

Scientists measure time in two periods : prehistory and history.

The period before written records is called prehistory.

The period of the past for which we have written accounts is called history.

The history period of written records is only around 5,000 years.

The earth is thought to be about four and a half *billion* years old. Human beings have existed for perhaps 2-3 *million* years. The earliest people to use rocks as tools lived on the earth about 1.75 million years ago. During this period, some scientists believe there were four major groups of people:

- ☛ *homo habilis*
- ☛ *homo erectus*
- ☛ Neanderthal Human
- ☛ Cro-Magnon Human

We have learned much about early animal and plant life through *fossils*. This is true about human fossils as well. *Archaeologists* are people who excavate the earth to uncover evidence of past life. People who study fossils are called *paleontologists*. Fossils are formed when the undisturbed remains of plants or animals are changed into stone. This process takes millions of years.

A. homo habilis ("Handy-Man" comes from Latin meaning: homo-man; habilis-handy)

There is a steep-sided valley that lies on the plains of eastern Africa. The valley is called the Olduvai Gorge. (Ol-du-vi Gorj) This gorge extends over 40 km and is more than 100 m deep. There are 7 different layers of rock that contain fossils. The deepest layer was formed over 2 million years ago. A British couple, Mary and Louis Leakey, began a long search in the Olduvai Gorge for fossil remains. They began their work in the 1930s and continued for 40 years. They found many animal fossils and stone tools but only a few remains that could be considered as human. In 1959, Mary Leakey made a spectacular discovery. She found an almost complete human skull-fossil. This skull was around 1.75 million years old.



Appearance:

Homo habilis had a long, flat head with a much smaller brain than humans today. Adults stood about 1.5m tall and walked in a stooped position. Scientists know this because of the size and shape of the leg and thighbones.

Shelter/Food:

Homo habilis lived in shelters built of branches. They were only able to live in warm parts of the world since they did not know how to make clothes or how to use fire. Their fossil remains have been found in parts of Africa.

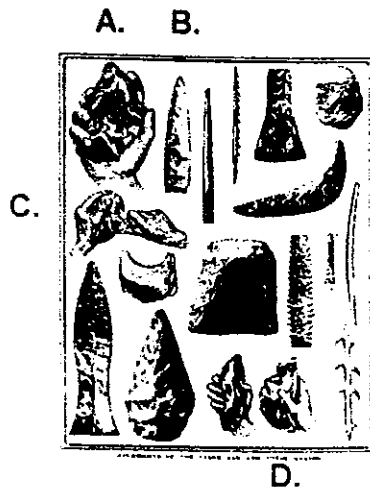
These people ate plants, birds' eggs, wild berries and wild animals such as pigs. They would attack the creatures while they slept, or frighten them into crevices where they would get stuck. Then they would kill them with rocks. The meat would be scraped off the hide and eaten raw.

Tools:

Stone tools used by homo habilis were in the form of:

- A. a primitive hammer
- B. a knife edge
- C. a scraper
- D. a sidescraper

The hammer was simply a rock held in the hand and used to pound a bone or some other object. The knife edge was used to cut open an animal's pelt or skin, and the scrapers were used to shave off the meat. The other tools in the picture are from a later period.





B. homo erectus ("Upright Man" comes from Latin meaning: homo-man; erectus-upright)

A Dutch scientist, Eugene Dubois, found fossils at Java, now Indonesia. In 1891 he discovered the top of a skull and a thighbone. Although the fossils were not those from an ape or a huma, the thighbone showed that the creature had walked upright. He named his creature *Java Man*. These fossils dated back to 1.25 million years ago.

A Canadian, Davidson Black, found similar fossils at Zoukhoudian in China. He named his finds *Peking Man* (Peking was the earlier name for Beijing). Scientists concluded that both these discoveries were the fossils of early humans who had lived about three-quarters of a million years ago.

Appearance:

Homo erectus was similar to homo habilis with an average height of 1.5 m tall. They had large bony eyebrow ridges and almost no chin. The vocal chord was not well developed so these people may have spoken in a short, halting manner if indeed they spoke at all.

Tools:

The tools of homo erectus were better developed than those of homo habilis. They used bones and rocks to chip away at flints to make blades for cutting. These blades were also used on wooden sticks for spears. These people could now hunt other animals besides small pigs.

Food/Fire:

With the use of better hunting tools, homo erectus had a more varied diet. They could now attack elephants and other large animals. They also ate a variety of wild plants.

The ability to use and make fire enabled homo erectus to:

- a. live in colder climates
- b. cook their food
- c. protect themselves against wild animals
- d. have a source of light

It is thought that later groups of these people created fire by rubbing two sticks together. These groups probably used the burning branches from trees that had been struck by lightning. Fire made life much easier for homo erectus and they adapted more successfully to their environment. The fossils of these people have been found as far north as England and Germany as well as in the southern parts of Africa, Europe and Asia.

For these later groups of homo erectus scientists use the name *homo sapiens* ("reasoning human"). Homo sapiens is the species to which all modern-day people belong.



The above picture shows the different appearances of these three species of humans:

1. Java
2. Neanderthal
3. Cro-Magnon



C. Neanderthal Human

In 1856, in the Neander Thal (Neander Valley) in Germany, fossilized bones of a human were found. They were estimated to be tens of thousands of years old. Some of the finds in Europe and the Middle East have dated the Neanderthals back to 130,000 years ago. They lived in caves kept warm with fire.

Appearance:

The Neanderthals were slightly taller than the homo erectus and they still had the rather thick eyebrow ridge. Their clothes were simple. Laces made of skin were threaded through rough holes that had been in the hides. The hides had been dried after the meat was scraped away.

Tools/Food:

The Neanderthal people developed many tools. Chipped rock was turned into knives, borers, and spear-sharpeners. These tools enabled the people to:

- a. get food
- b. make shelter
- c. protect themselves against wild animals.

They hunted large animals such as bears. The bears' skulls have been found in caves. These people probably smoked out the bear and killed it with spears and rocks. They cooked the meat, used the hide for clothes and possibly kept its skull as a good luck charm. Like homo habilis and homo erectus they gathered wild plants for food.

Customs:

The Neanderthals were the first people to bury their dead. Graves have been found in the floors of caves. The skeletons showed that the bodies had been carefully prepared for burial. Fossilized pollen from flowers has been found around the sites, showing a custom of dusting graves with flowers, similar to what we might do today.



A. Cro-Magnon Human

Pieces of skeleton-fossils found in the dirt of a site in France known as Cro-Magnon, are thought to be those of people who first appeared in Europe about 30,000 years ago. These people were imaginative and skillful. Their tools and carvings on bones were detailed and clear. They became known as Cro-Magnons after the name of the place where they were found. Cro-Magnon fossils have been discovered on five continents. This shows they could adjust to many different climates. It has been suggested, but not fully proven, that Cro-Magnons killed off the Neanderthals with their greater strength and more developed tools and weapons.

Appearance:

Cro-Magnons were slightly taller on the average than modern people. Their brains were as large as ours today. They had high foreheads and pronounced chins. They could speak in the same range of sounds as modern people.

Tools/Objects:

The tools of Cro-Magnons were much more advanced compared to those of the Neanderthals. They used flint to make sharp blades that could be used as chisels, knives and spearpoints. Needles, fish-hooks and barbed harpoon-heads enabled them to catch and kill different animals to broaden their diets. These people were imaginative enough to make lamps out of stone bowls containing animal grease and a wick of moss or fur. Necklaces were made of shells and animal teeth. The Cro-Magnons even had flutes and whistles made from animal bones.

Paintings:

The greatest find of Cro-Magnon paintings happened in 1940 in the town of Lascaux, France. The walls contained rows of paintings of many colours, preserved for thousands of years by the conditions in the caves. These people used paints made from a mixture of coloured rock-powder and animal fat. The brushes were made of animal hair that was tied to bones. These paintings have been dated back to 30,000 years ago and show many hunting scenes.

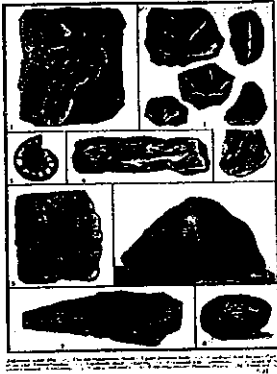


Hunting to Farming:

About 10,000 years ago, after the last ice age, more and more wild plants grew and people began to see how some plants would grow again when the seeds fell to the ground. This was the beginning of simple farming. It enabled the people to settle in one area and stay for a longer period of time. They began to tame animals. These were the first *domestic* plants and animals. Goats, sheep, chickens, turkeys, pigs and cattle were tamed. Plants such as barley, rice, oats, sunflowers and beans were cultivated.

The Study of Fossils:

Paleontologists are people who find and study animal and plant fossils. Fossils are formed when the remains of plants and animals are changed into stone. This process takes millions of years. The remains must be buried and then left undisturbed. The picture on the left shows fossils of different plants and animals.



This is the skull and skeleton of a human. These are called human fossils.



These are the fossilized footprints of human ancestors found in Tanzania, East Africa by Mary Leakey. They are 3.5 million years old. Two people walked over wet volcanic ash. Then the wet ash hardened like cement and preserved the footprints. Louis and Mary Leakey were two of the world's most famous hunters of human fossils. They are thought to be the greatest contributors in the field of human origins.



Louis and Mary Leakey at an excavation site.

Digging and Dating Evidence:

There are several important steps that paleontologists take when digging up a site where fossils have been discovered. These steps are:

- A. Divide the site into numbered squares one or two metres in length using stakes, strings and surveying equipment.
- B. Remove earth from each square and put it through a *sieve* to detect anything
- C. Map, number and photograph each *find*.
- D. Cover each article in plaster or some protective material and send to lab.
- E. Scientific equipment in the lab calculates the age of the *fossil*.