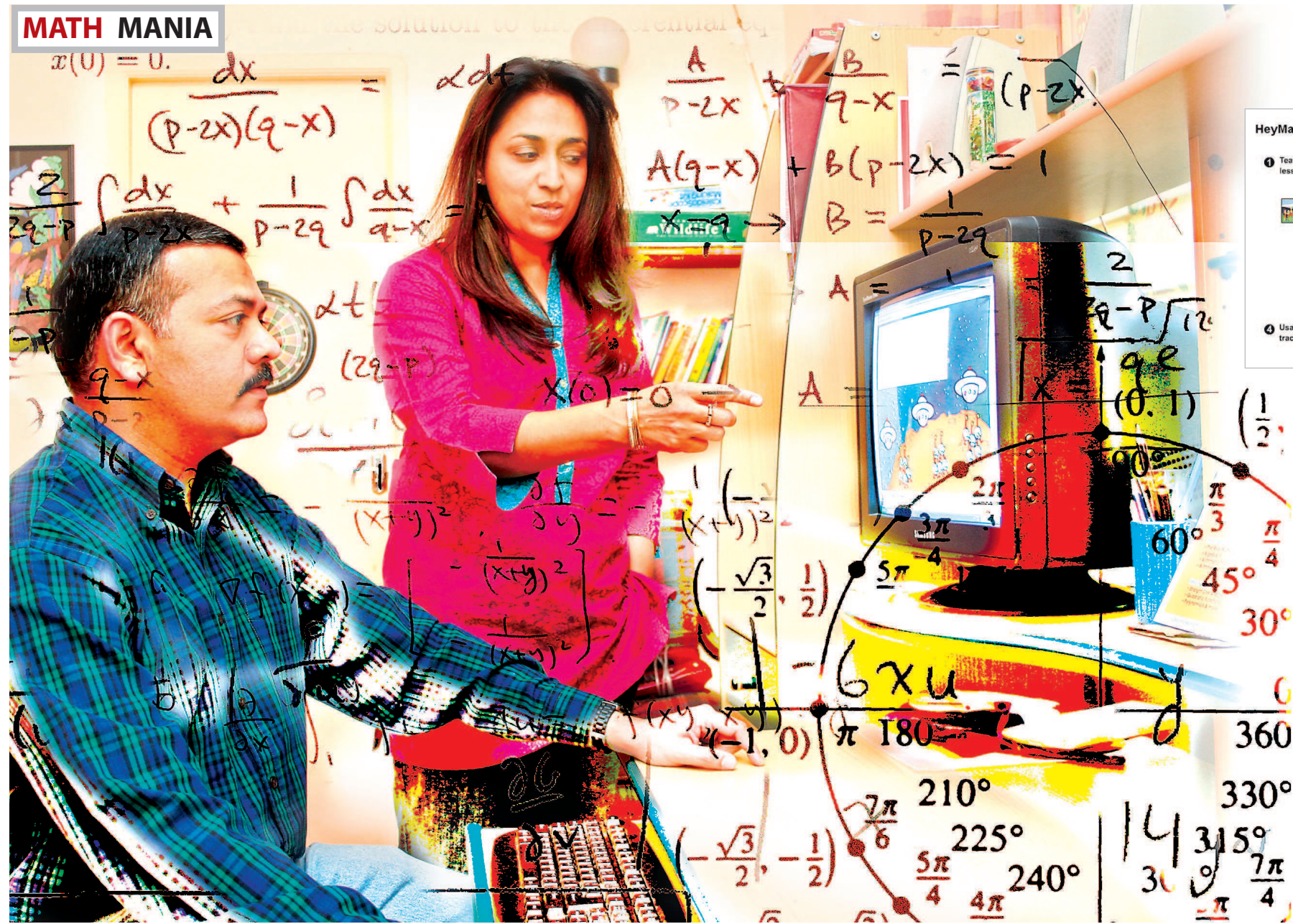
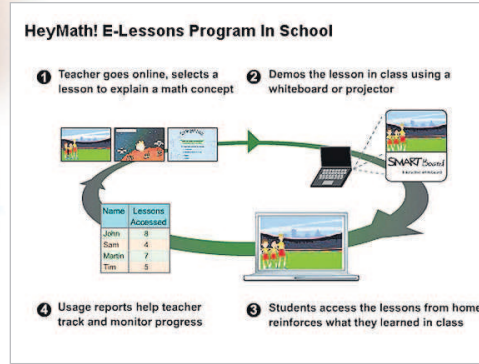


# DE-MYSTIFYING MATH

"HeyMath is a living, breathing, thinking curriculum... With innovative and interactive lessons in mathematics, this E-learning programme has users across 33 countries, including India... **Anupama Srinivasan** meets the creators



In a 3rd standard classroom at an affluent school in Chennai, students watch, and listen to a story about a young girl called Crystal. Crystal wakes up one morning, gets ready, goes down the stairs, and realising it is raining, takes her brand new umbrella and sets off. It is a special day for her - she has a chance to meet the king and visit his magnificent castle. The story continues... A normal enough English 'period', to be followed by a 'question and answer' or a 'reading' session, and a chance for the young students to improve their English. Few of us would guess that this is actually a lesson in mathematics, and specifically, a session on learning and understanding angles. Crystal's story is merely one of thousands of such innovative and interactive lessons in mathematics, conceptualised by the creative team at HeyMath. In this example, every object in the story - an umbrella, doors and windows, the castle gate, the king's crown - folds and unfolds into angles of every kind (right, obtuse, acute and others). At the end of the story, students can click on an object and understand more about the specific angle. Set up in 2000 in Chennai by Harsh Rajan and Nirmala Sankaran, HeyMath is a globally recognised E-Learning programme, used by students in 33 countries including Singapore, the USA, and increasingly, India. "We felt that there was a shortage of good quality math teachers worldwide. Although math is a universal subject, there was no single perfect system, and different systems emphasise different skill sets. We wanted to identify the good teachers, befriend them and digitise their expertise, so that it can be used by anyone," says Nirmala.



In a bid to assess and learn from high performing math systems, HeyMath initiated a partnership with the Millennium Mathematics Project at Cambridge University. After an intensive product development phase, HeyMath found users in schools across Singapore. "Singapore was ready; they had a coherent math system in place, and also had the required infrastructure. Singapore really helped us build product credibility, since they are the best performing country in math," claims Harsh. HeyMath lessons are designed to be compatible with a range of curriculums including the CBSE and ICSE boards in India. Today, HeyMath is used extensively in Padma Seshadri Bala Bhavan (PSBB) in Chennai for grades 6 to 10, and teachers are pleased with the results. Says Durga Chandrasekhar, Math teacher at PSBB (T Nagar), "We often use HeyMath to introduce concepts, as this is more effective through animation." The 45 member team at HeyMath draws creative impetus from their extended family of teachers, parents and students worldwide. Harsh and Nirmala now want to facilitate greater interaction between their users worldwide, through online forums. Users will soon be able to link their lessons to videos from YouTube or even create their own videos. There are plans to evolve fun Math stories on subjects like Pythagoras. Programmes are also being translated into other languages. Referring to Abdul Kalam, Nirmala says, "He once asked why one good teacher couldn't impact thousands of children, instead of just one classroom. With HeyMath, we are trying to achieve exactly that."

CHITIRAI SELVAN

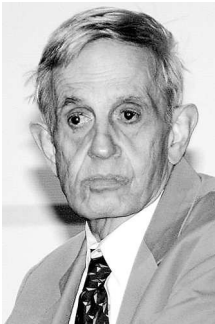
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Compiled by the Quiz Foundation of India, Chennai Chapter

- 1) Give one word to describe a numerical series where the first number of the sequence is 0, the second number 1 and each subsequent number is equal to the sum of the previous two numbers in the sequence. A series which got immortalised in the non-mathematics world thanks to a mention in the popular 'The Da Vinci Code'.
- 2) Considered the 'Nobel prize' of the mathematics world, this is a prize awarded to 2,3 or 4 mathematicians not over 40 years of age at each International Congress of the International Mathematical Union, a meeting that takes place every four years. What?
- 3) Whose life does the recently released fiction book 'The Indian Clerk' by David Leavitt chronicle?
- 4) This mathematical term was coined in 1920 by 9 year old Milton Sirota, nephew of American mathematician Edward Kasner to describe a

very large number - 1 followed by 100 zeros. What?



word meaning 'Reunion'

- 5) Identify the Nobel prize winning mathematician in the picture whose struggle with Schizophrenia was poignantly captured in an Academy award winning film of this decade.
- 6) Which branch of mathematics takes its name from the Arabic
- 7) With respect to computers, if 1024 Mega Bytes is 1 Giga Byte and if 1024 Giga Bytes is 1 Tera Byte, what is 1024 Tera Bytes?

- 8) In cryptography, after whom is a substitution cipher named where each letter of the plain text is replaced by a letter some fixed number of positions down the alphabet? E.g., A is replaced by D (a shift of 3), B is replaced by E and so on.
- 9) Numbers in popular culture. What is the name given to a women's clothing size in US Clothing catalogs for women with vital statistics: 31.5 - 23 - 32. Clue: Kareena Kapoor sported this bold, new look in the recent hit 'Tashan'.
- 10) Herodotus the Greek Historian, referred to this person as "The most able philosopher among the greeks". Most school students know and sweat over his name!

The answers for the above questions are hidden in this issue of Education Times...

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Mr. Pankaj Jain, Director and Ms. Anju Chopra, Regional Manager will counsel students on Thursday 22 May 2008 from 10 am to 6 pm at British Council, 737, Anna Salai, Chennai  
For an appointment, please contact British Council on 044 - 4205 0600  
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## A SCIENTIFIC LOOK

Harshini V and Vaishnavi B check out Chennai's own mathematical institutions

**Institute of Mathematical Sciences (IMSC)**  
"We value motivation, creativity, independence and the ability to work hard. We look for these qualities in students who apply to us," claims the Institute of Mathematical Sciences (IMSC), one of the premier institutes of theoretical research in the country. Founded by Alladi Ramakrishnan in 1962, it is a national institution for fundamental research in the field of mathematical and physical sciences. The director of the institute, R Balasubramanian (PhD), says, "The institute provides an atmosphere conducive primarily to research. We ensure that our institute offers good facilities to enable students to do just that. We would like them all to be good academic scientists."

The fastest academic computer in India (as of mid '04). The institute hosts several meetings and conferences throughout the year and produces regular reports on the research happening in the respective fields. The faculty of 40 consists of people from eminent backgrounds, a number of whom are recipients of awards like the Bhatnagar Award. The selection process begins in June. Prospective candidates need to necessarily hold graduate or post-graduate degree in any of the sciences or have an engineering background. The admission process consists of an entrance test known as the Joint Entrance Screening Test (JEST) conducted in collaboration with 20 Indian institutes. It is held at centres all over the world, usually in February. Applications are given in December, which need to be submitted at the end of the month. All the announcements regarding admissions are usually published in the website [www.imsc.res.in](http://www.imsc.res.in). The precise structure of the test differs from group to group. Based on your performance in this test, you may be called for an interview.

Government of India. Since 1998, CMI has been offering a BSc(Hons) degree in Mathematics and Computer Science. Spanning over three years, the course offers 26 subjects, including two in humanities, two in physics, and the rest in mathematics and computer science. After completing this, one can either move into research or opt to start working. In 2003, CMI launched a three-year BSc(Hons) degree in Physics, largely focussing on theoretical physics. CMI also started a physics laboratory recently. During summer, following their first year, physics students visit the Homi Bhabha Centre for Science Education (under TIFR) in Mumbai for practical sessions and in their second year, they visit the Indira Gandhi Centre for Atomic Research (IGCAR), in Kalpakkam. Admission to any course is based on a nation-wide entrance test, the advertisement for which appears around the end of February or the beginning of March. The entrance test is held in the end of May, so that it does not clash with other major entrance exams. Results are usually declared by the end of June. Students who have passed the Indian National Mathematics Olympiad get direct admission to the BSc (Hons) in Mathematics, and those who have passed the Indian National Physics Olympiad are offered direct entry to the BSc(Hons) in Physics. Nithin Saurabh, a first year student, says, "The entrance exam needs extensive preparation. One must make it a point to cover portions of the CBSE Class XII syllabus, the State board syllabus and the curriculum of the Indian National Mathematics Olympiad."

Part from an active graduate research programme, IMSc boasts of a large number of scientists at the post-doctoral level and offers several interesting programmes like a visiting scientist programme and student summer programmes. The institute is ideal for both independent and collaborative post-doctoral work. Most post-doctorals are provided a consolidated salary based on previous experience and are either provided accommodation or a suitable house-rent allowance along with medical benefits. The campus houses a lecture hall complex, a 200-seat auditorium known as the Ramenjan Auditorium, which is used for large scientific meetings, small lecture halls and classrooms to accommodate other gatherings, most of which are Wi-Fi enabled. The MSc students have access to a large library as well as computing facility, which contains

**Chennai Mathematical Institute (CMI)**  
Located in Siruseri, CMI is institute was founded in 1989 as a part of the SPIC Science Foundation. Funded by the SPIC group, CMI is a "centre of excellence for teaching and research in the field of mathematical sciences". In 1996, it became autonomous and today, CMI is a rare example of public-private partnership in research, with education receiving major private funding along with substantial financial support from the

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This Course will be initiated in August 2008. This is a specialized, one year course in Biostatistics and Data Management with a focus on training in applied statistics and is relevant both to private and public sector activities in health. This is targeted at graduates from diverse quantitative streams with interest in analytical and research areas in health sector.  
• **PG Diploma in Health Economics and Policy (PGDHEP) at IIPH, Delhi:**  
This is a nine month course to be initiated in September 2008. It aims to provide specialized training and knowledge build up in the field of Health economics, financing and Policy for informed decision making. This is targeted at an audience of mid-career professionals from the public and private sector, civil society and other concerned stakeholders.  
Details regarding the above courses are available on the PHFI website: [www.phfi.org](http://www.phfi.org)