



Coconut requires high humidity, around 27°C, an annual rainfall of 1300-2300 mm, and has a mild tolerance to salinity - pH 5 to 8. It can grow in soils such as laterite, coastal sandy, alluvial, and even reclaimed marshy lowlands! People of Kerala State use every part of the coconut palm. Coconut oil is used for cooking, on hair and body, and for industrial purposes. Tender coconut water is a nutritious beverage and the best oral re-hydration fluid to cope with the heat and humidity. Fermented coconut water (toddy) is a common alcoholic beverage. Coconut shell is used as fuel wood and for handicrafts, and palm leaves for roofing. Coir industry is well established here.

Alappuzha (try pronouncing that!), popularly known as the Venice of the East, is networked by canals used for people's daily mode of transport. The boat races in backwaters of Kerala are world famous, attracting thousands of onlookers each year! The hand-crafted wooden Kerala snake boats (*Chundan Vallam*) are built for strength and speed.



Typical of the sub-tropical forests, the Western Ghats has a high diversity of flora and fauna. The fauna here range from the tiny Tree Shrew to the huge Asiatic Elephant. About 30% of Asiatic Elephants live here! Apart from the majestic tigers and nimble leopards, they are also home to sloth bears, Indian bisons and wild boars.

How do large ears help the elephant?  
Why do small animals huddle together?  
Are there biodiversity hot-spots in your country? What do you think they are?



Think

Think

Write to us

On an average, estimate the weight of food you eat in a day. Did you know that the daily food eaten by mice equals 25% to 50% of their body weight, while the daily consumption of humming birds are known to be more than their body weight. Why do they need so much food? And where does it all go?

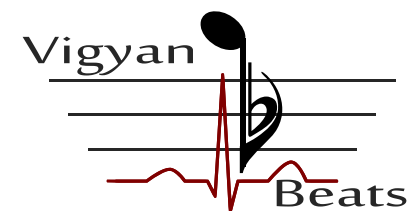
Which of the following are most likely to survive a fall from a large height, say, 900 meters: Cockroach, Horse, Human, Lizard, Mice, and Rat? Why do you think so?

Interesting answers may get featured in the upcoming issues! You could also win prizes!

Image source: Eacz12, Rursus, Linuserist, Anand Singh, Domtw, Saravask, Franz Eugen Kohler, Arun Sinha, Pakrashi from [www.commons.wikimedia.org](http://www.commons.wikimedia.org)

### Editorial team

Chitra Natarajan, Rafikh Shaikh, Shraddha Ghumre, Geetanjali Date, Adithi Muralidhar, Manoj Nair.



## 10<sup>th</sup> International Junior Science Olympiad

### Today's attraction: Classical music concert

The opening ceremony brings you a treat in the form of a musical concert based on Indian classical music. Here we introduce you to some foundational ideas in Indian classical music, such as rāga, taal, and laya.



Mridangam

Two of the major classical music traditions in India are the Hindustani and Carnatic styles. Similar to that in the Western classical tradition, these styles divide an octave into 12 semitones. The notes Do Re Mi Fa Sol La Ti (Si) Do of the western classical become Sa Re (Ri) Ga Ma Pa Dha (Da) Ni Sa, in the two Indian traditions.

Rāga (Raaga) is a melodic mode, which is based on a scale and has a set of characteristic melodic behaviors. Several rāgas may share the same scale, which may have five, six or seven tones, called swaras. A raga is better defined by the way the notes are sung and the mood they build than by the notes themselves.



Tabla

Taal or rhythm is foundational to Indian classical music. Many kinds of rhythm instruments are used for accompaniment as well as for solo performances. Percussion-based rhythm instruments have a membrane fitted on a wooden, clay, or metallic shell, and are tuned by straining the laces. A mixture of materials such as gum, starch, soot, and/or iron filings may be permanently or temporarily applied to the center of the membranes. This black spot gives the specific timbre to the instrument.



Pakhawaj

Laya is the tempo, or speed of a musical piece. The laya usually changes progressively in a performance in accordance with the musical style.

A vocalization of the actual sound produced by the tabla is bol. The system of reciting the rhythm compositions orally, and transmitting over generations is called as padhant. Before actually playing a new composition on the drums, a student typically learns to vocalize the padhant of the composition.

### Today @ IJSO

Opening ceremony - Lunch - Talk on History of Pune by Dr. Tapkeer

Opening ceremony Venue: Hotel Marriott, Sabha 1+2+3

- Buses will leave from your hotel at 08:30 hrs.
  - Please take your seats in the hall before 09:15 hrs.
  - Post-lunch, the buses will leave for VITS hotel at 13:30 hrs.
  - Make sure that you have handed over all your communication devices (laptops, phones, etc.) to your leaders at Hotel Marriott before you get on the bus.
- History of Pune talk Venue: Sapphire 1 at VITS hotel



Opening ceremony - Lunch - MCQ exam discussion

Opening ceremony Venue: Hotel Marriott, Sabha 1+2+3

- Please take your seats in the hall before 9:15 hrs.
  - Post-lunch session will be in Sabha.
- Breakfast on 5 December at Pool Deck.



# Snapshots



the cute comprehension continues...



the 'braidy' bunch!



arriving with smiles that will win hearts..



the engaging beats



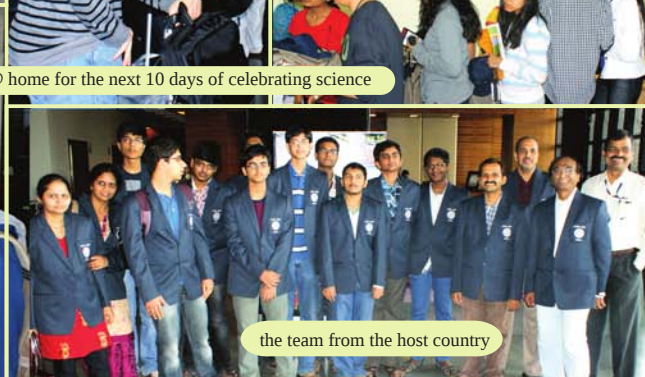
all my bags are packed...I am ready to venture into IJSO



the three musketeers



registering @ home for the next 10 days of celebrating science

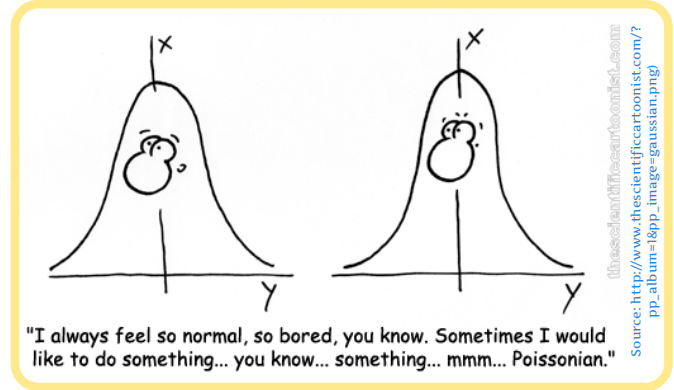


the team from the host country

## Graffiti Boards

At the Help Desk, you may come across some graffiti boards. We will keep sketch pens, notepads and post-its for you at the Help Desk. Please feel free to share your ideas on it. If you have any thoughts on the "THINK THINK" section, pen them down on the board. Looking forward to seeing your drawings and doodles on the board! Happy Sharing!

Have a flair to combine humour and science? Fill the dropbox at the Help Desk with your ideas and cartoons!



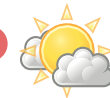
"I always feel so normal, so bored, you know. Sometimes I would like to do something... you know... something... mmm... Poissonian."

Source: [http://www.thescientificcartoonist.com/?pp\\_album=1&pp\\_image=gaussian.png](http://www.thescientificcartoonist.com/?pp_album=1&pp_image=gaussian.png)

## Today's weather

Sunrise: 06.52AM

Sunset: 05.57PM



Max Temp: 30° C

Min Temp: 17° C

Rain or thundershowers would occur in some areas.

Source: [www.imdpune.gov.in](http://www.imdpune.gov.in)

## Zoom In

### Answers to yesterday's Write to us



SILICON, GREENLAND, COCONUT, BLEACHING

Letters IOEACCN unscramble to form OCEANIC

Congratulations Wong Gabriel Chun Hei and Gordon Wu from Hong Kong, China! Winners can collect their gifts during breakfast time from the Vigyan Beats Team.

## Glimpses of Western Ghats



The Western Ghats span over six States of India along her western coast. They are one of the world's biodiversity hot spots as well as World Heritage Site declared by UNESCO. This 160,000 square kilometers stretch of land harbors tropical and subtropical moist broad-leaf forests, moist deciduous forests, montane rain forests, and the Sholas. It is home to over 5000 species of plants, 120+ mammals, 500+ bird species, 170+ amphibian and reptile species, and 100+ species of freshwater fish.



Millions of people live in the Western Ghats and their lives and livelihood depends on the land, rivers and climate of this region.