

COMET: It is exciting to see a comet in the night sky. A comet is not a star. It is a rock made of dust and ice. The long tail is seen because, as the comet comes near the Sun, the ice melts and reflects the light of the Sun. The tail of the comet is seen in the opposite direction of the Sun. The tail of the comet appears because minute particles from the Sun strike the gaseous part emitted from the comet. Now it is clear that the Solar family consists of the Sun, its eight planets, the satellites like the moon that revolve around the planets, dwarf planets, thousands of asteroids, meteoroids and comets.

UNIVERSE: Millions of constellations of stars seen in the sky is called a galaxy. Thousands of galaxies form the Universe. The Universe is vast and ever expanding. Milky way galaxy is one among the many galaxies. MILKYWAY GALAXY: The twinkling stars that are seen on a starry night are actually like the Sun, but are far away. Many of these stars are hundreds and thousand times bigger than our Sun. They are seen only as a small spot of light because they are very, very far away. Scientists have found that planets revolve around these stars. Millions of stars, including the Sun and other celestial bodies which can be viewed with our eyes belongs to the Milky way galaxy. A white streak of light can be seen on a clear night for few days. Our ancestors called this as the Milky Way galaxy. In India it is named as "Akash Ganga". Milky way galaxy is a dense cluster of stars. They appear as a tiny dot of light because they are far away. We live in the Earth which is part of the solar system in the Milky way galaxy.

EARTH IS A LIVING PLANET: Earth is the third planet from the Sun. Mercury and Venus are very hot planets. Mars, Jupiter, Saturn, Uranus and Neptune are very cold because they are far away from the Sun. Land, water, air and heat are available in the optimum amount only on Earth. Therefore different kinds of life develop and increase only on Earth.

In our Solar system there is life only on Earth. There is no life on other planets. Earth is called as 'Living Planet' because life is found in abundance only on Earth. The period between the full moon and new moon is called as waning of the moon. The period between the new moon and full moon is called as the waxing of the moon.

#### ECONOMICS

The basic needs of man are food, clothing and shelter. The food we eat like rice, wheat, etc. are cultivated in the land. The farmers cultivate food grains. This is termed as agriculture. Agriculture is the first known occupation to man. Man who lived in caves, to protect himself from rain, cold and heat later started to live in houses. Cities began to emerge and man's need started to increase. To fulfill his needs, he started to manufacture garments, footwear, bi-cycles, cars, radios and television sets. In our daily life we utilize many things. These things are sold in shops. To buy and sell commodities we use money. If we save money it is good for us and the country. Food helps us to grow. Education is necessary to grow intellectually. Medical facilities protect us from diseases. Teachers impart education and doctors treat patients. Along with them Government employees work for the welfare of the people.

Agriculturists, labourers and employees help to improve the economy of the country. This is called as National income. What an individual earns is termed as Per Capita Income. Many people do not get income. The Government helps to these people. Through this they receive their basic requirements. This is called distribution.

1 . Production                      2. Consumption                      3. Distribution      are the basic divisions in economics.

A market is a place where things are bought and sold. When people purchase commodities from the market to satisfy their requirements, it is called consumption. The buying and selling of commodities is termed as trade. People who buy and sell things are called traders. Finished products are bought by traders and sold in the markets. People who buy and sell large quantities of commodities are called wholesale merchants. People who buy and sell small quantities are called retailers. When there is surplus of commodities there is a fall in price. When there is deficit of commodities there is a rise in price.

Amarthya Sen Scholar in Economics (Nobel Laureate)??

The Government supplies essential commodities like rice, dhal, sugar and oil through fair price shops. The Government has taken several steps to control price rise through

the enforcement of laws. When there is a shortage of commodities the Government imports them from other countries and distributes it through fair price shops. As the demand increases there is an increase in the production, consumption and distribution. This is termed as Economic Development. What should be produced? How does production take place? These are monitored by the Government. The Government helps in the stable development of the country's economy. Those who study Economics become scholars. To prepare the Central and State Government annual budget, it is necessary to have a knowledge of Economics. A sound knowledge of Economics will surely help in the developmental work in all fields. In our country Amartya Sen received the Nobel Prize for Economics.

## HISTORY

5. PREHISTORIC PERIOD: An animal called Dinosaur lived many million years ago. The eggs of the Dinosaur were excavated near Ariyalur. They belonged to the prehistoric period. History tells about the people who lived in the past with evidences according to the ages.

The archaeological excavation has been going on for 100 years in Athichanallur, which is in Tirunelveli District in Tamil Nadu. Recently in 2004, they excavated more than 160 burial urns in one place. This proved that people lived in that place long ago.

The written and archaeological evidences that tell us about the period in which people lived, events, food habits, customs, culture, forms of government and literature are known as historical evidences. History can be divided into pre-history and historical period. Historical period has proof of written evidences and other evidences. The written evidences are literary work, historical notes, stone edicts, copper plates and palm leaves.

Evidences to know about pre-historic

period: To know about the pre-historic period, there are evidences such as the things that belonged to that period, ruins, fossils, horns and bones of animals, tools made of stones, skulls and deposits (impressions) which are found in different places around the world as well as in India. With the help of all these we know about the pre-historic period of India. The Pre-historic period can be classified as:

o Palaeolithic Age - Old Stone Age (BC 10000 years ago)      Neolithic Age - New Stone Age (BC 10000 - BC 4000)

Chalcolithic Age - Copper Stone Age (BC 3000 - BC 1500)

Iron Age - Iron Age (BC 1500 - BC 600)

With the help of the tools used by early man, we can divide the stone age into Old stone age and New stone age.

1. Old Stone Age: (Palaeolithic Age) He was a nomad. He lived in the jungle. He took shelter on the branches of trees, in holes and caves. He discovered fire by using the flint stone. The primitive man was scared of thunder and lightning and worshipped them. He had to protect himself from cold, Sun and rain. He wore dresses made out of leaves, skin of animals and barks of trees. He used stones, branches of trees, bones and horns of the animals as weapons. He ate vegetables, fruits, roots and meat of animals which he gathered from the jungle. Since he could not find food in one place he went from place to place in search of food.

Era of some important events: Beginning of the Earth - 4.6 Billion years ago;

Appearance of man - 4000 years ago (Homosepians);      Beginning of agriculture - 8000 years ago; Beginning of the cities - 4700 years ago

BC - Before Christ;      AD - Anno Domini;      CE - Common Era;      BCE - Before Common Era;      BC 31 - Birth of Thiruvalluvar;      BT - Before Thiruvalluvar;      AT - After Thiruvalluvar

When he did not find vegetables, fruits and roots, he hunted animals. He used stones, branches, bones, horns of animals etc. to hunt animals. In the beginning he hunted small animals all alone. Then they hunted in groups. Both men and women involved in hunting. In the Pimpet Ca cave in Madhya Pradesh we see a painting. This depicts a woman with her child tied to her waist throwing an arrow. From this we know that women were also involved in hunting.

Places in India where the Old stone age tools were found:

Madhya Pradesh - Soan River bank, Pimpet Ca, Mageshwa.

Rajasthan - Luni Valley;      Karnataka - Pagalkhat.

Andhra Pradesh - Karnool caves, Renigunta.

Tamilnadu - Vadamadurai, Athirambakkam, Pallavaram, Kanchipuram, Vellur, Thiruvallur.

2. New StoneAge: (Neolithic Age) Old stone age man went from place to place in search of food and for hunting animals. Then he learnt to produce his food. He domesticated animals like goat, cow and hen.

The first animal he tamed was dog, which helped him in hunting. He reared goats and cows and had milk as his food. The next stage in the evolution of man is known as New StoneAge.

During this age, he used polished, carved, sharp stone weapons. In this period, he started to produce food. Wheel was invented. As a result of this, he was able to transport things from one place to another easily. With the help of wheels he made pots. He sharpened the crude weapons and attached them with handles made up of wood and bones. Metal was in use. Copper was the first metal used by him. They built mud houses with thatched roofs and began to live in the pots they used. The Harappan culture belonged to this age. - The houses were round or oval shaped. They were built below the ground level and thatched with wooden planks. oAgriculture was their main occupation. Chalcothic Age weapons. They domesticated and reared animals.

4\_IronAge:

° Axes, handles made out of bones,  
fishing hooks, needle and chopper were in use.

Ø During the New stone age they had the practice of burying the dead. The dead were buried along with their tamed animals in the front yard of their houses. Places where New stone age weapons were found: Tirunelveli, Thandikkudi, Pudukottai, Tiruchirapalli and Salem.

3. CopperAge : (Chalaolithic Age) At the end of the New stone age, The period when the tools were made up of iron was called Iron Age. Household articles and agricultural implements were made out of iron. They learnt to melt the metal and make weapons. They were creative. Vedic period belonged to the Iron age.

Madhyapradesh - Pimpet Ca cave

Alloys: Stainless Iron + Chromium = Steel;                      Copper + Lead = Bronze;                      Copper  
+ Zinc = Brass;                      Iron + Maganese = Steel