

मेरा शौक - घुड़सवारी

- शुन निशिमोतो, कक्षा 5



वैसे तो मेरे बहुत से शौक हैं, पर मुझे घुड़सवारी करना बहुत पसंद है। मैं केवल घुड़सवारी ही नहीं करता, बल्कि उनकी देखभाल भी करता हूँ। उन्हें खाना खिलाता हूँ, उनका घर साफ करता हूँ। जब मैं घोड़े की सेवा करता हूँ, मैं उनके बारे में ज्ञान प्राप्त करता हूँ। घोड़े को भगाने के लिये मैं अपने एड़ी से उसके पेट में लात मारता हूँ, और रोकने के लिये लगाम खिंचता हूँ। घोड़े घास और गाजर खाते हैं।

एक बार जब मैं एक घोड़े की कंधी कर रहा था, वह अचानक हिलकर मेरे पाँव पर चढ़ गया और मुझे बहुत दर्द हुआ। मैंने सुना है कि पुराने ज़माने में घोड़ों का जबाड़ा जुड़ा होता था इसलिए उनका चेहरा छोटा दिखता था, परंतु आजकल उनके जबाड़े जुड़े नहीं होते इसलिए उनका चेहरा लम्बे दिखते हैं। मुझे लगता है कि घास खाने के लिए जब वे अपना चेहरा नीचे करते हैं, उनका चेहरा लम्बा हो जाता है। ■

Adults are so strange

- Akanksha Mukheree, Grade IV

At times I find adults to be a bit strange. They think that they know everything about children and always say, “do this, do that”, but that is not right. We children have our own thoughts and opinions that adults need to listen to.

There are many things about adults that I quite don't understand. For example I read news about adults killing each other and fighting wars and I wonder why! If adults asked children, we would tell them to immediately stop these killings and make peace among themselves.

I find many adults smoking and drinking alcohol, which is bad for health. And then they tell children “ don't eat this or you will fall sick.” They don't let children do it. But they do it themselves.

In some schools teachers punish and hit children, which I feel is strange and not a good thing to do. I feel that adults who humiliate children are very mean and I wonder why they do it!

When children get bad scores in their exams, adults get very angry and scold them because they want children to get everything correct and not make a single mistake. But that is not right because if children don't make mistakes they won't learn anything. But adults don't understand that failing is also very important.

Adults judge people by their clothes. If a person is shabbily dressed, adults will not believe the person. But if the person is wearing a suitable outfit, adults will believe him or her.

Children know what they want. But adults just don't understand the children's feelings. So they don't get it. The children are much more active than the adults are.

That is why I find most adults so strange! ■

My trip to Shikine-jima Island

- Anushka Mandal, Grade IV



My trip to Shikine-jima Island started when I went to the Yokohama Passenger terminal. It was my golden week holidays and my first overnight journey on a ship.

We went to the deck, we saw big waves of the ocean. At night we slept in the ship, and in the morning we saw sunrise from the ship. At 9'o clock we reached a beautiful island called the Shikine-jima Island. There I saw fishermen, pebble beach, blue and green sea water:



There are very few houses, and very few shops. It was very beautiful to see many types of wild plants, small gardens. I felt like a real adventure. One side of the island is protected by big boulder. We saw very steep rocky area. There lime stones are yellow and water is boiling. Some people were scuba diving to see big tortoise. We saw Shikine-jima sea life photo gallery.

There were sudden hot water streams very near to shore. We ate fresh seafood grilled fish and squid. Me and my sister collected shells. We explored the whole island by bicycle. We came back to Tokyo by a pink sea jet named Ai. ■



Summer Camp – 2014

- Yui Nishimoto, Grade III

This year at the end of July, I went for the summer camp in Hakuba with my elder brother, Shun and some other friends. The camp was in a beautiful location. I was in the English camp that has some rules: If we speak Japanese for first time in the camp, the camp master will caution us. If we speak Japanese for the second time they will call our parents. If we speak Japanese for the third time in the camp, they will send us back to home. They're very strict about that.

The food there was very yummy! The activities in free

time are making envelopes, balancing games and playing with my friends. Other fun activities which I enjoyed are rafting with kids, kayaking, swimming in the lake, and canoeing. I enjoyed the most was watching fireflies in the dark. I cried sometimes in the nighttime, missing my mom. When I come back I was very happy when I met my mom. This year summer camp was very fun!

Creation of Gravity and Separation of Sun and Moon

- Krish Kothari, Grade VI

Near the beginning when God had just finished creating the Earth, God was becoming very frustrated. When he created anything, it would fly away. Even the plants could not hold on. In his frustration, God caused a fire. He had forgot about the Earth having no gravity at the moment. The fire turned on him. God was burned very badly. He was knocked out cold. He managed to croak out these words, "Sun, Moon, please take care of everything." Now, Sun and Moon were his first and favorite creation. They were very loyal and reliable, and are the best of friends. However, they are very forgetful.

Days passed, and Sun and Moon got worried about God. They decide to try their powers. God had created them and said not to use their powers unless it was an emergency. They decide that they would say (if they would get caught) that they were just "practicing" for something terrible. They started by

creating many animals for fun and laughing when it flew off into space. Then they spent many days on a very big "project", gravity. They planned that one of them would stay at the switch and the other would create animals and plants. Since the gravity switch was off, the animals and plants would fly about. Then they would turn the switch on, and the animals would fall and the other will flick them with a finger. They started arguing about who would do what. Sun said that since he was created first, he should try it. Moon said that his accuracy and timing was better, so he should do the "honors".

God had come back. He asked about the commotion. They didn't hesitate and said the truth of everything they had done. God was very angry and decided that Sun and Moon will never met, thus the separation of the two. The gravity switch stayed on forever. ■

My Travelogue of Last Summer

- Sneha Pal, Grade VI

Last summer, my father and uncle planned to visit Amritsar, Dalhousie, Shimla and Manali. When I heard that news, my heart danced with joy. I was very happy that my friends, Rohan and Roshni would travel with us.

On 16th May, 2014, we boarded the Jallianwalla Bagh Express from Durgapur Station. During the journey, we saw many peacocks and deer in Uttar Pradesh. Next day, we passed through Delhi and at last we reached Amritsar at 2:30PM as our train ran about 6 hours late.

Next day we went to the world famous Golden Temple, the pilgrimage place for the Sikhs. We were amazed to see the temple in the middle of lake. We had our breakfast at the Langar (food) served there.

On 18th, we started for Dalhousie. Dalhousie is a hill station of Himachal Pradesh, situated at the height of 2100 m. It is known as Travelers' Paradise. It was established in 1854 by the British Governor Lord Dalhousie. We reached our hotel Jaspreet, at around 5:30 PM. From the roof of our hotel, we enjoyed breathtaking view of the forest with a glow of the setting sun, and fresh air and cool breeze. It indeed, delighted our mind, relaxed our body, and made our soul to dance.

Next day, we trekked about two kilometers and reached Ma Pahalani Temple. The scenery along the trekking route was beautiful. My brother was also accompanied us with a great joy. On the same day, we went to Khajjjar, a beautiful green valley

surrounded by pine trees. There Rohan, Roshni, Rupak and I rode on horses. In the Kalatop sanctuary, we saw many kinds of trees and flowering plants.

On 20th May, we went to the Dharamshala, the holy place of Tibetan and the living place of Dalai Lama, and then to our hotel Chamunda. In the morning, from our hotel, we saw spectacular awesome snowline of Dhauladhar range. We went to Chamunda Devi Temple and worshipped there. We also visited Jwalamukhi Temple where flakes of fire come out from the ground.

From there, after a long journey through the zigzag roads, we reached our hotel, 'Ocean Blue' in Manali. The scenery of both sides of our hotel was beautiful. From our hotel balcony, we saw the nearby mountains covered with snow. Later, we went to Solang valley, Rohtang Pass, where my brother, my friends and I played in snow. We also did river rafting in the river Beas there. The water of the river Beas was very cold.

In the evening, we shifted to 'Gulmarg Regency' in Shimla. There, we went to the Kali Bari, and worshipped Goddess Kali. We also visited a zoo at Kupri. In that zoo, we saw many birds and Himalayan animals like bears, leopards, deer etc.

Our stay at Himachal Pradesh was short but pleasant. Its clean climate and natural beauty made a very powerful impression in our minds. Therefore, we felt very bad when the time came to return. On 26th May, we got in at the Kalka Mail from Kalka Station for our home with hale and hearty. ■

The Unforgettable Journey

- Sneha Kundu, Grade VI

Alice and Matilda were lost in the forest surrounded by hooting owls and darkness. It felt like creepy eyes were following and watching them as they took each step that brought them farther away from where they wanted to be, home. Ever since the storm had hit their boat and destroyed it, Alice and Matilda's plan of moving to another island had been totally ruined. They surely were in an island, but it wasn't as good as they would imagine. They thought it would be like paradise, with more freedom, but now they were free, to die of various reasons.

Alice and Matilda decided it was going to be some time until they got out of here, so they would have to search for water. If they wanted water they probably shouldn't have walked to the center of the forest because now they would have to walk back to the sea. But then they realized that the sea had salty water so they would have to find a stream with fresh water. Alice and Matilda decided that they would go separate ways and when they would find fresh water they would climb the tallest tree around them and blow a seashell so that it would make a sound that would be a signal that meant they found fresh water.

Matilda was going through the trees on the island until she found a river. She still wasn't sure if that had freshwater so she took a sip. She waited for a while and realized that there was nothing wrong with the water so she climbed the tallest tree around her and blew a seashell. It was about three hours since she had blown the seashell, but Alice still didn't show up. Matilda was wondering if Alice was in great danger, but she didn't want to go and search for her because it was getting even darker. Soon, she fell asleep next to the river.

The next morning, Matilda woke up to find Alice sleeping next to her. Matilda was so grateful that Alice was alive and she wasn't the only person on the island. As soon as Alice woke up they started searching for food. Since there was a river they could just catch fish and eat it but they had a problem because Alice was vegetarian. But it took her a few hours of eating fruits and thinking to realize that eating fish was the only way to stay alive.

After six months, Matilda and Alice decided to go to the coast of the island when they saw a ship coming towards the island to check if it was empty. And Alice and Matilda sailed on the ship to go back to their parents. ■

I am From

- Anika Sen Mitra, Grade VII

I am from east and west, from the land of the rising sun and the nation's capital, from rainy days, snowy mornings, and scorching, dry desert.

I am from red, white, and blue, from watching sparkling fireworks on Fourth of July at the National Mall.

I am from a house surrounded by dogwoods, cedar, and elm, a house by rolling hills, and everywhere in between. A room cluttered with stuffed animals and bookshelves of beloved, worn-out books.

I am from the aroma of curry and fish cooked with bright colored spices, from luchi, aloo bhaja, and tandoori chicken. I am from Thanksgiving dinners, from juicy turkeys, mashed potatoes and warm, crusty apple pie.

I am from Sen and Mitra, from funny and warm, from Face Timing across the globe.

I am from Hindu religion, temples, and festivals of light and color.

I am from international trips to India and London, from baby pictures in Japan, Amsterdam, and Canada.

I am from music, classical and jazz, from piano, saxophone, dance recitals, from packed after-school schedules full of fun!

I am from hard courts, from serves, forehands and backhands, from hard won rallies played in weekend matches.

I am from the land of cherry blossoms, from saris and bindis, and weekend dinners of sushi rolls and calamari.

I am from nicknames thought after a Japanese orange, from high ponytails with red ribbons, from big hearty laughs.

I am from different corners of the globe, from loving family and friends. I am from love, peace and hope.

Maharana Pratap

- An Idol for Today's Generation

- Aashi Dwivedi, Grade IX



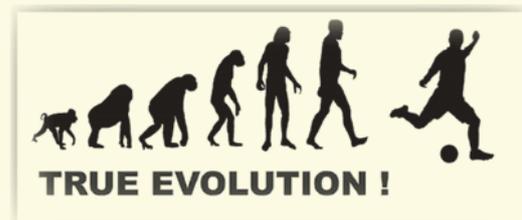
If you look around, role models of our youth today are music, movie or sports stars. Teenagers worship celebrities such as One direction, Ranbir Kapoor, or Beyoncé as their god, however I feel these icons lack substance. Many of us seem to have forgotten the real heroes of our past time, who sacrificed themselves for a noble cause and a peaceful future for us all. One of those unprecedented courageous freedom fighters who has inspired me and the rest of India, is the great warrior king of Mewar, Maharana Pratap Singh.

Around 500 years ago in West India, the ruler of Mewar, Rana Pratap, was born to a Sisodiya Rajput family in Chittor with loving parents who always encouraged him to fight for his motherland. He was a determined boy right from his early years who could go to any extent to protect his people, their pride, and the precious soil of Mewar. He never gave up the will power to fight against the many Mughals, Afghans and Turks that kept on trying to gain control over his country. His dedication and deeds helped pave the way for a victorious leader to his people and earned his title, "Maharana". Being a true rajput, Maharana Pratap always followed his dharma and believed that "if our enemy invades our motherland, then we Indians will not turn our back; we will fight with spirit and give a befitting reply to the enemy". This belief led him to being the emblem of his nation and generations learnt from his bold actions, words, and deeds.

The greatness of Maharana Pratap lies in his unique qualities. He was a compassionate soul who fought with fairness as he never invaded other countries, did not attack unarmed people and forgave those who surrendered. Rana Pratap was so determined that he took a lifelong vow to give away all luxuries and spent 21 years, almost half of his life in the jungle, away from his Palace till he threw out Mughals from his land. This symbolizes that he had a pure heart and sacrificed selflessly for the sake of his motherland. Additionally, Rana Pratap was known to be an inspiring leader who united his country and brought together alienated sections of society such as Bheels, who lived in jungles to fight with the enemies. Maharana Pratap is known best for his courage as he fought with Mughal armies twenty times the size of his troops and never surrendered till his death.

I believe the learnings from Maharana Pratap's life are still highly relevant today, and we should apply them in order to create a better world for us to live in. Today's youth are not deriving values by worshipping celebrities. They need to build character by following the great heroes of yesteryears such as Maharana Pratap, Mahatma Gandhi, Martin Luther King and other such figures around the world. Get to know their inspirational story and think again about who you feel is the true hero you should follow. ■

The Evolution of Football



- Arunit Baidya, Grade IX

Right now as the 2014 FIFA world cup is being held in Brazil, I thought it was interesting to talk about the evolution of Football. At a time where everything is made in China, it turns out that even football was first played in China in the second and third centuries BC. This spread to Rome as the Romans dribbled leather balls and kicked into nets made out of threads of animal gut, and then the Greeks took it on and surprisingly as we are living in Japan, football had even been a fun sport for the Japanese in Kyoto. However, obviously football was nowhere to be as much advanced or played at such large scales at any point or place at history as it is played and enjoyed today.

However, recently in earth's history 3,000 years ago, Football was played in a lot European countries especially in Great Britain, England. The seeds of modern soccer were planted in England where people were thought to be actually playing with some rules and regulations. They even had things like a hand ball. People were said to play for hours in a day as it was their primary source of leisure and pretty much the only time they would meet their friends was on the field. This really annoyed a few people and Football was actually banned by King Edward III in 1365. Now days if anyone tried to do that the person would be outnumbered greatly by his/her opponents and could get sued.

After all those years of incubation of Football, finally in 1904 FIFA was established and after a few decades conducted the first ever FIFA world cup in Uruguay. This is when the seeds of football shot out of the ground and became a proper big tree. At the beginning, countries were still colonized and did not get independence and so not many countries participated in the Games however that changed dramatically. Now in 2014 World Cup, 204 countries participated with their teams, however only 32 teams qualified for the actual games being held in Brazil.

Football now holds the title of the most popular and played sport around the world and as the game evolved, legends evolved as well from Pele to Maradona to Ronaldo and Messi. But it is not just the legends and the game, it is also the companies sponsoring and making the actual footwear and clothing required to play the game like Nike and Adidas. As you can see below, the huge difference in that as well below. Just like in movies, from black and white to colours! ■



THE NEFILIBATIC NOMAD

- Utsho Bose, Grade IX

The evening was vermilion, drenched in her memory.
That memory, undaunted, the sun, not set.
The Raven had set sail, it's wings in motion.
While they carried his mother into the darkness.
Her scream sent shivers down his spine.
Like a doe, brought at bay.

His father had rushed, his sister soaking in scarlet elixir.
Her eyes unfazed, towards the setting sun.
Something lost, something gained, he wondered,
As he blew bubbles through the blower.
The pain of the hiraeth, the contemplation of loss,
Seemed to be giving way to momentary bliss.
Ignorance, overshadowed by acceptance crept back into its burrow.
He turned to bid the radiant giver of life, goodbye.
His father's crutch, shining in the beautifully depressing memories.
The stillness of the moment, the dying delirium,
Mixed colour.

The dogs pricked their ears,
The boy raised his head, every cell awakened.
Etched with the familiarity of the sound.
His father erect, the air brought the smell of his sister's blood.
The die had been cast.
The dogs of war unleashed, upon the final hiding place.
There wasn't a moment to run, no moment to face.
Silence broken, metal on metal, blood on Earth.
Fate, remorseless.

The house lay watching, apparently, unmoved,
While they faced destiny, with arms wide open.
Each second lasted an eternity,
The puppet masters had fallen,
The puppets still on stage, possibly inert.
The air pungent, with the echo of a nomad.
A song unsung, a faded memory,
Eroded footprints on Earth,
The last bubble, not blown.

Genetic Mutations: Are the X-men really possible?

- Arunangsu Patra, Grade IX



In the mid 19th century, Czechoslovakian scientist Gregor Mendel discovered the secret code to our existence and who we are, simply through *cross-breeding* purple and white pea flowers. It is still used in various fields of study, such as biology or biochemistry. *Genetics*, the study of *Deoxyribonucleic Acid*, or DNA, has lead us to understanding natural human characteristics and discoveries that potentially save people's lives, and can even enhance their physical abilities.

On July 18, 2014, Fox released a new movie, X-men: Days of Future Past, that contributes to the X-men series, which is based on Marvel's comics written by Stan Lee. In this movie series, the topic of *Genetic Mutation* (GM) is widely explored, and the term *mutant* is commonly used. A mutant is someone with some sort of genetic disorder, which will be discussed later. These mutants possess extraordinary powers and abilities due to their mutation.

However, are these abilities truly because of GM? Or is it just used as an excuse to possess extra-terrestrial powers? Before we get into this, let's skim through the topic of genetics and biology first.

First of all, what is DNA? Before we get into that, there are a few things we should familiarize ourselves with first.

Let's start with perhaps one of the most abundant terminology in biology. An organism is any living being, ranging from humans to dogs, to insects to even trees. A living being is identified through the short phrase "MRS GREN", which stands for:

Movement
Respiration
Sensitivity
Growth
Reproduction
Excretion
Nutrition

This means that an organism has to be able to move, respire, have sense, grow, reproduce, get rid of waste and consume energy and nutrition. For example, we Humans do it all; we can use most of our five senses, sight, hearing, smell, taste and touch, if not all. Take the great physicist Stephen Hawking, for example. Despite his condition that he cannot move, which is part of what defines a living being, he is still alive. There are some other examples to disprove this idea, but this phrase is still used to define a living being. Therefore, we are all living beings: organisms.

Now, let's go to a microscopic level. An organism is made of tiny *cells*. The dictionary tells us that a cell is "the smallest structural and functional unit of an organism, which is typically microscopic and consists of cytoplasm and a nucleus enclosed in a membrane." The human body consists of about 100 trillion. These cells reproduce, which result in our growth.

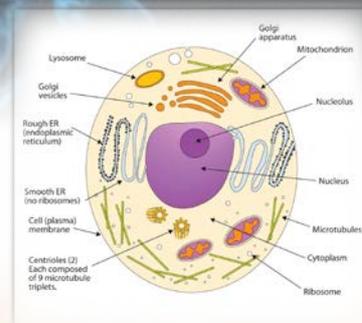
Cells are a complicated topic, as there are so many different parts to an individual cell that all play a vital role to our function. However, in the context of DNA, the part of a cell we

will be focusing on is the *nucleus*. The nucleus can be considered the brain of a cell. This is the place where the entire DNA is located and stored. DNA is a molecule that contains the 'code' to shape any individual organism. They are well known for their double helix shaped structure.

Genes, as you may have heard, are different parts of the long strand of DNA. Each gene contains information about a different part of your body. Supposedly, one gene can have information about your hair while another gene has information about your eyes, even if they are on the same strand. Of course, it's more complicated than that in real life. These strands of DNA are somewhat coiled and compressed together to make the shape of chromosomes, which are known for its X shaped structure. There are a different number of chromosomes in each cell for different organisms. In us,

humans, there are 46, or 23 pairs, of chromosomes in each cell's nucleus

Recalling that the human body consists of 100 trillion cells, there should be about 4.6×10^{15} chromosomes in our body. So how much actual DNA is in our If we were to uncoil every single chromosome into a long strand, the total length is about 20 billion meters, or 134 astronomical units (AU), enough to stretch from here to Pluto and back!

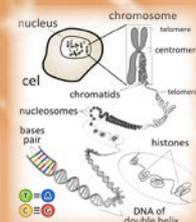


Why is this important? That is pretty much how much information and data there is to an individual human being, in this case. It can be considered as a manual on how to create an exact copy of you, or any living being. That is where the concept of 'Cloning' came in theory, and succeeded on an experiment conducted on a sheep named Dolly. More recently, scientists have been tinkering with DNA in many different ways, one of which is known as Genetic Engineering, or Genetic Modification, which is the process of modifying genes. The genes of fish, typically salmon, are modified to make them bigger and look better for marketing.

There is a theory that, if they can fully understand the human DNA, there is a chance that a guaranteed cure can be found for cancer. Cancer isn't the only issue relating to DNA. As mentioned earlier, a GM is when there is something wrong with a gene, whether it's the structure of the DNA or it's the order of chemicals.

DNA is made of hydrogen, oxygen, nitrogen, carbon and phosphorus. On a typical picture of DNA, you can see horizontal bars connecting the two spiraling helixes together. The truth is, it's actually two different 'bars' bonded to make one single 'bar'. Each bar is made of one of four chemicals: Adenine, Thymine, Guanine or Cytosine. In each gene, Guanine is bonded with Cytosine; and Adenine is bonded with Thymine. This is why, in many diagrams regarding DNA, it shows GC and AT, or vice versa, which represent the bonds of those chemicals.

Most, if not all, of the information regarding our physical self is determined by the combination of these chemicals. For example, someone with a certain hair colour could have the combination GCATCGTAGCATCGTATA, while a person with a



Genetic Mutations:

different colour of hair can have ATCGTACGCGTATAGCCG, both of which give different information.

However, it is when there is an error in the ordering, mismatching, or even inequalities in the number, of these chemicals that a GM occurs. Mutations are usually caused by exposure to radiation, certain chemicals, or errors when repairing DNA. Mutations commonly lead to *genetic disorders*, such as Sickle-cell anemia, Achondroplasia, and many others. The other main problem is that these genetic disorders are typically a dominant *genotype*.

Genotypes are the genetic traits that one carries, which are passed down from your ancestors. On the contrary, a *phenotype* is the physical result of a certain genotype. For example, a genotype **B** can be a result for a phenotype of brown eyes. Genotypes are often categorized by two categories: dominant (**B**) and recessive (**b**) phenotypes. A dominant phenotype is a trait that is more likely to be passed down the next generation, and a recessive phenotype is a trait that is less likely to be passed down. A common example for a dominant phenotype is brown/black hair, and an example for a recessive trait is blond hair. If a person with black hair has an offspring with a person with blond hair, the offspring will have black hair.

When Gregor Mendel first discovered this, he used pea plants. Back then, there were only pea plants with purple or white flowers, and the plants were always bred through flowers of the same colour. This means the plant's genes were "pure", so a purple flower had a genotype **BB** and the white flowers had genotype **bb**. Mendel then bred with a purple flower and a white flower, and its entire offspring turned out to be purple. At this point, the offspring all had genotype **Bb**.

In theory, we show this using what we call a *Punnet Square*. If we use the example above, we have a parent of **BB**, and a parent of **bb**. If we put this in our Punnet Square, we end up with this:

	Purple Flower Plant	
	B	B
White Flower Plant	b	Bb
	b	Bb

Each cell in the 2x2 grid represents one offspring, thus a Punnet Square only represents four offspring, with a maximum of four different possible genotypes. In this case, any offspring of this couple is guaranteed to have genotype **Bb**,

a mix of the dominant and recessive trait. The phenotype of **Bb** will be the same as phenotype **BB**. This means that whenever a dominant genotype is mixed with a recessive genotype, the dominant phenotype, in this case purple flowers, will be shown, hence the term 'dominant'.

The only difference between **BB** and **Bb** is that the genotypes of the resulting offspring will be different. If a person with genotype **Bb** has children with a person with genotype **bb**, in our Punnet Square it would look like this:

	Purple Flower Plant	
	B	b
White Flower Plant	b	Bb
	b	bb

The chance of there being a white flower plant now becomes 50%. This is why **BB** and **Bb** are classified differently, and are called *homozygous* and *heterozygous* respectively.

How is this related to GM? GM is a dominant genome and, when acquired, can either be **BB** or **Bb**. Whether its homozygous or heterozygous comes from how it is acquired, and there are numerous different ways.

Now that we know a bit about GM, let's see whether Marvel's X-men mutants can actually be realistic or not. Since there are hundreds of different X-men, I will be looking at some of the main mutants in the movie X-Men: Days of Future Past.

Logan Howlett: Wolverine

Wolverine, played by Hugh Jackman, is a mutant who has the power to regenerate his health in a short period of time and has an entire skeleton, including his claws, made of a metal called Adamantium.



For all this to be acquired through mutation would be extremely rare. However, it may be possible through genetic engineering. Everyone has a different rate of healing, and that is partially dependent in one of your genes. However, if that gene could be enhanced and can be used somewhat often, quicker health regeneration may be possible, although probably not as quick as Wolverine's.

Wolverine's claws were first made of just bone. Later on, he had his entire skeleton fused with adamantium, which was successful due to his healing factor. Again, this would be difficult to achieve through mutation. Wolverine's claws resemble a three-toed sloth's claws the most. Even if the claws would extend like normal nails, the subject would have claws visually similar to Wolverine's.



In conclusion, it may be possible for there to be a Wolverine in the real world, although not as accurate, and probably not through genetic mutation.

Charles Xavier: Professor X

Professor X, played by James McAvoy and Patrick Stewart, is a mutant who can read and control other people's minds. He uses a device called Cerebro to expand his field of his mind reading and locate other mutants or people. However, due to a severe injury in his spine, he had lost the ability to walk, until he kept taking the cure, which subsided his ability to read minds.



The concept of telepathy is still not very clear, and is still unknown whether it really exists or not. A very common concept of telepathy, however, is known as twin telepathy, where twins have a link strong enough that they can share similar emotions and thoughts. Until telepathy is proven to be a phenomenon, and is understood to some extent, it is safe to say that there should not be a person with the ability to read people's minds.

In conclusion, at this stage it is not probable for another Professor X to exist in the real world.

Erik Lehnsherr: Magneto

Magneto, played by Michael Fassbender and Ian McKellen, is a mutant who can control all sorts of metal and can create magnetic fields at his will.



Magnetism can be conducted using magnets made of iron, and can only control iron or alloys of iron, like steel. However, since Magneto can control all sorts of metal, it would be impossible for an exact copy of him to exist. Typically,

magnetism through humans shouldn't be possible. However, a type of bacteria called *Magnetotactic Bacteria* has a magnetic field of its own, and when free from a host, orients along Earth's magnetic field. If these bacteria are injected into the human body, at a sufficient amount, it may be possible for that person to be attracted to ferric metals or magnets at the most. And even then, we still do not know whether the bacteria will cause any harm to the human body.

In conclusion, it would be improbable for another Magneto to exist in the real world.

Raven Darkholme: Mystique



Mystique, played by Jennifer Lawrence, is a mutant who can shape-shift into other people at exact detail, and even copy their voice. She consists of a natural blue humanoid form.

By changing appearance, one would need to be able to re-write every single piece of DNA containing information on one's appearance, therefore re-writing every single outer cell in their body, in a matter of seconds. In theory, one would experience pain during this process, and it would take time and mechanical assistance. That being said, it has never been done successfully, and therefore, until more about shape shifting is discovered, this ability would remain improbable.

In conclusion, it would be improbable for a copy of Mystique to exist.

Henry "Hank" McCoy: Beast

Beast, played by Nicholas Hoult, is a mutant who takes the shape of blue carnivorous feline creature. In addition to his appearance, he possesses super-human strength, allowing him to perform numerous aerobic movements.



While it may not be so challenging creating a hybrid animal of that sort, getting the ratio of human to feline animal would be crucial. However, his blue form would be more challenging to achieve through genetic mutation. Also, finding a creature strong enough satisfy that of Beast's would not be very easy, unless if perhaps genes from a variety of feline animals were to be injected, and even then the question of whether they are compatible to the subject remains.

In conclusion, a copy of Beast can be created, but would still not precisely satisfy the abilities of the comic book hero.

What you have read, related to genetics, is only a basic introduction to the very broad topic of the secret code that lies inside us. Which makes us who we are, and what we will be. Marvel introduces these topics in a very entertaining way, and in comic series other than the X-men. Despite all the knowledge we already know that about DNA, there is still much more to be discovered, and so much to do once discovered. ■

It Works!

- Nishant Chanda, Grade VIII

Wasting time; what all of you did at various points of your lives, its usually the hardest but yet the easiest thing to do. When you have nothing to do, suppose waiting in line, done with your work, when you don't like the food etc. You find yourself in a state of subconsciousness, also known as day dreaming. Many times, you don't even notice you are wasting time, it just happens. It's a way of letting your brain off the leash, running wildly all around the world.

There are many ways to waste time, and they're not that hard to do. The first way is the same as going to bed. Let your mind drift into whatever you are thinking about. You will see, you are slowly losing grasp of reality, far away from the ticking clock and you feel like you are meditating. It will feel like you are in vertigo. This is very easy to do when you are eating dinner alone or brushing your teeth. In the toilet is also a good place. When you are not in a hurry, breakfast works fine. Another way is to walk from one place to another. This is the one you see most often. People do it all the time without knowing. It is a sign of lack of concentration. It occurs most frequently when you have a lot to do, but you don't know what to do first and you are not planned. If you want to waste time, this is not a bad thing. It is automatic. When you wake up in the morning at a time you are not used to, you will find yourself doing this. When you are in this state, external forces may find it hard to wake you up without reaching their threshold of anger.

These ways work well for me; why don't you try as well... that's how to waste time, efficiently. ■

How the Theory of Gravity was discovered

- Amartya Mukheree, Grade X

Most people assume that the Theory of Gravity was discovered by Isaac Newton because of the famous story about the apple falling beside him. This however, is not the entire story. It dates back to centuries earlier, involving great minds like Nicolaus Copernicus, Galileo Galilei and Johannes Kepler. Along with them, there is a person who made important contributions, however, the world has yet to hear his name: Tycho Brahe.

The most important factor that led to the discovery of gravity was the realization that there is a force pulling the Earth towards the Sun. However, this statement was still far from being discovered, as it was believed by the Christian Church that the Earth is at the center of the Solar System, and all heavenly matter orbits it. This model of the universe was proposed by Aristotle, and viewed as something so sacred that questioning it was considered a crime.

This model of the universe was believed for 2000 years until Copernicus (1473-1543) stated that the Earth is not at the center of the Solar System, and instead, the Sun is. This model of the universe – discovered in 1514 – otherwise known as the “Copernican model,” is considered as one of the greatest scientific theories discovered.

Tycho Brahe (1546-1601) was born three years after Copernicus’s death, and was so inspired by the Copernican model that he decided to investigate the movement of the stars and planets to see if Copernicus was right. For a brief introduction, Brahe was a Danish astronomer and an inventor. He owned an island near Copenhagen, where he built his inventions.

How did he investigate the movement of the stars and planets? He spent the entire night drawing every single detail of the stars and planets in the night sky. To draw the stars, Brahe invented several precise instruments that were accurately able to measure the distance between stars, and Brahe drew them out. He kept doing this for thirty-five years. This is how Brahe gathered all the data, which was crucial in the discovery of gravity. The thirty-five years he spent on observing the stars is what gives him one of the biggest roles in the discovery of gravity. This observation also makes Brahe one of the earliest experimental physicists, who believe in data collection.

After Brahe’s death, his data came into the hands of his assistant Johannes Kepler (1571-1630). Kepler analyzed the data, using trial and error methods, and came up with the conclusion that Earth orbits the Sun. With Brahe’s data, he was able to successfully prove that the Earth orbits the Sun and prove Copernicus’s

statement right. Upon further analysis, Kepler was also able to prove that the planets moved around the Sun in an elliptical pattern. Alongside the movement of the planets, he was also able to discover that as the planets move closer to the Sun, they move faster, when compared to their speed when they are the furthest from the Sun.

Meanwhile, Galileo Galilei (1564-1642) published his Theory of Inertia, which explained how if we roll a ball, it would keep rolling at constant speed in a straight line, unless external force acts on it. This Theory of Inertia is considered as one of the greatest discoveries in science.

Finally, Isaac Newton (1642-1727) was able to combine all the theories discovered by the great scientists. The planets are moving in an elliptical pattern, and they are not moving in a constant speed. Since this contradicts Galileo’s laws of inertia, there must be some force acting on these planets. And this force gets greater as the planets get closer to the Sun, which is what makes them move faster than when they are away from the Sun. After some analysis, this force that moved the planets around the Sun was the same force that made the apple fall down to the ground. He decided to call this force “gravity”, from the Latin word “gravitas”, meaning “heavy”. Thus, the Theory of Gravity was born.

The Theory of Gravity is considered to be one of the greatest discoveries of mankind. It all started with the Copernican model that stated that the Sun is at the center of the Solar System, which inspired Brahe to begin his investigation of the movement of stars. Brahe’s drawings were then handed over to his assistant, Kepler, who proved that the Earth moves around the sun in an elliptical pattern and the speed of the planet’s movement changes with respect to its location. Finally, Isaac Newton combined Kepler’s and Galileo’s laws and discovered that there is a force moving all these planets around the Sun, which he called “gravity”.

All the five scientists played a huge role in the discovery of gravity. However, not many people know about Tycho Brahe. This is very unfortunate given the fact that Brahe devoted a great deal of time to draw the stars in the night sky and gather data; his work ultimately helped Kepler and Newton make their discoveries. Brahe was simply the giant whose shoulders Kepler and Newton stood on. Along with that, Brahe was one of the earliest experimental physicists, who believed in data collection, which is how modern scientists normally carry out their investigation. Therefore, Brahe also deserves to be considered as one of the greatest minds in science history, which is why we should respect him, and not forget his name. ■

Overthinking

- Aakriti Naarang, Grade XII

To think about a life,
Where everything was for best
Too long a happiness,
Outlasting all the rest.

Such seems really surreal,
I'm torn between two sides
One which echoes: don't complain
The other: it's alright.

The days keep tumbling by
Aspirations cannot end
Be hopeful, they said
And all else will surrend-er.

To feel or not to feel
Even the closest don't understand
Change, oh how to change
When what I feel is: strand-ed?

DRAWINGS



Birds, Ashmita Pal 7yrs



Flamingo Dancer, Zinniya Maya Dhar 5yrs



Craft flower, Manav Ghose 7yrs



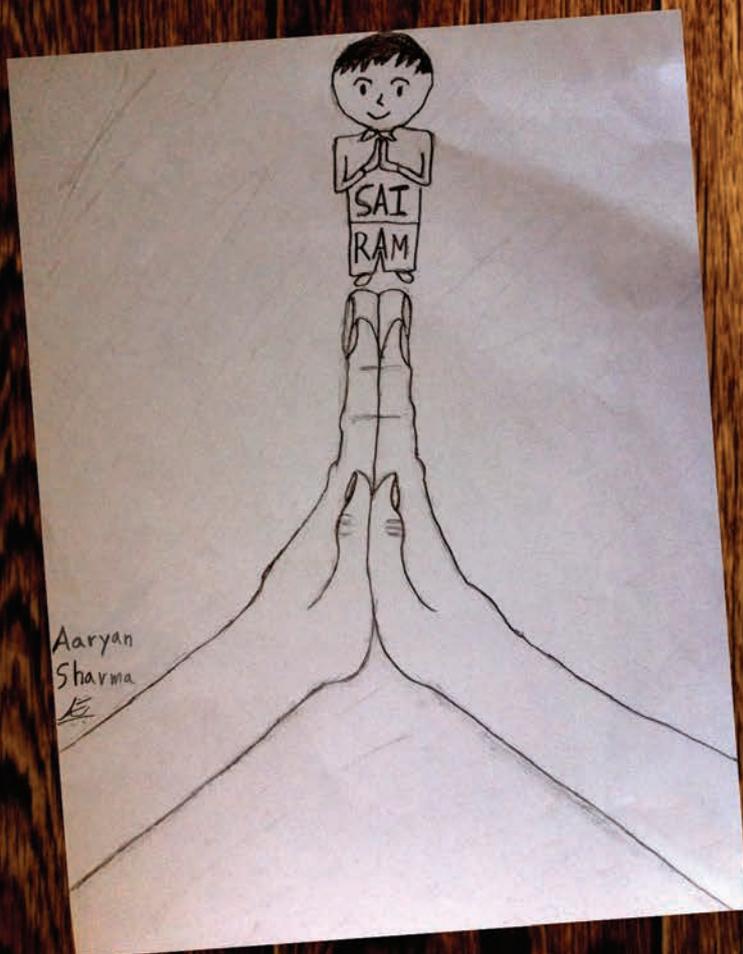
If you can Dream it ... you can Do it, Auyona Gupta 6yrs



Elsa from Frozen, Spurti Unnamatla Gr IX



Fishing, Koji Togawa 9yrs



Sai Ram, Aaryan Sharma Gr V



Monkey D. Luffy, Shubhankar Vakde Gr VII



Ganesha, Kirti Unnamatla Gr V



Krishna, Kavya Sharma Gr IX



Krishna, Ayushi Baidya Gr IX



Ganesha, Ushrita Gr VI



Family Portrait,
Arnab Karmokar 7yrs



Out of this World, Nimisha Anand Gr VII



Craft ship, Maya Ghose 10yrs



Scenery, Kenta Bhowmik Gr VI



Woods - Dark & Deep, Debkanya Sengupta Gr X

New Born

Aagneyi Gupta
Parents:- Ahona & Arka Gupta



Photography

Spiritual Beauty, by Goutam Mitra

