

Indian Science and Technology heritage

The Indian Civilization has a long recorded history of scientific culture that goes back to more than 5000 years.

This gallery portrays the rich contributions of ancient India in science and technology. Indians developed one of the earliest written scripts (the Indus Scripts), built urban towns, with residential complexes and wastewater systems, way back in 2500 BC.

Ancient Indians produced the Delhi Iron Pillar that has remained rust less for more than 500 years.

They discovered the zero and were the first to use decimal place value number system way back in 500 AD.

Cotton Gin, an Indian invention, was the fore runner of all geared machines that subsequently paved the way for the west to bring about an industrial revolution.

Indians also created enduring architectural constructs that have become eternal world heritages.

They smelted zinc, which requires precise metallurgical knowledge, on industrial scale and produced thousands of tons of zinc over hundreds of years.

Science and Technology in India- a time line - The Indian Civilization has a long recorded history of scientific culture that goes back to more than 5000 years.

This gallery portrays the rich contributions of ancient India in science and technology. Indians developed one of the earliest written scripts (the Indus Scripts), built urban towns, with residential complexes and wastewater systems, way back in 2500 BC

Technology Traditions of Indus valley - This exhibit is controlled by CPU. This exhibit gives the idea of the Indus valley civilization at its peak during 2600BC to 1900 BC.

Harappans the World's first town planners - In this exhibit we can study that Harappans were the first to adopt systematic town planning. The exhibit consists of the various models collected during excavation.

Glimpses of Harappan technology - In this exhibit the technological traditions of Harappans in ceramics, pottery, refined personal ornaments, metallurgy, steatite, agate, and shell ornaments.

Shell bangle making - This exhibit is a model showing the making of bangles with help of the shells.

Textiles- Indian origin - It is pointed by the scholars that the Harappans were the first to grow the cotton and had established Cotton Empire.

Introduction - An attempt is made with this part of the exhibit to show case the ancient Indian independent contributions in science. Specially focusing on some important fields of science, mathematics, medicines etc.

Triguna - The gunas though assuming infinite diversity of forms and powers can neither be created nor destroyed. The idea of conservation of matter was studied long back in India.

Tanmatra - This exhibit shows about the five subtle infra atomic particles named as tanmatras.

These five Tanmatras are not exactly the human senses of sound, but they signify corresponding energy potentials.

The panchabhuta - This exhibit tells about the five basic elements that is sabdha, sparsha, rupa, rasa and gandha tanmatras.

Atom 2500 years ago - Vaisesika atomism (4th Century BC) four basic elements of vayu, tejas, ap, and ksiti are considered material and have atomic structure. The study of atom was done in India in fourth century BC.

a) Gravity - It was regarded that gravity not as a force but as a cause of the act of falling in 5th century BC.

b) Elasticity - Elasticity was conceived as the property that responsible for a bow or a branch of tree, which can undergo contraction or expansion.

c) Viscosity - It was conceived as the cause of cohesion and smoothness.

Properties of matter- Vaisesika has laid considerable emphasis on properties of matter. This exhibit tells about the fluidity property of matter.

Zero the Indian invention - This exhibit shows about the use of zero by Indians in Mathematics 2000 years ago.

Big numbers - This exhibit tells how big numbers were used in decimal system. It also tells how Aryabhata used big numbers to express revolutions of the earth.

Decimal place value - This exhibit tells us the use of decimal system in the history of India.

Word numeral - The nine numbers ranging from 0 to 9 were related to physical realities. In this exhibit you can study how the different numbers were used to express each number.

Brahmas discs - This exhibit tells about the almighty Brahma's game of building this universe. And still how many years he has to play the game of building this universe.

Golden rule of three - This exhibit tells us how the method of ratio and proportion was freely dealt with in Bakhshali Manuscript in 2nd AD.

Square root - This exhibit tells you the method of finding the square root and the cube root by Aryabhata

Rasashala- Ancient Indian chemical lab - This exhibit shows how different kinds of apparatus were used in extraction of medicines in the chemical lab of Nagarjuna. We can study the Indian works on alchemy and chemistry

Value of pi - This exhibit tells how accurately the value of π was found out by Aryabhata in fourth century.

Pythagoras or sulba sutra: This exhibit tells about the sulba sutra or Pythagoras theorem.

Bidri and lost wax (acclaimed Indian crafts) - This exhibit is explained with help of a documentary of age old method of making Bidri work. The bidri work is an original technique which involves inlaying of gold or silver on zinc, steel and copper base.

Area of circle - This exhibit tells how Aryabhata gives the area of circle formula which is known even today.

Mathematical series: This exhibit shows us about the trigonometric operations.

Sushrutha (The plastic surgeon) - This exhibit tells how the great Shushruta had used surgery techniques in olden days. It introduces us about the various surgical equipment used.

Ayurveda (Ancient Indian medical system) - This exhibit tells about the Ayurveda science in the Vedic period. It introduces us to the Science of life that originated in ancient India. Ayurveda elaborately deals with the measures for a healthy life.

Dravyaguna (Harnessing nature's gift for human health) -

Crucibles (shapers of metal technology) - This exhibit tells the story of the use of crucibles in the metal extraction. It gives the idea of the heat resistant crucibles used in the Indian metallurgy.

Harnessing metals - This exhibit tells us about the old method of mining used in India. It introduces us the method of mining the ores.

Iron smelting (Exploiting the master metal) - This Exhibit has a model of furnace used in extraction of iron. A model of Naikund furnace, one of the most ancient iron furnace in India has been displayed here.

Delhi Iron pillar- The rustless wonder: This exhibit tells us about the making of one of the rustless wonder in the world. It is 1600 years old. This exhibit introduces us to the making of this rustless wonder

Legendary Indian wootz steel - This exhibit tells us about that special iron which was used by Indians to prepare the swords in the olden periods.

This special steel had a great demand from Damascus, where the famous Damascus swords were produced.

Zinc smelting (An Indian contribution) - This exhibit introduces us to the age old method of smelting zinc in India.

Ancient Indians were the first to produce zinc on large scale. This exhibit consists of a furnace used in smelting of zinc called 'kosthi'.

Indian musical instruments - This exhibit consists of some musical instruments of Indian origin. Music is very old to India.

Heritage quiz - This quiz programme can be attended by four participants. This is software produced by Visvesvaraya Industrial and Technological Museum (VITM), Bangalore.

Story of India - This exhibit consists of a TV in which the story of India will be repeated continually. This story tells us about the Indian past traditions which are still alive.

Glimpses of science and technology in India - This exhibit is operated by CPU the visitors can use the mouse and study about the traditional technology of India.

Pottery - The exhibit consists of a still model of making pottery in the past which is still followed in India.

Pottery (preserving for posterity) - This exhibit tells us the story of pottery which evolved in Harappan period in India which is still used in the country side.

Architecture - This exhibit is controlled by CPU the visitor can study the various architecture styles used in India. viz, Jain style, Islamic, Rock cut.....etc

Weights and measures - This exhibit tells us about the weights and measures system used in Harappan period.

Yarghu (The portable cannon cleaner) - This exhibit is a miniature model of the portable canon cleaner used in the Akbar's regime. This was invented by Shiraji.

The art and technology of cannons - This exhibit introduces us to the art of making canons and the use of multi-barrel canons in the past.

Architecture of temple - This exhibit is controlled by CPU the visitor can study the various architecture styles used in India. viz, Jain style, Islamic, Rock cut.....etc

Qutub minar - This is a miniature model of Qutub Minar situated in Delhi.

Ram yantra - This is a model of Ram yantra in Jaipur, which was used to study the altitude

of the celestial objects in the past

Samrat yantra - This is a model of the Yantra present in Jaipur which was used to measure time and the position of the stars.

Konark wheel - This is a small model of the wheel in the temple of sun god in konark.

Sun temple of konark - This is a small model of sun god temple in Konark, carved in stone.

Sun god - This is the miniature stone sculpture of sun god present in Konark Temple.

Excellence in Indian crafts (Traditional knowledge from the past)

Heritage video corner - This is a place for the visitors to sit and relax while watching the Heritage video of India.

Gharat - This is a model showing the use of hydel power to grind the grains.

Noria and saquia (The art devices of Indian origin) - This is the model of a water pumping system used in Egypt which was copied from India.

Gharat (Harnessing energy from nature) -This is a model showing the use of hydel power to grind the grains.

Ancient Indian glass - This exhibit tells us how the use of glass was used in ancient India since the period of Ramayana.

Metallurgy Heritage - This exhibit tells us the use of metals in various ways in ancient India like gold, copper, silver, zinc, brass, iron etc.

Techniques of coin making - This model tell us the method used in minting coins in the olden periods