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Editorial
A Step Towards the Future

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Here we present to our visitors the second issue of the PSC newsletter, which represents a significant event to the Center's team. The first edition was delayed for five years since the very first opening of the Center, because we did not wish to start and not be able to follow up with the issues in due time. But, here we are keeping our promise by issuing this second edition of the newsletter, which we hope will meet your satisfaction.

Recently, the PSC has organized a variety of programs and events, the most distinguished of which was part of the Center's participation in the celebration of the Bibliotheca Alexandrina Fifth Anniversary, in the period 20-25 October 2007. The Center's contribution included the "Women in Science" conference, which was honored by the attendance of Her Excellence the First Lady, Mrs. Suzanne Mubarak; in addition to the World Space Environment Forum 2007. During the celebration week, the Center also inaugurated the "Sky of Alexandria" planetarium show, the first to be produced entirely in the Middle East, in collaboration with the Arab Academy for Science and Technology. Furthermore, the Center organized a festivity to launch the Arabic version of the "Golden Age of Islam", a long French documentary covering the glorious scientific discoveries and contributions of the Muslims since the beginning of Islam and until the fall of Andalucía; , the documentary is now showing in episodes at the "Listen & Discover" auditorium.

Coming up, the PSC is organizing a mini-festival during the Mid-Year vacation, which will include, in addition to the regular ongoing scientific lectures and programs: the Flight Festivity, the Remote Sensing workshop, the Discover your Environment camp, and the finale of the 3rd FIRST-LEGO League in Egypt competition. During the same period, the Center will also be inaugurating the new planetarium IMAX film "Solarmax", in addition to showing the "Sky of Alexandria" planetarium show to the public.

During the second school semester 2007/2008, the Center's activities include a large number of programs and events that include among others: the Intel ISEF National Science Fair, the Annual Science Festivity, in addition to the World Water Day, the World Environment Day, and Creativity Day. Continuing programs include: Super Science Show, Fun with Science, Zoom Earth, among others. The Center is also offering a large variety of workshops at the ALEXploratorium and the History of Science Museum, in addition to scientific lectures by speakers from inside and outside the Bibliotheca Alexandrina.

I hope that you find answers to all your inquiries within this issue of the PSC newsletter, and look forward to seeing you soon at the Bibliotheca Alexandrina Planetarium Science Center.

CONTENT

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planetarium

WHAT IS A PLANETARIUM?

A planetarium may be defined as:

- a building housing an instrument for projecting the positions of celestial bodies onto a domed ceiling;
- an optical device for projecting images of celestial bodies and other astronomical phenomena onto the inner surface of a hemispherical dome; or
- an apparatus or model for representing the solar systems.

A planetarium is simply a domed theater in which a realistic and scientifically accurate simulation of the night sky is created, using a "Star Projector". In most cases, the star projector can be rotated about several different axes of motion, giving a planetarium the ability to show the correct sky for any date of the year and any location on the surface of the Earth.

Most planetarium programs are usually about astronomy, or astronomy-related topics, and are designed to use the projected stars as the main visual, though many other special effects are also used. Commonly-used special effects include sunrise, sunset, rainbows, constellation figures, and animated phenomena such as meteors, comets, and auroras. More sophisticated visuals may include undulating nebulae, rotating planets, multiple star systems, galaxies, or black holes. Although 16mm film was once a popular medium for special effects, this is gradually being replaced by video, computer graphics, and laser technology.

In recent years, thanks to computer technology and video projection, planetariums have become rooms in which all or part of the universe can be modeled. The new high-resolution equipment, which is both versatile and high-performance, can show not only the appearance of the sky but also a large number of phenomena.

Planetariums are not distributed evenly around the world; most of them are in the northern hemisphere, with the largest concentration being in North America and Europe. There are also planetariums in Eastern Europe and Russia, but they are suffering because of the difficult economic situation these. In Asia, India, China, and Japan have reasonable facilities. As for Africa, sadly it has very few planetariums. Finally, South America is now starting to build some extremely fine planetariums.

SOLARMAX

New

An IMAX film
Duration: 40 Min.

We are at the edge of a spiral galaxy ... far from the galactic core...
Our Earth is a small planet ... its pole crowned with a circle of "Northern Lights"...
The whole planet glows in the infrared warmth of a star we rarely think about...
A star we call the Sun.
Our Sun is a star ... one of billions
It has shone for five billion years and will shine for five billion more...
For us, it is the great engine of life...
Ancient civilizations recognized the Sun as the source of all life and called it God...
They observed it with care ... sometimes setting up stone markers to send that knowledge through time...
Aristotle taught that the world was round and theorized that the Sun and planets were carried in crystal spheres nested around the Earth ... thus, misleading astronomers for centuries...
Copernicus found the courage to believe in a world spinning through space ... a vast Universe of billions of stars...
It was a cosmos awesome enough for one of humanity's great minds ...
Galileo was the first to look at the sky through a telescope and he found that the Sun was not the flawless orb...
It was as spotty as a teenager!!!
Space has given us new eyes...
Everything we had glimpsed before can be seen anew...
Built in England and France for the European Space Agency, with instruments from Europe and the United States of America, SOHO was launched by NASA and parked a million miles from Earth at a point where the gravity of Earth exactly balances the gravity of the Sun.
SOHO shows us the Sun as we have never seen it before...
Every sunrise brings hope...
For some, it's the hope that we can learn to do what the humblest plant can do...
Make clean and abundant energy directly from sunlight...

STARS SHOW

Live show by the PSC resident astronomer
Duration: 45 Min.

With every instant, the Sun rises at one place on Earth and sets at another...
When the sunlight fades away, sparkling objects appear in the night sky...
As we gaze at these wondrous objects, we notice they are different in size, shape and color...
What exactly are these objects? And what is the secret of these differences we see in them?
Ever since the beginning of time, Man has gazed constantly and endlessly at the stars ... trying to unravel its secrets...
It occupied a big part of his time and thought ... he saw in them stories inspired by his life and his beliefs...
But Man's relationship with the stars was never constricted to myth and fantasy ... it was also science...
It consumed a large portion of the attention of all the great civilizations of the ancient world...
With the passing of time, the attention Man gave to this science did nothing but grow...
Now, in this modern age of high technology, Man has learnt a great deal about this mysteriously vast and endless Universe...
Still, it is all but a tiny drop in the sea of knowledge hidden deep in this amazing tapestry we call the heavens...
If you wish to learn a bit about this amazing cosmos, come visit the BA Planetarium and have a closer look at the sky, with an accomplished astronomer to guide you through a one-night journey of the Universe in just 45 minutes.

Oasis in Space

A half-dome video panorama show
Duration: 25 Min.

Beyond the moon, beyond the sun and stars, far beyond the Milky Way, we enter a realm of perpetual darkness … the cold, black emptiness of space.

Yet, even here, small amounts of matter can be found, these microscopic particles form the raw material of the evolving cosmos.

About five billion years ago, a new, rather average yellow star condensed from a great cloud of gas and dust. Relatively close to the star, a place of blue skies and liquid looms into view.

Here we find our "Oasis in Space".

Our star dwindles in the distance, circled by a family of planets and moons. Water exists on many of these worlds, but only on Earth did it become the major component of evolving life.

But the Sun is just an average star; small, stable, like billions of other stars in the Milky Way galaxy. And our galaxy itself is typical of billions of galaxies in the known universe, each in turn, home to untold billions of stars.

How many other "water planets" orbit just the right distance from their own "average" stars?

…The search for life goes on…

…We listen for a faint echo from some far-off civilization for a signal from an alien world … for signs of another … Oasis in Space...

Ring of Fire

An IMAX film
Duration: 40 Min.

Our earth was born of fire.

Today, more than four hundred active volcanoes shape life on the Pacific Rim; geologists call it "The Ring of Fire."

Here, where half a billion people dwell, is a window on the awesome geological forces that shape our planet:

… In Beppu, people have learned to live with volcanic powers, harnessing their geothermal energy for health and relaxation.

… Deep within the crater of the notorious volcano of Kawah Idgen, there are those who seek their living directly from the cauldrons of Hell.

… High on the slopes of the sleeping volcano, at the surviving Mother Temple of all Bali, the Kecak Dance unfolds.

… The rich fertile land which is the wealth of Indonesia is a gift of the volcanoes.

… Not only humans are adapted to life on the Ring of Fire.

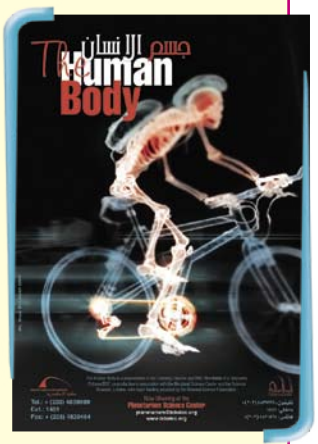
Creation did not happen just once … Creation continues … It is a beginning without end …

The Earth is alive...

Human Body

An IMAX film
Duration: 40 Min.

Using groundbreaking photographic techniques, the Human Body promises to amaze audiences with a firsthand look at some of the body's simple biological processes, such as the creation of 200 billion red blood cells over one 24-hour period, the 30-40 yards of new hair we sprout each day, and the daily demise of 10,000 brain cells that will never be replaced!



You will be enthralled by this extraordinary and insightful adventure that begins each morning from the moment we first open our eyes, as burning cells from the surface of our retinas reveal a fresh set of sensors, to the last rumblings of our evening meal as it is turned into the energy we will need to face tomorrow.

The Human Body is a presentation of the Learning Channel and BBC Worldwide of a Discovery Pictures/BBC co-production in association with the Maryland Science Center and the Science Museum, London with major funding provided by the National Science Foundation.

Show Times

• For the Planetarium daily schedule and fees,

please consult the Center's official website: www.bibalex.org/psc

• Kindly note that, for technical reasons, the Planetarium maintains the right to cancel or change shows at any time without prior notification.

Fixed Show Times

From Saturday to Thursday [11:30 am & 13:30 pm];

In addition to 10:30 am, for groups only, from Sunday to Thursday;

And 16:00 pm and 17:00 pm on Thursday, Friday, and Saturday

History of Science Museum

The History of Science Museum is not just a traditional museum; in addition to traditional museum tours, it integrates a variety of activities that ranges from daily contests, interactive presentations, hands-on workshops, to lectures and festivities; all of which target school children, in particular, and the public at large, in general.

Medicine in Ancient Egypt

Within the new strategy adopted by the History of Science Museum to transcend the basic function of a museum as a static exhibition to become a dynamic and interactive facility, the museum organizes special programs and events, the latest of which is the "Medicine in Ancient Egypt" program and festivity.

Medicine in Ancient Egypt program is currently in progress; its objectives are to present the contribution of Pharaohs to science and to develop the youth's interest in their heritage. The program includes a series of workshops, lectures and field trips:

- The first of the program's activities was the "Mummification" workshop, part of the Center's Summer Festival 2007. The workshop, which aimed to familiarize the children with the Pharaonic mummification process, was prepared to suit a variety of age groups. It included different experiments according to the age group:

  Elementary School:

  - From the first to the third grade: *How to make a mummy using argil?*
  - From the fourth to the sixth grade: *How to mummify an apple?*

  Preparatory and Secondary Schools: *How to mummify a fish?*

- Another activity included in the Center's Summer Festival 2007 was the fieldtrips, two of which were to the Egyptian Museum and the Pharaonic Village. The participants of the program were able to observe the different aspects of the Pharaonic life, including original mummies, under the guidance of PSC specialists.
- During the first school semester (2007/2008), the program continued with lectures delivered by an Egyptologist on 25 and 26 December 2007.
- The program continues into the second school semester (2007/2008) with archaeological fieldtrips in Alexandria led by an Egyptologist and PSC specialists; the trips will be succeeded by concluding lectures at the "Listen and Discover" Auditorium.
- To enhance the results of the program, the History of Science Museum is organizing a festivity to celebrate the end of the program on 25 February 2008, at the Small Theater in the Bibliotheca Alexandrina Conference Center. The festivity targets school students 12 to 16 years of age and the general public.

Museum Admission and Tours

Opening Hours

From Sunday to Wednesday	[from 09:00 am to 16:00 pm]
Saturday and Thursday	[from 09:00 am to 18:00 pm]
Friday	[from 15:00 pm to 18:00 pm]

Guided Tours Schedule

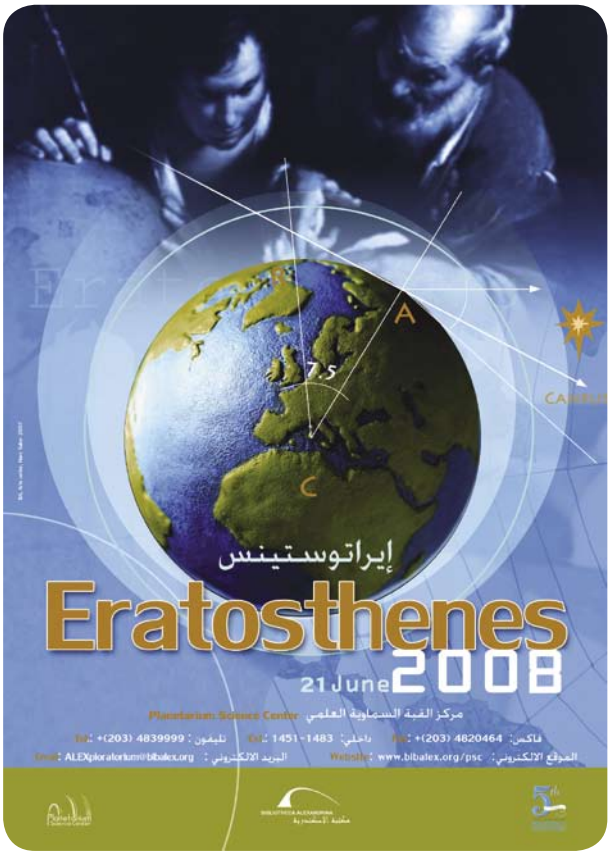
From Saturday to Thursday	[10:00 am + 11:00 am + 12:15 pm + 13:00 pm + 14:15 pm]
Additional tours on Saturday and Thursday	[16:45 pm + 17:45 pm]
Friday	[16:45 pm + 17:45 pm]

- **Museum entry fees are included in all Planetarium show tickets**
- **For non-audience of the Planetarium, Museum entry fees are as follows:**

Students	**0.25 EGP**
Non-students	**0.50 EGP**

- **Museum Tours are free for ticket holders**

Eratosthenes 2008



Eratosthenes is a traditional annual festivity that the Bibliotheca Alexandrina organizes with the aim of promoting science and heritage among school students. The festivities of 2003, 2004, 2005, 2006, and 2007, evolved around measuring the Earth's Circumference following the footsteps of Eratosthenes; the tradition continues with "Eratosthenes 2008".

Why the "Eratosthenes" festivity?

To commemorate the eminent Greek scientist categorized as "Beta" because of his role as a pioneer in a diversity of humanitarian, scientific and cultural issues. Eratosthenes, being ahead of his time, changed the ancient beliefs and uncovered new horizons. His work changed the tradition of accepting scientific statements as is and allowed further research beyond what is known.

Who is Eratosthenes? Ἐρατοσθένης (276- 194 BCE)

Mathematician, astronomer, geographer, philosopher, historian and poet, Eratosthenes is considered one of the most universal scientists of ancient times.

Born in Cyrene (part of present Libyan Arab Jamahiriya), Eratosthenes studied in Athens and then moved to Alexandria were he lived for many years. In 236 BCE, he was appointed Librarian of the Library of Alexandria and became the third Librarian of the illustrious edifice.

An exceptional scientist, Eratosthenes was the author of distinctive works of mathematics, and set some of the most important geometric and arithmetic definitions. In his works of astronomy, he developed a catalog that included 675 stars and 44 constellations; he also calculated the ecliptic orbit. Eratosthenes wrote the first treaty on mathematical geography, including a map of the world, and measured the circumference of the Earth with outstanding preciseness through the latitude difference between ancient Syene city (Aswan) and Alexandria, in Egypt. Unfortunately, none of his works survived, however many extracts have been quoted by his successors.

How did Eratosthenes measure the circumference of Earth?

In 205 BCE, Eratosthenes proposed a rather simple and precise method of measuring the circumference of Earth applying his observations of shadows.

Where? In Alexandria and ancient Syene (Aswan).

When? At the moment of summer solstice, according to the local solar midday.

What did Eratosthenes notice at this specific time and date?

Eratosthenes; knowing that precisely at midday on 21 June, the Sun is at the highest position above the horizon; noticed that in Syene sunrays were perpendicular, reaching the bottom of wells, and that vertical objects had no shadows.

On the other hand, in Alexandria, the sunrays were not at all perpendicular, thus the same vertical objects had very short angled shadows.

How did Eratosthenes proceed with his method?

- First, he measured the shadow of an obelisk in Alexandria and then estimated the angle between sunrays and the obelisk (angle = 7.2°).
- Knowing that the angle of the obelisk shadow in Alexandria was about 7.2°, while in Syene there was no shadow for any vertical objects, such as a well, Eratosthenes reached this conclusion:
  - The Earth is not flat and its surface is curved and maybe completely spherical
  - two lines will meet exactly at the center of the Earth.
  - Knowing that Alexandria and Syene are located almost on the same meridian, Eratosthenes assumed that:
  - the rays of the sun are parallel
  (7.2°).
  - Thus, the conclusion that the ratio of this angle (7.2°) to the (360°) of the circle is the same ratio of the distance between Alexandria and Syene (800 km) to the circumference of the circle (= the Earth)

How?

7.2°/ 360° = 800 / x

x = 360 X 800 / 7.2°

x = 40 000

Then, the circumference of the Earth = 40 000 km.

How are we going to celebrate?

We aim to achieve our goal through a series of activities that revolve around the measuring of the circumference of the Earth applying the method developed by Eratosthenes, nearly 2000 years ago.

NEW

Did you Know? Interactive Presentations

The History of Science Museum offers a variety of presentations, each of which focuses on a specific subject displayed at the Museum, with rich and detailed ideas and facts that are shown via data show. The presentations are shown at different points in the Museum where visitors are able to browse through their content freely, using touch screens.

The presentations are available in Arabic, English, and French; and they cover the historical eras exhibited at the Museum: Egypt of the Pharaohs, Hellenistic Alexandria, and the Arab-Muslim Middle Ages. The visitor starts by choosing the language then chooses one of the themes; these include, among others: The Calendar, Archimedes, Astrolabes, Construction in Ancient Egypt, and Time Measurement in Ancient Times.

Search and Find Students Contests

The History of Science Museum hosts fun and interactive activities that help better explain the information displayed on the panels; these include games and quizzes, such as Who am I? and Test your knowledge.

- The contests are available from Sunday to Thursday, from 10:00 am to 15:00 pm; however, reservation must be made at least one week in advance.
- Target Age Group: 8-16 years
- Maximum number of participants: 50 students
- Duration: 45 min.
- **Museum Contest fees are 1 EGP per student**

Hands-on Workshops

Within the mission and strategy adopted by the PSC, the History of Science Museum conducts a variety of workshops to facilitate and animate the information introduced in the Museum in a simple fun manner.

- The workshops are available from Sunday to Thursday, at 10:00 am and 12:00 pm, in addition to 17:00 pm on Thursdays only; however, reservation must be made at least one week in advance.
- Museum Workshop fees are 2 EGP per student

This semester, available workshops include:

Density (09-20 March 2008)

A workshop that presents the density theory and the floating bodies in an easy to understand manner that suits the target age group.

- Target Age Group: 8-13 years

Mathematics (06-24 April 2008)

In this workshop, the students will learn more about the mathematics of our predecessors.

- Target Age Group: 10-15 years

Astronomy (20-24 April 2008)

This workshop helps participants understand the answers to these questions:

What is a solar system?

Could you make your own solar system?

Could you make your own rocket?

Could you gain new information about astronomy without reading a book?

Our Astronomy workshop's goal is to help children discover space through a new, interactive and entertaining approach.

- Target Age Group: 10-16 years

ALEXploratorium

What are you planning to do during the Mid-Year vacation? Bored of the regular stuff? Join the Planetarium Science Center and enjoy a new kind of experience.
Sample the PSC experience by participating in the Mid-Year mini-festival. You will get the chance to learn all about airplanes and helicopters; watch teams of students your age competing in a robotic challenge; see how satellites help us understand our planet; and roam the lands to discover fascinating facts about our country.

Mid-Year Vacation Mini-Festival

26 January – 7 February 2008

Flight Festivity

27 January 2008

The first powered flight took place less than a century ago and lasted only twelve seconds. Now, planes can travel faster than the speed of sound, and helicopters can hover in the air without moving.

On 27 January 2008, the PSC celebrates the annual Egyptian "National Flight Day", which is 26 January, the anniversary of the first engine-powered airplane flight over Egyptian territory by the Egyptian pilot, Mahmoud Sedky.

For three months, ALEXploratorium specialists supervise a group of bright children fascinated by airplanes and flight on a weekly trip to the Alexandria Flight Club, situated in El-Nozha airport, where flight specialists explain to them the basics of the field and worked with them on workshops where they put together different airplane models.

Each member of the group will be awarded a certificate for his/her outstanding achievement during the workshops as part of a festivity that will also include a Lecture by one of the expert pilots, an Exhibition of different airplane models provided by the Alexandria Flight Club, a Workshop on airplane modeling, and, finally, an outdoor Show.

- Target Age Group: 8-16 years
- Attendance is by Invitation Only

3rd FIRST-LEGO League in Egypt Competition Finale

17-18 February 2008

The result of an impressive alliance between FIRST (For Inspiration and Recognition of Science and Technology) and LEGO, FIRST LEGO League (FLL) is an international hands-on, sport-like, robotics program for children 9-14 years of age.

Guided by mentors and their own imagination, FLL students solve actual engineering challenges, develop important life skills, and learn to contribute positively to society, enhancing characteristics such as team-building, problem solving, analytical thinking and creativity.

Every September, a new Challenge is unveiled and over the course of 8 weeks, the FLL international teams strategize, design, build, program, test and refine a fully autonomous robot capable of completing the mission. During the process, teams search the web, talk to scientists, visit the Library and develop presentations that relate to a problem or opportunity facing the world today.

This year's theme, Power Puzzle, asks teams to explore how energy production and consumption choices affect the planet and our quality of life today, tomorrow, and for future generations. The finale of the competition takes place on 17 and 18 of February 2008; school teams from different Egyptian governorates will present the results of their studying, planning and execution during the period of two months, and one team will win the opportunity to compete in the International Competition.

- Target Age Group: 9-14 years
- Attendance is by Invitation Only

Remote Sensing Workshop

The workshop introduces the scientific principles of remote sensing, and offers hands-on applications. Participants will be introduced to the impact of natural events throughout history using a series of satellite images, as well as the analysis of recent images to comprehend the current situation. Participants will also be exposed to other environmental issues that are related to the workshop theme.

By attending the workshop, participants will be able to clearly define environmental problems and their extent; they will also learn the use of new equipment in monitoring and predicting future impacts, all of which aim to motivate students to start thinking about the solution and ways of being part of it.

- Target Age Group: 10-18 years
- Date: 28 January – 07 February 2008
- Duration: 5 days, including one fieldtrip
- Time: daily from 10:00 am to 16:00 pm
- Maximum number of participants: 30 students
- For reservation, please contact the PSC Administrator at least one week in advance
- Workshop fees are 50 EGP per student for the whole workshop including the fieldtrip

Zoom Earth Program

This program comprises different kinds of educational activities, such as series of lectures, workshops and fieldtrips. The program mainly tackles topics such as irrigation, water pollution, meteorology, volcanoes and earthquakes.

- Target Age Group: 12-14 years
- Available Dates: 28 January – 07 February 2008
- Session Duration: 90 min.
- Maximum number of participants per group: 50 students
- For reservation, please contact the PSC Administrator at least one week in advance
- Program fees are 2 EGP per student per session

Discover your Environment Camp

A winter camp, Discover your Environment allows students to interact with various fields of science through entertaining activities in the course of an amazing journey to the Siwa desert organized by the Planetarium Science Center; the camp activities tackle the following:

Astronomy:

Excursions are arranged where the sky can easily be observed, gathering groups of students and PSC astronomy specialists, thus, cultivating awareness and self-learning.

Geology and Botany:

A geologist will accompany the PSC team through a mission to discover the secrets of rocks, plants and water located in the desert by analyzing them.

History and Culture:

Students will interact with Siwa Bedouins and get to observe their daily life style and learn their traditions and habits.

Climbing:

A climbing specialist will teach the students climbing basics and train them to work as a team.

- Target Age Group: 12-16 years
- Date: 02-06 February 2008
- Duration: 5 days
- Location: Siwa
- Maximum number of participants: 50
- For reservation, please contact the PSC Administrator; reservation is opened until the number of participants reaches its maximum, or one week before departure
- Camp fees are 450 EGP per participant

Discovery Zone

Inaugurated in January 2007, the new main Discovery Zone exhibit area is where visitors can interact directly with the experiments on display and that are divided into five main themes:

1. Physics: Optics, Acoustics, Waves, Electricity, Magnetism, Mechanics, Mathematics, and fluids.
2. Biology: the Human Body exhibition, the Food Pyramid, and other experiments.
3. Chemistry: the Periodic Table.
4. Astronomy: the Solar Miniatures.
5. Games: a few interactive quizzes in Physics, Astronomy, Biology, and General Knowledge, to help remember some of the information learnt at the ALEXploratorium. There are also some trick questions that give some new ideas through four quizzes, each including five challenging questions.

The Discovery Zone now also comprises:

- the ***Timeline*** banner, which is located in the main corridor leading to the entrance of the main Discovery Zone exhibit area, is dedicated to highlighting 48 scientific milestones throughout history from 35000 BCE to the year 2000;
- the ***Nobel Laureates*** banners on display in the entrance of the main Discovery Zone exhibit area, which are dedicated to honoring a few of the great scientists who have received the honorable world-renowned prize, and, whose achievements are directly related to the themes adopted by the ALEXploratorium exhibits and activities; and
- the ***Kids Corner***, which is a special area where children under 6 years of age can safely have fun while their families enjoy the PSC activities.

Opening Hours

From Saturday to Wednesday	[from 09:00 am to 16:00 pm]
Friday	[from 15:00 pm to 18:00 pm]

Guided Tours Schedule

From Saturday to Thursday	[10:00 am + 11:00 am + 12:00 pm + 13:00 pm + 14:00 pm + 15:00 pm]
Friday	[15:00 pm + 16:00 pm]

Discovery Zone entry fees are:

Students	2 EGP
Non-students	4 EGP

Listen and Discover

Short and simple scientific documentary films are displayed according to a predefined schedule. The films are of a lively nature that attract audience and help them understand scientific issues in an appealing and interesting manner.

Show Times
From Sunday to Wednesday
10:00 am + 10:30 am + 11:00 am + 11:30 am + 12:00 pm + 12:30 pm + 13:00 pm + 13:30 pm + 14:00 pm + 15:00 pm

- For the list of shows available at the "Listen and Discover", please consult the Center's official website: www.bibalex.org/psc
- For reservation, please contact the ALEXploratorium administrator at least one week before the desired date.

"Listen and Discover" show fees are:

DVD shows:		3D shows:	
Students	1 EGP	Students	2 EGP
Non-students	2 EGP	Non-students	4 EGP

The Workshop

Enjoyable practical workshops in all fields of science are constantly developed in an innovative fashion by ALEXploratorium specialists.

- The workshops are available from Sunday to Thursday, at 10:00 am and 12:00 pm, in addition to 17:00 pm on Thursdays only; however, reservation must be made at least one week in advance.
- **ALEXploratorium Workshop fees are 2 EGP per student**

This semester, available workshops include:

Chemistry (10-21 February 2008)

The science of substances and their interactions with each other, chemistry is all around us all the time.
People of very different walks of life use chemistry on daily basis: the doctor, the farmer, the builder and the chef; to name a few. There are endless uses for chemistry in everyday life: the technician in the hospital laboratory uses chemistry to check for infections in blood samples; chemicals keep the water supply safe and swimming pools clean; one of the largest industries in the world is the petrochemical industry.
The Chemistry Workshop comprises some simple and fun scientific experiments that familiarize children with some secrets, such as: Acid Base Reactions; the difference between Compounds and Mixtures; Secret Ink.

- **Target Age Group: 13-16 years**

Volcanoes (10-21 February 2008)

This workshop is about Volcanoes and Earthquakes; it consists of experiments about the topology of Earth, the equipment used to measure earthquakes, the reasons for volcano eruptions and the composition of lava.

- **Target Age Group: 8-12 years**

DNA (24 February – 06 March 2008)

The chemical structure of everyone's DNA is the same; the only difference between people, or any animal, is the order of the base pairs. There are so many millions of base pairs in each person's DNA that every person has a different sequence; using these sequences, every person could be identified solely by the sequence of their base pairs. However, because there are so many millions of base pairs, the task would be extremely time-consuming; instead, scientists are able to use a shorter method, because of repeating patterns in DNA.
DNA is the secret of life; the DNA Workshop helps unravel the mystery; it brings participants a little closer to the life code.

- **Target Age Group: 13-18 years**

Agriculture (24 February – 06 March 2008)

The Agriculture Workshop lays a foundation to the knowledge of plants, their growth, and their reproduction; it also explains how essential they are to the survival of all living organisms.

- **Target Age Group: 8-12 years**

Five Senses (09-20 March 2008)

An exciting workshop exploring, in a creative and simplified manner, the amazing world of our five senses: sight, hearing, smell, taste, and touch. The workshop tackles the biological and physical aspects of the five senses, as well as their interaction with the surrounding environment. Through the workshop, participants will be able to express what they perceive in their own individualized ways.

- **Target Age Group: 9-13 years**

Sound (23 March – 03 April 2008)

Sounds are all around us . . . cars honking, phones ringing, friends talking, and dogs barking are all sounds you are probably familiar with. So, what is sound?

This workshop aims to facilitate the understanding of sound and to answer intriguing questions like:

How does sound travel?
Is there sound on the moon?
How do musical instruments work?

Some of the topics that we are going to discuss are Sound vibrations, Sound waves, the speed of sound in different mediums and sound frequency.

- **Target Age Group: 10-15 years**

Genetics (23 March – 03 April 2008)

Shopping for a new pair of genes? That is not as easy as it sounds as each is born with a full set of genes for life!
In the workshop, participants will discover what a gene is and how it affects characteristics such as hair color, eye color, height, and bone structure; they will also learn how each cell in the body contains long strands of DNA called chromosomes, and how genes come into the picture; how some genes are recessive and some are dominant; and why no two people (except identical twins) have the same genetic makeup.

- **Target age: 12-14 years**

Air (06-24 April 2008)

Air is all around us, but we cannot really see it. Find out why hot air rises; how temperature changes air pressure; and other related issues through entertaining interactive experiments.

- **Target Age Group: 8-12 years**

Ongoing Programs and Events

SEED corner

The Schlumberger Excellence in Educational Development (SEED) program and the Planetarium Science Center (PSC) at the Bibliotheca Alexandrina, joined forces to achieve their common goal of raising scientific awareness and enhancing the understanding of scientific facts among children and youth of Egypt. It is in this spirit of collaboration that the SEED corner was launched at the ALEXploratorium to host a series of scientific hands-on activities related to a certain chosen theme. SEED is a program that presents workshops and activities. The age range starts from 10 to 16 years old. SEED is an educational program, each year we choose a certain educational topic, around which the activities evolve. This theme for the school year 2007/2008 is climate change and clean energy.

- Target Age Group: 12-16 years
- Number of participants per group: 10-20 students
- Number of sessions per program: 6
- Session Duration: 90 min. – once a week
- Each program includes two to three field trips
- **Program fees, including fieldtrips, are 75 EGP per student**
- **For reservation, please contact the PSC Administrator at least two weeks in advance**

RoboAlex center

The RoboAlex Center at the ALEXploratorium offers compelling hands-on robotic challenges. Guided by animators, the participating groups design, program, and test Robots on a special playing field to accomplish certain missions. Every year, distinguished school groups who participate in RoboAlex center workshops are invited to compete in the FIRST LEGO League (FLL) in Egypt tournament.

- Target Age Group: 8-14 years
- Number of participants per group: 10-20 students
- Session Duration: 180 min. – once a week
- Session Time: 12:00-15:00 pm – according to reservation
- **Fees are 3 EGP per student per session**
- **For reservation, please contact the PSC Administrator at least two weeks in advance**

Science Club

Science clubs implement educational and scientific programs at schools; they aim to stimulate curiosity, interest and enjoyment in science and its methods of inquiry, to develop experimental and investigative abilities and develop children abilities and skills.

- **Target Age Group: 12-15 years**
- **Participation is for schools only. To join the Science Club,** please contact the PSC Administrator

ALEXploratorium Contests

The ALEXploratorium contest is a science-related contest that familiarizes students of different age groups with essential topics in science like: the human body, IQ tests, and teamwork; it also tackles important scientific discoveries, and provides students an opportunity to test their knowledge and push their limits as they explore the world of science and encourage them to become good science communicators and share what they know with each other.
The contest is divided to the following sections:

Human body
Computer games
Timeline
Periodic table

- **Target Age Group: 12-16 years**
- **For reservation, please contact the PSC Administrator at least one week in advance**

Super Science Show

An independent workshop that is available only by reservation, the Super Science Show is a dynamic and highly motivational activity that gets the participating children involved in hands-on experiments that stimulate infectious enthusiasm. The show includes experiments in the fields of Physics, Biology, and Chemistry. The specialists working with the children use a variety of materials, such as balloons, bouncing balls, balance board, baseball bats, water, and soda cans. It is a valuable and amusing show; do not miss it!

- Target Age Group: 6-12 years
- Maximum number of participants: 50 students
- Show Duration: 90 min.
- Indoor Show fees are100 EGP
- Outdoor Show fees are 200 EGP
- **For reservation, please contact the PSC Administrator at least one week in advance**

Fun with Science

Fun with Science is a program organized by the PSC in collaboration with the BA Young People and Children libraries. The program applies a series of fables containing messages that aim to provide children with a scientific basis, enabling them to make use of scientific facts as a creative tool. A major theme of the "Fun with Science" program is the introduction of "systems thinking". Children learn that everything in the world is interconnected and that thinking from a systems perspective influences choices and behavior.

The 1st part of the program is based on storytelling applying illustrated fables and a variety of creative activities that teach children about the systems message and demonstrate to them how everything is connected. The 2nd part is based on hands-on scientific activities related to each fable content that teach the same systems message in a fun manner. Every 3 months we change the fable, orange soap is the next fable and workshop.

- Target Age Group: 9-14 years
- Number of participants per group: 20-25 students
- Session Duration: 120 min. – twice a week (Sunday and Wednesday)
- PSC workshop fees are 2 EGP per student per session
- **Young People and Children Library entry fees are 0.50 EGP per student per visit**
- **For reservation, please contact the PSC Administrator at least one week in advance**

Zoom Earth

This program comprises different kinds of educational activities, such as series of lectures, workshops and fieldtrips. The program mainly tackles topics such as irrigation, water pollution, meteorology, volcanoes and earthquakes.

- Target Age Group: 12-14 years
- Maximum number of participants per group: 50 students
- Session Duration: 120 min. – once a week (Monday)
- **Group fees (25 students)are 75 EGP**
- **Group fees (50 students)are 150 EGP**
- **For reservation, please contact the PSC Administrator at least one week in advance**

Zoom Earth Club

Zoom Earth Club is a scientific club targeting secondary and university students who are interested in satellites image studies, aiming to improve their knowledge, by performing activities on the subject and connecting with other groups and countries.

- Target Age Group: 16-22 years
- Maximum number of participants: 25 students
- Duration: 25 February - 21 April 2008
- Participant fees are 75 EGP
- For reservation, please contact the PSC Administrator at least two weeks in advance

Special Programs and Events

Intel ISEF

8 March 2008

The International Science and Engineering Fair (Intel ISEF) (http://www.sciserv.org/isef/index.asp), an international science competition that provides an opportunity for outstanding young scientists and inventors to come together to share ideas and showcase cutting-edge science projects. The competition recognizes the urgency of promoting achievement in science to students 14-18 years of age, and encourages innovation and creativity. The international competition occurs every year in the United States of America., bringing together students, teachers, corporate executives, and government officials from around the world to compete for over 4 million USD in scholarships, tuition grants, scientific equipment, and scientific trips.

The Intel ISEF 2008 will be held 11-17 May, 2008 in Atlanta, GA. Meanwhile. Under the auspices of the Egyptian Ministry of Education, the PSC co-organizes with Intel Corporation the National Science Fair at the Bibliotheca Alexandrina; the winners will participate in the International Competition.

- Target Age Group: 14-17 years
- Location: Great Hall, Bibliotheca Alexandrina Conference Center
- Open to the public, free of charge; however, for participation, please contact the PSC Administrator at least one month in advance

World Water Day

22 March 2008

On the occasion of the international celebration of the World Water Day, initiated in 1992, the PSC is organizing a one-day

festivity that comprises a variety of entertaining scientific activities.

- Location: Lectures Hall, Bibliotheca Alexandrina Conference Center
- Open to the public, free of charge

World Environment Day

5 June 2008

Commemorated each year on 5 June, World Environment Day is one of the vehicles through which the United Nations stimulates worldwide awareness of the environment and enhances political attention and action. The slogan for 2008 is "CO2, Kick the Habit! Towards a Low Carbon Economy." The PSC celebrates the WED at the BA in cooperation with the Wadi Environment Science Center and the British Council.

- Location: Bibliotheca Alexandrina Conference Center and Plaza
- Open to the public, free of charge

Creativity Day

21 April 2008

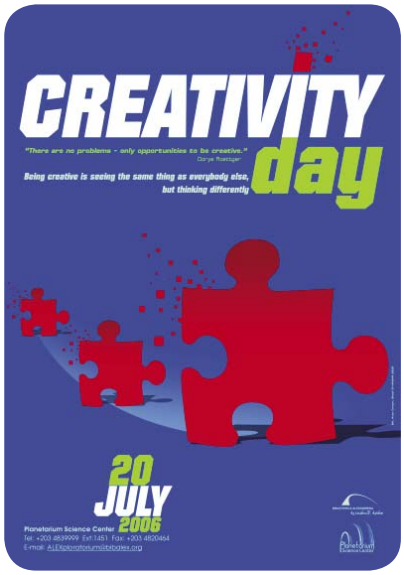
"There are no problems - only opportunities to be creative." Dorye Roettger

Everyone has problems and challenges that need solving; they are an inevitable part of living. What many people do not realize, however, is that most of them can be overcome using a simple, focused program of personal brainstorming. Creativity is inventing, experimenting, growing, taking risks, breaking rules, making mistakes, and having fun.

What is Creativity?

Is creativity innate? Can it be learned? Is the human species alone in demonstrating creativity?

- Why am I creative?
- Is there more than one way to be creative?
- What kind of creative things can I do?
- Do I learn and grow when I am creative?
- Do I find joy in being creative?
- How can I use my creativity to help others?
- How can I use my creativity to help myself?



Develop your Imagination by using it

What can I do to increase my Creativity?

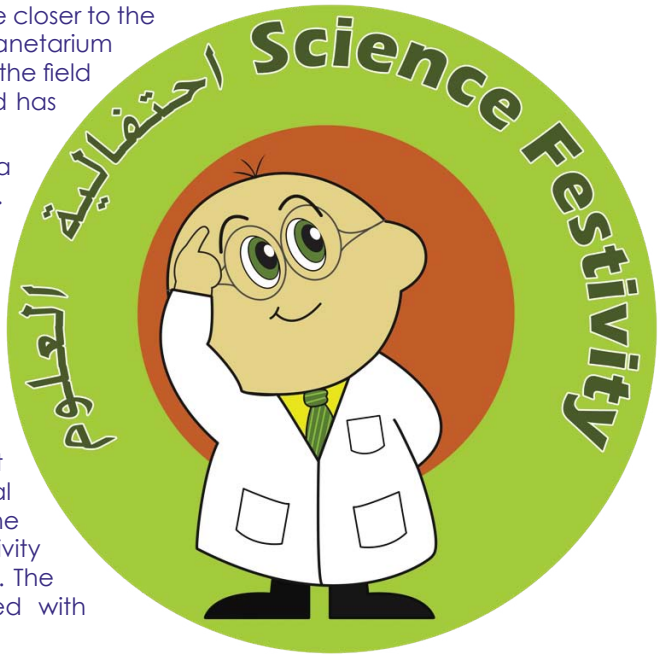
You can increase your creativity by Reading and Studying books, as well as by Attending Courses on creative thinking techniques and putting them to practice. Learn more by attending the Creativity Day, in collaboration with Mr. Mohamed Shalaby, an expert in creative thinking.

- Location: Bibliotheca Alexandrina Conference Center
- **Open to the public, free of charge**

Science Festivity, *When Science Becomes Yours!*

16-18 April 2008

Science Centers and Museums are facilities dedicated to furthering the public awareness and understanding of science among increasingly diverse audiences; they encourage creativity and spark interest about the world around us. Aiming to bring science closer to the public through an entertaining, simple and fun manner, the BA Planetarium Science Center has been seeking excellence and innovation in the field of informal science learning through a period of five years and has taken major steps towards achieving that goal.



One of the steps taken by the PSC has been the initiation of a local science festival, the Annual Alexandria Science Festivity. Science festivals give science a presence in the community and offer people of all ages and backgrounds the opportunity to ask questions, discuss, and explore. In the process, visitors experience the pleasure of lifelong learning, whether with family, friends, or on their own; at science festivals, everyone is welcome. It is the target of the PSC to transform the Science Festivity into a National Festival within the few coming years.

The Annual Science Festivity targets the public in general and children in particular; it is open to the public for free. The first Science Festivity took place 18-20 April 2007, with an environmental theme, the first two days of which were on the BA Plaza while the last day was in the Shallalat Gardens. The next Science Festivity takes place 16-18 April 2008; this year's theme is "Technology". The Science Festivity promises audiences entertainment wrapped with surprising knowledge.

Save the date and come be part of the Science Festivity; you will never forget it!