

# Upon Wings of Silver

- Aditi Kumar, Grade III

Flitter, flutter, flitter,  
You beautiful creature,  
Always gliding,  
Until you stop and delicately land,  
On a flower,  
You suck in sweet, sweet, nectar,  
Loving the taste as you beat your wings in.

The warm, warm sun,  
Your silvery wings sparkle,  
As you flap and soar into the sky,  
Beautiful bright colors,  
Show on your wings,  
So glamorous,  
Your beautiful silvery wings.



## しょう来に向けて頑張ってる水泳

- ダッタ・シヨルミ (8歳)

私は今、しょう来に向けて水泳を頑張っています。4さいごろから水泳を習っています。入ったときはぜんぜんできませんでした。でも、ひび練習をかさね、?年生の終りごろには、すべての級を合格し、大会もたくさん出るようになりました。そのため前よりも練習時間をふやし、たくさんのど力をし、県大会で平泳ぎでは1位になりました。3年生になってから、2年生よりも練習がきつくなりました。その中でも集中的にせ泳ぎの練習をしていたため、6月に行われた県大会では、平泳ぎとせ泳ぎとに出る事にしました。ど力した結果、平泳ぎは0.07秒の差で負けてしまい2位、そしてせ泳ぎは6位でした。せ泳ぎは初めてでも、6位で嬉しかったです。現在は、JO (Junior Olympic)めざしています。これからも練習をまじめにやり、しょう来の水泳せん手というゆめに向かってがんばりたいと思います。 ■

第3回茨城県水泳記録会  
セントラル日立から13名もの選手が出演！素晴らしい

【女子8歳以下】	【女子11~12歳】	【男子】
ダッタ シヨルミ さん(小学3年)	石橋 美羽 さん(中学1年)	
50m背泳ぎ 49秒19 6位	50m背泳ぎ 34秒64 4位	
50m平泳ぎ 50秒13 2位	100m背泳ぎ 1分13秒39 9位	
藤部 有希 さん(小学3年)	落合 ひなの さん(中学1年)	
50m自由形 52秒17 27位	50m自由形 33秒48 57位	
50m背泳ぎ 53秒65 11位	羽川 莉奈 さん(小学6年)	
	50m平泳ぎ 40秒72 10位	
	100m自由形 1分09秒33 21位	
【女子9~10歳】		
相馬 紗凜 さん(小学5年)		
50m自由形 33秒24 9位		
50m背泳ぎ 36秒13 3位		
藤山 理彩子 さん(小学4年)		
50m自由形 39秒84 41位		
50m平泳ぎ 49秒37 21位		

# Camping In Japan

- Anushka Mandal, Grade V

One day my father told me, " See darling, let's learn about the forest! water! seasons! and nature!" All these wonder me. He told me camping has always been popular among the Japanese people. Let's try, during summer school holidays we will go for camping in different places. He brought a whole camp gear consisting of a tent, sleeping bags, campfire grill, tarp, lantern and outdoor chair table sets etc.



For the first camp we went to Nagatoro. We reached camp ground by car, my father told me to help him but I found the forest were very lively in summer. Many fallen logs were there in the camp ground, those provides food and shelter to many insects. A log can be a very busy place, some animals make their nests in them. I went to a nearby river, where everyone was just staring, the water was so clear that I could see the bottom. Drip, drip, drip, I could feel the current. I could hear the river and I could splash in it too. People were busy with fishing, cycling, hiking, and rafting. All the student campers were enjoying in the river . I never enjoyed more than this before.

Our next camping was beside lake Yamanakako. Lake Yamanaka is the largest among those five lakes of Mt. Fuji. I saw a beautiful scenery. Mt. Fuji's snow melts through the ground and feeds these lakes with clear fresh spring water. I saw people busy with windsurfing, boating and horseback riding. We enjoyed the lake view and Mt. Fuji together. I saw the lake water is not in hurry, like river. It was quiet and calm all the time. I saw dark green forest around the lake, some trees have leaves that change colour. I found lots of life on forest floor such as lichens, mosses, ants and spiders. Evergreen trees start out small on the forest floor. The sun light takes pokes through the tree tops which helps them to grow big and tall. Crunch! Squirrels eat pine cone seeds and carry some to their nests. Evergreen trees are the best things around all over the lake. I found woodpeckers eating insects that are inside trees. I fed big white swans by my hand. They like to swim all around the lake for the whole day.



In fall I enjoyed one best camp at Oku-Nikko. The camp ground was beside a water fall, lake, and high marshland. I saw a waterfall. Whoosh! Water rushes over a high cliff pouring huge amounts of water down, down, down. They made a big noise. Here alpine plants and marsh plants grow. People were busy with birds watching and hiking. We went with a ropeway to the top of a mountain and took a foot bath. I found deer's were roaming around the camp ground. After the sun sets down, it was freezing cold. I feel nice and cozy by the fire. I could not stay out for long though. I soon went inside the tent. I thought suddenly winter is here. I was thinking of maybe I need a heavy winter coat and trees will be covered with blanket of snow soon. In the morning I found sparkly frost on the grass and outside tent there was still thin snow layer. Birds sing so loud in the forest. I ate breakfast, deers were looking for twigs and barks from trees to eat. I



could feel the cool air and wind moving branches. It was a good time to fly a kite. I enjoyed kite flying with my sister.

Another best camp that I enjoyed was in Togakushi in Nagano. The camp ground was at the foot of Mt. Togakushi. It was a highland surrounded by beautiful green mountains. It was raining when we reached the place. I found many horses inside a long wooden fence. I found three-four ponies. They all kept together. All the children were busy feeding the horses. I also fed them by my hand. There was a small stream beside the horse ground. We tried fishing. There was a long slide and we had lots of fun. I enjoyed BBQ and soba noodle. Every time roasting marshmallows in bonfire made me so happy. Now I like outdoor camps so much and it is exciting too. ■



# My trip to Spain and Portugal

- Akanksha Mukherjee, Grade V

This year, I traveled to two countries in Europe: Spain and Portugal. They were both awesome! On the day of departure, we left the house at 7:00 pm and took an Emirates flight at 10:30 pm. As Spain is really far from here, we took two flights. We first took a flight to Dubai. There we waited for a long time. Finally, we took our second airplane to Barcelona.

## Barcelona

In Barcelona, we stayed at an apartment, not a hotel. Living in Barcelona was wonderful! We went to many places like Sagrada Familia, which was created by a famous person called Antoni Gaudi. We took a two-day bus tour around the whole city of Barcelona. We also visited Gaudi Park and Magic Fountain. After spending 5 days in Barcelona, we went to Sevilla.

## Sevilla

Sevilla is an old city and the cultural center of Spain. In Sevilla, the type of dance they do is called Flamingo dance. I saw the dance on the first day. It looked great. To do the dance they needed a lot of practice to make it perfect. In Sevilla, we went to many cathedrals and palaces. Sevilla is full of bats! We spent three days in Sevilla and then left for Madrid.

## Madrid

Madrid is the capital of Spain. There, we stayed in a huge apartment. We visited the emperor's palace, a church, Prado museum, and an Egyptian temple. On the third day, we left Spain and went to Portugal. I felt a bit sad; I really missed Spain.

## Porto

Now I wasn't in Spain anymore. I was in Portugal. And in Portugal, I was in Porto. There we lived in a serviced apartment which was not as good as the one in Barcelona. We took a bus



tour like we did in Barcelona. We got a little sick after spending too much time out in the sun, so we spent the remaining part of the day at the apartment. We were glad that we only spent three days there. So on the third day we left for Lisbon.

## Lisbon

Lisbon is the capital of Portugal. It is very beautiful. We stayed in a great hotel. In Lisbon, we visited the Pena palace and spent hours visiting it. It looked awesome! We also went to beaches and to the western most point of Europe in Cabo Da Roca. On the fourth day, we left Lisbon.

## Back home

After having a really enjoyable trip, we returned back to Japan. It was a wonderful experience travelling Spain and Portugal – such beautiful countries! I can even speak a little bit of Spanish now. From Lisbon, we took our first airplane to Dubai, and then another to Tokyo. I was glad to be back home after such a long time. There isn't a place better than home! ■



# ভারতের বৈচিত্র্য ও ভারত দর্শন

- Sneha Pal , Grade VII

ভারত এমন একটা দেশ যেখানে হাজারো বৈচিত্র্যের সহাবস্থান। তার প্রমাণ মেলে সব জায়গায়- প্রকৃতিতে আর জীব জগতে। আসলে যা আছে বিশ্বে তা আছে ভারতে।

ভারতের উত্তরে রয়েছে হিমালয়। এ পর্বতমালার সঙ্গে ইউরোপের আল্পস তুলনীয়। হিমালয় পর্বতমালার রহস্য, তুষার ঢাকা মোহিনী রূপ কাকে না টানে? যারা প্রকৃতিকে ভালোবাসেন তাঁরা কি পারেন হিমালয়কে উপেক্ষা করতে?

ভূস্বর্গ কাশ্মীরের সৌন্দর্য সুইজারল্যান্ডের সৌন্দর্যের সমতুল। সুন্দর সাজান লেক, মুঘল আমলের সাজান বাগান, ডাল লেকের জলে শিকারায় ভাসতে ভাসতে সূর্য অস্ত দেখার আনন্দ অপরিসীম। হিমালয়ের পাদদেশে আমাদের কাছে দারজিলিং এর আকর্ষণও কি কম? কাঞ্চনজঙ্ঘার সূর্যোদয় ও সূর্যাস্ত উপেক্ষা করা যায় না।

ভারতের পশ্চিম সীমান্তে রয়েছে থর মরুভূমি। এই মরুভূমির আকর্ষণ আমাদের মত সাধারণ মানুষের কাছে কতটা সেটা নিয়ে বিতর্ক থাকতে পারে, তবে এটা নিশ্চিত থর মরুভূমিও ভারতের বৈচিত্র্যের একটা অঙ্গ।

গাঙ্গেয় উপত্যকায় ঋতু পরিবর্তনের সঙ্গে প্রকৃতির পট পালটানো আর এক মজার ব্যাপার। এটা ঘটে প্রকৃতির নিয়মে। গ্রীষ্মের কাঠফাটা রোদের শেষে বর্ষা, বর্ষার বাদল দিনে মেঘের গর্জনের মধ্যে সম্ভাবনার গান, বর্ষা শেষে ঘন সবুজের মধ্যে রোদ আর ছায়ার লুকোচুরি, অথবা শীতের রেশ কাটতে না কাটতে বসন্তের কড়া নাড়া, এমন টা ভারতেই মেলে। একটানা শীত বা গ্রীষ্মের সঙ্গে লড়াই করতে হয় না এখানে। এখানে একঘেয়েমির অবকাশ নেই।

যাঁরা বনভূমি পছন্দ করেন, তাঁরাও নিরাশ হবেন না। ভারতের

প্রায় প্রতিটি রাজ্যে রয়েছে অনেক বনভূমি। আমাদের পশ্চিমবাংলাও তার ব্যতিক্রম নয়। এখানেও রয়েছে অনেক উপভোগ করার মত অরণ্য। দারজিলিংএর নীচেই রয়েছে ডুয়ার্সের জঙ্গল। আর এ রাজ্যের দক্ষিণে রয়েছে বিশ্ব বিখ্যাত সুন্দরবন যেখানে রয়েছে রয়াল বেঙ্গল টাইগার।

ভারতের তিন দিকে ঘিরে রয়েছে সমুদ্র। তাই এখানে সমুদ্র সৈকতের অভাব নেই। আন্দামানের রাধানগর, গোয়ার কালাঙ্গুতে, দোনাপাউলা, বাংলার দীঘা, সবগুলোই নিজ নিজ বৈশিষ্ট্যে সুন্দর ও প্রাণবন্ত।

আসলে, ভারতীয় বৈচিত্র্যের শেষ নেই। এটা ভৌগোলিক বিন্যাসের বা ল্যাঙ্কস্কেপের মধ্যে সীমাবদ্ধ নয়। বৈচিত্র্য রয়েছে ভারতীয় জীবনযাত্রায়, চিন্তায়, ও ভাবনায়। তাই ভারতবর্ষের প্রতিটি রাজ্যের সংস্কৃতি, ভাষা, খাদ্য, রন্ধন প্রণালী, পোষাক, সব কিছুর মধ্যে রয়েছে সেই বৈচিত্র্যের প্রতিফলন। আসলে এই বৈচিত্র্যই ভারতের অন্তর্নিহিত শক্তি যা এক জন থেকে অন্য জনকে পৃথক করে না, অন্যের সংস্কৃতিকে, অন্যের মত করে বুঝতে শেখায়। এই ভাবনা থেকে জন্ম নেয় ভ্রাতৃত্ব বোধ, ভারতীয়তা। জন্ম নেয় বিশ্বজনীন ভাবনা। ভারতীয় জাতীয়তা বোধে, ভারতীয় দর্শনে তাই বর্ণবাদ নেই, আছে উদারতা, আছে ভালবাসা, আছে বৈচিত্র্যকে মূলধন করে বিশ্বের সামনে এক জীবন্ত উদাহরণ হয়ে নিজেকে মেলে ধরার অকৃত্রিম ব্যাকুলতা। তাই যারা প্রকৃতি কে ভালবাসেন, যারা বেড়াতে যান এক ঘেয়েমি কাটাতে, তাদের কাছে ভারত ভ্রমণ নিঃসন্দেহে একটা আকর্ষণ। কেননা ভারত দর্শন বিশ্বদর্শনের সমতুল।

## The Pen is Mightier Than the Sword

- Sneha Kundu, Grade VII

“The pen is mightier than the sword” is a metaphor developed in the 1830s and first used by the English author Edward Bulwer-Lytton. You must be wondering about what the meaning of this phrase is or why it is used considering the fact that a pen cannot be used as a weapon nor can it save anyone from death. The actual meaning of this phrase is that communication is a much more effective tool than direct violence. Communication can prevent unwanted happenings such as misinterpretations or miscommunications. Using violence, or swords, can injure or kill people without people knowing the reason.

Many writers write about problems in society instead of fighting against them. Taslima Nasrin is a Bangladeshi writer. She is known to be feminist who claims that the true meaning of her religion is different from the way it is practiced, specifically those which go against women. Writing this had gotten her arrested by people who didn't agree with her statements but doing this had made her even more famous and now her books

are even read in other parts of South Asia. She was sent to exile out of Bangladesh and East India. Currently, she got her protection by the Centre for Inquiry in US. Unfortunately, now she can neither return to her home in Bangladesh nor to her adopted home in West Bengal. Despite being a controversial writer, she has been awarded with many prizes in recognition of her writings. This shows how she could spread her influence across the globe. This proves that words on a paper have a much bigger impact than it is thought of.

Frederick Douglass was another writer who used books to address problems in society. He was an African-American who was born into slavery in the 19th century. He wrote many auto-biographies about his life in slavery. He was a firm believer in equality for all human beings and campaigned against slavery. He became the first African-American to be nominated for becoming Vice President of the U.S.

Looking at these incidents of history, I firmly believe that pen is mightier than sword. ■

# New York, New York

- Anirudh Kumar, Grade VII

**W**elcome to the melting pot, also known as the Big Apple! In my opinion, New York City is one of the most exciting cities to visit in the world. In this metropolitan jungle, there is something that each person can savor! Whether your passion is touring museums, exploring historic sites, shopping till you drop, or watching plays, NYC has just the thing for you! I, myself, had the privilege of experiencing the city that never sleeps for three full years! Let me tell you why you should visit this city, if you haven't already.

The most fascinating part of New York, perhaps, is its museums. They include art museums like the Museum of Modern Art (MOMA for short) and the Guggenheim Museum, and science museums like the Museum of Natural History. There are even museums that focus solely on children, like the Children's Museum in Manhattan. One of my favorite museums is MOMA. There is artwork from various art movements such as Impressionism, Cubism, Realism, etc. It has artwork by people with innate artistic abilities like Pablo Picasso, Vincent Van Gogh, Claude Monet, Jackson Pollock, and Andy Warhol. This museum is easy to navigate through with the help of friendly staff members and labeled signs. Another one of my favorite museums is the Children's Museum in Manhattan. It is a hidden gem: not many people know about it, but it is an excellent resource for children to learn about science. With hands-on activities that explain topics like earthquakes and the tides and explanations written in concise language that children can easily understand, this museum is high up on my list.

New York is a city that is an architectural delight with its amazing buildings, bridges, and world-famous sites. Historic sites include but are not limited to the famous Statue of Liberty and the 9/11 Memorial. The awe-inspiring bridges and buildings include the Brooklyn Bridge, the Manhattan Bridge, the New York Public Library, the Empire State Building, and the Chrysler building. The beautiful Statue of Liberty and the poignant 9/11 Memorial are my two favorite sites. The Statue of Liberty was a gift to the U.S. from France. It was (and still is) an iconic symbol of freedom especially for immigrants who were sailing to Ellis Island from other countries. Today, you can take a ferry to the statue, or take in the view from a distant point. Either way, you can fully appreciate the beauty of the statue and understand how symbolic it was to those who made the dangerous journey to Ellis Island from other countries. Another site that I found very touching was the 9/11 Memorial, which was built to mark the attack on the Twin Towers on September 11, 2001. Today, all that remains in the place of the towers is a

pool formed from water from the bedrock of Manhattan. When you visit this site, you cannot help but hope for world peace and an end to terrorism.

New York City boasts many wondrous structures. The 1.8 kilometer long Brooklyn Bridge is my favorite bridge. It was the world's longest suspension bridge till 1903. You can either drive or walk on this bridge, from where you will get an incredible view of the city. My favorite building in Manhattan is the New York Public Library, and not just because of its architecture. In front of this building are two magnificent lion statues. Their names are Patience and Fortitude. Not only is this building grand on the outside, it houses a vast treasure inside, in the form of books.

New York City is unique in terms of entertainment. One of the major aspects of this entertainment are the Broadway musicals that include Annie, The Lion King, and Matilda. This city is also home to the world-class New York Philharmonic Orchestra. New York's theatrical productions are staged in Broadway, an area close to Times Square. I have watched a few Broadway musicals, but my favorite is perhaps The Lion King. With vibrant costumes, catchy songs, humor, and action, this production has appealed to me as one of the best shows I have ever watched. Carnegie Hall and Lincoln Center are two locations where you can attend music concerts. The New York Philharmonic Orchestra performs at the Lincoln Center. Not only is this orchestra one of the most elite in the world, it is an excellent resource for learning about music and instruments. Before each piece, the conductor talks about the origin of the piece. At the end of the performance, the musicians openly interact with the audience by giving them opportunities to query them about the piece and their instrument. I actually had the privilege of being part of the New York Philharmonic Young Composers program. It gave me great satisfaction to see my musical piece being played by artists from this orchestra.

What I have spoken about in this review is just the tip of the iceberg. There is much more to New York, including notable designer stores, gourmet restaurants from around the world, and serene parks. This city is one of the most diverse places in the world with residents from all around the world, which is why it is called a melting pot. Words cannot truly express its wonders. If you want to fully enjoy New York, you need to explore it yourself. If you don't believe me, check it out yourself! ■



# The Evolution of the World's Most Complicated Toy: The Rubik's Cube

- Rituraj Sohoni, Grade VIII

I am packing my bags and am all set to go to the biggest biannual event in the history of the Rubik's Cube: The World Championships 2015, held in Sao Paulo, Brazil. This event is held in different places every two years and attracts a huge number of people from various countries. In 2013, the competition was held in Las Vegas, Nevada, USA and had over 600 competitors from 34 nations. There are no age groups or levels for the competitors; it's free for all. Though it's a competition, the environment is fun and friendly.

Let me stop for a second. Few of you reading this might not have heard about the Rubik's Cube at all; this topic might be new to you. Let me give you a little background information on this topic. Here goes:

The Rubik's Cube is a bestselling toy that was invented by Erno Rubik in 1974. It is a 3D combination puzzle that became a bestseller in 1980. The standard Rubik's Cube comprises of 6 faces and 9 stickers on each face. It is still widely known and nowadays, speedcubers attempt to solve the cube in the least amount of time possible. The first ever World Championship was held in Budapest in 1982. After speedcubing gained more popularity the WCA (World Cube Association) was formed. Look it up if you want to find out about the WCA. Probably the biggest event in the speedcubing history came in 2009 when a Melbourne boy named Feliks Zemdegs broke the several barriers of speedsolving and bagged a world record in his second competition. He now holds the average world record for the Rubik's Cube with a time of 6.54 (an average is when you do five solves, remove the best and the worst time, and average the three remaining times). The single fastest world record for the 3x3 is held by a boy named Collin Burns who bagged it very recently this year. This is how the Rubik's cube evolved from just being an ordinary toy to becoming a very popular hobby amongst several people.

Let me talk a bit about how I got interested into cubing. I had a really old cube for around several years now. I never really knew how to solve it so I tried and tried and finally gave up after successfully solving two layers by myself. I looked up some videos on YouTube and found a really helpful tutorial, which I learned from and began consistently solving all six faces in about a minute. From then, it was all about practice, learning new stuff and dedicating a lot of time towards my very strong hobby and that actually made me the speedcuber I am today. I wasn't really interested in doing bigger cubes at first but then I developed an interest in several types of puzzles and practiced those as well. To see my official records go to: <https://www.worldcubeassociation.org/results/p.php?i=2012SOH001> and for those who want to see my YouTube channel check out: <https://www.youtube.com/channel/UCACeSq2VH0rvSckCIHaAJ5Q>

I have been cubing for about 3 years now. This is my story on me becoming a fast speedcuber.

My experience at Worlds 2015 is a story of a totally new level of excitement. It was the biggest event this year and the most memorable for several competitors including me. I beat my records in several events and made two finals. I achieved my personal best timing, clocking a 7.86 3x3 solve which is 2nd in India. I was also awarded the fastest Indian competitor at the World Championship events, both in 2013 and 2015. I am proud of my achievements and look to press forward breaking more records. I have uploaded a few of these videos on my YouTube channel.

Cubing is not as hard as it looks though and I believe that anybody can solve it. It's not really about being the best; it's about being better today, than you were yesterday. I hope this article inspires you to go down to your local toy store and get your Rubik's Cube today. ■



# Amazing Japan

- Manasvi Kapoor, Grade VIII

*When I look through the window,  
The greenery, the blue sky and the skyscrapers delight me.  
Japan is this place,  
Simply wonderful and full of might.*

*The Japanese being so kind and with their sweet voice, they greet people and leave good impressions behind.  
Japan is such a happening place,  
There is so much to do each season,  
That you bloom with grace.*

*Whether it is the fireworks, the festivals,  
Or the glorious Cherry Blossoms,  
One can never stop admiring the various aspects of Japan which makes it a magnificent nation.*

*Safety is in the first place,  
Especially for women and children.  
One never hesitates to go alone,  
Anytime and anywhere.*

*I love Japan so much,  
And why would one not,  
It is a first world country,  
By dint of the peoples' hardwork and dedication.  
I shall never forget my memories of Japan!*

## Arctic Foxes

- Aaryan Kumar, Grade V

**T**he Arctic Foxes (*Lepus arcticus*) live in the heart of the Arctic circle. They are truly amazing creatures: during the summer their fur is brown to help them look like dirt, but in the winter, it is white to help them blend in with snow. They can also survive a warm summer as well as a harsh winter. They are also known as the polar fox or snow fox. Grown up males would usually be (from paw to shoulder) 20-25cm and 3.5 kg. The Arctic Foxes are built so well that they can survive until the temperature drops to -50°C (-58°F). Arctic Foxes can survive weather that cold since it has the help of a warm coat and a layer of fat called blubber.



Arctic Foxes eat various types of animals such as voles, mice, bird eggs, and most commonly lemmings. But their favourite meal is the leftover of a polar bear. Based on this you'd think it is a carnivore, but it also eats some vegetables. The Arctic Fox is indeed an extraordinary animal. But hunters only think that their coat is extraordinary. So, they hunt them for their coats. And people offer higher and higher prices for a fashionable fur coat making hunters poach more Arctic Foxes. Only the Scandinavian government made a law to save the Arctic Foxes. I hope you will help maintain the Arctic Fox's population by not buying fur coats and donating at the link below.

Save Arctic Foxes by Donating at:

[www.panda.org/about\\_our\\_earth/species/profiles/mammals/arctic\\_fox/](http://www.panda.org/about_our_earth/species/profiles/mammals/arctic_fox/)



# The Unwritten Rules of Social Media

- Aishwarya Kumar, Grade X

**S**ocial media has become a major part in how we communicate, and as with anything, it comes with a set of rules. However, when it comes to social media, the regulations stretch far beyond the terms, conditions, and online etiquette. There is an incredible amount of rules that changes depending on the user, and teenage girls seem to have the most. Because of this, and the fact that I know these guidelines from personal experience, the unspoken rules covered in this essay will mainly apply to teenage girls.

Most of the unspoken rules are about photographs. Before posting a picture, we must make sure we are posting the right picture, on the right platform, on the right day. The rules also change depending on whether we are posting a photo of ourselves, a friend, or a family member, and when the photograph was taken. Therefore, the standards are much better explained with these two scenarios, the times we use social media the most.

Travelling is the best opportunity for us to take artsy snaps, so we must make sure we have a Facebook album ready and are updating our Snapchat constantly. Everyone has to be jealous of our super exotic vacation! When on an airplane, we must take a picture of the wing from our window. A picture of our passport with our boarding pass sticking out is optional. We must try to capture everything on camera, and the best shots have to go on Instagram. If we have photo of beautiful scenery, that must become our cover photo. If our profile picture is too old, a year old shot is way too old, we should make sure

someone takes a smashing photo of us during our trip for our new profile picture.

No one should ever post embarrassing pictures of their friends on Facebook and Instagram unless it is their birthday. Actually, it is more complicated than that. Only really close friends can get away with posting embarrassing pictures of each other on their birthdays. These should be accompanied by really long messages, especially if they have been friends for a long time. If we are not that close to the birthday girl, a simple birthday message on her Facebook wall will suffice. Even though we are friends on Facebook, if we don't even know the birthday girl, then we should not send a message at all. Snapchat is the exception to the rule of no embarrassing pictures unless it is a birthday, since the pictures will be gone after some time if a screenshot is not taken. Remember not to screenshot a funny Snapchat unless the person in the picture is a good friend. We would look like a stalker otherwise. Keeping embarrassing pictures of friends in really large Facebook albums, is also okay because not much attention is being drawn to them.

At a first glance, these unwritten rules seem ridiculous. Nevertheless, these rules are part of a new culture, the internet's culture, and they should be treasured. It is amazing how the internet has become a way of life outside the physical world that anyone can be part of, and although the concept is still quite new and a bit confusing, it is just as important as the traditions people have had for thousands of years. ■

## The Cake Lady

- Utso Bose, Grade X

**I**t's been six years since I returned from Japan, but the memories remain.

I used to live in Yokohama, a sleepy city next to the bustling capital, Tokyo. A few blocks away from my house was a flurry of little shops, each hideously attractive in its own way. Among these was the shop of the Cake Lady. Since I had been living here for the past two years, (2007 ~ 2009), I had picked up the language within a few months. Not much as ever by interest, but by compulsion. I still remember one such incident which took place with the Cake Lady.

It was a dreary Tuesday. Being a school holiday, I was dawdling around, when I heard one of the shopkeepers wishing the Cake Lady Happy Birthday.

"Otanjoubi Omedetou! (Happy Birthday!)"

Those were the days when I loved the little joys of life. I rushed home, picked up a small piece of chart paper, and hurriedly drew a picture of her and the cakes she baked. Then, in the rather preposterous handwriting, I scribbled, "Happy Birthday!"

"Kothaye jachhish? (Where are you going?) " Maa asked. I

shuffled through my dictionary of languages. I replied in two languages:

"Matte, (wait- Japanese) I'm coming!"

I rushed down to the store and handed her the card. She looked at me equal disbelief and amusement.

"Nani kore? (What is this?) "

"Anata no tame ni tsukutta card des. (It's a card I made for you) " I replied.

Her suspicious tinge broke into a huge gleaming smile. Without saying something, she rushed inside and came back with two packets of freshly baked cookies.

I just looked.

She seemed to be saying thank you.

Maybe, a lingering sense inside her seemed to be telling her that I may come back some day.

A few days back, I received an e-mail from a friend. It read: "I'm very sorry to inform you Utsho. The cake shop's been closed. She was running on losses."

Maybe, money comes before humanity. ■

# Climate Change and Global Warming

- Arunansu Patra, Grade X

In the early 19th century, when climate change was first identified, it has raised questions among the human population as to the fate of humanity, and planet Earth, for that matter. By the late 19th century, scientists had devised theories of climate change that is still recognised to this day. Nonetheless, global warming, one of the factors of climate change, is an issue which consequences our ecosystems, meteorology, and health badly. As often confused, climate change is not the same thing as global warming. Global warming is more focused on the Earth's average temperature increasing, whereas climate change encompasses aspects such as intense weather, droughts, ocean acidification, sea-level rise, etc., and this differentiation is important, because there are times when the Earth can be cooler.

As commonly defined, global warming is the process in which the Earth's average temperature increases. Firstly, it is imperative that we understand how the Earth keeps warm. When the Sun releases energy, which it constantly does, in the form of solar radiation, a lot of the radiation (visible) penetrates into the atmosphere, while the others are either reflected back into space or absorbed (ultraviolet) by the atmosphere. Then the Earth's surface absorbs most of that energy and reflects some of it back out as infrared radiation. The clouds and greenhouse gases (GHGs), in the troposphere (0-10 km), reflects most of the radiation back to the Earth or absorbs that radiation. Although a lot of the radiation is reflected back into space, enough is trapped and absorbed to maintain a suitable temperature to sustain life. The earth's surface temperature would be in equilibrium at about 270 kelvin (0°C) without any effect of the GHGs that can be calculated from Stefan-Boltzmann theory of blackbody radiation. GHGs are consisted of mostly water vapour (H<sub>2</sub>O), while other abundant gases include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and tropospheric ozone (O<sub>3</sub>). While H<sub>2</sub>O is part of earth's natural hydrological cycle, the other gases are increasing in the atmosphere due to human activities.

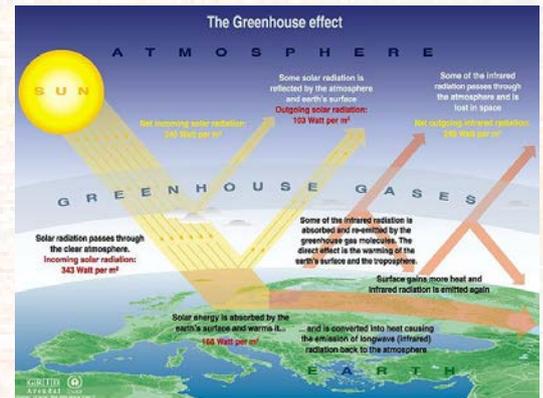


Figure 1: Diagram illustrating movement of energy due to the greenhouse effect.  
Image source: Delaware.gov

So what's the problem? The average global temperature has been rising at an alarming rate. The past half-century has experienced the biggest temperature change in history, with global temperatures raised an average of about 1°C. This may not seem like much, but over time, the effects of temperature increase builds up, and at this rate, would likely accelerate in concert with the rate of increase of GHGs. Global warming affects the climate and Earth in more ways than only the temperature being higher than before.

A common example for this effect is the bleaching of corals in the oceans. As the Earth's temperature increases, so do sea temperatures across the globe. Coral relies on a kind of algae called Zooxanthellae to be maintained. Like a plant's chloroplasts, zooxanthellae undergo a process similar to photosynthesis to produce nutrients and convert things like light into energy. This is essential to the coral's survival, and is what gives them its beautiful colours. The algae need to be in its necessary condition, such as appropriate temperature, for it to photosynthesise. However, due to global warming, these corals do not necessarily get to be in its preferred temperature, which then results in the zooxanthellae failing to provide enough nutrients and pigmentation, bleaching the coral of its colour and nutrients. An increase in CO<sub>2</sub> concentrations in the oceans also increases H<sup>+</sup> ion concentrations in the ocean. This is called ocean acidification, as an increased concentration of H<sup>+</sup> ions acidify the oceans. And it gets worse. Nearly 2 million underwater species rely are provided with nutrition and shelter from coral reefs. Some species' physical appearances allow them to camouflage by the distinctive colors and textures of the corals. Loss of the coral reefs would risk the extinction of these 2 million species that are adapted to survive off the coral reefs. How does it affect us? Aside humans feeding off of some of these species, and others kept for show and jewelry, some of these species have recently shown medicinal use, and scientists are using extractions from these species to develop cures for cancer, arthritis, AIDS, etc. This is why many people are working towards preserving these corals for the benefits of many species, including humans.

Planet Earth is located in what is known as the "Goldilocks Zone" in the solar system, because it is not too hot, and not too cold. We are actually extremely lucky to be in a planet at such a distance from the Sun, and with a well-conditioned atmosphere. Planets Venus and Mars are also in the Goldilocks Zone, therefore should be able to sustain some form of life. However, they obviously do not sustain life as complex as life on Earth. This is due to their atmospheres, rather than their distances from the Sun. Venus has an extremely thick and dense atmosphere, and due to it being exposed to more sunlight than Earth, traps more solar energy within its atmosphere than Earth. Consequently, Venus has an average surface temperature of 465°C. Mars, on the other hand, has a thinner atmosphere than Earth, and cannot trap as much solar energy as Earth, resulting in an average surface temperature of about -50°C. These two planets are examples of what can happen if we do not control our GHG emissions into the atmosphere. Another planet to look into to observe the importance of a planet's atmosphere is Mercury. Even though Mercury is the closest known planet to the Sun and receives the most extreme solar energy, therefore should be the hottest planet in the solar system. However, since its atmosphere is so thin, barely any heat is trapped, and the average surface temperature of Mercury is about -310°C.

Another consequence of global warming is the worldwide melting of ice, especially at the Earth's two poles: the North Pole and the South Pole, and to some extent the third pole of Himalayan Glaciers. The two polar ice caps have a volume of 33 million cubic kilometres of ice combined, and according to satellite measurements from NASA (National Aeronautics and Space Administration) the Greenland ice cap is melting at a rate of 9% per decade. This implies that there is 9% less land of natural habitat for animals that inhabit the polar caps, such as penguins, polar bears, seals, etc., implying the endangerment of these species of animals. The white colour of ice in the oceans reflects a lot of incoming solar energy back into space, which helps with the cooling of the Earth.

Another issue with melting ice bodies is that this is one of two causes to the rising of sea levels. However, this is not as abundant a reason for sea levels rising, because the ice bodies already displace the waters of the ocean. Another reason is that, as water is heated, it expands in volume, which results in sea levels rising. Looking at the general trend, sea levels are expected to rise 3 millimetres every year. The main issue with this is more frequent and extreme flooding to islands, cities and countries, especially if they are at a low elevation, and increased salinity of the coastal (agricultural) land.

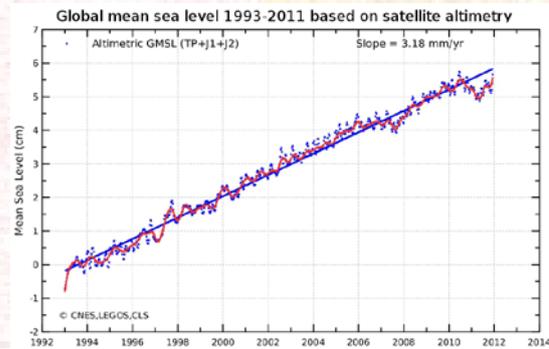
In order to prevent these scenarios from happening in the future, there are many devised reasons as to why the globe is warming, and a lot of misconceptions about why global warming occurs. Once we know what is causing global warming, we will know what factors we need to eliminate in order to solve this problem. Incidentally, thousands of scientists are working in harmony under the Intergovernmental Panel on Climate Change (IPCC) for improving our understanding of the earth system science. Noting the importance of climate change science, this panel was awarded the Nobel Peace prize along with the former vice-president of the United States in 2007.

Firstly, one of the misconceptions of global warming is that human CO<sub>2</sub> emissions do not contribute much to the increasing global temperatures, and the natural emissions dominate human activity. Although it is true that humans only emit about 30 Gigatonnes (GT, 1GT = 1015g) of CO<sub>2</sub> each year, while nearly 750 GT of CO<sub>2</sub> is emitted annually by nature, the amount of CO<sub>2</sub> emitted by nature gets reabsorbed, and this is called the Carbon Cycle. This kept CO<sub>2</sub> levels in the atmosphere between 180 and 280 parts per million (ppm) in the preindustrial time period until 1750 AD. However, our contribution to CO<sub>2</sub> emissions causes an imbalance in this process, and atmosphere accumulates the excess CO<sub>2</sub>, and because of this, CO<sub>2</sub> levels in the atmosphere are as high as 400 million ppm, and still rising at a rate of 2 ppm per year.

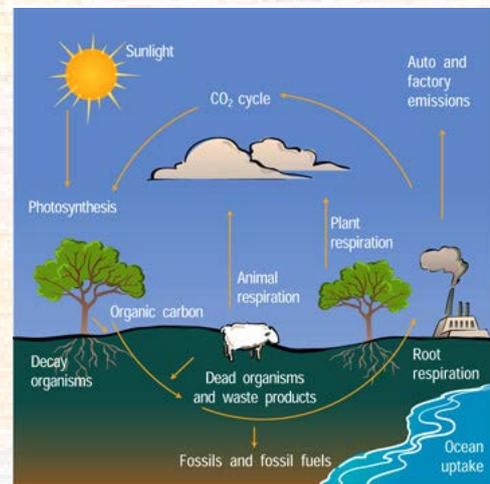
Another misconception is that planetary activity and solar activity may have something to do with climate change. In terms of solar activity, there have been statements that the sun is getting brighter, so more energy is being absorbed from the sun and therefore the globe is getting warmer. This was true until approximately the 1980s, when the sun slowly became dimmer, yet global temperatures kept increasing. In terms of planetary activity, the Milankovitch cycles include the shape of Earth's orbit around the Sun, the Earth's angle of tilt and its precession. All these factors influence the way sunlight comes into contact with the Earth's surface, with distance and how directly the sunlight is making contact with the Earth's surface. However, that would explain climate variability in the past, when human CO<sub>2</sub> emissions were nowhere near as extreme as it is now. The temperature rise due to the Milankovitch cycle also decreases the solubility of CO<sub>2</sub> in the oceans, allowing more CO<sub>2</sub> to be released into the atmosphere.

One last misconception is the confusion between roles of O<sub>3</sub> as greenhouse gas and in formation of ozone layer. The main function of GHGs is to trap and distribute heat across the globe within the troposphere. However, the ozone layer in the stratosphere (10-45 km), consisting of mostly ozone (O<sub>3</sub>), has a function of blocking harmful ultraviolet (UV) radiation. The sun emits mostly visible and UV light in the electromagnetic spectrum, and the greenhouse gases allow these frequencies of light to pass through the earth's atmosphere. Although visible light has proven to be harmless to organisms directly, the energy from UV radiation can be harmful to the environment and living beings. The ozone layer prevents most of the UV radiation from passing through and making contact with the surface, although some of it still makes it through. Scientists have found that the ozone layer was being destroyed since the 1970s through the 1990s over the Polar Regions (referred to as ozone "holes"), which is now in the recovery phase following the implementation of an emission mitigation policy (the Montreal protocol and its amendments). The ozone depletion is primarily caused by emissions of chlorofluorocarbons (CFCs), which are emitted entirely from industrial activities.

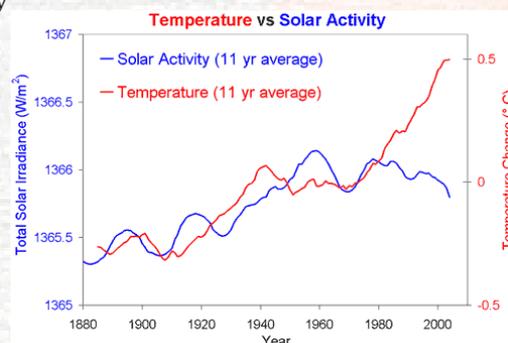
So what exactly is causing global warming to this extent? We have already established that CO<sub>2</sub> levels are increasing in the



Global mean sea level rising. Figure from acclimatize.uk



The carbon cycle. Diagram from Kid's Crossing©



Shows how solar activity affects temperature. From theguardian.com

atmosphere due to human activity, and excessive CO<sub>2</sub> emissions is the main reason for global warming. Scientists are almost certain that the burning of fossil fuels is the biggest cause of global warming. From our experience of preventing further damage of the ozone layer by enforcing emission mitigation policy, we can be optimistic about avoidance of dangerous climate change by altering our way of life, adapting new technologies, preserving ecosystems. However, this will be a much challenging task as the nature and human interaction are closely coupled and some of the changes could be irreversible. ■

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## Riddles

1. Poor people have it. Rich people need it. If you eat it you die. What is it?
2. What comes down but never goes up?
3. I'm tall when I'm young and I'm short when I'm old. What am I?
4. Mary's father has 5 daughters – Rara, Rere, Riri, Roro. What is the fifth daughters name?
5. What goes up when rain comes down?
6. What is the longest word in the dictionary?
7. What travels around the world but stays in one spot?
8. What occurs once in a minute, twice in a moment and never in one thousand years?
9. What has 4 eyes but can't see?
10. A house has 4 walls. All of the walls are facing south, and a bear is circling the house. What color is the bear?

# The Gravity of Thought

- Amartya Mukherjee, Grade XII

**I**t was an early Sunday morning when I was awakened by strange noises. I woke up and saw five strangers in my bedroom - staring at me! At first I was terrified, but then I realized that these were familiar faces, right out of my science textbooks. Imagine my amazement when I recognized the person standing right in front of me - Albert Einstein! Next to him was Isaac Newton, whom I referenced in my research on gravity. I could hear him whispering to Einstein's ear, "He's just a high-school boy", but Einstein silenced him.

Is this a dream or is this real? There are no laser guns around, and I just heard a pigeon hit the window. I can see the clock ticking, so I'm guessing this is real. But why are so many great people sitting in front of me staring at me (not the most comfortable experience)? Before I had the time think, Einstein spoke up.

Einstein: "Hallo Guten Morgen (Good morning)! Ich heiÙe (my name is) Albert Einstein! Sorry for the intrusion but we read your Anjali 2014 article on 'How the Theory of Gravity was discovered', so we thought of having a discussion with you."

Me (interrupting): "Where did you find the article?"

Einstein: "Umm... [www.google.com/heaven](http://www.google.com/heaven)"

Me (rather confused): "Ok that makes perfect sense"

Einstein: "So, let me first introduce everyone here. This man next to me is Herr Isaac Newton, whose discoveries on gravity you referenced in your article. To his right is Varahamihira, a 6th century Indian mathematician and astronomer who made profound contributions to trigonometry, binomial theorem, as well as observations of eclipses. Next to me is Al Biruni, an 11th century Persian mathematician and astronomer who analyzed the movement of the Moon around the earth and explained the different phases of the Moon. Lastly, next to him is Brahmagupta, a famous 7th century Indian mathematician and astronomer, the discoverer of zero, the founder of the quadratic formula, and the first person to prove that the Moon is closer to the Earth than the Sun."

Me: "What about Copernicus, Tycho Brahe and Johannes Kepler? We can't have a serious discussion about gravity without them"

Einstein: "Entschuldigung (Sorry!) ...They wanted to avoid the space-time warping caused by time travel hence decided to give it a pass."

Me: "Wait, what?"

Einstein: "Anyways, could we start with Varahamihira?"

Varahamihira: "Let me get straight to the point in English (though I rather prefer discussing in Sanskrit for serious topics!)... Gravity was known to me long before others. After Aryabhata proposed his heliocentric model, I was able to understand how eclipses work, which is due to the Moon's shadow on the Earth and the Earth's shadow on the moon. Out of this, I was able to discover that the Moon revolves around the Earth the same way the Earth revolves around the Sun. But what keeps all of the matter in such a fashion? This is what is known as gravity."

Einstein: "Danke (thank you) Varahamihira. Any questions?"

Me: "Going back to what Varahamihira said, wasn't your theory ignored because those days, people used to believe that a Hindu deity named 'Rahu' eats the sun, causing an eclipse. The same way Galileo was ignored because of Aristotle's sacrosanct

geocentric model."

Al Biruni: "Firstly *ṣabāḥul khayr* (good morning) to everybody! Now let me ask another question in addition to that. Varahamihira explained solar and lunar eclipses very accurately, which means that he is aware of the role of gravity between the Sun and the Earth, as well as the Earth and the Moon. But Brahmagupta, you criticized Varahamihira for not believing in the superstition consisting of the "Rahu" eating the Sun. My question is if you ignored their theories, then why did you go ahead and measure the diameters of the Moon and its shadow casted during an eclipse?"

Brahmagupta: "Good Morning (*suprabhātam*)! To the question raised by Al Biruni ....unfortunately I was also trapped in that perspective. And I was also one of the people who criticized Varahamihira and Aryabhata for bringing that idea up, which is something I later regretted doing. What Varahamihira did was that he had to explain his theory in a way such that he pays respect to their belief, as well as carefully state their own scientific theory. Back then, there was also a dispute going on whether the Sun was closer to Earth, or the Moon was closer to the Earth. This is because measurements were not as advanced as they are in the present. The best I could do was to prove that Varahamihira was correct. Therefore I had to measure the diameter from the Moon as it appeared from Earth, then I had to measure the shadow of the Moon visible from an eclipse. Both these measurements are equal in length, therefore, I proved Varahamihira to be correct, as well as put an end to the dispute."

Einstein: "Brahmagupta, you've done an excellent job of explaining how Varahamihira's theory was proved to be correct, along with answering Amartya's question and explaining how you both were very careful as to how you presented your idea of eclipses. Amartya, you see, the discovery of eclipses was crucial in the discovery of gravity because it helped early scientists understand the fact that the Earth goes around the Sun, and the Moon goes around the Earth. Newton, would you like to say something?"

Newton: (stuttering a little) "Oh you know, Aryabhata also had a brief idea of gravity. He proposed the theory that the Earth was round and it kept spinning, but when people asked him why the trees and we humans don't fall out of Earth's ground and fall to space, he clearly said that the Earth used an attractive force to keep us at the ground. I am certain that he would have also come up with a mathematical formula explaining the value of gravity, and the formula for weight. When I discovered gravity more than a 1000 years later, I named it 'gravitas' after the Latin term for 'weight'."

Einstein: "Amartya, you see - there is a lot more to gravity than what most people in your time may currently know. The 'everything' of the universe; the main idea behind the heliocentric solar system and the idea of gravity were all originally formed by Aryabhata and these three great scientists. Now let me tell you what I have discovered on gravity, and how my theory of relativity has changed people's views on gravity. Let's start off imagining a few scenarios".

Einstein (continued.): "A person standing in a box on the surface of Earth, having Earth's gravitational acceleration applied on him is equivalent to a person standing in a box in a rocket, moving with the same acceleration rate. There is no way each person can explain whether he is on Earth's surface subject to Earth's gravitational acceleration, or whether he is in a rocket subject to the same acceleration. This means that

the person on Earth's surface must also be accelerating through space-time, even though he does not appear to be moving. If you graph an accelerating object on a plot with distance and time set as the axes, then you will see that the graph is curved. This means that acceleration has a curved effect on space-time, meaning that gravity also has a curved effect on space-time. So then what causes gravity? The answer is mass!"

Me: "Wait, how does mass cause gravity? I know mass is energy, but what is the relation?"

Einstein: "Picture it this way. If you put a bowling ball on your bed, the bed will curve. That is how mass curves space. So you now know that mass is responsible for curving space-time. To be direct, mass causes for an object to follow a straight path, which space-time curves. Even if light is travelling past an object with mass, the light particle will think that it is following a straight line, while it actually follows a curved path caused by the object."

Einstein (continued..): "Let's imagine another scenario. Let's imagine two people on Earth (a curved space), where both of them are standing on the equator, standing on the exact opposite sides of Earth. Now they both walk north at the same speed. Eventually, they both will reach the top of the Earth and come in contact with each other. How can two people walking at parallel directions come to contact with each other? This is where the people understand that there is a force bringing them together. Also, when they both come into contact, then they will both be facing opposite directions. They both started off facing the same direction, but later, they face opposite directions. There should be a force causing them to face different directions. However, this turns out to not be a force, it is the result of walking a curved surface. They travel in

straight lines parallel to each other, yet, they come in contact and face opposite directions. This is nothing other than the law of curved spaces."

Einstein (continued..): "Out of this information, I stated in the law of general relativity that gravity does not exist at all; gravity is simply an illusion formed when we follow a curved space."

Me: "Wait, what?" (I'm so confused right now ..)

Newton: "See what happens when you teach a high school kid? I told you before that my laws of gravity and motion are enough for kids his age. But you simply can't resist talking about curvatures!"

Varahamihira: "I guess this is why people use Newton's law of gravity when teaching children"

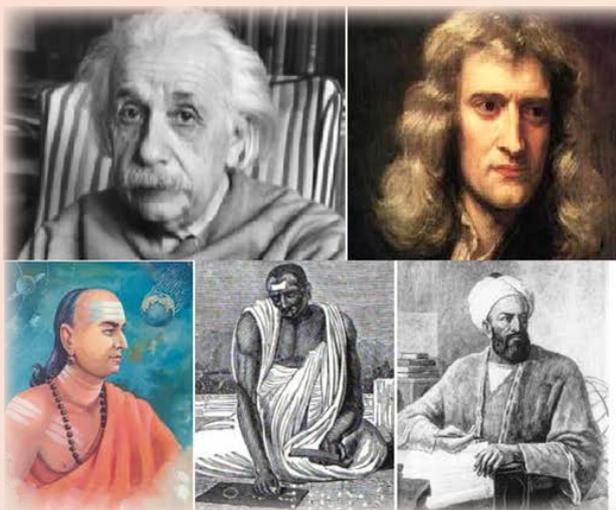
Al Biruni: "Okay, should we go back in time? Maybe we can warp ourselves using the Alcubierre or Krasnikov type space time structure....Anyway good bye (ma'a salama) ! "

Brahmagupta: "But again, it's better to just appreciate the fun we had teaching ourselves to a high school kid. Shubhamastu! (cheers)"

Einstein: "Ok, Amartya, I had fun teaching you, we all had fun teaching you, but I guess we will go back to our time. Viel Glück!"

Me: "Wait! How do you even go back in time? I thought it was impossible to go back in time"

But they already left .... This experience was surprising. I was speechless over what I just saw in the last whole hour, and that's when I realized, I will write this experience in the Anjali 2015 article. ■



- 1: Nothing 2: Rain 3: A candle 4: If you answered Ruru, you are wrong. It's Mary
- 5: An umbrella 6: Smiles, because there is a mile between each 's'
- 7: A stamp 8: The letter M 9: Mississippi
- 10: The house is on the north pole, so the bear is white.