

5. Evolution of Mankind

5.1 From *Homo habilis* to *Homo sapiens sapiens*

5.2 *Homo sapiens sapiens* and civilization

In the previous lesson, we learnt that the primitive man evolved from apes. The next step for humans was learning to use their hands effectively to make tools.

5.1 From *Homo habilis* to *Homo sapiens sapiens*

The skilled human : The species of humans who could use their hands skilfully is known as ‘the skilled human’. The first evidence of this species was



A reconstructed picture of *Homo habilis*

Stone choppers made by *Homo habilis*



found in the border region between Tanzania and Kenya in the continent of Africa. The scientist Louis Leakey, who discovered this species, named it *Homo habilis* because beside their fossilized

remains, he found some tools made by them. In Latin, ‘homo’ means man, and ‘habilis’ means ‘the one who uses his hands skilfully’. *Homo habilis* could stand on two feet and walk. His spine was slightly bent and not quite erect. His brain was bigger than that of the apes, although his face and limbs were somewhat similar to theirs.

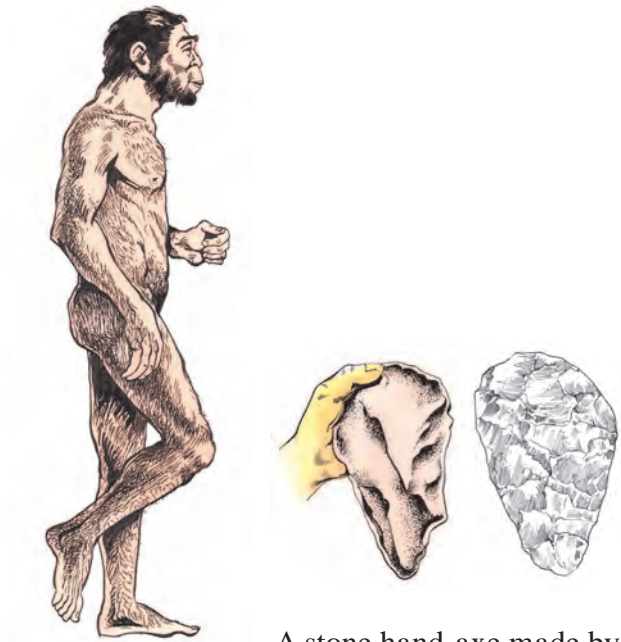
The stone tools made by *Homo habilis* were not useful for hunting big animals. They had limited uses such as scraping meat from the skin of dead animals or breaking bones to get the marrow. We can infer from this that *Homo habilis* was a forager. He ate the leftovers of animals that had been hunted by other animals. It is possible that he hunted small animals and gathered eggs, wild fruits and roots to eat.

***Homo erectus* :** *Homo erectus* marks an important stage in human evolution. ‘Erectus’ means ‘the one who stands erect’, hence the name *Homo erectus*. Compared to *Homo habilis*, he had a more developed brain. Humans of the *Homo erectus* species lived in groups.

Having seen wildfires, humans knew about fire. It is likely that *Homo erectus* had learnt the technique of fetching the burning branches of trees to use that fire. During his time, most of the earth was covered with ice sheets. Therefore,

the climate was extremely cold. *Homo erectus* could survive in that extremely cold climate because he had learnt to use fire. However, he had not yet mastered the technique of making fire.

Tools made by the *Homo erectus* were more developed and symmetrical compared to those made by *Homo habilis*. *Homo erectus* made tools like the hand-axe. Remains of *Homo erectus* have been found along with his tools in the continents of Africa, Asia and Europe.



A reconstructed picture of *Homo erectus*

A stone hand-axe made by *Homo erectus*

***Homo Neanderthalensis* (Neanderthal Man)** : One more stage of development in human evolution is *Homo Neanderthalensis*. He was physically big and strong. He is commonly known as the Neanderthal Man because his remains were first found at Neanderthal,



Neanderthal Man

a place in Germany. His brain was more developed than that of *Homo erectus*.

The Neanderthals primarily lived in caves. They made tools out of big pebbles as well as from the flakes scraped off from them. Such tools were fixed on a bone or wooden shaft to make weapons like the spear, axe, etc. The Neanderthals hunted big animals. They used scrapers made from stone flakes to scrape meat from the hide of dead animals. They used leather clothing. They were mainly meat eaters. They ate meat roasted on fire. They knew the art of making fire by rubbing sticks of hard wood on each other or by striking one flintstone on another to obtain sparks.

It is likely that the Neanderthals had developed some artistic skills. Some scientists believe that they also communicated with each other by producing grunts and other primary sounds. However, it is not known whether they had a developed language system to express their thoughts with the help of words.

When a member of the group died, the Neanderthals buried tools, horns, etc. along with the dead body. Also, they applied red ochre to the dead body before burying it. It indicates that the Neanderthals had established some rituals of burying the dead.

In the course of time, some groups of Neanderthals left Africa and migrated up to the continents of Europe and Asia. Naturally, they had to face a different environment. They had to adopt new ways of living and finding food. Therefore, they went on modifying and improving the tools that were essential in their life. However, the improvements in tools took place over thousands of years.

'*Homo sapiens*' is the name used for humans that were more advanced than the Neanderthals. '*Homo sapiens*' means Intelligent or Intellectual Man. We shall learn more about him later. The Neanderthals and the *Homo sapiens* were neighbours for some time in Europe. It is believed that due to reasons like their conflict with *Homo sapiens* and inability

to adapt to environmental changes, the Neanderthals became extinct. On the basis of C-14 dating, it is estimated that the Neanderthals became extinct about 30,000 years ago.

Homo sapiens : The human species that was more intelligent than any of the earlier species was named '*Homo sapiens*'. In Europe *Homo sapiens* is also known as 'Cro-Magnon Man'. Their remains have been found in the continents of Europe, Asia and Africa. *Homo sapiens* made different kinds of tools and implements to suit the tasks they needed to do. They used to make stone blades and fix them in grooves and notches made in wood or bone handles.

Homo sapiens had evolved to the



Homo sapiens

stage of having a fully developed larynx which could produce a range of sounds with subtle differences. Their jaws and the muscles inside the mouth were well-developed and the tongue was flexible. Hence, *Homo sapiens* could use them to produce a variety of sounds and modulate his voice the way he liked. Using his imagination, he could give names to the different things he saw and could put his thoughts and feelings into words. Using these words, he could speak and communicate. In short, he had a well-developed language system. He could draw pictures on the basis of actual observation as well as imagination. He



A cave painting

even began to make artistic objects. That is why, he has been named '*Homo sapiens*', i.e., 'Intelligent Man' or 'Thinking Man'.

5.2 *Homo sapiens sapiens* and civilization

Homo sapiens sapiens : *Homo sapiens sapiens* is the name given to the humans as their capacity to think developed even further than that of *Homo sapiens*. The capacity of their brain

and their grasping power also developed further with time.

We, the modern humans, are *Homo sapiens sapiens*. The appearance and health characteristics of human beings indicate their similarity to their ancestors. This is known as heredity. Genetics is a science that studies heredity. Genetic research has shown that we have inherited some traits of the Neanderthal Man. Thus, it can be said that the Neanderthal Man and *Homo sapiens* are both ancestors of the modern humans. Around 11000 – 10000 BC, *Homo sapiens sapiens* developed the technique of cultivating land and keeping animals. Because of their well-developed capacity to think, the speed at which they improved their technology increased with time. They began to live a more settled life. They began to grow foodgrains in the fields. As a result, the amount of carbohydrates in their food increased.

The changed lifestyle and diet affected the appearance of humans. Their body and face grew smaller than they had been in the earlier generations.

The name *Homo sapiens sapiens* reflects their intellectual and cultural rather than their physical prowess. All animals must necessarily meet their basic need for food. However, modern humans are not satisfied with only doing that much. Through their efforts to enrich their lives using their creativity, intelligence and skills, human beings acquired a culture

and continue to develop it. The technological and cultural progress achieved by modern humans after the beginning of agriculture and domestication of animals has been extremely rapid.

The history of the evolution of humans that began from apes can be divided into various stages. In the following lessons, we shall learn about various facets of human culture at these different stages.

Exercises

1. Fill in the blanks.

- (a) Homo is a Latin word which means ----- .
- (b) The Neanderthals primarily lived in ----- .

2. Answer each question in one sentence.

- (a) Who is said to have first made tools like the hand-axe ?

- (b) What is heredity ?

3. Give reasons for the following.

- (a) The Neanderthals became extinct.
- (b) Humans could produce subtle and varied types of sounds.

4. Read the clues given below and find the words hidden in the box.

H	O	M	O	H	A	B	I	L	I	S
G	R	G	H	A	N	D	A	X	E	M
R	O	R	O	G	E	R	M	A	N	Y
A	A	U	R	F	L	A	K	E	S	Q
I	S	N	N	I	Z	W	F	E	E	T
N	T	T	S	R	K	E	N	Y	A	O
H	O	M	O	E	R	E	C	T	U	S

- Humans who stood upright.
- A sound that Neanderthals could make.
- Humans who used their hands.
- *Homo sapiens sapiens* began to grow this in fields.
- Pieces of stone used to make tools.
- It kept *Homo erectus* warm although they could not make it.
- A country in which remains of *Homo habilis* were found.
- A way of preparing food that Neanderthals used.
- A tool made by *Homo erectus*.
- *Homo sapiens* could do this to make pictures.
- Humans could use their hands because they learnt to stand on two of these.
- The country in which remains of Neanderthals were first found.
- These were buried with them when Neanderthals died.

Activity

Prepare a chart to show the progress of Man at the various stages from *Homo habilis* to *Homo sapiens sapiens*.

Do you know this?

The history of human evolution has been reconstructed solely with the help of the fossilized human bones discovered so far. An animal's body decomposes after death. The bones get dispersed. They gradually get buried in the soil. Over a period of thousands of years, the minerals in the soil get deposited inside the pores of these bones. In the course of this time, the bone disappears but the minerals which take the shape of the bones are left behind. These are actually rocks in the shape of bones. Such rocks are known as the 'fossilized remains of animals' or simply 'fossils'.

Such animal fossils have been found in a number of countries in Asia, Africa and Europe. Using these, it is possible to work out the sequence of human evolution but we have not yet discovered all the necessary fossil links. The evidence that we have till today indicates that human evolution has not been unilinear, that is, with only one ancestor species evolving into the next species one after the other. It is likely that during evolution, many branches originated from the same ancestor species. It is also likely that some of these branches became extinct.

At the present moment, it is not possible to tell exactly how the various branches of the human species were related to each other in the process of evolution. However, it is important to study some of these species as the markers of important stages of human evolution. The tools and other objects made by them provide the evidence for reconstructing the history of human culture. In this lesson, we have included four such human species: *Homo habilis* → *Homo erectus* → *Homo Neanderthalensis* (Neanderthal Man) → *Homo sapiens*.

Characteristics of the structure of the human body : The structure of the human body

is different from that of other vertebrate animals in certain aspects. These differences set man apart from the other vertebrates. The most important of these characteristics are as follows :

1. Humans could stand upright. It enabled them to walk on two feet. Other vertebrate animals cannot stand upright. Hence, they walk on four limbs.

2. As humans learnt to stand erect and walk on two feet, it became possible for them to use their two forelimbs as hands. The structure of human hands came to be different from that of the forelimbs of other animals.

3. Humans have an opposable thumb. That is, they can move their thumb against the other four fingers of the hand. It allows them to have a firm and flexible grip on various objects in various ways. It enables them to perform various tasks that require manual skills, which other animals could not do. They could make various tools and other articles. Hence, humans are known as 'makers' of devices, tools and implements.

4. The capacity of the human brain is much greater than that of other animals. Therefore, humans have a greater capacity to think.

5. The muscles of the human face are such that it can express their feelings.

6. The structure of the larynx, the muscles of the mouth and a very flexible tongue together enable humans to produce a variety of sounds. However, this system, which enabled humans to speak took thousands of years to develop.

