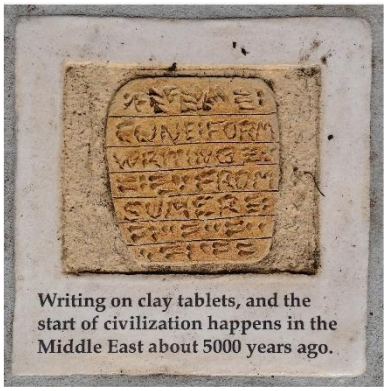
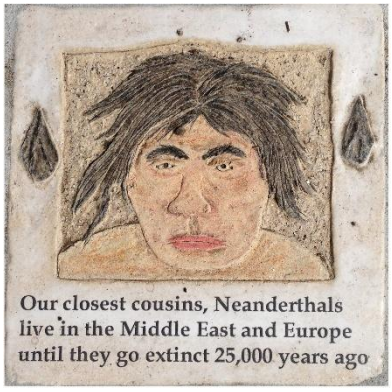
1. Earth Today Circle. Center is START OF TOUR



Writing on clay tablets, and the start of civilization happens in the Middle East about 5000 years ago.

2. HET Civilization arises in M. East 3500K

Civilization appears to have first begun in the Middle East. This conclusion has been challenged over the years by workers on early civilizations from other parts of the world, but today the consensus still stands that civilization first started in the Middle East, in what is now southern Iraq, in the land btween the Tigris and Euphrates Rivers. Other early civilizations appeared soon after in Pakistan, China and Egypt. Recent work in coastal South Ameriuca has shown that anther very earlycivilzation began there as well. A common thread among these early civilzations is that they were based in drier areas along rivers, which led to irrigation for agriculture. The much greater organiation of human effort to build and maintain irrigation systems is what is though to have spurred the development of civilization.


Our closest cousins, Neanderthals live in the Middle East and Europe until they go extinct 25,000 years ago

3. HET last Neanderthals, 24K

Homo neanderthalensis ('Neanderthal man') is named for fossil finds in the Neander Valley in Germany in 1856. Since then, many other fossils and artifacts from this close human cousin have been found in western Asia and Europe. They were adapted to life in the cold, harsh climate of the time. Neanderthals had thick, stocky bodies, jutting eyebrow ridges, a receding chin, low forehead and a broad nose. They have been found with healed broken bones that resemble the injuries suffered by rodeo riders. This would suggest Neanderthals had more than their share of rough encounters with large animals, probably ones they hunted. Neanderthals made simple stone tools, used fire and buried their dead. There is some evidence that they may have put offerings into the grave with the deceased. Neanderthals retreated before the advance of modern humans, and the last ones died out in southern Spain, as recently as 24,000 years ago. Whether they fought with modern humans, or tried to avoid them, or interbred with them, or all three, is not known.

Ice Age cave paintings in southern Europe depict animals hunted by humans, and animals that hunt them.

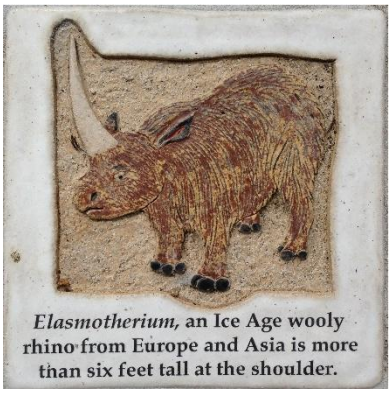
4. HET cave paintings, 32-28K

Ancient human paintings and carvings, have been found on all continents. There are hints that some fragments are older than 40,000 years, but this is still up in the air. There are also hints of much older symbolic thinking: numerous parallel scratches made on bone by stone butchering tool have been dated to over a million years old. These parallel scratches were not formed just from the activity of slicing flesh off bone. This would suggest that an early human ancestor (Homo erectus) might have had some capacity for symbolic activity. But the oldest reliable evidence dates to around 30,000 years ago, for the cave paintings of France and Spain, although even these dates are still disputed. The conservative view would be that at least by 25,000 years ago humans were decorating bones, caves and other sites withsymbolic paintings and carvings, perhaps for religious or ceremonial reasons.

Thick layers of hair and fat protect this Ice Age elephant *Mammuthus* from the intense cold.

5. <u>Mammuths,</u> Late Pleistocine

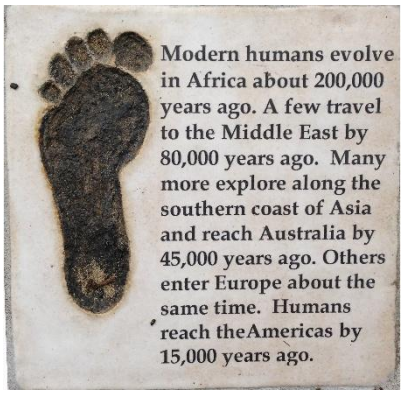
Mammuthus primigenius is the scientific name of the well-known 'wooly mammoths. They lived during the height of the current Ice Age on the harsh tundra and stunted forest of the northern continents. They had many adaptations to the extreme cold, including long, thick hair, an 8-centimeter-thick layer of fat, and curved, five-meter tusks that were probably used to scrape away snow cover from edible plants. Some forty partial or complete mammoths have been found frozen in the tundra. It may be possible to recover enough DNA to impregnate an Asian elephant (the closest modern relative) with mammoth genes and bring these great beasts back to life. Mammoths died out around 10,000 years ago, but a few populations of dwarf mammoth survived on arctic islands until at least 1700 B.C.



Elasmotherium, an Ice Age wooly rhino from Europe and Asia is more than six feet tall at the shoulder.

6. <u>Elasmotherium,</u> Pleistocene (pronounced ee-LAZ-mo-THEER-ee-um)

Elasmotherium sp.('plate beast' – the name refers to it's teeth) was a huge beast that stood two meters tall at the shoulder and was six meters long. The most striking feature of this ancient rhinoceros (the name means 'nose horn') was the single two meter tall horn on its nose. This horn was probably used, as in modern rhinos, mostly for mating behavior, for defense, and for scratching mineral salts out of the ground. *Elasmostherium* had relatively long legs, and could probably run well, despite its huge five ton bulk. Long legs also helped it to cover large areas across its open steep and tundra home in search of food. If it had sense like modern rhinos, its eyesight was por, but its senses of hearing and smell were excellent.



7. Modern human migration from Africa colonizes the world

In the last decade, DNA studies of human populations around the world have added a huge amount of information to the existing archaeological (study of cultural artifacts) and human fossil record. The DNA work basically relies on the fact that populations that have existed in one place for a long time build up a lot of gene variation and populations that have recently expanded into a new area from a initial small first group will be more homogenous genetically. Links between populations can also be understood by comparing the kinds of gene mutations common between them. From these studies it seems most likely that humans evolved in Africa. The genetic variation among African populations is far greater than any population outside of Africa. It also seems likely that a small group of groups of humans, perhaps as few as a couple hundred or a few thousand, left Africa via the Middle East 50,000 years ago. They spread along the southern coasts of Asia to Australia, then to Europe and norther Asia and lastly to the Americas.