

## Summer 2009

### In this edition...

|                                 |   |                           |   |
|---------------------------------|---|---------------------------|---|
| Editorial .....                 | 1 | ALEXploratorium .....     | 4 |
| Planetarium .....               | 2 | The Workshop .....        | 5 |
| History of Science Museum ..... | 3 | Programs and Events ..... | 6 |

# It Is Fun Time Again!

By: Maissa Azab, PSC Publications Coordinator

*Only two months of hard work to go before it is summer time again and the fun begins!*

The school year is coming to an end, but not without leaving us unforgettable achievements. As mentioned in our previous issue, the Planetarium Science Center (PSC) is currently focusing on reinforcing its successes by emphasizing its annual activities.

In the past months, the 4<sup>th</sup> **FIRST-LEGO League (FLL) in Egypt** competition, under the theme 'Climate Connections', was concluded with the 'Triple Legend'-team, from Alsalam Language School in Asyout, taking first place with an impressive high score of 431 points; the winning team will be representing Egypt in the international competition in the USA.

More recently, the **ALEX Science and Engineering Fair** was held for the first time to prepare students from Alexandria

and neighboring governorates for the Egypt Science and Engineering Fair (ESEF), where the winning teams will represent Egypt in the International Science and Engineering Fair (ISEF) in the USA. The ALEX Fair 2009 first place prize went to Sara and Youssr Alshaarawi, and Ahmed M. Hassan, in the Biochemistry category with their project entitled "Biological Treatment of CO<sub>2</sub>".

The third annual **Science Festivity**; a huge public event that gives science a presence in the community and offers people of all ages and backgrounds the opportunity to question, discuss, and explore; is celebrated on 1-3 April 2009 with the overarching theme of 'Energy'. The event is held under the auspices of the Egyptian Ministry of Petroleum, and in cooperation with the Egyptian Ministry of Education. The hub of the Science Festivity is the 'Science Village' hosting

a diversity of interactive exhibits, the Super Science Show, lectures and presentations, as well as the 'Science Café'. The Egyptian band 'Massar Egbary' is also performing at the Science Village on 2 April 2009.

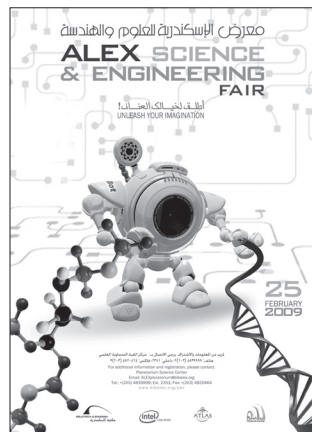
In two months time, the PSC will start its most anticipated annual event, the **Summer Program**. A combination of innovative hands-on, interactive, and pleasurable activities grouped according to age group, the Summer Program offers exciting packages tailored to give PSC young visitors a memorable vacation and a unique experience of fun learning.

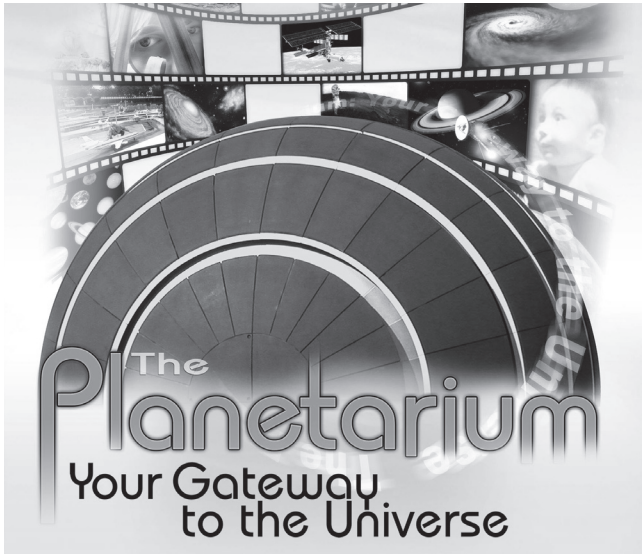
At the center of the Summer Program is a large diversity of workshops, each related to a different field of science; each workshop comprising a variety of hands-on experiments. The Program also includes a series of lectures and contests, in addition to the Super Science Show. The

children also get to attend science shows and documentaries, in addition to a number of camps and fieldtrips to different locations and with different purposes.

Soon, the PSC will also be celebrating the annual events of the **World Environment Day** (18 June) and **Eratosthenes** (21 June). Other exhibitions and events to take place in the near future include the **Astronomy Day**, an International Year of Astronomy 2009 activity (7 May); **The Arctic-The Antarctic-** and **'Antarctica, a Desert of Ice'** exhibitions, held within the Egypt-Italy Science Year 2009; and **Flight Day**, on 9 August 2009.

Unfortunately, the Planetarium will be closed to the public most of the summer time as it will be undergoing a huge upgrading that was made possible thanks to the Egyptian Ministry of Tourism. However, we still promise our visitors another eventful and unforgettable summer!





### The Latest in Planetarium Technology

**The Full-Sphere Planetarium...  
Dive into a World of Fantasy!**

*Have you ever thought how wonderful and scary it would be to stand in the middle of an ocean, with sharks swarming around you? Can you imagine yourself walking on Mars or maybe hiking on the Moon? Have you considered it possible to be in the middle of all that while still standing in your place?*

You can experience all that if you visit a 360-degree planetarium. Standing in the middle of a spherical planetarium you feel like you are floating in space or diving deep down into the ocean; something that cannot be done with a regular projection system in a traditional planetarium. That would only be possible if you sit in a cube, the six sides of which are projection screens; if that is done correctly, it should appear as if you are inside a seamless spherical space.

*But, where can we find such amazing technology? Is it really true that you can be standing in the middle of all that?*

Yes, it is, and it is a great place to visit. You can find it in Japan, and only in Japan! Japan was the first country to develop such technology in the history of planetaria, introducing the world's first 360° image globe "EARTHVISION", first installed by GOTO INC at EXPO 2005 in Aichi, Japan, and to premiere in Tokyo, in autumn 2006.

The Japanese company GOTO INC featured a 360-degree full screen measuring 12.8m in diameter, one-millionth the size of the earth. Displayed on the screen were perfect high-resolution images, the first of their kind in the world. Visitors viewed the images from a glass bridge. They could look up to the top of the globe and down to the bottom of the globe, an experience that could not be met anywhere else.

# The New Phase of the BA Planetarium

Since its inauguration in October 2002, the BA Planetarium, a beautiful piece of architecture, has been operating with two different systems: a large format IMAX film projection system, and a regular half-dome Video Panorama projection system. The BA Planetarium also uses a Star-ball projector for astronomy live shows. The Star-ball projects about 5200 stars as well as 4 famous star constellations.

However, planetarium technology is rapidly evolving and the BA Planetarium has fallen far from its rank as the ninth on the world at its inauguration. As the host of the upcoming International Planetarium Society conference (IPS 2010), the largest and most significant event in the world of planetariums, where nothing but cutting-edge developments are exposed; the BA has embarked on the endeavor to upgrade its Planetarium to rise up to the expectations of the visitors who will come from all over the world to partake in the IPS 2010.

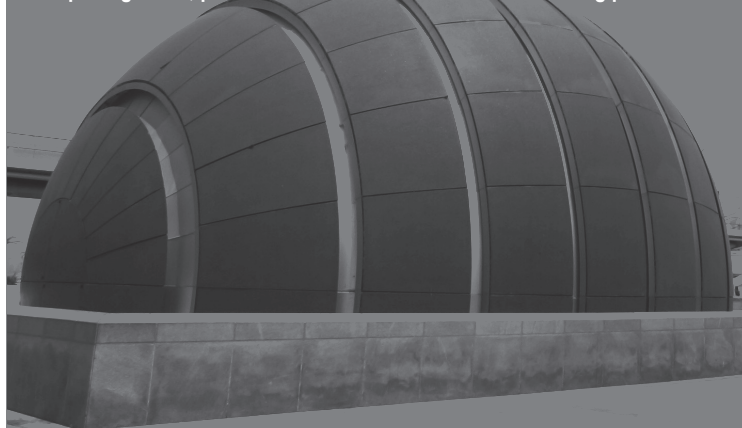
Thanks to the Egyptian Ministry of Tourism, the BA's endeavor has found the financial resources to bring it to reality. Naturally, The Ministry's keen interest in this huge and expensive project rises from its awareness of the status of the Library of Alexandria as one of the most attractive touristic sites in Egypt.

The Planetarium upgrading project entails the replacement of the present half-dome system with a digital full-dome projection system; this means that the whole screen will be covered with animated imagery. The new system will have a rich set of real-time 3D astronomy features and comprises a wide database for stars, planets, and galaxies to be shown on the screen. The audience will be able to identify these celestial bodies and get a closer look at them; they will get to explore the mysterious universe as never before.

The new system will also enable the BA Planetarium Specialists who have, so far, succeeded in producing the first Egyptian planetarium show, which is also the first to be produced entirely in the Middle East, to build shows from a simple-touch screen interface and watch their creations in the star theatre.

This upgrading project will reclaim the BA Planetarium's stature as a state-of-the-art facility and allow it to continue its pursuit as an educational and entertaining center of attraction. Once again, the BA Planetarium will be able to dazzle its visitors with surreal voyages, this time through a three dimensional universe!

**Unfortunately, during the process of upgrading, which takes place in the summer of 2009, the BA Planetarium will not be open to the public. For information concerning the Planetarium, its closing and opening times, please visit our website at [www.bibalex.org/psc](http://www.bibalex.org/psc)**



# A Walk Through Time!

Time is a component of a measuring system used to sequence events, measure their durations and the intervals between them. Time has been a major subject of religion, philosophy, and science; but defining time in a non-controversial manner, applicable to all fields of study, has consistently eluded the greatest scholars.

In physics and other sciences, time is considered one of the few fundamental quantities and it is used to define other quantities, such as velocity. Time is also of significant social importance, having personal, as well as economic, value.

About five or six thousand years ago, great civilizations in the Middle East and North Africa began to make clocks to supplement their calendars to fulfill the need to organize time more efficiently.

The apparent motion of the sun across the sky, the phases of the moon, the swing of a pendulum, and the beat of a heart were first steps to measuring time:

## The Sundial

Before the invention of mechanical clocks, timepieces used the Sun's motion or simple measurement devices to track time. The sundial may be the oldest, and best known, ancient keeper of time; it is still manufactured as a popular garden accessory.

The sundial is based on the fact that the shadow of an object will move from one side of the object to the other as the sun "moves" from East to West during the day. It consists of a vertical stick or pillar, where the length of the shadow it casts gives an indication of the time of day. It dates back to the Egyptian Period, around 1500 BCE; it was also used in ancient Greece and Rome. In central Europe, it was the most commonly used method to determine the time, even after the mechanical clock was developed in the 14<sup>th</sup> century, and until the 19<sup>th</sup> century.

Sundials come in all shapes and sizes, from tiny pocket dials to huge meter-high dials in observatories and sundial parks.

## The Water Clock

Water clocks were invented in Egypt around 1400 BCE. They are better than sundials because they tell time at night as well as during the day, and they are also more accurate. A water clock might sound very complicated but actually it is not. It is composed of a little stand with a pot on the top and another at the bottom, with the pot at the top having a hole drilled in its side. The pot is then filled with water flowing out of the top pot down to the bottom pot. When the water is at a certain level, it is a certain time. The only disadvantage of the water clock is that it has to be continually refilled.

## The Candle Clock

There are other simple measurement devices used to mark the duration of time. Four basic types of these devices could be used indoors, regardless of the weather or time of the day; the

candle clock is one. It is a candle with lines drawn around it to mark units of time, usually hours; by observing the length of a candle burnt in one hour, a candle made of the same material is marked with lines showing one-hour intervals. The disadvantage of this clock is that any change in the wick or wax would alter the burning properties.

## The Sand Clock

Hourglasses, also called sand glasses and sand clocks, may have been used by the ancient Greeks and Romans. An hourglass consists of two glass bulbs, placed one above the other, and connected by a narrow tube. One of the bulbs is usually filled with fine sand which flows through the narrow tube into the bottom bulb at a given rate. Once all the sand has run to the bottom bulb, the device is inverted in order to measure another time period.

The amount of time measured by the hourglass is affected by the volume of sand, the size and angle of the bulbs, the width of the neck, and the type and quality of the sand.

## Pendulum Clocks

Before pendulum clocks were invented, Peter Henlein invented a spring-powered clock in around 1510, which was not very precise. The first clock with a minute hand was invented by Jost Burgi in 1577, but it still had problems. The first practical clock was driven by a pendulum and was developed by Christiaan Huygens around 1656.

The pendulum swings left and right, and as it swings, it turns a wheel with teeth, which turns the hour and minute hands on the clock. In the beginning, the pendulum used to swing about 50 degrees, but as pendulum clocks improved, the pendulum swung about 10 -15 degrees.

One problem with pendulum clocks is that they stop running after a while and have to be restarted. The first pendulum clock with external batteries was developed around 1840. By 1906, the batteries were inside the clock.





## Museum Admission and Tours

### Opening Hours

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

### Guided Tours Schedule

Saturday to Thursday  
 [10:00 am + 11:00 am + 12:15 pm + 13:00 pm + 14:15 pm]  
 Friday [16:45 pm]

- Museum entry fees are included in all Planetarium show tickets.
- For non-audience of the Planetarium, Museum entry fees are 0.50 EGP.
- Museum Tours are free for ticket holders.

## ALEXploratorium

### Discovery Zone

The current Discovery Zone exhibit area where visitors can interact directly with the experiments on display is divided into five main themes: Physics, Biology, Chemistry, Astronomy and Games.

The Discovery Zone now also comprises:

- the **Timeline** banner, located in the entrance of the Discovery Zone and 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 dedicated to honoring a few of the great scientists who have received the prestigious prize for achievements directly related to the themes adopted by the ALEXploratorium exhibits and activities; and
- the **Kids Corner**, a special area where children under 6 years of age can safely have fun while their families enjoy the PSC activities.

### Opening Hours

Saturday to Thursday [from 09:00 am to 16:00 pm]  
 Friday [from 15:00 pm to 17:00 pm]

### Guided Tours Schedule

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 of a lively nature that attract audience and help them understand scientific issues in an appealing and interesting manner.

- For the list of shows available at the "Listen and Discover" and the schedule, please consult the Center's official website: [www.bibalex.org/psc](http://www.bibalex.org/psc).
- For reservation, please contact the PSC Administrator at least one week before the desired date.

### "Listen and Discover" show fees are:

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



# THE WORKSHOP



Workshops are hands-on activities that allow students to get in direct contact with scientific phenomena while interacting with the PSC staff. Every season, ALEXploratorium specialists develop new ideas for the workshops they prepare for the students. Their main concern is to make the workshops enjoyable, besides being practical and useful for students. Through direct contact with the students, the specialists have developed an extensive knowledge of their interests and the appropriate methods to approach them.

This season's workshops are all part of the Summer Program. Students are going to learn about different fields of science. Among other things, they will be introduced to some of the wonders of the stars and the solar system, the secrets of the micro world, the history of fossils, the nature of DNA, and the importance of sports and its relation to health. The students will also learn some interesting facts about how bubbles form, how an engine works, as well as the importance of energy in our lives. Furthermore, they are going to acquire some mental skills during the brain teasers workshop, know how to communicate with the world, as well as some artistic skills and creative designing.

As always, we do our best to guarantee that the students enjoy their experience with us and come visit us every new season for a new variety of intriguing workshops.

## Stars

A star is a massive, mysterious luminous ball of plasma that is held together by its own gravity. The nearest star to Earth is the Sun, which is the source of most of the energy on Earth. Other stars are visible in the night sky when they are not outshone by the Sun. In this workshop, students will discover the names of the stars, their characteristics and classifications, in addition to many other interesting facts.

-Target age group: 6 -12 years

## Brain Teasers

The brain is not a passive recipient of knowledge. In order to gain new information, the brain must be able to focus on important cues and store them in its short-term memory. The objective of this workshop is to help students test and exercise their brains with puzzles, as well as logic and strategy games to sharpen their critical thinking and problem-solving skills.

-Target age group: 6 -12 years

## In the Bubble

What is so fascinating about bubbles? Is it the precise spherical shape; the incredibly fragile nature of the extremely thin soap film; the beautiful colors that swirl and shine; or is it a combination of all these phenomena? Why does a bubble form a sphere and not a cube, a tetrahedron, or any other geometrical figure?

In this workshop, students will observe the forces that form bubbles and try to make them in different colors. This workshop proposes to explore the world of bubbles, from physics to chemistry, from surprising observations to fun hands-on activities!

-Target age group: 6- 12 years

## Energy

All forms of energy are stored in different ways in energy sources that we use every day. These sources are divided into renewable sources that include solar energy, wind, geothermal energy, biomass, and hydropower; and nonrenewable sources that include fossil fuels: oil, natural gas, and coal. This workshop presents the different forms of energy, through interactive experiments to explain how energy is transformed from one form to another, its properties and its applications in daily life.

- Target age group: 6- 12 years

## Fossils

Fossils are the remains of living organisms that existed in old geological ages with their tremendously different conditions, before the start of the New Age we are living in. They are the substantial evidence for the development of living beings; through fossils, we are able to trace organisms that lived in the past. However, there are important conditions that must be fulfilled to complete the fossilization process, as well as different agents that can prevent it. What fossils are, their kinds, their importance; all these conditions, agents and secrets, students will discover in the fossils workshop.

-Target age group: 6- 12 years

## Communicate with the Universe

"Communication" is when information is sent by a sender to a receiver via a medium; it requires that all parties share a communicative commonality. The goal of this workshop is to help students understand the meaning of communication, its tools and its different images. The workshop also includes a series of activities concerning the "Morse code", which is a type of character encoding that transmits telegraphic information using rhythm, the semaphore, and the telegraph.

-Target age group: 6 -12 years

## Much More than Sports (Parts 1 and 2)

Sports are activities that are governed by a set of rules or customs, where the physical capabilities of the competitor are the primary determiner of the outcome either winning or losing. It is important to know the suitable sport for oneself; that is why this workshop will show students the importance of sports and its effect on the human body. Students will also learn the way to healthy nutrition to build a healthy body. The workshop is divided into two parts that will include a series of activities: experiments, games, and movies.

-Target age group: 6 -12 years

## The Solar System

Our Solar System consists of the Sun and the celestial objects bound to it by gravity. For thousands of years, humanity did not recognize the existence of the Solar System. They believed the Earth to be at the centre of the universe, and categorically different from other objects that moved in space. Nicolas Copernicus was the first to develop a mathematically predictive heliocentric system. Then, his successors developed an understanding of physics that led to the gradual acceptance of the idea that the Earth moves around the Sun, and that the planets are governed by the same physical laws that govern the Earth. This workshop is about the different planets of the solar system.

-Target age group: 6 -12 years

## Micro-Organisms

A micro-organism is an organism that is microscopic; that is, too small to be seen by the naked eye. The study of micro-organisms is known as microbiology. Micro-organisms are very diverse; they include bacteria, fungi, microscopic plants, such as green algae, and animals such as amoeba. Some micro-organisms are considered non-living, such as viruses. Microbes are exploited by people in biotechnology. What is a microbe? What is a virus? What are the good microbes and the bad ones? In this workshop, students will learn the answers to these questions and much more.

-Target age group: 6- 12 years

## Engines

Have you ever opened the hood of your car and wondered what was going on in there? A car engine can look like a big confusing jumble of metal, tubes and wires. In this workshop, the basic idea behind an engine will be discussed, and then students will learn how all the pieces fit together; what can go wrong and how engine's performance can be enhanced.

-Target age group: 12-16 years

## Design and Creativity

This workshop is about the exploration of engineering by engaging in hands-on design activities. It provides an environment where science and engineering concepts and skills are applied in a way that is meaningful to students. The workshop takes students through a series of activities, building their understanding in a sequential way, as they identify and design solutions to problems significant in their own lives; the design activities require students to develop concepts and principles from real encounters in their own world.

-Target age group:12 -16 years

## DNA

DNA is the genetic material that exists in the nucleus of each living cell; it is a nucleic acid that contains the genetic instructions used in the development and functioning of all known living organisms. The chemical structure of everyone's DNA is the same; the only difference between people is the order of the base pairs; there are so many base pairs in every person's DNA, where each person could be identified by the sequence of their base pairs. Many questions are answered in this workshop, as it will bring you very close to life's code.

-Target age group: 12- 16 years

## Measurements

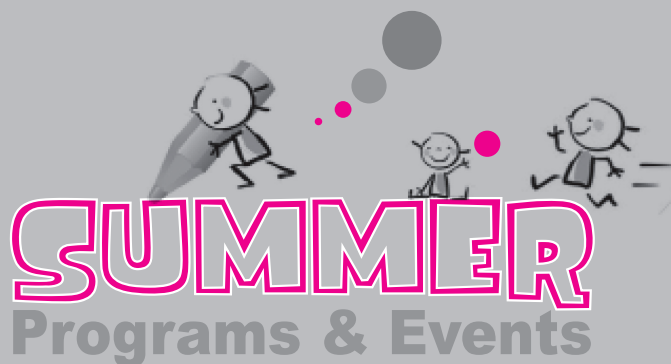
Measurement is the process of assigning a number to an attribute or phenomenon according to a rule or set of rules; the term can also be used to refer to the result obtained after performing the process. In this workshop, students will be acquainted with altimetry, as well as new innovative ways of measurement of different parameters, including an introduction to different measuring systems.

-Target age group: 12-16 years

## Getting Closer to Our Environment

Environment is a term that encompasses all living and non-living species existing naturally on Earth. The concept of natural environment can be broken down into a few key components, such as ecological units that function as natural systems without massive human intervention, which includes all vegetation, animals, micro-organisms, soil, rocks, atmosphere and natural phenomena. That is in addition to universal natural resources and physical phenomena that lack clear-cut boundaries, such as air, water, and climate, as well as energy, radiation, and electric charge. Students will learn about ecosystems, various environmental problems and forms of degradation, providing some solutions to such problems.

-Target age group: 12-16 years



## Chess Club

Chess is an exercise of infinite possibilities for the mind; one which develops mental abilities used throughout life: concentration, critical thinking, pattern recognition, strategic planning, creativity, analysis, synthesis, and evaluation, to name a few. Chess is also a highly effective tool for teaching problem-solving and abstract reasoning. Learning how to solve a problem is actually more important than learning the solution to any particular problem. Through chess, we learn how to analyze a situation by focusing on important factors and by eliminating distractions. To that end, the Planetarium Science Center (PSC) is launching this new program that aims at developing the mental capacity and analytical skills of children.

- Target age group:8-15 years

- Program duration: 3 months

- Number of sessions/week: Twice

- Session duration: 2 hrs

- Starting date: 21 June

- Registration: 1 June

- Maximum participations: 20

- Fees (following interview): EGP 150

-For additional information and registration, please contact the PSC Administrator.

## Super Science Show

The PSC team introduces a new phase of excitement and science learning to students. The Super Science Show is a dynamic and highly motivational activity that gets children involved in exciting hands-on experiments in the fields of Physics, Biology, and Chemistry, that stimulate infectious enthusiasm. This ever-intriguing show allows children to use a variety of materials, such as balloons, bouncing balls, balance board, water, liquid Nitrogen, dry ice and soda cans. Prior reservation is required.

- Target age group: 6-16 years

- Show duration: 90 min

- Maximum participations: 50

- Show fees inside the BA are EGP 150

- Show fees outside the BA are EGP 300

- For reservation, please contact the PSC Administrator at least one week before the desired date.

## Fun with Science

In collaboration with the BA Young People's and Children's Library, the PSC offers the Fun with Science program, which applies a series of fables containing valuable 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 program is the introduction of «systems thinking»; children learn that everything is interconnected. The first part of the program is based on storytelling, while the second part focuses on hands-on scientific activities.

- Target age group: 6-12 years

- Program duration: 3 months

- Number of sessions/week: Twice

- Session duration: 2 hrs

- Number of participants: 20-25

- Starting date: 21 June

- Registration: 1 June

- PSC workshop fees are EGP 2 per student per session.

- Young People's and Children's Library entry fees are EGP 0.50 per student per visit.

- For registration, please contact the PSC Administrator at least one week before the start of the program.

## Flight Program

The Flight Program is organized in cooperation with the Aviation Club in Alexandria. Its aims to introduce concepts of airplanes to children teaching them how airplanes are designed and guiding them in creating their own designs. Projects completed by the participants are exhibited during the Flight Day festivity on 9 August 2009 at the Bibliotheca Alexandrina.

- Target age group: 8-16 years

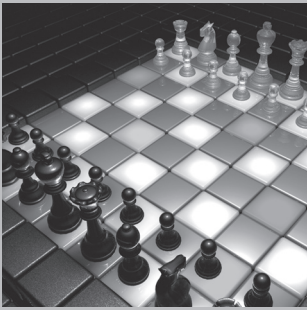
- Number of participants: 15

- Fees: EGP 150

- For additional information and registration, please contact the PSC Administrator.

## TECHNOkids

TECHNOkids Inc. is a reputable and valued publisher of technology curriculum used on a daily basis to teach thousands of students' skills



that will best prepare them for the digital age. TECHNokids presents a variety of programs tailored according to the target age group of children. For additional details about the activities offered by TECHNokids corner at the ALEXploratorium, please visit the PSC website at [www.bibalex.org/psc](http://www.bibalex.org/psc)

- Target age group: 6-16 years
- Program fees depend on the selected program
- For additional information and registration, please contact the PSC Administrator.

## ALEXploratorium Contest

The ALEXploratorium contest is a science-related contest that helps students of different age groups interact with essential scientific topics through teamwork. The contest provides students with an opportunity to test their knowledge and mental abilities to explore the world of science. It also encourages them to participate in the process of science communication and share their knowledge with each other. The contest is divided into: the Human Body, Computer Games, and the Timeline.

- Target age group: 12-16 years
- Contest duration: 1 hour
- Number of participants: 30
- Fees: Included in the Summer Package, EGP 100
- For reservation, please contact the PSC Administrator at least one week before the desired date.

## History of Science Museum Contest

The History of Science Museum transcends the traditional museum concept of static display in its quest to simplify national and regional scientific heritage. The PSC team offers its visitors this energetic interactive contest that is based on games and quizzes about the information found within the Museum.

- Target age group: 8-16 years
- Contest duration: 1 hour
- Number of participants: 30
- Fees: Included in the Summer Package, EGP 100
- For reservation, please contact the PSC Administrator at least one week before the desired date.

## History of Science Museum Research

(a Summer Program activity)

Participants of the Summer Program 2009 will be challenged to conduct a research about one of the eminent scientists mentioned in History of Science Museum. The program aims at empowering research and presentation skills of the kids, as well as introducing some ancient scientists of Alexandria.

- Target age group: 12-16 years

## FIRST-LEGO League Program

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.

- Target age group: 9-14 years

## Space Technology Program

Understanding Space is essential to face 21<sup>st</sup>-century challenges, such as: climate change, natural disasters, security, communication, and scientific development in general. The Space Technology program offered by the PSC simplifies this field to students via multiple activities including lectures, workshops, fieldtrips, and research projects.

- Target age group: 15-21 years

## Empower your Research Skills

(a Summer Program activity)

Participants of the Summer Program 2009 will examine their research abilities. Each participant will have three sessions; the first is a session in research and presentation skills, where students choose one of four fields to examine; the second session will be a free visit to the PSC facilities and the BA Reading Area to locate resources for their research; they will present their research in the final session, in which a specialist will discuss it with them in detail.

- Target age group: 12-16 years

## Electronic Board

(a Summer Program activity)

Participants of the Summer Program 2009 will learn how to use electronic components, and how to apply this in manufacturing an electronic board as well as electronic circuits on their own.

- Target age group: 12-16 years

## Videoconferences

(a Summer Program activity)

The PSC organizes a series of videoconferences in collaboration with NASA and other specialized entities that tackle different aspects of astronomy. It targets mainly school and university students, under the umbrella of the International Year of Astronomy.

- Target age group: 12-16 years

## Science Club

(ongoing)

An ambitious outreach project, the Science Club program has been adopted by the PSC to bring the hands-on concept to science learning within the formal education framework. It aims to establish scientific corners in different schools and train teachers to apply innovative communication methods through workshops and researches. The program aspires to stimulate curiosity, interest and enjoyment in science, in addition to enhancing experimental abilities and developing investigative skills.

- Target age group: 12-15 years
- Participation is for schools only; to participate, please contact the PSC Administrator for details.

## Save the Date!

### Astronomy Day

(7 May 2009), an IYA2009 activity

Astronomy Day is designed to share the joy of astronomy with the general public, under the theme of «Bringing Astronomy to the People». On Astronomy Day, thousands of people will have an opportunity to see firsthand what astronomers are up to. Astronomy clubs, science museums, observatories, universities, planetariums, laboratories, libraries, and nature centers host special events and activities to acquaint their population with local astronomical resources and facilities.

- Target age group: 6-12 years
- Number of participants: 50
- Fees: EGP 25
- For additional information and registration, please contact the PSC Administrator.

### World Environment Day

(18 June 2009)

Celebrated every year in June, the World Environment Day (WED) is one of the principal vehicles through which the United Nations stimulates worldwide awareness of the environment and enhances political attention and action. The PSC is celebrating WED at the BA in cooperation with the Ministry of State for Environment Affairs.

- Target age group: 6-16 years
- Fees: Free-of-charge
- For additional information and registration, please contact the PSC Administrator.

### Eratosthenes 2009

(20-21 June 2009)

In celebration of the eminent scientist Eratosthenes, the third Librarian of the Ancient Library of Alexandria who excelled in most ancient fields of science. The annual festivity is based on a shared effort between school students in both Alexandria and Aswan to determine the circumference of the Earth applying the method developed by Eratosthenes, nearly 2000 years ago, on the day of summer solstice.

- Target age group: 12-17 years
- Number of participants: 300- 500
- Fees: Free-of-charge
- For additional information and registration, please contact the PSC Administrator.

## Flight Day (9 August 2009)

The first powered flight occurred less than a century ago and lasted only twelve seconds. Now, very interestingly, planes can travel faster than the speed of sound, and helicopters can hover in the air without moving. How do planes and helicopters fly and how are they controlled? To learn more information about planes and aviation, and to join in the celebration of the young participants of the Flight Program, we invite you to join the Flight Day festivity at the Bibliotheca Alexandrina in cooperation with the Aviation Club in Alexandria.

- Target age group: All ages
- Number of participants: 700
- Fees: Free-of-charge
- For additional information and registration, please contact the PSC Administrator.

## Summer Program Closing Ceremony (29 August 2009)

To celebrate the completion of the Summer Program activities, the PSC team organizes a festivity for all participants of the Program. The festivity includes lectures, science shows, and a summary of the Program activities and their results, presented by the students themselves. Certificates of Recognition are also awarded to outstanding students, as well as the PSC volunteers.

## Exhibitions

### The Arctic-The Antarctic (22 May - 18 June 2009)

Part of the PSC's celebration of the Egypt-Italy Science Year 2009, the BA hosts this photographic exhibition of Italian research at the Poles at the West Exhibition Hall in the Conference Center from 22 May to 18 June 2009. The Exhibition is promoted and organized by the Italian National Antarctic Museum in collaboration with the National Program for Research in Antarctica (CNR) and the Polar Geographic Institute.

### Antarctica, a Desert of Ice. Travelling Exhibition

On the occasion of the International Polar Year (IPY2007/2008), this photographic exhibition leads the viewer through Antarctica's spectacular landscape, where extraordinary treasures are buried beneath the two immense ice sheets blanketing the Continent. The displayed images will both help us understand the characteristics, history, and life of this Continent in extreme conditions, as well as provide glimpses of Italian research activities.

The exhibition will be on display at the BA from 31 March to 6 April 2009 before it travels to Aswan, Luxor, Qena, Sohag, Assiut, Elmiya, Beni Sweif, Elgona, Ismailia, Port Said, Cairo before returning to the BA for the World Environment Day festivity on 18 June 2009.



"Triple Legend"  
4<sup>th</sup> FIRST-LEGO League (FLL) in Egypt competition winners



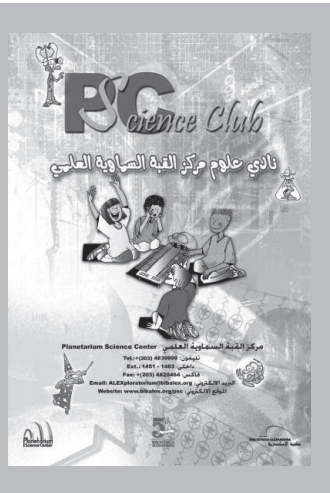
Sahar & Youssr Alsharaawi, and Ahmed M. Hassan  
ALEX Science & Engineering Fair 2009 winners with their project  
"Biological Treatment of CO<sub>2</sub>" in the Biochemistry category



An International Year of Astronomy (IYA2009) activity  
Astronomy Olympiad Rounds



An International Year of Astronomy (IYA2009) activity  
Astronomy Olympiad Training



## Planetarium Science Center 2<sup>nd</sup> year | 3<sup>rd</sup> edition

2<sup>nd</sup> school semester  
(2008 - 2009)

Edited by:

Maissa Azab

PSC Publications Coordinator

Ingy Hafez

PSC Publications Specialist

For more information and reservation,  
please contact:

PSC Administrator

planetarium@bibalex.org

ALEXploratorium@bibalex.org

TEL: +203 4839999

EXT: 2350, 2351

FAX: +203 4820464



Visit our website:  
www.bibalex.org/psc