Euclid 300BC
In 300BC, Euclid noted, in his *Opticia,* that light travels in straight line and described the laws of reflection.

Archimedes 514 AD
Archimedes believed to have used a mirror during siege of Syracuse to set the roman ships on fire. Burning mirrors were also used to defend Constantinople in 514 AD.

Lady with the mirror 11th century
Referencefor mirror is found in this figure from Khajuraho (MP). It shows a young lady who regards her image in a mirror.

Alhazen (965-1039)
A pioneer in optics who invented laws of refraction and correctly explained and proved the modern intromission theory of vision. His experiments on optics include experiments on lenses, mirrors, refraction, reflection, and the dispersion of light.

Sir Isaac Newton (1700-1799)
He investigated the refraction of light and demonstrated that a prism could decompose white light into a spectrum of colours. He also invented a reflecting telescope now known as a Newtonian telescope.

William Herschel (1738-1822)
He constructed more than four hundred telescopes. The largest and most famous of these was a reflecting telescope with a 40ft (12m) focal length and an aperture 49½ inches (126cm) in diameter.

Justus Von Liebig (1803-1873)
In 1835 he invented a process or silvering of glass that greatly improved the utility of mirrors.

Some more....
Hubble space telescope (HST)
HST, launched in 1990, is a large space-based observatory. This huge mirror is used to gather light from distant galaxies.

Diamond
Glittering diamonds are attraction forever. High dispersion and refractive index make them useful for industrial applications and jewellery.

OTHER ATTRACTIONS

Fun Science

Science Park

3D Science Show

Pre-historic Animals

Science Demonstration

Sky Observation

Science of Ocean

Planetarium

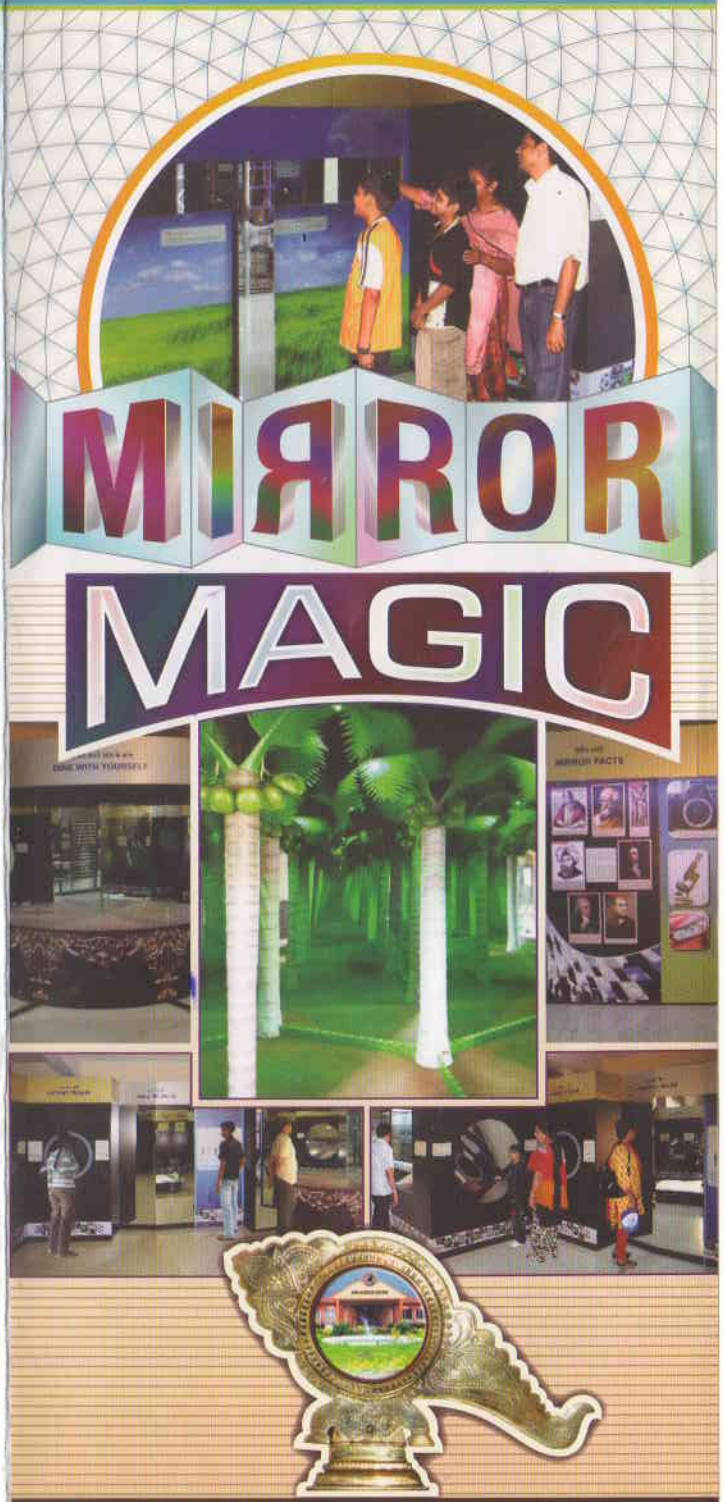
Opening Hours
10.00 am to 6.00 pm
on All Days except Diwali & Holi

Admission Fee

	General Public	Students
Science Centre	₹ 15.00	₹ 10.00
Planetarium	₹ 25.00	₹ 10.00
3D Science Show	₹ 20.00	₹ 10.00

GOA SCIENCE CENTRE & PLANETARIUM

National Council of Science Museums, Ministry of Culture, Govt. of India
Marine Highway, Miramar, Panaji, Goa - 403 001
Ph.: 0832-2463426 E-mail: gscp1@dataone.in



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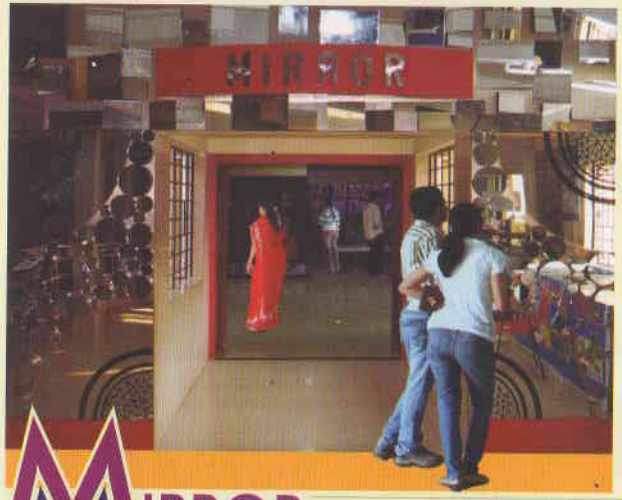


MIRROR MAGIC

History of mirrors dates back to ancient times when mankind first noticed reflections in still waters. Long before man was able to make glass mirrors; polished metal was used to observe images. Greco-Romans used convex disks of metals like bronze, tin, silver etc. for various applications. The earliest mirrors were hand mirrors. Mirrors large enough to reflect the image of whole body did not appear until 1st century AD. The chemical process of coating a glass surface with metallic silver was invented by Justus Von Liebig in 1835 which resulted in modern techniques of mirror making.

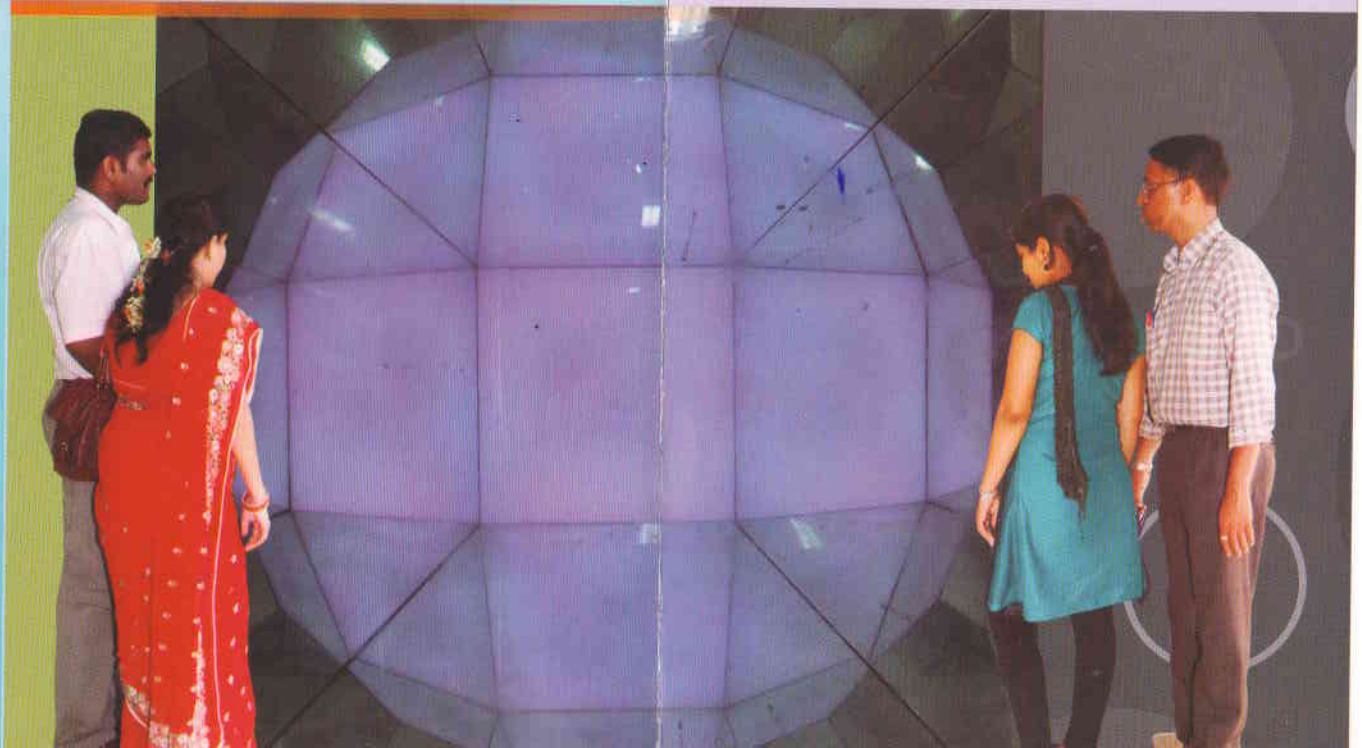
Mirrors make rooms come alive and add magic to a room. They visually expand small areas, and add depth to existing décor. It is this gadget that is available in every home irrespectful of the social strata. When one mirror can create so much interest in us, imagine the effect a combination of them would provide.

We are all aware of mirrors that are flat. What happens when it is curved? What manifestations does varying the magnitude and direction of curvature of a mirror create? What happens when several mirrors are placed at different angles to each other? The "Mirror Magic" gallery provides opportunity for exploring all such manifestations and experiencing them.

A flat or plane mirror will always reflect an image with lateral inversion. A few mirrors kept at different angles would display structures like octahedron, dodecahedron etc. Visitors can experience all these by inserting their head inside the array of mirrors. They can also walk through a maze created with mirrors as well as dine with several images of their own in this exhibition.

Visitors can watch their own image changing its dimensions by standing in front of the 'changing image exhibit'.They can also have fun by looking at their distorted images at Fun Mirrors as well as learn the science behind why concave mirrors make you look taller and convex mirrors look shorter.

Here, you can have several interesting experiences like floating in air, vanishing image, seeing only back of your body, rotating image, tunnel of infinite depth etc. You along with your friend, while standing on both sides of a special glass, can create a peculiar image at "Half You Half Me" exhibit.

Kerala's legacy for world renowned technology of unique metal mirrors is indeed an evidence of its rich culture and metallurgical traditions. 'AranmulaKannadi' is a standing example of which is evidenced by its presence at renowned museums worldover.

The gallery is full of several interest stimulating experiences through interactive exhibits and also explains scientific principles involved in mirror optics.