

National Science Day 2014

5th march 2014, Siliguri, National Science Day was organized by the Department of Computer Science & Application (CSA) and the Department of Mathematics, Salesian College, Siliguri on 28th February 2014. Though the event was based on science, but it was unique in its own aspect. It was eventful due to the presence of a renowned professor from North Bengal University, Fr. James chako, Vice Principal, SCSC and the students of Birla Divya Jyoti School.

The day was called to order by Ms. Darshika Jajodia, convener, SCSC-2014. It was followed by lighting of the lamp and garlanding of the guests along with the prayer song. Thereafter, Dr. Kabita Sarkar welcomed the hournable guests and gave a brief introduction of the day drawing the attention to the related events taking place in the field of science. Then an introductory speech was given by the chief guest Prof. R.K Samanta, Department of Computer Science & Application, NBU. After this, Mr. Dhiroductta Subba, (CSA), SCSC delivered his talk on the topic Undefined Flying Objects (UFO). Then the students of Salesian College, Siliguri, presented their power point presentation on the various topics related to science. After the presentation, an open quiz competition was organized by the students of CSA. The students of BBA Department, SCSC and the students of Birla Divya Jyoti actively took part in the quiz competition. Following the discussions the day came to its conclusion with the distribution of the certificates of participation and a vote of thanks by Mr. Amit Ghosh Roy, the head of the department of CSA.

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A QUICK INSIGHT INTO NEUTRINO

DEPARTMENT OF MATHEMATICS & DEPARTMENT OF COMPUTER SCIENCE
Sri Lanka Open University, Colombo

Sasana Gunaratne, Sanku Ranasinghe, Sanku Ranasinghe, Pappu Sanku Ranasinghe, Raju Sanku Ranasinghe, Mithra Ranasinghe

NEUTRINO

The only known massless particle passes through your body!

That is Neutrino!

Neutrinos are the most abundant particles in the universe. They are produced in the cores of stars, in supernovae, and in nuclear reactors. They are also produced in the decay of radioactive elements.

WHY?

Neutrinos are produced in the cores of stars, in supernovae, and in nuclear reactors. They are also produced in the decay of radioactive elements.

Neutrino Oscillation

Neutrinos can change their flavor as they travel. This is known as neutrino oscillation. It is a quantum mechanical phenomenon that occurs because neutrinos have mass and travel at speeds close to the speed of light.

COUPLING OF NEUTRINO FLAVORS

Neutrinos are produced in three flavors: electron neutrino (ν_e), muon neutrino (ν_μ), and tau neutrino (ν_τ). They can oscillate between these flavors as they travel.

$$\nu_e = \cos^2 \theta \nu_1 + \sin^2 \theta \nu_2 + \sin 2\theta \nu_3$$

$$\nu_\mu = \sin^2 \theta \nu_1 + \cos^2 \theta \nu_2 - \sin 2\theta \nu_3$$

$$\nu_\tau = \sin 2\theta \nu_1 + \sin 2\theta \nu_2 + \cos 2\theta \nu_3$$

where θ is the mixing angle.

NEUTRINO NEUTRINO OSCILLATIONS

Super Kamiokande

Super Kamiokande is a neutrino detector located in Japan. It consists of a large tank of water with photomultiplier tubes lining the walls. When a neutrino interacts with the water, it produces a flash of light that is detected by the photomultiplier tubes.

CELTA

CELTA is a neutrino detector located in China. It consists of a large tank of water with photomultiplier tubes lining the walls. When a neutrino interacts with the water, it produces a flash of light that is detected by the photomultiplier tubes.

REACTOR

REACTOR is a neutrino detector located in the United States. It consists of a large tank of water with photomultiplier tubes lining the walls. When a neutrino interacts with the water, it produces a flash of light that is detected by the photomultiplier tubes.

INO

INO is a neutrino detector located in India. It consists of a large tank of water with photomultiplier tubes lining the walls. When a neutrino interacts with the water, it produces a flash of light that is detected by the photomultiplier tubes.

INTEGRAL

INTEGRAL is a neutrino detector located in Italy. It consists of a large tank of water with photomultiplier tubes lining the walls. When a neutrino interacts with the water, it produces a flash of light that is detected by the photomultiplier tubes.

THE FIBONACCI SERIES AND THE GOLDEN SECTION

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DEFINITION

The Fibonacci sequence is a sequence of numbers where each number is the sum of the two preceding ones. It starts with 0 and 1.

$$F_n = F_{n-1} + F_{n-2}$$

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597, 2584, 4181, 6765, 10946, 17711, 28657, 46368, 75025, 121393, 196418, 317811, 514130, 832041, 1346269, 2178309, 3542248, 5710209, 9254381, 14930352, 24214963, 39306194, 63501357, 102307519, 166010066, 268340941, 434890450, 703080409, 1137903216, 1841052635, 2980102843, 4817104478, 7798256303, 12605354681, 20398790424, 33008815137, 53416700661, 86424596785, 139823262070, 226145571785, 366049143655, 592194564640, 958243716715, 1550438881400, 2501188543815, 4051628360215, 6552817014030, 10604445574245, 17157142640960, 27851694327205, 45008837017445, 72859522344650, 117877661526945, 190736783099600, 308565447470315, 500147025337915, 809014554117530, 1309161291348845, 2121375705466375, 3430536796815215, 5551932401871590, 9082468137244805, 14634354505366400, 23716812643202195, 38351174401089595, 62068037177172690, 100369140519049185, 162437177696221880, 262815817715300875, 425252964411522060, 688068782127721945, 1113322214563694805, 1801571488276716750, 2914893702838418645, 4716465191115135395, 7631256893953354240, 12347820094970573635, 20000000000000000000

APPLICATIONS

The Fibonacci sequence appears in many natural phenomena, such as the growth of shells, the arrangement of leaves on a stem, and the branching of trees. It also appears in art and architecture, where it is used to create aesthetically pleasing proportions.

THE GOLDEN SECTION

The Golden Section is a mathematical constant that is approximately equal to 1.618. It is often used in art and architecture to create aesthetically pleasing proportions.

CONCLUSION

The Fibonacci sequence and the Golden Section are important mathematical concepts that have many applications in nature, art, and architecture. They are also important in computer science, where they are used in algorithms and data structures.