Honors Biology Name
Skull Lab Per.

Identify each of the various hominids below. Use the information you have gathered from your research of these hominids to correctly name each of these skulls. Use the list given to you to fill in the appropriate blanks. Each skull station has a letter. Write the letter of the skull on the appropriate line that fits your research.

Name _____ Skull # _____

The earliest known member of the human family, the Homindae. In many respects resemble apes. They have ape-sized brains and large incisors. Have many primitive features including large canine teeth, a protruding face with a low forehead and prominent brow ridges. Relatively large incisors and canines; gap between upper incisors and canines; moderate-sized molars. Donald Johanson found remains of a very complete hominid specimen near the Awash River in Hadar, Ethiopia ("Lucy"). Existed between 3.9 and 3.0 million years ago. Had an apelike face with a low forehead, a bony ridge over the eyes, a flat nose, and no chin. They had protruding jaws with large back teeth. The skull is similar to that of a chimpanzee, except for the more humanlike teeth. Females were substantially smaller than males, a condition known as sexual dimorphism. This is the first hominid species for which we have a large sample of fossils. The fossil bones provide strong evidence of a primate that walked on two legs. This hominid had many ape-like features. Its teeth and molars were large and its cranial capacity (indicating brain size) was small about the size of a softball. However, the position of the foramen magnum and the pelvis, knee, and thighbones showed that this species walked on two legs. Bipedal walking was our hominid ancestors' first step toward becoming human.

Name _____ Skull # ____

Higher forehead; shorter face; brow ridges less prominent
Small incisor-like canines; no gap between upper incisors and canines; larger molars. The back teeth were a little bigger than in afarensis. They are more similar to human teeth than those of apes. The shape of the jaw is parabolic, like that of humans, and the size of the canine teeth is further reduced compared to afarensis. First Australopithecine to be identified (Raymond Dart's Taung child, 1924). Name means "southern ape of Africa." Dentition much more similar to humans than to ancestral Miocene apes (canines reduced, more parabolic jaw shape, no diastema). Dentition most likely reflects an omnivorous diet without specialization in any one type of food resource. Cranium still very small and chimp-like. Higher rounder braincase."Gracile", as opposed to their "robust" relatives. That does not mean they were more slender or graceful, but that their skulls were not large and rugged. Gracile fossils show smaller, more modern-looking teeth and more delicate jaws. They did not have the massive chewing structures of their robust relatives, and so they probably ate softer foods. Existed 3-2 mya.

Name _____ Skull # _____

Similar to H. erectus, but teeth may be smaller. Reduced brow ridge; thinner skull; large nose: midface projection. The ridges above the eyes are prominent. Seen from the side, the back of the head looks flat. Compared with those of a modern man, the facial bones appear very large. Eye sockets are wide and high. The average cranial capacity is 1450cc, although this may be a reflection of their greater bodily bulk. The skull is notably longer than that of modern humans, with a lower vault and an occipital bulge at the rear. The nasal cavity is broad and high, and the nasal bones protrude forward. Length of the skull is longer than that of modern man. In phylogenetic respects, thought to be a branch of the hominids, which probably diverged from a common ancestor, to die out in the second half of the last glaciation. Not considered to be archaic human. Brain size is slightly larger than that of modern man, but this is probably correlated with their great bulk. Not believed to have evolved in Africa. A large number of tools and weapons have been found, more advanced than those of *Homo erectus*. Were formidable hunters, and were the first people known to have buried their dead. Existed about 230,000- and 30,000 years ago, during the last Ice Age, and were found only in Europe and the Middle East, where they coexisted with modern humans for the later part of their existence.

Name _____ Skull # _____

The comparatively large and heavy-weight skull features remarkable length of 206mm. The width is 145 mm and height 130mm. The skull was fund on the floor of a cave in Rhodesia in 1921. Besides the skull, other human and animal bones and implements were found. There is evidence that this species used fire, and their stone tools are more sophisticated than those of habilis. About 1.8 million years ago, began to replace *H. habilis.* Believed to have migrated out of Africa and coexisted in Africa with robust australopithecines. The base of the skull is destroyed. The first of these specimens were discovered by Eugene Dubois,

Name _____ Skull # _____

The relatively long skull has a steep forehead, but no continuous ridge above the eyes. The root of the nose is deeply indented and the eye sockets are broad and low. Notable are the wide zygomatic arches and a wide lower jaw, which has a prominent chin. Most closely related to modern man. Tool kits started to become more sophisticated (spears), using a wide variety of raw materials such as bone and antler. Fine artwork, in the form of decorated tools, beads, ivory carvings, and musical instruments are associated with this hominid. Known for spectacular cave paintings and perhaps the first to use meaningful speech. Considered modern humans in physical terms, although sometimes termed "primitive". Can be classified a direct ancestor of modern man. This fully modern human lived in what is now Europe at the end of the most recent ice age.

Name _____ Skull # _____

Vertical forehead, definite chin, small anterior teeth, small brow ridge. In comparison to Neanderthals, these have short braincases with high foreheads, weakly developed brow ridges, short mandibles, and prominent chins. Current theory holds that a major migration of people out of Africa occurred 100,000 to 200,000 years ago. Origin of name means to know. Fossils found on all continents except Antarctica. With 98 percent DNA in common, the key to what makes this species different from chimps may lie in newly discovered genetic "switches."

Name _____ Skull # _____

2.5-1.8 million years ago. Characterized by a large cranial capacity (around 750 cc), large cheek teeth and a long face that is broad across the orbits (eye sockets) and flattened below the nose. The earliest known species found in Kenya, Ethiopia and northern Malawi. The subject displays an intriguing mix of primitive (traits that are shared with an ancestor) and derived traits (traits different from those found in the ancestral species) that make taxonomic and phylogenetic interpretations difficult and controversial.

Name _____ Skull # _____

Fossils have been found at East African sites that have been dated to between 2.7 and 2.3 million years ago. The features include a prognathic (forwardly jutting) face and a relatively small cranial capacity. The anterior (front) teeth in are relatively large. The sagittal crest (a bony ridge on the top of the skull extending from front to back in the middle of the skull) is more pronounced in the back of the skull. Cranial capacity around 410 cc.

Name _____ Skull # _____

Fossil remains been found in South Africa. A large sagittal crest provided a large area to anchor these chewing muscles to the skull. A larger absolute brain size (530 cc), a pronounced sagittal crest, very large flattened face, a brow ridge separated by a slight sulcus, relatively smaller incisors, large mandible, and very large cheek teeth.

Name _____ Skull # _____

Contrasted H. erectus mainly in their larger cranial capacities of 1100 to 1400 cubic centimeters, which fall within the lower end of the modern human range. Have massive brow ridges that resemble that of Homo erectus. Instead of forming a continuous bar of bone, the brow ridge have an arched winged-like configuration that is low in the center and followed in the center and followed the contours of the orbits. Are also classified as "archaic *Homo sapiens*". Archaic *H. sapiens* first appears in the fossil record about half a million years ago. These fossils appear intermediate between *Homo erectus* and fully modern humans. Skulls attributed to archaic *sapiens* have an average cranial capacity of 1200cc, which is larger than erectus but less than the average value for modern *sapiens*. The vault of the skull is more rounded than in *erectus*, and many of the fossils have large brow ridges, receding foreheads, and weak chins. Big-bodied, sophisticated hunter and probable ancestor of Neanderthal and modern humans.

Name _____ Skull # _____

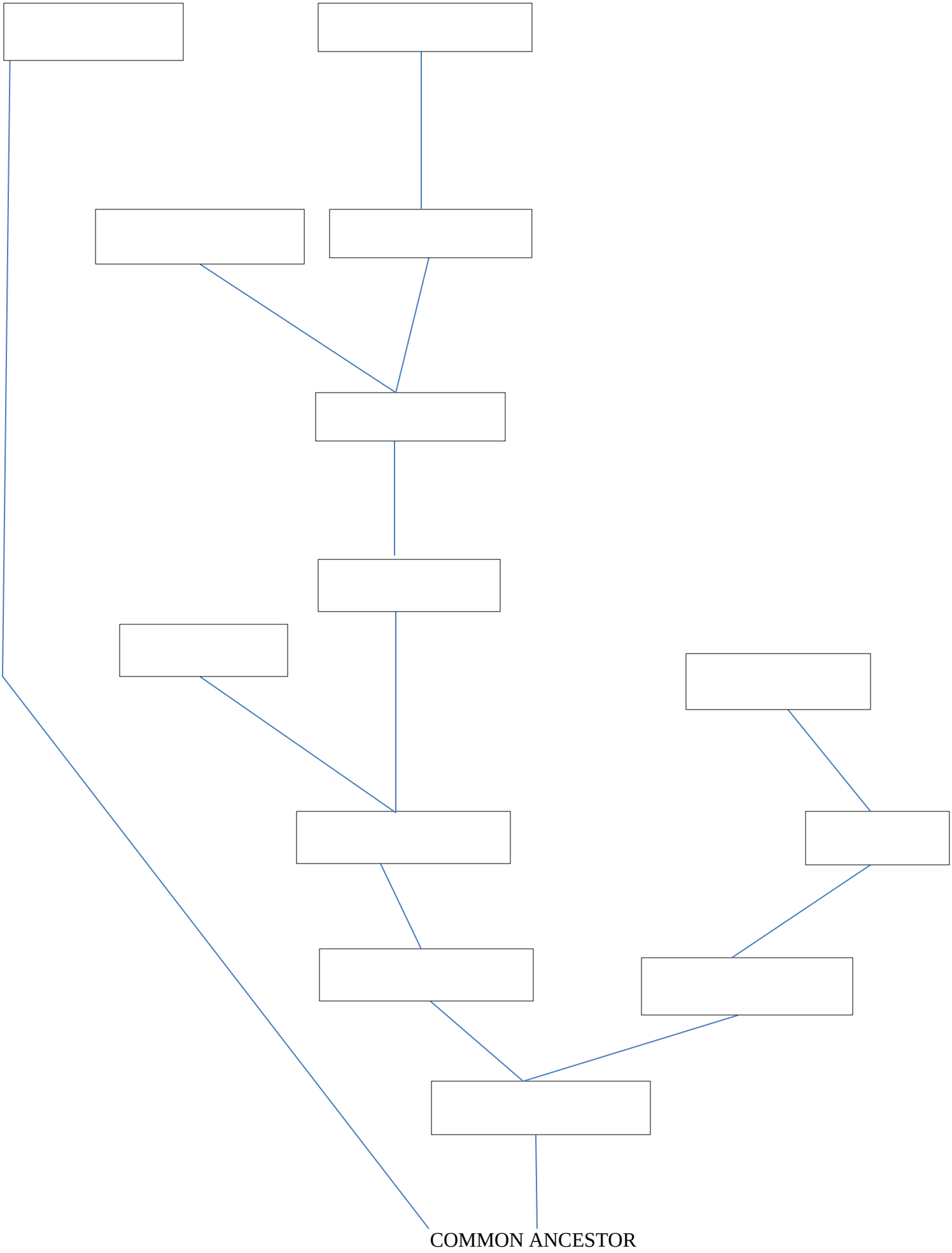
Skull was discovered by Mary Leakey in 1959 in the Olduvai Gorge. Prominent crests on top and back of skull; very long, broad, flattish face; strong facial buttressing. Very thick jaws; small incisors and canines; large, molar-like premolars; very large molars. The large molars of the lower jaw are twice as large as those of recent man. A broad, flat face, prominent cheekbones, and a sagittal crest (bony ridge at the top of the skull) were the main characteristics of this species. The massive molars (four times the size of ours) and large premolars (bicuspids) were covered with thick enamel. This increased the chewing surface and strength of the grinding teeth. This line of hominids is not ancestral to our genus Homo, and eventually became extinct. Existed 2.3-1.3 mya.

Name _____ Skull # _____

Name means "handy man", was so called because of evidence of tools found with him. First archaic human to have produced stone tools. Existed between 2.4 and 1.5 million years ago. It is very similar to australopithecines in many ways. The face is still primitive, but it projects less than in A. africanus. The back teeth are smaller, but still considerably larger than in modern humans. The average brain size, at 650 cc, is considerably larger than in australopithecines. Brain size varies between 500 and 800 cc, overlapping the australopithecines at the low end and H. erectus at the high end. The brain shape is also more humanlike. Thinner jaw; smaller, narrow molars. Relatively small face; nose developed. Remains have only been found in Africa. The brain case is much larger than any australopithecine skull and lacks the large brow ridges typical of Homo erectus. First species of the genus *Homo*.

FAMILY TREE

Fill in the family tree on the next page to demonstrate how you would arrange the skulls based on the information given to you for each skull. Each skull will be used. Use the skull name when filling in your family tree.


COMMON ANCESTOR