

Get, Set, KNOW!



ISSUE 02, JULY, 2015



Meet the Characters...



Mystery talk



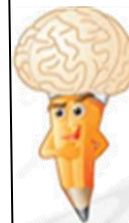
Great Lives



I Wonder Why?

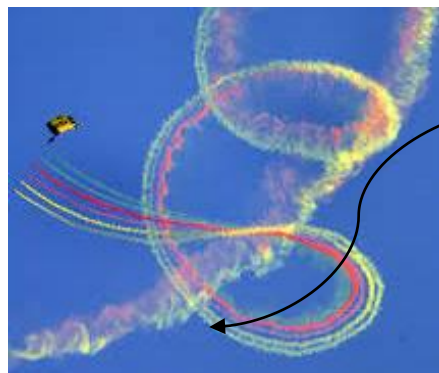
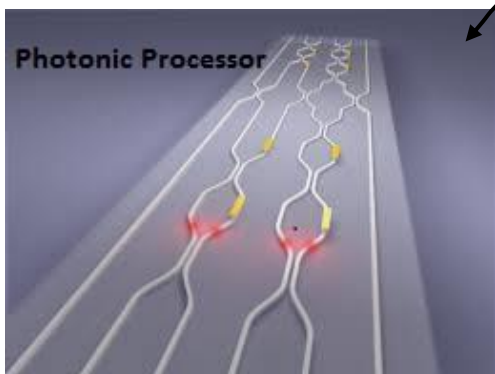


Space Science



Train
your
Brain

Advanced science



Webpage: **Coming soon**
Publisher: **Not Yet**

Dear readers

Welcome to the world of knowledge and science with the second issue of Get, Set Know! The previous or you can call it the first issue was a roaring success! Many contributors sent their articles and stories, drawings which were liked by many readers. In this issue, there will be four new characters along with new sections like 'What Will He Say?' and 'Mystery talk'. The 'Great Lives' section includes different personalities on the subsections 'Great scientists' 'Great women', 'Great explorers' and 'Great Educationists'. The 'I Wonder Why' section will all allow readers to ask reasonable questions. So fasten your seatbelts to zoom off to a spectacular journey in the world of science. Have fun!

Editor

Muhammed Muaaz

Email: getsetknowmagazine@gmail.com

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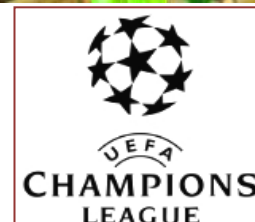
- ✦ Anger is an acid that can do more harm to the vessel in which it is stored than to anything on which it is poured. - **Mark Twain**
- ✦ All truths are easy to understand once they are discovered; the point is to discover them. - **Galileo Galilei**

CURRENT AFFAIRS

Muhammed Muaaz; VI-C, The Blossoms & Aminul Islam; D/O Chemistry, AMU

June

- Maharashtra has officially declared **Blue Mormon** species on June 23 as State butterfly as part of state symbols and became the first State in the country to have a State butterfly. It is the **second largest butterfly species** in terms of size, after the southern birdwing.
- Sister **Nirmala Joshi**, Superior General of Missionaries of Charity and **successor of Mother Teresa** passed away in Kolkata at the age of 81 on the same day.
- Kerala Government has declared June 22 as '**Snake Bird Day**' in a bid to protect the endangered species which is also known as Indian darter. These species usually nests atop tall trees near wetlands.
- **Barcelona FC** celebrates its fifth win of Union of European Football Associations (UEFA) **Champions League** defeating Juventus FC by 3-1 goals on June 7. Ivan Rakitic had first scored goal for Barcelona in the fourth minute and later Luis Suárez restores at 68 minute and Neymar scored the goal in extra time. Earlier, Barcelona FC had won UEFA Champions League trophy in 1992, 2006, 2009 and 2011.
- Every year **World Environment Day (WED)** is observed on 05 June to raise global awareness to take positive environmental action to protect nature and the planet Earth. The theme for year 2015 is **Seven Billion Dreams. One Planet. Consume with Care**. The theme highlights the need to respect the carrying capacity of the planet earth and to manage natural resources efficiently to ensure prosperity and wellbeing globally. Observing this day is global initiative of United Nations Environment Program (UNEP). The host country for the WED 2015 is Italy.
- Kolkata's **Mohun Bagan Football Club (FC)** has won the **I-League** title by defeating Bengaluru Football Club.

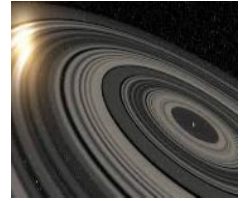
**May**

- Several cases were lodged against **Nestle India** over inadequate safety standards of its product **Maggi**. Food Safety and Drug Administration asked Nestle India to withdraw a batch of Maggi noodles from the market after they had found that it contained high level of lead and **Monosodium glutamate (MSG)**. MSG is a kind of amino acid which occurs naturally in many agricultural products but is added artificially to packaged food to enhance flavor. Large doses of MSG can cause headaches and other feelings of discomfort collectively known as **Chinese restaurant syndrome**.
- **World No-Tobacco Day** is observed every year across the world on 31 May. This day highlights the health risks associated with consumption all forms of tobacco and advocating for effective policies to reduce tobacco consumption.
- **Dr. Pramod Patil** and **Dr. Ananda Kumar** won 2015 Whitley Awards for wildlife conservation at a ceremony in Royal Geographical Society, London for their work to protect the iconic great Indian bustard (GIB) in the Thar Desert and developing innovative communication systems namely Elephant Information Network (EIN) has enabled human-elephant coexistence in southern India.

**April**

- Scientists have discovered three planets orbiting a nearby star named **HD 7924** that is only 54 light-years away. These planets were discovered by the **Automated Planet Finder (APF) Telescope** located at **Lick Observatory** in **California** and **Keck Observatory**, **Hawaii**. They

were traced out using the Doppler technique and the APT made crucial measurements of the brightness of HD 7924 to assure the validity of the planet discoveries. Each of the discovered planets has mass 7 to 8 times that of Earth and completes their orbits in just 5, 15, and 24 days around HD 7924.



- Novelist **Siddhartha Gigoo** won 2015 Commonwealth Short Story Prize in Asia region for his novel **Umbrella Man**. With this win he will compete with the other four regional winners for the 5000 pounds grand prize which will be announced in London on 8 September 2015.



March

- World Number one ace shuttler **Saina Nehwal** on 29 March won India Open Super Series Badminton Women's Singles 2015 at Siri Fort Indoor Complex in New Delhi and Men's Single's Title was also won by India's Srikanth Kidambi.
- Australia won **ICC Cricket World Cup** for 5th time defeating New Zealand by 7 wickets played at the iconic Melbourne Cricket Ground (MCG).



February

- Wildlife SOS in collaboration with Uttar Pradesh (UP) Forest Department and Archaeological Survey of India (ASI) is launching Jackal Research & Translocation Project in UP to study and translocation of 30-35 wild jackals from Akbar's Tomb in Sikandra, Agra to a safe natural habitat.
- NASA launched a Soil Moisture Active Passive (SMAP) satellite which can measure the moisture content of the soil from its spot in orbit about 426 miles (685 km) above Earth's surface. (Feb 02)
- Leander Paes and his Swiss teammate Martina Hingis won 2015 Australian Open mixed doubles title.



MYSTERY TALK

Muhammed Muazz: Class VI-C, The Blossoms

Howdy friends! Craig is my name and I am a **first** class mystery expert. Here is a



puzzling mystery from my 'around the world collection'.

You must have surely heard about the lost continent of **Atlantis**. Well if not, then here is its story. The great philosopher Plato described Atlantis as a magnificent, continent sized island (Pic-1) located somewhere on the west of the Mediterranean. The people were greedy and the gods punished them. However he said that a violent earthquake shook the land resulting it to sink underwater (Pic-2& 4). Was it just a fable or was he referring to a real place? Some scientists now believe that Plato was referring to the once powerful **Minoan** empire (Pic-3)

because it was also destroyed by a volcanic eruption. The island of Crete was the centre of the Minoan empire. According to Plato, Atlantis was a city of the colours black, red and whites same as the Minoans. Their main worship idol was the bull similar to the Minoans.



So it is time for us to end the talk and get prepared with our whacky brains to crack the next mystery!



WHAT WILL HE SAY? 1

Muhammed Muaaz; Class VI-C, The Blossoms

What will the bear cub say?

Email your answers To getsetknowmagazine@gmail.com with 'What will he say' as subject.

NOTE: The winners will be decided only on correct entries.



My secret diary

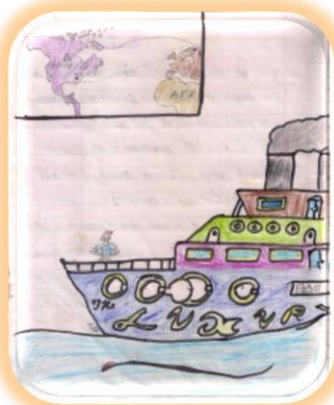
Tamara Raza; V, Kendriya Vidyalaya, Central University, Tezpur

Last birthday, my best friend Ayesha gifted me a beautiful diary which has pictures of the lovely fairy Mariposa on the cover. It is pink and blue in colour and my favourite colour happens to be blue. The most interesting bit about the diary is a lock and a pair of tiny silver keys attached to a silver thread. I love my diary as I can share all my secrets with the diary. I keep the diary at a secret place where nobody can see. Every night I jot down my feelings in my diary. It has become a habit which I want to continue. I will keep on writing in my diary before I go to sleep every night. The fairy Mariposa smiles at me every night when I lock her and say 'good night'.

Mystery of the Diamond Ring

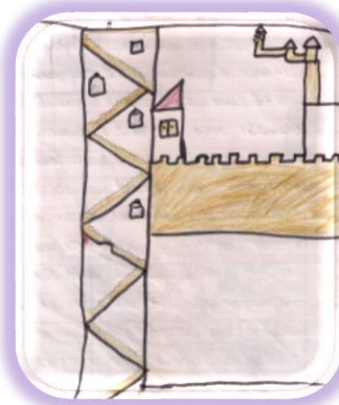
Muhammed Muazz: Class VI-C, The Blossoms

Recap: I am Jim Morgan and along with Professor Stein saw a meteorite through his telescope which has crashed in Queensland peninsula. We are going there along with A few professors to take a sample of the meteorite. We are recently in Norway busy refilling our ships oil.



Then we moved into the frozen White Sea.

We parked our ships in Archangelsk and bought enough food for our camp in Queensland. The peninsula was very cold and dusty. I found a black knob stuck to the ground. I started to dig the place and found a door which led to an old castle. I went into the castle and found a huge court where a huge chair was kept. I lifted the chair's seat and found a map which showed the route to something



precious at the topmost room of the castle. I

followed the route given in the map which ended in the room. A diamond ring was kept inside a

locked and rusted metal cage. Behind the cage, the bricks of the wall were removed and, to my surprise, I found that the rock of the meteorite had fallen behind the wall! I took a sample of the rock. Suddenly the ground started shaking which broke the cage. I put the ring in my pocket. Just as I did that, I was teleported to Norway with professor in just a second just as I thought about it! Suddenly a crow leapt at me and took the



ring from my pocket and dropped it far, far

away. A blue light appeared from the place where the crow dropped it, which led us to a small island located between Russia and Alaska. The place was colder than Queensland with a teeth



"The curse of Khufu has awakened. You must get inside the pyramid of Khufu, to get your ring back. You have to solve a unique puzzle located at the top of the pyramid. And you have to face a terrifying creature before you return. Whoever can pass all the traps and secret exits will get the powers of the six invincible gems- Amethyst, Emerald, Sapphire, Garnet, Ruby and Topaz. He cannot be Poisoned, Infected, Frozen, Stunned, Burned and Drowned and he must face a mythical beast before reaching back".

chattering -70°C temperature. We took shelter in a cave to cross the night. I woke up at 4' clock at dawn. I freshened myself & set out for a morning walk. I found a crumbled chit in front of the cave in which it was written-

I went to the shore of the island to continue my journey to Egypt. I woke up professor and set sail to Africa. On the way, we visited India. There we booked a room in a hotel in which we resided for the rest of the day.

To be continued...



Hello friends! I am Nigel; I like to travel in time and interview famous personalities. Read on to know some great people and their great deeds those have played a great role in history.

Great Women

The famous freedom fighter, **Joan of Arc** was born on 1412 in the little village of **Doremy, France**. Her father often told her about how it was in the possession of England and



how the king didn't dare to get crowned. This used to make her very sad. From then she began to see angels and hear strange voices saying "Joan you can deliver the land from the English. Go to the relief of king Charles of France."

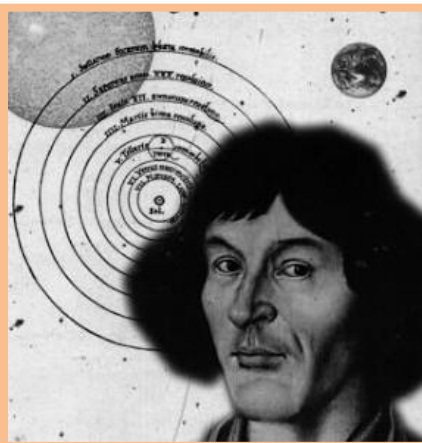
She believed she had a mission for god and she determined to save France. Even when everyone tried to dissuade, her she went to the king and asked him to allow her to lead his soldiers. The king



reluctantly agreed and when she was only just eighteen years old she led an army of 5,000 men against the English, who had till then, conquered the city of Orleans. Mounted on a fine war horse, clad in white armour, a large shield in one hand and an ancient sword in the other, (Pic-1) she led her army to victory.

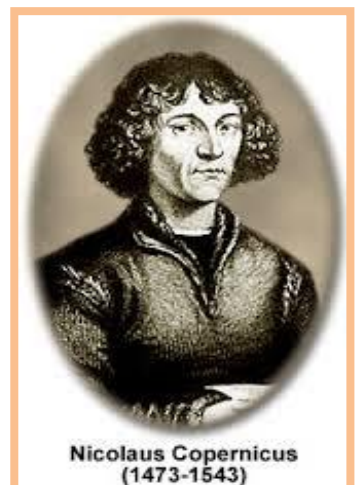
Sadly, after a few days after their victory, she was burnt at the stake (Pic-2) by her own people thinking her to be a witch.

Great Scientists



Nicolas Copernicus, the founder of modern astronomy proposed that the centre of Universe is the sun and all the planets including our Earth revolve around it. His proposal proved the earlier proposal given by Ptolemy that the Earth is the centre of the universe and all the other celestial bodies revolve around it, wrong.

Copernicus was born in 1473 in Poland. In 1496 he joined the University of Bologna to study canon law. Later he was elected as canon of cathedral of Frenzburg. He took advantage of his income



and begun his astronomical observation. Copernicus also practiced medicine.

Great Explorers



We will now talk about the first man to circumnavigate the globe and find a sea route to India by sailing westwards (Pic-5). He is none other than **Ferdinand Magellan** (Pic-1& 3). Magellan was born in Portugal in 1480. As a child he worked in the queen's household. This way he heard about all the discoveries been made. He dreamt of doing what



Columbus failed to do... sailing to the west to find a sea passage to India. In 1505, Magellan finally got a chance to fulfil his dream that is meeting the sea, on a military expedition. He thought that if he



he could find a strait through the newly discovered continent which we today know as America. But to do that, he needed full support from the king. Although, the king of Portugal refused but the King of Spain agreed because Columbus had discovered America for Spain but America did not

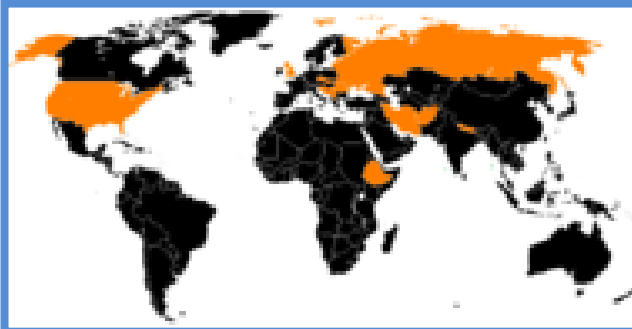


cultivated many spices. His voyage started in 1519, and lasted for almost three years. He sailed from Seville, Spain with five ships but only one ship survived and returned to Spain (Pic-2). The ship returned with only 18 of the original 270 people and without Magellan, who was

killed in the Philippines with a battle with the native tribes. By the way, Magellan was the first European to make the longest voyage which lasted for 99 days, the person discovered the strait in South America which is today named after him (Pic-4) and the person who named the Pacific Ocean meaning peaceful.

Great Educationists

Being a student, we are familiar about this day- 5th September! Aren't we? This is observed as



Teacher's day, the birthday of great teacher, philosopher and educationist - Dr. Sarvepalli Radhakrishnan.

Those who studied under him still evoke him with appreciation as a great teacher. It is India's atypical privilege to have a great educationist to have her President. Although he was a firm and highbrow teacher, he was a very humanitarian person. In his early days as a professor in Presidency college, Madras he was outstandingly prevalent midst his students. Later he was offered professorship in Calcutta University and a vice chancellor at Andhra University and Benares Hindu University. His scholarship credit came again in 1936 when he was bidden to fill the Chair of Spalding Professor of Eastern religions and Ethics at Oxford. He earned very early international recognition. After independence, he became an ideal ambassador to the Soviet Union, which was then the most powerful country. He made 11 different country visits including U.S.A. and U.S.S.R (Pic-2). Radhakrishnan was drawn into philosophy by accident, because of his concentration, skill and principles he decided to become a great philosopher. In 1952, He became the Vice President of India and head of the state for five years. Plato sought to philosophers to be kings and it is an accolade to India that she should make a philosopher her president.

The Brave Bear

Muhammed Zaid Class I-A The Blossoms School

Once upon a time, there was a male bear. He loved a female bear but she did not like him. This made him very sad. One day a hunter caught the female bear and went to the city. But the male bear came and scared the hunter. The female bear and the male bear became good friends.

Moral: We cannot Judge a person by its looks but by its action.



WORD RIP

Muhammed Muaz: Class VI- C. The Blossoms

Try and make as many smaller words from the word- **THUNDERED**. The most number of words will be featured as winners in the next issue.

NOTE: The winners will be decided only on correct entries.



Hi friends! I am Wayne from Pluto and I am fond of astronomy a lot. Last month, I zipped past all the planets, taking photos and discovering facts about the eight planets that you haven't heard before. But first, we must talk about the basics. So let's see...

Our Amazing Solar System

Mohammed Zaid Agha, Class III, Our Lady of Fatima Hr. Sec. School

The Solar System is the name given to our sun, planets, moons, comets, meteors and millions of asteroids. Everything else you can see in the sky is outside the Solar System and far, far away. Every single star is a sun, and each may have its own family of planets and moons. There are eight planets in the Solar System- from boiling Mercury, the closest planet to the Sun, to the stormy Neptune - the most faraway world. All the planets have at least one moon, except Mercury and Venus which have none.

If you throw a ball into the air, it will again come down. Heard it too many times? The invisible force that pulls things down to Earth is called gravity. The Earth's gravity holds us down on the ground. The Sun's gravity is strong enough to hold all its planets in their orbits. Imagine? Unbelievable but ...true!

No matter how still you try to be, you are always moving. This is because the Earth and all the other planets- are moving. They are flying through space around the sun in looping paths called 'orbits'.

Friends! As you know that there are eight planets, so here are a few details about our planets in our Solar System-

1. Mercury - The closest planet to the Sun. (Roman messenger of the gods)
2. Venus - The second and the hottest planet in the Solar System. (Roman goddess of love)
3. Earth - Our sweet home, the third and the only discovered planet with life.
4. Mars - It is the red planet. (Roman god of war)
5. Jupiter - The biggest planet in our Solar System. (Roman king of the gods)
6. Saturn - It is the sixth & the ringed planet.(Roman god of agriculture &father of Jupiter)
7. Uranus - The coldest and the seventh planet to the Sun. (Roman god of the sky)
8. Neptune - The stormiest and blue planet.(Roman god of the sea)

The Solar Planets- Unbelievable Facts

Muhammed Muaz; Class VI-C, The Blossoms



Mercury

- Mercury is the second **densest** and **hottest** planet.
- There are no known volcanic craters on Mercury.
- Orbits the sun faster than any other planet.
- Temperature on Mercury is 430°C in day and -180°C in night.
- Scientists have recently found ice under Mercury's North Pole.

- Launched in 1973, Mariner 10 was the first mission to Mercury. It took 2,700 photos covering almost 45% of its surface.



Venus

- Planet nearest and closest in size to Earth.
- Only planet that rotates in **clockwise** direction.
- Venus is the brightest planet and brightest object in the night sky during morning and evening.
- In Venus, the Sun rises in the west and sets in the east.

- Atmosphere in Venus is almost made up of **carbon dioxide**.
- A Venusian day is longer than a Venusian year.
- Venus is called sister of the Earth because both are almost similar in size, mass density, volume and both condensed out at the same time and out of the same nebula.



- Only planet which has 24 hour day like Earth.
- If you stood on Mars, you would see a pink sky.
- Mars's North Pole is composed of ice and South Pole of frozen CO₂.
- Olympus Mons is the tallest mountain in the whole solar system.
- Mars had water once as evidenced by dried up water channels.
- The Valles Marineris Canyon would stretch across the USA.
- Mars has two lumpy moons Phobos and Deimos. Astronomers think they are asteroids pulled by Mars's gravity.



- The great red spot is a permanent hurricane twice the size of Earth.
- Jupiter is shrinking slightly each year because of its own gravity.
- Hot molten materials exist under the icy surface of Jupiter.
- A man weighing 100kg on Earth would weigh 254kgs on Jupiter.
- Jupiter has 63 known moons. The largest four are- Calisto, Europa, Ganymede (Solar System's largest moon & is larger than Mercury) and Io.
- It is the **largest, heaviest, fastest spinning** planet having the **most gravity**
- Jupiter is five times further than the Earth. That's why it is colder than Antarctica.



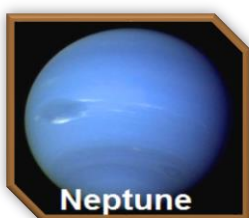
- Saturn is the second largest, parent of the second largest moon and the least dense planet.
- Titan, the largest moon of Saturn is the only moon in the Solar System to have an atmosphere of **smog**.
- Saturn's rings are less than 1km thick.
- Ice in Saturn's rings reflects light enabling us to see them well.
- Janus and Epithemus Saturn's two moons revolve around Saturn in the same orbit.



- Uranus is the coldest and the third largest planet.
- The only planet to spin on its side & takes 84 years to orbit the Sun.
- The poles experience 42 years of summer and 42 years of winter. The rest 21 years are in complete darkness or light.
- Uranus is the **farthest planet** seen with the naked eye.
- William Herschel is the discoverer of Uranus named it George's star in honour of King George III. This name was not famous, so it was named

Uranus.

- Uranus has 13 narrow rings and 20 known moons.



- Windiest planet in the solar system.
- From Neptune, the sun looks as small as the stars from Earth.
- Triton, a large moon of Neptune, is the coldest place in the Solar System with teeth chattering -235° temperature.
- A year on Neptune is equal to 164.9 Earth years.
- In 1989, Voyager 2 discovered a storm the size of Earth which

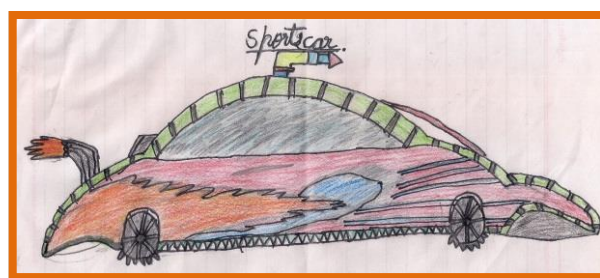
lasted several years.

- Neptune is named after the Greek god of the sea for its blue colour.

DRAWING GALLERY



Muhammed Zaid, I-A, The Blossoms



M. Adil VI-A, The Blossoms



Mariam Nusrat Khan, VI-B, The Blossoms



Ipshita Dey, V, Vivekanand Mission, Harit, Hooghly



Khadija Parvez, I-C, The Blossoms



**Rahail Akhtar,
VIII-B Seventh
day Adventist SR.
Sec. School,
Kolkata**



Ayesha Ahmad, V, The Blossoms, Aligarh



Muhammed Zaid, I-A, The Blossoms, Aligarh



Dua, Qamar I-,B, St. Joseph's, Betiya



I WONDER WHY?

Muhammed Muqaz: Class VI-C, The Blossoms

Greetings friends! I am Warren, a professor at Oxford University and I like answering questions a lot. There many wonderful things in our everyday life about which we don't know. So, we will take a simple example and explore its roots as we experience the 'miracles' of everyday science.

Why is there a trail of white smoke behind jet airliners?



You must have thought that the white line behind a jet liner is smoke but you are wrong, because it is just water vapour!

In a jet engine, when the combustion of fuel takes place, the oxygen in the air combines with



hydrogen in the fuel, vaporised water is formed. When the vapour rushes out it condenses to form a cloudlike tail. When the atmosphere is hot, the vapour disappears quickly than compared to cold weather because it takes more time to dissolve therefore the white smoke is visible for a long time. You must have noticed that the smoke starts meters away from the plane. This is because the vapour takes time to condense, till then the plane moves further ahead.

During exhibitions, planes fly in different formations in which colours are released to form dazzling designs in the air.

Have such a burning science question in mind? Email it to getsetknowmagazine@gmail.com with 'I Wonder Why' as subject. The best questions will get answered and featured in the next issue.



1ST AND 2ND LARGEST RIVERINE ISLANDS OF ASIA

Dr. M. A. Laskar, Assistant Professor, Department of Chemistry, Jazan University, Saudi Arabia

The frequent earthquakes, during the period of 1661-1696, lead to the catastrophic flood in 1750 that lasted for 15 days, resulting in the formation of the **Majuli Island**. The



Majuli Island is a delta that is formed by rivers including Brahmaputra. The island stretches over 875 Sq. km at 85 - 90 m above the mean sea level. Among the 243 villages, 210 are Cadastral Villages (villages from which revenues is collected by the government) and 33 are Non-cadastral villages (mostly resettled or rehabilitated villages which got shifted due to flood and erosion). The inhabitants are expert navigators by boat.

It is a wetland that harbours many rare and endangered avifauna species including migratory birds namely, the Greater Adjutant Stork, Pelican, Siberian Crane and the Whistling Teal. The lack of polluting industries and factories and also the chronic rainfall has collectively preserved its pollution-free environment. The

dwellers of Majuli are mostly of the "Missing" tribes from Arunachal Pradesh who immigrated here centuries ago. Languages spoken here are **Mising, Ahomia, and Deori**. The Majuli Island has a rich and diverse agricultural tradition, with as many as a hundred different varieties of rice grown without using pesticides or artificial fertilisers. Handloom is the major non-commercial occupation. In their traditional weaving, they employ a variety of colours and textures of cotton and silk (especially **Muga** silk).

Nongkhnum Island is the 2nd largest river island in Asia and is situated in Meghalaya. Spanning an area of 25 sq km, the island was formed by the bifurcation of the Kynshi River into the Phanliang and Namliang rivers.



There is a sandy beach named Wei-Phanliang, which covers an area of 100 sq. m. The Island is featured with big trees, grassland areas and natural playground for playing football and golf. Nongkhnum is endowed with magnificent perennial falls namely Weinia Falls in the northern side, Thum Falls in the southern side and Langshiang Falls on the western side. A variety of fishes is found in the pool at the bottom of the falls. The wooden bridge over the Weinia Falls connects the

Island to the main land.

Profit and loss



Sohail Akhtar, VI-B Seventh day Adventist SR Sec School, Kolkata

A man named Rahul owned a general store in Mumbai. One of his two brothers owned another store like him and the other was a carpenter. One day a customer came to the shop and asked for a kg of potato. The customer wrongly gave 500 rupees instead of 50.00, the actual price. He was happy that he had made a huge profit. The same customer went to his brother and asked for three kg onion. The customer again wrongly gave rupees 900 instead of 90.00. The shopkeeper pointed the mistake. The customer thanked him and returned the extra money. It means we should be honest whether we are in profit or loss.

EARTH QUAKES

Anam Qamar IV-B St. Joseph's, Betiya

An earthquake arises when the stress on the edges overcomes the friction which releases



energy in the form of waves that travel through the Earth's crust that causes the shaking that we feel. In Nepal, Bihar, and Uttar Pradesh and at 25th April 2015 12:58pm a massive earthquake struck with an intensity of 7.4 at the Richter scale. At that time, I was watching television. My chair started shaking and all of my family ran to the ground. All the people of the colony stood there till the earthquake was gone. After that day, we went to our village, because fields were

in plenty. People had to sleep outside their houses. I couldn't sleep that night because of fear. It came again and again by which my school was also closed.

Many people died and many got injured. Buildings were broken and damaged. Roads also cracked. In a tourist place of Nepal, a large 9 large floor tower named Dharhara tower (140 ft. high). It was completely broken. Some countries also gave help Our Prime Minister also gave money to rebuilt the buildings. Again 17 days later, a milder earthquake occurred in Nepal and Bihar on May 13 at 12:48pm.

NANOTECHNOLOGY FROM ANCIENT PERIOD TO PRESENT

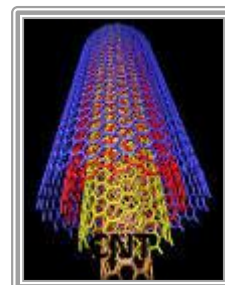
Md Palashuddin Sk, Doctoral Student, Department of Chemistry and Associate Project Scientist, Centre for Nanotechnology, IIT Guwahati.

The continuous advancement of science has been observed since ancient age with the evolution of human civilization, by creating new pathways and digging unexplored natural phenomena, leads to scientific advancement. The emergence and diversification of Nano science and technology is

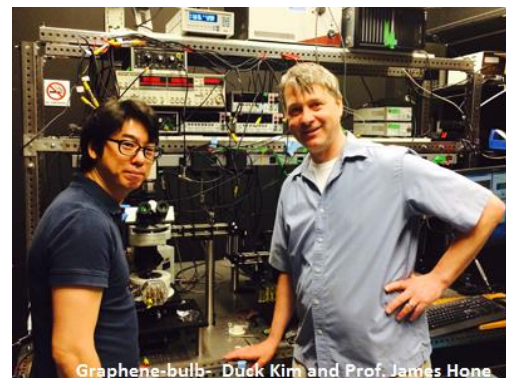


one of the achievements of this century. The vindication of this concept started with the famous quote "There's Plenty of Room at the Bottom," by physicist Richard Feynman at an American Physical Society meeting at CalTech on December 29, 1959. Nano science includes the study of materials that have sizes between 1-100 nm with at least one dimension. However, nanomaterial based technologies were exploited inadvertently during different civilizations. For example, in ancient period, Lycurgus cup (present at the British Museum) which was

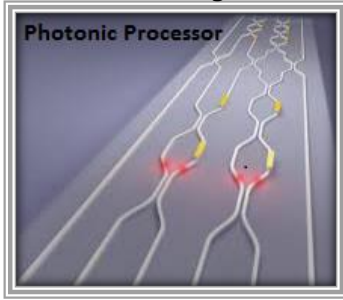
made in Rome around 290-325 AD shows two different colours, appears green when lit from the front but blood-red when lit from behind-a property that puzzled scientists for decades. Nano science revealed that this is due to the gold and silver nanoparticles present in Lycurgus Cup. In Greco-Roman period, black hair colouring dye was used. But, now it is found that the dye consisted of PbS nano crystals. Besides, Carbon based nano materials, a promising class of nanomaterials are also being exerted since classical ages. The presence of carbon nanotubes and cementite nanowires in the ancient Damascus sabre



provided extraordinary mechanical strength and a sharp cutting edge. Damascus blades were first used by the Crusaders when fighting against Muslims. Present research works have also proven carbon nanoparticles as safe nano materials and they are present in various food items such as bread, roti, biscuits, jaggery, cornflakes 'tandoori chicken' etc. without causing any health hazards to human being. These particles have unique fluorescence property and used in various application. These particles are considered as safe nanomaterials for biological applications. In 21st century, nano-technology ripens into the technology of this century. Nano science is there in everywhere, from medical to food agriculture; electronics to industrial; transportation to telecommunication system and so on. Both, inorganic metal based as well as carbon based nano materials are being extensively used in various fields of science and technologies. However, discovery of graphene and carbon nanotube, are one of the important breakthrough of modern science. These carbon based nano-



structure brought noble prizes in the year of 1996 for buckminsterfullerene and 2010 for graphene, which implies the importance of this emerging field of nanomaterials, that has immensely changed modern technologies such as electronic, optoelectronic, solar cells etc as well. In this regard, very recently, researchers have built the world's thinnest light bulb using graphene as a filament. So, in near future, your bulb might be made of carbon nanomaterials. It could be used in transparent and flexible lighting displays. Also it will help to develop photonic processors that are much faster than conventional chips.



The dangerous Dracula

Muhammed Zaid Class I-A The Blossoms School



It was a dark night and I was sleeping in my bed. A dangerous Dracula with red glowing eyes, blood in his mouth, long nose and tall figure came in my room. He grabbed me and hid in his long black overcoat. He vanished at a speed of lightning. I woke up, Dracula said (Hi! Mister Mike) I scared. I shouted where I am. Now my dream came to an end. I found myself in my mom's lap. I said to mom Dracula!!!



THE OLD MAN AND THE MAGIC STICK

Sohail Akhtar, VI-B Seventh day Adventist SR .Sec School, Kolkata

Once upon a time, there lived an old man in a small village. He worked in a farm to earn his living. One day he saw a stick lying on the grass and picked it up. Suddenly it started raining. He dropped the stick and the raining stopped. He thought that the rain came by the magic stick. He went to his neighbour's house and picked the stick and it started raining again. It soon stopped as he dropped the stick. He went to the next village to show the magic and earn some money. People gathered in large numbers to see the magic. But rain didn't come as he picked the stick. Everyone made fun of him and laughed at him. He threw the stick in the water and started thinking that why rain came only in his and his neighbour's farm and not in the other village. Then he realizes that it was just a coincidence and returned home with a smile on his face.

QUIZ WIZ

Muhammed Muazz: Class VI-C, The Blossoms

1. What food makes up nearly all (around 99%) of a Giant Panda's diet?
2. What is the name of the phobia that involves an abnormal fear of spiders?
3. What is the only continent on earth where Giraffes live in the wild?
4. What type of animal is the largest primate in the world?
5. What are female elephants called?
6. What group has more teeth mammals or reptiles?
7. What type of leaves does a koala feed on?
8. What animal was the first to be domesticated?
9. In Britain which is the only venomous snake?
10. Is shark a fish or a mammal?





TRAIN _____ YOUR _____ BRAIN

Ciao readers!! Did you recognise me? Yes, I am the human brain and I have a few puzzles for you. Try and solve these.

1. What is the one thing shared by all three items in the same group?

I	II	III	IV	V	VI
Cow	Doctor's office	Zipper	Restaurant goer	Potato	River
Shoe	Post office	Shark	Bird	Hurricane	Person
Baby	Music	Comb	The senate	Target	Cave

2. Some kids are playing hide and seek in a park where there are seven trees. All are hiding behind trees. Of course, you can't see them, because they're hiding. See if you can figure out the fewest possible kids hiding, using the following information: A girl is hiding to the left of a boy. Two boys are hiding to the right of a girl.

3. For each three-letter sequence below, provide two words that include the identical sequence and that are both in the category named. For instance, for the sequence **ERI** and the category **LAKES**, you could come up with **Erie** and **Superior's**.

	I	II	III	IV	V
SEQUENCE	BAG	COR	RON	ALE	ART
CATEGORY	Vegetables	Zodiac signs	Metals	State Capitals	US Presidents

NUTRITION BITES.... A, B, C..... Z Dr. Kamil Ashraf: Assistant Professor, Department of Medicine, JNMC A.M.U

BAEL

Bael is the only member of the monotypic genus *Aegle*. It is also known as Bengal quince, golden apple, stone apple, wood apple and bili. It is a species of tree native to India. The tree is called "belpattharka paid" in Hindi. The fruits can be eaten either freshly from trees or after drying them. All parts of the herb (leaves, fruits, roots) are used for medicinal purposes. The bael fruit has a smooth, woody shell with a green, grey, or yellow peel. It takes about 11 months to ripen on the tree and can reach the size of a large grapefruit or pomelo, and some are even larger. The shell is so hard it must be cracked with a hammer or machete. The fibrous yellow pulp is very aromatic. It has been described as tasting of marmalade and smelling of roses. Boning (2006) indicates that the flavour is "sweet, aromatic and pleasant, although tangy and slightly astringent in some varieties. It resembles a marmalade made, in part, with citrus and, in part, with tamarind. Numerous hairy seeds are encapsulated in slimy mucilage.

USES: The fruit is eaten fresh or dried. If fresh, the juice is strained and sweetened to make a drink similar to lemonade. It can be made into sherbet (Hindi/Urdu) or Belapana (Oriya) or bel pana (Bengali), a refreshing drink made of the pulp with water, sugar, and lime juice, mixed, left to stand a few hours, strained, and put on ice. Wood apple juice is a very healthy summer drink



because of its medicinal properties. One large bael fruit may yield five or six litres of sherbet. If the fruit is to be dried, it is usually sliced and sun-dried. The hard leathery slices are then immersed in water. The leaves and small shoots are eaten as salad greens. The Tamil Siddhas call the plant Koovilam and use the fragrant leaves for medicinal purposes, including dyspepsia and sinusitis. A confection called 'Ilakam' is made of the fruit and used to treat tuberculosis and loss of appetite. In the system of Ayurveda, this drug finds several and frequent therapeutic uses in different forms and recipes. They are prescribed in a number of diseases such as gastro intestinal diseases, piles, oedema, jaundice, vomiting, obesity, paediatric disorders, gynaecological disorders, urinary complaints and as a rejuvenative. Besides the wide medicinal utility the plant and its certain parts (leaves and fruits) are of religious importance since the tree is regarded as one of the sacred trees of Indian heritage. Aegeline (N-[2-hydroxy-2(4-methoxyphenyl) ethyl]-3-phenyl-2-propenamide) is a known constituent of the bael leaf and consumed as a dietary supplement for a variety of purposes.



BASICS OF SOLAR CELL, Md. Shamim, Doctoral student, Department of Chemistry, IIT Delhi

Now a day, there are immense needs of energy in every field of life. Ever-growing energy needs is one of the most important challenges of the twenty-first century. With the growing demand of energy the use of fossil fuel increased day by day. Due to the high consumption rate they will run out of stock in near future. However use of burning fossil fuel also threat for the mankind as it releases large amounts of carbon dioxide and sulfur dioxide in the environment. In a recent report of the environment cell of UNO if such pollution has not been stopped the whole life kingdom will be destroyed by 2150. So there is no option left without renewable energies. In this respect solar energy is the best option. There is about one lack and twenty thousand terawatts of solar power irradiating earth, human consumes only 15 terawatt. Basically solar cell is a device that converts the energy of sunlight directly into electrical energy. The basic mechanism of all the solar cell is almost similar. The first step is light absorption by the cell to generate exciton. Second step is to separate electron-hole pair and inject them into energetically favorable charge-separating junction through a diffusion driven process. Third step is to transport the photo-generated charge carriers into electrodes. And the final step is energy dissipation in the circuit. The collected electrons dissipate their

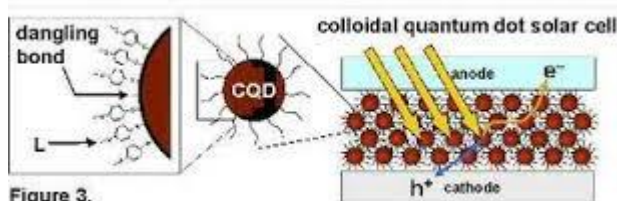
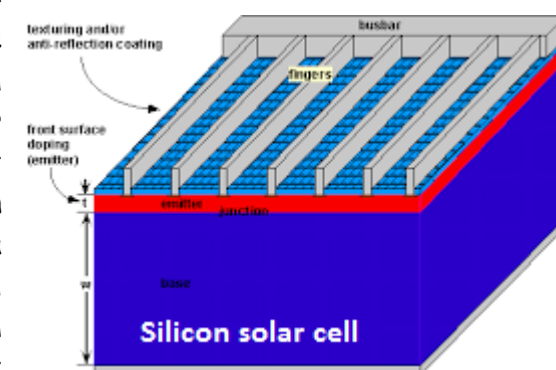


Figure 3.

energy in the external circuit, returning to the solar cell, and annihilating with holes. It is considered that there are mainly three generation solar cells. The first generation cell mainly consists of p-n Silicon solar cell. This crystalline p-n solar cell is dominating in the commercial market. But due to the use of pure silicone the manufacturing cost is high. But till now it is the best commercial and stabilized solar cell. The second generation solar cell is the thin-film solar cells of amorphous silicon, poly-crystalline silicon, cadmium telluride, copper indium gallium selenide etc. These solar cells are significantly less expensive than first generation PV cells due to reduced materials and processing costs. But it has the stability

problem as well as the efficiency is low compared to the first generation solar cell. The third generation solar cell is the solution processed solar cell. These technologies comprise of dye sensitized solar cells (DSSCs), organic solar cell, solution processed bulk inorganic photovoltaic, colloidal quantum dot solar cells etc. It is the best promising type solar cell as it has very lower cost as well as the maximum theoretical efficiency is much higher (68% for multi-junction cell) as compared to the single junction silicon solar cell.

HISTORY

Dr. Ghulam Nadri; Assoc. Prof., History Department, Georgia State University, Atlanta, GA

The Indus Valley Civilisation: an introduction

The Indus Valley Civilization, one of the oldest civilizations in the world, flourished between 3300 BC and 1300 BC in the north-western part of the Indian subcontinent (comprising parts of present day north-western India, Pakistan, and parts of Afghanistan). As this civilisation originated and flourished in the basin of the river Indus, one of the major rivers in the subcontinent, it came to be known as the Indus Valley Civilisation. This was also one of the most advanced and city-based civilizations of the world. Harappa and Mohenjo-Daro were the two largest cities, which were discovered after extensive excavations carried out between the 1920s and 1940s by John Marshall and his team and Sir Mortimer Wheeler, directors of the Archaeological Survey of India. This was a bronze-age civilization because the people then used bronze (a mix of copper and tin) to make tools, weapons, and objects for local consumption and trade. It is also known as the proto-historic civilization because our knowledge about the people, their culture, religion, and their political and economic life is entirely based on the physical remains and objects found during the archaeological excavations. Historians have not been able to decipher the Indus script and understand what is inscribed on seals and other objects of that period.

The cities of the Indus Valley Civilisation had elaborate town planning and sophisticated drainage system. The government and the people paid much attention to sanitation. Some cities had provision for public utilities such as bathing facility and granary. Mohenjo-Daro, for example, had the great public bath for customary and ritual bathing. Harappa and MohenjoDaro both had large granaries for storing grain to keep the inhabitants supplied with food. The Indus Civilisation is also known for its good craftsmanship especially in the production of seals, pottery, and jewellery. Some of these products were even taken to Mesopotamia and Mediterranean Europe through both overland (caravan) and overseas (maritime) trade between the Indus Civilisation and West and Central Asia. Around 1500 BC, the Indus Civilisation had considerably declined and by the time the Aryans began to move into north-western and northern India, it had completely disappeared.



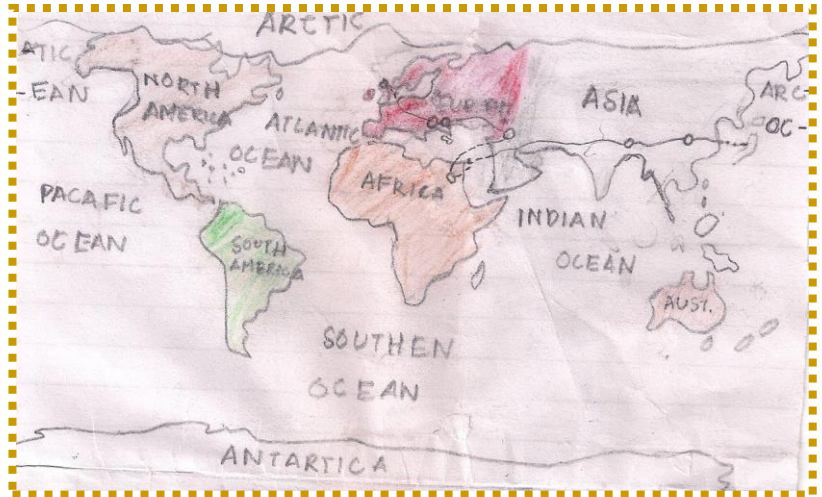
THE TIME TRAVEL ADVENTURE

Muhammed Muaz; Class VI-C, The Blossoms

Chapter 1: The Beginning

It was a sunny and bright morning in the city of Tokyo. As usual, I was busy reading my book in the drawing room. The beautiful chirping of birds was interrupted, when the postmen rang the bell. I took the letters and searched for any important letter. I found an advertisement paper about a Machine Making contest held on 26th April 2014. I got very excited and decided to participate in. I spent many sleepless nights and worked at least 17 hours daily. At last, after 30 days, I completed building my machine 'Time Traveling Machine'. The next day

I went to the submission hall with my friend, Sohaib. A long queue was waiting in front of the submission gates. Sohaib was at the hall cafe bringing some steaming coffee and cheese toasts for us. After the tasty snack I took out a book from my handbag and started reading it. Since I had not tested my machine at home, I tried to test it now rather than waiting in the long queue. I turned on the switches and pushed the buttons. It started on and I was teleported to 8956AD into the armoury room of the president of France. I was fascinated by the sight of his laser guns and rifles. I collected all of them. I returned to



the machine and went back in my original time. Sohaib was just coming with some toasts and biscuits with two cups of steaming coffee. After the tasty snack, I narrated the whole story to Sohaib. After finishing the story, I saw that the next turn to submit the machine was mine. The judges were testing the machines and giving them big prizes. I again switched on the machine but this time with Sohaib. I wrongly typed 'Jurassic Period' instead of 'Tertiary Period'. We were teleported us to Amazon in South America. Suddenly strange voice started echoing from the east. A huge Allosaurus came and almost ate us up! We ran towards a big lake hoping to be safe. Just as the Allosaurus was going to eat us two giant Utrasaurus came and scared the scary beast away. As they are herbivores, they didn't harm us. Sohaib was just going to the machine a Pterodactyl came and took him away. I shot him with the closer gun just as it flew out of sight. Sohaib just fell into the machine. We were teleported to an unknown time in the future.

Chapter 2: A Wonderful (I) Trip

We landed in a ship which was bound to China from Tokyo, Japan. Suddenly a British pirate ship came and attacked our ship. We boarded on a life boat to china. We sat on a horse cart to the Great Wall of China. I always wanted to climb that astonishing wall. After long 3 hours we found that we even couldn't reach one fourth of the wall of the wall. Along with the gun I had also brought some energy pills that we ate and ran very fast onto till the end of the wall. There I boarded on a rickshaw to the porcelain tower at Nanjing. After clicking the photos, we sat on a boat on the Yangtze River. We also visited The Three Pagodas, The Terracotta Warriors etc. Then we went to a really long trip to Alexandria, Egypt across many countries by riding a flying chariot. We went to the catacombs of Kom El Shaqafa. These are the haunting remainders of a culture that existed 1900 years ago which was found again when a donkey fell through a hole into the one of catacombs. I went into the catacombs and studied its wonderful architecture. "Well, forgot to tell you this! You must be amazed when I told you 'I rode on a flying chariot, did not you? That's because it came from just as I thought about it. Our next trip was to travel back to Asia in Istanbul to see the magnificent Hagias Sophia. It was first a church, Then a mosque and after that a museum! At that time it was a mosque. I almost inspected the whole monument! Then we offered prayers in the mosque and then set our journey to the Coliseum in Rome, Italy. "A fight will be held on the Coliseum today, was written on the 'Portable battery speed automobile' which I had brought from future. I showed Sohaib the diary in which I had written about my exciting trip and the magnificent architecture of the monuments till we reached the Coliseum. The fight was just about to begin in just 10 minutes. I recorded the whole show in my video camera. "No one knows in the present that we were among the 50,000

spectators who watched the big fight" I said to Sohaib. Then I took out my 'Super ultra-deluxe motocross bike that took us to Pisa in just a few minutes! I always wanted to visit 'The Leaning Tower of Pisa. After reaching there I also tried to secretly straighten the tower with a few gadgets but since it is the 'Leaning Tower, If I had straightened it then it would not be then came. Then we went to an Italian pizza with mozzarella cheese topping yum!!. Then we went to England by our 'Land Rover Hovercraft' on both water and land. Suddenly I saw a Pterodactyl robot holding a man in its feet. The man was trying to free himself. I captured its thoughts before damaging it and found that it was trying to throw the innocent into a volcano which was situated in an inhabited island about 40 km from there. I shot the missiles in no time that were attached to the craft. They shot the creature and it fell into the volcano.

Suddenly a projected video appeared on the president of Germany of the future and his men planning to kill the men living in islands and capture endangered and extinct creature that don't exist in the future (some don't even exist today like dodo etc.) and selling them unnoticed. It was actually the dinosaur's memory, the task, it had to accomplish. Then we went into the island and searched for the fallen man. We found him lying unconscious under a tree. I took him on our craft and then set to England. He told us that he was trying to kill the beastly creature. In just a few minutes we reached England. Bond went to his own homeland which was also in England. Then I went to Salisbury plain to see the magnificent Stonehenge. Sohaib clichéd hundreds of photos of almost every stone! Then I took my 'Super ultra-Rocket space shuttle' straight back to China to get my time machine. But something went wrong in the rocket and we got stuck in somewhere in space. After a few minutes I noticed that we were stuck between the rings of Saturn! The rocket fell down on earth in China straight into the time machine. We were teleported to 1942, the age of the World War II in Russia. Sohaib was very terrified and ran back to China on my bike. An exciting idea came to my mind and I too went to china to disclose my plan to Sohaib.

Chapter 3: The War begins

"My plan was to teleported these soldiers to the future to stop the president and his man to accomplish their wicked plot they will not be aware that they are fighting with people of the future," I said to Sohaib, standing beside the time machine. Soon we put the machine in my car and set for Russia to complete our plan. The war was going on very fiercely and continuously we placed the machine in front of the headquarters and switched it to 8956. The German were trying to open the gates and destroy everything. Suddenly Adolf Hitler, the army general of Germany saw the machine and thought that it is some door leading to any underground base. He ordered all the soldiers to enter into it. Suddenly they were teleported to future and they started to find the Russians. "They were less in number but very powerful because they are armed with advanced weapons" Sohaib said. I replied "The future people of course!" Something must be done to defeat them. We too jumped into the machine to see what was happening. We reached into a big hall in which I found a super-sized robot. I started the robot and read the instruction given in a booklet and moved it. Suddenly Sohaib fell on the robot and asked for my laser guns. I gave him the guns and set for Kolcutt (present day Kolkata) where the president lives. Meanwhile the German attacked their future men thinking them to be Russian. The men counter attacked the German which led to a terrible war. The fight lasted for a month until we captured the president and defeated them. After that we both went to our original time and the judges seemed very happy after I reached there. Actually, they watched the entire adventure on the monitor and I won their first prize. Suddenly I heard the familiar ringing sound and found myself sleeping on the bed. The ringing sound was in fact from my alarm clock and all the chaos was just a dream! I just remembered that today is 1st June, my birthday! My eyes laid on gift package lying on my desk. I opened it and found a book "How to Build a Time Machine". Indeed, I have got my dream gift on my dream day!

QUIZ ANSWERS

- | | | | | |
|------------------|--------------|------------|---------------|----------|
| 1) Bamboo | 3) Australia | 5) Cows | 7) Eucalyptus | 9) Adder |
| 2) Arachnophobia | 4) Gorilla | 6) Mammals | 8) Dog | 10) Fish |

TRAIN YOUR BRAIN - ANSWERS

A	I	II	III	IV	V	VI
1	Tongue	Scale or key	Teeth	Bill	An eye	Mouth

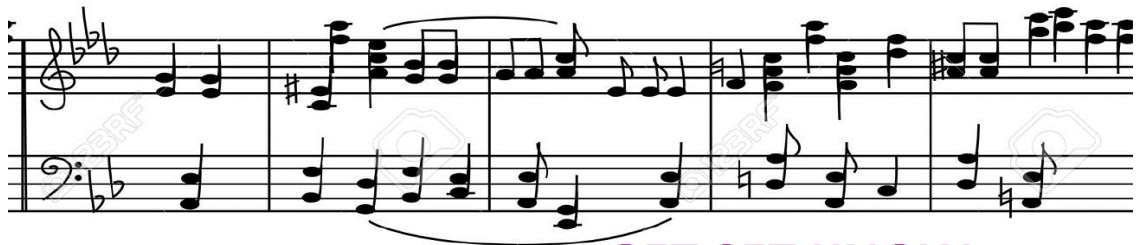
2. The fewest kids hiding are three. A girl is on the left; to her right is a boy; To his right is another boy.
3. Rutabaga and cabbage Scorpio and Capricorn Iron and bronze, Salem and Raleigh Arthur and Carter



STAY TUNED



WITH



GET SET KNOW

