



Creative Writing
Non-Fiction
Group 3

New Tales of China's Inventions

CUHK FAA Thomas Cheung Secondary School, Lam, Chun Yu – 13

I admire the long history of Chinese culture. I praise the wisdom of Chinese culture. At the same time, I love the spirit of Chinese culture. From the Four Treasures of the Study to the Four Great Inventions, from hieroglyphics to simplified Chinese characters, these all reflect the great amount of Chinese culture and the unique wisdom of Chinese culture. However, in the 21st century, which is driven by ever-changing technology, we need to inject new wisdom into Chinese culture and give Chinese culture a bright future.

In recent years, China has entered a period of rapid development. Science and technology in China have advanced in a unique way. Besides, from Made in China to Created in China, it not only reflects China's achievements in science and technology, but also allows high-quality and low-priced products selling to around the world. It proves that the fresh wisdom has been inspired by Chinese culture.

China's high-speed rail is a channel that brings China to the world. Chinese culture will also be carried to every corner of the world. As a new mode of transportation, high-speed rail is faster than trains and more convenient than airplanes. More importantly, China owns complete independent intellectual property rights.

On National Day, my parents took me to Guangzhou by taking high-speed rail. This was my first time taking the high-speed rail. I thought it would be fun, so I couldn't wait to set off with my parents. When we arrived at the station, my father gave me the ticket, checked it and got on the train. "Let's go!" I shouted excitedly and walked to the platform. At this time, a high-speed train arrived. Wow, this train is so beautiful! The long body is like a dragon, and the shining car lights look like its eyes. It warmly welcomed us to get on the train. When it started moving, it ran so fast! The scenery beside me flashed before my eyes. Sitting in the train, I felt like sitting at home; the train was very stable and comfortable!

The Chinese Dream is not a grand vision for people to look up. Chinese people have been working very hard to make the dream come true. Chinese technology is developing, and society is progressing! Our world is more exciting because of the development of science and technology.

Omnipotent Robot

CUHK FAA Thomas Cheung Secondary School, See, Kak Kak – 12

All kinds of inventions make our life more convenient. What if scientists have invented a robot who is omnipotent, and you can ask him to do anything?

He can take care of your life instead of your parents. Before you get up in the morning, the robot will have made breakfast for you, then wake you up on time, send you to school, and ensure that you arrive at school safely. He will pick you up from school, help you with your homework, answer any questions you don't know, and help you study for exams.

He can also clean up the house. He sucks all the garbage in the house into his stomach like a vacuum cleaner. The room will be clean after he has cleaned it, and the garbage can be converted into energy, so you do not need to be charged for throwing it away, and it will be very environmentally friendly.

When someone knocks on the door, it will automatically identify whether you know the person outside the door. If it encounters danger, he will immediately call the police. It also has combat features, effectively protecting your safety.

This robot reduces the burden of parents, makes our life more convenient, and there is no need to waste time on some piecemeal things.

New Tales of China's Inventions

CUHK FAA Thomas Cheung Secondary School, Yim, Wing – 12

In recent years, the science and technology development in China have been making great progress. There are so many innovative inventions that upgrade our lives and can benefit people's quality of living. For example, high-speed railway systems, electronic payment systems and bike-sharing improve a lot of people's daily lives by bringing us convenience and efficiency. As technology advances continuously, more and more new inventions are expected to come up in the near future. One potential invention that is very likely to be produced and is much needed is a newest model of a full-time robot assistant for everyone in the world.

This brand-new innovation will come in sizes as tiny as a portable USB or as large as a giant gorilla. Its appearance can be changed according to the wants and needs of the owner. It can come as the image of an animal, a person, or even an object. By this time, you might be pondering why this robot needs to be in such strange forms. Let me shed some light on this. This is because this novel, high-tech, powerful, helpful, and wonderful robot will have the ability to provide assistance to its human friends in any way, anytime and anywhere.

For instance, when the owner is sick, the robot can transform into a doctor to check on him or her and advise on which medicines and what kind of food to take, followed by transforming into a Foodpanda delivery driver to bring the painkillers and chicken congee home for the owner. If a lonely old lady brings this robot home, it can transform into a fun-loving and smart service dog to keep the lady company and monitor her health. And what about turning into objects? Doesn't it sound weird? No, not at all! Because there are times we need help from objects such as a hand truck to carry heavy groceries or an air conditioner to give us fresh air on sizzling hot days. This transformation can be done instantly based on the owners' orders. What's more? The robot can actively monitor the owners' physical and emotional needs and advise on the need of transformation.

This invention can be very beneficial to the elderly with medical conditions who are living alone, physically or emotionally fragile patients, single-parent families, children who need a friend and anyone in need. I hope China will be able to create such a helpful invention for the world in the near future.

New Tales Of Chinese Inventions

ELCHK Lutheran Academy, Cheung, Nga Wun Isa – 12

China has been known for its significant cultural heritage, long-standing customs, and outstanding achievements in a variety of fields, it also has left a lasting impact on human civilization. Glasses have an old history in Chinese inventions, and they are still very useful nowadays.

Let's start with the history of glasses in Chinese culture. The glasses that people used before look really small and the shape is mostly round or circular. The colors that they mostly include are black, brown, gold and green. Inventing glasses was a brilliant idea because it helps a lot of people who need to protect their eyes from the sun or even prevent eye diseases. Glasses were first originated in Italy by Salvino D'Armate but when it was introduced to China it became immensely popular among scholars, officials, and individuals with vision problems, and was first modified by the Chinese in the 3rd to 4th century (around the Han dynasty.). During this period, glasses had become increasingly popular. Craftsmen started creating elegant and beautiful pattern frames out of metal, bamboo, and etc.

Nowadays, we can have electric glasses. They are very cool, you can make phone calls, send messages and even have navigation, etc. You can also control the colors of the glasses, that's why many people say it is very fashionable and matches different types of color tone. People feel safer using these electronic glasses while you use navigation. It leads you the way to your exact destination. It has different ways and modes of using it, for example: having arrows leading you to the right path throughout the glass-monitor, and having voices to tell you the direction. And the coolest thing is, you don't need to use your phone, you are handed-free to do other things with your hands. No more head-down while using the navigation. With a simple voice command, users can name their glasses and require them to do their tasks such as making calls or sending messages. For example, they can say, "Glasses, call (XXX)" or "Glasses, send a text to (XXX) about what we should eat for dinner today." These glasses are like phones but easier to use and handle, making them one of the greatest inventions.

In recent years, China has been a global leader in the development and manufacturing of glasses. Modern technologies have been used by Chinese businesses to create high-quality glasses. Furthermore, Chinese manufacturing has been making more fashionable glasses that turn out to a wide range of fashion interests. We can see the changes in the history of glasses. In the old days, it was just a pair of glasses that helped us see the surroundings better and cured poor eyesights. Now we have electric glasses that are suitable, very stylish and fashionable. Glasses are one of the greatest inventions in Chinese history!

Ancient Chinese inventions: Pioneering Achievements that Shaped the World

ELCHK Lutheran Academy, Poon, Lok Tung Hilary – 12

China is a country with a particularly rich and ancient civilization, that can look back on an incredibly long history. Over the millennia, China has made enormous progress. The Chinese have contributed to various fields such as art, philosophy, literature, science, technology, governance and so on. Chinese civilization is known for its long history of remarkable and significant inventions and technological achievements. Let us go embark on a journey through time and discover the extraordinary innovations that have left an indelible mark on our modern world. The invention of paper is an advanced science and technology in ancient China. The invention of paper traditionally dates back to 105 AD, when a chamberlain of Emperor Ming (Cai Lun) gave paper to the emperor in the first year of the Yuanxing era. The invention of paper had a great impact on mankind. In ancient China, paper was often made from bamboo. To make paper, you first cut the bamboo. Finally, the paper had to be pressed to dry to remove the water and then hung it up to dry.

Why did the Chinese have to make paper? Because the Chinese engraved characters and symbols on animal bones and turtle shells. However, there is a problem when you use these things for writing, because if you write on them, you cannot erase your writing because it has enlarged in the bone or shell, and it's very annoying if you must rewrite the whole text because of a misspelled word. It's not so great for the turtles either, because sometimes the Chinese engraved letters into living turtles, and that's not so nice for the turtles. So, some Chinese thought of using bamboo to replace the turtles so it wouldn't hurt them, but there's another problem: bamboo is too heavy to carry a book around, and you need two men to carry it. They invented an ink that could be used with the silk, it was light and portable, but silk is very expensive and the process of making silk kills a lot of silkworms and it's a lot of work to make silk.

Given these challenges, the invention of paper revolutionized the writing and communication systems in ancient China. It provided a light, easy to make, and cheap product that had a big impact on the world and continues to help people in modern life.

The discovery of gunpowder in ancient China was a crucial milestone in Chinese history. Gunpowder is a mixture of saltpeter also known as potassium nitrate, sulfur, and charcoal. Together, these substances will burn quickly and explode. Chinese monks discovered this technology in the 9th century BC when they were looking for a kind of immortality medicine.

The Chinese believed that the power of gunpowder could drive away evil spirits and confer immortality. However, the Chinese quickly recognized the explosive properties of gunpowder and began to explore its military uses. The Chinese used it from the 11th century onwards. It was originally used against enemies in the form of fire arrows and flaming projectiles. The discovery of gunpowder in ancient China had a significant impact on warfare, leading to the development of firearms and changing military history. It changed the battles that were fought, and it contributed to the decline of traditional chivalric warfare. Today, gunpowder is no longer the primary explosive used in modern firearms and explosives. Nevertheless, the discovery of gunpowder in ancient China was a crucial milestone in human history, influencing technology, warfare, and some global interactions.

Then, we have Chinese acupuncture. It was invented several millennia ago around 8000 years ago. The oldest Chinese medicine book "Neijing" also known as "The Classic of Internal Medicine of the Yellow Emperor" tells us that acupuncture was often used as a therapy in China a long time ago. Besides that, various kinds of acupuncture needles were discovered in Prince Liu Sheng's tomb. Prince Liu Sheng died at around 200 B.C. This is further proof that acupuncture was already in use in China more than two thousand years ago. Earlier instead of needles, sharpened stones and long sharp bones were used around 6000 BC for acupuncture treatment.

How was acupuncture performed? Acupuncture is done by using needles that are as thin as your hair. The needles are then inserted onto your body, onto your skin or sometimes deeper into the muscle. The needle is inserted onto a point that produces a sensation of pressure or ache, needles may be heated during the treatment. Acupuncture points are believed to stimulate the central nervous system. This releases chemicals into the muscles, spinal cord, and brain. These biochemical changes may stimulate the body's natural healing abilities and promote physical and emotional well-being. Some people say that acupuncture has minimal pain where the needle is inserted. Some people report acupuncture makes them feel energized, whereas others say that it really hurts.

Next, we have the earthquake detector. The earthquake detector was invented nearly 2000 years ago in 132 AD by a Chinese inventor called Zheng Heng. The earthquake device was remarkably accurate I could measure earthquakes from far away, the device did not rely on shaking or movement. In the past Chinese people didn't understand that earthquakes were caused by the movement of the tectonic plates on the earth's crust. Although we still cannot accurately predict earthquakes, we have come a long way in detecting, recording, and measuring seismic shocks. A lot of people don't realize that the earthquake detector was invented over 2000 years ago. Zhang Heng's earthquake detector was able to determine the direction of an earthquake hundreds of miles away.

Zhang's earthquake detector was a giant bronze vessel, it was almost 6 feet in diameter. Eight dragons snaked face-down along the outside of the barrel, marking the 8 compass directions. In each dragon's mouth was a small bronze ball. Beneath the dragons sat eight bronze toads, with their broad mouths gaping to receive the balls. His device also included a vertical pin passing through a slot in the crank, a catch device, a pivot on a projection, a sling suspending the pendulum, an attachment for the sling, and a horizontal bar supporting the pendulum. The mechanism that caused a ball to drop in the event of an earthquake is still unknown. But one theory was that a thin stick was set loosely in the center on the barrel, and the earthquake would cause the stick to fall down and fall onto one of the 8 directions causing a dragon to open its mouth and release a ball.

In 2005, some scientists in Zhengzhou (China), Zhang's hometown, succeeded in recreating Zhang's earthquake detector and using it to detect simulated earthquakes based on four different real earthquakes, and all the data collected by the scientists was very accurate and all the tests were consistent with previous results!

Then, we have the compass, the compass is a navigational device that shows direction. It was invented by a Chinese person the compass was first used for worshipping, and fortune telling and geomancy, which means the art of aligning buildings. In the late 11th to the early 12th century, some Chinese sailors adopted this gadget for astronomical and terrestrial navigation purposes. Making a new era in the history of navigation.

How does the compass work? In the compass a small, long, magnetized needle is placed on the pivot so that it may rotate freely in the compass. It uses earth's magnetic field to exert a force onto the compass needle causing it to rotate in the same direction as the magnetic field. That is how it can tell you the direction of where you are going!

The Chinese also invented alcohol. Alcohol was invented at around 1600 BC. Alcohol is known as Jiu in China and is often used as a spiritual offering to Heaven and the Earth or ancestors in ancient China. In 2013, a 9000-year-old pottery found in Henan province, this revealed that the presence of alcohol has existed very long time ago. Chinese people used to make alcohol in clay pots, it has been revealed that people were making an alcoholic beverage from fermented rice, millet, grapes, and honey.

There are so many notable ancient Chinese inventions, but these inventions represent just a fraction of the remarkable contributions made by ancient China. The Chinese have created so many unique inventions from edibles to gadgets! China is a very interesting country. The country has come a long way since everything started. I think that the Chinese have created many great inventions! The Chinese had made things from groundbreaking technological achievements to amazing creations. These remarkable inventions not only transformed their own society but also had a profound impact on civilizations far beyond China's borders.

Whispers of Threads

G.T. (Ellen Yeung) College, Tai, Ellie – 14

Speaking of Ancient China, many remarkable inventions come to mind. Tea, gunpowder, compass...China is the land of great inventions, resourceful ideas and world-changing inspiration that profoundly improved human civilization. Without them, human lives would have been far less convenient. However, among all these innovations, papermaking plays the most significant role in China's inventions.

Before papermaking was invented in China, the lives of Chinese were largely different from now. They had other methods for writing such as using bamboo strips and animal shells. They carved word by word with sharp tools, which is extremely time consuming and laborious. Once there is a single mistake carved, there is no going back, therefore the ancients may have to start carving all over again. Additionally, the materials used were bulky and expensive, limiting the availability of usage. Therefore, it strongly affected the spread of knowledge and communication among people, stimulating them to create new materials for writing.

Although papermaking seemed to be invented in Egypt first—the first true papermaking process was invented in China during the Eastern Han period by Cai Lun. He was an eunuch court official of the Eastern Han dynasty, born in around c.50–62 CE in Leiyang and died in 2023 in Luoyang, the Imperial capital.

Cai Lun observed that the demand for writing materials was growing fast in China, so he conducted extensive experiments to invent a more convenient and efficient material for writing. The first paper was rumored to be made in the backyard pond of the Cai household. He found new materials to replace the traditional bamboo-and-wood scrolls, such as mulberry bark, which is the bark of a paper mulberry tree, thin and fabric-like. Other materials include fishing nets, hemp waste, boiled bamboo and old rags.

The sheer complexity of the Papermaking process has awed both Chinese and Western historians alike. Up till this day, they were still intrigued by Cai Lun's intellect. First comes the fibre preparation: after gathering all materials needed, Cai Lun soaked them in water to soften them. Next in line would be fibre maceration: they were beaten down into individual fibres to create a pulp. Then, pulp formation: the fibre pulp was mixed with water to create a suspension and agitated to ensure uniform distribution and remove impurities. Additionally, sheet formation: a screen-like mold was dipped into the pulp suspension then lifted out to allow excess water to drain through the screen, leaving a thin layer of fibre on the screen. Furthermore, pressing and drying: the wet fibre layer was transferred to a cloth for compression to squeeze out water. Additional layers of wet fibre sheets and felts were stacked to form a pile. Moreover, continued pressing and drying: the piled sheets were then subjected to further pressure using heavy weights, to remove remaining moisture and bond the fibres together. Finally, polishing: once the sheets were sufficiently dried, they were separated and smoothed using shells or stones, to achieve a smooth writing surface.

The papermaking process that Cai Lun thought of was a success. Because although the materials used were abundant and cheap, they still could create a high-quality paper product. The paper made was also light and portable which its adaptability was wide over China, helping the spread of knowledge and facilitating communication. His papermaking method gained support and promotion from the imperial government, which later on established the credibility and acceptance of the new technology among the ruling elite and the broader population. As it is widely used in China, through interactions between travellers, people have successfully facilitated the transfer of papermaking knowledge across different regions within China and beyond its borders. His invention brought accessibility to affordable writing materials that allowed more people to engage in reading and writing. Paper is also light and portable, easing the problem of being bulky when using bamboo. Papermaking itself created employment opportunities and economic growth, also brought other economic benefits such as ink production and printing. It also helped to expand literacy as more people engage in reading literature, it can empower individuals, promote education and facilitate communication between people. Soon, Cai Lun's papermaking method spread widely in China and all over the world. He was later referred as the "Father of Paper".

But nevertheless, the papermaking process was not necessarily easy and fast compared to the modern papermaking process. As Cai Lun's method required intensive labour, skills, time and machinery, it was never easy to adopt it in today's modern world; therefore, multiple refinements were taken place. For the first one, it was industrial papermaking which modern machinery and technologies are used to produce paper on a large scale, involving traditional processing steps similar to Cai Lun's such as pulping, pressing and drying. It was a crucial part of the modern society as it is the primary means of producing paper on a large scale and meeting the demands of modern society.

After that in recent years, people have started to realize the importance of recycling and sustainability. Recycling technologies have been implemented to reuse paper waste and minimize the negative impact it brings to the environment, also exploring alternative fibre sources to reduce reliance on traditional wood pulps.

And nowadays after many years of refinements and innovations, the papermaking process has a huge turn. Firstly, the fibre preparation is carried out using wood pulp, recycled paper and agricultural residues for the removal of impurities and preparation of papermaking process. Secondly, the fibres are further broken down through mechanical or chemical processes to create a pulp. Thirdly, the pulp is mixed with water to create a slurry, which is then fed onto a paper machine that consists of formation, pressing, drying and finishing processes. Lastly, the finished paper is cut into desired sizes and may undergo additional processes like folding, creasing, or binding, depending on its intended use. Then the paper is packaged and prepared for distribution. The process is much faster and easier with modern technologies, the quality is also much higher.

Therefore, we can see how the modern papermaking process differs from traditional papermaking, for example through the scale of production: traditional papermaking processes are often small-scale while modern papermaking is often conducted on a large industrial scale in high volumes using advanced machinery. Also, traditional papermaking uses fibre sources mainly from nature such as bamboo sticks, but due to environmental issues, modern papermaking uses fibre sources mainly from recycled paper. Moreover, traditional papermaking has no quality control while modern papermaking incorporates rigorous quality control measures throughout the process such as sensors to monitor and adjust parameters, to obtain a favourable paper thickness. So actually as time passes, the papermaking process has also improved to the one in our modern world today.

China has received much criticism in both past and recent years, both politically and culturally. But the majority mostly overlook that the past has a major influence in our current lives. Past inventions are like solid pieces of building blocks; they are the base of technology and improvement. Papermaking has given the rise to the publishing and printing industry which has had a transformative effect on media and literature worldwide. It also plays a vital role in packaging materials for storage which is sustainable in commerce.

Papermaking makes our lives much more convenient and has a huge positive economic impact around the world. Up until this day, Paper is still widely used.

Find a paper and observe closely—can you see the hard work centuries of Chinese has put in behind a single piece of paper?

New Tales of Trains and Railways

G.T. (Ellen Yeung) College, Zheng, Elyn – 14

Inventions contribute greatly to the development of a country. It symbolizes the growth of complexity, promotion of better technology and more consummate living standards. From the ancient times to nowadays, inventions have noted eras in people's minds for every century.

China is a spectacular country which has a rich history of scientific and technological innovations that date back thousands of years. From the first compass and gunpowder to papermaking and printing, these are wonderful inventions that are thought to be impossible in ancient days as historians believe the maturity of technologies that time compared to modern ones are way too rusty, even though people are intelligent and ingenious. Nevertheless, the truth is the citizens living in ancient China used their knowledge and resources to create numerous inventions that astonished the world. To sum up, China's contributions have shaped the world we're living in today.

In recent years, China has been experiencing a remarkable surge in innovation and invention, making significant strides in various fields. Scientists and historians often are interested in exploring and shedding light on China's inventions, no matter whether it is usable in the past or the present, highlighting the country's cutting-edge advancements and their global impact. Today, in this essay, I would like to introduce the great history of trains and railway transport in China to the world.

About 221 B.C., in Tang dynasty, there was an unknown man who made a simple gharry driven by strong horses for his pregnant wife. This gharry is handmade with bamboo sticks and wood pieces. Inside the gharry, there was a cozy area where the person could lie supine in order to rest on the trip. The man's wife showed great affection for the handmade gharry and claimed that it was comfortable and well-designed for travelers. However, she declared that the gharry was jolting rapidly during the trip and nearly made her fall. The man was puzzled but still promised to fix the problem. After a few weeks of researching and exploring, he found out that the inner design of the carriage was not perfectly shaped since the supporting rods didn't act as a force to hold the entire gharry and that explained why turbulence still happened on flat roads. Unfortunately, there weren't any screwdrivers or spanners at that period of time. All the men could use were knives made by seashells and axes made by molten iron. Thus, the man was unable to fix the issue for his beloved wife and was extremely devastated at the end because his wife experienced miscarriage during a long trip on his gharry accidentally.

This was definitely a sad story smeared with grief and suffering. But, the story showed that citizens in the Tang dynasty had already started to invent transportations similar to the railways and trains nowadays in China. They aimed for exactly the same item and application with us!

Surprisingly, the footsteps of railway and train explorations had stopped for a few decades until another child named Cheng Meng appeared to the stage of history. One day, Meng demonstrated how his train model worked. He plugged the strips and the train started moving on the wood railway. This shocked his mother as she had never seen trains before and had completely no idea what it was. Luckily, she didn't scold the boy for doing nonsense, instead, she listened to her boy about how fun the train model was, until the boy told her he wanted to produce this type of transportation for the country in the future. She realized that her child wasn't ordinary and had different thoughts compared to children of the same age. The woman immediately informed her husband and sent Meng to the feudal official. The officers were astonished by his designs as well and used it as the blueprint for the new type of railway

transportation. After ten years, Cheng Meng, had become the first man ever who invented the earliest railway and train carriages.

This story might be amusing as we would seldom use a 10-year-old child's drawing to be the blueprint of a design. Regardless, the officers in the play didn't disdain a child's imagination and applied it onto the discovery. In the end, they fulfilled a child's dream and contributed a lot to the residents living at that time, including economizing time for travelers, local citizens who had to walk from one place to another originally and poor families who aren't able to bear the price of a horse or cow carriage.

To be precise, no significant events happened after the Tang dynasty about railway and train development until the Qing dynasty, approximately seven hundred years later. The first railway and train in China were built during the Qing dynasty in the late 19th century. It was called the 'First Railway and Train' in the view of the fact that its maturity and safety are enhanced and more advantageous than that of the earlier ones in Tang dynasty. Notwithstanding, it got dismantled owing to the refusal of the Qing government. The arrival of this railway and train wasn't utterly because of creativity but was due both to the lack of industrialization and skeptical attitude of the Qing government. Although diverse and prominent personages such as Lin Zexu and Taiping Rebel Hong Rengan called for the building of railways and trains services in China, the conservative Qing court considered steam engines to be 'Clever but Useless' contraptions, and resisted the opinion about railways, which would have rescued the refugees from all over the country to escape from war-footing areas, and the train, which would have carried tons of passengers to a safe place to seek for asylum.

Soon after World War One, the Chinese government recognized the significance of building railways with trains along the settlements and mineral rights because they both facilitated ordinary people and the transfer of military devices and war materials. Therefore, they insisted on developing and upgrading the railways and tried to make connections between them in order to smooth out the routes of the trains. The first railways and trains extension map was then introduced by constructing long-term railways from Shanghai to Nanjing, equipped with one eleven-carriages train per railway. Although the construction process was difficult and tiring, it was worth trying as the official results about railways and trains were successful and indeed, neat and practical.

In the modern era, after numerous times of trying, making errors and correcting them, China has developed an impeccable set of railways and trains routes map. Throughout the whole country, we can see a well-equipped train station in every city. This extremely conduces to the daily life of citizens, not only for military usage in the past.

In 2001, the Chinese government embarked on the construction of high-speed trains on railways. This type of train is expected to have a full speed of 400 km per hour, become a safer transportation, reduced turbulence compared to old trains and exquisite inner space designs to provide comfy trips for the travelers all over the world, not just localized in China. Additionally, the Chinese government announced that they would extend their routes to western areas in China where ethnic minorities live and might towards outer lands such as New Delhi, the capital of India! After all, researching and developing requires time and effort: we shouldn't be harsh and hurrying. I believe that the most fantastic, fastest, safest and most comfortable train and railway trip can be shown to the public promptly and astonish the world one more time.

Ultimately, China's rapid rise in innovation and invention, especially the development of railways and trains, is shaping the world in profound ways. From advancements in transportation and quantum technology to renewable energy and space exploration, China's contributions are transforming various sectors and industries. Unanswerable,

China's journey of innovation and invention is far from over, and the world eagerly awaits the next chapter to be disclosed in its remarkable story.

From the past to modern times, inventions are essential in elevating our living standards. At first, the people in ancient China doubted about the development of trains and railways because of the fact that they need time, effort and large amounts of capital, until a few ordinary people who were brave enough to face the consensus and obeyed his or her own opinion instead of falling into the tsunami of vox populi. At last, they finished an invention but were still questioned by innocent citizens and might even get into trouble. After the washing of time, people gradually trusted the invention and forgot the great inventor who contributed to their lives. Although this process of getting in trouble, going through devastating hours and being forgotten by people might happen, we should still burst our imagination and let our creativity soar in our daily lives, which at least makes our days better and become people who are full of vitality and always interested in discovering new objects and inventing quick-witted inventions!

The Story of Tea

Good Hope School, Ip, Kalam – 12

After pouring boiling water into a cup filled with tea leaves, the water then turns into a bright, beautiful, orange-brown, the steam and aroma arise from the cup and stimulate the senses. This is tea, a fragrant beverage brewed from leaves that captivated people all across the globe. With a wide variety of flavours, its bitter yet soothing taste attracted everyone and has now become one of the world's most-loved drinks. One whiff of it can make you feel energetic, drunk and in love. However, tea was not always how it is now.

Legend has it, on a breezy day, the first Yan emperor Shennong was resting after a long tiring journey with his men. Feeling thirsty, he asked his servant to prepare him some water. The way he preferred his water was rather unusual. He liked his water first boiled and then served. As a herbalist, his water always needed to be cleansed before consumption. Upon serving the water to Shennong, a dead tea leaf carried by wind went into the cup of water the servant was grasping. It was served unnoticed by the servant. The drink had turned into a subtle brown colour that intrigued the emperor. He drank it and found the taste and aroma emitting from the drink quite peculiar yet refreshing. He was taken aback by the sensational taste. A lot of people believe that this was how tea as a beverage came about.

Some people believed that it was discovered as a medicine first before being considered as a drink. Shennong was known for being a great herbalist alongside his role as the emperor. He tasted and tested numerous leaves to see if they were useful for his medicine research but he had fallen sick after consuming 72 poisonous leaves. His condition was fatal, he could've died at any moment. That's when some leaves fell next to him. Even though the stakes were high, he swallowed it regardless due to his curiosity. He then felt more energised so he kept craving for them. He ate more and more until the poison had left his body. It was then that tea leaves were recognised as a medicine and made their debut.

Even though tea was not used as medicine among citizens, herbalists from the Han Dynasty (206 BC – 220 AD) continued to study and enhance the use of tea for medicine. As tea contains L-theanine (an amino acid), caffeine and theophylline (medication for asthma and chronic diseases), it is great for all kinds of ailments. Making it also popular among medical workers.

After the introduction of drinking tea, it took ancient China by storm. It was quickly normalised in high society. The nobility considered rare or expensive tea as proof of their status and wealth. Just having tea was seen as a luxury. The rich also drank tea for energization and peace of mind instead of using it for medical purposes. After years of development, drinking tea became habitual to everyone despite their classes. Commoners drank tea as pleasure rather than proving their rank. It then became proper etiquette to serve tea to guests or visitors upon their arrival as a gesture of respect, or even friendship and affection.

“茶” (pronounced as “tí”) — the old Chinese character for tea then became a household name. As it was used as medication, the character carried the definition of medicine. However, from the Jin Dynasty (265–420 CE) to the Tang Dynasty (618–906 CE), a stroke was removed from the character. It then became “茶” (pronounced as chá) after the simplification and is used to this day.

“The Classic of Tea: Origins & Rituals” (《茶經》) by Lu Yu (a native of JingLing) was a book about what tea was, what it contained, the tools for tea, the methods of brewing tea and its use. It is a renowned book and still considered the best monograph of tea ever written. Even though tea was already popularised by everyone, the book helped it reach new heights to the point where tea became an important part of Chinese history.

The fame of tea carried on to modern times. It spread even wider to foreign countries. In the United Kingdom, tea is consumed on a daily basis by a majority of people across the country. It is preserved as one of their cultural beverages as tea became such an impactful drink to the lives of many. In India, tea has had a great influence on households. They consume it in domestic and official surroundings, with sometimes an addition of milk. Furthermore, it is

regarded as an important part of Japanese food culture. Green tea is often served alongside dishes and tea ceremonies. It substitutes water and adds the finishing touch to a meal. Tea has an effect on all parts of the world, with billions of people drinking it daily, it is now a widely-known beverage.

Tea has a huge variety of kinds such as black tea, green tea, oolong tea, Earl Grey tea, chamomile tea, et cetera. And it all leads to the complicated production of tea. Firstly, tea leaves have to be harvested from *Camellia sinensis* after years of cultivation. Secondly, the harvested leaves have to be dried and processed. There are different flavours of tea because each is processed differently. Some are wilted, some are not. Some are oxidised while some are untouched. That is how different tastes and colours are made. Then people add different ingredients to it to make the flavour unique. Many add lemon and sugar to turn it into lemon tea. Milk is also commonly added to tea, making the drink thicker, hence the given name "milk tea". It is experimented by many, there are countless possibilities on how one can go about tea, making it revolutionary with its diversity. It has the ability to evolve and keep its position as one of the best beverages ever served.

As tea contains a large sum of caffeine, it is used as an energiser. The caffeine in tea makes people forget about their drowsy, tired selves. It helps workers stay on their feet and finish their work. It helps students stay awake during long exhausting study sessions. Consuming tea early in the morning is the start of a fresh new day for a lot of people. The energetic feeling makes people productive and efficient. It does wonders. Therefore, it can be found in many cafés and offices.

To this day, serving tea to guests and visitors remains a common courtesy. It is not a proof of position anymore, but a way to initiate a conversation. That's how the term "afternoon tea" was formed. Afternoon tea is a light meal enjoyed during the time between lunch and dinner, around 3–5 p.m. Hence the name "'afternoon" tea'. The meal is made of snacks such as sandwiches and sweet pastries and rich tea. High-quality tea is the main highlight of the meal, it completes everything with a hint of its bitterness. Long conversations take place during this peaceful and calming gathering. It helped grow tea's reputation and its daily consumption.

Who would've thought that mixing hot water and leaves can create such a sumptuous drink? Shenmng's discovery led to a magnificent custom. Tea is enjoyed all over the world with people thirsting for more. Its luscious taste allured people into its cage. Tea has countless variations, with infinite forms and tastes. I believe tea will become the best beverage in the world, surpassing coffee and alcoholic drinks. It certainly has left me an unforgettable experience. The mesmerising scent is what makes me feel amazing in the morning. It has helped me through my long journey of school which has more to come. Tea has changed many souls and has become engraved in our fruitful lives. It will evolve and turn into something better than ever. The journey of tea has much more to come.

From Ancient Windmills to Modern Wind Power: The Evolution and Development of Wind Energy in China

Hong Kong Chinese Women's Club College, Chung, Pok Ho, Aiden – 12

Wind energy is an important part of China's renewable energy and an important area encouraged and supported by the Chinese government. In recent years, China has made significant progress in the wind energy field and has become one of the largest wind power markets in the world. This article will discuss the development status and prospects of wind energy in China from the aspects of the development history of wind energy in China, the advantages and applications of wind energy technology, the challenges and future development trends of wind energy technology.

1. The development history of wind energy in China

The Chinese government has introduced a series of policies to encourage and support the development of wind energy. For instance, a wind energy development plan has been formulated to provide financial subsidies and tax incentives for wind energy projects. In addition, a dedicated wind energy research and development institution has been established to promote the innovation and application of wind energy technology.

Driven by policy support and market demand, China's wind energy industry has developed rapidly. According to the data from the China Renewable Energy Society, as of end of 2020, China's wind power capacity has exceeded 300 million kilowatts, becoming the world's largest wind power market.

2. Advantages and applications of wind energy technology

Wind energy technology has the advantages of being clean, renewable, and efficient. In terms of application fields, wind power generation is currently in its most mature and large-scale application. In addition, wind energy can also be used in fields such as seawater desalination and heating.

In China, wind power generation has been widely used. Large-scale wind farms have been built in many provinces to provide the local with clean power supplies. In addition, with the advancement of technology and reduction of costs, the application scope of wind energy will be further expanded.

3. Challenges and future development trends of wind energy technology

Although wind energy technology has brought about many advantages, it still faces some challenges in many practical applications. For example, the intermittency and instability of wind power are important factors affecting the stability of the power system. In addition, the construction and operation of wind energy technology will also have certain impacts on the environment.

In the future, with technological advancement and policy support, wind energy will develop into a more efficient, stable, and environmentally friendly direction. On the one hand, technological innovation is used to improve wind energy conversion efficiency, reduce costs, and to improve market competitiveness, on the other hand, wind farm construction and operation management are strengthened to reduce the impact on the environment.

4. Conclusion

China's rapid development in the wind energy field is supported by Government policies and strong market demand. China's will continue to play an important role in the global energy market and the environment.

First of all, China is one of the world's largest wind power markets, and its development and application of wind energy technology plays a leading role in the development of the global renewable energy industry. China's wind energy technology continues to innovate, improving wind energy conversion efficiency and reducing costs, providing important experience and reference for the development of the global wind energy industry.

Secondly, China's wind energy development also plays an important role in promoting the transformation of the global energy structure. Traditional fossil energy combustion produces large amounts of greenhouse gas emissions, affecting global climate change. As a clean and renewable energy, wind energy is of great significance for reducing fossil energy consumption and reducing carbon emissions. China's wind energy development will promote the transformation of the global energy structure and promote the world's development towards a more sustainable energy system.

Finally, China's wind energy development will also promote the sustainable development of the global economy. As energy prices rise and environmental problems intensify, the development of renewable energy has become an important trend in global economic development. China's wind energy development will provide more clean energy supply to the world and promote sustainable economic development.

In short, China's wind energy development has an important impact on the global energy market and the environment. It will promote the transformation of the global energy structure and sustainable economic development, and contribute to the global response to climate change and the realization of sustainable development goals.

The Greatest Inventor in the Past – Huangdi

Hong Kong Chinese Women's Club College, Sze, Hing Lam – 14

In Hong Kong we use Western calendar, but do you know what calendar would the mainland use? Of course, it is the lunar calendar. Our Lunar New Year holiday is based on it. Do you know who invented the lunar calendar? The answer is the Yellow emperor. Do you know about his history and other inventions?

The Yellow Emperor was born in Shou Qiu, about 2704bc. Early on, he lived with his tribe near the Ji River. He then became a farmer.

One of his most important inventions is acupuncture. The Yellow emperor wrote a book called 'Neijing'. It is an ancient Chinese medical text or group of texts that has been treated as a fundamental doctrinal source for Chinese medicine for more than two thousand years. The book has proved influential as a reference work for practitioners of traditional Chinese medicine well into the modern era. The book takes the form of a discussion between Huangdi and his physician in which Huangdi inquires about the nature of health, disease, and treatment. The ideas in the book have a basis in Taoist philosophy. The key to a long healthy life is to follow the Tao, the natural way of the universe. Health and illness are caused by an imbalance of the two basic forces, yin and yang, and by the influence of the five elements (water, fire, metal, wood, and earth) on the organs of the body. The organs themselves were thought to interact in ways that seem physiologically strange nowadays: the spleen "ruled" over the lungs, for example, and the lungs were connected with the skin. There was an understanding of the connection between the heart and the pulse but not in terms of circulation of the blood as understood today. Like elderly said after eating crab, drinking a bowl of ginger red sugar soup would feel much better. This is because crab is a food belonging to yin and ginger red sugar soup belongs to yang. It sounds very different from western medical theory.

Diagnosis was mainly carried out by pulse taking, a complex process involving taking into account the time of day, season, and sex of the patient. Treatments included drugs, diet, acupuncture. There are four diagnosis methods: Inspection, Listening & Smelling, Inquiring and Palpation. If we take a look at westerns, they rely on evidence-based medicine to diagnose and treat symptoms and conditions. Western medicine uses scientifically proven methods to improve your overall health. Huangdi Neijing also stated that for everyone, the processes of the body follow certain natural rules and that health and disease are influenced by natural ageing processes, as well as the environment. All this needs to be understood to ensure accurate diagnosis and specific treatment for a condition.

Do you know how Huangdi Neijing affects our lives nowadays? One is acupuncture. It depends on Huangdi Neijing. Acupuncture involves inserting very thin needles into the body at different locations and depths. It aims to balance the life forces known as Qi that are responsible for different health issues. Other than using thin needles, doctors will also teach patients how to massage the acupuncture points by themselves to alleviate pain. Different acupuncture points have different functions, for example the place between your thumb and forefinger. If you feel a toothache, you can massage there and alleviate the pain.

With Huangdi Neijing, it emphasises the importance of following the natural route. There are four seasons in a year. We should eat in-season foods, not out-of-season food. Also, Huangdi Neijing also mentioned how to condition our body. For example, I was a very weak person when I was primary two, I always caught a cold. I went to the clinic and the doctor just gave me some medicine. After taking them, I didn't turn well. My mum decided to take me to see the Chinese doctor. She finished her checking with the four methods mentioned above. Then she told me the reason why I easily caught a cold is because my body is cold constitution. My hands and feet will always feel cold. That's very accurate! Then she gave me a list of different plants to boil to make a Chinese medicine. After two years, I feel much stronger.

In conclusion, Huangdi Neijing can help condition our body and is one of the greatest inventions of Huangdi.

A Glimpse of Chinese Inventions

Hong Kong Taoist Association Tang Hin Memorial Secondary School, Liu, Cheong – 13

Speaking of a country with a long and prestigious history, China, is undoubtedly on the list. As a nation that was established dating back to 200 BC, its significance is unmeasurable. From the perspective of inventions, let's dive into the innovative nature of Chinese.

Now, take a look at your house. If I'm going to tell you that almost all goods have a shadow of China's invention, would you be surprised? Before I explain, let's meet Ts'ai Lun. He served as a chamberlain in the Han Dynasty. At that time, paper was not invented yet. What our ancestors did was to carve the words on bamboo sticks, which the process was painstakingly hard, and no errors were allowed. Apart from the process of production, the finished product costs the earth. Few people could afford such precious items.

Ts'ai was later in the position of an inventor, having access to the most sophisticated technology and craftsmen in Han Dynasty. Then, he officially declared that the new generation of paper was invented. Using a wide range of common products, from old fishnets to wood peels, the mixture was boiled and dried and eventually, the first 'paper' was invented, which directly motivated the development of knowledge level due to the relatively low price of books. The commitment of Ts'ai Lun was crucial. It is no longer pride and noble's privilege to acquire knowledge. Civilians can also do so due to the reduction in cost for acquiring knowledge. Our ancestors' intelligence to life is unlimited. Adults having a few alcoholic drinks in a delightful day is the icing on the cake. This type of enjoyment would not be possible without ancient China who invented the uses of alcohol. Besides, alcohol is essential for modern medical treatments as it is commonly used for sterilizing during medical operations. Without it, it would be dangerous to carry out surgeries.

However, not only ancient Chinese are great inventors. Nowadays, China has developed a range of digital-orientated products, making great contributions to the electronics industry. For example, the biggest platform of video sharing – YouTube may seem to be invented by foreigner, but it turned out that it was a Chinese who founded the world-renowned platform. Not only is it used by people to pass time, but it also becomes a public access to information. This shows China has great potential in information industry.

All of these elements bring an alluring prospect. What will the Republic of China create in the future? What invention will China make to stir up the world? And what will it exactly be?

Well, it turns out we have the same potential to produce majestic things. Who knows? If so, let's strive together! Maybe you are the next Ts'ai Lun and Thomas Eddison!

Tales of China's inventions: Unleashing Innovation and Shaping the Future

Kiangsu–Chekiang College International Section, Tam, Colin – 11

Our flight was heading at full speed towards Hong Kong. I was reading a book about environmentally friendly technologies when I suddenly realised that the airplane I was on was polluting the earth. Because of this, I thought that if every plane in the world was eco-friendly, we could increase the chance of slowing the process of global warming. When I started to think of ways to improve an airplane, I wondered about putting solar panels on planes to use less fuel... maybe? I guess the key motivation behind all great inventions is to improve our lives. Great inventions can impact the world significantly. China is one of the most sophisticated civilisations in the world and has many ground-breaking inventions, from the ancient abacus and the compass, herbal medicines and health treatments including acupuncture, to more recent developments such as foldable smartphones and TikTok. China has consistently demonstrated its capacity for innovation and advancement. These inventions have not only had a significant impact within China but have also influenced global civilisation, transforming the way we communicate, travel, and live our lives.

The invention of the compass in ancient China stands as a remarkable achievement that revolutionised navigation and exploration. It is believed to have originated during the Han dynasty around the 2nd century BC. The Chinese compass, known as the "south-pointing spoon," initially consisted of a magnetised stone shaped like a spoon that pointed south. Later advancements replaced the spoon with a magnetised needle floating on water, enclosed in a protective case. This ingenious invention allowed sailors and travellers to determine their direction accurately, making long-distance voyages and land exploration more reliable and efficient. The compass played a crucial role in facilitating trade, military campaigns, and cultural exchange, contributing to the development of civilisations worldwide. The Chinese invention of the compass represents a significant milestone in human history, shaping the course of exploration and our understanding of the world.

The abacus, a calculating device that has been used for thousands of years, is a remarkable invention originating from ancient China. While the exact origins of the abacus are not well-documented, it is believed to have been developed during the Zhou dynasty around 500 BC. The abacus consists of a wooden frame with multiple rows of rods, each containing movable beads. By manipulating these beads, users could perform calculations quickly and efficiently. The invention of the abacus revolutionised mathematical computation, enabling individuals to solve complex problems without relying solely on mental arithmetic or written numerals. The abacus played a

crucial role in ancient China's education system and commercial activities, and its influence spread throughout East Asia and beyond. Even in the modern era of digital computers, the abacus continues to be used in some areas, serving as a valuable educational tool and a symbol of China's mathematical heritage.

TikTok, the popular social media platform, was created by a Chinese company . It was first launched in September 2016 under the name Douyin in China before expanding to international markets as TikTok in 2017. The invention of TikTok revolutionised the way people create and consume short-form videos. With its user-friendly interface and innovative features like filters, effects, and music synchronisation, TikTok quickly gained immense popularity, particularly among younger generations. Its algorithmic recommendation system, which tailors content based on user preferences, further contributed to its success. Today, TikTok continues to be a global sensation, influencing internet culture and spawning a new wave of content creators and trends.

I can't believe that my ancestors were intelligent enough to discover these amazing inventions! Maybe I can be as intelligent as them one day! Seeing global climate change getting out of hand, we need to work together to stop it. With my passion in aviation, I want to invent a plane that will be absolutely eco-friendly and efficient.

I might call it the Solar-powered Colin Craft (SPCC), who knows? Even though nowadays, solar panels have not nearly enough power to propel a plane through the sky, although with time, they may evolve to produce enough power. Maybe one day I'll be one of the first Chinese to receive the Nobel Prize for Amazing Scientific Discoveries (or NPFASD)! Maybe I'll even become world famous! The burning of fossil fuels, deforestation, and industrial processes have contributed to the accumulation of greenhouse gases in the atmosphere, trapping heat and leading to the warming of the planet. That is the reason I am fascinated by ancient Chinese inventions. These ingenious and timeless ideas contain the seed of continual inspiration and can shine a light for the challenging path ahead.

The Resurrection of Chinese opera

Kowloon True Light School, Chong, Man Ying – 14

Ladies tossing their silky water sleeves. Male actors somersault on the stage. At times they sing majestically, moments later they whisper softly, tinged with a mournful cry. Through it all they wear their emotions on their faces, literally as well as figuratively, telling an age-old tale that is the legend of Chinese opera itself.

This could well be a theatre performance in Beijing, set to sporadic applause at a day-time show; or a video-recorded display at the Heritage Museum in Hong Kong, designed to preserve the art form that had once had its prime.

But instead, this is a group rehearsal in Buffalo, New York, where Carrie Feyerabend was wowing the audience with her rendition of the Heavenly Maid Scatters Blossoms. Unbeknownst to her, she is also sowing the seeds of revival on alien soil of an age-old tradition that was once music to many ears.

Chinese opera, together with Greece tragic-comedy and Indian Sanskrit are the three oldest dramatic art forms in the world. Xiqu, as it's commonly known, traces its roots back to ancient China, evolving over thousands of years and maturing in the 13th Century during the Song dynasty.

Encompassing multiple art forms including music, dance, martial arts, acrobatic stage movements, costumes and make-up art, the national treasure also has great regional varieties, most notably Peking, Kunqu, and Cantonese, and has attained international recognition as a World Intangible Cultural Heritage.

In the world of Chinese opera, characters can be distinguished by their four basic roles: sang (male roles), dan (female roles), zing (rough or mighty male characters denoted by heavy face paintings) and cau (comic roles). In a sign perhaps that Chinese opera is ahead of its times culturally, there is great gender fluidity too in the art form where male actors are sometimes cast as dan and vice versa, with Mei Lanfang perfecting his trade as one of the most famous dan performers of all times.

Great cultural symbolism is also at play with the costumes and make-up of the actors. The audience can usually tell the characters' personalities apart by looking at their remarkable masks. Red for example represents loyalty, courage, bravery and righteousness; black symbolises forthrightness and honesty; white denotes villainary and wickedness, yellow depicts ferocity and ambition, while gold and silver are reserved for the supernatural, be they monsters, deities, or spirits, to name but a few.

This was what captured many a heart and mind among the Buffalo audience, with one viewer commenting the bright colours were so striking it brought the whole play to life, while another opined that the dresses, in their watery shapes, made for a feast for the eyes.

Heavenly as it may be, Chinese opera has suffered its own earthly fortunes in recent years with its support base rapidly ageing and dwindling, while the nation's young seem enraptured and detained by other pleasures of life, like the Korean pop culture.

While its journey back to the Earth may not have produced as much as a loud thud on the ground as its decline has been foretold for many generations, its reincarnation on foreign land in the last decade has perhaps stunned more pundits and observers alike.

In the United States, much of the revival has been led by Confucius Institutes, with their mission to spread the Chinese language and culture, giving millions a chance to experience first-hand the ancient civilisation.

In some quarters, the cultural artifact has been given a new lease of life, in the way of a mix of Chinese and western opera, that perhaps points a way to its second life in its Chinese homeland as well.

One-log Bridge, a creation of a Chengdu native Fan Pang who tells her own story of earning her Ph.D. in music at the University of Minnesota and later relocating to Pittsburgh, explore the notions of race, culture, immigration and home, in a fusion that blends Chinese and western music, costumes and even breakdancing in a cultural melting pot.

Traditional Chinese music, unmistakable by their sharp tones and loud sounds, are represented by Erhu and Pipa, two instruments perhaps most known to western audiences, while western classical traditions are showcased with their frequent overtures, choruses and ensembles in the play.

What drew the audience in Buffalo to the Chinese tradition though, was also the diverse and culturally-rich scripts and plays behind the opera. Few may understand what 'lok-faa mun-tin bai jyut-gwong' or 'raining petals overshadowing the moonlight' belted out by the female protagonist may mean at first, but upon closer investigation many are surprised by just how much cultural significance those mere seven words carry and the beauty and precision with which they were crafted.

In the immortal play of Floral Princess performed in the Cantonese genre, the tragic love story of Princess Ceong-ping and consort Zau Sai-hin is told in the backdrop of a calamitous fall of a nation, where she wept for how the two destinies are inextricably intertwined. With her city in flames, the Princess recognised she could not bear to live without her husband and committed suicide together in a sad but beautiful end of the tale.

The Cosmos Sword, a classic in the Peking style, tells a long story of how intrigue and feud between two rivals in the Qin dynasty spelt the death of an otherwise happy marriage of a young couple, again drawing its inspirations from the vast well of Chinese wisdom where family and kinship are inseparable from statehood. Both must flourish or perish together.

In the last century, Chinese opera has faced its existential crisis that might seem terminal at the time.

During the cultural revolution, Peking opera was banned as it was denounced as feudalistic and a bourgeois plaything. Many Peking opera artists were publicly shamed, forced into retirement or even killed. At that time, only eight revolutionary operas were allowed to perform, with performers singing to the tune of patriotic tropes.

In this century however, the challenge comes not as much from a bureaucratic plot to airbrush it out of history, but more from the great leap forward in technology that brings renewed threats but also opportunities.

Director Teng Junjie is one that found such an opportunity in the digital era and became the first that brought the Chinese opera to the big screen using 3D technology. In the adaption of the Peking classic Farewell my Concubine premiered in Shanghai in 2015, movie-goers felt not just the pull of the traditional art, but also knives flying off the screen towards them when the actors threw them, making them all the more engaged to the story as an active participant immersed in the experience.

All these have ensured new tales of China's century-old invention are being told afresh every day on Chinese stage, western rehearsal rooms, and who knows, maybe even streaming platforms like Netflix one day. For all that we know, one thing is for sure, Chinese opera, far from being a dying art, is alive and well.

Ceaselessly into the future: A Tale of Chinese space explorations

Kowloon True Light School, Fung, Arianna – 14

Putting the first man on the moon, sending astronauts to outer space, exploring the vast boundaries of the universe in unmanned spacecrafts, these may all be worthy achievements of the human kind in the past century. But what of this century and the next?

Chinese inventions hold much promise in writing the next chapter of human's relationship with the universe, for a Chinese company in December last year became the first in the world to launch satellites fuelled by methane and liquid oxygen, beating its American rival, and tech giant Elon Musk-owned SpaceX to the technology in a breakthrough that could transform the space exploration landscape beyond recognition.

The fact that LandSpace has managed to send three satellites aboard Zhuque 2 Y-3 in a successful lift-off that has seemed to plagued many of its American rival's attempts, not only raised hopes for its commercial applications according to the pundits, but importantly, it has rocket-boosted national pride and proved to the world this century is indeed Chinese.

Indeed, China has emerged as a major player in the field of space, making remarkable strides on the space stage in recent years and establishing itself firmly as a global leader. With its own brand of progressive missions, innovative technology and commitment to scientific advancement, China has successfully earned the world's attention and recognition.

Since launching its space mission in the 1950s from its humble beginnings and cash-strapped origins fresh out of the ashes of the civil war period, the Chinese have nevertheless dreamt big about what it can do to push the boundaries of human knowledge, application and ultimately existence. Chinese persistence and ingenuity plowed on when geopolitics intervened in the 1960s with the Sino-Soviet split resulting in the pulling out of foreign expertise and assistance.

Almost defying the laws of gravity in those political and economic circumstances, Chinese scientists have put missile and satellites as its cornerstone missions, decades of efforts finally culminated in the launch of Chinese first satellite Dong Fang Hong 1 in 1970, parachuting the nation onto its space power status by becoming the fifth country to ever put a satellite in the orbit.

It proved to be a moment of national pride and unity. Since then, China has made further strides in space technology. Notably of course, in 2003, Yang Liwei's successful flight into outer space put China on the map as the third country to independently send humans to space. That same year, China became the third country to achieve 'soft landing' on the moon when it landed Chang'e-3 on the moon surface.

The development of the BeiDou Navigation Satellite System, which provides global location and navigation services, and the discovery of quantum communication satellites with the launch of Micius, the world's first quantum-enabled satellite in 2016, also made it to the history books of satellite developments.

In 2018, China overtook the United States to perform more orbital launches than any other countries on the planet for the first time in recorded history.

But to simply record these numerical achievements would be to overlook the substantial contributions Chinese inventors and pioneers have made to the human race.

Listen to Dumitru Prunariu, the first and only Romanian astronaut, who said: 'The Chinese are among the most active members, showing interest in peaceful and sustainable cooperation of outer space, with a specific emphasis on the Moon and other celestial bodies.'

Bilateral space co-operations have existed for years, with China and Brazil a notable example of long-standing partnership in jointly developing their access to satellite imagery and remote sensing technologies.

With a focus on scientific research and development, China has also extended a hand of friendship and co-operation to the international community. In recent years, the high-profile Belt and Road Initiatives for instance has as one of its priorities the mission to improve satellite information pathways.

The Chang'e program, for example, which made waves internationally for achieving China's first soft landing, has seen the Chang'e 5 mission in which spacecrafts have rocketed back to the Earth with 3.8 pounds of lunar rocks and soil from its Oceanus Procellarum exploration site on the near side of the moon. These achievements have provided extremely helpful data and insights into lunar geology, space weather and future human exploration.

More recently, China has revived international interest and attention on Mars exploration with its Tianwen 1 mission when it successfully arrived in Mars's orbit and located a rover named Zhurong in May 2021. Named after the God of Fire in Chinese mythology, the rover explored Mars for 358 days and found irregular polygon-shaped wedges beneath its surface, thought to be caused by the freeze-thaw cycle of the planet.

But what does the future hold for Chinese space inventors, who will write the next tale of Chinese inventions?

Perhaps that methane-liquid oxygen rocket that blasted off the ground of Jinqian Satellite Launch Centre in Inner Mongolia will hold some clues. Deemed to be less polluting, safer, cheaper and more reusable as a propellant, the Chinese invention has pointed the way to future space exploration that can both slash costs and be environmentally sustainable.

Following that successful kick-off, LandSpace said it plans to operate three launches for clients in 2024 and double that number in 2025.

Other Chinese startups like OrienSpace and Galactic Energy have also launched or lined up satellites into orbit, making the private space industry an increasingly congested and competed arena since the Chinese government opened up private investment in the industry in 2014.

Apart from the growing evidence that China's future space inventions will be private-led, the public sector has continued its focus on spreading the benefits of space advancements for the masses.

Civilian use of Chinese space technology is evidenced by the Hongyan constellation programme, which consists of over 300 satellites aiming to provide global broadband coverage, benefiting remote areas and marine communication. Additionally, China has launched a few high-throughput satellites, such as the ChinaSat series, which is launched to meet the growing demand for high-speed internet, broadcasting and telecommunication services.

Indeed, China's pace on satellite programmes shows no sign of slowing. The country has enterprising plans for future missions, including the Chang'e 6 mission, in which spacecrafts will carry science payloads and satellites from four countries and will return more moon rocks to the Earth, is expected to be launched in 2024.

And so, at the forefront of space explorations, Chinese inventions will beat on, spaceships against the current, defying the ebbs and flows in the arena, borne back ceaselessly into the future.

A Tale of Rice: A Distinctly Chinese Invention

Kowloon True Light School, Ng, Man Hei – 14

The first rays of dawn crept over the majestic silhouette of the Great Wall of China, casting a warm glow upon its ancient stones. As the morning mist gently lifted, a secret whispered through the air, woven within the bricks that stood tall for centuries. The secret lay not in the grandeur of the Wall itself, but in the humble essence of rice, an unsuspecting hero that held this architectural wonder together.

Deep within the walls of the Great Wall of China lies an intriguing secret – the bricks that form this monumental structure are bound together by a unique adhesive known as sticky rice mortar. This remarkable discovery, made by master craftsmen around 500 CE, showcases the ingenious application of rice in the construction of one of the world's most iconic landmarks.

The story of sticky rice mortar begins with ancient craftsmen seeking to enhance the structural integrity of the Great Wall. They experimented with different materials and techniques to create a mortar that would withstand the test of time. Through trial and error, they stumbled upon an unexpected treasure – the power of sticky rice.

Sticky rice, also known as glutinous rice, has been a staple in Chinese cuisine for centuries. However, its adhesive properties were harnessed in a completely different context when mixed with slaked lime. The craftsmen discovered that blending sticky rice soup with lime created a potent inorganic–organic composite mortar that defied the limits of conventional construction.

The sticky rice mortar possessed several remarkable qualities that made it ideal for the demanding task of building the Great Wall. First and foremost, it exhibited exceptional strength and durability, surpassing the properties of traditional lime mortar. This allowed the bricks to adhere firmly together, creating a robust and resilient structure capable of withstanding the ravages of time and nature.

Additionally, the sticky rice mortar demonstrated excellent water resistance. This was a crucial factor considering the Great Wall's proximity to rivers and its exposure to rain and humidity. The mortar's ability to repel water prevented erosion and prolonged the lifespan of the wall, ensuring its endurance for centuries.

The discovery of sticky rice mortar not only contributed to the structural integrity of the Great Wall but also exemplified the deep connection between rice and the lives of the Chinese people. Rice, revered as a sacred staple, transcended its traditional role as food and became an essential building material, intertwining the realms of sustenance and construction.

In Chinese culture, rice weaves itself as an essential thread, embodying the sustenance, unity, and prosperity of the nation. The profound saying 'People regard food as their heaven' indicates the deep–rooted reverence for rice and its pivotal role in Chinese society.

Rice cultivation has been intertwined with the fabric of Chinese civilization for millennia. The fertile plains of China have nurtured vast rice fields, providing sustenance to the population and fueling the growth of communities. The surplus production of rice enabled the development of complex societies, where specialized skills, trade, and cultural exchanges flourished.

Beyond its role as a staple food, rice cultivation spurred advancements in agricultural techniques and irrigation systems. The cultivation of rice necessitated collective efforts, as farmers worked together to navigate the complexity of the land, ensuring abundant harvests and sustainable farming practices. This cooperative spirit fostered social cohesion and laid the foundation for the harmonious development of Chinese civilization.

Of course, rice chose China too. As a plant, rice requires plenty of water and heat and is uniquely suited to grow under wet and hot climates, under which other crops would not stand a chance to survive. With adequate rainfalls and suitable temperatures, the vast plains of southern China became a country of choice for rice to prosper and thrive. The more arid environment of the north however is not destined for rice, grains like wheat and millet are cultivated in rice's stead.

Reinventing nature, the Chinese people harnessed their wisdom and craft and brought vast quantities of rice northward to feed their fellow countrymen. The Grand Canal and other waterways were constructed to facilitate the transport of rice, with the rice trade turbocharging the manufacturing and commercial industries across the country too. Between 1000 and 1800 CE approximately, China became the world's most populous country with an economy that was the envy of the world, thanks in large part to the part rice farming played.

Rice can also make and unmake history. The absence of rice has often precipitated famine, rebellions and eventually the rise and fall of kingdoms. In feudal China, dynastic cycles often coincided with agricultural calendars and fortunes. The notorious Yellow Scarves Rebellion in the Eastern Han dynasty for example, had its seeds in the periodic flooding in the Yellow River which destroyed crops and harvests, leading to widespread hunger and uprisings. The peasants' revolts were also stirred up when the natural disasters and shortage of rice production were linked to a loss of the heavenly mandate of the emperor.

The deep symbolic meaning of rice can also be found in Chinese traditions and rituals, representing abundance, fertility, and good fortune. Throughout the various stages of life, rice accompanies important milestones, carrying cultural significance and conveying well-wishes.

During ancestral worship ceremonies, rice offerings are made as a way to honor and pay respect to ancestors. These offerings symbolize gratitude for their guidance and blessings, and serve as a way to strengthen the bond between the living and the departed. In weddings, the act of tossing rice has long been a cherished tradition. As the newlywed couple exits the ceremony, guests shower them with rice, symbolizing fertility, prosperity, and happiness in their future life together. This gesture expresses well-wishes for a fruitful and harmonious union.

Rice-based delicacies play a central role in Chinese festivals, further emphasizing the deep connection between rice and cultural celebrations. The Mid-Autumn Festival, for example, is marked by the sharing of mooncakes—sweet pastries with a rich filling, often made with rice flour. These round treats symbolize unity and the gathering of loved ones under the full moon. Similarly, the Dragon Boat Festival is associated with the consumption of zongzi, pyramid-shaped rice dumplings wrapped in bamboo leaves. These delicious treats are filled with various ingredients and steamed or boiled. They are traditionally eaten during the festival to commemorate the ancient poet Qu Yuan and ensure protection against evil spirits.

In the grand tapestry of Chinese inventions, the story of rice stands out as a testament to human ingenuity and the symbiotic relationship between culture and innovation. The application of sticky rice mortar in the construction of the Great Wall of China exemplifies the resourcefulness and adaptability of ancient Chinese builders. Meanwhile, the cultural significance of rice as a symbol of sustenance, unity, and prosperity reinforces its fundamental role in Chinese society.

As we gaze upon the Great Wall, let us remember the humble rice grains that hold its bricks together, reminding us that even the smallest of elements can wield great power. The new tale of Chinese inventions, interwoven with the essence of rice, invites us to appreciate the wonders that arise from the fusion of tradition, creativity, and the everyday miracles that surround us.

From Boyhood to Enlightenment: A Monk's Path of discovering China's Greatest Invention

Kowloon True Light School, Tang, Hiu Yan – 14

In a small village nestled among the lush mountains of ancient China, named Qilin, lived a curious and compassionate young boy named Zhang Wei. From a tender age, Wei possessed a deep sense of wonder and a yearning to understand the mysteries of life. His heart was filled with a desire to bring peace and happiness to all beings.

One day, while exploring the nearby forest, Wei stumbled upon an old and weathered scroll hidden beneath the roots of a sacred tree. Intrigued, he carefully unrolled it and discovered that it was a part of the Heart Sutra, a sacred Buddhist scripture.

As Wei read the profound teachings of the Heart Sutra, a awe-inspiring sense of clarity and peace washed over him. He realized that he had found a treasure that held the key to unlocking the path towards enlightenment. Determined to understand its wisdom and share it with others, Wei embarked on a transformative journey finding the rest of the Heart Sutra.

Wei sought out the counsel of wise monks and dedicated himself to the study of Buddhism. He immersed himself in the learnings of compassion, wisdom, and mindfulness. With each passing day, Wei's understanding deepened, and his heart blossomed with love and compassion.

Wei's journey to wisdom was of course not without difficulties, the well-trodden path was laid with countless failures before him, but Wei's persistence and grit helped him weather many storms.

One evening, he was alone in the temple reading the Heart Sutra and deciphering its deep meanings late into the night, when a gust of wind swept through the deserted hall and extinguished the candles on his desk. Sensing the approach of something dark, Wei held forth to his beliefs and recited the Heart Sutra in his heart.

Despite hearing the echoes of his family back home and other voices in his head, Wei never yielded to the temptations, believing that those were but hallucinations designed to make him deviate from the path he was on. And so many a night passed, and he grew stronger by the day, fortifying his mind with the teachings of Heart Sutra and emptying his earthly desires in substitution for spiritual ones.

Believing he was ready for the tasks ahead, Wei proceeded to Xizang, which was believed to be the location where the remaining portions of the Heart Sutra were kept. Despite the difficult journey of trekking across half of China and passing through mountains and deserts, Wei never gave up on his aim of becoming an enlightened monk like XuanZang.

Also, under the tutelage of the wise Master Xuan, Wei's teacher, he delved deeper into the intricacies of the Heart Sutra. Master Xuan recognized Wei's extraordinary potential and nurtured his innate qualities of wisdom and compassion. He taught Wei the importance of practicing meditation and cultivating a mind free from attachment and delusion.

Wei arrived at Xizang with the help of the abilities Master Xuan had taught him. There, he discovered the remainder of Heart Sutra. In addition, he visited the hallowed Potala Place, where he was able to view the palace's renowned collection, which included the pagoda housing the Dalai Lama's bones.

As years passed, Wei's reputation as a devoted and insightful practitioner spread far and wide. People from distant lands would come to seek his guidance and wisdom. Wei became known as Dalai Lama, a revered figure in the Buddhist community, at last realizing his long-held dream of becoming an influential master like XuanZang.

It was then when he realized life was not about seeking, but about giving; not about chasing some glory and titles, but about spreading joy and happiness; and that China's greatest invention in his mind was not the Heart Sutra or even Buddhism, but what lies in the human heart, the ability to perceive, to cherish and to love.

Wei spent his days spreading the teachings of the Heart Sutra, inspiring others to cultivate inner peace and compassion. He taught his followers the importance of seeing through the illusions of the material world and embracing the interconnectedness of all beings.

After years of hard work preaching across China, Wei has finally decided to return to his hometown — Qilin. Under Wei's guidance, the village flourished. The people learned to live in harmony, treating one another with kindness and respect. They cultivated gratitude for the present moment and found solace in the practice of meditation.

Wei's teachings transcended boundaries, reaching the hearts of people far and wide. Kings and emperors sought his counsel, and his influence spread throughout the kingdom. His message of love and compassion resonated deeply with all who encountered it.

In his later years, Wei dedicated himself to writing commentaries on the Heart Sutra, intending to make its profound teachings accessible to all. His writings became renowned throughout the Buddhist world, serving as a source of inspiration for generations to come.

Wei's impact extended beyond his teachings. He established monastic centers and schools, where young disciples could immerse themselves in the study of Buddhism. He emphasized the importance of integrating the teachings into daily life, encouraging his students to embody compassion and mindfulness in every action.

Through his teachings and writings, Master Wei touched the lives of countless individuals. He transformed the way people perceived themselves and the world around them. His presence was like a calming breeze, soothing the hearts of those burdened by suffering and guiding them towards liberation.

When Wei's time on Earth came to an end, his teachings continued to ripple through the hearts and minds of countless individuals. His legacy lived on in the hearts of his disciples, who carried forth the torch of his wisdom and compassion.

Centuries later, the story of the boy who found the Heart Sutra and became a master of Buddhism remained a cherished tale. It served as a reminder that wisdom can be found in the most unexpected places, and that a single individual, driven by genuine compassion, can transform the lives of many and leave an indelible mark on the world.

The world continued to be blessed by the teachings of Master Wei, an eternal testament to the power of the Heart Sutra and the transformative potential within each and every one of us. And so, the journey towards enlightenment and the pursuit of inner peace and compassion continued for all who sought the path.

The Brilliant Inventor and the Light of Civilization – Zhuge Liang

Macau Pui Ching Middle School, Liu, Kai Yan Eric – 18

When it comes to famous figures in ancient China, Zhuge Liang, who lived in the Three Kingdoms period, has left an indelible mark on Chinese history. Because of his brilliant talents in the military and politics, he is renowned at home and abroad and has already been an enduring legend. It is in the work *Romance of the Three Kingdoms* that he distinguished himself, and people know him well because of it. However, in addition to being a sophisticated politician and military strategist, he also has another status that is rarely known by people – he is also a daring and outstanding inventor in Chinese history.

Steamed buns

Zhuce Liang invented steamed buns when he led his army across the Lu River south. While they were preparing to cross the river, suddenly a gust of wind blew up and the sky was soon covered with dark clouds. According to the words from an old man who had lived in the local area for a long time, Zhuge Liang learned that these strange phenomena were because the souls of the soldiers who died on the battlefield could not rest in peace, and forty-nine heads needed to be sacrificed. Instead of killing innocent people, Zhuge Liang made a brilliant decision by ordering his soldiers to slaughter cattle and sheep, chop them into meat fillings, wrap them in flour, and make them into round shapes that looked like skulls. Zhuge Liang named them “Steamed Buns” because in ancient times, southern barbarians called Man Tribe were often killed to be offered to God as sacrifices, and the Chinese pronunciation of steamed buns is similar to “Man”. Now steamed buns have become one of the indispensable staple foods on the Chinese table.

Sky lantern

Kongming lanterns, also known as sky lanterns, have been used as lanterns to make vows to God in Chinese traditional festivals. It is a lantern made of paper with a candle or torch inside that can be lit and taken off into the air. The origin of the creation of Kongming lanterns can be traced back to the Three Kingdoms period when Zhuge Liang, also known as Kongming, the prime minister of the Shu Kingdom, resisted the attack of the enemy the Cao Wei Kingdom. During the war, the Shu army was in great trouble and very close to losing. In order to boost the morale of the soldiers, Zhuge Liang asked the soldiers to make a batch of special lanterns. The lanterns were made of paper with torches inside. Then, at night, Zhuge Liang ordered all the soldiers to light lanterns together and then release them into the sky together.

When these lanterns rose into the sky, they created a beautiful light and magnificent scene in the night sky which inspired the soldiers greatly. They believed that these lanterns would convey their wishes to God, bringing good luck and victory. In the end, the Shu army successfully defeated the enemy’s attack. What a remarkable invention Zhuge Liang made! Since then, the Kongming Lantern has become a symbol of good luck, good wishes and victory, and people have begun to fly the Kongming Lantern in some special festivals and celebrations.

Three great inventions in the military

In the military, Zhuge Liang is best known for his three major inventions: the Eight Formations, the Wooden Ox and the Flowing Horse, and the Zhuge repeating crossbows. So how powerful are these three great inventions?

Let’s talk about the Eight Formation Diagram first. This is a formation method improved by Zhuge Liang. It is a battle formation and troop deployment diagram in ancient wars. Because of the invention of the Eight Formation Diagram, the wars directed by Zhuge Liang never failed. Zhuge Liang’s Eight Formation Diagram also played an

essential role in the later generations. For instance, during the Western Jin Dynasty, the famous general Ma Long made a sidecar based on Zhuge Liang's Eight Formation Diagram. In the end, he defeated tens of thousands of the Xianbei army with only 3,500 people. It is said that the famous Tang Dynasty general Li Jing also created the "Liuhua Formation" based on Zhuge's Formation. Until the Northern Song Dynasty, many generals were still studying Zhuge Liang's Eight Formations.

Next comes Zhuge Liang's invention of the wooden cow and the horse. It is a transport cart improved by Zhuge Liang. Before his invention, an ordinary transport cart during the Han Dynasty could carry 10,000 kilograms of grain with six people to push it. During Zhuge Liang's Northern Expedition, when transporting grain through the plank road, it was impossible for six people to push the cart together because the plank road was too narrow and easy to collapse. Therefore, Zhuge Liang improved the transport cart by reducing its size. Although its carrying capacity was only 2,000 kilograms, only one person was needed when moving it, making it more convenient and safer to transport grain. Zhuge Liang's improvement reflects his philosophy of not pursuing the biggest, but the most suitable.

Last but not least, let's talk about the Zhuge repeating crossbows. Compared with ordinary crossbows, the Zhuge repeating crossbows can shoot ten arrows at a time, whose force was much like a gun in ancient society. The Zhuge repeating crossbows had always been popular in ancient China. In the Ming Dynasty, some people imitated Zhuge Liang's design and developed the Zhuge Wuhou Crossbow. The Zhuge repeating crossbows are also very famous abroad even nowadays. For example, the Chinese army in the game "Age of Empires 3" uses the Zhuge repeating crossbows as weapons.

Zhuce Liang's inventions are far more than the above five, as well as the improvement of fire wells, tube-sleeved armor, Dongshui fields and other astonishing inventions. The famous Chinese writer Lu Xun once commented on the character Zhuge Liang in the novel *The Romance of the Three Kingdoms*: "His intelligence is too extraordinary as a human, almost like a supernatural being." This remark reflects that the image of Zhuge Liang in historical novels is unreal and divorced from reality, but the real Zhuge Liang in history, as a military strategist, politician, and most importantly, outstanding inventor, is rooted in human beings. In real history, he was not a supernatural being who lived high above. Instead, he was greatly concerned about the desirable needs of the common people and his soldiers, making every effort to achieve them. It is this kind of Zhuge Liang that can be passed down through the ages. The extraordinary wisdom he showed in his inventions has been shining from ancient times to the present and will last forever.

Chinese Inventions' Impact on Human's Daily Lives

Macau Pui Ching Middle School, Lau, Hao Ieng Madison – 14

Over the past years, the Chinese have created numerous inventions that have significantly changed humanity. As a Chinese, born and bred, I've heard about The Four Great Inventions ever since I was a toddler. They are well-known around the globe and include papermaking, gunpowder, printing, and the compass. From these four ancient inventions to today's digital society, China's clever inventions have shaped our daily lives. Not only did Ancient China create astonishing inventions such as the crossbow and silk, but until modern times, this country is still developing at an insane speed and rushing towards big hopes for the whole world.

Many may not know this, but the Chinese invented an everyday item. Long ago, people used chewing sticks to keep their teeth clean. These were branches or sticks from certain plants that were chewed until frayed. That was until the toothbrush, a necessary item for proper hygiene, was invented about 800 years ago in China. The first toothbrush was made with bamboo and stiff hog bristles. Some variants used animal bones instead of bamboo sticks. The bristles on the brushes were sourced from hogs living in northern China because the cold temperature provided firmer bristles. The toothbrush first spread to Europe through travellers before swiftly reaching the rest of the world.

Nowadays, everybody needs cash to survive. Can you imagine only using heavy coins as your currency? Believe it or not, people used metal coins for a long time until paper money was finally introduced in China in the Song dynasty during the 11th century. However, the concept appeared in the Tang dynasty back in the 7th century. Merchants, tired of cumbersome copper coinage, sought a more convenient substitute. They came up with the idea of credit notes, but these only lasted for a limited period and had less value than the promised amount. However, these notes did not replace the use of coins. In the 11th century, however, the government ran short on copper for coin striking, eventually issuing the first series of paper money based on credit notes. They soon observed the economic advantage of this and started massively printing these incredible papers. In the 13th century, these became well-known in European countries. "All these pieces of paper are issued with as much solemnity and authority as if they were pure gold or silver..." commented Marco Polo, a European traveller when he first discovered paper money. Until the present, paper money has still been widely printed and used worldwide.

China's development did not just stop there, either. In modern times, the use of virtual payment systems is prevalent. In China, Alipay and WeChat Pay are used by a large number of citizens. Taobao, a prominent online shopping platform, has pioneered this development. Over the years, this platform has gathered 1.3 billion users. An astounding number, right? Additionally, China has made huge advancements regarding drones. DJI, founded in 2006, is a Chinese technology company that has established itself as a global leader in the drone industry. DJI accounted for around 76% of the world's consumer drone market as of March 2021. These technologies are something many of our people are proud of. Not only that, but this technology is slowly but surely affecting our daily lives. Every day, numerous people use WeChat and Alipay to even buy the most basic but necessary items or supplies. If they ever shut down, these users will no longer be able to use their mobile phones to purchase items. They would have to use cash, a more inconvenient choice. DJI's drone camera technology is used widely around the globe for music, movies, and many other filming projects. It has also been used in police and military forces. Imagine a music video with amazing graphics and scenes. Without the technology DJI created, the quality will never be as lively as it is today. Instead, we would be watching less amusing music videos. The police and military would not find their targets as quickly as they do now.

We already have such sophisticated and stunning technologies, but it definitely does not end here. Every month, day and even minute, China takes steps on the road to help its own people and the entire globe. Beyond the points mentioned, an increasing array of technologies continues to grow and develop. One of the most well-known is Artificial intelligence facial detection. Without a doubt, China has been improving its economic and social landscapes through these technologies. It is up to us to imagine what awaits us in the future, but it is almost certain that China will not disappoint us.

New Tales of China's Trends of Inventions

Po Leung Kuk No. 1 W. H. Cheung College, Lam, Sheung Chit – 14

From the past to the present, China's inventions have been known far and wide. In the past, explosive gunpowder allowed people to celebrate festivities with booming excitement, while materials such as paper led to the easy distribution of written knowledge. Nowadays, supersonic bullet trains and energy-efficient solar panels have given China an edge in the technological sector.

In this essay, I will talk about the spirit that drove Chinese inventors to come up with innovative ideas and speculate on what incredible invention might appear in the future.

Firstly, the reason that ancient Chinese people have been so successful in their endeavours is because of their diligence and persistence. It is said that paper-making was invented by a man named Cai Lun in the Han dynasty. Noticing how other writing media were inconvenient and fragile, he painstakingly tested numerous different materials to come up with a perfect recipe for paper. Since the process included long periods of soaking and drying, it would take immense manpower and time to test just one batch of paper. Despite this, Cai Lun persevered and experimented hundreds of times before he finally succeeded. The resulting mixture consisted of mulberry and several common fibres in China. It was easy to do calligraphy on it, and it slowly made its way into different cultures around the world.

As far as modern inventions are concerned, TikTok is a perfect example to illustrate how Chinese inventors can be adaptive and catch up to the latest trends. Tiktok, being a website jam-packed with short-form content, suits the needs of the young generation perfectly. Its compact interface and built-in features allow users to express themselves freely, and easily. In addition, advanced AI sorting algorithms show people the content they are most interested in, which is why people sometimes find themselves browsing the app for hours at a time. All those functions were meticulously created by Chinese programmers, which goes to show how China is always ahead of the curve.

Combining hard work and creativity, Chinese inventions have impacted the world time and time again. With endless upcoming possibilities, it's only natural that China uses these traits to its advantage. In my opinion, that can only mean one thing – space cities!

Scientists around the world have been interested in space since the Egyptians first saw the Moon. At present, China is one of the countries with a dominant lead in the astronomical field. Having witnessed China's rapid development, I believe that entire space cities are possible in the coming century or two. As sea levels rise and extreme weather events such as hurricanes become more frequent, it's only natural that we would like to expand outwards to avoid our demise. On the other hand, space cities have stable conditions and can be regulated more easily than cities on Earth, which is why building one is of everyone's interest.

The cities would orbit around the Earth like the Moon. It would look like a huge ring that spins on its own to create a centrifugal force. In other words, artificial gravity would be created to mimic the conditions on Earth. Perhaps solar panels could be the city's main energy source, while plants and animals could be grown in greenhouses via sustainable methods. Moreover, telescopes would be a common household item because people no longer have to worry about light pollution, hence they could view planets and stars far beyond the cosmos. As a result, people would become more interested in space.

Thousands of satellites could monitor spatial conditions and warn the citizens of potential disasters. They could also link up with the satellites orbiting Earth, providing some comfort for those who are homesick. Events such as meteor showers and comets have always intrigued space enthusiasts, so witnessing them freely in a space city would be a dream come true.

People can access space more easily if they're already in space. Leisure activities would include spacewalks and space sports. Could you imagine playing basketball in zero gravity? How would it feel like to dance if you were weightless? The possibilities truly seem endless, don't they?

In its early development stage, space cities might require regular imports on Earth. After all, most cities cannot produce all the resources they need by themselves. However, as the city grows in size and increases in efficiency, it could provide a sustainable living environment. After that, we could set our sights on travelling to other planets in our solar system, and eventually travel to different galaxies!

While it may sound far-fetched, many scientists have proven that interstellar travel is possible given enough time and effort. Now, you may ask: How is China a suitable contender for building space cities?

It all comes down to perseverance and innovation. While the conditions in space are vastly different from those on Earth, I believe that space cities could be built from the ground up in a matter of decades. The incredible efficiency and diligence of Chinese people would give them an advantage in completing the city, while their resilience would allow them to bounce back after every hardship.

China's creativity and novel ideas are also paramount to the future of this space city. Scientists have always been keen on doing experiments in space. Usually, these experiments yield surprising and fruitful results. Now, with an entire colony in space, combined with their innate ingenuity, China could be light years ahead in scientific development, so long as they establish this space city.

Another reason why space cities are such a perfect match with China is because Chinese people have always been inspired by the moons and the stars. Ancient poems and texts dating back thousands of years regard the moon as a vessel for the authors' joys and sorrows, while household tales about the moon goddess Chang'e are known by every Chinese child as soon as they learn how to walk.

Given China's distinct cultural customs and the people's commitment, I'm sure that space cities could be an invention exclusively developed by China. Don't you agree?

When people get exposed to new ideas and different cultures, innovation soon follows. The past and present experiences of Chinese inventors taught me lessons about diligence and creativity, while also inspiring me to come up with inventions of my own. Is it possible that China will build space cities in the future, or is such an idea too outrageous? However, one thing is certain – as long as we think and act, our imaginations could be transformed into reality.

New Tales of China's Trends of Inventions

Po Leung Kuk No. 1 W. H. Cheung College, Chung, Sze Ting – 14

Nowadays, all the things we use in our daily lives are invented by the people in the past. Most of us are familiar with inventors like Thomas Edison and Albert Einstein because their inventions and discoveries have influenced us very much. But what about Chinese inventors? We might know Cai Lun who invented the paper and Zhang Heng who created the seismoscope. However, we know foreign inventors more but fewer Chinese inventors. Therefore, I am going to introduce two Chinese inventors in both the ancient and modern.

To begin with, Sun Yunqiu was an inventor in the Ming dynasty. He was born in 1628. Even though he died at only 34 years old, he had plenty of achievements in creating eyeglasses and mirrors. He wrote a book about mirror history and some records of optical instruments. Sun Yunqiu's mother was knowledgeable so he was inspired to learn and explore mathematics in the categories of mensuration, calculation and geometry. However, Sun Yunqiu was forced to stop learning since his dad died when Sun was about 13 years old. Later, he continued to learn and thus he was successful.

Sun Yunqiu invented different lenses for eyeglasses to correct short-sightedness or other eye problems. People might be short-sighted or long-sighted. They might have astigmatism or presbyopia. These are the common eye problems in Ming. Sun learned everywhere to find teachers in Hangzhou and finally, he could grind lenses to make various types of lenses in order to correct eye problems and to help people. Eyeglasses were rare in the Ming dynasty and they were expensive. His creation of many kinds of lenses affected the industry of eyeglasses greatly in Suzhou and later in China. The glasses became cheaper and more and more people could afford to buy them.

Besides eyeglasses, Sun Yunqiu invented a wide range of mirrors. For instance, there are simple telescopes, magnifiers, microscopes, etc. Different mirrors have different uses. People could observe different images when looking at the mirrors. People could see images far away by using telescopes, small images by using magnifiers, and much smaller images by using microscopes. They were intriguing. Sun wrote a book recording the history of mirrors and lenses including his inventions. Although the mirrors didn't have a great influence at that time, people read the book and created the mirrors according to it and therefore the mirrors exist now and we can use them.

In my opinion, Sun Yunqiu wasn't known by many people but he gained a victory. First of all, the skills to grind lenses were developed by him in China. His teacher learned the study of light from the Western people and taught the Sun about it. After talking with other investigators, Sun mastered the skills to grind lenses. He put a substantial effort into improving eyeglasses. I appreciate that he was willing to research for it instead of doing simple jobs such as being a teacher in school and working for the government. The development of eyeglasses in China was important too. Because of his accomplishment, eyeglasses became more common so we can buy a pair of glasses at a reasonable price now. In addition, there were only monacles at that time and Sun made bicle which is most of the eyeglasses we see today. A pair of glasses is more convenient and safer. It is also more suitable for Asians as we can't hold a piece of glass easily. His inventions of lenses and bicycles made us buy a pair of eyeglasses to let us hold the glasses with less difficulty and see things.

On the other hand, Sun talked with other researchers and learned from teachers, which showed that he was humble. He was eager to learn so he looked for teachers. If he studied by himself without consulting anyone, he wouldn't have had such great achievements. He would not be known by us now too. Discussing with researchers, Sun acquired knowledge and was inspired by them. They studied light together so Sun benefited from their

discussion. I think this was because the power of a group of people is much larger than the power of an individual. “Unity is strength.” When there is teamwork or collaboration, anything can be achieved. Furthermore, Sun stopped learning at 13 because of his dad’s death but he learned again later. He needed to take care of his mum and himself so he worked and sold things to make money to live in that period. He persisted in learning and wasn’t affected by the incident. Therefore, I think he was a remarkable person.

Not only did Sun Yunqiu invent lenses and glasses which help us nowadays, but also his good qualities which we can learn from him. For example, he was modest and we can also learn from his perseverance. Having similar qualities, another inventor I want to introduce made a great success too. She is a modern inventor called Tu Youyou.

She was born in 1930. She is a malariologist and pharmaceutical chemist. She has invented medicines to cure diseases. Studying Chinese and Western medicine, Tu Youyou found artemisinin and dihydroartemisinin, which are used to treat malaria. In the 20th century, malaria was widespread in more than 100 countries in tropical and subtropical zones. 150 million to 300 million people died in the 20th century alone. Her medicine can decrease the patients’ mortality rates of malaria, saving millions of lives in South China, Southeast Asia, Africa, etc. Moreover, she got several prizes for the achievement. She got the Nobel Prize in Physiology or Medicine jointly with two other people in 2015. She is the first female in China to receive a Nobel Prize in any category. Apart from this, she also got the Lasker–DeBakey Clinical Medical Research Award and the Warren Alpert Foundation Prize.

Tu discovered a chemical compound which can heal malaria. This saved many people at that time. Her discovery was not a piece of cake. When she was studying in secondary, she suffered from tuberculosis, forced to stop her academic. After two years, she was getting better so she started to go to school again. She studied at Peking University and graduated in 1955. She worked from that time including the period of the Vietnam War. Before discovering ways to treat malaria, Tu studied a way of using herbs to treat schistosomiasis. It is related to Chinese Medicine. It was like a preparation for finding artemisinin. Since malaria killed many people in China, Tu was invited to join the research group to find a drug to cure malaria.

The major contribution of Tu is artemisinin. Her mission was to carry the team to find out anti-malaria drugs. By 1969, scientists from all over the world had tested for 240000 compounds but nobody succeeded. At the age of 39, Tu thought she could test Chinese herbs because they would not appear in foreign countries. She collected over 2000 herbs and summed up 640 prescriptions. She wrote all the details in *A Collection of Single Practical Prescriptions for Anti-Malaria*. Experiencing 380 failures and improving extraction methods, Tu finally accomplished the mission. She then developed the medicine and it was used for treating malaria in 1972. The exploration rescued over a million patients of malaria, influencing the world deeply.

She got recognition from the World Health Organization for the anti-malaria drug. The Nobel Prize was also given to Tu in 2015. Not only did her dedication save lots of people infected by malaria, but also gave a huge development in Chinese medicine. As she has been a researcher and scientist in China, she made a great impact on medical studies. She was a teacher too and she brought up a few master’s graduates and one doctor’s graduate. Furthermore, she wrote theses about medicines which favor future generations and push evolution. Scientists can read them so as to know the research of artemisinin and may get some other ideas for other investigations. Bai Chunli, the President of the Chinese Academy of Sciences said Tu Youyou’s award is the pride of the Chinese scientific sector. This shows that Tu had significant success and influence on society.

Although her achievements were not recognized by China as her contribution, she didn't care much about it. She continued to do research and teach students at school. This shows that she didn't care about fame and fortune. Being selfless, Tu still helped to develop medicine for China in 2019. She wrote many articles about artemisinin—her major

achievement. This allows future generations to read them and know more about science, mainly medicine. In my point of view, she is keen on learning and exploring nature science too. She has been learning and researching almost her whole life. She persevered with it. She was 93 years old this year and she helped the future generation in developing the research on artemisinin. She was still energetic enough to do that, which made me respect and admire her. I hope I will be so healthy and love learning like her at a later time.

In conclusion, Sun Yunqiu and Tu Youyou both have different qualities that we can learn from. From humility to perseverance, we can adopt them not only in learning but also in working and developing hobbies. If we have these qualities, we may achieve our goals in a particular aspect or even life goals. Additionally, their inventions which helped all people around the world, made me feel impressed. They gained glory for their country. Thus, people may have a good impression of Ch

A Better Air Conditioner?

Po Leung Kuk No. 1 W. H. Cheung College, Lau, Lok Tung – 13

“Shanghai has experienced a great disaster; coastal water levels have begun to rise. It is now speculated that the flood may soon submerge the entire town. Citizens are asked to be mentally prepared and flee as soon as possible.”

The news reporter on the TV brought bad news, and every citizen is trying to leave as soon as possible. Although it is only a false alarm, since then the temperatures in China have started to rise sharply, and soon this phenomenon could extend to the world.

Global warming is getting more serious. Surely, global warming is a problem that cannot be ignored. Climate impacts are already harming health, through air pollution, disease, extreme weather events, forced displacement, pressures on mental health, and increased hunger and poor nutrition in places where people cannot grow or find sufficient food. People usually use air conditioners to keep themselves warm. However, the problem will become more serious if people continue to use air conditioners because this will cause more emissions of greenhouse gases. This condition first started in areas such as Chongqing, and Wuhan – the hotter areas. Then this started to spread to other areas. Even some traditionally cool areas started to experience this condition. Soon after, this is happening all over the world.

So people use air conditioners even more often, which causes the problem to become even more serious. What is more troublesome is that as the economy develops, market prices increase. This is undoubtedly a heavy blow to those low-income people's lives. All of the most famous institutions and organizations in the world started paying attention to this issue. They hired famous inventors and scientists to solve this problem but they did not get good ideas: planting more plants, and decreasing the use of electronic products which may cause harm to the earth. Some of them even started to plan to move to Mars. However, they know that is ultimately impossible; through the advancement of time, scientific knowledge and technology have developed well, but it is still not enough to make this idea come true.

“ We must find a good idea to solve this problem! Those citizens are starting to hold demonstrations! They said if we don't do something, they will give us a piece of their mind! ” Appeasing citizens is not an easy task for big countries, so how could ordinary countries cope with it?

“ I pay money for those so-called successful researchers. For them to be failures?” The presidents are helpless. They did whatever they could but all of those efforts are useless in the face of this problem.

Different countries want to stand out among others and propose solutions. China is no exception. In fact, in the past, China's scientific level was not as good as other countries. However, with their unremitting efforts, they developed successfully. As we all know, China's temperature is not unified. Some districts are always hot but some are always cool. That makes China's different districts' cultures have big differences. There is a disadvantage in joining the scientific community later.

However, those scientists finally found a solution: a machine which freed gases that could offset the gases emitted by the air conditioners. This invention still has a lot of flaws but can do enough to mitigate the problem.

This invention soon becomes known globally. Every country rushes to buy it.

This machine can exhaust nitrogen, oxygen, argon, carbon dioxide etc. gases which are the main components of the atmosphere. Plants can also do these but their efficiency is too slow. The machine can exhaust higher purity gases and its efficiency is even faster than plants. The most important thing is, it can be made by humans and does not take a long time so it is much more convenient than planting plants.

With this machine, the problem may be solved, but the machine still has a flaw – while it is operating, it will emit 20% of greenhouse gases from the total. Greenhouse gases have a bigger impact than those other gases. Although the problem might be solved in several years, people still need to endure the heat.

As more and more machines are produced, with the greenhouse effect problem eventually being addressed, the temperature problem is still not fixed completely. However, there is hope as the ratio between the impacts of these gases and greenhouse gases is getting closer and closer.

New Tales of China's Inventions

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China has a lot of inventions that you may be familiar with, such as the ones in ancient times, with printing, gunpowder, the compass and papermaking being the four most popular, with it still being used today. Even though people of later generations associate the best inventions with ancient times, China still has a lot of world-changing inventions now, such as the quantum experiment satellite, synthesized crystalline bovine insulin, USB drive, VCD player, portable charger, AI glasses to help blindness, new merchandising way with blockchain technology, 3D printing building technology, advanced advertising materials and internet car. In this passage, some of their ideas, usage, details, and how they change our daily lives will be briefed below.

Firstly, the quantum experiment satellite, named “Micius” (named after a Chinese philosopher and scientist who is credited as being the first person in history to conduct optical experiments) was launched into orbit in 2016. It was operated by the Chinese Academy of Sciences as well as ground stations in China. The satellite will make communication networks much safer, as it has a special laser which has several different properties, one of which is known as “the observer effect”, which basically means that if the satellite were to encode an encryption key in that quantum state, any interception would be obvious, making the satellite change the key, rendering it useless. So that is why this invention will make the network more secure and virtually uncrackable.

Secondly, the synthesized crystalline bovine insulin is a medical achievement made by a Chinese group of people in 1965, as it is the first time humans have been able to synthesize living matter. Insulin is used to help people who have diabetes, which was previously a feared disease that did not have a remedy and therefore led to many deaths, but it was made from the pancreas of animals and humans, making it not ethical. So, the Chinese group took it upon themselves to make insulin using genetic engineering, preventing more animals from being harmed in the way of convenience and moral ethics.

Thirdly is the USB drive. Before the 4G or 5G network was widely spread, the USB drive was and still is something we use in our day-to-day lives, with it being able to hold enormous amounts of information despite its tiny size and being easy to transport anywhere. Most businessmen, students and teachers in secondary schools and universities use it to transfer data, projects and homework. Such a revolutionary product was made by a China company named Netac Technology Co Ltd, which invented the first USB flash drive in 1999 and got a patent in China. Who could have guessed that this invention would be so practical that many spy movies would use it to steal or transfer information? Do you remember the thrilling scenes where the data is almost transferred and the loading bar is almost complete, but if the spy stays any longer, they will get caught?

The next one is the VCD player. VCDs were revolutionary as the only way to view movies at home before was using expensive Laser Discs or bad quality VHS cassette tapes. Back in the day, the price of Laser Discs was very high. Most people could not afford to buy Laser Discs, so they rented Laser Discs from the video rental store, needing to return them after a short period of time. The VHS cassette tapes were also not a good way for long-term storage, as the magnetic tape would degrade over time. Besides going to the cinema to see a film, the VCDs were a great way to store the movies cheaper, better and longer. Thus, the invention of VCD players in China in 1993 gained popularity very quickly in Asia, leading to fifty million VCD players sold to Chinese households, showing just how accessible it is, it also revitalized the film genre, leading to all the great movie franchises we know and love today. The spread of culture, knowledge, and communication has benefited the entire world.

The fifth one is the portable charger, which is an essential tool in our everyday lives. Nowadays, everyone has a mobile phone, but when your phone needs charging while you are not at home, you can just charge it on the go with a portable charger. In 2001, the first portable charger was invented by a Chinese company named Pisen. Over the years, there have been more sophisticated and compact designs invented with much better battery life that lasts longer. The ways of use are expanded to charging notebooks, game consoles or even cars, especially in cases of emergencies. The portable charger rental business also widely spread in concentrated areas with masses of people, such as cinemas and shopping malls.

Moreover, some scientists found that blindness is feared by most people because they could have it when they get related illness, especially when they are old. The main problem is that in most cases, it is incurable, so that why Angeleye is an extraordinary invention. Angeleye is a pair of glasses for the blind, which uses Artificial Intelligence and sensors to help them navigate, similar to those in autonomous cars. They can also recognize money, read texts and recognize colours. This impressive invention was made by Feng Xin Peng, a Chinese inventor, a near impossible achievement as the glasses only weight a mere 45 grams, a small object that is able to fit inside your pocket, but to the blind, it is like a whole new world.

Furthermore, technology can be connected to anything nowadays, even fashion. Fashion has now been paired with the world of blockchain technology, it can be applied so that we can verify if an item is genuine. The principle is that the new technology puts unique identity code on the blockchain. This technology focuses on four areas, namely anti-counterfeiting, supply chain management, asset management, and client experience. It can further be applied to marketing, the merchants can put a QR code on the label, when scanned, it tells its 'story' to consumers on their phones, which can save manpower as well as upgrade shopping experience.

Relating to construction technology, building a house can be more efficient, safe and "green". With housing demands getting high, no matter in China and most of East-Asian countries, such as Hong Kong and Japan, construction needs more and more money plus manpower. The rough construction environment may bring severe diseases to workers leading to high costs of medical expenses and even death. Thus, one of the biggest 3D company in China, Winsun, made a 3D printer for houses. According to the founder, Ma Yi He, constructing houses is painful and inefficient for human workers. "Why can't building houses be easier like how car and planes are manufactured by machines?" he says. The invention allows opportunities for new designs that would be challenging to achieve with conventional construction methods, reduces costs and wastes as it uses less materials, and has fewer constructions errors as it uses machines instead of manpower.

The next one is related to new advertising methods. In science fiction movies, we see commercials or information on glass billboard and windows, which is unbelievable and stunning. But now fiction has become reality as now Augmented Reality can be applied to glass, making ordinary windows turn into space for advertising. Inspired by Tom Cruise's action movies, the founder of Netcars Technology, Chen Jia, launched research dedicated for nanotechnology, which lead to the design of AR optical technology, new telecommunication electronics, and new material science. Meaning other than advertising, the company can also produce smart vehicle information systems, smart helmets, and smart glasses, suggesting that the fictional paradise of a future, may not be so fictional after all.

Last but not least, we have the "Internet car". In our everyday lives, we spend a lot of time travelling, especially in cars, so a Chinese company, SAIC, and an Alibaba group company, Banma, made the world's first internet car in 2016. It uses 4G and Wi-Fi to connect with the internet to provide entertainment and give accurate information to the driver as well as passengers. It has its own operating system which can do anything that you can imagine, such as flying a drone, controlling household appliances, talking to other cars, finding a gas or charging

station, restaurants and even booking cinema tickets without using your mobile phone. It paved the way for the development of modern cars, especially in electric cars. This marks the beginning of the digital transformation across the automotive industry.

As you can see, China has a lot of inventions, no matter in the past, present or future. They also have a wide variety, ranging from space technology development, medical treatment, human civilization inheritance, culture disperse, construction, marketing and transportation. We are looking forward to see how China will change the world with its new inventions, hopefully they can treat the untreatable, such as cancer and Alzheimer's, in the future.

China's Intangible Contributions: the Invention that Resides in Our Hearts

Shanghai American School Pudong Campus, Jin, Sophie – 14

When you think of what China has invented for the world, what do you think of? Most people's minds would automatically flash images of China's four great inventions: smooth paper, the versatile wood block printing, deadly gunpowder, and the guiding compass. Some people would think of China's more modern inventions, including the lifesaving artemisinin, and the advanced high-speed train. Nonetheless, all these inventions share one similarity: they're all visible, tangible objects. It's only natural that they're the most well-known of the bunch. They get a lot of media coverage and are present in people's everyday lives. However, there's an invention that importance rivals all of those. While it cannot be seen, touched, or heard directly, it plays a significant role in shaping society both in the past and today.

So, what is this intangible invention? This invention is a way of living, a way of ruling, a way of interpreting what it means to be human. It's the deep, meaningful, Chinese philosophy. There were multiple branches of Chinese philosophy, and it evolved a lot as the dynasties went by. Though one of the eras where Chinese philosophy flourished was the Spring and Autumn period to the Warring States period of ancient China. Contrary to expectations, while this time was replete with chaotic wars and deadly battles, it was also an age of massive cultural and intellectual expansion, later being known as the Golden Age of Chinese philosophy due to its wide range of thoughts being freely discussed. Soon many of these thoughts formed together into schools, teaching students to pass on their principles. This phenomenon is known as the Contention of a Hundred Schools of Thought. While there were several thought parties present in this period, there were three main beliefs that dominated the era, and have lasting significance up to today.

The first main belief was Confucianism. Confucianism originated from the philosopher Confucius, who emphasizes ethics, good behavior, and moral character. These are achieved through the virtue of *Ren*, meaning humanity, leading to more virtuous behaviors including respect, altruism, and humility. One renowned example is the quote of "Do not do unto others what you would not want others to do unto you," otherwise known as the golden rule of Confucianism. Confucianism also entails the concept known as filial piety, or in other words, one's devotion to one's family. This devotion can be expressed through numerous ways, such as worshipping your ancestors, obeying your parents, and the usage of metaphors referring to family like using the term "son of heaven" to describe the emperor. Family was the most significant group in Confucian principles, where it states that devotion to family can only strengthen the society it belongs to.

Not only is family a crucial aspect of Confucianism, but education is also a key element. Confucianism states that a virtuous character is formed through education. One of its ideas is that people are good at heart, though they may have strayed from the appropriate forms of conduct because of a lack of quality education. Confucian rituals were designed to nurture this respectful attitude and create a sense of belonging within a group. Confucianism puts great emphasis on these qualities because it could affect the world through the concept of cosmic harmony. It's believed in Confucianism that all natural disasters and conflicts are the product of straying from the ancient teachings. All these ideas are compiled by Confucius' disciples into a book called *Lunyu*, which is studied by later dynasties and even today!

The second core belief was Taoism. Unlike Confucianism, Taoism doesn't promote rigid rituals and social order, but rather encourages living in harmony with *Tao*, or the universe. This includes maintaining a balance in many things. For example, one of the core principles of Taoism is the belief in balancing out the forces of yin and yang, which represent matching pairs. This is why there are many contrasting ideas like tall and short. These show that the universe is connected, and nothing stands on its own. Another concept of *Tao* that emphasizes balance is the idea of *Qi* energy. All living things have *Qi*, which is the body's way to maintain homeostasis. It's believed that anything with balanced *Qi* is healthy, with good endurance and a clear mind. It's also said that *Qi* energy is what guides

everything in this universe, but it's different from that of a god. However, Taoists do worship gods, and there's one key figure that was given legendary status equivalent to that.

Lao Tzu was usually known as the icon of Taoism, or the representative of Taoism, particularly for the book he wrote called the *Tao Te Ching*, meaning the way and its power. It contains a collection of quotes depicting Taoist thoughts and action that guides Taoist believers. However, several historians doubt the existence of Lao Tzu due to the lack of evidence, claiming that the *Tao Te Ching* is a gathering of quotes from many authors in China's early dynasties. Nonetheless, whether Lao Tzu truly existed or not, what's indisputable is his profound influence in Taoism.

The third and last major belief was legalism. Legalists believed that all humans are more likely to commit wrongful acts than right ones since they're motivated by their own benefit and hence require a strict legal system to control their impulses. For example, according to the tenets of Legalism, if it's in one's best interest to murder another person, then the other person would be murdered. Therefore, to prevent such incidents from happening, the ruler must enact a legal system which would direct people's inclination to serve their own benefit towards the good of society. As a result, the person who wants to murder their neighbor is prevented doing so by the law but would be permitted to kill others by joining the military. Through this method, the person's selfish intentions are satisfied and the nation benefits from a committed soldier. In this way, the population of China was controlled. It was a stark contrast to Confucianism and was developed by a philosopher named Hanfei Zi.

Historians think that Hanfei Zi was a student of Xunzi, a Confucian reformer who abandoned the Confucian principles that humans were inherently good, stating that if they were, they wouldn't need to be taught how to be good. Hanfei Zi extended on this aspect of Xunzi's ideas as well as combined it with early writings of Shang Yang, a statesperson, to develop the philosophy that, since humans are naturally evil, laws to control humans are necessary for upholding the structure of society. It's an effective form of governing at the time as China's populace had experienced war for centuries, hence enacting a legal system to control people's detrimental impulses was the best way to deal with the chaos. It's why not only did legalism tackle everyday situations, but also addressed how one should conduct themselves during wartime. This is why the Qin state, the state that practiced legalism first, ended up being the victor in a long bloody war against hundreds of nations, which comes to show that with harsh circumstances, come harsh policies.

Despite being invented thousands of years ago, these three philosophies are still relevant to the modern world, whether they be used in policy making, or just guiding how we behave in general. For instance, legalism is practiced in many nations today as there are many punishments in place for people who commit crimes, such as imprisonment and the death penalty. However, this philosophy is also balanced out by ideals of Confucianism to prevent the people from uprising due to the harsh system. Confucianism is also relevant in other aspects of society like business. Ma Yun, the co-founder of the Alibaba corporation states that even a large-scale company cannot last long in the market even if they know nothing about the principles of Confucianism. Taoism also connects with modern society as it talks about the idea of "integrating with the whole," which is the solution for many of our problems. On an environmental level, the reason we are facing climate change and pollution is because we only consider our own individual needs rather than taking the whole picture of the effects of our actions. In society, when we allow differences in race and culture to separate different humans, it easily leads to conflict and alienation. On a personal level, by rejecting the bad parts of ourselves, we are prone to stress and depression. Therefore, by integrating oneself with the whole picture, these issues could be prevented. By utilizing the three main philosophies, we are continuously improving our society, and are speedily advancing.

While it's hidden from the eye, it's evident that these three main philosophies are having a significant impact, whether it be in the past, or in our present society. So, next time you're thinking about China's great inventions, don't forget to give the philosophers some credit!

"Chinese Inventions: Compasses"

Shanghai Singapore International School, Albert, Austin – 12

Before the compass was invented, explorers had no other choice but to look at the sun, moon and stars for directional guidance. Magnetic rocks were originally utilized by the Chinese to distinguish north and south. Later on, this method was integrated into the compass's design. Nonetheless, the original compasses, were not intended for use in navigating. Originally developed in China in the fourth century BC, crude compasses helped people arrange and balance their surroundings and lives by literally showing them the path acted as direction markers, mostly employed by the Chinese to create order and harmony in their surroundings and daily life. The magnetic compass was first created by the Chinese, which you already know, in the eleventh century A.D., and a century later it was used throughout Europe and the Islamic world. In the end, the magnetic compass's most important application was as a maritime navigational tool in the late Middle Ages.

Well, when the Compass was born, it wasn't perfect, it evolved and got better each time, from a spoon in the middle of a plate to a fully functioning piece of mystical magic! The first Chinese compass was a spoon in the middle, it was called Sinan, it did have some disadvantages, it was heavy and not easy to carry, for a start and if the surface was not very smooth, the spoon may not rotate due to too much resistance. They later replaced the spoon with a magnetic needle, the invention of the magnetic needle led to the discovery of magnetic declination. Later on, some people also replaced the spoon with a fish, made from steel or wood or a tortoise. Then, a new type of compass known as a Luopan was created by fusing an index plate with a magnetic needle. Did you know that the origins of this wonderful creation may be traced back to the Chinese art of Feng Shui? This art is founded on the idea that the arrangement of objects within a building can have an impact on several elements of life, including harmony, wealth, and health. Feng Shui masters might use the magnetic needle's spin to determine the best place or time for a particular person or subject. The significance of Feng Shui has diminished over time, yet the compass has gained recognition as a national intangible cultural treasure. In Wanan Ancient Town, Anhui Province, there is even a museum dedicated to compass culture. Then after that, it was improved to the compass which we know today, thanks to the first compass created by the Chinese, now we can have our voyages to be more "trouble-free." Well let's go in detail. An old Chinese compass had a magnetic needle that pointed in the four directions: north, south, east, and west.

The Chinese compass was based on a pivot point or a basin of water and had an iron needle that was magnetized. As the needle aligned with the Earth's magnetic field, it would naturally point in the direction of the magnetic north pole. Because it made it possible for sailors and travelers to

navigate even in the absence of stars and other markers, the compass was essential for navigation. In addition to being necessary for navigation, the compass was also a component of feng shui, the traditional Chinese practice of arranging spaces to promote harmony and wealth. There is no set time in written history when the compass became, however authentic appraisals put its underlying improvement during the Han line (between the second Century BCE to the first Century Promotion). During this time of old Chinese science and arithmetic, the investigation of earth sorcery (which they called geomancy) was dynamic.

The first compasses were based on this directional navigation principle. At first, there were named as 'south-pointing spoons', as the lodestone needles were molded into spoons with their 'handles' pointing toward the south, and could turn effectively over a smooth surface. It is hazy who thought of the compass, yet they were basically helpful in navigational undertakings during the Tune line particularly in 1040 Promotion, particularly by the Chinese military. The loadstone was subsequently supplanted by iron needles in the sixth 100 years, and the compass was subsequently kept in Europe in 1190 Promotion. Its overall design was changed to a parallelogram in the 17th century to make it easier to balance its pin, and Gowin Knight created the Knight compass in 1745. Rather than iron, the compass presently involved steel needles that could hold their attraction for a more drawn out time frame.

Due to the fact that it was simultaneously going through the Age of Exploration and industrialization, this improvement was crucial to European dominance and colonialism.

To sum up, the history of compasses and their revolutionary purposes make a huge difference to the world we live in, they have evolved through various stages and has made a great contribution and significance to our daily lives and who knew that it all started from just a spoon and a plate to something we call “wonder.”

"Gunpowder"

Shanghai Singapore International School, Arun, Krithik – 13

Gun powder was invented by Chinese Taoist alchemist about 1000 A.D... It is generally believed that gunpowder spread to Europe during the Mongol Empire of 1200–1300 A.D... The interesting fact is that Chinese used this mainly for firecrackers while the Europeans created cannons and guns and dominated China in the mid–1800s. Gunpowder was invented by accident by a Chinese alchemist of the Tang dynasty while trying to discover a portion of immortality. He accidentally invented saltpeter, the main ingredient of gunpowder. Upon further experimentation, saltpeter was a combination of charcoal and sulphur. Saltpeter is now called as potassium nitrate. Gunpowder was first used to make fireworks during festivals and some major events. It was later used as an explosive substance in the military, such as cannons and fire–arrows. Cannons and muskets were used in the Song dynasty. Song military engineers found gunpowder to be helpful in warfare, leading to the development of early types of rockets, cannons, bombs, and mines. Gunpowder was first use in warfare as an incendiary, or fire producing, compound. Small packages of gunpowder wrapped in paper or bamboo were attached to arrows and lit with a fuse. Bombs of gunpowder mixed scrap iron would be launched with catapults. Another use was “fire–spurting lances”, which were a kind of flame–thrower using bamboo or metal tubes for their barrels. It is also used to make fertilizers, pigment and is known to treat burns and other injuries. Gunpowder is used to fire projectiles and to stop other explosives. It can also be used for signalling. I think gunpowder is very important because it is used in wars for making explosive weapons such as fire arrows, rockets, explosives, fire lances, naval bombs, hard shell explosives, hand cannon.

Gunpowder is used now also because it is also used in medicine. For example, to make skin grafts, medicines, and as a painkiller. It is also used to make fertilisers, pigments, and is known to treat burns and other injuries. Gunpowder is used to fire projectiles and to detonate other explosives. It can be also used for signalling. Fireworks is being widely used in the world which is made by gunpowder. It is also used in fireworks making apparatus. Many things have been invented by using gunpowder.

Gunpowder is also known as black powder. It is used in fireworks to produce colourful smoke. And gunpowder is the earliest known explosive. It is also used in mining and process such as cement production and iron smelting. I think gun powder is the most important invention of China because, there are many wars going in our world now. Gunpowder made men equal on the battlefield as a bullet would affect all the years of training a knight receives while making armour and cavalry less effective therefore preventing the knights, lords and kings from ruling through force as gunpowder made warfare and rebellion both easier to occur and harder to crush. And gunpowder is extremely versatile. It is used to clean fireplaces and make paper or cardboard. It is cheap, easy to store, and easy to light. But in the other hand, millions of people have been killed by using weapons in wars which is not good. All people would prefer peace. Gunpowder is volumetrically inefficient. Depending on the grade, granulation, and loading density, gas production is only 45 to 55 percent of the total output. The remaining inert solids, largely dense smoke and fouling. Gunpowder is bad because it releases smoke when it burns, which creates air pollution. The smoke also contains chemicals that are dangerous to inhale.

I think that the invention of gunpowder was great. As it is used in wars and also used for many purposes such as, fireworks, weapons, medicines, mining, road building, colourful smoke, skin grafts, painkiller, fertilizers, pigments, pyrotechnics, injury healer, cement production and iron smelting. In the other hand, it causes people to die because of wars and harmful smoke is produced which leads to pollution and it is dangerous to inhale.

So, I can say that gunpowder can be used, but it should be used for only main and important purposes. And it should be used limitedly.

"Paper Making and the History of Paper"

Shanghai Singapore International School, Chen, Yung Cheng Justin – 13

Paper making was invented by Cai Lun in 105 CE, at ancient China. Paper making was a great success in human history, paper helped people a lot, dynasty before Han dynasty, people were having to have to carve words onto animal bones to record the events that have happened in that time, and people have thought another way to record history, using bamboos. They start to write words on bamboos, or maybe write poems, this is easier to record things than to carve words onto animal bones. But then they have found another problem, the bamboos are too heavy if you want to carry lots of them to another place. So, during the Han dynasty, Cai Lun had invented paper making.

Early Chinese paper was made from pounded and macerated plant fibers, primarily from mulberry bark, hemp, and bamboo. The fibers were mixed with water, formed into a pulp, and then flattened and dried to create thin sheets

Papermaking techniques gradually spread from China to other regions through trade routes and cultural exchanges. During the 8th century, papermaking reached Central Asia, including regions like Samarkand and Baghdad. The Islamic world played a significant role in refining and disseminating papermaking knowledge. The availability of paper contributed to the flourishing of Islamic scholarship, calligraphy, and book production.

Papermaking arrived in Europe during the 12th century through various routes, including the Islamic world and the Iberian Peninsula. The first paper mill in Europe was established in Xàtiva, Spain, around 1150 CE. European paper production initially relied on rags and textiles as the primary fiber source. The spread of papermaking technology contributed to the growth of literacy, book production, and the Renaissance.

Over time, papermaking techniques evolved and improved. In the 18th century, the invention of the paper machine revolutionized the production process, allowing for faster and more efficient papermaking. The paper machine mechanized the process of pulp preparation, sheet formation, and drying, leading to increased production capacity.

The Industrial Revolution in the 19th century brought significant advancements to the paper industry. Wood pulp, obtained from trees, emerged as the primary raw material for papermaking, replacing rags and other plant fibers. In the late 19th century, the development of the Kraft process, a chemical pulping method, revolutionized paper production by enabling the use of lower-cost wood fibers. The 20th century witnessed further innovations in papermaking technology, such as the Fourdrinier machine and continuous papermaking processes.

The paper industry has faced environmental challenges due to deforestation, energy consumption, water usage, and waste generation. However, the industry has made efforts to promote sustainability, including responsible forestry practices, recycling programs, and cleaner production methods. The use of recycled paper and the development of alternative fiber sources, such as agricultural residues and non-wood plant fibers, have also contributed to sustainability.

Today, paper remains an integral part of our lives, serving various purposes in communication, education, art, packaging, and more. The history of papermaking showcases the ingenuity and cultural significance of this versatile material, highlighting its impact on human progress and knowledge preservation.

The Impact of WeChat on China's Society

Shanghai Singapore International School, Li, Haoxuan Jackson – 12

The quick post-war development of the world saw humanity with mind-blowing technology in the 21st century. In the modern century's fast paced, interconnected world, few technological innovations had a greater impact on people's lives and their cognitive interactions than the Chinese application WeChat. WeChat had not only been a ground-breaking success but had revolutionized the communication and mentality of the Chinese society. This essay will dive deep on how WeChat as a Chinese platform influenced the social dynamics and payment systems of not only the present world, but humanity for generations to come.

Historians constantly argue over the negative effects of presentism and how arrogant perspectives of people in the modern day can result in horrible outcomes. However, no matter how phenomenal these ancient inventions of China can be, people in the present day fail to realize their impact. On the other hand, the recent success of the virtual application, WeChat, made by Tencent, made people acknowledge the technological wonders of China's virtual realm. But just praises might contribute to an imprecise comprehension of the feats that WeChat had accomplished to accelerate the development of human society and technology. This essay strives to further refine the knowledge over WeChat.

WeChat had emerged as a combination of many referenced platform features: that of WhatsApp, Facebook, and Twitter. All these elements had resulted in a transcending of traditional psychological boundaries, changing people's attitudes and perceptions to a whole new application that encompasses a vast range of functionalities, including instant messaging, voice and video calls, a social feed, and a video/clip program.

Though WeChat's unparalleled combination of various social aspects is remarkable, it doesn't only contain these advantages of the interactions systems — it had created an impact greater than simple convenience; it had reshaped biases and perspectives of China. This had transitioned China's definition as a country that heavily relies on its agricultural output to a state that is industrialized and independent. Before WeChat's launch, China's invention had been defined as the compass, paper, and printing. Though these inventions prove to be pivotal for the present-day, this had inspired the feeling that China had been falling behind throughout the world's technological advancement. But WeChat's groundbreaking success had reorganized people's perspectives of China, and thus proved to be one of China's most successful inventions.

Additionally, WeChat had formed a different digital citizenship than before. With the cultural phenomena 'WeChat Moments', people had started curating their personal image and selecting aspects of their daily lives to present themselves at their best to their society. By constructing these platforms for virtual projection of one's identity, WeChat had made its first steps towards reconceptualization of digital citizenship.

WeChat had also successfully redefined the way normal individuals complete their financial transactions. By doing so, WeChat had not only proved to be one of the most influential social media platforms; it had also made itself a payment utility that is most crucial to the lives of billions of Chinese people. With this revolutionary act, WeChat had rendered physical wallets and credit/debit cards obsolete for many. With WeChat Pay, WeChat is opening opportunities for future development of regular, day-to-day utilities. This had created a new market for integrated mobile payment services.

Furthermore, though people often neglect the implications that WeChat had brought to Chinese culture and generating of economic booms, there is a definite need to state it here. With WeChat Pay, China had opened itself to e-commerce platforms and businesses which facilitated an explosion of online retail, streamlining the purchasing process. WeChat had also proved itself vital to the growth of celebrities online, creating an enlightenment within China in which art is expressed in more diverse ways. With these subcultures and communities, WeChat had successfully started trends all over China, proving itself instrumental to spreading China's unique pop culture.

The creation of WeChat as a Chinese platform had reverberated throughout China's recent technological transformations. Its groundbreaking success changed not only people's interactions and forming connections, but had also fundamentally changed financial transactions with WeChat Pay. Moreover, it had influenced the cognitive perceptions of people, redefining China's worldwide definition, and revolutionizing the means of digital citizenship. As WeChat continues to expand beyond the borders of China, it is evident that, with its profound impact on cognitive reorganization and payment systems, WeChat will continue its feats that will establish a better society for generations to come.

"Cold Fusion"

Shanghai Singapore International School, Lin, Jed – 12

Cold fusion is simply nuclear fusion around room temperature. Cold fusion was first discovered in 1989 by two electrochemists, Stanley Pons and Martin Fleischmann. The material that they chose to fuel their attempted fusion reaction was Deuterium. These two soon quickly made the headlines, claiming that they had produced fusion at room temperature, in comparison to the beliefs of most scientists that fusion only occurred at extremely elevated temperatures (15 million °C in the center of the Sun).

To understand the concept of cold fusion, it is important to first grasp the principles of nuclear fusion. Nuclear fusion is the process by which two light atomic nuclei combine to form a heavier nucleus, releasing a large amount of energy in the process. This process is the source of energy in the sun and other stars, where the extreme temperatures and pressures enable nuclear fusion to occur. Cold fusion, on the other hand, gives the idea that nuclear fusion reactions can happen around room temperature, with extremely high and extreme temperatures not being needed at all. On the other hand, in Stanley and Martin's experiment, they used electrolysis to make a deuterium gas by taking apart water molecules that were heavy. However, other scientists had difficulty in replicating the experiment results of Stanley and Martin. Without consistent and reproducible results, the idea of cold fusion has not been accepted by the scientific community, therefore they dismissed it from their minds. Despite recent progress and renewed interest in cold fusion research, fundamental challenges and uncertainty remain. Due to the fact, lack of dependable and forgeable evidence from experiments on cold fusion reactions persist to be a crucial obstruction. Furthermore, the conceptual understanding of cold fusion is still in its infancy, and many attributes of the reaction composition and state of affairs are still poorly understood.

The benefits of cold fusion have a wide range of possible advantages. Cold fusion processes are thought to produce little to no radioactive byproducts at all and present a low danger of runaway reactions (controlling nuclear explosions), in contrast to conventional nuclear fission reactions, which generate radioactive waste and carry the risk of meltdowns and catastrophic mishaps. If the research of cold fusion has succeeded, it would bring great news not only to the scientific community but also to the entire world. Energy problems worldwide would be solved in just a snap of a finger. It would bring an almost infinite energy source to the world for use. If the United Nations summit discusses this technology and the countries gave approval, it would end serious environmental problems too. Numerous problems like global warming and carbon dioxide emissions would end in the blink of an eye. Not only does cold fusion end these problems, but it also cuts minor problems caused by the major ones. Apart from the fact that it is an almost infinite energy source, it is also a renewable energy source. However, one problematic aspect of cold fusion is, in the process of producing energy, it as a matter of fact consumes more energy that it essentially produces. On the other hand, the bright side of this is that in actual fact utilizes hydrogen, the element that has the greatest amount of inside of the universe. But the scientific community paid no attention to this and started their on work on hot fusion instead.

An example why I believe China can succeed in finding the secret to cold fusion in the future is that they have already done a project that is somewhat similar to cold fusion. On December 4th, 2020, China's "artificial sun" project was activated, and it sustained a nuclear fusion reaction for more than 17 minutes in total. The superheated plasma reached an estimated 126 million degrees Fahrenheit (roughly 69999982.222 degrees Celsius)— that is almost five times hotter than the sun, which gives out an extreme ten thousand degrees Fahrenheit (5537.777778 degrees Celsius) at the surface and around 27 million degrees Fahrenheit (around 14999982.222 degrees Celsius) at its core. This was the closest that anyone had reached cold fusion since Stanley Pons and Martin Fleischmann in 1989. Deputy director of Institute of Plasma Physics, Hu Jiansheng said "It is of great significance for China to build a new consumption energy system dominated by green and low-carbon energy and fulfill China's commitment of having

CO2 emissions peak by 2030 and carbon neutrality by 2060.” The future fusion reactor will be able to create energy just like the Sun, making use of tritium and deuterium that are in abundance to give a steady stream of clean energy. The dedication of China to continue to create sustainable energy such as solar energy and using windmills to manipulate the strong gusts into making energy for them.

China’s technological advancement has surprised the world countless times. From inventing paper and gunpowder to making fusion reactors, even helping the mathematical community by inventing the first ever calculator: the abacus. The world of technology seems to be in the palm of China’s hand. The architectural feats of China are also great, making the Great Wall of China, which is roughly 21,200 kilometers (about 13173.07 mi) long, spanning from the Jiayuguan Pass in Gansu in the west to Hushan mountain in Liaoning in the east. It really seems that China will continue to strive for eons to come.

From Fiction to Future

Shanghai Singapore International School, Susanto, Stella Marcheline – 12

What if the ancient Chinese had never invented paper or the compass? How different would our world be? Books would be harder to make without paper to write on, and exploring the world would be tougher without compasses to navigate. We would live in a world where ideas spread slower and frontiers remained uncharted. It would be a dark and stagnant world.

China almost risked falling into this similar world in the early 2000s. By then, the nation was a giant of manufacturing industry who could make anything. But there was a catch: it could only make things based on other nation's ideas. Of course, this was not enough for China. They wanted to invent and they wanted to innovate. Just like in the ancient times, when they gave the world paper and the compass.

China was pursuing for the next “paper and compass” of this era, but they struggled to generate new ideas. Perhaps they had grown too reliant on other nations' ideas and forgotten how to come up with their own. They wondered how other nations did it.

In search of inspiration, China then turned to the inventors at Apple, Google and Microsoft and discovered that these people shared an experience—they all had grown up reading science fiction. These stories took them to see futures they would never otherwise imagine. Once they had glimpsed these futures, they returned to the present with ideas on how to make things better. And then, in time, with skills and resources, these ideas were transformed into reality.

Inspired by the value of reading science fiction, China hosted its first-ever state-sponsored science fiction convention in 2007, gathering renowned science writers, artists, scholars, and innovators from around the world to inspire the next generations to pursue careers in science, technology, and the arts.

In the years that followed, China had metamorphosed from a workshop into an innovation hub. Startups worked on sci-fi inspired concepts like flying cars, nanorobotic surgery, and an artificial sun, while the students eagerly studied AI, robotics, and renewable energy. News media were filled with stories of inventions being launched, government innovation programs being implemented, or hi-tech fairs being organized.

Science fiction remains to be one of powerful forces in nurturing China's new generation. Today, the works of science fiction writers like Liu Cixin, Hao Jingfang, and Chen Qiuhuan spark curiosity and creativity in millions of readers. From each page of their books, a new idea is about to be born. An idea that could build the future of China and the world. What kind of idea will you find in those pages?

"The Most Important Chinese Invention"

Shanghai Singapore International School, Tan, Jedidiah –

Have you ever wondered what was the most impactful Chinese invention ever? In my opinion, I think that gunpowder is the most impactful Chinese invention ever. First I will explain why in my opinion gunpowder is the most impactful Chinese invention, then I will give evidence to further prove why gunpowder is the most impactful Chinese invention, finally I will compare gunpowder with other Chinese inventions.

Firstly, I think gunpowder is the most impactful Chinese invention because without gunpowder invented by China, many major wars of ancient China would be very different, especially after and during the Ming dynasty. During the Ming dynasty there were armies armed with large cannons and were used both in attacks and defense. The invention of gunpowder were also used to make fireworks, fire crackers and mining. Gunpowder did not only effect China, but through the Silk Road, gunpowder was able to spread all around the world. At a period of time, the whole Europe were using muskets as the main weapon of war, murder and destruction. Even in the modern world, guns using bullets including gunpowder are still used in the military. This just further proves the impact of gunpowder.

Further more, this is the evidence behind why gunpowder is the most impactful Chinese invention. Since the 1300's, nearly 700 years ago, Europe and China started putting gunpowder into weapons, not only fireworks. Gunpowder weapons first started making a appearance in the army in a form of a cannon. At that time cannons are often used in sieges and several other battle situations. In the 1500's the canon started making a appearance in a different form, a shrunken form able to be carried and used freely by a individual independently. This was a more flexible and lighter form of a cannon, although much weaker, this gave each soldier a chance to have a lot more power wielding this weapon compared to a regular sword. Even to the Modern day, gunpowder is still the firm basis of many weapons today. The single invention of gunpowder effect wars for the next 700 years permanently. This just proves the huge impact of gunpowder.

Finally, I will compare many Chinese inventions to prove why gunpowder is the most impactful Chinese invention. Paper and gunpowder are both very impactful inventions of China, there are many impactful outcomes from the invention of paper for example, it help people spread information and knowledge through newspaper, books and magazines. It also impacted how people communicate through long distances and helped preserve ancient text. Although these are all very important, the sheer death, destruction and happiness produced by gunpowder through, war, guns and fireworks are equally if not more impactful and important.

To conclude, I think that gunpowder is the most impactful Chinese invention because of the sheer destruction, damage, and death it caused for the middle age world. I also chose gunpowder as the most impactful Chinese invention because of the happiness, hope and heartwarming feelings that they can feel as they witnessed the moment as the fireworks extravagantly detonates in the gloomy night. This is why I chose gunpowder as the most impactful Chinese invention.

All You Need to Know about Paper

Shanghai Singapore International School, Zhu, William – 13

Hey, before we start, let me ask you a question. Have you ever thought about one thing. When and how the thing you are writing or reading on now is from? But if you are reading it from a digital device, then ignore the part above.

Now, if you are still wondering what I'm talking about and doesn't bother to check the title, its paper what I'm talking about. And if you ask me, I will say that it is one of the most used materials in the world. Well, to start with, paper is first invented in the Chinese Han dynasty 2000 years ago. Really impressive, is it? Well, no. Don't think that they have to do a million pages of math homework like us. Doesn't sound impressive now, does it? Well, the one of the first paper being made is used for wrapping not writing. It's much later that they started to write on paper.

Now, you might be wondering, what's paper made of, and of course, some people will say that it is made from wood, which I won't deny that is correct. But do you know that paper doesn't always have to be made from trees, it can also be made from any plant, old T-shirts and herbivore's solid waste. Yes, your eyes are not playing tricks on you, it's true. In fact, anything with fiber can be made into paper. And herbivores ate lots of plants, but they can't digest the plant fiber in the plant, so their solid wastes have a lot of plant fiber in them, so they can be made into paper. But remember, don't try this at home, or else.....

So, now, do you know what you need to know about paper? If not, read the paragraph again, if still not, then go research it for yourself. So, if you are using paper next time, you might think deeper when you see them.

"The Accident Fireworks"

Shanghai Singapore International School, Xiang, Mina – 12

Boom! Boom! Boom! Fireworks are always fascinating and dazzling, the brightness when colorful sparks appear in the night sky, the essential material that forms fireworks are also used as a weapon, gunpowder and is all the basis of all kinds of weapons. But who discovered it? Its China!

China was the country who discovered firecrackers, it first accidentally appeared in 200 B.C., when the ancient Chinese unintentionally put pieces of bamboo in a fire, and it made a loud crack sound. Hollow pockets in the bamboo would explode and they believe that evil spirits would be scared away by the loud crack sounds bamboo would make when they explode in the fire. There was a tale that a monster called "nian" who has an enormous body, sharp horns, and rigid claws, sleeps at the bottom of the ocean, and sneaks in villages to eat people during Chinese New Year. When everyone was escaping again from "nian," an old man with white, grey hair, said he can stop nian from eating people, then he pasted red paper all over the walls and told people to light up firecrackers. Then nian was terrified by red papers and loud sounds of fireworks and he ran away without eating any people. In Chinese New Year, people would light up fireworks or firecrackers, and for other western festivals like fourth of July in America.

Sparklers are also like fireworks but different. They both produce beautiful spots of light but sparklers last longer than fireworks, and do not make a loud boom sound like fireworks. they burn for a prolonged period of time (about a minute), and they produce extremely bright sparkles. But of course, fireworks are better than sparkles for big festivals, and sparklers fit perfectly for other small events, like birthday parties.

By the time firecrackers were invented, it took thousands of years before fireworks which explode in the air were truly created. By 900 A.D., during the Tang dynasty, Chinese alchemists were finding a medicine that allows people to be immortal, so they try mixing chemicals such as Potassium nitrate, Sulphur, and Charcoal. They decided it was an innovative idea to add on to their first version of firecrackers, so they pour the black powder into bamboo tubes and throw it in the fire, it did make quite a loud "boom" sound, but the Chinese has still not yet figured out how to make fireworks that exploded in the air.

So how are fireworks made? There are a couple of main parts such as; the aerial shell, gunpowder, and stars. The aerial shell is the part that holds everything together, and it contains a fuse that burns slowly, and it explodes when the shell is in the sky. Gunpowder is located at the end of the shell and creates great explosions when heated and causes the material inside the shell to catch fire and be pushed outward. Stars are explosive pellets that can be covered with different metals and create the colored points of light we see in the sky. The fireworks can change colors when they are composed of metal salts that can naturally react and change different colors when they catch fire. Sometimes, you can see fireworks create shapes and symbols, this takes careful planning and packing the explosive pellets in a piece of card inside the shell, when the shell explodes, it pushes the pellets out in that shape into the sky.

By the 10th century, Chinese has figured out how to use the black powder for violent uses, warfare uses, such as making bombs and rocket cannons, and in 1200, China had built the first rocket cannons, using gun powder to aim at their enemies. In war, people also strap animals with firecrackers to bring the explosive device to their enemies and destroy their territories and of course, animals themselves would die, but it is an effective way to attack enemies without them noticing. Gunpowder traveled west when European and Arabian diplomats and missionaries began to visit China. Like China, western engineers also developed weapons from their own countries. They attached firecrackers to arrows that they shot at enemies, and this led to something wonderful: the aerial fireworks. This was how the first few fireworks that exploded in the air were created. Aerial fireworks show was held by the "fire masters" and their assistant: "green man ". Before the shows start, the green man would tell jokes to the crowd for

attention while preparing for the magical fireworks show, but the color of the fireworks at that time was just bright yellow, people still hadn't figured out yet how to add colors to fireworks, but the crowds' attention was still attracted by the bright spot lights in the sky. Being a green man, however, is a highly dangerous position, many were injured or killed when their fireworks were out of control.

Finally! The first version of fireworks that explode in the air was invented, but there is still one problem: adding colors to the fireworks. But luckily, in the 1830s, the Italians figured out how to add colors to the fireworks by introducing elements that can create a natural chemical reaction when they are heated together. Pyrotechnic mix produces a red spotlight, copper for blue, barium for green and sodium for yellow, and among all these colors research shows that blue is the hardest color to make, but why? This is because the evening sky is dark blue, so most blue fireworks do not show up well. The right balance of copper and other chemicals is essential for producing the best blue fireworks.

Fireworks are beautiful inventions but dangerous too, the brightness and colors have fascinated generations of people and it is one of the most used and famous inventions, for used when celebrating something like festivals or other ritual uses, it is also used in warfare to make bombs and rockets too, first discovered by China then it was added on by other countries like Italy, like adding colors to it. Lastly, be careful and have fun when you light fireworks! Fireworks are a uniquely beautiful thing to be able to watch in the sky as they explode and produce all sorts of colors, but they can easily be misused if it falls into the wrong hands.

A New Way Through Tradition

Western Academy of Beijing, Ma, Aristo - 14

China has a wide variety of noodle dishes. For many people living in China, noodles are a must, not an option in a satisfactory meal. Among the many varieties of noodles, a bowl of "oil noodles" (you po mian) caught my keen interest.

For a taste of these oil noodles, I went to a random restaurant to have a look. The noodles were wide and long, with colors and ingredients that looked highly enticing. I picked up a strand of noodles with excitement. However, after just one bite, I lost my appetite. The spice needed to be more; a dominating taste of soy sauce stood out and covered up all the other flavors. Immersed in disappointment, I put down my chopsticks and walked away.

I decided to make a bowl of oil noodles myself. I kneaded the dough and rolled it into belt-like widths. With the chili powder sprinkled on the noodles, and a spoon of hot oil that followed—just like that, a big bowl of oil noodles is completed. I took a bite, and although the noodles were neatly arranged, the taste still didn't meet my expectations. Something was not right. I put down my chopsticks and walked away.

As New Year's Day approached, I visited Xi'an, the city of noodles, to taste authentic oil noodles. The cuisine in Xi'an is unforgettable; as the saying goes: "There are countless delicious foods in Xi'an, and oil-splashed chili takes half of them." Each restaurant has its unique taste, unique look, and unique style. Locals enjoy a bowl of noodles at least once daily, if not more.

At the bustling food street, people strolled with undiminished enthusiasm despite the cold weather. The street was illuminated as night fell with dazzling lights from malls and restaurant signs. More people crowded the streets in the evening, and chefs worked energetically, creating a lively mood. A shop stood between noodle restaurants, although empty tables and seats made it lonely. It is simply "out of place". In the food market within the mall, various small stalls sell different dishes. Customers waited for oil noodles while tearing buns into soybean size pieces to put in the lamb broth later. What a particular way to pass the time! Finally, I tasted a satisfying bowl of oil noodles here. Carrying back my joy, I put down my chopsticks and walked away.

On the way back, I passed that peculiar shop again. I looked closer at it; the chef was actually a robot. Surprisingly, this place was also selling oil noodles. Seeing the crowded line in front of the traditional noodle shop and the emptiness in front of the robot-operated one, I was intrigued, never having seen a robot make oil noodles. How bad could it be? For some unclear reason I walked into the shop and ordered a bowl.

The robot behind me started moving, rolling the prepared dough to cover the entire width of the table. Then, a metal piece above sliced the noodles into belt-like widths. Multiple robots worked in coordination, resembling a performance. The noodles were inhumanly "flawless." They were slid into a pot, and with bubbling boiling water, they tumbled like fish playing in the water. Finally, the noodles were scooped up, rolled into a bunch, and placed in a large bowl. The snow-white noodles looked neat, probably too neat for oil noodles. At the same time, a spoon of spicy oil and chili pepper was poured over the noodles, making a sizzling sound that sent shivers down my spine. The aroma hit me, and just smelling it made me momentarily forget that I was already full.

A fragrant bowl of noodles was handed to me. Eagerly, I took a sip, but surprisingly, the taste was average. Chinese cooking needs the chef's warmth of hand and spirit to make the magic, but this robot still had a lot to learn. Yet the mere fact that it produced this bowl of noodles left me speechless, not to mention the lack of flaws.

It made me ponder: will we live to see a future with the fantasy of technology and the charm of tradition joining hands? Or is the little robot-run shop really "out of place"? But the robot would not answer me. What I could do was put down my chopsticks and walk away.