip are writing with a pencil, opening a jar <i>with the fingertips alone</i> , and gripping a ball.
Prognathism	The degree of protrusion of the snout or muzzle region of the face.
Replacement hypothesis OR Out of Africa	Dispersal hypothesis that states that modern humans (<i>H. sapiens</i>) evolved in Africa and left about 200,000 years ago. As they moved out of Africa they outcompeted and replaced regional populations of other Hominin from previous migrations as they went and were eventually the only remaining hominin. This is supported by mtDNA
Robust	This term is often used to describe the heavy skulls with large ridges for muscle attachment belonging to the genus <i>Paranthropus</i> when comparing them to the genus <i>Australopithecus</i> . It is also used to describe the more solidly built physiques of some hominids.
Sagittal crest	Bony projection on the top of the skull for attachment of chewing muscles
Sexual dimorphism	Where there are structural differences between the sexes of a species
Thermoregulation	The ability of the body to keep cool
Upper Palaeolithic	Tools crafted by <i>H. sapiens</i> in this period cover a wide range of tool cultures and are characterised by the use of a greater range of materials to make tools, e.g. spearheads of stone or carved antler joined to wooden handles. Another feature of this period is the use of tools to make tools, e.g. stone chisels used to work wood, antler, or bone.
Valgus angle	The carrying angle of the thighbone that ensures the knee is brought well under the body during walking, increasing walking efficiency by eliminating sideways movement.

Valgus angle (of femur)	Femur is stronger, longer and angled inwards from the hip so that the knees nearly touch (increased valgus angle) This shifts the knees under the hips improving efficiency of balance and walking (eliminates swagger/ side to side movement)
Wernicke's area	An area of the brain concerned with the comprehension of spoken words - the ability to listen.
Y-chromosome DNA	The Y chromosome is one of two sex chromosomes (allosomes) in mammals. The Y chromosome is passed only from father to son and can be used to demonstrate relatedness and trace paternal lineage far back in time to paternal ancestor approximately 140,000 years ago (theoretical Adam). This is useful because the Y chromosome does not recombine with X chromosome therefore can only change by mutation.
Zygomatic arch	Bone structure on side of cheek through which the chewing muscles go.