Non-fiction

Group 2

The Wonders of China's Inventive Legacy

Diocesan Girls' Junior School, Mak, Nicole Tiffany – 11

When we think of China's inventions, we usually associate them with paper, gunpowder, printing and compass. In fact, the Chinese people are highly creative, and their achievements have gone far beyond the four great inventions. Below are four groups of inventions from the ancient Chinese that demonstrate their amazing creativity.

The first category is everyday inventions. China built its nation on agriculture. To enhance efficiency in farming, seed drills were invented so that farmers did not have to plant the seeds by hand. The seed drills ensured the right number of seeds were tossed into the ground at uniform depth. In this way, the seeds were better conserved and the maximum number of crops could then be harvested to feed the people. Besides food being our daily necessity, clothing is also a crucial element in a civilized society. Our ancestors unveiled the secret of silk weaving back in 3,000 BC. Silk is a precious material as it is soft and gives out an air of elegance. It was an important trading item back then as many Westerners would travel from afar to pay for the high-quality silk products that were made in China.

The next category of inventions relates to entertainment. Have you ever imagined one of the world's most famous sports, soccer, originated from China? The sport cuju (meaning "kickball") was practiced by the Chinese more than 2000 years ago. Cuju was a fun game like football, apart from the fact that the ball could not touch the floor. Another fun item invented by the Chinese was the kite. The earliest kite was made of wood and was used for military purposes. Nowadays, kite flying is a leisure activity enjoyed by people worldwide.

The third category relates to art and decoration. Emperors in China before were known for their love of elaborate decorations in their palaces, so porcelain was a prized invention. The production of porcelain can be traced back to the Han Dynasty (206BC). Porcelain was used in everyday items including cups, plates and vases. The high-quality ones were used as decorative items for display, and you could see their worth from the artistic designs on them. When porcelain was traded to other countries, people admired its exquisite and unique quality and associated it with the land of origin – China.

The final category of inventions enhanced people's wellbeing and protected them from hazards. The earthquake detector was invented so the emperor would know when and where citizens had to evacuate. This helped significantly reduce the casualties. Acupuncture, on the other hand, was used for therapy and opened the gate for further understanding of the human body.

All in all, China has made an impact on everyone's lives through its creative and useful inventions. The next time you admire a porcelain display or fly a kite on a lovely Sunday, have a think and reflect on the ingenious ideas of the Chinese people.

Teleportation

Diocesan Girls' Junior School, Wu, Yuet Hei – 9

Did you know that the fastest train in the world is from China? It can move 501 kilometers per hour! Well, if we can go that fast, why can't we travel in a second? Why does nobody ever invent a teleportation machine?

Perhaps I will! I already have in mind how it will be like: The machine is simply a capsule. It looks like an enormous medicine pill, except it is made of metal, has a door and a few buttons here and there. Once you step inside, the machine will connect to your brain and find out where you want to go. Inside is a short metal pillar, and on it sits a small glowing blob that actually is alive and constantly changes colors and flashes just to annoy you and watch you fuss. Well, these are the things you will see in the first second you step into the machine, but then you would be sucked into the annoying blob (What?!) and a whole lot of nonsense would start happening. First, you would immediately be transferred into an unseen dimension between time and space. You wouldn't see much except for a few flashes of your past and then a quick replay of your favorite movie. (Not very relevant, probably caused by the annoying blob). Then, you would be blinded by an extra bright light, and before you know it, you would be standing beside the teleportation machine at your destination, not knowing what had just happened.

If teleporting machines are invented, China would be able to remove all the train stations and airports and make a lot more space. And nowadays, people order goods and food online, and they all wait for an hour and when the food finally arrives, it'll already be cold, but if the restaurants put the ordered food into the teleportation machine, it will come out hot in the customers' homes. Also, cars are really creating a lot of pollution, right? But if we teleport, we'd just be zooming around in nowhere and China would be a lot less polluted, protecting the residents from cancer and sickness. Also, did you realise that people are always either chasing buses and trains or waking up extra early just because they were afraid there would be a traffic jam and would be late for work? Well, none of this will happen after my teleportation machine comes out!

Don't you think it'll be really cool? China would become the world's lead in transport speed, and people would never have to rush, rush, rush again! But for now, I'm still young and I can't build the machine yet. Good luck on chasing buses!

Cai Lun – The Inventor of Papermaking

Diocesan Preparatory School, Ip, Yui Sun – 9

Papermaking is one of the four great inventions of China. Cai Lun is the inventor of papermaking.

Cai Lun was born to a blacksmiths family in Hunan during the Eastern Han dynasty. He received education in his hometown school when he was a child and quickly became familiar with ancient books such as "Zhou Rites" and "the Analects of Confucious". He was already very knowledgeable at a young age.

Since his family could not support him to study in school for a long time, he learnt by himself from daily life.

Cai Lun was curious, he paid attention to new things and loved to ask questions. He observed how workers forged and cast ironware at home, and how rural women grew hemp and weaved cloth. He gained great pleasure from this and learned a lot of knowledge.

When Cai Lun was thirteen years old, he was selected to work in the palace. His job was to deliver edicts in and out of the palace. He was conscientious, modest and eager to learn. An old eunuch accepted him as his apprentice. The old eunuch often taught him cultural knowledge and principle of life. Cai Lun was appreciated by the queen and she sent him to serve the crown prince and help him to study. He was promoted to a senior eunuch position when the prince succeeded his father and became emperor. Cai Lun had won the emperor's trust because he was very reliable. In his thirties, he was appointed to supervise the production of royal instruments and swords. His craftsmanship and management talents were fully utilised.

Usually, when reviewing the memorials of minister, heavy bamboo or wooden slips had to be carried to the palace. If the cowhide straps connecting the slips were broken accidentally, it would mess up the order of the slips causing trouble to the emperor to review the memorials. Cai Lun wanted to find ways to tackle the problem, he got the inspiration when women in the Western Han Dynasty soaked silkworm cocoons to make silk floss, dry some of the remaining silk floss into silk paper. Silk floss can be made into paper because they have fibers. Could we find something that is more widely sourced, easier to obtain, and less expensive to replace silk floss, he wondered? He summoned some craftsmen to study and discuss.

One day, Cai Lun went out to play outside the city and walked to a creek. His eyes were caught by a pile of thin cotton layer which he picked up from the stream and looked at it carefully. He asked an old man who was fishing by the stream, "Excuse me, old man, how do this thing come into being?"

The old man said, "This is found everywhere in the river. It is bark, cloth, broken fish nets and rotten hemp that are soaked in the river. After being soaked in water and exposed to the sun, it become like this."

Cai Lun felt like he had found a treasure. When he returned to the palace, he immediately assigned people to collect large amounts of barks, cloth, broken fishing nets, rotted hemp and other worthless garbage. He repeatedly experimented with the different materials he collected and created a papermaking process: First, washed the raw materials, chopped it up. Next, soaked it until it became soft and rotten. Then, meshed and mixed the materials. Next, boiled them to make paper pulp and spread it into thin slices of paper layers. After that, it was peeled off when dried, flattened and polished. Finally, it became a piece of paper that was light, thin, fine, clean, smooth, cheap and durable.

In the first year of Yuanxing (105 AD), Cai Lun presented the successful trial production to the imperial court, and with the support of the Emperor, he mass-produced paper and promoted its use. Later, he was honored as

"Lord of Longting" for his achievement in papermaking, and his new writing material was called "Caihou paper". "Caihou paper" had a smooth and glossy surface. It was very suitable for writing, and its raw materials were not expensive. The paper had replaced bamboo slips and silk as writing material in China. Papermaking is a remarkable craft that has greatly promoted the spread of human culture.

Chinese Inventors of the Past

Discovery Mind Primary School, Vinesh, Vasudev Moolekkugiyil – 10

China has been the source of many innovations, scientific discoveries and inventions. That includes the Four Great Inventions: papermaking, the compass, gunpowder, and printing. Chinese inventors throughout history have made significant contributions to the world with their innovative creations. Chess, the cannon, silk, the umbrella, acupuncture, porcelain, the seismometer, the kite, and even the toothbrush were some of the Chinese inventions that were very popular of the past.

From ancient times to the more recent past, Chinese inventors have played a crucial role in shaping various fields, including science, technology, engineering, and medicine.

Here are some notable Chinese inventors from the past:

Bi Sheng (990–1051) is credited with inventing the world's first movable type printing technology during the Northern Song Dynasty. He created individual clay characters that could be rearranged and reused, revolutionizing the process of printing and making it more efficient.

Zhang Heng (78–139), an astronomer, mathematician, and inventor during the Eastern FHan Dynasty, is renowned for his invention of the seismoscope. This device could detect and indicate the direction of earthquakes, making it an essential tool for earthquake monitoring.

Zhang Zhongjing (150–219), considered one of the greatest physicians in ancient China, made significant contributions to traditional Chinese medicine. He compiled a comprehensive medical text that discussed various diseases, their symptoms, and treatment methods. His work laid the foundation for the development of traditional Chinese medicine.

Su Song (1020–1101), an astronomer, engineer, and inventor of the Northern Song Dynasty, is renowned for creating the "Celestial Atlas" and the "Clock Tower of the Cosmic Panorama." The Celestial Atlas was an elaborate star map that accurately depicted celestial bodies. The Clock Tower was a sophisticated astronomical clock that incorporated various mechanisms, including an escapement mechanism and an automatic celestial globe.

Shen Kuo (1031–1095), a polymath of the Song Dynasty, made significant contributions to various fields, including astronomy, geology, biology, and cartography. He developed an improved astronomical compass and made important advancements in the study of celestial phenomena. Shen Kuo also described the concept of true north and magnetic declination, which had a significant impact on navigation in the sea.

Wang Zhen (1290–1333), a Yuan Dynasty official, invented the world's first known wooden movable type printing technology. His method involved carving individual characters onto wooden blocks, which could be used for printing. Wang Zhen's invention greatly improved printing efficiency and played a crucial role in disseminating knowledge and culture.

These are just a few examples of the many ingenious inventors from Chinese history. Their inventions and discoveries have left a lasting legacy and have contributed to the advancement of various fields, demonstrating the rich history of innovation in ancient China.

The Ancient Chinese Inventions

Discovery Mind Primary School, Weber, Lincoln – 10

Introduction

In this text you will learn about the Ancient Chinese inventions. There are 5 sections and the categories consist of the chapters, The Great Gunpowder, The Interest−Piquing Paper, The Pioneering Printer Cube, The Campaigning Compass, and the Fabulous Finale.

Section 1: The Great Gunpowder

Gunpowder was invented by the Ancient Chinese. It was discovered while they pursued a way to get immortality through a potion. The most common compound the Ancient Chinese used during this wild goose chase was potassium nitrate, also known as saltpeter. Gunpowder was made from other materials too, such as carbon in the form of coal, and sulfur. This group of materials formed a powder called gunpowder. Sadly, some of the Ancient Chinese learned the hard way what gunpowder does. You can say that many of the gunpowder alchemists went out with a bang.

Due to gunpowder's high flammability and its tendency to explode, the Ancient Chinese used it in things like burning arrows. When England got its hands on China's explosive gunpowder, they came up with the idea of guns. During the time of England's 'combustive' ideas streak, Ancient Korea was also inventing the basis for the present day multi−fire rocket launcher. During battles the ancient Koreans fired arrows from a machine that used the gunpowder from China to create small explosions, allowing the firing off of multiple arrows, all with the power of a short bow, which was actually pretty powerful at that time.

Much later, gunpowder was used against the Chinese Nation when the British raided China during the Opium War. The British used their gargantuan navy consisting of many cannons, which used the exact same gunpowder that the Chinese had invented so long ago.

Section 2: The Interest−Piquing Paper

Before paper was invented, the Ancient Chinese used oracle bones, clay, stone, silk, etc, to write on. But all of these materials were either too expensive, too rare or too heavy. The Ancient Chinese then came up with paper which was a better alternative as writing material. Paper was invented when they mixed things like cloth, torn hats and other plant fiber materials while searching for a more portable writing material. After soaking the plant−fiber materials, they pressed the result to drain it of some of its liquid and to flatten it, then hung it to dry on the workshops building walls. It takes a while to dry, and after it dries, the result is the well−known paper we know today. It was very helpful because paper was a much lighter material than clay or stone. It was also a less expensive material than silk.

Paper became a more portable material, but the Ancient Chinese ran into other problems. Due to the amount of ink required, paper consumed a lot of the needed resources to make ink. It also required a lot of patience and energy, so only the skilled and experienced could take up this job at the time, and the documents had to be delivered under a strict amount of time. Being late with the deliveries could cause many problems for the Chinese, such as non−aggression agreements could be cancelled, or even trade routes could be blocked off if they were not written down on time.

Section 3: The Pioneering Printer Cube

As mentioned in the last section, writing needed to become faster, less energy consuming and material consuming. To solve this, the Ancient Chinese invented a printer cube for every single combination of letters and symbols in existence in Chinese language. However, that made writing even more material consuming, so they only solved one problem. As the numbers of Chinese symbols grew, the needed amounts of wood to make the combinations were getting out of control. So the Ancient Chinese decided that they should only make the letters, and not the combinations.

The Ancient Chinese later on created a printer that was fast, material efficient, and less energy consuming. The printers were built into one of the side walls of the workshops. It had 3 sections of wood attached to each other, forming a three step process to write anything. The printer could be taken out of the wall, and could be folded back in. Since they now only needed to build one printer cube per Chinese symbol, there was less material deficiency related problems in that area for a while. Also, since writing was no longer so energy consuming, more people could take on the job.

Section 4: The Campaigning Compass

The compass was a revolutionary invention that enabled even the most lost of people to tell where the North is. It helped navigation because they could better tell their bearings. A compass user could tell directions without needing to follow the migrating birds or tracking celestial constellations which were not always visible or reliable.

The first compass of the Ancient Chinese, was a brass spoon that was supposed to represent the big dipper, placed on a brass pedestal that was to represent the sky and other constellations. The big dipper is a constellation of stars that centers on Polaris. Polaris is the northern−most star that is the most popular star for celestial navigation in the northern hemisphere which is also the hemisphere of China.

The first compass was actually only used to distance houses from one another, as to leave space between them. Eventually, the Ancient Chinese used the compass more and more to navigate during explorations. One example of the Chinese explorers was Zheng He. The compass would be very important for his exploration of the southern hemisphere where he would not have been able to see the Big Dipper.

Soon after, the Ancient Chinese designed the water compass as a more portable compass. It was more reliable and sturdier than the spoon and pedestal compass. The water compass had a glass top so the needle could not so easily be lost as opposed to the spoon and pedestal compass which easily got lost. The water compass was an early version of the modern day compass.

The invention of the compass enabled the Chinese and other countries to progress very far and fast in exploration of foreign territories especially the ocean that the ancient people were generally afraid of. The invention of the compass was very important in the creation of the modern world.

Section 5: The Fabulous Finale

The Chinese people are proud of their inventions that shaped modern civilization.

Around the 1970s, China held a festival in honor of all of these inventions showing how they helped build the world we're living in.

All the inventions helped shape the world so much, but my favorite is paper, because for almost 2000 years it's been the basis for the recording of history and knowledge including the facts I've presented today!

New Tales of China's Invention

ESF Beacon Hill School, Chan, Nikita – 9

How many inventions have China done? What were they? Are they all still use now today? Why were they invented? How many people use all these incredible inventions? According to the official count China has made proximately 23 successful inventions that have changed the world, But the most common ones today used were the Paper, Gun powder, Compass and Movable type printing press. In fact, they are still commonly used now today but are converted in more valued improvements and versions, and researched this the chinese history that tells us all about it…...

Great Ancient Paper –

Paper as known as one of the greatest inventions that China has made was only existing in the AD 105. Before then people used the oracle–bone writing in the 1100 to the 1600 BC. The oracle–bone writing was the earliest writing for the Chinese. Soon after papyrus was alive, a plant base material used for writing. It was the earliest thing like paper. Chinese man in the Han Dynasty 105 AD revolutionised the way people wrote and read. The leges says that the man is called Cai Lun once saw a wasp knitting its nest. It only did three steps, Fibre Saliva and knit then they got the most unbelievable idea of all times. Used bamboo fibres, added them to water and pounded them very hard with a wooden tool. After the fibres were throughly interwoven he poured the mixture on a flat woven cloth and letted the water drain out and let the wet mixture dry up in the sunlight. And after a few hours the first paper was born. Cai Lun presented his paper making process to the Chinese Emperor and received praise for his ability. And universally the paper was called paper of Marquis Tshai. The Chinese kept the discreet for a long time but started to defeat of the Chinese T'ang army in 751 A.D. And by the end of the 12th Century a major part if the world were using Cai Lun's method of manufacturing the invention the paper.

But as the popularity of this spectacular new invention grew so big and so did the demand of wanting the paper. A demand that the manual method of paper manufacturing couldn't certainly meet their key. This eventually gave way to water–powered paper mills the first evidence of which dates back to the Spain kingdom of Aragon in 1282. The most common fibre source the manufacturing process used was form a rag picker. Included hemp linen and cotton, The use of fibre source was continued for another 6 centuries before another evolution. The cost was cheaper than bones and animals skin but still the supply was low. This was until two men from different continents named Friedrich Gottlob Keller and Charles Fenerty tried wood fibre as a source material.In light of this new discovery the mills started replacing this new discovery the source material with wood fibre and a new era of paper making began in mid 1844 and by the end of the 19th century all the paper manufacturers in the west were converting the wood into paper.

Burning and fighting gunpowder–

Over centres the gunpowder was use in war, fights and now fireworks but how did they invent it and was the great history behind it. Gunpowder was invented by chinese taoist alchemists about 1000 A.D. When they tried to find a potion to gain human immortality by mixing elements of sulfur, charcoal and saltpeter instead of the potion they created was a flammable powder that burned down many of their homes. They imminently realised that black and greyish powder which they called fire medicine, was precisely the opposite of something that would make you live forever. In these early days the Chinese hadn't yet figured out how to make the powder explode. It was simply very flammable, and their army use it to make flaming arrows and even a flamethrower. But once the figured out the right proportions of ingredients to creat a blast, they began using the powder even more, creating fireworks to keep evil spirits away and bombs to defend themselves against mongol invaders. It was these Mongols, most likely, who spread the great and beautiful invention of gunpowder across the whole planet Earth...

The leader the compass–
The first compass was invented during the Han Dynasty around 200 BC. It used lodestone which was naturally magnetised piece the mineral magnetite and was carved into a spoon shape and it automatically pointed to the south it sat on a bronze plated and when it moved around aligned to the Earth's magnetic field, this compass was not used for navigation back then in china; but for harmonising people's lives and environments by the song dynasty compasses consisting of a magnetised needle in a bowl of water were being used for navigation on ships. The first use for navigation was around the 11 centuries.

Easy and fast movable type printing–
Printing came around in the 1040 A.D. During the Northern Song Dynasty by the inventor Bi Shing this is recorded in the dream pool essays by the Chinese scholar official Shen Kuo while woodblock printing had already been alive in china since centuries ago before Shang had invented the first movable type printing press and was centuries before Johannes Gutenberg would like to have invent a metal version in Europe. The Chinese characters were put on unto the clay types and assembled to print a page but instead of writing all these amazing books by two bare hands they could be printed on paper rapidly non–stop.

To this day, people still use their great invention to do many things like when you're hiking or climbing a mountain you would need a compass and the compass was invented by the chinese, everyday life we would at lease use a piece of paper, to celebrate the new year's we use gunpowder to make the fireworks happen and if it wasn't the chinese that started the movable type print we wouldn't have this many books and every day at work you might use the printer to print your things. Thanks to the Chinese we have a very enjoyable and successful life.

New Tales of China's Inventions

ESF Beacon Hill School, Cheng, Sunny – 10

Have you ever wondered about the most 4 useful things that you use in life almost everyday? Introducing the four new inventions! But before I start, I need to tell you about the Four inventions in ancient China first.

Firstly, we have paper making, which is still something we often use till this day. Then we have movable printing, which is somehow really useful in the past but we rarely use it nowadays that we have printers. Thirdly we have the magic compass, which was made with a magnetic board and a magnetic spoon. Finally, we have Alchemy and gunpowder, which can be used to make fireworks. Honestly, I think all of these inventions are pretty important, especially to make our lives more interesting and convenient.

Now, let me tell you about the first of the four new inventions, which is …. Ofo! When you're walking through the street do you sometimes see a row of bicycles? If you do, they are from Ofo. You can borrow the bicycles by scanning the QR code on it and with just a few clicks with your fingers, you can ride your bike in no time! It's also eco–friendly because it doesn't consume gas which leads to pollution. On the other hand, the prices are really cheap, so it is always affordable. Speaking of how Ofo works, are you wondering how you pay for it? With Alipay! That's the next thing in the four new inventions. Alipay is used in many shops. Obviously, it's a digital wallet, but can you guess the amount of people who are using it worldwide? Up to 1.3 billion users around the world! You can keep money in the wallet ranging from a single cent up to the amount you just need! If you don't trust me that it's so convenient, why don't you just imagine yourself, try to carry 1 billion dollars in cash (and having to take money while sweating and scorching heat), whereas, you can just carry your phone around, only carrying 130 grams with you.

Thirdly we have Taobao. Which is used for online shopping. Almost everything is affordable there since it's so cheap. You can buy a great variety of items there, such as clothes, makeup, toys, stationaries, food, kitchen finds or other thing you use in daily life. When you buy things, they are usually split into many categories, you can either search the item up, or browse around the suggestions below the search bar. When you want to search for things, each Item has their own box you can easily find the information about the item. There is even a video about the instructions of the product. When you shop outside you need to take public transportations like riding a bus or a taxi to the nearest supermarket? But, with Taobao, you can easily buy things at the comfort of your house which reduces less pollution to our environment.

The last new inventions are the high−speed rail train. To make traveling from one place to another easy and convenient? Use the high−speed rail train! It's obviously a transportation to all of us which we know, and the reason is because it's convenient and eco−friendly, but how? Well, high speed rail trains use electricity instead of diesel fuel. Did you know that more than 20 countries in Asia and Europe have high−speed rail trains? It can also cruise up to 221 miles (355 KM) per hour, and some have reached even higher speeds. In Hong Kong, we can go to mainland by high−speed rail trains within an hour.

Lastly, although these inventions are very beneficial for all of us. I am confident that in the future. For example, a car that could drive itself, and a table that works like a phone or I−pad! We never know when these inventions will be real one day!

Inventions that Changed the World

ESF Beacon Hill School, Ganesh, Inba – 10

One country had what it took to turn the course of history. Below are 4 remarkable inventions of China that changed the world. These extraordinary creations are the compass, seismograph, mechanical clock and silk. These past achievements have shown the world that this country was capable of changing the world in a way that has never been done before.

Compass: The magnificent compass which ruled the history of navigation for more than 2000 years is the first great invention. Made out of a material called lodestone, the compass's earliest use was for fortune−telling and geomancy. At first the compass wasn't used that much as people didn't know how to read it. But a few centuries later, they made little changes that helped them to use it more properly. After they learnt how to use it, it became one of the world's most widely used navigational tools. Nowadays, all sailors know how to use a compass if they ever get lost in sea or land. Remember, your body takes you to places, but your heart takes you home. Speaking of land, let's now move on to the invention that helped and still does save countless lives in China and the world.

Seismograph: The Seismograph was built in 132 A.D, a really long time ago, and was one of China's most treasured possessions. The reason it was so valuable was because it helped save countless lives in a most peculiar way. The seismograph's importance and purpose was to warn people about earthquakes, and as many occurred in China it was a vital instrument of its age. The first seismograph was 6 feet wide and 8 feet tall. It was in a cylinder shape with eight dragons at the top and eight toads at the bottom with both aligning perfectly top to bottom. Each dragon and toad were facing one of the eight directions. Even if the slightest tremor occurred, a mechanism inside the seismograph would open the mouth of a dragon and a bronze ball would fall into the mouth of the toad which was pointing in the direction that the earthquake had occurred in, creating enough noise to alert somebody that an earthquake had occurred there. But as this mechanism was very complicated to make, only royal families such as the emperor's, could purchase it. This warning device alerted the emperor where and when to send help, saving millions of lives. Keep in mind that Mother Nature is a powerful force and earthquakes remind us of her strength and unpredictability. Now, let's move onto the invention that helped save time and reminded us how to use it wisely.

Mechanical Clock: This region also invented a creation that completely transformed time. The Mechanical Clock didn't only tell the time of the day, but also the day of the month, the stage of the moon and the position of some stars and planets. At the top of the clock was a rotating dome that showed the objects in space their places. The making of the clock also completely changed the way of traveling by sea. This treasure allowed sailors to measure how far they were traveling and how much time and fuel was needed, creating the great age of discoveries and occupation of other countries and in other words : War. The mechanical clock also advanced astronomy, as now stargazers and scientists could now measure the paths of ancient and heavenly beings with greater accuracy. Being compared with astronomical systems for measuring time, the mechanical clock is less accurate, but can be used at any time of day or night and even in the worst weather conditions. We cannot turn the clock back, but we can do our best today to make tomorrow a happier time. Finally, let us move onto the last and hopefully the most magnificent invention.

Silk: Chinese legends and myths describe how silk was discovered almost 5,000 years ago by Xi Lingshi, an empress of China. On a lovely evening with cool breezes the Empress walked into her garden and plucked a silkworm cocoon from a nearby mulberry tree. The cocoon slipped out of her hand and fell into her drink and she watched as a strong, white and long thread uncurled. China maintained its secrecy over silk production for another great 1 thousand years, as they were afraid that this material would be exposed to the rest of the world and other countries would start creating silk of their own. Silk was also used for a great number of other items , including writing. The color of silk worn was also an important guide of the different classes during the Tang Dynasty. Soon, other countries also found out about this material and wanted to purchase it. Silk was more expensive to the rest of the world because it was brought all the way from China, crossing dangerous roads through mountains and deserts including the Himalayas and Gobi Desert. Silk became a prized item for the Chinese as nobles and kings of foreign lands desired it

so much, they would pay the highest prices for the cloth. In fact, the demand was increasing so much that China found a path to the west and called it the Silk Road. Know that, Silk does for the body what diamonds do for the hand.

In conclusion, China has created these inventions for the greater good. The compass shows new paths in life and the seismograph forecasts that danger can be prevented while the clock displays that time flies like the wind and that you should use it wisely. Last but not least, Silk has shown us that beautification comes in many different ways. If you are from China and reading this article you should be proud of your country for proving to the world that they are capable of doing anything.

New Tales of China's Inventions

ESF Beacon Hill School, Li, Audrey – 10

China is a really cool country that makes lots of awesome and creative inventions! They're really good at using their smart creative brains to create new things. In this, we'll learn about some of China's super awesome inventions. They're making things like robots that can think, super cool electric cars, clean energy for a better planet,the high speed rail, space exploration and apps having cool features. Let's dive in and see what these inventions are all about! So The most popular app all around the world is made by a Chinese company called bytedance. Can you guess which app? Can you? Fine I will give you a hint it is usually used for dancing! Can you guess? I knew you could guess it, it is Tiktok! Tiktok is an Online platform where people use it for lip−syncing, Dancing, Funny videos and Informative videos. Tiktok has suppressed 1 billion monthly downloads and is quickly catching up to instagram day by day. Bytedance's mission is to inspire creativity,bring joy and enrich life. Time flies by so fast because a few years ago we were still using TV to watch news, but now we use our mobile device's to watch youtube shorts , Tiktok , Instagram etc… Tiktok inspired youtube on youtube shorts which tik tok made called 15 second video models. Tiktok can make someone break their career where it can lead to new trends and people also do food blogs , dance trends and transitions. There is another very famous app in Hong Kong that people love to go shopping in. It is a very cheap order where the quality is pretty good and it ships from China down to Hong Kong. I know what you are thinking and if that app you are thinking of is Taobao! Jack Ma founded TaoBao but before that. He created Alibaba/Alipay! Taobao's direct English translation is "Digging Treasure". Taobao is a online shopping app that allows you to buy different objects from different types of shops that has different kind of items you can buy it is basically going through shops to see what you like for example you want to buy a apple watch strap and thinks the apple store is too expensive you can just search apple watch strap in chinese and it will lead you to the shops that sells apple watch straps and you can choose your watch model then your color that you desire and it will add it to your shopping cart. Lastly there is an app that the whole of China must use to communicate with others and you can use it for paying at stores, supermarkets, and restaurants. I bet you can't think of which app I am thinking about is Wechat! Wechat is an online platform that people use to chat like whatsapp but it has games on there and tons of apps or websites and so much more amazing apps all in one app! Wechat was created by Allen Zhang January 21 2011,there is an older version of wechat that could only text like whatsapp was called QQ. Now Wechat can do lots of modern stuff like call didi/Taxi,Pay for items and play games on the same app! Can you guess how many downloads does wechat have? 1.3 billion downloads! 1.412 billion people are living in China and over 90% of the population uses wechat while the other 10% or lower people doesnt use wechat. The wechat team is aiming to become the leading customer experience, Wechat doesn't just let you message your friends and see their updates on feed it,wechat allows you to play fun games except of only texting your friends or family members and posting on your status and it is so much more fun on a app like it is a one−thousand in one app like I don't think there is a thousand apps but it is a metaphor. Anyways, did you think that was fascinating? China made a lot of cool apps that help the people's everyday. But here is some information that will shock you , China is also making special cars called electric vehicles (EVs). They don't need gas like regular cars. They run on electricity, which is much better for the environment and the earth. It's like having a car that's powered by a superhero but actually powered by batteries! Also China is working hard to make the world a better place. They're using new inventions to make clean energy. They have lots

of big, shiny solar panels that can make electricity from the sun. They're also using wind power to make electricity. This is important because it helps to keep the air clean and helps our planet stay clean and healthy. If you are from Hong kong you must know the high speed rail that goes to China. China is well known for its high−speed rail train , which is one of the most extensive and advanced in the world. Their trains can reach speeds of over 300 kilometers per hour, offering fast and convenient transportation options for passengers that need to go across China or something like that . The high−speed rail system has revolutionized travel within China and has become a model for other countries to emulate. And last but not least China has made very remarkable progress in space exploration. They have successfully launched and operated space missions, including the Chang'e lunar exploration program. China became the third country in the world to land a moon rover on the moon, showcasing their expertise in space technology. Now you see how China's inventions are truly amazing! They have high speed trains. The really amazing apps that have so many functions and China is also working hard to make the world better with clean energy and electric cars. Their solar panels and wind power help keep the air clean. Electric vehicles don't need gasoline, so they don't pollute. China is a place full of cool ideas and inventions. I can't wait to see what they make next! The future will be fantastic and magical, thanks to China's inventions!

China's Great Inventions

ESF Beacon Hill School, Ng, Kacey – 10

Do you know about China's old four great inventions?... I'm about to share some information to you!

Let me tell you about gunpowder first–Its pretty cool! Gunpowder is a mix of unique things that make a big boom sound! It includes: Sulfur, Charcoal, and potassium nitrate. If you light it up,it explodes and releases gas and heat. People in the past used it for cannons, fireworks and guns. It's very dangerous, so let the grown ups handle it!

Second one is papermaking! It's also pretty interesting. Papermaking is the process of making paper from trees. First, they started by cutting down mulberry trees and removing the bark. Then, they soaked the bark in water and pounded it into a soft pulp! Next, they spread the pulp onto flat screens and let the water drain away, leaving behind a thin layer of fibers. They pressed the fibers (fiber is a tiny, thread–like structure that make the pulp used to create paper.)together, dried them in the sun–tada! They had paper. This invention made a huge impact because it made writing and drawing way easier! People in China were the first people to use paper, and it eventually spread to other parts of the world. Cool how trees can turn into paper!

The third one, is a compass! The compass is a super cool invention that originally made by ancient China. Imagine trying to find your way without Google Maps or GPS devices! That's where the compass comes in handy. It's like having a little magical device that always shows the way. The Chinese compass is made up of a small, round object called a magnetized needle, which is usually made from a special type of metal called lodestone. This needle is attached to a piece of wood or cork, and it's free to move around. It always points north because of Earth's magnetic field. So remember the next time you use a compass, remember that it was invented by the clever minds of ancient China, and it continues to be a helpful tool for adventurers and explorers around the world!

Last but not least, printing! China has a fascinating history of printing. I'll show you the magic! Woodblock printing: Using carved wooden blocks, ink is applied and pressed into paper to create prints. Moveable Type Printing: Characters on small blocks can be rearranged to form different words and sentences, like a puzzle! Impact: Chinese Printing spread knowledge and made books more accessible to people everywhere. Conclusion! : Chinese printing changed the world! From woodblock printing to moveable type, it brought knowledge to people and left a lasting impact. It's an amazing art that shows how creative and clever people can be!

As I have told you about China's great four old inventions, I'll tell you about the new ones as well!

China's high–speed railway! It's a super fast train network that connects cities. The train goes over 300 km/h and has comfy seating. It's efficient, boosts the economy, and makes traveling easy and exciting!

Then, there is online shopping. It's like a magical world of shopping from home. You can buy anything you want and get it delivered fast. It's like receiving surprises in the mail!

China's mobile payment is a convenient way to pay using smartphones. People can link their bank accounts or credit cards to their phones and make payments by scanning QR codes or using NFC technology. It's fast, secure, and widely accepted in many stores and restaurants. No need to carry cash or cards anymore!

The last new invention China made is bike sharing. Easy and eco–friendly transportation! China's bike sharing is a popular way to get around. Users can rent bikes through an app, ride them to their destination, and leave them for others to use. It's convenient, reduces pollution, and promotes a healthy lifestyle!

But after all of those inventions, do you know the founders of the old four inventions? Well I simply have some information!The discovery of gunpowder is also attributed to ancient China. The exact origin and inventor of gunpowder are not known, but it's believed to have developed during Tang Dynasty. The founder of papermaking is traditionally credited to Cai Lun (Also spelled Tsai Lun) who lived in the Eastern Han Dynasty. The founder of Woodblock printing in China is not credited to a specific individual since it predates recorded history. As for moveable printing in China, it was developed during the Northern Song Dynasty. The inventor was Bi Sheng. The founder of the compass is credited to the Chinese during the Han Dynasty, the specific individual is not known.

China's inventions made a huge impact on the world. From paper to the compass and printing, they changed history! These inventions made knowledge accessible, helped explorers navigate, and spread literacy, and more, making our life easier. They also inspired modern innovation (refers to the development and creation of new ideas). Chinese inventions are amazing and continue shaping the world, inspiring new inventors!

New tales of China's inventions

ESF Beacon Hill School, Shy, Audrey – 10

The abacus is a manual frame for counting, that has been used since ancient times like since the second B.C.E.(300 B.C.E). The abacus is the oldest calculating device that is still up−to−date. It is operated by moving the plastic balls/beads up and down on the rods because the beads stand for digits and the vertical column of beads on the right represents the one's place and the place value moves up as you move to the left. It is mainly used to solve math equations or essentials.

Abacus is a Latin word from a Greek word "abax", which means an ancient counting board with grooves where people put counters. It is also the root for the Greek work "abakos"(æbəkəs) which means calculator abacus. Abacus education improves the skills of Visualisation (photographic memory), Concentration, Listening Skills, Memory, Speed, Accuracy, Creativity, Self−Reliance. The basic objective of the abacus was to count items and numbers. But now we not only keep track of numbers with it, we also use it to perform basic mathematical calculations in accounting and education. Besides using it to calculate the core use of addition, subtraction, multiplication and division, the abacus can also calculate roots up to the cubic degree.

The abacus, called Suan−Pan in Chinese, was first registered at 1200 C.E. in China, and was developed by Chu Pan, who also came from at least as early as the later part of the Chou Dynasty between the sixth and the third centuries B.C.. But, some websites say that the abacus was made by Ancient Mesopotamians of Sumeria around 2700 and 2300 B.C. The Sumerians and the ancient Chinese developed their civilisations independently in different places of the world, and there is no evidence to show there was a connection between the two. The abacus has been existing in China since the second century BCE,which is years 200 − 101 BCE, although the oldest counting boards have been found in fourth century BCE in Rome.

The basic purpose of the Abacus was to be used to count items. The invention of the Abacus occurred in Sumeria around 2700 to 2300 B.C.E. using a base 60 system, but the oldest known abacus example is the Salamis Tablet in Greece in 300 B.C.E..Merchants who traded goods needed a way to keep count of the goods they bought and sold. Numerous transportable counting devices were invented to keep tallies. The abacus is one of many counting devices invented to help count large numbers. When the Hindu−Arabic number system came into use, abaci were modified to use place−value counting. Abaci evolved into bionic calculators, pocket slide−rules, electronic calculators and now abstract representations of calculators or reproduction on smartphones. It is necessary to tell the difference between the early abacuses/abaci, known as counting boards from the modern abaci. The counting board is a piece of wood, stone or metal with carved grooves or painted lines between which beads, pebbles or metal discs were moved. The abacus is a device, usually of wood.(Before,Romans made them out of metal and they are made of plastic nowadays), having a frame that holds rods with freely−sliding beads set up on them. Though both the abacus and the counting board are mechanical aids used for counting; they are not calculators in the way we use the word today. The person operating the abacus performs calculations in their head and uses the abacus as a prop to keep track of the sums, the carries, etc.

Used in open−air markets of those times, the simplest counting board involved drawing lines in the sand with one's fingers or with a stylus, and placing pebbles between those lines as place−holders showing numbers two pebbles in the 10s column would represent 20. Wealthy merchants could afford small wooden tables having raised borders that were filled with sand (usually coloured blue or green). An advantage of these counting boards on tables was that they could be moved without disturbing the calculation— the table could be picked up and carried indoors. With the need for portable devices, wooden boards with grooves carved into the surface were then created and wooden

markers were used as place−holders. The wooden boards then gave way to even more more sturdy materials like marble and metal used with stone or metal markers.

The design of the abacus is based on a pair of human hands (each row has ten beads, corresponding to ten fingers). The abacus is operated by sliding the beads right to left . If you hold out both hands in front of you, you will see that your two thumbs are beside each other and two sets of 4 fingers spread out from there. Similarly, on the abacus, each row has two sets of 4 beads of the same colour on the outside, representing the two sets of 4 fingers and the two innermost beads of the same colour representing the two thumbs. The "home" position for the beads is on the right hand side. The bottom−most row represents units, the next row up represents tens, then hundreds, and so on. So, counting is similar to counting on one's fingers, the beads move from right to left: 1 to 10, and then carry upwards to the next row. Observers will notice that the metal rods have a slight arch to prevent the counted beads from accidentally sliding back to the home−position.

In conclusion, the abacus is a very old and important counting device that was made since the 2nd century and is used until this very day, it can help you revise your math, speed, accuracy, counting, and visualisation by moving small beads on some rods which represents your 5 fingers on each hand. The abacus is how we now have calculators with numbers and bionic calculators, pocket slide−rules, electronic calculators and the calculator you see on devices, was developed with the same logic.

Flying Money

ESF Beacon Hill School, Wong, Isabella – 9

China is one of the countries in Asia, it has a population of 1.4 billion people and has a very long history. Many people know that China has a lot of famous inventors, they also have great inventions and architecture, such as the Great Wall, Forbidden City and the Shanghai Tower. A century ago, Chinese inventors developed four important and intelligent inventions which are the compass, printing, paper and gunpowder.

Many of these inventions are substantial, intelligent and helping people daily. Starting from the pandemic period, digital wallets have become a very important role to people's daily life. Can you imagine that payments can be transferred really quick, fast and super hygienic because you don't have to touch actual real money. Paying with a digital wallet can just be a click of the button on your phone. Chinese inventors developed a lot of digital wallet application such as Alipay, WeChat pay, Octopus and Tap & Go. All these applications can be installed through a phone, and you can easily have an auto payment just by moving your finger. When you shop at a supermarket you don't need to wait in a line, and you can just go to the self–checkouts and use your digital wallet to pay. The self–checkouts are a great idea, people could quickly decide what they want to use to pay because no one has to ask you what you pay with. Also, the markets will be less crowded because a lot of people now can move faster for their payments. When you are at the restaurant you can just use your phone to place your order, so you don't need to call a waitress over. You only need to turn on the barcode scanner to scan the order barcode, then you order your food on the website, and you can customize your food according to your needs and favorites. When you drive a car and go through the toll you can use a digital auto passing toll payment when you pass. Auto tolls is an amazing idea because it would be less common for a line to form and for people who are in a rush. All cars will not have to stop to pay the toll and that can decrease accidents to occur as well.

These are all great inventions, but many of these still have disadvantages. The digital wallet, this is known as a very good idea. As we all know if you need to install a digital wallet applications, you have to input a lot of personal information and your bank account information. Can you imagine that if you lose your phone, it is risky because it will disclose all your personal information to other people, and they can use this info to do illegal things. Secondly people can access your bank account and steal your money. Moreover, when a lot of industries use self–checkouts machines, they will hire less people at work, many people will lose their job. If people do not have a job, they will not have money and they can't support their life. Lastly, mobile phones batteries are very unstable and runs out very fast, if your phone is out of battery, you cannot use all the

applications on your mobile phone. When there is an emergency, you cannot do anything, and you will fall into a very risky situation.

To let people have more confidence of using a digital wallet, developers could write up a better program to protect people's personal information. They could also build up a better antivirus security program to block viruses from going into your mobile phone. Secondly if we could use our fingerprint, Face ID and passcode to pay for your purchases you don't need to take your phone out in public, so no one can steal it, and if you left your phone at home you don't need to worry about that because you can use all the above to pay.

As a conclusion, China's inventions were not only benefited the people living in China, but it has also been used all over the world in the past and to the future. All these inventions influenced the world and improved people's life. As a young generation, we should keep being curious and creative, which to create and develop new inventions to improve our living quality.

From 2D to 3D

ESF Beacon Hill School, Wu, Jackson – 10

People worldwide write, print, and carve to keep their ideas, experiences, and records of civilization. Egyptians marked on pyramids, and Arabians created the most popular numbering right now. In China, the four great inventions are paper, gunpowder, woodblock printing, and compass. Two of the four are about record keeping, and they affect each other in the history of evolution.

Material–wise, Chinese people started with turtle shells in the 17th century BC while they had to carve on them. Bronze and rocks were carved on as well after 650 AD. Afterward, bamboo was cut into thin slips as a key record–keeping material, and accordingly, people could either carve or brush ink on it. Things were getting easier as it saved our power to hand–write instead of carving. Silk was in the game too, but less popular due to its high cost and rarity.

Finally, China invented the modern writing material, namely paper. Ts'ai Lun invented it in the 2nd century AD. This invention was way better than bamboo because paper is lighter to carry and bendable while bamboo still looks so big when you roll it in any way.

Then, in the 7th century AD, woodblock printing was invented, which was great because you could print so many paper copies with one carved woodblock. For example, words stick out from a piece of wood after the carving, then you need to brush ink onto the raised words, and finally, to put paper on the wood and press it hard, so that hundreds of words would be printed on altogether in seconds. I like this printing technique because it improved efficiency back then.

This was only the beginning of 2D printing, and it went beyond when people were deeply annoyed by mistakes on the very last word that ruined the whole block. So Bi Sheung invented a moveable type. This was an improvement because you could stamp the words on paper in any order and the words were reusable. And the problem of carving on big woodblocks had been solved! Bi Sheung made the blocks small and there would only be one word on each block so that if you made a mistake on one block when carving on it…well, at least the entire thing doesn't go to waste, does it?

Almost 400 years later, 2D movable printing further evolved when Johannes Gutenberg invented the first modern printing press in France in the year 1440. From his childhood, he had already seen wine and olive presses. By and by he learned how to polish stones, became a master goldsmith, and also acquired the expertise to create lead molds used for making trinkets. Using this knowledge, Gutenberg adapted the existing technology to design his creation.

Nowadays, when we turn the pages of this long–lasting but greatest Chinese invention into a new chapter, 2–D has been developed into 3–D, which has been changing the world in a disruptive way. 3D printing is part of a process called additive manufacturing, where an object is created by adding material layer by layer, and Chuck Hull and his company invented this in 1983. Now, you can easily build a fully functioning house in just 3 days with the help of 3D printing, or even scan a body part and 3D print it out to check your health!

Unlike 2D printing which creates flat records on paper, 3D printing is a type of printer that can print models and even functioning things, i.e. objects of weight. Many things you see today, from functional cars to even edible food, can be 3D printed! 3D printing work starts from digital 3D models in CAD software, then, you have to arrange them

into layers. Afterward, you can just leave it to the printer to do the rest. Some 3D printers use lasers to cure liquid resin into hardened plastic, while others fuse small particles of powder at high temperatures or melt plastic filaments to build parts.

3−D printing has a few benefits. Firstly, you can create any model that is in your mind, anything in a model shape. Secondly, it is very easy to access and to program the model now that it has guides and lessons on websites and videos. Lastly, the design and production are swift. If you build a house, it would take 7−12 months to finish, but if you consider printing a house instead, it would only take around three days. Now that 3−D printing prevails, you can make copies of famous sculptures and put them into different museums.

Applications for 3D printing include construction, prototypes, research, etc., which play important roles in various situations. For example, architecture is important when it comes to the Kakuma Refugee camp. There, people can create fast, flexible but sturdy structures.

You might wonder what is the difference between just building it on construction sites and 3D printing it directly. Apart from the waste of materials and energy, construction sites produce a great amount of dust. To my knowledge, China is widely applying this technology in the construction industry, and people are building a lot faster!

Earlier this year, I happened to come across a 3−D printing class in my after−school academy. Through the windows, I saw 3−D printing models on display. There were many things like truck models, tower models, etc. On top of these, I was amazed by a model of Albert Einstein's head, with every part of a human face on it. It was great because not only the student went through the complicated process into realistic edits, but also it was vivid.

When I grow up, I wish to live in a 3−D built home and I want to own a printer myself to 3−D print a museum where I can store 3−D printouts, for example, one piece anime character models.

Robotic Restaurant in China

ESF Discovery College, Saxena, Agastya – 8

Welcome to Foodom Restaurant, a robotic culinary experience located in Hang Zhou, Zhu Jiang, China developed by Country Garden. The restaurant is operated by 46 types of robots and is definitely worth coming

to!

Upon entering Foodom Restaurant, customers are warmly greeted by robot waiters. They guide customers to their seat, recommend specials of the day and take peoples orders by using an AI–Powered System. The versatility of the robots allows them to perform a wide range of tasks, executed flawlessly and repeatedly

throughout the day.

In the kitchen, an impressive number of robots are responsible for cooking and preparing dishes, which are then delivered to tables via a conveyor belt. Interested customers through glass window separating the kitchen and restaurant can observe their meal be prepared by robots. According to Gizmo China, ten Shunde chefs have trained the robots using computer programs that instruct them on temperature control, ingredient selection, and

cooking times. These programs are continuously refined to ensure a high level of precision.

Renowned Chef Lin Chao gave the restaurant a consent full nod after sampling the robotically–prepared dishes, noting that the standardized computers used in Foodom's robots can achieve a level of food quality superior to human chefs. Another chef, Ma Huiliang, awarded a score of 90 out of 100 to a fried vegetable dish cooked at Foodom, and mentioned robots cooking is a liberal opportunity for the chefs, furthermore with robots handling the cooking tasks, chefs can focus on innovation and research, further enhancing the realm of culinary possibilities.

Established in May 2019, the Qianxi Robotic Catering Group Subsidiary, backed by the Property Giant Country Garden and its 750–person research and development team, has successfully created a system utilizing 70 different robots across five distinct restaurant styles, including hot pot, fast food, Chinese cuisine, clay–pot, and rice and noodle shops. With the help of the system and advanced robotic technology, “labor shortage” faced by industry can be lessened. Qiu Mi, assistant president of Country Garden Group mentioned efficiency of staff management and employment cost reduction can be improved by management and control.

In conclusion, Foodom Restaurant, with its innovative concept and cutting–edge technology, has revolutionized the dining experience by introducing a robot–driven restaurant. The integration of robots has not only enhanced efficiency and accuracy but has also created a unique and memorable atmosphere for customers. The sight of robots gliding across the room, gracefully delivering plates of delicious food, creates a sense of wonder and excitement for customers. This unique setting appeals to both tech enthusiasts and those seeking a memorable and out–of–the–ordinary dining experience. The integration of robots has not only improved efficiency and operational performance but has also created a unique and captivating dining experience. Foodom Restaurant stands as a testament to the potential of technology in transforming the way we dine, and it is poised to inspire further innovation in the industry.

REFERENCE:

https://globalshakers.com/country–garden–opens–chinas–first–fully–robotic–staffed–restaurant/

Gunpowder : Evolution to obsoletion

ESF Glenealy School, Chaki, Adhiraaj – 10

Gunpowder is one of the Four great inventions coming out of China. Ironically, gunpowder was invented in 9th century China by Taoist alchemists who were trying to craft a potion for immortality, who instead created one of the biggest breakthroughs in weapons technology. Its first use in warfare dates back to around the 9th century. However its modern day use has declined to a halt, due to more efficient methods, leading only to small use in fireworks.

Following its invention in China, gunpowder has a long history with many subsequent inventions and innovations. Traveling through the Silk Road, gunpowder influenced the development of every military in Eurasia throughout the Middle Ages and beyond.

Over time, many changes were made to the initial formula of gunpowder. As my research details below, on some occasions the proportions of the basic ingredients were altered and in some other modifications, new ingredients were added.

Pre Gunpowder – 300 AD
It was in this period of time that the initial concept, ingredients and recipe was written down by Taoists in China in a book called the Can Tong Qi.
This book stated that when three ingredients are combined, a powder that can dance and fly violently was formed. The recipe was unintentionally created when the Taoists tried inventing the elixir of life. This basic formula consists of Saltpeter, which would combine with Sulfur and Carbon.

9th Century
During this century the recipe for the powder was solidified into 6 parts Sulfur, 6 parts Saltpeter and 1 part Birthwort herb. This century saw gunpowder move into weaponry with the Fire arrow. People now realized that gunpowder was dangerous. This was mentioned in the Taosist text "Zhenyuan Miaodao Yaolue" which states that gunpowder causes fire to violently erupt, followed by smoke blooming everywhere.

10th Century
The 10th Century saw big changes – the Fire lance (ancestor of the firearm) and also the slow match recipe. The slow match was used by flame throwers because of slower burn time. With time, this would evolve into the modern day fuse, leading to slower and more controlled ignition sequences. The Fire arrow allowed the Song Dynasty to have superior defense especially when the Liao Dynasty attacked, leading to its popularity.

11th Century
More weapons were invented during the 11th century including bombs and crossbow rockets. Gunpowder weapons were given to soldiers in higher numbers, making the Fire lance and Fire arrow the staple weapon. The first chemical gunpowder recipe was also written during this time in the Wujing Zhong Yao. Due to its efficiency, gunpowder's export was banned by the Song dynasty.

12th Century
This century brought in an improved version of a firecracker, with it taking off into the air before the explosion. The first type of artillery weapon was also developed with the primary goal being to arm ships. This was one of the earliest battleships to be ever made, making this one of the biggest leaps in sea based warfare technology. The earliest depiction of a cannon was also conceptualized at this time.

13th Century
This era saw newer and upgraded weapons come out such as the Fire lance's new reusable metal barrel & the bomb's new outer shell. One of the major improvements include the Fire Lance's new projectile – one of the first guns ever. Rockets were now getting deployed leading the Mongols to spread gunpowder to Japan, Southeast Asia, Europe and the Middle East.

14th Century
The 14th century brought in the addition of Rocket launchers, Land mines and Naval Mines. Also, the rest of the world was starting to catch up by the later half of the 14th century. Carriage mounted iron cannons also came into existence. Europe caught up with China on the weaponry front with an early version of the canon.

15th Century
Europe started to make larger and deadlier wheel driven cannons. In addition to that, Europe evolved their own version of the slowmatch for the cannons which were now appearing throughout Europe. Also in this century the matchlock firing system with a trigger mechanism was invented.Rifled barrels became the standard for any type of gun. The Chinese used their rockets and bombs to fight with Korea and Japan effectively.

16th Century
During this century matchlock firearms found their way all over Eurasia, reaching China and Japan. The Volley Fire technique was implemented into matchlock firearms by the Ottomans, Ming Dynasty, and the Dutch Republic by the end of this century. The Wheel Lock and Flintlock trigger mechanisms were invented leading to the invention of Pistols and Revolvers. Ottoman troops started to attach bayonets to their firearms with both Europe and China developing handheld breech loading firearms.

17th Century
The 17th Century saw the spread of bayonets throughout Eurasia as well as the new edition of paper cartridges which are the ancestors of modern day bullets. The 17th century brought in the most efficient type of Flintlock yet, replacing the Snaphance Flintlock. During this time China and Japan reject using flintlocks while in the west, Europe starts using gunpowder for industrial uses. Europeans also started to experiment using composite metals for their cannons.

18th Century
In Europe Flintlocks completely replaced matchlocks and Sir William Congreve the 1st Baronet invented the Cylindrical Powder which was also the final change in gunpowder's chemistry. The kingdom of Mysore deploys Mysorean rockets as their main weapon. Also in the 18th century, the first scopes were developed which basically were telescopes mounted onto the gun.

19th Century
In Europe the invention of smokeless powder marks the beginning of the end of gunpowder. Sir William Congreve the 2nd Baronet makes the British version of Mysorean rockets, the Congreve Rocket. Joshua Shaw invents the percussion cap which is the modern trigger mechanism. Rifles start replacing muskets as the Maxim Gun is invented, the world's first machine gun. Alfred Nobel invented Dynamite, an absolute game changer.

20th Century
Most gunpowder is replaced by smokeless powder, ending the glorious gunpowder age with its use remaining in small fireworks.

The Dawn of Paper

ESF Glenealy School, Mithaiwala, Burhanuddin – 10

The city of Lie–yang was bustling like bees in a beehive. The vintage city was full of historical artifacts. Ancient temples guarded the city. But that is not the reason our story is settled here. This village is the dawn of paper…

Smart Zhong and timid Carta along with chubby Kaagaz were on an excursion in a heritage paper museum.

Zhong: "Examining the exquisite paper models, aren't they fabulous!"

Carta: "Absolutely! These art pieces are extravagant."

Kaagaz: "Have you ever pondered how paper was fabricated?"

Carta/Zhong: "Do you have any awareness about the journey of paper."

Kaagaz: Indeed! This amazing history in "AD 105 is frequently cited as the year in which paper making was invented. The latest archaeological investigations place the verified invention of papermaking some two hundred years earlier. Ancient paper pieces from the Xuan Quan Zhi ruins of Dunhuang in China's northwest Gansu province were manufactured during the span of Emperor Wu who reigned between 140 BC and 86 BC."

Zhong: "I wonder about the first piece of paper made in China?"

Kaagaz: "You will be astonished to know Zhong, early Chinese paper appears to have been made from a suspension of hemp waste in water, washed, soaked, and beaten to a pulp with a wooden mallet. A paper mold, a sieve of coarsely woven cloth stretched in a four–sided bamboo frame, was used to dip fibre slurry from the vat and hold it for drying. Eventually, tree bark, bamboo, and other plant fibres were used in addition to hemp."

The intriguing conversation between boys caught the attention of the grey–haired museum curator who offered to share his deep knowledge on this topic.

Curator: "The earliest real advance in papermaking came with the development of a smooth material for the mold covering, which made it possible for the papermaker to free the newly formed sheet and reuse the mold immediately." Furthermore, other papermaking includes the use of starch as a sizing material and the use of a yellow dye which doubled as an insect repellent for manuscript paper."

This outstanding invention has helped the advancement of education and communication in our society. Without paper the world would be vastly different as we see it today – books would not have been created, drawings would have been different and writing skills would be non–existent. It would have been hard to receive education and keep records of one's belongings.

With its invention literary creativity and written culture flourished. It was convenient, affordable material for preserving writing.

Paper also had an influence on history. Many events were recorded in written formats and people began to show interest in the past human life. The enthusiasm about past life unravelled many unknown mysteries.

Science and technology also made spectacular gains. Formula and theories began to be written on paper. Books and journals on science and technology were later preserved by the scientists for future reference.

Kaagaz: "Most of us do not value paper. Soft dry paper at your desk ready to be used is prepared after a lot of arduous work. Recycled paper must be transmitted over five hundred meters to become a high−quality paper anew. The same paper will find itself at another desk."

Carta: "Hey, look at the ancient carved wooden block with ink on it, what could it be."

Zhong: "Maybe a plaything!"

Carta: "I think it is to help people learn Chinese"

Kaagaz: "To me, this is a food container!"

The three friends erupted into laughter.

Curator: "This 'Food container' is an old model of printer.

In the ninth century, Chinese craftsmen had developed a way to produce books by carving words and pictures into wooden blocks, inking them, and then pressing paper onto the blocks. Each block consisted of an entire page of text and illustrations. "This is the first version of ink printing.

Kaagaz: "This was also invented in China! I must say this is the 'Land of Inventions'

Curator: "It lowered the price of books, thus helping the spread of literacy. Inexpensive books gave a boost to the development of drama and other forms of popular culture. It quickened the spread of knowledge, discoveries and literacy and became essential to how humans communicated. With the invention of printing the process of copying was accelerated and within a few years writings covered a great part of the public thanks to the dissemination of knowledge and the decrease in production costs.

The storytellers depicted in the Beijing Qingming scroll may have benefited from 'prompt books' that would help them review the stories that they told orally to their audiences."

"So how did a piece of carved wood turn into our modern printers? murmured Kaagaz inquisitively

Curator: "In the 11th century movable type (one piece of type for each character) was invented by Bi Sheng. He used baked clay, which was very fragile. The Yuan−dynasty official Wang Zhen is credited with the introduction of the wooden movable type, a more durable option, around 1297.

Before the boys knew they were heading for the exit of the museum. They were extremely thankful to the curator for his insight.

Cashier: "You boys bought some wonderful artefacts. That will be $ 58.50."

Zhong gave $ 60. As he was receiving change, the blue eyed Zhong stared at the notes. A thought popped into his mind.

Zhong: "Guys, have any of you wondered how paper money was created?

Before Kaagaz could reply, Carta boastingly responded,

Carta: "Paper money was created around the ninth century CE. Its original name was 'flying money 'because it was so light it could blow by a gust of wind. It was used as certificates for merchants to trade. Government later used money to collect taxes. Paper money was then used to exchange which was backed up by deposit cash (metal coins). This style came in use near the tenth century."

Kaagaz: “Carta, paper money was also created in China. Wow, they have made magnificent inventions ‘”

Carta: “Their innovations are remarkable.

Carta: “The first paper money was called jiaozi. As the Chinese dynasties fell and rose, jioazi took the form of yuan. Soon China’s yuan spread all over the world. Nowadays each country has its own currency.

Kaagaz: “China has created something which has helped human civilisations over many centuries. But we humans are wasting paper. Each year humans waste approximately one billion trees worth paper. Wasting paper not only affects humans, but animals and Earth. Hopefully, we can come together to utilize this invention in the right proportions to protect the planet we call HOME.

Zhong: Guys, want some junk food? I brought a few pennies.

Carta: Sure, hopefully our moms do not mind!

The three friends ate a few scrumptious candies, but when they returned home…

Kaagaz’s mom: Boys what have you been eating?

Kaagaz: Uh oh.

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Best Chinese Invention: PAPER

ESF Glenealy School, Oladokun Piguillem, Sade – 10

1.– History of paper

Paper is made by combining milled plants and textile fibers.
Chinese inventions were needed at some of the times but paper was needed all the time. '
Some believe that papyrus was the first paper used to write in Egypt, but the truth is that papermaking was invented in China more than 200 years ago, during the Han Dynasty in 105 CE by Ts'ai Lun, also known as a court official. Lun was famous for inventing paper.

2.– The inventor: Ts'ai LUN or Cai LUN

The inventor of paper was Ts'ai Lun. Ts'ai Lun was born in the Eastern Han Dynasty in 50 AD and was also raised by a poor family. Tsai lun,s courtesy name was Jingzhong. Sadly he died when he was 71 years old in 121 CE. When Ts,ai Lun died everyone had a memory of him and that is why he was really famous back then. Cai Lun was 55 when he invented paper.

People who lived before 105 CE used bamboo as paper of course they did not discover paper until Ts'ai Lun invented it.

When bamboo and silk was used as a form of paper, Ts'ai Lun decided to make paper because paper was lighter than bamboo and cheaper than silk.

3.– The process

The process of making paper is:
1.– First you have to mix mulberry bark then mix hemp and rags with water
2.– Next Ts'ai mashed it into pulp
3.– Last step he pressed out the liquid and hung the thin mat to dry it in the sun and this part took some patience and that is how they made paper in the olden days.

What is needed for the process is :

(1) Patience

(2) Strength

(3) Plants

(4) A lot of rare material

And it included a lot more which is why people use it so much because now they paper instead of bamboo and silk.

On the next page you will now understand the real uses of paper.

4.–Uses

These are some uses for paper

(1) Printing

(2) Writing

(3) Packaging

(4) Toilet paper

(5) Doodling

(6) Tickets

(7) Newspapers

(8) Money

(9) Cheque

(10) Cleaning

5.– The End

For me paper is the greatest Chinese invention because it led to the development of education, writing, drawing, science, printing and money. Paper is one of the best inventions also because it was invented really early in life so people found out the use of it.

China's Sweetest Invention

ESF Kennedy School, Ng, Gabriella – 9

Did you know that the world consumes 15 billion liters of ice–cream every year? This delightful treat is popular and loved by everyone young and old around the world for its sweet, creamy, refreshing taste. There are over 1,000 different ice–cream flavors and new ones get created every year. Some classic flavors include vanilla, chocolate, strawberry, cookies and cream, and mint–chocolate chip, while the more eccentric flavors include mayonnaise, foie gras, wasabi, lobster, curry, mustard, crocodile egg, and durian. Ice–cream has been catered to meet everyone's unique palate.

Most people think that ice–cream comes from Italy, but there is evidence to suggest that ice–cream was in fact invented in China in the Tang Dynasty in A.D. 618–907. It was made with buffalo, cow or goat milk, and it was heated and fermented. The mixture was added to some flour to thicken it up and camphor was added for flavor. It was then kept cool before being served to King Tang of Shang and his family, friends, and guests. Since refrigerators were not invented yet, the Chinese mixed salt with ice which lowered the temperature of a space to −14°C to temporarily store the ice–cream. Perhaps you are wondering how ice–cream made its way to other parts of the world to be enjoyed. Explorers like Marco Polo and Catherine de Medici brought ice–cream to their country, Italy and France, respectively, to share the magical experience with their countrymen. Since then, ice–cream has made its way into the heart of every continent including Antarctica. Ice–cream has even been eaten in outer space!

The very first ice–cream maker was developed by an American woman named Nancy Johnson in 1846. It was the first device to make it possible for the public to quickly taste freshly–made ice–cream. The sealed container held a metal bowl of cream or sorbet that got spun around with blocks of ice and salt and was ready to eat in 30 minutes. It must have been worth the wait, though! When electricity arrived in homes across the world, the electric version of the ice–cream maker was designed because ice–cream could then be stored in refrigerators. Ice–cream could now be kept for a longer period of time, thanks to the invention of the refrigerator. These days, ice–cream is made in massive ice turbines for mass production. It can also be made in the comfort of your own home for fun using tabletop ice turbines.

Ice–cream is not only eaten by humans; dogs, monkeys, cats, goats, lions, donkeys, horses, and cows have all been known to eat the scrumptious dessert. It is one of the easiest desserts to make without an ice turbine. First, whip up two cups of heavy cream using a hand whisk or electric mixer until stiff peaks form. After that, slowly add in a cold can of sweetened condensed milk. Then, add your favorite flavorings like vanilla or almond extract and whatever toppings you want to mix into your ice–cream like walnuts or chocolate chips. Mix and combine all the ingredients together and transfer it to an airtight container and freeze it. It is that simple!

Ice–cream is one of the most loved desserts on the planet. Ice–cream can satisfy all our sweet–tooth cravings. This delectable treat can make any bad day turn into an awesome day! China is responsible for inventing many things for example paper, gunpowder, compass, umbrella, earthquake detector, and toothbrushes. These inventions have proven to be useful, helpful, life–changing, and necessary. The invention of ice–cream by China has enriched many lives by creating joy, laughter, adventure, and lifelong memories. It has added value and sweetness to the world. Ice–cream is one of the best inventions from China – a cold, refreshing, sweet, and perfect food to eat on any given day!

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China's Inventions – Innovation and Development

ESF Sha Tin Junior School, Zhong, Sophia – 10

Papermaking, letterpress printing, gunpowder and the compass – known as the Four Great Inventions – have considerably changed the way our life operates today. Invented by the ancient Chinese, these inventions have no doubt contributed immensely to our present society, but in different countries, their usage and development vary greatly.

For instance, in fifteenth century Europe, children's education was largely influenced by social status, the dominant role of the church, gender inequalities, and the fact that they were constantly on the verge of war. Education was primarily accessible to the privileged elite, such as the nobility and wealthy landowners. The majority of the European population consisted of rural peasants that had limited access to a means of a formal education.During that time, before the printing press had spread to Europe, each copy of a book was carefully hand–written, or each page was carefully carved into a large slate of wood, which made the process long and laborious. It meant that only a few books could be produced in a day, which made the books overwhelmingly expensive, therefore inaccessible to the poor.

The arrival of letterpress printing changed everything. Each word was carved and could be used in another book. It made the making of a book significantly easier, rendering them more affordable for the larger part of the population, which helped make their education more accessible. This prompted the start of the Renaissance and promoted the importance of science in Europe.

In Ancient China, on the other hand, the changes that China's own inventions brought were not as substantial. For example, in 1820 to 1913 China, only 3 books were shared within one million people, Holland was 538, England was 198. At the time, not only were there few books to be read, women were not allowed to have a basic education, and instead had to stay at home and focus on housework. It didn't help that the range of characters in the Chinese language were vast, which made it difficult to print, affecting the speed at which knowledge was acquired. Ancient China's society and cultural climate largely influenced how China's inventions affected its population.

Now, In modern China, as the economy develops and people's approval for newly advanced technology increases, the usage and popularity of new inventions increases as well. Mobile–payment, e–commerce, bike–sharing, and the high–speed rail —These inventions have had a great impact on the development of Chinese society and brought great convenience to the daily lives of Chinese people, which is why they are known as the "new" four great inventions of China. We definitely need to admit that in China these inventions have become part of our daily life. But in truth, none of these inventions actually originated in China. For example, bike–sharing stations first appeared in the Netherlands, and the high–speed rail was invented by the Japanese. The "new four great inventions" have been popularised in China, but China lacks original innovation from before. In a way, Ancient China was the opposite of modern China: Ancient China invented many helpful devices but didn't focus on their development. On the contrary, modern China used and developed many new inventions but required more originality. Both correct usage and new innovations are important in order to correctly devise an invention that could change our lives.

Here is an example that demonstrates this prospect: As we all know, AI is one of the greatest inventions of modern times and a direction we could develop toward in the future. In this field, innovation and especially correct management are the two most important things. For instance, if used incorrectly, it could be a threat to the

educational system, as students could use it to cheat just by giving it a few keywords. On the other hand, AI could help us accomplish many aims we have for the future.

I believe that in order to achieve this goal, we need to pay further attention to basic subjects such as mathematics and physics, because these two subjects involve knowledge of computer hardware and software, as well as the development of big data processing capabilities. Research on basic subjects is very important to the development of advanced technology.

In addition, we need to cultivate new talents, and leave a relaxed legal environment for innovation without affecting safety. Furthermore, we could take advantage of China's large population and high efficiency and improve the way we use inventions and innovations in production and life to create a better future for us and the next generations.

World's Greatest Inventor

German Swiss International School, Ding, Matthew – 9

From paper to fireworks, China definitely wins the cup of The World's Greatest Inventor.

Just start with rice, the essential food we eat almost everyday. It was unearthed from the Yangtze River in China almost 9,400 years ago. Just a bowl of plain food holds a big history of hundreds of centuries ago.

Do not forget paper, the item we depend on every single day. The first true paper making process goes back to the Eastern Han Period, which was 25 to 220 A.D.. It was found as a paper prayer then as a blessing on an adobe block on someone's home. The first paper in China was made by fishing nets, bamboo, mulberry bark, or hemp. There was such a complicated process just to create paper back then. Today, all you have to do is turn on a machine, set the panel to the size, shape you like and Voila! You have your precious piece of paper. Nowadays, many people use paper too much. They have not put the slightest thought of how precious paper was back then in their hearts.

Think of the compass now. If it weren't for China, people might have thought that the sun would rise in the south and go down in the east. And without the compass, people might've accidentally sent a ship going to Hong Kong but ending up in Shanghai.

Also think about the lovely fireworks when celebrating festivals like New Year. If not for China, the lovely colours in the sky wouldn't even be there to enhance those 'oohs' and 'aahs'.

Imagine those few things just written, they are more than common to see today. But they were all made by one single country, China.

Who's hungry for some noodles? Well, you'll find lots from China. Although not exactly known, udon and soba are said to be both invented in China. It is believed by some people that these noodles originated from Japan. Well, that is incorrect. Udon and soba both originate back to the 700s in China, but soba only gained popularity in 1700.

Do you eat McDonalds these days and put ketchup on your fries? Well, if you do, then say thank you to China. It was called "keh–jup" or "koe–cheup," meaning "fish sauce, back then. The first ketchup recipe included neither tomatoes, vinegar, nor many other ingredients that make today's ketchup. The first base of the sauce was fish, then oysters, mushrooms, and only after that, which is today, ketchup is made of tomatoes.

Now let's discuss Douyin. Douyin is an app which originates from a China company. It is similar to TikTok, but it only works in China. Even though it only materialised in September 2016, Douyin has better functionality than TikTok.

But that's not just it yet. There are hundreds of inventions not described above waiting for you to discover.
And there definitely will be more in the future too. When there's already high technology apps today, there may be self–driving cars tomorrow.

All About Gunpowder

German Swiss International School, Luan, Zyan – 9

Introduction

Hello everyone! Today, we're going to talk about gunpowder. Gunpowder is something that is used in many different things, and one of China's top four historical inventions. Let's learn all about it!

What Gunpowder Can Do

Gunpowder has many uses, both for peaceful and not–so–peaceful things. For peaceful purposes, gunpowder is used in fireworks. You know those beautiful explosions of colors and lights you see in the sky during celebrations? That's gunpowder! But gunpowder can also be used for not–so–peaceful things like bombs, which are really dangerous.

How Gunpowder Was Discovered

A long time ago, there was a person called an alchemist named Wei Boyang. He lived during the first millennium AD. One day, during the Tang dynasty in the 8th century, Wei Boyang mixed sulfur and saltpeter with charcoal. And guess what? It created a powerful explosive called gunpowder! It was a really important discovery.

How the Chinese Found Out About Gunpowder

Wei Boyang, the alchemist, mixed sulfur and carbon with a special compound called saltpeter. He didn't know what would happen, but it turned out to be a big surprise! Saltpeter has three elements: potassium, oxygen, and nitrogen. When these elements get a lot of energy, they break apart. When the sulfur and carbon were set on fire, they ignited and created a super–fast and powerful shock wave that traveled at 200 miles per hour!

The Power of Gunpowder

Gunpowder can be incredibly powerful. It can destroy whole buildings with just one hit! But it can also be very weak and not able to break a stone. Did you know that the world's strongest explosive is called Azidoazide azide? It has a really long scientific name, 1–Diazidoocarbomoyl–5–azidotetrazole. It's made up of a special compound that has 14 nitrogen atoms. Because of all those special nitrogen bonds, this explosive is extremely powerful, even if you leave it alone on a plate without touching it!

Conclusion

Gunpowder is a fascinating thing that can be used for both good and bad. It was discovered a long time ago by an alchemist named Wei Boyang, and it can create amazing fireworks or cause destruction if used improperly. So, remember, gunpowder is something that needs to be used very carefully and responsibly.

New Tales of China's Inventions

German Swiss International School, Saxton, Ella – 8

Paper crafting, fireworks, wheelbarrows and the compass. It all came from China. China has been making inventions since the beginning of time, that's for thousands of years! China has invented much more than you think, they even invented kites and umbrellas, which we still use today.

Long, long, ago the Chinese were mainly known for their temples with long walls around them, but China has made so many inventions since then. Some you can eat, and some were even stolen! They made noodles, and then later, the Italians made spaghetti pasta and they said they made it first! China also invented ketchup, but it feels like everyone thinks it came from America because they eat so many French fries with it. People also think French fries came from France, which is not true, but that's a whole other story.

On to the most spectacular and dazzling invention. It was believed that the first natural firecrackers were bamboo stalks. When thrown in fire they would explode with a bang, because of the overheating in the hollow air pockets. This gave the Chinese an idea. Then during the 9th century, gunpowder was invented by China. Gunpowder is made with 75% saltpetre, 15% charcoal and 10% sulphur. Many people love fireworks, except for dogs and babies that is, but what exactly goes into the making of fireworks? Fireworks are a lot more than an explosive bomb in the sky, they are chemicals made for special celebrations.

So, let's take a look at the colours of fireworks, because the patterns they can make are unbelievable. Think of Disneyland and Chinese New Year in Hong Kong! As you likely expected, the firework bomb in the sky creates heat, that heat reacts with different chemicals they put inside the fireworks, which makes different colours.

People with amazing skills can mix them into marvellous patterns. In the 19th century fireworks were used for European celebrations, however before long, people began putting firecrackers on a bow and arrow so in war their enemies would see the fireworks in the sky and get afraid then retreat.

Another great invention for the Chinese was the clock, which is very old indeed, and think about how many people wear watches today! How did they even do it, so long ago!

I hope you know more about China's inventions now.

What do you think they will invent in the future? A pollution eating machine, flying roller coasters, rockets to Pluto?

The Modern Uses of Porcelain

German Swiss International School, Song, Shawn – 11

Beginning in around 1600 BC, the Chinese developed a special ceramic that was durable, non−porous, heat resistant and was light compared to metals. This material reigned supreme above all other ceramics for many thousands of years, being highly valued all across the globe from Japan to Britain. It fetched massive prices and was regarded as a miracle material, it was porcelain.

Many people think of porcelain as the material that is used to make teapots, or the material that they use to make their vases or bowls. A few metallurgists may even think of it as the material for their crucibles, but the uses of porcelain are much more expansive nowadays, ranging from rocket nozzles to heat shields and jet engines.

How are these materials in modern industries even connected to porcelain? Well, the answer is simple. They are all built up on porcelain's natural anti−corrosive and heat resistant properties. All in all, porcelain is the ancestor of a slew of modern day ceramics. Two typical examples are ceramic matrix composites (CMCs) and ultra high temperature ceramics (UHTCs).

First of all, how are these curious materials manufactured? CMCs are essentially just layer upon layer of thin materials, such as ceramic fibers stacked together. That's why they are classified as *composite* and *matrix*. The thin fibers are then stacked into thin sheets and cut according to the required dimensions, lastly, they are fused together in an autoclave. The end result is a light,and heat resistant material that can bear temperatures up to 2000℃. This allows them to be used in many places, such as jet engines! The following qualities provide even more evidence:

- They are ⅔ lighter than other metals,
- They can withstand 20% more heat than regular alloys,
- They rank at a level 9 on the Mohs scale – same as tungsten but substantially lighter.

To better understand the advantages of CMCs over alloys, we must use a comparative. Take porcelain and tungsten as an example. 1 cubic meter of porcelain weighs 2,403 kilograms, while 1 cubic meter of tungsten weighs 19,280 kilograms. Even though porcelain rates in at only 7 on the mohs scale, it serves as a useful comparison. The practicality of ceramics is also shown through a slew of engine models. Take the General Electric Adaptive Cycle Engine as an example, it features 25% better fuel consumption than earlier aircraft, and above that it has reached 65℃ above the target temperature, all because it featured the most expansive use of ceramics ever in aviation history. Also, for the new Gen 90 GE engines, they were to feature 325.12cm turbine blades, but there was a problem, titanium was too heavy and would damage the engine. The solution was to turn to ceramic blades. Consequently, this innovation gave the engine the Guiness World Record with over 57,000 kilograms of thrust! All this makes CMCs the most promising material for the future of jet engines. But why stick to earth when UHTCs can take you to space!

Since UHTCs can withstand even higher temperatures than CMCs, often upwards of 2000℃, they are widely used in the space industry. They protect important scientific equipment and moreover the astronauts' lives. Ceramics in the space industry have 2 primary uses, the first being in rocket engine chambers and nozzles, with the second being in the heat shield area. With rocket engines having temperatures that reach up to 3300°C , cooling systems are a must no matter what material you use, but with lighter and more heat resistant material, the overall weight would be reduced and the cooling systems would not have to be so sophisticated, also resulting in less weight. This overall

causes overall costs to be lowered. This in turn would cause prices to be lowered and more importantly, the extra space could be used to add more fuel, increasing the range of rockets.

The other, arguably more important reason is heat protection during atmospheric reentry, as the temperatures during re−entry can reach up to more than 2700℃. The primary heat protection material in almost all spacecraft is various types of lightweight UHTCs, as they can withstand temperatures of up to 3958℃ (Hafnium Carbide). UHTCs are a great choice for this as they are durable, lightweight, can withstand great amounts of heat and melt away slowly, ensuring that the astronauts and scientific equipment and data remain safe and sound. Another surprising reason is that UHTCs are corrosion resistant, that may not sound like much, but a single error can mess up the whole project. Take SpaceX's reusable rockets, just because 1 metal bolt corroded because of the salty sea air, the whole rocket blew up. UHTCs can also form non−ablative heat shields, such as those used in NASA's space shuttle program. Specifically, NASA used borosilicate glass (a glass ceramic) as a high temperature insulator on the bottom side of the space shuttles which withstood temperatures up to 650℃ to 1260℃. The highest temperatures in the space shuttle are again absorbed with ceramics, this time with a reinforced carbon alloy that withstood temperatures up to a whopping 1650℃!

We can draw from this that ceramics are a very potent and useful new resource, just waiting to be explored. We can use ceramics for vastly different uses, and ceramics all excel in those scenes. Using ceramics as teapots and bowls is like making Albert Einstein do your math homework, it just is a waste of a massive innovative new material. Ceramics is the iron of the stone age, the computer to pre − cold war mathematicians, the telescope to medieval astronomers, ceramics are a new, vast frontier just waiting to be utilized and explored.

Chinese Space Program

German Swiss International School, Wong, Jayden – 11

Many people know about Chinese inventions, such as the compass, paper, gunpowder and silk, that have made their way to every corner of the globe. However, relatively few people know about China's contributions to space research. Ever since China invented rockets in 228 AD by igniting gunpowder, the country has achieved many firsts in space exploration and is dedicated to making further advancements in this field.

China's space program started small, established by a renowned Chinese rocketry scientist, Quan Xuesen. When Quan returned from America in 1950, he asked the government for permission to start a missile tech center. They quickly responded with a big yes, and China's space program was born. At this point, it was the Cold War, and China was on very good terms with the Soviet Union. So, the Chinese got in touch with the Soviets and said something along the lines of, "Hey, think you could spare us a few inter-continental ballistic missiles?" and the Soviet Union replied, "Sure, take two R-2 missiles."

As the Cold War continued, tensions developed between China and the Soviet Union over borders, nearly causing a nuclear war. The end of their friendship obviously meant no more lending of advanced technology; therefore, the mission to launch the missiles was postponed.

However, when the Soviet Union managed to launch Sputnik I in 1957, Mao Zedong, in his own little Space Race with the Soviets, decided that China should launch its own satellite by 1959 to celebrate the tenth anniversary of the PRC. Unfortunately, this goal was too ambitious, as China still had the thorny problem that it didn't know much about launching objects into space. Therefore, the Chinese decided to focus on a new target: launching a sounding rocket, which is a rocket that flies into space, releases a satellite and then comes back down to earth. China saw sounding rockets as a stepping stone to ultimately getting its own satellite into space.

After many failed attempts, the sounding rocket T-7M finally made a successful liftoff and reached a height of 8 km. Mao Zedong praised the success, calling it a good beginning for the Chinese space program. Remember those Soviet R-2 missiles? The Chinese soon managed to launch one of those using a fuel of liquid oxygen and alcohol, naming the missile Dongfeng-1 (The East-1). They then started working on what would be the first 100%-Chinese built missile, Dongfeng-2. After many rocket test trials and a failed launch attempt, Dongfeng-2 achieved its first successful launch on 29 June, 1964. As part of China's nuclear ambitions, Dongfeng-2A, an improved version of Dongfeng-2, successfully detonated a nuke at its target in a desert. It's important to note that this operation was just to develop nukes and satellite tech. No population was targeted or harmed.

These are not the only rocketry advancements that China has made. On 24 April, 1970, the 173 kg Dong Fang Hong-1 (The East is Red-1) satellite was launched into orbit. It was the heaviest maiden satellite to be put into orbit by a nation. On 29 April, 2021, the Tiangong space station was successfully assembled in space. It is the second space station to be launched into space by a sovereign country, and with the ISS (International Space Station)'s decommissioning in 2030, it will become the main space station for use globally. The goals for the Tiangong space station are to develop spacecraft rendezvous technology, autonomous spacecraft and regenerative life support as well as achieve permanent human operations in orbit. Currently, China is also one of the most active nations in terms of space exploration, making the fifth most launches of any country every year.

Imagine it's the year 2182, and an asteroid is about to hit Earth, as NASA has predicted. However, thanks to space developments by the Chinese, the human race can settle on Mars. Consequently, the persistent quest to explore and conquer space hasn't been in vain. It hasn't been a straight trajectory upwards for the Chinese Space Program, but it's incredible to think that the tiny seed planted by Quan Xuesen in 1950 will have blossomed into such a massive and important project that will ensure the future of humanity.

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Modern Chinese Invetions

Harrow International School Hong Kong, Huang, Alex – 10

China is an amazing country. You might think that China just invented paper that we used today, noodles that was made out of dough, silk, the compass and gunpowder. But this is just an underestimate. They invented so much more! They invented the multi-stage rockets to online shopping, mobile payment to 3D printers that can print full-functioning houses, even the App TikTok was invented in China! Let's see some modern Chinese inventions.

Electric cars were one of the most important inventions China invented. Not only they are fast, cheaper compared to the gas cars when refilling fuel, quieter when accelerating and easier to drive. It can also help us battle against global warming. You see, the entire world is getting warmer by many reasons. One of them is emitting carbon dioxide (CO_2) into the air. This is called air pollution, and CO_2 is a type of gas that cars running on petrol emit out and into the air. This is why some people are switching into car brands like Tesla, BMW (electric car variation), and Mercedes-Benz (also electric car variation). They all make electric cars. But there is one electric car brand made from China called BYD. It is based in Shenzhen and founded in 1995. It started out as a battery maker company then later started to be the automobile business in 2003. BYD is also has a feature where they can wirelessly charge the car. And remember when I said about BYD starting out as an battery maker? Well since they are already experienced at making batteries, their electric car battery density is very high. This means they can store more energy. The car also has seven airbags. That's just one more then a regular car. BYD also can be charged by major charging networks for example some tesla chargers. Look how much of an impact a country could do to the world.

Not only electric cars can help us battle global warming. Bike sharing systems were promoted everywhere so people can go to work on Bike rather on gas cars if they can't afford electric cars. Founded in 2014, OFO was the pioneer of China's bike sharing industry. They invented lightweight, affordable and very sustainable bicycles. It's pretty amazing that it was also invented (sort of) in china. All you need to do is download an App, click a few buttons and just hop on a bike. Furthermore, Bike-sharing can also include in your daily workout! Every morning, you hop on a bike and ride around for 1 hour. It can help increase your exercise volume. Plus, it's a lot more easier then having to walk 3 kilo-meters to your work place every single day. Now many places like New-York city, Paris, Barcelona, Beijing and Philadelphia all have bike-sharing systems.

You won't believe this but, China invented the App most people use today. There was a company called ByteDance in Beijing, China that was made for internet technology. What App did you think ByteDance created? You guessed it, it was TikTok. With 1 Billion monthly global active users, TikTok was a very successful social media dedicated to short-form videos created from many people around the world. In 2016 the Chinese TikTok was invented. By the time in 2017 the international version was created. It was the most popular App between 2020 and 2021. And in 2022 it already earned a whopping $9.9 billion US dollars! That's a lot of money! I can't believe if how these famous influencers on TikTok like Zach King, Charli D'Amelio, Bella Poarch, James Charles and other countless influencers would make a living without China's wonderful, popular invention. Not only it is good for people to make money, it is also an very important key in daily life. Entertainment is a thing that everyone does in their life. But you might think scrolling on TikTok in your bed sounds very unhealthy, keep in mind, many people do this. Maybe you even do it! But still this App is entertaining everyone. Scrolling on a phone sounds so simple, but almost everyone likes to do this!``

Just imagine you had to drive all the way across the earth just to buy an item that is only sold in that one country. That's when mobile shopping comes in handy. In 1999, entrepreneur Jack Ma formed Alibaba, an online/digital marketplace where merchants can sell and buy things from each other. Now, people no longer have to leave their homes and take a road trip just to get that one item you want. Instead, you can simply sit on you couch and pull out your phone to order whatever you need just with a few simple clicks. How easy is that! Now you can relax for a few days on your couch playing video games and **DING DONG!**The items you have ordered had just arrived. This is how online shopping changed the entire world. Now there are many different online shopping

marketplaces on the internet such as Taobao (also invented by Jack ma), HKTV Mall, Flipkart, AJIO, Meesho and so much more!

Now you know that China did not only invent things way back then, but they invented many things in the modern ages. Futhermore Online shopping makes your life much more easier. It is a lot more easier than going to the supermarket. It's much more convenient for online shopping. Also, Bike−Sharing helped many people who can't afford a car sustainably use transportation at a very cheap price. In addition, the electric car helped contribute to rule 13 (Climate action) of the SDG (Sustainable Development Goals), which was set by the UN (United Nations). It helped many people reduce their carbon footprint and slowing down the process of the Earths ozone layer being destroyed (Global Warming/Climate change).

Ancient Chinese Inventors

Harrow International School Hong Kong, Lee, Arthur – 9

China is one of the countries in Asia with a high population of 1.402 billion people. It is a developed country that is the center of many production companies and the development of agricultural practices.

China has very many learned and intelligent people who play important roles in shaping the current world order from different fields of expertise.

Chinese developments and inventions began in the CE years with very many inventors inventing new and different things.

Some of these inventors were mathematicians, Geographers who came up with the idea of the moon reflecting the sun, astronomers who studied the stars, physicists who knew how to use magnets to identify compass directions, chemists who facilitated the development of medicine, not forgetting new technology engineers.

Efficient machines are known to have developed from this country including portable ones that are easy to learn and use. China was one of the developers of clocks that have been evolving time after time.

Those years had very little technology all over the world, unlike the current situation where technology is very much developed and it is been used for production and other purposes.

As per the current statistics conducted to identify the most technological country in the world, China was ranked third. The following are the top ten most famous Chinese inventors.

1. Cai Lun:

Cai Lun was a Chinese eunuch court official of the eastern Hun dynasty. He was born in 57 CE in Leiyang Hengyang, China. He joined the service of the imperial palace in 75 CE. In the year 105, he came up with the idea of making paper.

History has it that on the 11th day of March year 105, Cai Lun presented his paper to the emperor of the ruling Han Dynasty, Han Ho Ti. He died in the year 121 CE.

2. Zhang Heng:

Zhang Heng was a polymath scientist, astronomer, inventor, and statesman. He was born in 78 CE in Nanyang, China.

He was the chief astronomer in the Chinese emperor court. He managed to map the stars and planets.

Also, he was the one that discovered that the moon was not a source of light but reflected the sun. He invented Zhang's Seismoscope. He died in the year 139 CE.

3. Su Song:

Su Song was a polymath scientist who was also conversant in mathematics, geography, astronomy, cartography, horology, mineralogy, among others. He was born in the year 1020.

Astronomical clock tower in medieval,Kaifeng was his development. He used hydro−mechanical engineering knowledge to develop it. This employed the use of an early escarpment mechanism.

He used a chain−drive mechanism added to a water−powered clock. This clock showed the time of the day, day of the month, and phases of the moon. He died in the year 1101 in Kaifeng, China.

4. Ma Jun Dehung:

Man Jun was a mechanical engineer, politician, and inventor. He was born in the year 200 CE in Fufeng county Baoji, China.

South−pointing chariot was invented by him and this was used during the war to alert soldiers of incoming enemies. The chariot had an idol man with one of its arms pointing to the south no matter the direction taken by the chariot. The chariot also had gear−driven wheels, Man Jun also chain pump. He died in the year 265 CE.

5. Shen Kuo:

Shen was a Chinese mathematician, scientist, and statesman. He was born in the year 1031 in Hangzhou, China.

He discovered the True North concept in terms of magnetic declination towards the North Pole. He used suspended magnetic needles and his determined meridian which he improved. He died in the year 1095 in Zhenjiang China.

6. Wan Laiming:

Wan Laiming was a cinematographer, author, and producer. His area of expertise was animations. He was born on the 18th of January, 1900 in Nanjing, China. Chinese Animation Industry was developed by Wan Laiming together with his twin brother Wan Guchan.

In 1956, they developed the first colored animation. One of his animations is entitled 'the monkey finished the moon'. He died on the 7th of October, 1997 in Shanghai China.

7. Yi Sing

Yi Sing was an astronomer, mathematician, mechanical engineer, philosopher, Buddhist monk. He was born in the year 683 CE.

He developed an astronomical instrument in 725 CE which incidentally worked like a clock. It was, later on, named the Astronomical Clock. He died in the year 727 CE in Zhejiang, China.

8. Tu Youyou

Tu Youyou was born on the 30th of December, 1930. She is a pharmaceutical chemist and a Malariologist.

She invented a drug therapy for malaria, Artemisinin. For this invention, she has rewarded awards like the Nobel Prize in Physiology/medicine awarded in 2015. She studied at the Peking University of Beijing.

She works at The China Academy of Traditional Chinese Medicine from 1965 to date, where she is currently the chief scientist.

9. Yuan Longping

Yuan Longping was born on the 13th day of August 1929 in Beijing, China.

He was known for being an agronomist and a member of the Chinese Academy of engineering. He is the man behind the invention of the hybrid rice varieties in the 1970s.

This invention was part of the Green Revolution in Agriculture. This hybrid rice is currently grown in many African, American, and Asian countries. Yuan Longping died on the 22nd of May, 2021 in Xiangya hospital in Central South University.

10. 10.Sir Charles Kuen Kao

Fiber optics inventor, Sir Kuen Charles Kao was born on the 4th of November, 1933 in Shanghai, China. He was an electrical engineer and a physicist too.

He was pioneer the development of fiber optics which he did from the physics properties of a glass and later the discovery laid the groundwork for high−speed data. This brought to life his famous invention of fiber optics in telecommunication in the 1960s.

He was awarded the Nobel Prize in physics and the Grand Bauhinia Medal among other awards. He died on the 23rd of September, 2018 in Shatin, Hongkong.

The little detailed inventors from China have played a great role as far as development I concerned. Under their fields of discovery and innovation more so engineering, we can agree to the fact that they brought about a lot of what is seen today around the world. Their countless developments range from agriculture (the hybrid rice), medicine (artemisinin), telecommunication engineering, writing paper sheets, geographical development (true North), amongst others.

Their time−sensitivity led to the development of clocks which have been evolving day in day out and being developed further to the best. To date, China still holds top positions in as far as development and product making is concerned.

New Tales of China's Inventions

Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Chen, Lianyu Lucas – 10

Introduction

Silk is an ancient invention created in 2696 BC. It is always a very interesting yet expensive material. But have you ever thought that this amazing material is even stronger than metal of the same size? You will go through an exciting journey where it will take you back to the history of silk, as well as provide a step–by–step guide to creating the best, yet most expensive fabric in the whole wide world.

History

For the first stop, we'll have to trace back to 2696 BC. The beautiful empress named Leizu was sitting under a tree, having a cup of tea.

Suddenly, a gleaming white cocoon fell from the tree and fell right

into her cup. Inside the hot water, the sticky mixture dissolved,

leaving a long strand of silk floating in her cup. It was a gorgeous

sight for the empress. This gave the empress the idea of silk. Silk

remained a secret to China until the Silk Road opened around the later

half of the 1st millennium BC. China maintained its virtual monopoly

over silk production for another thousand years. Silk cultivation

expanded to Japan around 300 AD. By 522 AD, the Romans managed

to steal silkworm eggs and were able to start silkworm cultivation.

The Arab people also started manufacturing silk at the same time,

resulting in the spread of sericulture. Chinese silk exports were less

important, though they still maintained dominance over the luxury

silk market. Nowadays, China is still the world's largest producer of

silk.

The Silk Production

It all starts with a silk moth. Female silk moths usually lay around 300–500 eggs at one time. These eggs hatch and become silkworms. After that, the silkworms take around 6 weeks to grow to their full age. At this stage, they'll stop eating and begin to spin their cocoon.

The silkworm will rotate its body in a figure–8 movement almost 300,000 times in order to spin its cocoon. This process takes 3 to 8 days. After the cocoon is collected, they are placed in boiling watewhich softens the mixture holding the cocoon in place. When the threads have been washed, they are bleached and dried before the next step,

dyeing. Traditional dyes are usually made with natural resources like indigo plants or fruits. The threads will be soaked in a pot of hot dye. After the silk threads are dyed, it's finally time for the most fun part: spinning. Traditional spinning wheels are an integral part of the silk production process. Even if there are processes that are able to spin threads faster using technology, they simply just mimic the functions of classic spinning wheels. Weaving is when two sets of final silk are being interlaced in a pattern, resulting in a secure piece of fabric. It is a process for the silk to turn into a piece of flat fabric.

Lastly, a piece of silk sometimes requires printing some patterns or images on the fabric. After this step, the piece of fabric is ready for delivery.

Conclusion

The information about this luxury fabric still varies. Now you have a brief knowledge about this expensive fabric, why don't you try and find out more about silk.

New Tales of China's Inventions

Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Ho, Tin Yuet – 10

Ancient China had four great inventions, they were compass, gunpowder, papermaking and printing. China had new tales of inventions too! That is Tiktok.

People will think, why Tiktok is popular? One of the main reasons for Tiktok's popularity is its viral content and trends, Tiktok's algorithm is designed to surface content that is engaging and interesting to users, regardless of the creator's following or popularity.

Why Tiktok so addictive? The brain grows to desire this ongoing dopamine, sometimes referred to as a dopamine addiction, causing people to continue turning to the platform.

This World seems like is closer and closer if each day go, it is because of the internet, everyone can take a video of themselves whatever they want to do. You can watch people cooking, playing trickshots and everything you want to watch.

Who is popular in Tiktok? Zach King is a very popular in Tiktok because he always makes tricks, Charli D'Amelio is a woman who dance in Tiktok for 10 years.

There are some pros and cons about Tiktok, Bad such as increases your digital footprint. Good such as Addictive quality and high levels of engagement. The last important is What is the main purpose ofTiktok? Creating, sharing and discovering short videos.

New Tales of China's Inventions

Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Hui, Lok Hei Aiden – 10

Do you know that kites were invented in Ancient China over two thousand years ago? Have you noticed that kites were originally made from wood and silk? What are the purposes of kites in the past and now? We will talk about the information regarding the history of kites, types and the construction of the kites and the usage of kites in the following paragraphs.

Kites were believed to be invented by a Chinese craftsman called Mozi in the 5th century BC. He worked for three years on building a kite that could fly in the sky. The earliest kites were made of wood and in the shape of bird. The kites became popular among farmers as they used them to scare away birds from their crops. The size of the kites varied depending on their purposes and designs. Later, kite flying spread throughout Europe between the 14th and 15th centuries. During 19th century, kites were used not only for scientific purposes like studying weather but for lifting such as lifting cameras and thermometers.

The earliest kites were made of wood and cloth. When paper was invented, it was adapted to use in kites. Nowadays, kites are made of various materials such as nylon, polyester or carbon fiber etc. Kites come in many shapes and sizes like diamond, triangle, oval and rectangle. Kites are also in form of art and expression. Many kites are decorated with colorful patterns, symbols or even some cartoon images that attract people. My dad bought a Doraemon kite for me as a birthday present and I like it very much.

The purpose of kites in the past varied depending on the culture and context. Kites could be used as military purposes such as delivering message, sending radio signals, raising banners, observation and bombing. Kites could also be used religious ceremonies such as representing the gods and flying prayers. In addition, kites could be used as entertainment and scientific experiments. There were kite flying festivals, competitions and games. Some scientists might use kites for measuring distances and testing wind speeds. Nowadays, the purpose of kites is mainly for recreation and sport such as kite surfing and kite festivals.

Kites are one of the oldest inventions in human history. They have been used for various purposes, such as military, religious, entertainment, scientific and artistic.

Kites have also evolved over time, from simple wood and cloth to complex and colorful designs made of different materials. Kites are not only a toy, but also a useful tool in the past and nowadays.

An Invention of China – Ice-cream

Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Ip, Chloe – 12

Contrary to popular belief, it was actually the Chinese who first introduced the world to the wonders of ice cream. This revelation comes from the Tang Dynasty, which ruled from 618 to 967 AD, where the emperors took great pleasure in a frozen delicacy known as a "Frozen milk-like confection." This early form of ice cream was skillfully crafted by combining the milk of cows, goats, or buffaloes with flour, resulting in a truly delightful blend. To enhance the texture and flavor, a touch of camphor from evergreen trees was ingeniously incorporated into the mixture. The next step involved pouring the concoction into metal tubes and submerging them in a vast icy pool, allowing the mixture to freeze gradually. Interestingly, this fascinating process shares similarities with the traditional method employed by Indians in creating "Kulfi," a frozen dessert that predates the invention of refrigeration. The beauty of this early rendition of ice cream was eloquently captured by poet Yang Wanli in his enchanting poetry from the Song dynasty. The poem effectively captures the essence of the ice cream's texture and appearance, creating a detailed and vibrant image within the reader's imagination with just a few well-crafted sentences.

The roots of ice cream can be traced back to ancient times, with biblical references to King Solomon enjoying refreshing iced drinks during the harvest season and Alexander the Great indulging in a chilled beverage flavored with wine or honey in ancient Greece. The iconic phrase "You scream! I scream! We all scream for Ice Cream!" carries a wave of fond nostalgia and cherished memories of indulging in this delightful frozen treat. The mere thought of ice cream evokes lazy summer days, where we eagerly devoured melting cones and luxuriated in decadent Sundaes. Ice cream is a timeless pleasure that never fails to bring joy to both the young and the old. The history of ice cream is surrounded by various myths and legends, each claiming different origins. Some believe that Marco Polo brought ice cream back from his journeys to the East, while others claim that Catherine de Medici introduced it to France upon her marriage to King Henry II. However, the true origins of ice cream can be traced even further back than these tales. From its ancient beginnings to the modern-day variations we enjoy; ice cream has always held a special place in our hearts. It is a beloved indulgence that transcends time and brings happiness to people of all ages? So, the next time you hear the familiar phrase "You scream! I scream! We all scream for Ice Cream!" let it transport you back to those carefree summer days when the sweet taste of ice cream was all that mattered.

Although China is widely recognized as the origin of a dessert that bears resemblances to ice cream, but it wasn't until 1672 that the first known recipe for ice cream was formally recorded by Elias Ashmole, an Englishman. Ashmole shared an intriguing story about King Charles II having the extraordinary experience of enjoying "a solitary portion of ice cream" during a grand feast the year before. This captivating anecdote carries great importance, representing a significant milestone in the evolution of ice cream as a truly delightful and irresistible treat.

The History, Invention, Spread and Uses of Gunpowder

Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Lai, Pak Ho Carson – 12

"Today we are going on a field trip to the museum!", our history teacher told us. I thought: Oh great, more learning.

We rode the tour bus to the museum. Our teacher told us that today's topic is about Gunpowder. I thought: what could be interesting about some random gunpowder I don't even know exists? Well, was I stupidly wrong.

The Imperial Palace, Beijing, A.D. 1047. A group of Tang alchemists were in a room.The room is a room for experts all over China to find a life–extending potion to conduct experiments.
There were multiple people inside the room. One of them was Chinese alchemist Yang Zhang, he was only 33 years old, making him the youngest in the room.

There was a table in the room. It contained the finest examples of found materials made all over China. Yang Zhang was tinkering with saltpetre, charcoal, and just recently discovered, sulphur.
He puts a little bit of saltpetre, a little bit of charcoal, and a lot of sulphur and mixed them into a giant bowl of powder. He creates a black and grey substance. Then, he boiled the powder.

"Ssszzz.... Boom!"There was smoke everywhere, and the group of alchemists can sense a strange smell. They cleared off the smoke, and found out that the glass container containing the substance was obliterated into a thousand pieces and flew all over the place!

The highest ranking official in charge of the project immediately put a stop to it, and questioned the people in the room who made that substance! The people all pointed at Yang Zhang. " He's a demon! Executerrrrrr!", the official in charge shouted. He was immediately executed and nobody (except his family) remembered the story of the blast.

The same place, almost 300 years later, during the Mongol invasion of China, a scavenger in the ruins of the imperial palace discovers an ancient writing, from the families of Yang Zhang, about his story. He sells the writing to a rich man living in south China.

The rich man, named Meng Fang, was very interested in the story. He decides to send an expedition to find legendary "Gunpowder".

The expedition found writings about how "Gunpowder" was invented. Meng Fang decided to try the substance out, and it worked! "Wow!", Meng Fang said. He found that "Gunpowder" was explosive when heated up.

Meng Fang decided to make a dragon–like explosive as he made a mould of a dragon and put some gunpowder inside. He pointed the explosive upwards and lit the gunpowder inside.
There was a loud band that was heard all over the house of Meng Fang. He went to where the explosives used to be, and there was black dust everywhere. He looked up at the sky, and... there was an object falling from the sky, and "boom!", the object hit the ground and shattered into a million different pieces.
Meng Fang was f
ascinated. In the following years, he made countless inventions using their gunpowder substance. There were early mines and even early bombs!

In the 1200s, the Mongols had invaded Meng Fang's house. To save his life, he decided to give the gunpowder to the Mongols as an exchange for his life. The Mongols at the time had expanded their empire to India, the Middle East and Europe. Using this new weapon, they could have expanded their empire to the entire world, but.....

A spy from European powers found out about the news of the gunpowder, and spreaded it all over Europe. Europeans quickly began research about the new substance to them, and in a short period of time, invented..... the mighty gun!

European powers decided to trade information with merchants across India and the Middle East. The Arabians and Indians shortly invented the new weapon called a cannon.
Using the new weapons , the other powers completely destroyed the Mongols, pushing them out of foreign lands using the now famous gunpowder.

Later, an inventor named Alfred Bernhard Nobel invented a safe gunpowder explosive. He intended that gunpowder would be used more for peaceful inventions, but the people who got the explosives used it to develop better and more harmful bombs.

Little did Nobel know, Gunpowder can also be used for more peaceful uses. In the Qing dynasty, Modern fireworks were invented with gunpowder. In the following years, they also invented the explosive, which helped out miners in China a whole lot.

The story of Gunpowder taught me one thing: when humans get any good thing, somebody will always come in and change the reason and uses for it. We should treasure our resources and not change something from helping us to harming us instead.

Gunpowder completely changed the world around us. If there was no gunpowder, there would be no fireworks, rockets and a whole lot more. We all should remember the brave alchemist Yang Zhang for creating one of the most useful inventions in the whole world. Who would have known that a a little black and greyish substance could change the course of the world?

World Class Inventions

Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Lam, Chun Wai Milton – 10

Most people are familiar with the four inventions of ancient China: papermaking, gunpowder, printing, and the compass, but fewer people are aware that there are world class inventions in Traditional Chinese Medicine (TCM) as well. TCM is a medical system used to treat, diagnose, and prevent illnesses over thousands of years. It includes cupping, acupressure, moxibustion, tui na, and much more. Let's explore the magnificent and honourable contributions of China within the realm of TCM, specifically the inventions of artemisinin and acupuncture.

Artemisinin

Achievement

The 2015 Nobel Prize in Physiology or Medicine was awarded to Professor Youyou Tu for her key contributions to the discovery of artemisinin and the qinghao extract, which have saved millions of lives and represent one of China's influential contributions to global health.

History

Artemisinin, the active substance of the qinghao extract for preventing malaria, was discovered during the Chinese 'Cultural Revolution' in the 1970s. Malaria has been an extensive and damaging disease with global influence since ancient times. The first use of artemisia, also known as qinghao, with its active ingredient as artemisinin, was first used in the Eastern Jin Dynasty (317–420 AD), but people didn't know it could defend against malaria. As malaria became more severe from the late 1960s to the early 1970s, over 380 extracts sourced from approximately 200 herbs were collected and tested with unsatisfactory results. Despite many failures, the qinghao extract, having artemisinin as its active substance, had promising results in one of the most important breakthroughs in the process to prevent malaria.

How it works

Once the juice of Artemisia annua, the source of the antimalarial drug artemisinin, is consumed, artemisinin spreads throughout our body, killing malaria parasites and viruses that are common worldwide, including SARS–CoV–2 and common cancers such as breast cancer and lung cancer.

Risks

Although there are many benefits, artemisinin has multiple risks, including skin rash, nausea, vomiting, tremors, and liver issues. However, the chance of experiencing minor side effects is around 0.9%, which means that less than one in a million people will suffer from its risks.

Conclusion

Artemisinin, a drug–resistant medicine recommended as malaria's first line of defence by the World Health Organization, has saved millions of lives around the world, especially in Africa. In fact, this notable invention is considered to be one of the most important breakthroughs in medicine in the 20th century, and because of it, 12 countries, including China, are now malaria–free as confirmed by the World Health Organization. Research is also continually conducted by scientists to enhance artemisinin production.

Acupuncture

History

Acupuncture, one of the oldest practices of treatment in traditional Chinese medicine, is believed to have begun in China. In the first half of the 1st century AD, people began discussing that acupuncture's effectiveness depended on the time, the lunar cycle, and the season. Other beliefs stated that the human body had a rhythm, and acupuncture had to be applied at the right place to be effective. Sometimes, the imbalance between Yin and Yang was believed to be the cause of diseases. In the mid–7th century, Sun Simiao created charts and diagrams that provided more standardised methods for finding acupuncture sites. He also categorised acupuncture sites in a set of modules. Acupuncture became more popular in China as improvements in paper led to the publication of more acupuncture books. The public also learned stories about royal members having their diseases cured by

acupuncturists. By the time the Great Compendium of Acupuncture and Moxibustion was published in the late 7th Century, most acupuncture practices currently used had been established.

How it works

Acupuncture involves inserting thin needles into the body to balance a life force called Qi, which can help with chronic pain and various other health issues. Inserting needles at the right place and penetrating through 361 points can allow energy to flow in balance, while the activity of sensory neurons, also known as receptive fields, can also be affected. It can also increase blood flow to different parts of the body, resulting in various pain relief.

What happens during a session?

During a typical acupuncture session, multiple activities are conducted. Firstly, the acupuncturist will assess the individual's medical condition before inviting them to sit or lie down for the treatment. Secondly, five to twenty single−use and disposable needles are inserted typically at the back of the individual's body. In this stage, the individual may experience a number of aches. After twenty to sixty minutes, the needles will be removed and disposed of, and the procedure ends. After around eight to twelve sessions, minor health issues typically improve.

Life−changing success

A woman who had struggled for twenty−two years trying multiple therapies and learning that she might not be able to walk for the rest of her life experienced a life−changing transformation when she met an acupuncturist. The acupuncturist conducted weekly acupuncture sessions with her for a few years, and as a result, she could now walk with a walking aid, which is nothing short of a great miracle.

Risks

While acupuncture offers numerous benefits, it does come with potential risks such as bleeding, bruising, soreness, infection and imbalances in blood flow. However, a prospective, observational study indicates that only approximately 10% of patients encounter mild and temporary adverse effects after acupuncture.

Conclusion

Acupuncture, as a supplemental therapy, has transformed the lives of many in recent years. This notable invention is considered to be an ancient Chinese medical treatment for relieving pain, curing diseases, and improving health. Ongoing research by scientists continues to enhance the understanding and practice of acupuncture.

World class invention

Traditional Chinese Medicine boasts world class inventions that have made significant contributions to healthcare. It has a deep history and is still popular around the world. It encompasses various traditions and has evolved into a comprehensive medical system that is not only popular in China but also in other parts of Asia and the Americas.

New Tales of China's Inventions

Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Lam, Yik Hay – 10

Have you heard the new tales of China's inventions? China held the world's leading position in many fields of natural study from the first century before Christ to the 15th century, with the four great inventions: papermaking, printing, gunpowder, and the compass.

The first of the four great inventions of ancient China was paper. Before its invention, words were written on natural materials like grass stalks, earthen plates, tree leaves, and even tortoise shells! Later, inspired by the process of silk reeling, people in China succeeded in making a kind of paper called "bo" out of silk. However, its production was very expensive due to the scarcity of materials. In the early 2nd century, a court official named Cai Lun introduced a new way of making paper from bark, rags, wheat stalks, and other materials. This new paper was cheap, light, thin, durable, and more suitable for brush writing.

The next of the four great inventions of ancient China is printing. Before the invention of printing, the dissemination of knowledge relied on either word of mouth or handwritten copies of manuscripts. Both methods took a lot of time and were prone to errors. 2000 years ago, during the Western Han Dynasty, stone–tablet rubbing was popular for spreading Confucian classics and Buddhist sutras. This practice eventually evolved into block printing during the Sui Dynasty. People would engrave writing or pictures on wooden boards, apply ink, and then print on pieces of paper page by page. Did you know that the first book with a verifiable date of printing appeared in China in the year 868, nearly 600 years before Europe witnessed printing?

Another one of the four great inventions of ancient China is gunpowder. Ancient alchemists discovered that certain ores and fuels, when mixed in the right proportions and heated, could create an explosion. This led to the invention of gunpowder. In 1044, in the collection of the Most Important Military Techniques edited by Zeng Gongliang, three formulas for making gunpowder were recorded – an explosive mixture of saltpeter, sulphur, and charcoal. Initially used for making fireworks, gunpowder later revolutionized warfare around the world.

The last of the four great inventions of ancient China is the compass. While mining ores and melting copper and iron, people stumbled upon a natural magnetic stone called magnetite. It attracted iron and always pointed towards the north. This magnetic stone became known as the "South Pointing Fish" and was used for land navigation during the mid–11th century in the Song Dynasty. Before the invention of the compass, navigators had to rely on the position of the sun, the moon, and the polestar to find their way.

In conclusion, these inventions have shaped the world as we know it today. We should be grateful for these inventions, as they have made life easier for every one of us.

New Tales of China's Inventions

Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Lau, Yee Ching – 10

Almost everyone has silk clothing at home, but do you know some amazing facts about it? This writing will contain lots of facts about silk. For example, do you know the oldest known written reference to silk is found on a bronze fragment found at the Shang Dynasty site at Anyang? Now, you might be curious so read on and find out more.

First, let's talk about the oldest Chinese history of silk making. According to history, the sericulture and the weaving of silk cloth were invented by Lady Hsi-Ling-Shih, the wife of the Yellow Emperor. This emperor ruled China in a mythical stage (about 3000 BC). Hsi-Ling-Shih created it by raising mulberry silkworms, then when they grew up she let them fly away and kept the cocoons, she made them smooth and slowly sewed them into silk. The appearance of silk is due to the triangular prism-like structure of silk fiber, which allows silk cloth to refract income light at different angles, producing different colors. Hsi-Ling-Shih is credited with both introducing sericulture and inventing the loom upon which silk is woven. Also, in Chinese texts, she is sometimes referred to as "The Goddess of Silk". Nowadays, a lot of Chinese still believe and worship her in some festivals.

The earliest evidence of silk dates back to more than 8,500 years ago and has been found in the early Neolithic Age tombs of Jiahu, China. Biomolecular evidence, reported from a study, showed the existence of prehistoric silk fibroin in the tombs. Rough weaving tools and bone needles were also excavated, indicating the possibility that the Jiahu residents may have possessed basic weaving and sewing skills required for making textiles. Other evidence of silk include items found at sites of the Yangshao culture in Xia County, Shanxi, where a silk cocoon was found cut in half by a sharp knife, dating back to between 4000 and 3000 BC. The species was identified as Bombyx mori, the domesticated silkworm. Fragments of a primitive loom can also be seen from the sites of Hemudu culture in Yuyao, Zhejiang, dated to about 4000 BC.

After silk was invented, for a long time silk was a material reserved for the Emperor of China and those very close to him such as important family members and very high-ranking dignitaries. It was also a secret to other countries because at that time the emperor of China didn't allow people in China to communicate with other countries.

Eventually, silk production grew to become quite a large industry in China. Silk was used for a variety of things, from fishing lines to both strings to instruments. Earlier documents have been written on the cloth. Now, Chinese paper makers developed technology to make more affordable, yet still luxurious, paper where rags were mixed with other naturally occurring fibers to make the pulps.

During the Han Dynasty, silk became somewhat of a currency. There are for instance documents from this era telling us about farmers who paid their taxes on grain and silk. When taxes were paid in silk, it also meant that the stage would make its payments in silk, and civil servants could for instance get their salary in the form of silk. The cost of something could be described using lengths of silk as the unit of measurement, just like many other societies would use weight units of gold or silver.

The Chinese authorities worked hard to keep everyone about silk production a secret to retain the nation's monopoly, but eventually, information began to slip out— partly through Chinese migrants who settled abroad and made a living there from silk making.

Now, let's talk about the advantages of silk in daily life. First, do you know that silk slows down aging? Silk's natural, cloud–like quality can be attributed to its composition. Silk amino acids, a natural nutrient found in the fabric, have been found to reduce specific signs of aging, such as wrinkles. Because silk is a natural material, it is easier for this fabric to produce and retain moisture on its own. It does miracles on the skin when left in contact overnight – silk is now recognized as a natural anti–aging product in the form of towels, bedding, and pillowcases. Dermatologists attest to silk's ability to slow down visible signs of aging and revitalize the human skin even after a short night's rest. Whilst cotton and polyester material withdraw moisture from the skin through a night's sleep, silk can replenish and maintain this very moisture necessary for keeping youthful, vibrant skin. Because it is a natural material packed with essential amino acids and natural protein, silk tricks the nervous system into a relaxing state, calming your nerves and therefore smoothing out the wrinkles we develop through age.

Also, silk promotes better sleep. If you ever experienced the luxury of sleeping in silk, you might have counted only a few sheep before finally hitting your REM. Silk pajamas don't cast a spell, but this material lets you wallow in a fresh, cooling comfort that triggers your sleep mode. Silk, known for its sheen and softness, also regulates body temperature and controls moisture even in changing climates. This makes silk an excellent sleep companion that will enhance the quality of your night–time slumbers. The secret? The natural construction of this material coaxes your nervous system into relaxing, allowing you to achieve the full cycle of sleep necessary.

Lastly, silk is not just good for your body and face but also for your hair. According to InStyle, sleeping on silk – sheets, cases, headbands, nightcaps – can do wonders for your beloved mane. The reason behind this? Cotton, the most common material for sleep products, absorbs something that your hair dearly needs: moisture. This is why when you sleep on cotton pillowcases, your hair will tend to appear lifeless, frizzy, and probably more prone to static. Switching to silk will make a difference; the smooth, protein–rich material allows your hair to smoothly slide, minus sucking out its much–needed moisture. Thus, you'll have fewer bad hair days. And who doesn't like healthier, shinier strands?

This is the end of the information report. You learned a lot of things about silk in both old and modern life.

New Tales of China's Inventions

Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Lee, Cheuk Ying – 11

Most people know the famous four inventions of China, but they don't realize that so were many other things we use today, from noodles and ketchup. The Chinese tried out different economic systems and invented the first paper money more than 1000 years ago, and the compass was developed over many centuries!

In the past few years, with the pandemic going on, China still invented mind blowing things! From the fastest speed car, to glasses that help blind people "see"! Now, let's talk about the short history of the smart glasses giving audible information of visual data to the blind ones. Unlike Google glasses, Angeles – the smart glasses, is a pair of extraordinary wearable tech that allows blind people to navigate their world through the use of AI and sensors, pretty similar to that used in autonomous car. It is also the most versatile and advanced all–in–one device for people with visual impairment.

Designed to move seamlessly with the wearer through daily life, it offers best visual acuity whether sitting reading, commuting to work, or exploring a new place. In 2016, China rolled out its first model of "Smart glasses" for the visually impaired. The technology was the first of its kind to combine both navigation and recognition functions. While most people who are visually impaired rely on guide dogs and guide sticks to assist them in their daily routine and travel, but these state–of–the–art glasses are providing a new option for the blind ones!

Besides the smart glasses, China still wasn't satisfied, so they invented a 3D printer that can print 10 full sized houses in a day. Later in 2016, construction company Hua Shang Tengda build the 3D printing machine and printed a 400–square–meter, two story house in a mere month and a half! The study also shows that the house will at least last 100 years! Although some people think that the house might be unstable, the study shows that the main pros of a 3D printed home are the opportunities for new designs, reduced costs, and fewer construction errors! On the other hand, next 3D printing company in China called Winson used their 3D printer and printed "Office of the future" in Dubai, and many other 3D printed houses in China. All in all, this leads to a more efficient construction industry, and to improve the technical skills of future engineers.

After inventing Angeleye the smart glasses, and the 3D printer, China still didn't think it's enough, so they again invented high–speed rail technology! The high speed rail (HSR) network in the People's Republic of China (PRC) is the world's longest and most extensively used, with a total length of 42000 km (26000 mi) by the end of 2022! The HSR network encompasses newly built rail lines with a design speed of 200–350 km/hour! China's HSR accounts for two–thirds of the world's total high– speed railway network! Let's talk about the history of this HSR network. This high–speed railway network planning started in the early 1990s under the leadership of Deng Xiaoping. In December 1994, the state council commissioned a feasibility study for the line. After that, high–speed rail has developed rapidly in China since the mid–2000s. China Railway High–speed was later on introduced in April 2007 and the Beijing–Tianjin intercity rail, which opened in August 2008, was the first passenger dedicated to high–speed rail lines. Currently, the high–speed railway extended to all provincial–level administrative divisions and Hong Kong SAR, with the exception of Macau SAR.

Now, let us share more interesting facts about the HSR line. The Beijing–Kunming high–speed railway which at 2760 km (1710 mi) is the world's longest high–speed railway line in operation, and the Beijing–Shanghai high–speed railway with the world's fastest operating conventional train services. The Shanghai Maglev is the world's first high–speed commercial magnetic levitation line, whose trains run on non–conventional track and reach a top speed of 430 km/hour (267 mph). In 2020, China started testing a maglev prototype train that runs at 600 km per hour (373 mph) and planned a 2025 launch date.

Talking about Chinese inventions, we have to mention the recently announced one – the world's The first unmanned air taxi flew commercially in Anhui, China. The air taxi uses the world's first EHang intelligent EH216–S unmanned aircraft that has obtained an airworthiness certificate. It can fly continuously for about 30 minutes, with a maximum flight altitude of 120 metres and a flight speed of 10 metres per second. The air taxi can carry up to 2

people and flies using 16 propellers powered by pure electricity. The biggest feature is that it can achieve unmanned driving. The entire process is connected to the ground command centre via a 4G or 5G network, and ground personnel perform various operations on the aircraft. In order to carry more passengers and have a wider range of applications, many countries are actively developing unmanned air taxis, and China is the first country in the world to launch commercial flights of "air taxis" with unmanned aircraft. The unmanned aircraft is reported to cost more than 2 million yuan. It is currently mainly used for aerial tours of Logang Park in Hefei. In the future, it can realise straight−line air transportation, such as transportation to airports, train stations or important areas. Air taxis do not require a driver or safety officer, and there is no need for passengers to do anything. The flight routes are all set in advance. As long as you select the destination and execute the takeoff command, the aircraft will automatically fly to the destination. Its aircraft have more than 42,000 safety test flight records in 14 countries around the world, which fully guarantees its comfort and safety.

Overall, China is a very popular country, and their inventions are mind−blowing. From high−speed railway technology to give the visually impaired ones the chance to open their world! It's just amazing! I hope that a future China will invent more stuff for the disabled ones with a better chance in life.

The Invention of Movable Type Printing

Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Leung, Wing Yu Natalie – 12

What is movable type printing? What is the use of it? And how does this thing exist? So today I will tell you more about movable type printing. Movable type printing is the system and technology of printing and typography that uses movable components to reproduce the elements of a document, usually on the medium of paper. They were made out of wooden blocks of sand and cast metal types from the depressions in copper, bronze, iron, or tin.

And this machine was invented by a man called Bi Sheng; he was a Chinese artisan and engineer also known as the inventor of the world's first movable type technology, with printing being one of the Four Great Inventions. Bi Sheng's system was made of Chinese porcelain and was invented between 1039 and 1048 in the Song dynasty. He was born in China in 990 AD; In 1051, he passed away.

During the reign of Chingli (1041–1048), Bi Sheng, a man of unofficial position, made movable type. He took some sticky clay and cut its characters as thin as the edge of a coin. Each character formed, as it were, a single type. He baked them in the fire to make them hard. He had previously prepared an iron plate, and he had covered his plate with a mixture of pine resin, wax, and paper ashes. When he wished to print, he took an iron frame and set it on the iron plate. In this, he placed the types close together. When the frame was full, the whole thing made one solid block of type. He then placed it near the fire to warm it. When the paste [at the back] was slightly melted, he took a smooth board and pressed it over the surface, so that the blocks of type became as even as a whetstone. For each character, there were several types, and for certain common characters, there were twenty or more types each, in order to be prepared for the repetition of characters on the same page. When the characters were not in use, he had them arranged with paper labels, one label for each rhyme group, and kept them in wooden cases.

A lot of inventions have their own stories, but they did not leave out the movable type of printing that was invented by a great person who knows a lot about wood cutting. In around 1454, a man named Johannes Gutenberg invented a printing machine that used movable lead type and printed a bible in Latin.

Johannes thinks he is the inventor of it, but what he doesn't know is that paper was invented by China a hundred years ago. Furthermore, even earlier than that, Bi Song had already invented the movable type printing machine. But what led him to create movable type printing?

But what led him to create this movable type of printing? Around 600 AD, when materials such as turtle shells, bamboo slips, and silk had been used, woodblock printing was invented. But after a while, they found out that a specialised change is very complicated due to a serious hindrance to spreading knowledge, and it needed to take a lot of time.

At that time, Bi Sheng was a carpenter, so he knew more than most people about the difficulties of carving woodblocks. But after a long time of thinking, he eventually came up with a way of revolutionising the process. Step by step, after a try at making the Chinese characters, he finally succeeded in movable printing. And that is how movable type printing was invented by our great inventor in China, Bi Sheng.

Information Report about Tea

Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School, Tang, Chin Hay Charlotte – 10

Introduction

Do you know how tea was discovered? This information report is all about tea; it is going to tell you the history of tea, how it is made, the type of tea, all the good things about drinking tea, popular drinks and dishes made out of tea, drawbacks and world records about tea.

History

In 2737 BC, there was a Chinese emperor named Shennog who was resting one day under a tea plant while waiting for his servants to boil his drinking water when suddenly, some of the leaves from the tea plant accidentally fell into the pot of boiling drinking water, which created the first brewed tea. When the emperor saw that the colour of the water in the cup was unusual, his brain was full of curiosity, so he tried the new drink. After tasting the drink, he liked it very much and named it tea.

How it is made

In the old days, people made tea by first selecting and picking tea leaves, and then the leaves were put to dry; afterwards, if they wanted to drink tea, they would most likely put some tea leaves in a cup and then pour some hot water to create tea. But nowadays, we would first select tea leaves, and the type plus quality of leaves are used to determine the flavour of the tea. Tea leaves are picked based on variety, region, and season. Next, we will have to process the leaves. Tea leaves are processed differently depending on the type of tea. For example, green tea is pan–fried, and oolong is practically oxidised. After that, we will need to dry the tea leaves. Leaves are dried to prevent further oxidisation. There are many methods, including sun drying, machine drying, or event oven baking. The last step is grading. The tea leaves are sorted by size to maintain the flavour of the tea. The bigger leaves are used for loose–leaf tea, and the smaller ones are for tea bags.

Types of tea

There are many types of tea in the world, some of which are in China. Green tea is produced through pan–fried fresh leaves, and this unfermented tea originated in China's Fujian province. Oolong tea is another famous tea in China, which has a roasted aroma and can range from light to dark in flavour. Other teas are white tea, a rare and delicate unoxidised tea made from young tea buds and leaves. Black tea is a type of tea that originated from the Wuyi Mountain of Fujian but was then eventually popularised by the British in India.

Good things about drinking tea

If you drink tea, there are many good things about it. Firstly, tea contains a lot of antioxidants, and with these powerful antioxidants, it can help protect cells from damage and may help prevent disease. Green tea also has the most antioxidant content. Drinking tea can benefit heart health, too. The compounds in tea help lower blood pressure and the risk of heart attacks plus stroke. Finally, drinking tea can help us with cancer prevention. The antioxidants and other constituents in tea may help block DNA damage and block tumour growth mechanisms, which may be associated with a lower risk of some cancers.

Popular tea drinks and dishes

First, a famous tea drink is Bubble Tea. Bubble Tea is originally from Taiwan, these comprise tea, milk, jelly balls or tapioca pearls through a large straw. Another popular dish made from tea is tea eggs. Tea eggs are hard–boiled

eggs steeped in black tea leaves, which impart an umami flavour, a savoury Chinese dim sum dish. And finally, Masala Chai is a spiced Indian tea blend usually containing black tea, milk, ginger, cinnamon, cloves and cardamom.

Drawbacks

Even though tea has a lot of good things, there are, of course, drawbacks. Firstly, tea sometimes has caffeine content, which can affect your sleep badly. Also, some types of tea, especially those with strong pigments, can potentially stain teeth if consumed regularly over a prolonged period. Besides, tea contains tannins, which can cause stomach upset in some people of consume it on an empty stomach or in massive quantities. Another drawback of tea is that it can affect our iron absorption. The tannins in tea can decrease the absorption of nonheme iron from plant foods if consumed together. Leaving a gap between tea and meal helps. Drinking tea may lead to drug interaction. Tea sometimes contains compounds that may interact adversely with certain medications through the inhibition of metabolising enzymes.

World record about tea

There are many world records of tea. One of the records is the record for the most expensive tea, gyokuro, which was sold for $2000 per pound at the auction in 2014. Gyokuro is a rare shade−grown Japanese green tea. The tea leaves of gyokuro came from a small garden in Uji, Kyoto, Japan. Uji is renewed as one of the top regions for matcha and gyokuro cultivation. The high price is because gyokuro is one of the most labour−intensive teas. The bushes are sheltered for three weeks before harvest to increase amino acid levels, and this rarer production process drives up the cost. Due to the intensive growing methods, the expensive $2000 gyokuro came from a garden that produces only one kilogram of tea annually.

Conclusion

Tea is a drink that is highly filled with antioxidants, which may help with heart health and cancer prevention, but it may also be caffeine, affecting our sleep badly. And strong pigments which potentially stain teeth if consumed regularly over a prolonged period and much more.

Echoes of the Earth

HKUGA Primary School, Ng, Ho Yin Erik

Prologue: The Rumbling Echo

The silence of Luoyang City was broken when the earthquake came. The earthquake went as quickly as it came, but the damage done was devastating. The city had been shaken to its core and many people got hurt. Qing Tian was there to witness it all. She was sad to see the city being left vulnerable to earthquakes because there were so many myths about earthquakes but without a reliable method to predict earthquakes.

"Someday," she thought, "someday, I'll find a way to fix all this."

Qing Tian's Discovery

One day, Qing Tian was walking to the field to work. Something shiny caught her eye. She bent down to look closer; it was some kind of Chinese scroll. Qing Tian tried to pull it out but it would not budge. She tried again, this time using all her strength. The scroll flew out with a "Pop!", as Qing Tian fell backwards. She blew off the thick layer of dust on the scroll and ben down to look at what was written on it. Engraved on the scroll was "Design of the Seismograph (Earthquake Detector) by Zhang Heng" in big golden letters!

The scroll illustrated the design of a large bronze vessel featuring eight dragons marking primary compass directions. Each dragon held a small bronze ball, while beneath them were eight bronze toads with open mouths to catch the balls. The scroll mentioned that an earthquake would cause one of the eight dragons to open its mouth and release its bronze earthquake and provide a rough indication of the earthquake's direction.

For the next several days, Qing Tian took all her time studying the scroll and trying to create her own seismograph. She barely ate and worked tirelessly from day to night. Qing Tian tried many times only to fail, but she still did not give up. After many try−outs, she finally succeeded in building her own seismograph and started working on modifying it to improve its accuracy.

The Earth Shuddered Again

The city of Luoyang, still reeling from the scars of the previous devastating earthquake that had shattered its foundation, found itself thrust into another nightmarish ordeal as the earth unleashed its wrath once more. The earth washed over the city like the waves over the beach, swallowing everything in its path. House were destroyed, and shops were crushed. It was a scene of pure chaos. Qing Tian woke up with a startled cry.

"Just a dream," she thought with a sigh of relief, "just a dream."

Dedicated to helping the city better prepare for future earthquakes, Qing Tian tried to show her seismograph to the High Council but was faced with disbelief and ridicule. Although some citizens believed her, there were only a few.

Race Against Time

A few days later, a dragon head facing the north spit a ball. Qing Tian knew that another earthquake was on its way. A few more citizens started to believe in Qing Tian but when she once again tried to warn the High Council, nobody at the Council believed her. The clock was ticking.

While Qing Tian and her followers were at the Council, the citizens of Luoyang were going about their daily lives when suddenly, the ground trembled as the earth cracked open. The house started to crumble and fall. People got trapped under fallen debris and rubble. The people of Luoyang City began to realize their impending doom as the earthquake approached.

Qing Tian watched as the city crumbled before her, the town square collapsed and the houses toppled over. Everywhere, there was chaos and destruction. Quickly, Qing Tian gathered up the few followers she had.

"We must save the city!" she said.

Qing Tian led her followers into the city who helped to evacuate the citizens and also saved the people who were trapped under the rubble and debris made by the earthquake. But before Qing Tian and her followers had finished evacuating the citizens, the earthquake's aftermath began. The sheer force of the earthquake made Qing Tian fall over as a piece of rubble fell towards her. She sat there with a look of horror on her face, powerless.

Suddenly, a hand grabbed Qing Tian just before the rock crushed her. She realized that it was one of her followers.

"We can't give up now," he said, as he helped Qing Tian up.

She nodded and led the group to continue the evacuation. Soon, with the tireless efforts of Qing Tian and her followers, many of the citizens became safe. As Qing Tian followed the line of citizens out of the city, she looked back. The city had been reduced to rubble, nothing remained but debris and ash. With a sigh, she turned around and continued walking.

"Someday," she said in her heart, "I'll come back someday."

Epilogue: The Resilient Rebirth

The citizens of Luoyang, with the help of Qing Tian, rebuilt their city better than their original one. At the city election, Qing Tian was voted the Head Counsellor at the High Council. With the help of Qing Tian's seismograph, the citizens of Luoyang were not finally getting safer protection against earthquakes.

China's Great Inventions for the Good of Mankind

HKUGA Primary School, Lo, Tsz Lam Julian

Nowadays, people around the globe are always under the impression that China is always copying other countries' products, manufacturing inferior quality goods, and selling them worldwide. Despite these accusations, the Chinese has created countless inventions that contributed to not only their country, but also the entire human race. Read on to discover the modern inventions that China has crafted and its contributions.

Around in the Ninth Century CE, the Chinese merchants developed paper money since coins were too heavy to carry. Since paper money was so lightweighted and was such a brilliant idea, the dynasty quickly adopted it for tax payments. In this day and age, China has already evolved into a technologically advanced country, using electronic payments such as Alipay, WeChat Pay, etc. rather than utilizing the traditional paper cash to even lessen the weight of paper money. Moreover, research shows that Alipay and WeChat Pay are the most popular payment method in Mainland China, and most Chinese pay by simply scanning QR codes or in-app payments via Alipay and WeChat Pay, etc. I personally also went to Mainland China with my family, and when I bought a refreshing drink in a famous tea shop, I realized that ninety percent of everything in China are paid by electronic payments! After this realization, I secretly added a mental note to myself when travelling to China, 'Your wallet doesn't have to be full, but your smartphone's battery definitely has to be full'!

But the astonishing inventions that China created does not end here. Currently, the Chinese has successfully created a high-speed rail network that not only covers a colossal distance of 23,500 miles, but also links all of China's mega-cities. Furthermore, the huge railway network has been expected to double its length to around 43,500 miles by 2035! In addition, the world's fastest train, China's Shanghai Maglev, utilizes a state-of-the-art technology called electromagnetic force to make the train levitate above the rail, eliminating friction and reach record-breaking speeds of 460 kilometers per hour and top speeds of 510 kilometers per hour. Also, do you know that travelling in high-speed rail from Hong Kong to Shenzhen North station is only 23 minutes? That is even faster than doing a massage!

Apart from technologically advanced infrastructures and other mechanics, the Chinese also created extraordinary inventions for one's daily life! At present, bike-sharing has been known as one of the 'four great new inventions of China'. In Mainland China, there are approximately thirty bike-sharing companies that operate around 10 million bikes in total! By amalgamating cutting-edge technology GPS, e-payment and some other advanced machinery, China's complicated boke-sharing system supplies the Chinese citizens to an innumerable amount of simple, easy-to-use bikes around the entire country. Also, bike-sharing can not only help Chinese citizens to travel faster and more comfortable to avoid traffic congestion, but it can also benefit the precious environment by emitting less harmful gases to the atmosphere and reducing air pollution.

Not only did China create major inventions in land, but they also created the world's first operational delivery drone! While people in the west are still waiting for Amazon flying service to exist, the Chinese citizens have already been on their couch, sipping a nice, ice-cold drink and waiting for their packages to be delivered by the revolutionary drone straight to their front door. This mind-blowing package-delivery drone was manufactured by China e-

commerce giant, JD.com. The company presently has 40 pilotless drones in use to deliver packages in Jiangsu and Xi'an, serving countless people who live in remote, rural areas. Also, since 2016, the delivery drones have successfully completed 20,000 delivery trips, leaving its mark in history.

In a nutshell, it is crystal clear that China has crafted a considerable number of inventions and contributed to not just China, but the entire mankind as other countries tent to learn and adopt China's inventions. Do you think China created numerous inventions that made the world a better place to live?

Learning about Amazing Ancient Chinese Bronze

International College Hong Kong: Hong Lok Yuen, Law Renee – 8

The first time I saw Chinese bronze was the 'Sanxingdui' exhibition in the Hong Kong Palace Museum. My mom took me there last year with some of my friends because we wanted to see the bronze vessels. I was so curious about the bronze products and really wanted to know more about them. Once entering the Palace Museum, we rushed to the bronze section immediately.

We saw the well–known giant bronze mask. There were so many people that we had to wait in a queue to see it. When it was finally our turn, I was amazed by the size of the mask but found the shape and pattern very weird. Its eyes were carved like almonds and its nose was like an onion to me. It has a wide mouth with thin lips and the ears were rectangular–shaped. On the forehead of the mask, there was a square–shaped hole. I wondered what it was used for, so I listened carefully to the tour guide. She said that the hole was used to hang the mask on high places back then during sacrifices.

On the information card beside the exhibited item, I learned that the giant bronze mask is 71 cm tall, 131 cm wide and 66 cm deep, making it the biggest of its kind discovered so far. It is estimated to date back from 1300 BC to 1100 BC during the Bronze Age.

During this visit, I learned a lot about ancient Chinese bronze, but I also had a lot of questions in my mind. So after I went back home, I did some research on my computer with my friends and found some interesting discoveries about the history of bronze and how it was made.

The first thing we searched is the Chinese Bronze Age. At first, we couldn't understand the difficult words on the websites, but then one of my friends said we could also watch a video.

In one of the videos, I learned that the Chinese Bronze Age is an important period in Chinese history. It began in the Xia Dynasty (2070–1600 BC), and continued during the Shang Dynasty (1600–1046 BC) and Zhou dynasty (1045–256 BC). The video also told us what bronze was used for in the ancient time. It is used for rituals, food, wine, musical instruments and weapons. When rich people died, they took many bronze vessels with them into their tomb. For people who were alive, they used bronze vessels during rituals to offer food and drinks to their ancestors.

When we finished watching the video, all of my friends told me the information was not enough, so I searched more information. One of my friends told me her Mom told her about the Piece Mould Technique, and we wanted to know more. So we searched for that too.

On the website about this Piece Mould Technique, it said that this technique is an easy way to make bronze vessels. It told us the step by step instructions. The first step is to use clay to make a model of the vessel. Then, you need to put pieces of clay around the model to make the mould. You then press the clay to make sure that the patterns are carved into the mould. After that, the mould needs to be fired to become hard and the different sections of the mould need to be bound together. Then, you pour the melted bronze through the legs of the vessel. To make melted bronze, you can mix melted copper and tin together. After learning all this information, my friends and I were amazed by how smart ancient Chinese people were. We still wanted to learn more. But, my mom told me my friends had to go. So I have to search the information by myself.

Then, I searched for the inventors behind the Piece Mould Technique. Actually, nobody knows who they were. I searched everywhere on the internet and asked my parents about the inventors of the bronze vessels, but I could not find the answer. Actually, in the end, I learned that the beautiful delicate vessels were not invented by a single person, but by many Chinese craftsmen in the ancient time.

I also learned that people today are doing a lot of research on Chinese bronze. For example, people use ink-rubbing to see the pattern clearly on the vessel and use x-ray scanning to see the density for later repair. Also, archaeologists continues to have new discoveries and dig ancient bronze up from the ground, just like the 'Sanxingdui' exhibition I visited in the Hong Kong Palace Museum.

After digging into my research, I'm super excited to tell my friends at school all the cool stuff I found out! Learning about bronze was like going on a treasure hunt! Plus, those ancient Chinese craftsmen were like superheroes. They must have thought super hard and worked incredibly long to make such awesome things!

China's Great Inventions

Korean International School, Agrawal, Anishka – 11

From ancient to modern times,
From tiniest of things to largest innovations
From most unique inventions to many help
China continues to amaze us with their innovation
Their journey continues to shine brighter than any other
with their inventions, creativity, imagination
Whether it be ketchup or kiwi
To gunpowder and printing
Even the most technically advanced inventions
like fastest electric racing car to the most helpful Smart glasses giving vision to the blind
China continues to disrupt the world.

As I look at all the various things I have, I often wonder about the people who made them. How could they create something so tremendously marvelous? And then there's China, a country that has contributed so much to the world with its incredible inventions and innovations throughout history. It might be hard to believe that what you're using in your daily life currently, is probably manufactured in China.
From large affordable toy production to delicious food items, the tiniest mechanical chips to big vehicles, it has been invented in China. China is an incredible part of our modern world.

I'm certain that you've tasted that creamy, cheesy, and delicious pasta, and thought what a life-changing dish Italy has invented, but China is the one who should be getting credit for that dish. It all started when archeologists found a 4000-year-old bowl of noodles. That's when it became the most antique evidence of spaghetti. Even thought it would probably be older than you, it will still make drools water out your mouth. Have you ever caught yourself craving Japanese food, specifically sushi? It appears that you're a Chinese food lover. You see, in Southeast Asia and southern China, several people were already making fish in cooked rice to let it ferment for up to a year before relishing its mixed flavors of tangy, spicey, and subtle texture, way before Japnese saw the unique delicacy of it and decided to make it more popular with tiny changes in their own way. You owe China the biggest thank of your life otherwise ice cream wouldn't have been invented. You might think Parisians or Romans were the first to invent it, however, if you dig a little deeper back in history, you will find that it was that flavored ice that was made by them, but it was China's great thought to add dairy to it and turn it into an even better masterpiece.

You would most likely be using lotus leaves as shelter if umbrellas didn't exist, as a Chinese carpenter and inventor got inspired by lotus leaves being used as shelter and turned it into something far more complex just by making a wooden flexible framework and covering it with a sturdy clot. See now how just a few changes can make a big change. I'm sure many of you can say proudly that one of your most enjoyable things to do outdoors is kite flying, well it might be hard to believe but 3000 years ago its original main purpose was to serve the military by sending messages, measuring the distances, testing the wind signal, and who knows what else. It was first made of wood but over time not only did they change the material of it but also its purpose, and as you can see now it is also used as things to play with and are enjoyed worldwide. China is also known as the hometown of rockets and invented quite a few materials such as silk, bronze, porcelain, and the most imperative paper.

I'm sure now you all have, if not completely, then at least little changed opinion about our Great China due to its game–changing impact it has on the world. It has inspired many countries to alter and upgrade the very same idea into something completely new and unique. This just proves how important China is with all of the varieties of inventions that it has contributed to us, to this world, just to make it a better, more modern place. And I am confident to say that it surely will continue to. Neither any other country, nor any city can replace China, because it is irreplaceable.

China continues to advance on its journey of innovation and creativity rising higher and higher day by day.

You can already see the long journey, the hard work that has paid off for China, as a new day unfolds a more advance path clearers its way for China to rise higher and higher, day by day. lighting its way to the very top of the podium.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Chan, Tin Lun Andres – 11

The future of the Chinese economy lies in innovation. In ancient times, there are Four Great Chinese Inventions – printing, paper making, the compass, and gunpowder. However, the core of China is to be ever-changing in which the four great new inventions of China in modern times are transformed to electronic-payment, high-technology, scientific research, and bike-sharing.

Firstly, e-payment "Alipay" is a China's version of PayPal which is the first third-party payment platform in China. People in China can use digital money as wallet instead of cash in most shops nowadays. There are about 270 million active users in Alipay. Other than providing payment facility, money savings and transfers, the Alipay app's user can enjoy many lifestyle services such as: paying credit card debts, bills, buy bus or train tickets, online shopping and even reserve hotel room services. From high-end luxury shops to wet markets, customers can simply present the QR code and pay through a cell phone. Besides, online shopping become a lifestyle for most Chinese people after Jack Ma created the first online shopping platform, Alibaba, and its subsidiary Taobao in China. Alibaba's Alipay and Tencent's WeChat Pay are leading the change toward a cashless society.

Secondly, there are many high-technology projects which have been implemented in China. For example, high-speed rail, electric car, and 6G. China has the world's largest high-speed rail network which covers most of its major cities. Travelers can save time and money by travelling among different cities in China. It has advanced technologies and comfortable facilities to travelers in the train in which you can book tickets and meal by online payment beforehand. Besides, Chinese Electric car brands are the world's largest automobile market. China's government would like to be a global leader in electric vehicle implementation, marketing, and sales all in one stop. Up to now, China has more than 60 electric car models on the market. Other than electric car, China also kicked off its 6G public experimental verification platform since 2019. China Unicom expects to complete technical research and explore early application scenarios for 6G technology by 2025, said Liu Liehong, the chairman of China Unicom. The launch of 6G will be commercially available around 2030 in China.

Thirdly, scientific research on aerospace science and technology is one of the most advanced projects in the world. China pioneers its first biological experiment to the outer layer of the space back to 1964. In 1975, China introduces its first remote-sensing satellite that rotate the planet and back to Earth. A breakthrough in 1999 that China initiates an uncrewed spacecraft, Shenzhou 1, a key success of sending the country's astronauts into orbit. The first Chinese astronaut, Yang Liwei, aboard on Shenzhou 5 in 2003. Until recently in 2022, Shenzhou 15 carrying three Chinese astronauts toward the finalized Tiangong space station which begin the permanent habitation by astronauts in the space. I have no hesitation to tell you that living in another planet will be happened in near future. The aerospace industry is a big project to be further explored by China.

Lastly, although European cities have implemented bike-sharing programs many years ago, but China has successfully transformed the access of the bike by a smartphone app everywhere anytime. The creation and innovation of shared bike concept developing drastically from China have been widely spread around the world. Of course, bike-sharing programs might not be the only way, but the concept can be transformed to other areas like vehicles. This is a good question to think of. Or even a vehicle without a physical driver which is replaced by AI driver when you get aboard to the shared vehicle.

The breakthrough of China is presented with major opportunities for green growth, technological innovations, as well as a booming AI economy through COVID recovery gradually. Chinese citizens do enjoy efficiency and convenience on their livelihood through the well−developed revolution on both industrial and technology areas. According to China, Beijing targets to elevate its high−end equipment with advanced manufacturing improvement starting in 2024. The key missions are application of 5G technology, 6G pre−research and development on AI. China aims to further develop humanoid robots and biomedicines to raise its economic growth.

In conclusion, never underestimate a manpower which can influence a country especially there are high populations of 1.4 billion in China. There are still many possibilities to be explored and not yet found in future. New innovations and creation will continuously be the top priority in China. Maybe you will be the next creator to implement a fabulous product or project which never exist in the past. Do not limit the talent you have in mind. We are looking forward to our better life in China.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Chan, Tsz Yu – 10

Yesterday, when I was in the library, I found a book about China's four famous invention. Therefore, I opened the book out of curiosity.

After reading the book, I found out that according to old Chinese legend, tea was first discovered by Shennong, Chinese Father of Agriculture, around 2,737BC. In the Tang Dynasty, tea became a popular drink enjoyed by all social classes.

Also, the compass was invented by Chinese between the 2nd century BC and 1st century AD. It was first used in Feng Shui, the layout of buildings.

Furthermore, gunpowder was invented in the 9th century by Chinese alchemists searching for an elixir of immortality. By the time the Song dynasty treatise, *Wujing Zongyao*, was written by Zeng Gongliang and Yang Weide in 1044, the various Chinese formulas for gunpowder held levels of nitrate in the range of 27% to 50%.By the end of the 12th century, Chinese formulas of gunpowder had a level of nitrate capable of bursting through cast iron metal containers, in the form of the earliest hollow, gunpowder–filled grenade bombs.

And my favourite one is blocks– printing. Blocks made from wood were used in the oldest type of Chinese printing. Printing textiles and reproducing Buddhist scriptures were also done using these blocks. Short religious writings were carried as charms in this manner.

The Chinese invention of woodblock printing, at some point before the first dated book in 868 (the Diamond Sutra), produced the world's first print culture. According to A. Hyatt Mayor, curator at the Metropolitan Museum of Art, "it was the Chinese who really invented the means of communication that was to dominate until our age." Woodblock printing was better suited to Chinese characters than movable type, which the Chinese also invented, but which did not replace woodblock printing. Western printing presses, although introduced in the 16th century, were not widely used in China until the 19th century. China, along with Korea, was one of the last countries to adopt them.

The intricate frontispiece of the Diamond Sutra from Tang dynasty China, 868 (British Museum)Woodblock printing for textiles, on the other hand, preceded text printing by centuries in all cultures, and is first found in China at around 220.[31] It reached Europe by the 14th century or before, via the Islamic world, and by around 1400 was being used on paper for old master prints and playing cards.

Overall speaking, China's invention has really helped improved the world. So, I am very proud of them! Lastly, I hope China's inventions can helped the world have a better future!

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Cheng, Ching – 11

China has a rich history of inventions and continues to contribute to technological advancements in various fields. Rail development, Mobile Payment Systems and E-commerce Giants are some notable recent inventions and innovations which are an astounding success.

China is known for its extensive high-speed rail network, which is the largest in the world. The country has developed and implemented advanced train technologies, allowing for efficient and comfortable travel at speeds exceeding 300 kilometers per hour. Apart from the high-speed rail network, the rapid development of the railway system in Shenzhen has provided a more convenient method of transportation for all citizens.

Also, Alibaba and JD.com is the major e-commerce companies in China which have revolutionized the online shopping experience. For instance, Taobao which is the largest e-commerce platforms of China, has played a crucial role in promoting online transactions and provided 24-hour purchasing convenience to all people.

Last but not least, traditional payment methods have leapfrogged by China with the widespread adoption of mobile payment systems like Alipay and WeChat Pay. These platforms enable us to make secure and convenient transactions using their smartphones. As a result of stimulating the consumer market.

These are just a few examples of China's recent inventions and innovations. The country's commitment to scientific research and development, coupled with its large market and technological expertise, positions it as a key player in the global innovation landscape.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Chow, Tsz Chiu – 10

I am Darren, I created a new invention that could help a lot of homeless people!

I created a new cooking robot that has a lot of abilities! First, it can cook by itself! The robot knows how to make every dish in the world! So it could cook so yummy food to give it to the homeless people! So this leads us to the robot second ability. The robot's hands! The hands can move and hold the dishes and give it out. How convenient! It also knows how to say nice words to others! The robot will say have a nice day! Enjoy your meal! '

The robot's third abilities is it can keep the food warm in its body. Just like a an oven! It can keep the food warm so the homeless people can enjoy a fresh warm meal.

The robot's fourth ability is one of the most convenient! When the robot or the homeless people drops their food, it will use it robot's vacuum cleaner to suck up the food that have been fallen down on the floor, and throw it in to the rubbish bin. After that, it will user fresh clean water to mop the floor so it will be as clean as before. It will use it air blower to dry the floor up! If the homeless drops his food, the robot will nicely give the homeless another fresh warm meal to him. I made this robot that is the food drops on the ground, he will only use five minutes to clean the floor. So avoid that anybody getting hurt!

Now I will take about this robot's fifth ability! If this robot breaks down in the middle of the sidewalk, it knows how to contact the robot control center. This robot can move really fast! So it can give out the food to the homeless people really quickly! So the homeless people can receive their food. If the robot ran out of food, it knows how to go back to the robot control center to get some more food really quickly! so if the robot ran out of food, this problem will be solved as quickly as possible. So no need to worries that the robot will ran of food.

So this is my robot cooking invention. It is really useful for helping homeless people or even people that are in need. So this invention is really important to this world. If we don't have this invention, a lot of people will starve and don't have food to eat! And they may even starve to death! So my invention is really important to the homeless people or people in need! So do not miss out on this invention!

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Fung, Hong Yiu – 12

Imagine a world without paper, where writing and reading were difficult tasks. Fortunately, ancient China gifted us with one of the most remarkable inventions in history – papermaking. This revolutionary process transformed the way information was recorded, shared, and preserved. This essay will take you on a journey through time to discover the fascinating origins and techniques of papermaking in ancient China.

The origins of papermaking can be traced back to the Han Dynasty in ancient China, around 200 BCE. Initially, the Chinese used various natural materials like bamboo, silk, and animal skins to record information. However, these materials were limited and expensive. Cai Lun, a court official during the Eastern Han Dynasty, is credited with inventing paper as we know it today. In 105 CE, he developed a revolutionary technique that utilized mulberry bark, old rags, and hemp waste to produce a durable and versatile writing surface.

The papermaking process in ancient China involved several intricate steps. First, the raw materials were soaked in water for days, allowing them to ferment. Then, the fibers were pounded into a pulp using wooden mallets. Next, the pulp was mixed with water and poured into a rectangular mold with a bamboo screen, ensuring an even distribution of fibers. Excess water was drained by gently shaking the mold. The wet sheet of paper was then transferred onto a heated surface, such as a heated stone or metal plate, to dry and solidify. Finally, the dried paper was polished with a smooth stone to achieve a smooth and even texture.

The invention of paper had a profound impact on Chinese society and the world at large. It revolutionized communication, education, and the spread of knowledge. With the availability of paper, books became more affordable and accessible, allowing for the mass production and dissemination of literature. The spread of Buddhism in China was greatly facilitated (speed up) by the use of paper, as religious (宗教)texts and sutras could be reproduced and distributed more easily. Over time, advancements in papermaking techniques were made. During the Tang Dynasty, the addition of tree bark and other plant fibers enhanced paper's quality and durability. In the Song Dynasty, paper mills were established, streamlining production and making paper more readily available. The invention of movable type printing during the Song Dynasty further revolutionized the dissemination of information, as books and documents could be printed more efficiently.

The invention of papermaking in ancient China had a lasting legacy. As neighboring countries learned of this remarkable innovation, they adopted and adapted the techniques. Papermaking eventually spread to the Islamic world in the 8th century, and from there, it reached Europe in the 12th century through trade and cultural exchanges. This marked the beginning of the paper industry in Europe, leading to the proliferation of printing, increased literacy rates, and the democratization of knowledge.

Even in the digital age, paper remains an essential medium for communication, education, and artistic expression. It has become deeply ingrained in our daily lives, from books and newspapers to packaging and art. The invention of papermaking in ancient China laid the foundation for the world we live in today.

The invention of papermaking in ancient China was a true game–changer. It transformed the way information was recorded, shared, and preserved, leaving an indelible mark on the world. The techniques and advancements made by the ancient Chinese have had a lasting impact on society, enabling the spread of knowledge, the accessibility of literature, and the growth of civilization. Paper continues to shape our lives, bridging the past and present, and connecting people across time and space.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Ho, Chak Lai – 11

Ts'ai Lun, a eunuch who served the Eastern Han dynasty in China, is widely credited with creating paper and the modern method of making it around the 2nd century BCE. He produced the first paper in Lei–Yang, China, after observing how paper wasps build their nests or being influenced by his native people. Before paper invented, writing was done on different materials like papyrus, bamboo, silk, and animal skins, but unfortunately, they were not easily accessible or long–lasting.

The Chinese people needed a better writing surface that was light, easy to carry, cheap and also long–lasting. However, the bamboo slips or silk scrolls they used before were ineffective and inefficient in use. Ts'ai Lun was inspired by how the other cultures, like the Egyptians, made paper from different materials such as papyrus. Around 105 AD, he had the notion to make paper from of shredded tree bark, hemp scraps, old fabric, and fishing nets. He improved the paper–making process to make it more economical and efficient, allowing for large–scale manufacturing.

Paper was a significant innovation in technology which changed how people wrote, communicated, and preserved information across the world. It facilitated progress in fields like literature, education, governance and intercultural exchange. People use paper made from plant fibre for many purposes, such as writing, drawing, and painting. Writing papers come in different shades of white and have smooth or rough surfaces. We use high–quality wood pulp that is bleached to make sulphite sheets, or high–quality cotton fibres to make cotton sheets.

Paper has many uses in various domains. It is a flat least material that can be written, printed, or drawn on. It is the basis for many printed media, such as books, newspaper, magazines, and notebooks. Paper is also a common packaging material for boxes, bags, cartoon, and labels, it is a versatile material for artistic and creative projects, such as origami, papercraft, scrapbooking, cardmaking, and others. Paper also plays a significant function in education. Textbooks, workbooks, notes, and other educational supplies are intended to be stored in it. Paper–based stationery, personal hygiene goods, and crumpled paper are essential for daily living, providing comfort and hygiene, and serving as a protective filler during transport and storage. It reduces the risk of damage. Paper can be recycled or made from eco–friendly sources for this purpose. In various industries and specialized fields, such as filters, electrical insulation, sandpaper, cigarette paper, medical packaging, tea bags, and more are using paper. Some of the most popular varieties of paper are copy paper, bond paper, cardstock, glossy paper, matte paper, newsprint, tissue paper, building paper, watercolour paper, vellum, tracing paper, and parchment paper.

There are many kinds of paper that people often use, such as paper for printing, writing, making cards, photos, magazines, newspaper, crafts, painting, drawing and writing on animal skins. Paper makers can check and measure the paper they make to make sure it has the right qualities and meets the expected criteria, this can make the paper better, save resources, and make the production process more effective.

The art of making paper travelled to different countries such as Korea, Japan, some European and American nations. In Korea, people like to use Hanji, which is their own paper. Meanwhile in Japan, they have Washi, which is the typical name of their paper. The Islamic Empire spread papermaking to the Islamic world in the 8th century through the enlargement of the Islamic Empire. The Arabs obtained the knowledge of papermaking at the time when they succeeded taking control of the countries they had defeated and introduced it to regions under their control, such as North Africa, Spain, and the Middle East. Papermaking adapted to the culture of each region and developed its own features and methods. Then, in the 12th century, papermaking techniques spread to Italy, Spain, and other Mediterranean regions. The paper production was getting larger in Europe. Not only that, it also developed in places

like France, Germany and Netherlands. In India, handmade paper production became very important while Kashmir gained prominent for their fine–quality papers. Papermaking techniques kept expanding and spreading through other parts of the regions. They were introduced to the Americas during European colonization. The Spanish brought papermaking knowledge to the New World, and by then, Mexico and South America and some other regions established the paper factories.

Paper is still a vital material for conveying, recording, and creating various forms of information. It can be made in different qualities, each with its own features that match different uses. For instance, papers for writing and printing are usually even and absorb ink well. On the other hand, certain paper products are less needed due to the digital alternatives. Nevertheless, we acknowledge that paper is a flexible and useful material that can contribute greatly to human interaction, learning, and culture over time.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Ho, Chin Yu – 10

The compass, called Sinan in ancient times, mainly consists of a magnetic needle mounted on a shaft. The magnetic needle can rotate freely under the influence of the natural geomagnetic field and remains in the tangent direction of the magnetic meridian. The south pole of the magnetic needle points to the geographical south pole (magnetic north pole). This performance can be used to identify the direction.

Commonly used in navigation, geodesy, travel, and military. The invention of the compass that physically indicates direction has three types of components, namely the compass, the compass, and the magnetic needle, all of which are Chinese inventions. According to the "Ancient Mine Records", it first appeared in the Cishan area during the Warring States Period.

The compass is the result of the ancient Chinese working people's understanding of the magnetism of magnets through long-term practice. As one of the four great inventions in ancient China, its invention played an immeasurable role in the development of human science, technology, and civilization. In ancient China, the compass was first used to determine the direction of sacrifices, etiquette, military affairs, divination, and Feng Shui.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Hon, Tsz Yu – 12

Shanghai has long been China's capital for the automobile industry. From the immense development of the car industry in this region, the fastest electric racing car, Nio, was born. This car startup was founded by Li Bin, who in 2015, wanted to prove to the world that his company can produce the fastest electric car in the world within the shortest possible amount of time.Therefore,they went on to take part in Formula E, the equivalent electric car race of Formula 1, and just in the first season, Nio won the world title of the fastest electric car.According to Li Bin, electric vehicles are more environmentally friendly and more capable of meeting the needs of autonomous driving. Both of these reasons are why electric vehicles are the future for China. Nio proved it was a legit race car later in 2017 when an autonomous version of the car completed the US version of the circuit at 250 km/h.

Another invention is Smart glasses which gives vision to the blind.Unlike Google Glass, Angeleye is a pair of extraordinary wearable tech that allows blind people to navigate their world through the use of AI and sensors, similar to that used in autonomous car. Not only can the smart glasses detect objects, but they can also recognize money bank notes, assist in text reading, recognize colours and distinguish different levels of light intensity.Prior to this invention, many would assume that getting this type of tech and AI system to fit into a mere 45-gram pair of glasses would be be impossible. However Feng Xin Peng, the founder of Next VPU has proven the world wrong. The fact that Feng can fit this amount of power and a whole system of AI into a mobile phone and these perfect-fit glasses is an impressive phenomenon. This kind of deep learning would have been impossible a few years ago, especially when it came to having such technology fit in your pocket.

One of the biggest 3D printing companies in China, Winsun is well-known around the world, especially for the 3D printed "Office of the Future" in Dubai and many other 3D printed houses in China. According to the founder of Winsun, Ma YiHe, constructing houses is painful and inefficient for the construction workers."Taking the hot weather, rough condition, dangerous environment, and time-consuming matter into account, why can't building houses be easier like how cars or planes are manufactured by machines?", says Ma YiHe.The house shown above was printed by a 7-meter-tall 3D printer layer by layer. For the purpose of testing the quality and safety, the house had 28,000 kg of weight on it for one and a half days. There were a few cracks here and there, but the structure didn't break – the 3D printed houses are actually three times stronger and more resistant than traditionally-built houses. In addition, thanks to the efficiency and the environmentally friendliness of materials used for 3D printing, costs can be reduced by up to 70%. From here, we can see the potential of 3D printing completely disrupting the manufacturing industry.

Imagine the application of AR that turns ordinary glass, windows at shops or taxis into space for advertising. With nanotechnology, this is made possible. Inspired by Tom Cruise's action movies, Chen Jia, the founder of Netcars Technology, launched a startup that conducts research dedicated for nanotechnology which leads to the design of AR optical technology, new telecommunication electronics and new material science. Other than advertising, the company also produces a smart vehicle info-system, a smart helmet and smart glasses.

These inventions made our lives more easier and brighter. I believe everyone in the world are glad to see these new inventions success. I hope that inventors can invent more useful inventions in order to effect the world to be more successful and convenient.

Chinese Inventors and their Inventions

Kowloon Tong School (Primary Section), Hui, Yat Yin Haylee – 11

Chinese inventors held leading positions in studying nature in the world. Other than "The Four Great Inventions"–papermaking, printing, gunpowder, and the compass, ancient Chinese Inventors contributed countless magnificent inventions to the world. Here are some of the inventions.

Hon Lik, a Chinese pharmacist, was the inventor of the modern electronic cigarette. The reason for him to make e–cigarettes was to help himself quit smoking. In 2003, Hon Lik with the astonishing idea of using a piezoelectric ultrasound–emitting element to boil away an influenced jet of liquid containing nicotine thinned out in a propylene glycol solution. This design produces a smoke–like condensation that can be sucked in and provides a vehicle for nicotine carriage into the circulating blood via the lungs. He also put forward using propylene glycol to dilute nicotine and put it down in a throwaway plastic cassette which serves as a liquid reservoir and mouthpiece. The first e–cigarette was made in Shenyang, China in 2004. The advantage of e–cigarettes is that it does not produce the two most harmful chemicals, tar and carbon monoxide, in the cigarette. With this invention, people can still smoke while minimizing the harmful effect of the cigarette, and avoid people from getting secondhand smoke.

The non–invasive prenatal diagnostic testing for Down Syndrome was developed by a Chinese researcher, Dr. Dennis Lo in Hong Kong in 2008. This is hailed as a massive breakthrough! In the old days, pregnant women had to undergo invasive testing for Down Syndrome for their babies by putting a needle through the belly to collect the amniotic fluid or chorionic villus sampling which is very dangerous and sometimes may cause death. Dr. Lo discovered that there is the baby's DNA in the circulating blood of the pregnant women. Therefore, we can simply collect the blood from the mother and perform the Down Syndrome test. It is not only convenient but also safe for both babies and the mother, the accuracy is also very high (~98%)! This method has been used in many countries around the world.

Another invention is the Wheelbarrows. The earliest wheelbarrows with archaeological evidence in the form of a one–wheel wagon from the second–century Han Dynasty Emperor Hui's tomb murals and brick tomb reliefs. The painted tomb mural of a man pushing a wheelbarrow was found in a tomb at Chengdu, Sichuan territory, dated accurately to 118 CE. After finding out about this wheelbarrow, it gave some ideas to the inventors, and throughout time, wheelbarrows have developed into the modern cars we have today, which help us to travel to different places efficiently and save our time.

These inventions have affected the world and our lives. Some helped us with efficiency, and some helped us with our health. I am so glad to have these wonderful inventors and I hope in the coming future, they can invent more gadgets to make our lives easier and brighter.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Lam, Ming Sum – 10

Ancient China was a civilization rich in inventions, from paper to gunpowder, compass and painting, those were all invented back then, but did you know that nowadays, China is still inventing useful technology like that?

In the past few years, China has invented lots of useful technology like mobile payment system including WeChatpay and Alipay. These platforms make buying things so much easier! Now, when you go to Mainland China, you will find that they don't use real money much, instead, they use online payment systems! There are so many good things about these mobile payment systems, like you don't need to bring too many cash out and you won't need to be afraid of not enough money to buy your favorite product. Unfortunately, it can cause different negative problems like hackers can steal your money from the e-wallet and if you don't have a mobile phone, you won't be able to pay.

China has also built many high-speed rail lines, the high-speed railway network is composed of four main components including the National High-Speed rail grid, Regional High-Speed Railways, Intercity High-Speed Rail Lines and the Upgraded Conventional Rail Lines that make a whopping 42,000 kilometers of high-speed railway roads!

Except from those two, China's has also made different Artificial Intelligences, including ERNIE 3.5 from Baidu and SenseRobot from Sensetime. Chinese companies and research institutions are actively working on AI technologies, including machine learning, computer vision, natural language processing, and robotics. They have invented different products to help people's lives like autonomous vehicles so that people don't need to drive themselves home, the car can do it itself.

Besides those, China has also invented new energy technologies, such as solar power and wind power, our country has become the world's largest producer of solar panels. These new energy technologies can reduce the waste of the old energy technologies and it is more eco-friendly, so the country can be cleaner. The old energy technologies also have very big smell and the people who live nearby will be very annoyed, but the new energy technologies fixed the problem, it doesn't produce any smells so the people who live nearby can live normally. One of the old energy technologies named nuclear power can cause serious health problems when an accident occurs and leaks the waste. In Fukushima, Japan, the nuclear plant there had a disaster during the earthquake and tsunami in 2011 and caused serious damage to there. They kept pouring water till this day to prevent the nuclear plant's waste to get out and harm people. Unfortunately, they have no space to keep the waste water and had to dump it in sea. It harmed many fish and sea animals there but the new energy technologies fixed that problem.

In conclusion, China is not only rich in inventions in the past. Nowadays, China is the world leader in inventing new technology products. We should appreciate our country and believe that China's technology will become better and better in the future.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Lam, Yan – 10

Paper and gunpower, inventions of the past, apps, WeChat and Taobao, inventions from now days. Chinese creativity should not only be a thing in the past, but China is also famous for creating useful things, from paper to apps. What about the coming future? In my opinion, I think that in the future phones implanted in human brains would be an interesting and creative invention. So how will this work? Well keep reading to know more about my fun idea!

Phones implanted in human brains; I would call it 'micro–life'. 'micro' meaning small thing that can not be seen be human eyes, like a microscope describing really tiny and mini items. 'Micro–life' has many benefits, such as…….

This invention can help the growth of a person by making people more use their own brain to solve things and do not need to ask for other's assistance, by doing so their knowledge will also be increased as others will post videos about studies and students can also remember it and expand their own horizons.

Furthermore, a person's eyesight can also be improved as people will stop using electronic devices and just using their brains will not damage the eyesight, in addition no damage means improvement.

Lastly, this amazing invention is good for the earth's economic development. 'Why?' you, my dear reader might ask. Well, it is because if people do not buy any electronic devices then factories do not have to use any more plastic to make more phones, computers, iPad, electronic watches and more.

To make a single 'micro–life', you will only need to recycle every day, and in the new future you, your friends, your family will definitely have a 'micro–life' in your own brains thinking about the past using 'pathetic' phones.

My invention is really convenient to use, and I am going to persuade you why. Firstly, you just need to think about something and a video, research paper, website will simply pop into your head like a thought bubble. Secondly, you do not even need to charge it as when you sleep it will turn into charging mode by itself. I mean, how convenient is that?

In conclusion, 'micro–life' has many benefits to a human's life; easy to make; convenient to use. So be sure to get one as soon as possible!

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Leung, Hoi Yin – 10

Many people know about many inventions that are from China like tik–tok (a social media platform), wechat and more. But many don't know that the compass was made by a guy in China named Shen Kuo in the Han dynasty.

The first compass was made with lodestone and a metal spoon it was called the south pointing fish or the south governor, there is a plate with lots of words on it and the metal spoon is placed in the middle. After that the spoon will immediately automatically point to the south, that's why its called the south pointing fish. The compass was first used for the fisherman long ago for finding their way out to the sea where there are many big fishes and there way back to shore.

After China started using the compass, Europe adapted the compass from China then made a better kind of compass, and slowly it became the compass we see now.

A long time ago China also invented paper. It was invented by Cai lun from the Han dynasty.

Cai Lun was a Chinese eunuch court official of the Eastern Han dynasty. He thought that the bamboo that they used to write on was very heavy and bulky. So he wanted to invent a better material to write on.

He tried lots of materials and it didn't work until he attempted to boil bamboo, hempwaste, oldrags, fishnets and tree barks to a pulp, which was then beaten before mixing it with water. After he hung the mixture and dried it, he tried to write on it. He found it very easy to write on and is light. So he stopped trying other materials and the people loved it, soon after people around the world are starting to use paper.

In conclusion. China has made many good inventions, and it has helped the world in many ways.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Leung, Kwan Ho – 10

A beautiful vessel called Chinese porcelain.

The invention of Chinese porcelain is the pinnacle of ceramic craftsmanship in human history. Since ancient times, Chinese porcelain has garnered praise and admiration worldwide for its elegant forms, exquisite craftsmanship, and unique artistic value.

How was it invented? Everything can be traced back to the Neolithic period of China. During that time, people always used rough clay to make vessels. However, this clay was not suitable for creating refined vessels. As time passed, people noticed the limitations of this clay and started to search for better materials and techniques to produce more beautiful and durable vessels.

Around the 16th century BCE, they finally discovered a better material called kaolin clay. This clay had a high content of a mineral called kaolinite, which, when fired at high temperatures, produced a vitrified and translucent surface. This breakthrough marked the birth of true porcelain.

Over time, Chinese porcelain became historical relics with significant value. However, the techniques gradually disappeared, so we should treasure Chinese porcelain.

China's invention

Kowloon Tong School (Primary Section), Liang, Cadence Ka Yin – 10

One notable invention from China is the compass. The compass, also known as the magnetic compass, was invented during the Han Dynasty around the 2nd century BC. It revolutionized maritime navigation by providing a reliable method for determining direction.

The early Chinese compass consisted of a magnetized iron spoon floating in a bowl of water. The spoon would align itself with the Earth's magnetic field, pointing north and allowing sailors to navigate accurately. This invention greatly facilitated long-distance sea voyages, as it provided a reliable means of orientation, reducing the risks of getting lost at sea.

The compass not only had a significant impact on navigation but also influenced the development of trade, exploration, and the spread of culture. It enabled Chinese sailors to navigate the vast oceans, leading to the establishment of maritime trade routes such as the famous Silk Road. The compass also played a crucial role in the Age of Discovery, as European explorers relied on it for their voyages of exploration.

The Chinese compass was a remarkable advancement in scientific and technological knowledge, demonstrating the Chinese understanding of magnetism and their ability to apply it practically. Its invention and subsequent improvements contributed to the progress of navigation and had a profound influence on human history.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Ng, Ching Hang – 10

China has many revolutionary inventions, for example: compass, gunpowder, paper…… But, do you know a new tale of invention in China has just been created? This innovative masterpiece is called Smart Buddy.

I would like to explain the main purpose for me to create this invention. Nowadays, there are more and more elderly in the population, which undoubtedly bring different pressing social problems. Most of the elderly find it very difficult to take care of themselves, while some of them have no family members to look after them. They cannot cook, wear clothes and even walk properly! This could make them fall, injured, starve or even perish. In response to the problems, I create Smart Buddy which is an intelligent robot caretaker. The Smart Buddy is designed to take care of the elderly, and to bring lots of fun and happiness to them.

Smart Buddy is made of millions of nanometer-sized solar panels. It is very eco-friendly because it uses renewable solar energy to power the robot. Furthermore, it is very quiet, because it uses solar panels instead of a noisy motor. To make the Smart Buddy light and dexterous, I adopt carbon fiber for the body materials of Smart Buddy. An activity of S.T.E.M inspired me to make this marvelous robot caretaker, and the teachers in the S.T.E.M activity taught me to do coding to control the movement of the different robot parts. A humanoid robot is creepy, and it would make the elderly terrified. As such, I designed Smart Buddy to be very adorable and cuddly instead of looking metallic. Smart Buddy has big sparkling yellow eyes. And his appearance is green, which looks peaceful and eco-friendly.

Smart Buddy has lots of powerful functions. Smart Buddy's eyes can detect a person's feelings. It analyses any problem and provides advice to the elderly to resolve it. Smart Buddy's eyes can detect if the owner is feeling unwell, and Smart Buddy can give the elderly appropriate medical advice or call an ambulance if necessary. Smart Buddy's mouth is a speaker allowing him to communicate with the elderly loudly and clearly. Furthermore, Smart Buddy's legs and arms are strong and dexterous, allowing him to carry heavy bags for the elderly. Last but not the least, if Smart Buddy's owner is not in a good mood, he will transform into a projector. The projector can cheer the elderly up by playing some hilarious movies. Of course, Smart Buddy can do all the household chores, do grocery shopping and even cook nutritious meals. He can even give his owner a refreshing massage!

So what are you waiting for? Don't hesitate! Go and buy Smart Buddy immediately!

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Ng, Sin Man – 10

Do you love Chinese silk? It is shiny, lustrous, soft yet strong, it can be beautifully dyed. Nowadays, we use silk to make carpets, furnishing, curtains and so on. Besides textiles, silk is also applied in various industries such as clothing, medical and surgical products and even fishing lines. We can see silk everywhere now. But do you know the history of silk?

The production of silk originated in Neolithic China within the Yangshao culture. The oldest silk found in China has been dated to about 3630 BC. This silk was found in the Henan province, a region widely regarded as the cradle of Chinese civilization. Silk cloth was invented by Lady His–Ling–Shih, the wife of the mythical Yellow Emperor. In Chinese texts, she is sometimes referred to as "The Goddess of Silk". The process of silk production is known as sericulture who was discovered by the Chinese 5000 years. According to legend, the princess Xi Ling–shi discovered the secret of silk production–a silk worm that could be unraveled to produce a thread.

For a long time, silk was a material reserved for the Emperor of China and those very close to him, such as important family members and very high–ranking dignitaries. Gradually, the restrictions on who could wear and use silk in China began to vanish. And more and more people–who could afford the precious material–could be seen sporting silk clothing and decorating with silk ornaments. Now, silk production became a big industry in China. Developers made silk more affordable, so many people can afford using silk.

As the knowledge of silk production was very valuable, the Chinese emperor wanted it keep it as a guarded secret, but it eventually spread beyond China, first to India and Japan, then to Persian Empire and to the west. The silk road was the trade that made it possible for people in places located far away from any silk cultivation and silk weaving and use silk. For instance, silk has been found with an ancient Egyptian mummy in the Village of Deir el– Medina; a mummy dated to 1070 BC.

After a long history of sericulture, China still remains as the world's largest silk producer. Jiangsu, Zhejiang and Sichuan are renowned provinces for silk production. Silk is one of the most treasurable culture of China and it will be last forever.

New China's invention – 'e–house'

Kowloon Tong School (Primary Section), Poon, Charlene Juliana – 10

Do you love Chinese silk? It is shiny, lustrous, soft yet strong, it can be beautifully dyed. Nowadays, we use silk to make carpets, furnishing, curtains and so on. Besides textiles, silk is also applied in various industries such as clothing, medical and surgical products and even fishing lines. We can see silk everywhere now. But do you know the history of silk?

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New Tales of China's Inventions

Kowloon Tong School (Primary Section), Siu, Hiu Long Kingsley – 11

Most people know that paper and gunpowder were invented in ancient China, but don't realise that so were many other things we use today. The Chinese tried out different economic systems, such as the first paper money invented more than 1000 years ago. The compass was developed over many centuries.

Paper making: Although it is recorded that the Han Dynasty (202 BC – AD 220) court eunuch Cai Lun (50 AD – AD 121) invented the pulp papermaking process and established the use of new materials used in making paper, ancient padding and wrapping paper artifacts dating to the 2nd century BC have been found in China, the oldest example of pulp papermaking being a map from Fang Matan, Tianshui; by the 3rd century, paper as a writing medium was in widespread use, replacing traditional but more expensive writing mediums such as strips of bamboo rolled into threaded scrolls, strips of silk, wet clay tablets hardened later in a furnace, and wooden tablets. The earliest known piece of paper with writing on it was discovered in the ruins of a Chinese watchtower at Tsakhortei, Alxa League, where Han Dynasty troops had deserted their position in AD 110 following a Xiong nu attack. In the paper making process established by Cai in 105, a boiled mixture of mulberry tree bark, hemp, old linens and fish nets created a pulp that was pounded into paste and stirred with water; a wooden frame sieve with a mat of sewn reeds was then dunked into the mixture, which was then shaken and then dried into sheets of paper that were bleached under the exposure of sunlight; K.S. Tom says this process was gradually improved through leaching, polishing and glazing to produce a smooth, strong paper.

Woodblock printing: The earliest specimen of woodblock printing is a single-sheet Dharani sutra in Sanskrit that was printed on hemp paper between 650 and 670 AD; it was unearthed in 1974 from a Tang tomb near Xi'an. A Korean miniature Dharani Buddhist sutra discovered in 1966, bearing extinct Chinese writing characters used only during the reign of China's only self-ruling empress, Wu Zetian (r. 690–705), is dated no earlier than 704 and preserved in a Silla Korean temple stupa built in 751. The first printed periodical, the Kaiyuan Za Bao was made available in AD 713. However, the earliest known book printed at regular size is the Diamond Sutra made during the Tang Dynasty (618–907), a 5.18 m (17 ft) long scroll which bears the date 868 AD. Joseph Needham and Tsien Tsuen-Husin write that the cutting and printing techniques used for the delicate calligraphy of the Diamond Sutra book are much more advanced and refined than the miniature Dharani sutra printed earlier.

Movable type: The polymath scientist and official Shen Kuo (1031–1095) of the Song dynasty (960–1279) was the first to describe the process of movable type printing in his Dream Pool Essays of 1088. He attributed the innovation of reusable fired clay characters to a little-known artisan named Bi Sheng (990–1051). Bi had experimented with wooden type characters, but their use was not perfected until 1297 to 1298 with the model of the official Wang Zhen (fl. 1290–1333) of the Yuan dynasty (1271–1368), who also arranged written characters by rhyme scheme on the surface of round table compartments. It was not until 1490 with the printed works of Hua Sui (1439–1513) of the Ming dynasty (1368–1644) that the Chinese perfected metal movable type characters, namely bronze. The Qing dynasty (1644–1912) scholar Xu Zhidong of Tai'an, Shandong developed vitreous enamel movable type printing in 1718.

Gunpowder: Evidence of gunpowder's first use in China comes from the Tang dynasty (618–907). The earliest known recorded recipes for gunpowder were written by Zeng Gong liang, Ding Du and Yang Weide in the Wujing Zongyao, a military manuscript compiled in 1044 during the Song Dynasty (960–1279). Its gunpowder formulas describe the use of incendiary bombs launched from catapults, thrown down from defensive walls, or lowered down the wall by use of iron chains operated by a swape lever. Bombs launched from trebuchet catapults mounted on forecastles of naval ships ensured the victory of Song over Jin forces at the Battle of Caishi in 1161, while the Mongol Yuan Dynasty (1271–1368) used gunpowder bombs during their failed invasion of Japan in 1274 and 1281. During the 13th and 14th centuries, gunpowder formulas became more potent (with nitrate levels of up to 91%) and gunpowder weaponry more advanced and deadly, as evidenced in the Ming Dynasty (1368–1644) military

manuscript Huo Longjing compiled by Jiao Yu (fl. 14th to early 15th century) and Liu Bowen (1311–1375). It was completed in 1412, a long while after Liu's death, with a preface added by the Jiao in its Nanyang publication.

Compass: Although an ancient hematite artifact from the Olmec era in Mexico dating to roughly 1000 BC indicates the possible use of the lodestone compass long before it was described in China, the Olmecs did not have iron which the Chinese would discover could be magnetised by contact with lodestone. Descriptions of lodestone attracting iron were made in the Guanxi, Master Lu's Spring and Autumn Annals and Huainan Zi. The Chinese by the Han Dynasty (202 BC – 220 AD) began using north–south oriented lodestone ladle–and–bowl shaped compasses for divination and geomancy and not yet for navigation. The Lu Heng, written by Han dynasty writer, scientist, and philosopher Wang Chong (27 – c. 100 AD) stated in chapter 52: "This instrument resembles a spoon and when it is placed on a plate on the ground, the handle points to the south". There are, however, another two references under chapter 47 of the same text to the attractive power of a magnet according to Needham (1986), but Li Shu–hua (1954) considers it to be lodestone, and states that there is no explicit mention of a magnet in Lu Heng.

New Tales of Chin's Inventions

Kowloon Tong School (Primary Section), Tang, Ho Wan – 10

In ancient China, people invented paper. it needs to do a lot of work to make paper. when we make paper it will have to use a lot of paper pulp and it can only use to make paper. So I think China can transform paper pulp from 2D to 3D. Then it can make a lots of different 3D shapes . It can turn plastic to paper. China can use the invention to make pencil cases ,water bottles, air conditioners , fans, televisions , box or models , etc.

This new invention can let China reduce waste at its source, reduce the use of plastic, and make mother earth healthier. And will not get sick because of plastic. Ultimately ,this will only be harmful to humanity.

I think it can help much people since it was an invention that it can reduce waste and help the mother earth.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Tang, Sik Hei Darwin – 11

Long, long ago in ancient China, there were some incredibly clever inventors who created amazing things! I'm now here to tell you all about them because their inventions were truly extraordinary. Let's take a journey back in time and discover the incredible creations made by these brilliant Chinese inventors!

One of the most famous inventors from China was Li Shi Zhen. He lived during the Ming Dynasty, which was a really long time ago, from the 16th to the 17th century. Li Shi Zhen was not only a great doctor but also a brilliant scientist. He spent his entire life studying plants and their incredible healing powers. He wrote a gigantic book called the "Compendium of Materia Medica." This book was like a treasure trove of knowledge about different plants and how they can be used as medicine. Li Shi Zhen described over 1,800 plants and their medicinal properties in his book. Even today, doctors and scientists still use Li Shi Zhen's book to learn about traditional Chinese medicine and find ways to help people get better.

Another intellectual inventor is Bi Sheng, an amazing inventor from the Song Dynasty, which was a really long time ago, around the 11th century. Bi Sheng came up with something called movable type, and it was a game–changer! Before his invention, making books was a slow and painstaking process because everything had to be written by hand. But Bi Sheng had an exquisite idea! He carved individual letters onto small wooden blocks, and these blocks could be rearranged to form words and sentences. Once the blocks were inked, they could be pressed onto paper, making the printing process much faster and easier. Bi Sheng's invention revolutionized the world of printing and made books more accessible to everyone. Can you imagine how much time it would take to copy an entire book by hand? It would be a never–ending task! Thanks to Bi Sheng's ingenious invention, we can enjoy printed books today.

Next, let's learn about Cai Lun, an incredible inventor who lived during the Eastern Han Dynasty, almost two thousand years ago.

Cai Lun is known for inventing something we use every day—paper! Before his invention, people used to write on heavy materials like bamboo sticks or animal bones. But Cai Lun had a brilliant idea. He took tree bark, old rags, and other plant fibers, and turned them into a mushy pulp. Then, he pressed and dried this pulp to create paper! Cai Lun's invention changed the way people communicated, recorded information, and shared their thoughts. Paper became lightweight, portable, and widely available, forever transforming education, literature, and the spread of knowledge.

Now, let's dive into the remarkable achievements of Zhang Heng, an exceptional inventor who also lived during the Eastern Han Dynasty, nearly two thousand years ago. Zhang Heng was a true genius with knowledge in various fields, including astronomy, mathematics, and engineering. One of his most awe–inspiring inventions was the seismograph. This incredible device could detect earthquakes and provide vital information for safety and preparedness. Zhang Heng's seismograph took the form of an impressive bronze vessel adorned with eight dragon heads, each holding a small ball in its mouth. When an earthquake occurred, the ground would shake, causing the balls to drop into the dragon heads. By observing which dragon's mouth held the ball, people could determine the direction of the earthquake. Zhang Heng's invention significantly advanced the understanding and study of seismic activity, greatly contributing to the safety and well–being of communities.

These inventors—Li Shi Zhen, Bi Sheng, Cai Lun, and Zhang Heng —were true visionaries who left an indelible mark on history.

If we didn't have the inventions of Cai Lun, Li Shi Zhen, Bi Sheng, and Zhang Heng, things would be very different. Cai Lun's invention of papermaking changed the way we write and share information. Without it, books, newspapers, and magazines wouldn't be around like they are today. We would have even brought bamboo slips to school today! Li Shi Zhen's work in studying medicinal plants would be lost, and we wouldn't know as much about how to use plants for medicine. Bi Sheng's movable type printing made it easier to print books, but without it, making copies would be a lot harder and slower. And without Zhang Heng's seismograph, we wouldn't have a way to detect earthquakes early. These inventors made important contributions, and their inventions have had a big impact on our world. Through their remarkable inventions transformed fields such as medicine, printing, and communication. Their creative genius and relentless pursuit of knowledge continue to inspire generations. We owe a debt of gratitude to these brilliant minds, whose contributions have shaped the world we live in today. Let us always appreciate and celebrate their ingenuity and the lasting impact they have made on our lives.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Tian, Sum Yui – 10

There are a lot of inventions around the world. But I like the most is paper, which was invented in China. Paper is a very useful invention as we can write, draw, or more on it. It is very easy to carry because it is extremely thin and weightless. Paper is invented long time ago, let me tell you about its history!

People said paper was invented by Cai Lun, an imperial eunuch official of the Han dynasty. At that time, paper was made of mulberry and other bast fibers along with fishing nets, old rags and hemp waste which reduced the cost of paper.

Before paper was invented, people in China used to write on bone or bamboo scrolls, but they are very heavy, awkward to use, and hard to transport. The light material of silk was sometimes used as a recording medium but was normally too expensive to consider. So, Cai Lun started to invent something to write on.

Cai Lun then think of the idea of making paper form bark of trees, remnants of hemp, rags of cloth and fishing nets. He then succeeded and got the emperor's praise. Although paper is useful at that time, the production was not so easy. At first, Cai Lun mixed mulberry bark, hemp, and rags with water, mashed it into pulp, pressed out the liquid and hung the thin mat to dry in the sun. This possess needs a few days before the paper can be used.

The demand for paper grew substantially, so the supply of bark could not keep up with the demand for paper. In result, many people invented new kinds of paper using bamboo during Song dynasty. After thousands of years of changes, paper became the most efficient thing to write on.

I think paper is the greatest invention of China as it is used all around the world. Making writing more efficient. I learned that nothing is impossible if I try. Like Cai Lun, had once though of making paper and he succeeded.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Tsang, Wai Yin – 11

China is one of the oldest civilizations in the world. There are many inventions that have helped the society throughout the history. Some of the earliest Chinese inventions came during ancient times. Paper, gunpowder, compass and printing are known as the "4 Great Inventions" from ancient China that went on to cultures around the world.

Perhaps the most significant ancient Chinese inventions was paper. Created during the Han Dynasty, people at that time made paper from a lot of different materials like tree trunks and hemp rag. It helped usher in an information revolution allowing knowledge to be preserved and shared more easily than on other materials like bamboo slips or silk. I feel grateful for this invention as learning becomes a piece of cake after paper was invented.

Gunpowder, another hugely important ancient Chinese invention, was created during the Tang Dynasty. It was originally developed as an alchemical but was later weaponized for warfare. However, gunpowder should be used in a peaceful way because if it is used in wars, it will cause a lot of innocent deaths.

The compass, which originated in ancient China in the 11th century, helped enable long-distance navigation. After learning that some metals are magnetic in nature, people put magnetic needle in a bowl of water to tell the direction. It greatly enhanced cultural exchanges through expanded marine travel routes.

Printing, meanwhile, was created during the Sung Dynasty. This was the earliest "character-based, movable type" printing, which could make thousands of print copies. The method involved arranging individual characters onto a print block, according to the contents. It had surely promoted knowledge exchange and learning.

Moving into the modern times, since the early 20th century science has become more advanced in China as people combined Western methods with traditional ones. We developed the high-speed rail system, e-commerce platforms, 5G wireless network and many other eye-opening technologies. These make livelihood much easier and more efficient. For example, the e-payment in China is now so advanced that citizens no longer need to bring their wallets when they go out. From buying a book to selling some shares on the stock market, everything can be done by pressing a few buttons on the phone.

While the above are designed for the people, some Chinese innovations and inventions are geared towards preserving our earth and exploration beyond the known world. China now leads the world in renewable energy. It invests heavily and produces over half of the global solar panel supply. Its ultra-large floating solar farms are revolutionizing sustainable energy development. For space adventures, China is definitely a great leader. It is well-known for investigating the space with its always improving satellites. Latest technologies have enabled China to explore the Mars recently with the robot "Zhu Rong" (meaning "God of Fire").

In a nutshell, China has been contributing to the world with excellent innovative ideas and inventions, both in ancient and modern times. Through developing advance technologies and generating more breakthrough in knowledge, China is a confident leader to the world. I feel proud of being a Chinese. When I grow up, I will try my best to contribute the technologies of China. Who knows, I might invent one of the "Modern 4 Great Inventions"!

China's Inventions – the past glories and future promises

Kowloon Tong School (Primary Section), Wang, Chi Yuen – 11

Stop what you are doing right now and look around the room you are sitting in. The chance that you are within a five–meter radius of at least two Chinese inventions is probably as high as the possibility of your disbelief.

The books on your desk are made up of paper which was first invented over 1900 years ago by a Chinese government official. The tea in your cup is said to be discovered by a Chinese herbalist in 2737 BC, almost 5000 years ago! The paper money in your wallet finds its prototype from "white deerskin" money issued in the Han Dynasty. As an avid football fan, I found to my great surprise that this global sport can be traced back to 2BC and 3BC in China. In a game known as *cuju*, people kicked balls filled with feathers, and the balls were made by inflating animals' bladders.

It's well known that paper is one of the Four Great Inventions that China contributed to the world. Beneath this familiar fact is a fascinating story about a man whose birthday still evades historians. Cai Lun (unknown – 121 AD), the father of the modern paper, was born into a poor family. He later served as a court eunuch. At the peak of his career, Cai was the chief eunuch under Emperor He'di, responsible for producing instruments and weapons.

How could a senior court official end up inventing paper? Some legends attributed Cai's source of inspiration to a wasp nest which he accidentally encountered on a country road. Back then, Cai appeared to be interested in creating something to write on, something lighter than bamboo and wood slips. Inspired by wasps which built nests by chewing wood, Cai embarked on an unchartered experiment using bamboo, hemp waste, old rags, fishnets, and, most importantly, bark from trees. After countless trial and error, he finally made a breakthrough, and invented what later known as "Cai Hou Paper" – a much better medium of writing than bamboo and, arguably, Egyptian papyrus. It is amazing that Cai accomplished this with no training in Chemistry at all. I would imagine that he must be curious about everything. Moreover, he may have access to resources and the advanced know–how of this time, given his work at the imperial court. Therefore, it may not be a total coincidence that Cai invented paper.

Equally intriguing is the story of Zhang Heng (78 – 139 AD). In stark contrast to Cai Lun, Zhang, born into a noble family, was well educated since childhood. He was not only an important inventor, but also a prolific writer and a great mathematician. For most of his career, he also served as a government official. At one point, he became the chief astrologer under Emperor An'di.

One of Zhang's hallmark inventions is seismometer. It is said that Zhang was once saddened by a deadly earthquake which killed thousands of people, and then decided to make an earthquake detector. His final product looks odd — a brass pot with dragon heads holding balls etched on the curves and frogs on the base. A ball would fall from the jaw of a dragon into the mouth of a frog, thereby telling the direction and possibly severity of an earthquake.

Initially, people were skeptical of Zhang's detector. But many years later, a ball indeed dropped. A messenger subsequently arrived at the capital city Luoyang, reporting a devastating earthquake that happened hundreds of miles away. It turned out that inside the pot hung a pendulum. The shockwaves of an earthquake would trigger the pendulum to swing. How Zhang Heng figured out the rationale behind the seismoscope remains a mystery. But again, it may not be a sheer coincidence that the earthquake detector was invented by such a diverse, superb intellectual as Zhang Heng.

Apart from the above two outstanding inventors, a variety of ancient creators have made an indelible mark. To name just a few, Zu Chongzhi (429 – 501 AD), often remembered as a math guru who calculated π to the 7th digit, invented hammer mills and paddle boats. Shen Kuo (1031 – 1095), a stateman and scientist of the Song Dynasty, discovered the concept of true north when Europe was in the throes of the Dark ages. His concept later brought tremendous benefits to navigation practices. And lastly, crossbow, one of the most powerful weapons in video games and real life alike, was first invented by an unknown Chinese genius in about 400BC.

Long before the West transformed the world with the Industry Revolution, long before the birth of modern sciences, the ancient China thrived on a plethora of groundbreaking inventions. The tales of Cai Lun, Zhang Heng, and other inventors epitomize human ingenuity and wisdom. Why China lagged the West in producing modern inventors like Thomas Edison is another story to tell. But it is no doubt that creativity and inventiveness have always been part of our ethnic DNA. In this digital age, the Chinese People are once again at the forefront of technological innovations – from WeChat, Tiktok to home–made electric cars and semiconductors. Don't forget that our ancestors have built the solid foundations we can create anything upon, whether it be a towering skyscraper or a minuscule gnome.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Wong, Hoi Ching – 10

Have you heard of China's four major inventions? The four major inventions are papermaking, compass, Chinese woodblock printing and gunpowder. Let me introduce you to each one of them.

Firstly, let me talk about paper. Did you know who invented paper? The answer to this question is Cai Lun from the year sixty-three to year one hundred and twenty-one. He made paper because he thought that the bamboo slips people used to write on were too heavy. So, he started making paper by using bark, hemp heads, rages and fishing nets. In the first step, he decided to steam all the materials, then he chose to mash all the materials together. After that, he beat it all up into a mixture. Later, he decided to put the mixture onto some rackets and let them dry up in the sunlight. Lastly, he peeled off the paper. That is how he made paper.

Without Cai Lun, we cannot do much. Paper is important to us as most of our homework and work uses it. Paper technology soon became better and now our paper is in much better quality compared to paper in the past. Despite our change of paper from Cai Lun's age, we should thank him at the same time as we could not have paper if Cai Lun didn't invent it in the first place.

Now, onto the next invention—the compass. The first person to invent the compass was Shen Kuo. Shen Kuo was born in a rich family in one thousand and thirty-one and died in one thousand and ninety-five. In one thousand and eighty-eight, Shen Kuo finally found the compass. But why did he invent this? It was because his king died in a war as they could not make out the judgment of which way their enemy would come out and attack. To prevent that from happening, Shen Kuo started to invent the compass with carburized and quenched sewing steel needles.

In volume 24 of the book "Mengxi Bi Tan", Shen Kuo described four ways to use the compass. Firstly, the water float method: in a bowl filled with water, place the compass on the water to indicate the north and south directions. Second, the nail rotation method: place the magnetic needle on the fingernail and rotate it gently to orient it. Number three, the bowl edge rotation method: place the magnetic needle on the edge of a smooth bowl and gently rotate the magnetic needle to orient it.

Number three, printing. Have you thought about who could have invented Chinese woodblock printing? It was also Shen Kuo from Song Dynasty. Shen Kuo was the first scholar to describe the movable type printing process. In his well-known book "Mengxi Bi Tan", he attributed the invention to an unknown craftsman named Bi Sheng. With the use of sintered clay characters, Shen Kuo described Bi Sheng making the glyphs, picking up the characters, arranging them, printing them, and then dismantling them for later use after printing. Bi Sheng once tried wooden movable type, but the wooden movable type was not perfected until Wang Zhen of the Yuan Dynasty made wooden molds.

Lastly, about gunpowder. Gunpowder was invented by Sun Simiao. Gunpowder among China's four great inventions can not only be used to make fireworks and firecrackers, but it is also an explosive that has been used in wars for military purposes. It was originated in the Tang Dynasty or even the Qin Dynasty. During the Song Dynasty, around the middle of the 12th century, individual firearms and continuous-fire firearms with certain lethality had been developed to make up for the disadvantage that the Song people's combat effectiveness was not as good as that of the Jin people at that time. China's use of practical firearms preceded Europe's by about five centuries.

There are four world-famous inventions of China, including papermaking, compass, Chinese woodblock printing and gunpowder. This technology spread throughout the world and pushed society one step forward. Some people

think that China has many inventions and creations, and there are more than just the four major inventions. Some Chinese scholars think that Needham overestimates China's inventions. To sum up, all of the four great inventions are wonderful and precious. Also, we should always appreciate what our ancestors gave us and we must care for things they left us with.

New Tales of China's Inventions

Kowloon Tong School (Primary Section), Wong, Yuet Yung – 10

Once upon a time, there was a eunuch named Cai Lun. He started to work at court during the Eastern Han Dynasty.

Cai Lun worked as an attendance that time. One day, the Queen was writing calligraphy. When she finished she asked the servant to bring more bamboos to her. The servant answered, " My Majesty, there is no more bamboos to be found in the palace." The Queen was furious when she heard the answer. "Well, go to call some people to bring more immediately!" Just then, Cai Lun was walking around the palace, he overheard some talks. There were 2 servants, carrying a big pile of bamboos in a burden. The first servant said, "Oh dear, this is the Queen's third pile of bamboo, is she trying to worn us out? This is way too heavy!" The second servant agreed by nodding his head.

Luckily, these conversations were heard by Cai Lun. He said to himself, "Well, I couldn't just only witness this, I must find a way to solve this issue. I will find a thing replace the bamboos!"

Since then in his free time, he decided to use different kinds of ingredients to make something that is light, white, clean and soft. Finally, in 105, he finally invented his first satisfactory work: A perfect piece of paper. This is how he made the paper: He puts the mulberry bark, hemp rags, and old fishnets into the pulp. Second, you take out the finished work and let it dry. When he made his paper, he instantly ran as fast as he could to show the others his work.

After some time, Cai Lun have met the two servants again. This time, the things that they said was not the same as last time. "I just can't believe that the paper were this light! I thought it was just lighter than the bamboo a little bit, but it turns out to weight like a feather! Carrying this is just as same as walking in the garden," the first servant said. The second one was over the moon. "I just can't believe it! How can he make the paper so thin and smooth? It is just like magic! These stack of paper will be enough for the majesty for one year. I can't wait to see the queen's reaction of this. After hearing this, Cai Lun couldn't help but snickered.

His hard work did not only just change the ancient China, his hard work have also made a huge change to all the countries in the world. Countries stopped using rocks, white shirts, even wood just because of Cai Lun. The name of 'Paper's Inventor" went to Cai Lun ever since.

Satellite Communication Function on Mobile Phones

Kowloon Tong School (Primary Section), Xiao, Yuang – 10

In the time of rapid development of digital technology, Chinese mobile phone has their leading position in the communication field again, leading the wave of innovation in the mobile phone industry. The latest breakthrough technology has pushed mobile communication to a new height – satellite communication.

With the continuous progress of technology, the demand for communication has also grown rapidly. However, in some areas or natural disasters, traditional phone cannot provide reliable communication services. Chinese company took the lead in mobile phone calls through satellite signals users to maintain smooth communication at any place.

Chinese phones are equipped with advanced satellite communication chips, and users only need to enable satellite communication function in the phone settings to make calls in areas without base station signal coverage. Satellite communication not only plays a crucial role in responding to natural disasters, but also provides convenience for explorers, travelers, and those who need to work in remote areas. Whether it's hiking, desert exploring, or sea exploration, Chinese mobile phone's satellite communication technology provides users with reliable communication.

I believe, in the future, Chinese smartphones can also achieve more information transmission through satellite networks, including data transmission, etc. We can surf the Internet and make video calls in areas without signals, and we don't have to worry about the problem of phone signal.

New Chinese Inventions in Technology

Maryknoll Convent School (Primary Section), Wan, Hei Yi Hayze – 11

China is very famous for its innovation and technological advancement. In the past few years, China has invented a lot of things in different areas, such as space exploration, technology, cultural development, and many more. These inventions help us in our daily lives a lot. Do you know what they are?

China has emerged as a global leader in 5G technology, changing the technological world once and for all. With its rapid speed and astounding connectivity, 5G has the potential to transform many different zones, such as transportation, manufacturing, or even the aviation industry.

According to Rcwireless, China's three main telecom operators have announced their subscriber totals for the month of November 2023, including a combined net increase of approximately 26 million 5G package subscribers, boosting their combined 5G package subscriber base to nearly 1.348 billion. At the end of December, 5G package subscribers accounted for 78.6% and 77.3% of China Mobile's and China Telecom's total subscriber.

"5G will overtake 4G in 2024 to become the dominant mobile technology in China," according to the report. "4G and 5G dominance in China means legacy networks are being phased out. While some users have changed to 4G and 5G, legacy networks continue to support many different services. Still, some estimates suggest that legacy networks could be almost entirely shut down in China by 2025," the study reads.

According to the GSMA report, 5G will account for 88% of mobile connections in China by 2030, while 4G technology will account for the remaining 12%.

Apart from 5G technology, China has also made some outstanding progress in artificial intelligence. China is at the forefront of AI development. AI today is highly dependent on data, and China has more human data than any other country thanks to its well-educated 1.4 billion people.

According to a blog of Top 10 China's AI Stories in 2023: A Year-End Review and the website of Amazon, on 31-8-2023, eight Chinese LLMs, including ERNIE Bot, ChatGLM and some more, cleared the filings to offer services to the public.

By November, over 20 LLMs had been approved, a list that includes Alibaba's Tongyi Qianwen, Tencent's Hunyuan, iFlytek's Spark, NetEase's Ziyue, Ant Group's Bailing, Moonshot, and WPS AI, among others. With full access, Chinese chatbots can now analyse more data than it has ever before.

The majority of Chinese ChatGPT alternatives use Reinforcement Learning with Human Feedback (RLHF), a machine learning (ML) technique that uses human feedback to optimise ML models to self-learn more efficiently. Reinforcement learning (RL) techniques train software to make decisions that maximise rewards, making their outcomes more accurate. Public access allows them to evolve more rapidly beyond their beta testing. Chinese chatbots are also different from Western chatbots like ChatGPT or Poe. Improved for new users, these chatbots have set up an answer for every question beforehand. Features like voice dialogue and text-to-image generation are also commonly included to let users use them more conveniently.

Another great invention from China is AngelEye. Unlike Google Glass, Angeleye is a pair of extraordinary wearable tech that allows blind people to navigate their world through the use of AI and sensors, similar to that used in

autonomous cars. Not only can the smart glasses detect objects, but they can also recognize money bank notes, assist in text reading, recognize colours, and distinguish different levels of light intensity. It uses binocular stereo cameras to pretend to be human eyes and convert visual information into audible signals. As a sensory extension for the visually impaired, the AngelEye smart glasses help the blind see the world safely. All you have to do is to press the button on the bottom, and the glasses will activate.

Before this invention, many would assume that getting this type of tech and AI system to fit into a plain glass would be unimaginable. However, Feng Xin Peng, the founder of Next CPU has proven the world wrong. The fact that some genius can fit this amount of power and a whole system of AI into a mobile phone and these glasses is an impressive phenomenon. This kind of deep learning would have been impossible a few years ago, especially when it came to having such technology fit in your pocket.

If you are interested in inventions, are you interested in cars? If you are, this invention will shock you.

According to a blog of Top 10 China's AI Stories in 2023: A Year–End Review, Alibaba is one of the biggest e–commerce companies in the world and has had a huge success in bringing everything online. Today, a startup founded by Alibaba, Banma, is also bridging cars to the Internet. The car is built with 4G and Wi–Fi. It can do anything, for example flying a drone. It can even talk to other cars, find a gas station, or even find a restaurant without needing to use Google map.

In the first year that it was launched, 5,000 cars were sold. Now, they're selling 20,000 a month, while also expecting 6 million cars to adopt its operating system by 2023.

As you can see, everything in China will go online, even cars – this marks the beginning of digital transformation across the automotive industry. China has had many achievements in inventions and technology over the past few years. China has created many useful inventions that may change our lives forever and open a door for us to the technological world.

Traditional Chinese medicine – A gift from the Chinese to the world

St. Joseph's Primary School, Chan, Lok Chi Aidan – 9

In the history of mankind, the Chinese have always been making important contributions to the advancement of the world. The four greatest inventions of ancient China, namely papermaking, printing, gunpowder, and the compass greatly enhanced the quality of life of many people. In addition to these four inventions, there is another major creation made by the Chinese which is equally influential and has saved millions of lives: traditional Chinese medicine. In the present day, the modernization of traditional herbal medicine by scientific methods should be regarded as an important invention. Artemisinin (QingHaoSu), which is now used to treat malaria infection, is one typical example.

Malaria is a life–threatening disease caused by parasites. There are four kinds of parasites that cause malaria in humans. These parasites are transmitted to people by mosquito bites. During the 1960s, there was an outbreak of drug–resistant malaria, caused by the parasite *Plasmodium falciparum*. The whole world was on a quest for an effective cure for the infection. Scientists around the world tried thousands of compounds, but none of them worked. In China, the government set up a special program to assist research on malaria cure, called Project 523, named after the date the project was started: the 23rd of May. A female Chinese scientist Tu Youyou was tasked to lead the project. She looked into the traditional Chinese medical literature and some folk recipes and also questioned a few experienced Chinese medical practitioners. Within three months since the project was launched, she had already collected over two thousand herbal, animal, and mineral prescriptions. After a lot of experiments and failures, she focused back on traditional Chinese medical literature. She tested multiple herbs and among them, one herb, QingHao, showed some effects on curing rodent malaria. However, it did not work every time. She then read "A Handbook of Prescriptions for Emergencies" written by Ge Hong and noticed a sentence "A handful of QingHao immersed in two litres of water, wring out the juice and drink it all." According to this ancient Chinese medical literature, QingHao must be extracted at a cold temperature to be effective.

Tu Youyou and her team then redesigned the experiment and extracted the juice from QingHao using a lower temperature. They also used different parts of QingHao, such as its leaves and stem to see which part of the plant was effective. They finally found out that it was the leaves of the QingHao plant that was killing the malaria parasite. They named the compound QingHaoSu and tested it on malaria–infected monkeys, rodents and other animals. The experiment showed that the malaria parasite disappeared from the animals' blood after treatment. Afterwards, it was time to prove that it works in humans. Following the example of Shen Nong, who tasted hundreds of herbs before using them on others, Tu Youyou and her team members tested QingHaoSu on themselves first. After confirming that QingHaoSu was safe to use on humans, the team carried out later the first clinical trial on humans. They found some voluntary people who were infected with malaria. The people were divided into three groups and the three different groups were given different doses of QingHaoSu, then her team paid close attention to the change in the people's temperature and the number of parasites inside their bodies. The clinical trial was successful, all patients recovered from malaria and no malaria parasites were detected inside their body. QingHaoSu was proven effective against drug–resistant malaria. QingHaoSu was then named scientifically as Artemisinin.

Was the discovery of Artemisinin just an ordinary story? No. Tu Youyou's path to finding Artemisinin was not easy. In the 1960s, it was the time of the Cultural Revolution in China. Many factories and manufacturing facilities were closed during that period. The environment for research was tough and money support was limited because of the poor economy. Many of her teammates fell sick after working long hours in the poorly ventilated laboratories. However, she successfully overcame all these difficulties and let the world recognize traditional Chinese medicine by proving Artemisinin's effectiveness with scientific methods and running the first clinical trial on Chinese

herbs. In recognition of her contributions, the Nobel Committee awarded her the Nobel Prize in Physiology or Medicine in 2015.

Artemisinin had already been used for thousands of years. However, the scientific method to extract and experiment the drug was a breakthrough. At the end of her Nobel Prize lecture, Tu Youyou made this statement: "*Let us reach to a greater height to appreciate Chinese culture and find the beauty and treasure in the territory of traditional Chinese medicine!*". Artemisinin is just one example of how the ancient wisdom of traditional Chinese medicine helps transform modern healthcare. Traditional Chinese medical practice covers a broader area beyond herbal medications, including bone−setting, acupuncture, moxibustion, etc. Given its long history and great potential to benefit people's health, traditional Chinese medicine rightfully deserves recognition as the fifth greatest invention of China.

New Tales of China's Inventions: The Compass and the Beidou Navigation System

St. Joesph's Primary School, Chan, Yau Ka Enzo – 11

Imagine yourself on a boat without a compass trying to transport from Ancient China to Ancient India at noon. How would you find where to go without GPS working on our phone? Would we even have phones without the invention of the compass? You would be worried about being blown away by the screaming wind during your voyage which lasts for several months or even a whole year with a map but it has no compass or GPS!

"It was easy to get lost due to poor orientation, which is why kings in ancient times invented an instrument that points south and so shows in which direction West and East lie." These are the words of the Third Century B.C. thinker, Han Fei. The instrument he is speaking about here is the South-Pointing Chariot, which was an early version of what we now call the 'compass'. Historically the compass has been the world's most important navigational invention, and it was created by the Ancient Chinese. It is the mother of all navigational technology we rely on today. Without it, the development of the BeiDou Navigation Satellite System would not exist today. In this essay, we will explore these two significant inventions from China --- The compass and BeiDou Navigation Satellite System ---- and how they have forever changed the way of human travel.

In 1620, the British philosopher Francis Bacon wrote in his book the Novum Organum, "Printing, gunpowder and the compass... have changed the whole face and state of things throughout the world, ... whence have followed innumerable changes, in so much that no empire, no sect, no star seems to have exerted greater power and influence in human affairs than these mechanical discoveries." We can see from this the world-changing importance of the compass but first let's understand what a compass is and how it works. A compass is a device that shows the cardinal directions used for navigation and geographic orientation. To put it more simply, it is for finding directions and it works by pointing which way is north and to help us especially when we get lost. While the compasses we use today point north, the Ancient Chinese compasses originally pointed south. This included the south-pointing fish, the 'spoon', or the Sinan, and the south-pointing chariot (指南車). The so-called "south-pointing fish" was a wooden fish with a magnetized iron needle within it, that floated in a bowl of water. The Sinan has been magnetized, and when you put it on the plate, it reacts by pointing to where south is. The south-pointing chariot's figure always points to the south whichever way you turn it, allowing people living at that time to find their sense of direction. Imagine you're the figure and the chair is the chariot. Before people had a compass, they used to navigate using the Sun, the Moon and the stars, but all of them are unreliable due to some unexpected weather conditions. They were not useful on rainy or cloudy days, but people could now navigate anywhere thanks to the ancient compass which was invented in the year 206 BC.

The true example of the impact of the compass came during the time of the Chinese explorer Zheng He (1371-1433). He commanded seven expeditionary treasure voyages to Southeast Asia, South Asia, West Asia, and East Africa from 1405 to 1433. In those days, there were no satellites or Google Maps to help them navigate. Numerous ships would travel for days out of sight of any land. But Captain Zheng wasn't afraid as he knew how to monitor stars in the sky and also taught his men how to use the "South-Pointing Needle", which we now call the compass. For

them, the compass was not just an invention but a means to explore and discover, and led them to far-off places such as India, Siam (now Thailand), the Horn of Africa and Arabia.

Transitioning to the present day, the BeiDou Navigation Satellite System (BDS; 北斗衛星導航系統) was invented in China in the year 2000. It is a satellite-based radio navigation system which has been independently constructed and operated by the China National Space Administration. The first idea of a Chinese satellite navigation system was come up with Chen Fangyun and his colleagues in the 1980s. The BeiDou system consists of 30 satellites in three different orbits. It provides global positioning, navigation, and timing services, even more accurate than GPS. BDS has been widely used in transportation, communication, meteorological forecasting, disaster relief and public security. The BeiDou-3 Navigation Satellite System provides full global coverage for timing and navigation, along with Russia's GLONASS, the European Galileo positioning system, and the United States's GPS. Beidou, which means 'Big Dipper' in Chinese, literally means 'Northern Dipper'. We can see the connection of the Big Dipper and the Beidou Navigation System because the Big Dipper can help you find the North Star. Several companies such as AutoNavi (also known as Amap) are using Beidou in their services, providing accurate and real-time navigation information to users. AutoNavi also provides mapping data of China and Taiwan for Apple Maps and Google. Its own map application was the top mobile map app in China in 2012, with over 100 million users.

The impact of the Beidou Navigation System has paved the way for high technology development in China, particularly in the daily use of driverless taxis in the cities such as Beijing, Shanghai and Guangzhou. According to ChinaDaily on 10th July 2023, Dai Wanli, a 35-year-old Beijing resident, said she and her family took a ride in a driverless taxi in May at Shougang Park.

"We booked a ride using a mobile phone app and followed instructions to the closest stop to board a self-driving taxi. We scanned the code, the door opened on its own and we hopped in," Dai said, pointing out that driverless taxi was a very smooth and accurate ride.

"My son absolutely loved the ride. We've seen other special projects in the industrial park, but this one is by far the most impressive," she said, adding that they planned to book another ride soon.

Beidou Navigation system helps driverless taxis reach their destinations efficiently. It minimizes the accidents caused by human error, reduces traffic congestion, and minimizes carbon emissions. BNS contributes to a sustainable transportation system.

Confucius says, "Study the past if you would define the future". In conclusion, the compass and the Beidou Navigation System are interconnected inventions that were invented in China. They are both important and commonly used for navigation. The compass is one of China's four great inventions and the BeiDou Navigation System is taking a new height of China's advanced technology. These tales of China's inventions are truly remarkable that continue to shape our world.

New Tales of China's Inventions

St. Joseph's Primary School, Chan, Yin Ting Laris – 11

China is a thriving and innovative country with many advanced technologies. Many people are astounded by some of the Chinese inventions that are still widely used worldwide today including paper, compasses and so on. Let's explore more about some of the important achievements that Chinese inventors from the past to the present have contributed to the world.

One of the most remarkable accomplishments China has done is paper making. Paper became an affordable, yet convenient tool for writing after the famous Chinese emperor, Ts'ai Lun discovered the way of making paper. Cultures like calligraphy and painting wouldn't have achieved a breakthrough if paper hadn't been invented.

The availability of paper has also developed into various kinds of printing technologies too. For example, books, which are made from ink, and newspaper has become more accessible. In this way, news and knowledge are easily spread around the world. We can receive quality education by studying and drilling exercises printed as worksheets. Also, exam papers and textbooks are made possible with the use of our printing technologies. We might still have to carve words on wood if it wasn't for Ts'ai Lun!

Another discovery of China is the compass. In ancient times, it was invented for fortune–telling and it was believed that the compass could exert a kind of magic on people as it would always point to the north. As time went by, it was used to detect where the sun, stars, moons or other locations were. This significant invention also enabled explorers to go on long voyages and explore various places. Even in severe weather conditions, whether it's rainy or foggy, a compass can navigate accurately to help seamen reach their destinations safely, yet in a quick time.

Last but not least, Chang Heng's seismometer plays a crucial role in detecting earthquakes. Scientists make use of this device to map the inside of the Earth and detect the ground motions and movements. It can locate earthquakes and estimate the severity of them. Other than calculating the frequencies of earthquakes, it also plays an important role in volcano monitoring. It can identify the rise of the lava and the changes in gravity. This effective seismometer can detect even the most petite movements of the grounds. As this device can detect several natural disasters, it can give out warnings to the world so different nations can practise safety precautions, preventing deaths and injuries.

To wind up, the above are just a few of the amazing things the Chinese have invented. We should be proud to be a part of such a creative country and appreciate and celebrate the commitments they made to shape our future and bring convenience to the world. The tales of China will last forever and have a dominant role in history, yet they show potential and possibility for a brighter and better future.

New Tales of China's Inventions

St. Joseph's Primary School, Lai, Tsz Long Kaysen – 10

In ancient China, remarkable inventions were created that had a lasting impact on the world. These inventions were so impressive that they continue to influence our lives even today. Without delay, let's explore the fascinating world of China's inventions!

One of the most prominent Chinese inventions is paper. Can you imagine a world without paper? Before paper, people used to write on bamboo strips or animal bones. But a knowledgeable Chinese inventor named Cai Lun thought of a brilliant idea. He combined mulberry bark, hemp, and other materials to create a new writing surface called paper. This invention revolutionized communication and learning around the world.

Another marvelous invention from China is the compass. Navigating across boundless oceans and finding one's way home was an enormous obstacle for ancient sailors. However, thanks to this magnificent Chinese invention, their lives became much easier. The compass used a magnetized needle that always pointed north. Sailors could now confidently explore the seas, knowing which direction they were heading. This invention opened up new trade routes and connected people from around the world.

Let's not forget the significant impact of gunpowder on history. In ancient China, alchemists were searching for an elixir of immortality when they discovered gunpowder. Initially, it was used for fireworks and celebrations, but later it revolutionized warfare. Chinese inventors created weapons like fire arrows and early forms of rockets, which changed the face of battle forever.

Noodles are one of China's most scrumptious inventions. They are long, stringy dough that can be enjoyed in a variety of ways, such as stir–fries and soups. According to legend, noodles were invented by a Chinese chef who accidentally dropped dough into boiling water. Since then, they have become a staple of Chinese cuisine and have delighted food lovers worldwide.

The Chinese made a remarkable contribution to the world through the invention of printing. Before this invention, books were copied manually, which was a time–consuming and laborious process. However, a brilliant inventor named Bi Sheng revolutionized the world of printing by creating movable types. With this invention, individual characters could be arranged and rearranged to print multiple copies. This made books more accessible, and knowledge could be shared more easily. The printing press played a significant role in spreading knowledge and sparked the Renaissance in Europe.

Last but not least, we have the amazing invention of silk. Silk is a luxurious fabric that was first introduced in ancient China. Legend has it that a Chinese empress discovered silk when a cocoon fell into her tea, unraveling a fine thread. This discovery led to the development of sericulture, the process of raising silkworms and harvesting their silk. Silk became highly sought–after and was even used as a currency along the Silk Road, a renowned trade route connecting China to the West.

The ancient Chinese civilization has given the world numerous impressive inventions, which have had a significant impact on our lives. Next time when you write on paper, use a compass, enjoy noodles, read a book, or wear something silky, take a moment to remember the incredible inventors from ancient China who made these things possible. Their inventions are truly amazing and showcase the intelligence and creativity of people from the past. They have continued to inspire us and make our lives better. In the foreseeable future, I hope that I will become one of the marvelous inventors contributing to creating a better world.

Zhang Heng: Pioneer of Science Who Ignites My Learning Journey

St. Joseph's Primary School, Ng, Hinnix – 10

In the fast-paced world of technology, we often overlook the contributions of past visionaries. Zhang Heng, an inventor and scientist during China's Eastern Han Dynasty, not only introduced significant inventions but also inspired and guided my personal learning.

Zhang Heng's notable inventions include the seismograph and celestial globe. The seismograph, one of the earliest earthquake-detecting instruments, provided crucial insights into seismic activity, enabling better earthquake understanding and disaster preparedness.

His celestial globe, an instrument used to measure celestial movements, revolutionized ancient Chinese astronomy by enabling accurate observations and predictions of astronomical events.

Zhang Heng's theories on geography, meteorology, and astronomy further enriched scientific knowledge during his time. Studying his ideas has deepened my appreciation for the vastness of science and fuelled my thirst for knowledge.

Zhang Heng's story exemplifies how wisdom and creativity can change the world. His inventions and theories left a lasting impact, setting an example for future scientists. His legacy motivates me to seek knowledge, embrace innovation, and face challenges fearlessly.

Zhang Heng, a remarkable inventor and scientist, made ground-breaking contributions to earthquake studies, astronomy, and scientific development. His journey inspires me to pursue knowledge, believe in the power of science, and make my own contributions to society.

In this era of rapid technological advancements, we often overlook the contributions of the pioneers who have significantly contributed to human progress. Zhang Heng, as an inventor and scientist during the late Eastern Han Dynasty in China, not only introduced a series of important inventions to the world but also provided inspiration and guidance for my personal learning journey.

Zhang Heng is most renowned for his inventions of the seismograph and the celestial globe. The seismograph is one of the earliest instruments in the world used to measure seismic activities. Through its internal mechanical structure, the instrument automatically triggers and indicates the direction and intensity of an earthquake. This invention not only enhanced our understanding of earthquake phenomena but also provided crucial foundations for earthquake early warning and disaster prevention efforts.

Furthermore, Zhang Heng invented the celestial globe, which is an instrument used to measure celestial movements and phenomena. The application of the celestial globe allowed for more accurate observations of celestial body positions and motion patterns, enabling the prediction of astronomical events. This invention played a significant role in the development of ancient Chinese astronomy and provided valuable research foundations for future astronomers.

Zhang Heng's contributions extended beyond mechanical inventions. He also proposed theories related to geography, meteorology, and astronomy. His doctrines and ideas brought new insights and explorations to the scientific community of his time. For me, the study and understanding of these theories have sparked a deep appreciation for the vastness and profoundness of science. Zhang Heng, with his wisdom and courage, opened the gateway to the world of science, igniting my thirst for knowledge and pursuit.

Zhang Heng's story also teaches me that individuals, regardless of the era, can change the world through

wisdom and creativity. His inventions and theories not only had a significant impact on his contemporaries but also set an example for future scientists. In my personal learning journey, Zhang Heng's story motivates me to continually seek knowledge and innovation, bravely facing challenges and difficulties.

It is through Zhang Heng's contributions and influence that I firmly believe in the ubiquitous presence of science. It guides us in understanding the world, exploring the unknown, and contributing to the progress of humanity. Zhang Heng's story is not just a legend of an inventor; it is a narrative of human wisdom and courage, which continues to inspire me in forging ahead on the path of science.

Zhang Heng, as a great inventor and scientist, made significant contributions to earthquake studies, astronomy, and the overall development of science through his inventions and theories. His story inspires me to pursue knowledge, seek innovation, and have faith in the transformative power of science. Zhang Heng's wisdom and courage have guided me towards the path of science, allowing me to recognize the vastness and profundity of scientific exploration. His story will continue to motivate me to bravely face challenges, pursue the essence of knowledge, and make my own contributions to the progress and development of humanity. Zhang Heng serves as a role model for my learning journey, demonstrating how an individual can change the world through wisdom and creativity. I will strive to follow in his footsteps, inspired by his legacy, and contribute to the world of science.

The Incredible Power of Chinese Acupuncture Needles

St. Joseph's Primary School, Pun, Sun Long Cardison – 11

A surgeon was holding a beating heart in his hand while the fully conscious patient was undergoing open-heart surgery. The young patient chose an ancient method of relieving pain because the cost was much more affordable for a factory worker like her. She needed to close the hole in her heart, which was a major life–threatening operation.

Beyond her wildest dreams, the patient did not feel any pain despite staying awake throughout the entire process, in which the surgeon opened her chest, removed her rib and some tissues, and took her heart from her body. The surgery was a remarkable success!

Another fully conscious patient had a tumor removed from her throat, but she never twitched when the surgeon made an incision in her throat. Instead, she could sit up, eat an orange, smile, and walk out of the operating room immediately after the last suture was tied!

The only anesthesia used in both operations was Chinese acupuncture needles, as reported in The New York Times on 24 May 1971.

Application of Acupuncture to Anesthesia for Surgical Operation

For centuries, acupuncture has been widely practiced in the Chinese history of medicine to relieve pain and promote healing. It involves the penetration of thin needles into specific points on the body to stimulate physiological responses, generate energy flow, restore inner balance, and promote overall wellness.

Acupuncture anesthesia is a technique that applies acupuncture to induce a state of analgesia for surgical procedures. It is an innovative approach that combines ancient acupuncture techniques with modern medical practice.

The concept of using acupuncture as the sole anesthesia for surgical operation aroused tremendous attention worldwide in 1971 when an extraordinary case of open–heart surgery, with only acupuncture for pain management, was successfully demonstrated in China.

Breakthrough with China's Great Invention

In the past, surgical interventions were unimaginable due to the intolerable pain patients had to suffer. Widely recognized as the birthplace of many scientific inventions and technological innovations, China has endeavored to discover means of reducing human suffering and making surgical interventions less traumatic.

The earliest evidence of acupuncture anesthesia can be traced in historical texts such as the Yellow Emperor's Inner Canon. These texts record ancient Chinese use of acupuncture to treat pain over 2,000 years ago.

Undoubtedly, the development of acupuncture anesthesia is regarded as one of the most remarkable achievements of China. It is a significant breakthrough that has transformed patient experience and had a profound impact on the field of medicine.

This great invention of China has not only saved countless lives, facilitating surgical procedures previously deemed impossible but also contributed to the understanding and application of alternative means of anesthesia to enhance patient comfort and overall outcome.

Mechanisms Behind the Ancient Method

How do the Chinese acupuncture needles work?

The growing popularity of acupuncture due to its effectiveness has sparked considerable interest in exploring and experimenting with this ancient practice.

Extensive research has been conducted on the neurophysiological mechanisms behind acupuncture anesthesia, taking potential placebo effects into consideration. It provides clinical evidence, including neuroimaging studies and analysis, and valuable insight into how acupuncture produces analgesic effects.

From a scientific perspective, findings indicate that acupuncture can influence the perception of pain by triggering the release of natural pain suppressors, such as endogenous opioids (e.g., endorphins, enkephalins, and dynorphins), mood–enhancing substances like serotonin, and other neurotransmitters that bind to receptors in the nervous systems. These substances modulate pain signals transmitted to the brain.

Potential Benefits of Acupuncture Anesthesia

Pain management is essential in ensuring patient comfort and safety during operation. Both ancient Chinese acupuncture techniques and modern anesthetic practices aim to alleviate pain and facilitate medical treatments.

Acupuncture anesthesia can be a viable alternative to conventional anesthesia, achieving similar outcomes without using pharmaceutical agents, which have certain drawbacks and limitations.

While some people remain skeptical about the effectiveness of such an ancient method, proponents of acupuncture anesthesia suggest that it offers the following potential benefits: (i) reduced risks associated with pharmaceutical agents, (ii) an effective solution for patients sensitive, allergic, or intolerant to anesthetic medication, (iii) faster recovery, and (iv) affordability and accessibility for people with limited resources.

Firstly, acupuncture anesthesia eliminates the risks and side effects associated with high doses of pharmaceutical agents to induce a state of unconsciousness, including adverse reactions and complications in the cardiovascular, respiratory, and central nervous systems. It is safer for patients with underlying medical conditions or at higher risk of complications.

Secondly, acupuncture anesthesia is an effective solution for patients with contraindications that preclude the use of anesthetic medication, such as organ dysfunctions or adverse reactions from sensitivity, allergy, or intolerance to drugs. Indeed, it is good news for patients who otherwise have to tolerate severe pain from surgical interventions.

Thirdly, acupuncture anesthesia can result in faster recovery, promote psychological and cardiovascular stability, decrease inflammation and infection rates, and reduce anxiety, stress, and bleeding during surgery by modulating the autonomic nervous system.

Finally, acupuncture anesthesia has proven to be a cost–effective option, eliminating the need for expensive anesthetic medication and monitoring equipment. It opens up opportunities for patients with limited resources or access to advanced medical facilities, substantially reducing the burden on healthcare expenditures.

Combination of Ancient Wisdom and Advanced Science

The invention of Chinese acupuncture needles marks a significant milestone in the development of medical science. Deeply rooted in traditional Chinese medicine, it has been highly integrated into modern medical practice. This unique combination of ancient wisdom and advanced science has stood the test of time, gaining widespread recognition with varying degrees of acceptance and prevalence around the world.

The successful application of acupuncture to anesthesia opens doors, in particular, for patients with limited resources or underlying medical conditions that preclude the use of pharmaceutical anesthesia.

Without question, many great inventions of China have surpassed its ancient past. The rich knowledge embedded in Chinese wisdom has inspired further development in different aspects of human life and continues to have a lasting impact on human well–being.

New tales of China's inventions

St. Joseph's Primary School, Tai, Sun Hei Curtis – 11

China has invented tons of interesting and useful things that affects the world impressively like gunpowder, compass, papermaking, and printing technology. Some of these inventions doesn't seem big but it plays a very important role in our daily life. For example, kites and fireworks which was used in war time for sending signals, nowadays, we make kites and fireworks show for our leisure time and celebrations. Toothbrush was invented in China approximately 200 years ago for tooth cleaning by using pig's hair. Among all these interesting inventions, have you ever imagined that robots were invented and created by China!

Ancient robots were invented and created during BC 770 to BC 256 in China. Compared to the AI electrical robots invented nowadays, ancient robots are different. Although it is called robots, it cannot do complicated calculations like our supercomputer today. However, these ancient robots helped the China emperors in their dynasties.

You might wonder, how and why these robots are invented? What is their purpose for the inventions? Let's jump on my private time travel machine and I'll bring you for an ancient China robot tour. Hold on tight and let's go!

The first stop we are going to visit is in Western Zhou Dynasty (10th century – 771 B.C.). Can you imagine that dancing robot was firstly invented by China! King Mu (976 – 922 B.C.) of the Western Zhou Dynasty once conducted an inspection tour of the west of his empire. A craftsman named Yan Shi made a robot to entertain King Mu during the inspection tour. This robot could sing and dance like a real person! It also had extremely realistic organs, bones, muscles, joints, skin, and hair! More mechanism robots can be found in the China history afterwards.

Let's follow me to the next stop where we will visit a monk in the Northern Qi Dynasty (550–577 A.D.). A monk called Ling Zhao who had many creative ideas. The encouragement and support of Emperor Wu Cheng provided huge impetus to Ling. He proudly turned all his creative ideas into creative inventions. At the command of Emperor Wu Cheng, Ling built a long pool next to a mountain pavilion where Emperor Wu Cheng could enjoy a feast next to the pool. Ling also built a miniature boat with exquisite details and put it in the water. Now, please hold your breath and guess what happened to this miniature boat! When the miniature boat flowed in front of the emperor and when he took a wine cup from it, the boat would stop automatically! Then the small wooden man on the boat would clap its hands, and the boat would start to play music! When Emperor Wu Cheng finished drinking and put down the wine cup, the small wooden man would take the cup back to the boat. If Emperor Wu Cheng did not finish drinking the wine in the cup, the boat would stay there and would not leave! Isn't that amazing?

Finally, have you ever heard of a robot which could catch fishes in Tong Dynasty? This robot looks like an otter and is used in a lake. How did it work? You can put some baits in its mouth and tied it with a stone. When a fish swims into its mouth, the component inside the robot moves and the stone drops, which makes the "otter" float. What an ingenious idea for catching fish!

Although robots in the ancient China couldn't do sums, it motivated the scientists nowadays to invent the AI. They are important to AI because they are the blueprint of the AI we commonly use nowadays. Without the 'old' robots, we wouldn't have created AI for use nowadays. AI nowadays can drive cars automatically, clean the tunnels and underground where human hardly want to do. They also even control industrial machines and build houses for us. Without the invention of the robots in the past, our live wouldn't have been so easy. AI can create beautiful picture within seconds, which saves lots of time. You can even kill two birds with one stone by letting the AI to create the blueprint and let yourself to draw the picture, which saves tons of time on thinking about how to draw the picture. Also, AI could answer questions immediately which reduce the amount of time used on researching. The productivity of artificial intelligence may boost our workplaces, which will benefit people by

enabling them to do more work. As the future of AI replaces tedious or dangerous tasks, the human workforce is liberated to focus on tasks for which they are more equipped, such as those requiring creativity and empathy.

Come on, let's jump on my private time travel machine again. Let's travel to the future and see what is in our world! Let's go! 100 years later, AI can control airplanes to fly which can reduce the number of flight accidents caused by human mistakes. AI could do the initial examination, take tests, do X−rays and MRIs, plus making primary diagnosis! It can greatly reduce the amount of death caused by human mistakes or careless miss. It can also get to know the patient's condition more efficiently and accurately, in which we can take the needed early treatment as soon as possible.

Ladies and gentlemen, welcome back in 2023. Can you imagine how our world will look like if there is no evolution and development of robots and AI in the past? Let's keep our imagination and creatively open for our bright future.

From Amazing Genes to Amazing Grains

St. Joseph's Primary School, Tam, Ching Yuk Eason – 11

《憫農》 唐·李紳

鋤禾日當午，汗滴禾下土。誰知盤中餐，粒粒皆辛苦。

"Compassion For Farmers" by Li Shen (Tang Dynasty)

At high noon, the farmer is wielding his hoe,

Sweat dripping, falling onto the rice paddy below.

Who knows, as we dine,

Each grain in your bowl bears labours' sign.

Over the past 35 years, China has been working relentlessly on hunger and poverty reduction. According to the World Food Programme, since 2015, China has met its Millennium Development Goal of halving the number of hungry population and brought down the global hunger rate by two-thirds. However, there are still 150.8 million people who are malnourished. Obviously, it should come as no surprise that there are wide gaps in nutritional status between urban and rural areas——especially in remote and mountainous areas. Given the size of China's population, rates of 9.4 percent for stunting in children and 19.6 percent for anemia illustrate significant national and global burdens. In 2022, three Chinese scientists timely discovered a genetic strategy for improving crop yields which will probably bring our world a strong food security in the future.

On March 25th, 2022, Chinese scientists Professors Jian Sheng Li and Xiao Hong Yang from China Agriculture University and Professor Jian Bing Yan from Huazhong Agriculture University published their discovery on how to increase the production of maize and rice. Their paper "Convergent selection of a WD 40 protein that enhances grain yield in rice and maize" was published in the "Science" magazine after eighteen years of hard work. Their results not only can help increase the production of maize and rice but also can solve the problem of malnourishment and poverty. They identified two critical genes called KRN2 and OsKRN2 in maize and rice respectively. By editing the two genes, they can control the number of maize and rice produced. They further found that knockout of genes KRN2 in maize and OsKRN2 in rice can increase grain yield by increasing kernel rows and secondary panicle branches respectively. As a result, the

grain production can be raised by ten and eight percent without an apparent negative impact on other agronomic characteristics. Besides, Professor Yan explained that their next step would be focusing on the gene KRN2 and building innovation teams for gene breeding. Eventually, the new breed can be promoted, released, and sold on the market.

How would this discovery make an impact on all of us? According to the United Nation's Food and Agriculture Organisation (FAO) indicated that more than 50% of all human calories come from just three plants and they are rice, maize, and wheat. At this point, the Professors' discovery not only finds out the mechanism of increasing yields of maize and rice but also provides a theoretical foundation for enhancements of other economically important crops, such as wheat, barley, and sorghum. After that, the production of these main cereals may also be raised by the same method. Unbelievably, these staple crops are feeding more than 7 billion of the world's population now confirms that this discovery from the three Chinese scientists will impact every one of us on the planet ultimately. Other than the main crops, vegetables could also be unexpectedly benefited too. "This morning, a scientist researching vegetables messaged me and thanked us for the inspiration from our research findings," said Professor Yan excitedly to a reporter.

Furthermore, the ever−growing world population is escalating the food security crisis. On the word of a new report by the World Resources Institute, the World Bank, and the United Nations, the trajectory for crop yields is inadequate to nourish the world's population by 2050, which is a whopping 9.7 billion people. But currently, cultivatable land is simply not evenly distributed amongst all the countries over the world, so many places still have poverty. If food trends remain unchanged, then 593 million hectares of land, equivalent to two Indias, would have to be cleared and turned into crop and livestock production to feed all the people in poverty, which is talking about more than 828 million people. Moreover, there are other upcoming threats to crop yields such as heat waves, precipitation, and other extreme weather. This research can help enhance sustainable crop production and the high yields of the staple crops are vital to feed a growing population.

The three scientists' discovery was the most inspiring and meaningful breakthrough for me from China's Top Ten Breakthroughs in Science and Technology in 2022, which were selected by the members of the Chinese Academy of Sciences and the Chinese Academy of Engineering, among the 4 entries in space exploration and observation, 2 entries in biotechnology related to agriculture, 2 entries in earth and environmental sciences, and 2 entries in fundamental physics because it not only can solve the hunger problem in China, but it can also prevent 828 million people in the world from starvation. The 18 years of persistent pursuit of the three scientists strikes me like lightning. Genome technology will bring big changes to us and I am inspired to become a genome scientist to support the farmers to develop new and better breeds that produce

more yields and require no pesticides or herbicides. Hopefully, the world is free of hunger and poverty out of poor crop yields.

The poem I quoted at the beginning "Compassion For Farmers" was the poem my teacher taught us when I was studying Primary Two in Beijing. The first time I heard this poem was when I was having lunch, everyone swallowed down the meat and vegetables hungrily, but we all ate the rice reluctantly. Then, my class teacher retold us a story from her grandfather's own experience. Her grandfather lived during the Second Sino–Japanese War, while there was starvation everywhere, and even a little food was an amazing gift to him and his family. It was hard to imagine how they could only survive on eating leaves or tree bark. Survival was almost impossible! All of us felt very ashamed after hearing this story. Since then, I learned to cherish food and natural resources, and respect farmers by finishing every single amazing grain in my bowl.

The Four Great Inventions

St. Joseph's Primary School, Thong, Kwan Yuen – 10

Have you ever heard about the "The Four Great Inventions" before? I'll explain the stories of these four inventions, and how without them we can't have some things that appear in our daily lives.

Firstly, let's talk about the compass. At around 206 BC, during the Chinese Song dynasty, Shen Kuo, an ingenious scientist, made a compass out of iron needles, magnetized by striking them with a lodestone to tell which direction was which, and the marked end would "pull" towards Earth's magnetic North Pole. The first-ever usage of a compass was recorded in Western Europe around 1190.

Next, we'll talk about gunpowder. 9th century AD during the Tang dynasty gunpowder appeared first in a formula contained in the "Taishang Shengzu Jindan Mijue" in 808, and then about 50 years later in a Taoist text called the "Zhenyuan miaodao yailue". According to it, "Some people have heated together sulphur, realgar and saltpetre with honey; smoke and flames to make a black powder. The result was that their hands and faces have been burnt, even the whole house where they were working burned down." It is most likely that the invention of gunpowder was fortuitous, and not done for experimental purposes. Gunpowder is also used to make fireworks and lethal weapons needed to kill people quickly in wars. Think about if gunpowder was never invented, so many people wouldn't be starving, homeless and dead right now because of wars, fireworks wouldn't be a thing anymore and most people's joy would be no more.

We then have printing, during 3000 BCE, When the proto-Elamite and Sumerian civilisations used cylinder seals to certify documents written in clay tablets. Other forms of printing include block seals, hammered coinage, pottery imprints and cloth printing. Initially, a method of printing on cloth such as silk and woodblock printing for texts on paper originated in China in the 7th century, leading to the rapid spread of book production and woodblock printing in other countries in Asia. This considerably impacted the world and authors could produce books more efficiently and less costly. Printing has developed even more nowadays. We can just buy a printer and computer to print out whatever we want, or, for a cheaper price, go to a printing shop and ask them to print out whatever we want. Could you imagine being stuck in ancient China and having to print the old-fashioned way? That would be too time-wasting and absurd.

Finally, there's papermaking. Hemp paper has been used since the 8th century BCE in China. An official attached to the imperial court during the Han Dynasty, Cai Lun, is said to have invented paper about 105 CE using mulberry and other bast fibres along with fishnets, old rags and hemp waste. It later spread to the 8th century to the Islamic world, where the process was refined, and machinery was designed for bulk manufacturing. It expeditiously spread across the world, and this innovation helped transform papermaking from an art into a major industry. These days, most types of papermaking are made by using a dilute suspension consisting of mostly separate cellulose fibres in water drained through a sieve-like screen, so that a mat of randomly interwoven fibres is laid down. Water is further removed from this sheet by pressing, aided by a suction vacuum, or heating. Once dried, an ordinary sheet of paper is made. This process is shortened thanks to machinery, and 65 billion sheets of paper are produced every day. However, more and more trees are getting cut every day, global warming will increase by 10% every year, and global temperatures will rise gradually, so people are creating environmentally friendly paper so that they don't have to cut down so many trees.

To conclude, if these 4 things weren't invented, humanity wouldn't be the same as it is now, and our daily lives wouldn't be so convenient now. So many things wouldn't have appeared in our daily lives if it weren't for these 3 inventors and people in Ancient China.

New Tales of China's Inventions: The beads that changed the world

St. Joseph's Primary School, Tsui, Zedric – 10

Apart from the four great inventions which are papermaking, printing, the compass, and gunpowder, do you know that China has a rich history of inventions that have significantly shaped the world and continue to contribute to a better future? And who can forget the ingenuous abacus, an ancient calculating device known as 'the oldest computer in the world'?

Let us transport ourselves to ancient China,
where tales of brilliant inventors crafting remarkable creations abound……

Ming Dynasty (1368–1644) was a period of prosperity characterized by increasing trade and commerce. A complex system of taxation emerged to regulate and finance the growing society. One evening, Cheng Dawei (1533–1606), a businessman from Anhui who started to do business at the age of 20, found himself struggling to figure out the exact profit he had earned after considering the multitude of tax components. To overcome this difficulty, Cheng recognized a pressing need for a tool that could simplify complex calculations. Driven by his inventive spirit and a thirst for knowledge, he decided to immerse himself in the world of mathematics. Conducting extensive research on mathematical skills, he ultimately invented a revolutionary device – the Suan–Pan abacus. This ancient calculating tool made of a wooden frame with rows of metal beads or stones on rods, allowed people to preform basic arithmetic operations such as addition, subtraction, multiplication and division. At the age of 60, Cheng further enhanced his invention by publishing the Suanfa Tongzong (General Source of Computational Methods), a guide designed to be used with the abacus. With his invention, he was able to calculate his income and expenses far more easily than ever before. Undeniably, the abacus stands as a powerful symbol of humanity's incredible ability to innovate and create sophisticated tools to overcome challenges.

<u>Chinese Economy and Society</u>

It is without a doubt that the abacus has played a major role in shaping the development of the Chinese economy and advancing society. During the Ming Dynasty, with the development of China's handicraft industry, and the expansion of foreign trade, many individuals recognized the abacus as an essential tool for its ability to enable precise calculations. Armed with this powerful tool, merchants were able to accurately determine the surplus income available for investments. This presented a remarkable opportunity for them to grow their wealth and make substantial contributions to the economy. The economic growth fueled by their investments generated employment opportunities, providing livelihoods for many individuals and improving their overall well–being. Additionally, this growth sparked innovation and business development, driving advancements in various fields and ultimately fostering rising prosperity for China's economy and society.

<u>Chinese Culture and that of Neighboring Countries</u>

The impact of abacus usage had a profound influence on Chinese culture and neighboring countries. In Chinese education, the abacus played a crucial role in teaching mathematics and fostering a deep understanding of numerical concepts among students. The use of abacus was integrated into the curriculum of Chinese schools, providing a tangible and visual representation of numbers and calculations, which helped students grasp mathematical concepts more concretely. Its influence on Chinese culture is evident in its status as a symbol of intelligence and mental agility. Moreover, the impact of the abacus extended beyond Chinese borders and influenced neighboring societies as well. The General Source of Computational Methods by Cheng Dawei reached Japan, greatly influencing Japanese mathematics. The influence drove Japan, Korea, and other countries to recognize the value of the abacus and adopted it, incorporating it into their own cultures and educational systems. The abacus became an essential tool for trade, education, and cultural exchange in these countries, contributing to the development and advancement of their respective societies.

The beads have changed the world.

Education

The impact of the abacus reaches far beyond its conventional role as a calculating tool. Its influence is observed globally, as people acknowledge its capacity to enhance mental visualization. Utilizing the abacus demands focused concentration and mental discipline, making it a valuable instrument for improving cognitive abilities. Manipulating the beads and performing calculations on the abacus engages the mind, eyes, and hands, honing attention to detail, memory, and problem−solving skills. Consequently, students who undergo abacus education often display heightened focus and concentration in both academic and non−academic activities. Today, Zhusuan, the practice of abacus usage, is widely recognized as China's fifth great invention. Through regular abacus practice, students strengthen their mental visualization skills, enabling them to tackle complex mathematical problems more efficiently. This skill extends beyond mathematics and can benefit them in other subjects that require visual thinking, such as science and engineering.

Modern Technology

Moreover, the abacus has left a lasting imprint on modern technology. The electronic calculator, for instance, draws inspiration from the abacus, building upon its foundations to provide convenient and efficient calculations. The influence of the abacus is not limited to calculators; it has also shaped the design and functionality of computers and digital devices like smartphones. The abacus's core idea of storing and manipulating numerical data serves as the basis for modern computing. The binary system, with its representation of values and positions using 0s and 1s, can be likened to the beads on the abacus rods, showcasing the abacus's influence on the very fabric of contemporary technology.

In conclusion, the abacus has transcended its traditional role as a calculating tool, leaving an indelible mark on various aspects of modern society. From its origins in ancient China, the principles and concepts underlying the abacus, along with the mental visualization skills and cognitive abilities it enhances, continue to shape the development of intelligent technologies. The beads on the abacus have truly changed the world. In December 2013, the abacus was listed as a World Intangible Cultural Heritage by the United Nations Educational, Scientific and Cultural Organization (UNESCO). As we appreciate the profound impact of the abacus, we are reminded of the remarkable contributions made by ancient inventors, and we are inspired to encourage a culture of curiosity, diversity, and innovation.

New Tales of China's Inventions

St. Joseph's Primary School, Wong, Bak Nik – 11

In the state where the so–called Four Great Inventions in paper, printing, compass and gunpowder were born, we notice that our Chinese ancestors were already the pioneers for invention and innovation. They introduced the Chinese people and the people in other parts of the world to those remarkable inventions and technologies that laid the foundation for our modern society.

As we know, China's inventions have a rich history and play a vital role in the development of global economics and culture. The Four Great Inventions have played an important role in global innovation and revolution for centuries. Paper–making technology, invented by Cai Lun in the 2nd century, had led up to revolution for communication. The invention of printing by Bi Sheng sparked off the spread of various knowledge and information on paper from one to others. The discovery of gunpowder created the use of firearms and cannon that had made some enormous impacts on the war between countries and developed more strategies for fighting the war. The invention of the compass has played a significant role in the navigation and exploration of lands and seas, and set up the platforms for transportation and trade networks between people in various areas and even countries.

China has set up a new chapter of innovation from the past achievements to modern breakthroughs by telling the story of China's invention that continues to influence the world. There are nowadays more Chinese inventions and scientific breakthroughs, such as the green energy revolution, artificial intelligence, high–speed transportation and so forth that have taken the modern world by storm.

To cite some examples, China's continuous quest and growth for green energy has brought in the production and use of sky wind turbines and solar panels. As the world's largest and the most advanced green energy production, China has embraced the Sun and soaring sky as the power fields for new electricity generation.

Sky Wind Turbines are much lighter and stronger than the conventional turbines, with the large aerodynamic blades that harness the steady breezes at higher elevation and give a more consistent and efficient energy output. Regarding solar energy, China is a world leader in solar panel production and technology. Chinese researchers and companies have made significant advancements in increasing the efficiency of solar panels, which directly impacts the amount of electricity generated from sunlight. Moreover, Chinese companies have also made significant improvements on the durability and performance of solar panels, which are now produced more reliable and cost–effective. This makes China the biggest manufacturer and exporter of solar panels worldwide.

China's advance in green energy production efficiency and the continuous development have established itself as an innovator to harness the natural resources to combat climate change and possible energy crisis, and reduce our reliance on fossil fuels.

Furthermore, during the past decade, China has made significant strides in the field of artificial intelligence, which is best known as "AI". Some Chinese companies such as Baidu, Alibaba and SenseTime are at the forefront of AI development, and have made breakthroughs in different areas such as facial recognition technology, natural language processing and autonomous driving.

While China is now at the forefront of developing and deploying facial recognition technology for many applications in public security, surveillance, and commercial uses, Chinese researchers and companies are making vital contributions to speech recognition technology, with their main applications in virtual assistants, language translation, and customer service.

In addition, China is investing manpower and resources in AI applications for healthcare aspects such as medical imaging analysis and drug discovery. Companies like Ping A Technology develop AI–powered healthcare technology

and solutions for some diagnosis of serious diseases such as cancer and heart conditions. They have also developed AI to analyze medical images such as X−rays, CT scans to aid early detection and treatment of diseases.

As there is a large population in China, AI has been recently utilized to analyze vast amounts of patient data such as genetics and medical history to provide more personalized treatment recommendations. In order to allow patients to consult doctors remotely in the vast and extensive territory in China, AI−powered telemedicine platforms are in place to integrate AI tools and virtual consultation services to expand access to healthcare services.

What's more, Chinese researchers have created different advanced ways of transportation. A Chinese company has developed an autonomous vehicle that can transport passengers and cargo without a pilot. Also, China's advancements in high−speed rail technology have led to the development of the world's fastest train systems which are well known for speed, safety, and efficiency in transportation.

From a few examples of what we have seen, China's inventions have been a game changer and significantly changed the way we live. These inventions represent scientific advancements from China that have the potential to shape various industries and have a significant impact on global innovation and enhance the living standards of the majority of people in the world.

All in all, the tales of China's inventions have not only brought wonder to the world, but also opened the eyes of the general public to expect more to come.

New Tales of China's Inventions

St. Margaret's Coeducational English Secondary And Primary School,

Ho, Ching Kong Tristan – 9

China has invented many things and developed them very well, such as paper money, compass, printing methods etc.

But today, I would like to share gunpowder. Gunpowder was invented in the 9th century CE, in China. It was made by a mixture of KNO3, charcoal, sulfur and it was an accidental invention.

One day, a man was trying to make some medicine, which would make humans have very long lives. However, the medicine exploded while heated up by the fire. The gunpowder burned down his house. In the beginning gunpowder was used in making fireworks for events or celebrations. Gradually, it was used in military. Moreover, fire lances and hand cannons were invented. Fire lances are lances which has gunpowder on the tips. Hand cannons are small and easy to be held in hands. The first hand cannon was called "Xanadu Gun". Later, gunpowder became even more popular. In 1250 AD, China started to sell gunpowder to Europe throughout the Silk Road. Not long after, Europe invented the first ever pistol. Nowadays, gunpowder is still often used in side bullets.

This is my topic for today. Thank you for reading my article and I hope you understand more about gunpowder.

New Tales of China's Inventions

St. Margaret's Coeducational English Secondary And Primary School,

Ng, Chit Hang Nathan – 9

Most people know about the four great inventions of ancient china. Compass, gunpowder, papermaking and printing. They are all really useful. For example, the compass being one of the most important instrument in navigation, while there was no printing Rustichello of Pisa the writer of The Travels of Marco Polo had to copy the same thing over and over again!

You might know about the four great inventions of ancient china but did you know that china created stuff like toilet paper, missiles and clocks? Today I'm going to talk about some of ancient China's inventions that you might not know about like for example.

1. Clock 725 AD

Yi Xing was a Chinese astronomer, Buddhist monk, inventor, mathematician, mechanical engineer and philosopher. He made the first ever clock named Water–driven Spherical Birds in 725 AD. It was operated by dripping water which powered a wheel that made one revolution in 24 hours/1 day. It was also completely driven by hydro power the clock is also referred to as an astronomical clock.

However, Yi Xing was not the first one to use hydraulic power. Zhang Heng was the one that inspired Yi Xing to make such an invention. Yi Xing's achievements were built upon the knowledge of Zhang Heng.

2. Silk 6000 years ago

According to Chinese myth, silk cloth was invented by Hsi–Ling–Shih the wife of The Yellow Emperor. The Yellow Emperor is said to have ruled over China in around 3000 B.C.

For a long Time, silk was only for a select few only reserved for people close to him like family members and high rank soldiers, some super ancient books wrote about how the Emperor always wore white silk. Slowly, more people were able to wear silk clothes and decorate with silk ornaments.

During the Han Dynasty, silk became a kind of a currency. There are for instance farmers who paid taxes using grain or silk. Silk was also highly valued outside of China, for example Europe tried to find a way to Asia/China for goods like silk and spices.

After that Gothic leader Alaric hid all the silk in the world inside Dunhuang. He hid it so well it remained hidden for nearly 900 years.

3. The Kite 3000 years ago

We all love playing kite flying and seeing all the marvelous kites flying in the air majestically. Well, we can thank Mozi and Lu Ban in ancient times for using wood and cloth. Mozi and Lu Ban were two philosophers who invented kites. Kites were invented in the early Warring States Period (221 – 475 B.C.).

The kites were exclusive to China. Mainly they were used for military purposes the kites were used for measuring distances, which was useful for moving large armies across terrain, record wind readings and provided a form of communication similar to a flare gun.

Chinese kites now usually represent mythological or legendary, animals, characters, symbolic creatures and figures, but the creators of the kites we use nowadays are from the Tang dynasty's people.

All of these wonderful inventions really show us that China is a really creative country! However, China is not the only country that has crazy inventions. Countries like America have crazy inventions too! There is one thing I learnt from this journey is that humans can imagine anything so if you try hard enough, you can achieve your goals.

Smart Contact Lenses – The Greatest Innovative Gadget made in China

St. Mary's Canossian School, Chan, Hei Man – 11

The Chinese have long regarded glasses as an important daily necessity. In ancient China, people secured glasses with ribbons and draped them over the top of their ears with small weights at the bottom of the ribbons to keep them in place. In the 12th century, sunglasses were made of transparent quartz stones in China. They were used by the judges in order to prevent people from reading their facial expressions. All these reflect the importance of the Chinese attaching to glasses.

Over the past decades, smartphones are gaining their popularity, and it is hard to imagine how life would be like without smartphones. Someone thinks that the development of smartphones has reached its limit, hence there would be no more advancement in the development of smartphones.

From my point of view, although smartphones have improved dramatically throughout the years, it does not mean that mobile phones have reached their technical limits. A major problem that developers have yet to solve is – How can people free their hands while using smartphones? To tackle that, I have an idea – If I could incorporate a smartphone with a built–in software in piece of lenses, it would be an innovative gadget!"

This future Chinese invention which will change the world is called the "Smart Contact Lenses". The device combines contact lenses and smartphones together so that we do not have to worry about forgetting to bring or losing our smartphones anymore. They look the same as the normal contact lenses, when you place them on your eyes, you can start thinking about what you want to look for, and then the lenses will come up with the results of your search. You do not need to use a private screen any longer as no one can see what you are watching or reading. Moreover, the product is eco–friendly, when the smart contact lenses are in touch with human tears, they can charge up without using electricity!

Here is an example on how it functions. If you want to search for information about "refraction of light", all you have to do is simply put on the contact lenses and keep thinking "refraction of light" in your mind. Then, the lenses will come up with all the information you need. Actually, you can search for all kinds of information, just like what you do using smartphones and computers.

Other than searching information, Smart Contact Lenses can be used for sending text messages. To do this, you can first synchronize your contact list from your smartphones to the contact lenses, then you can communicate with others whenever you want. In addition to sending text messages, the smart contact lenses can help make phone calls too. It works similar to sending messages, but the most delighted thing is that we no longer need any headphones or hands–free equipment now as smart contact lenses will transmit the voice through signals instead.

All in all, "Smart Contact Lenses" can make our lives more convenient and efficient. This ground–breaking invention can definitely help people with disabilities, such as amputees who accidentally lost their arms would be able to search for information, make phone calls and send messages. There are lots of advantages in this innovative product. I am not going to introduce it one by one here, but I will leave it to you to explore further! The invention will have far–reaching consequences on our daily lives. Undoubtedly, "Smart Contact Lenses" must be the greatest invention made in China!

Magnetic Levitation Train or Light Speed Train

St. Mary's Canossian School, Chan, Kei Tung – 10

Have you ever heard of the magnetic levitation train? It is a brilliant Chinese invention that has changed everything in China. The magnetic levitation train in China only travels in Shanghai. A magnetic levitation train consists of 16 carriages, carrying up to 1,000 passengers at a time. It cuts the current travel time by more than half, from 90 to 40 minutes. It is not only the fastest train in the world, but also the safest and most comfortable rapid transit system in the world. Many people may wonder, "Why aren't there magnetic levitation trains everywhere?" The main reason is that the magnetic levitation trains are very expensive. Therefore, many countries raise concerns over innovative railway system.

On one hand, there are many benefits bought by the magnetic levitation train. On the other hand, there are also numerous shortcomings coming from it. For example, the magnetic levitation train produces high noise levels at speeds of more than 250 kilometres per hour, which may affect the health and well−being of residents living nearby the rail. However, have you ever imagined that a train that is cheap, quiet and environmentally friendly? In the future, I think that there will be a brilliant train system called Light Speed Train. It uses the materials that come from space. The materials from space can change into energy like fuel that make the train travels like light speed. It is suitable for different countries with different landscapes!

Light Speed Train can take you to faraway places quickly. You can arrive at your destination in the twinkling of an eye, as compared to travelling by train or plane. Imagine how exciting that would be! Another great thing is that the Light Speed Train is very safe. It has sensors all over the carriages to keep everyone safe. So, you don't have to worry about accidents like with car or plane crushes.

And guess what? Light Speed Train is good for the environment too! It doesn't use things pollute the air. It releases purified air. That means it helps to keep our planet nice and clean. Light Speed Train is really important for China's future. It can help with traffic problems. You know how sometimes the roads get really crowed and it takes a long time to get somewhere? Well, Light Speed Train can go on special tracks, so it doesn't get stuck in traffic. It can zoom though cities really fast and make traveling much easier! The Light Speed Train can help the economy grow. By connecting different cities, it makes it easier for people to travel and do business that means more jobs and more money for everyone.

Lastly, this invention can get more great ideas. When people see how amazing Light Speed Train is, it can make them want to come up with even more cool things. That's how progress happens! Now, you can see why the Light Speed Train is such an amazing invention. It is really fast, super safe and truly good for the environment. It can solve transportation problems and help the economy. I can't wait for the day when we can all ride on the Light Speed Train and have an incredible adventure! Let's dream of the bright future of China together!

A Chinese Invention that will Change the Word – Translator Glasses

St. Mary's Canossian College, Kwok, Ching Yin Stephanie – 10

Nowadays, China has become the world leader in various aspects. If you want to understand more about Chinese inventions deeply, you need to know Chinese culture well and learn Chinese language. However, Chinese is not easy to learn. With over 50,000 unique characters, in which each character represents a syllable and a meaning, one may feel overwhelming to even think about learning it. To ensure that information is precisely conveyed and to break down language barriers, you need the following latest invention – Translator Glasses (TG).

TG is a marvellous invention that will change the world. This supercalifragilisticexpealidocious gadget can change our future and magically improve the lives of people once and for all. Since the dawn of time, people have started to invent and create new and special equipment or beautiful luxuries for everyone to lead an efficient life. Now I have to show you the latest Chinese invention, TG. When someone wears it, it is invisible to others. No one will know you are using it. So, what does TG do? Have you ever encountered any Chinese texts or poems that you wanted to translate to your own language? How about some Chinese sketches or paintings that you wanted to understand? TG is the best solution for you. Each one of them can be tailor-made and will suit you best.

How about the amazing features? As they are tailor-made, customisable secret buttons will be situated in the best place for you. A round button will be made to turn the glasses on and off whereas a triangular one will be installed to let you pre-set your language. Then, all you need to do is to place the Chinese drawings or readings in front of your eyes and "ta-da"! It only takes two seconds to translate and the explanations are right in front your eyes. How convenient! To keep a record, simply double click the square button to save it for further reference.

With the rapid development of Chinese science and technology, a lot of theses and research in Chinese are needed to be shared with the world promptly. For example, traditional Chinese medicine has become more popular and effective especially during the pandemic of COVID-19. Lianhua Qingwen capsules were widely used in the western world to treat COVID-19 patients. The combination of traditional Chinese and Western medicine will definitely knock our socks off in the coming future. However, the notes and prescriptions of doctors are often handwritten and they look like random scrawls for outsiders. With TG, all the notes and prescriptions can be deciphered and translated in no time. It will be very useful for doctors and scientists around the world because they can now read about medicines and scientific explanations which are written in Chinese.

Do you want to have a pair of TG? I cannot wait to see this invention be launched! Then, I can read all the books in the world whatever languages they are written in and I can spread new information, knowledge and ideas effectively with people around the world!

The New Era of Tavelling in China

St. Mary's Canossian College, Leong, Sing Yu Cintia – 10

Our ancestors, the ancient Chinese, are known for their inventions that still are used in the modern day. They are namely papermaking, gunpowder, printing and the compass. These four legendary inventions have had tremendous impacts on the development of global civilisation. Presently, four China's technological innovations – dockless shared bicycles, high-speed rail, mobile and online payment services as well as e-commerce, with a reputation that bark back to the "four great inventions" of ancient Chinese, have been exceptionally developed in China as they have become deep rooted in our daily life.

It got me thinking, what would be the next innovation that will power the future and change our tomorrow for the best? Since China is the world's largest emitter of carbon dioxide (CO_2) – the primary driver of climate change, we have faced widespread criticism to address environmental concerns. If we could not cut our CO_2 emissions in the atmosphere, it could be consequential for the world on combating climate change.

I believe we could combine the four latest innovations to create a cutting-edge public transport system which we could all participate and help cutting our CO_2 emissions. I am calling it the Orbit.

Borrowing the technology of high-speed rail, the Orbit is a high-speed electric vehicle which drives on its own and can take up to 4 passengers at a time. The Orbit can travel on the road, under the water, along cycle lanes and underground tracks. I called it the Orbit because it is sphere shaped. The upper half will be made out of glass so that passengers can enjoy the scenery while travelling. The bottom half will have four sets of pedals where each of the passengers will be able to help boosting its power by pedalling. Here comes an amazing feature – the harder they pedal, the less fare they will have to pay. And of course, all payment will be paid using smartphones or online payment services.

Underneath each of the Orbit will be an Artificial Intelligent (AI) computer that is linked to a super-giant computer using Wi-Fi technology. The super-giant computer can examine the latest traffic conditions and weather forecast for the Orbit and identify the most ideal combination of any set of 4 passengers to ride on the Orbit and travel to their destinations by selecting the quickest route. All the passengers can leisurely board on the Orbit at the requested time or locate the nearest Orbit with their smartphones, get off the Orbit once they are arrived or anywhere on the street without the need to stop at a specific station or bus stop, and pay for the fare conveniently by scanning a QR code. The super-giant computer will store our journey patterns and forecast when and where to go for our next ride. The more we ride on the Orbit, the smarter it will become and therefore more convenient for us all.

By combining smartphones, high-speed technology and super-giant computer, the Orbit would be an AI shared taxi transport system that is convenient and affordable transport alternative to private vehicles. It will encourage more people to use shared public transport, reducing traffic jam and cutting CO_2 emission. And with a population exceeding 1.4 billion, China could be at the forefront in the widespread adoption of the latest innovations to combat climate change.

Sir Charles Kao Kuen

St. Paul's Co-educational College Primary School, Chan, Hylia - 11

Ever since the four great inventions of China, China has become one of the world leaders in inventing, nurturing many great inventors. Among them all, Sir Charles Kao Kuen stands out.

Sir Charles Kao Kuen was a respectable and selfless Chinese inventor, and up to this day, people still praise him for his discovery, telecommunication using optical fibres.

Charles was born on 4th November, 1933 in Shanghai. His father, Kao Chun Hsin studied law and married a poet.

When the Japanese invaded China in the1930s, Charles and his family were shielded from the terror that reigned outside. Sadly, the end of war with Japan didn't bring peace. Soon, the Red Army was prepared to attack the city. In 1948, the family decided to leave Shanghai for safety. On that dreadful day, it was the last time they'd see their homeland for many years.

A short sojourn in Taipei convinced Charles' father that Hong Kong would be a better refuge. So, the family settled in a modest apartment there and the boys were enrolled into St. Joseph's College.

Charles did well academically and mostly got A's in the school matriculation exams, which granted him entry to the University of Hong Kong. However, the University was still in some confusion after the war. Some faculties, including the Electrical Engineering which Charles wanted to study at, were not functioning. Therefore, he went to Woolwich Polytechnic in London to sit for the A-level exams which he passed effortlessly. He graduated in 1957 with a Bachelor of Science in Electrical Engineering.

To relieve his father from the heavy financial burden, Charles started working immediately after graduation. He joined Standard Telephones & Cables (STC), a British subsidiary of International Telephone & Telegraph Co (ITT) in North Woolwich. Charles had gone around to different sections until he decided to stay in the microwave division. During his three years at STC, he married a fellow engineer named Gwen.

Three years passed, and Charles thought it was time to move on and applied for a lectureship at Loughborough Polytechnic. However, seeing Charles' potential, STC thought that the company shouldn't lose him. They offered Charles a chance to transfer to the research lab, STL in Harlow. To make sure Charles stayed, STC even found a job for Gwen at the new place. The offer was too good to refuse. As a result, he stayed with ITT Corp for the next thirty years, working at different locations. Everything seemed perfect, with Charles' parents emigrating to join him and delighted with two grandchildren.

In 1970, The Chinese University of Hong Kong, CUHK, asked Charles to come to the institution to set up an electronics department. STL granted him a two-year leave of absence, which later became four years. Charles could see the first batch of students graduate, and established a graduate program too. During this time, he took annual summer leaves to return to STL to keep alongside developments in optical fibers research.

By 1974, the project Charles had started had advanced to the pre-production development stage. It had gained attention and an industry had formed around it, trying to transform global telecommunications systems and ITT wanted him to rejoin the team for this project.

So, Charles' family moved to the ITT plant in Roanoke, Virginia. He became Chief Scientist and later Vice-President and Director of Engineering in charge of the electro-optical products division. Despite being in the U.S., he continued to travel to research labs worldwide to stay updated on developments.

In the 1980s, the optical fibre industry grew, increasing communication capacity. He became an Executive Scientist at ITT and led the Terabit Optoelectronics Technology Project, which aimed to explore technologies that could transmit capacities of terabits per second. The project involved a chain of universities and institutions. In 1985, he became the Director of Corporate Research at ITT, and during this time, modifications were made to utilize the increased communication capacity, and the internet was born.

Charles was promoted to the President of CUHK in 1986, so he moved to Hong Kong. This move clashed with ITT Corp selling its technical divisions to Alcatel, so Charles parted ways with his colleagues. He was the Vice-Chancellor of CUHK for nine years, during which time Hong Kong was preparing for the resumption of authority by China and the higher education part grew.

Charles' role at CUHK was to create an environment that encouraged people to take on responsibilities and contribute to the University. By creating this space, he allowed the University to develop and let people perform at their best, leading to a new level of development.

After a year of lecture tours around S. E. Asia, Charles stayed in Hong Kong, setting up his own company. He was appointed to miscellaneous companies as non-executive director. In 2009, he moved to California to be closer to his children.

In the past, light transmission through glass was used for various purposes. However, it was not possible to transmit light over long distances before Charles' work, as glass fibres were thought to be unsuitable as a conductor of information because of high signal loss from light scattering. Many research laboratories tried to find a solution, as the public had high expectations. Charles experimented with the failure of light to penetrate glass and discovered a solution. By cautiously purifying the glass, bundles of thin fibres could be produced that could carry lots of information over long distances with low signal diminution and that such fibres could replace copper wires for telecommunication. He had discovered telecommunication using fibre optics!

His revolutionary discovery shocked everyone, but instead of selling his invention at a high price, he generously shared it to the world. In 2009, he won the Nobel Prize in Physics and in 2010, he was knighted by the Queen!

Unfortunately, he was later diagnosed with Alzheimer's disease and passed away on September 23, 2018. Even so, he still has a place in everyone's hearts- not just as a physicist, but as a selfless hero who shared his invention with the whole world.

The Genius of China

St. Paul's Co-educational College Primary School, Man, Hay Yue Amber - 12

Whenever someone asks me who I think the best inventor of China is, they expect me to say Cai Lun, the man who invented paper, or perhaps Yi Sing, the man who developed an astronomical instrument which worked like a clock. What they don't expect me to reply, though, is that I think the genius of China is actually Zhang Heng.

Referred to as the Leonardo da Vinci of China, Zhang Heng was a polymath scientist, astronomer, inventor and statesman. He was born in 78 AD in Nanyang, China, mostly known for inventing things like the seismoscope, seismometer, hydraulic-powered armillary sphere, pi calculation, universal model and lunar eclipse and solar eclipse theory.

The seismoscope is, personally, his biggest and best invention, and also the development that made him the well-known man he is. He created the design of the first ever earthquake sensing device, which could remotely detect earthquakes hundreds, even thousands of kilometers away. The inventor believed that the cause of earthquakes were wind and air - to attempt to indicate the direction of a distant earthquake, his device dropped a bronze ball from one of eight tubed projections shaped as dragon heads into a metal object down below shaped like a frog's mouth, representing the direction in which the seismic wave was travelling. Sadly, there are no physical remains of Zhang Cheng's invention of the seismoscope, although many have tried to construct replicas of the famous, yet mysterious device. However, most experts agree on the fact that it worked on the principal of inertia.

Another example of Zhang Cheng's genius is the hydraulic-powered armillary sphere, pieced together by him with horizontal and meridian rings, the first water-powered armillary by use of an inflow clepsydra clock the world had ever seen. Invented in the Han Dynasty, the scientist's masterstroke was to apply hydraulic motive power by using a waterwheel to rotate the sphere. He invented this stunning object in hopes of assisting astronomical observation, which would aid him at his job as the Chief of Astronomy. The armillary sphere is a model of objects in the sky on the celestial sphere consisting of spherical framework of rings centered on Earth or the Sun, representing lines of celestial longitude and latitude.

After explaining so much about Zhang Cheng's unique and useful inventions, I would also like to provide information about his personal and professional life, proving to all that this man was, in fact, an extremely successful and smart person unlike any other. Compared to other intelligent people at that time and age, Zhang Cheng was an especially brilliant. The fact that things were much more difficult and challenging back then must be noted and kept in mind as well.

Born in the Xi'e, north of the modern Nanyang City in Henan Province, Zhang Cheng was lucky enough to be pat of an important, distinguished and wealthy family. His father died when he was ten, leacving him in the care of his mother and grandmother. He was educated in the capital cities of Luoyang and Chang'an, then began his career as a minor civil servant in Nanyang. Eventually, after some hard work, he became the Chief Astronomer, Prefect of the Majors for Official Carriages, and the Palace Attendant in the imperial court. Most disappointingly, his political rivalry with palace eunchs during the reign of Emperor Shun led him to retire from the central court to serve as an administrator in Hejian Kingdom.

I have introduced who I think is the greatest inventor and scientist of China is. We could agree, or agree to disagree, but no matter what anyone thinks, Zhang Cheng and his legacy will live on, along with his innovative device personally crafted by the genius himself.

The New Aircraft

St. Paul's Co-educational College Primary School, Poon, Lilianna Kirsten Rhodes - 12

Weak sunlight streamed in from an aircraft manufacturer's office window as he stared at the photos of Airbus and Boeing. Suddenly, he had a huge idea. If United States and France both had an extremely successful aircraft, shouldn't China try to compete with them too? He had to build an aircraft with his skills and technical knowledge he had acquired from his experience at work, and show the people that China was as advanced as the rest of the world. China had to reduce the reliance on foreign airliner makers and dependency on things they hadn't created.

After brainstorming how all this aircraft designing could work out in his own office, this manufacturer went to discuss this idea with the others. "I want to create an airplane as successful as Airbus and Boeing," he had told his company. "Someone will have to compete with the Western rivals in the air." Immediately, they approved of his proposal and started planning the timeline and steps for building the aircraft. They were to build the aircraft according to the specific needs of the Chinese market, and make it an international airliner that was unique in a way other planes would not be able to compete with. Of course, the most important purpose of designing this commercial passenger aircraft was to compete with the Airbus A320 and Boeing 737. Targeting a successful maiden flight in 2014, the company would fully support this idea and lead China to success with this aircraft.

Three years had passed swiftly. On 28 October 2010, they had applied to the Civil Aviation Authority of China for the type certification of their aircraft, and soon enough, the company had received 55 orders for the aircraft from different Chinese airlines. Then, the company had signed a cooperation agreement with Ryanair, the Irish low-cost airline, on the development of their new project. ICBC Leasing had also agreed to be the launch customer with an order of 45 aircrafts. It was time to start constructing the first prototype of their aircraft. It should be assembled in 2014 with a test flight in 2015.

Unfortunately, they were not able to do as they planned. Everything from the assembly of the aircraft and its maiden flight was delayed, and they only rolled out the completed aircraft in 2015, one year after their planned date. Finally, they had their maiden flight in 2017, and they expected a projected launch in 2020. However, they concluded that it might be more than likely that the launch would slip to 2021, given the recent delay in their assembly and maiden flight. They completed their second prototype of their project and soon, it was time for the second flight of the aircraft. It could fly for 2 hours and 46 minutes with a height of 10,000 feet, but others noted that the delay between the first and second flights, which took five months, was quite unusual. The company began to sweat over their project. Nothing was going as smoothly as planned, and the timeline had become even more delayed as they continued working on it. The third flight of the aircraft lasted 3 hours and 45 minutes to a height of 9800 feet, and the first prototype was transferred from Shanghai to Xian to continue its flight testing. Now it was time for the maiden flight of the second prototype, and it flew from Shanghai/Pudong to Dongying Airport in 1 hour and 46 minutes to take in a variation of meteorological conditions. Then, in the next year, the fourth, fifth and sixth prototypes eventually conducted their maiden flight. At last, the CAAC issued a type inspection authorization, which meant that the aircraft design was finalized and no more major structural changes could be made. The CAAC also issued the airworthiness certificate for their aircraft in 2022, and the company's hard work was over.

In 2022, their first aircraft was delivered to China Eastern Airlines, and the company revealed that four more of them would follow in 2023. In 2023, the aircraft had its first commercial flight, and the company had gathered to see it. "COMAC C919," the workers of the company chorused proudly in their deep voices, looking up at their aircraft. COMAC was the name of their company, which stands for The Commercial Aircraft Corporation of China, Ltd. The 'C' at the start was to create a contrast with the other airplanes, Airbus and Boeing, to compete with them with their project. The first '9' meant 'everlasting' while '19' meant that the maximum passenger capacity of the large passenger aircraft was 190 seats.

COMAC had worked hard for the glory and success of China, and the creation of COMAC C919 needed a lot of help from the workers of the company. They all struggled in the process of creating their aircraft, but in the end, they succeeded in having the first commercial flight of C919. Although the engines were from other countries, China has improved greatly after this long project, and is now successfully competing with the other airplanes.

China's Impact on Our World

St. Stephen's College Preparatory School, Chan, Josiah – 10

Our world is teetering on the edge of climate disaster, as rising temperatures scorch the earth, extreme weather patterns are decimating entire nations, and glaciers, ice–caps and sea ice crumble into the sea – and once verdant forests are now desert plains. Never before has our selfish actions pushed our planet to its limits, and never before has it been so urgent to act. How fortunate we are for China's cutting–edge initiatives that aim to develop and expand green energy to significantly reduce greenhouse gas emissions so that the world can reach COP28's core objective to keep 1.5°C within reach by the end of the century. More attention must be paid to China's extraordinary yet crucial innovations in renewable energies, affordable electric cars, and the pioneering tree–planting techniques.

It is clear that human activity is responsible for the climate crisis we find ourselves in, as throughout this century the Earth's temperature has risen by an average of 0.14° Fahrenheit (0.08° Celsius) per decade since 1880, or about 2° F in total. The rate of warming since 1981 is more than twice as fast: 0.32° F (0.18° C) per decade.
Our world's COP28 has discussed this decade's energy efficiency and renewables deployment alongside a phase–down in fossil fuel supply and demand; a significant scaling of climate finance for both developed and developing countries. But thanks to China, they already planned and made [253 GW] more solar energy as well as building more accessible and non–polluting electric cars and turning deserts into forests, but there are still countries that are lacking in the resources to build these technologies.
Surprisingly each country is responsible for creating around 37 billion metric tons (GT CO2)of carbon dioxide emissions from coal and fossil fuels in a year. But especially Russia produces the most Natural Gases in the world as well as other countries generating more greenhouse gases to heat up the world.

The earth nowadays still depends heavily on fossil fuels, with oil, natural gas and coal accounting for over 85% of energy source. Alternative energy such as nuclear, hydro, solar, etc account for a meagre 15%. It's in everyone's interest that the use of fossil fuels must be greatly reduced. China, as a responsible nation globally, has set a national objective on carbon emissions, reaching the peak by 2030 and achieving carbon neutrality or "net zero" by 2060. For instance, China has increased its installed capacity of solar energy by nearly 100–fold from 2012 to 2022, from 4GW to 390GW and heading to 1,000 GW by 2026. Analysts expect that in order to meet Paris Agreement targets by 2030, a total of 11,000 GW capacity of renewable energy is needed.

Even though China is the world's largest coal user, China has been the world's largest and fastest–growing producer of renewable power for more than a decade and it is largely thanks to their prolific production of solar panels that they are thinking of how if we continue to do nothing, we won't be able to live on earth again.

Solar Power works by converting the sun's energy into power. There are two forms of energy generated from the sun for our use – electricity and heat. Both are absorbed by the PV cells in the panels and are generated through the use of solar panels, which range in size from residential rooftops to 'solar farms' stretching over acres of rural land.

China has made substantial progress in deploying solar panels on a massive scale, making it more affordable and accessible to the masses.

While some criticise that solar panels produce greenhouse gases in the process of making, maintaining and disposing of them, China has found a way to manufacture them in an environmentally–friendly manner.

In 1950 a scientist astonishingly discovered that transportation contributes to 10% of carbon emissions. With that discovery in mind in the 2000's China has been modifying cars by turning them electric instead of burning fossil fuels. With that discovery in mind in the 2000's China has been modifying cars by turning them electric instead of burning fossil fuels. Moreover, China has been dominating the race of electric cars throughout the century, at present

China is competing with Tesla. The annual output of electric cars produced by Chinese manufacturers is expected to be nearly 7 million units in 2023, more than double the annual output of Tesla. Such a brilliant outcome was not achieved by accident or luck. The Central Government of China has the resolve and commitment to make it happen by encouraging technology advancement in the electric car industries and providing appropriate incentives for both manufacturers and end consumers for early adoption of electric cars.

This will impact the world significantly as there are around 1.4 billion people driving cars and burning fossil fuels, thus leading to more carbon emissions
China has taken the initiative and made a promise to produce more products in our daily lives to use less oil or fossil fuel. Unlike other countries, China didn't break their promise and they even did it 5 years early!

China's biggest project comes down to reforestation. Their project:

After decades of afforestation, China has created the world's largest planted forests, with its forest coverage rate more than doubling from 12% in the early 1980s to 24% in 2022.

China's sustained afforestation efforts have contributed to addressing global climate change and promoting green and low-carbon development, thus creating greater development dividends for the world.

China's biggest project comes down to reforestation. Their project:

After decades of deforestation and the Gobi desert covering green lands by 1000 000 mile square, China has created the world's largest planted forests, with its forest coverage rate more than doubling from 12% in the early 1980s to 24% in 2022. China is hoping to build a great forest around the Gobi desert in the three northern regions: North, North East, North West in China

China's sustained afforestation efforts have contributed to addressing global climate change and promoting green and low-carbon development, thus creating greater development dividends for the world.

In conclusion, China has taken significant steps to address climate change and contribute to global efforts in mitigating its impact. As the world's largest emitter of greenhouse gases, China has recognized the urgency of the situation and implemented various measures to transition towards a more sustainable and low-carbon future.

The Future of Drones in China – The Flying Robots

St. Stephen's College Preparatory School, Yeung, Hiu Wing Karissa – 10

The future of drone technology looks bright in China, with remarkable technological innovations that will further enhance drones and their applications in society. As we know them now, drones will soon become a thing of the past. Instead, they will be equipped with intelligent devices incorporating various combinations of arms, legs, and wings. We will call them "Flying Robots". They will come in a range of sizes, from miniature versions to huge and powerful ones. And they will become very popular around the world.

I went to China with my family a few months ago. There, I saw many elderly people in the parks and on trails. Like in many other countries, the ageing population is undoubtedly an issue. Doctors and nurses always have to visit the elderly to check up on them and do not always have time for that. "Flying Robots" can help solve this issue and address other time-sensitive cases by directly delivering medicines rather than medical personnel relying on traditional means of transport.

The future "Flying Robots" will be programmed to transport medical supplies and essentials to all locations, whether urban or rural, up in the mountains, down in the valleys, or even underwater. They can deliver medications to remote locations, dangerous places, and areas affected by war or contagious diseases. There will be no need for anyone to put their lives at risk. Healthcare will become accessible anytime and anywhere. Some of these "Flying Robots" will come with superb built-in screens and cameras. They can establish live connections with hospitals so doctors can see what is happening and keep track of the situation remotely. Medical practitioners can instantly assess the situation and do whatever is needed. The elderly or any sick people who need help will be able to see the warm and smiling faces of the medical personnel, which is a kind of healing. On top of this, Artificial Intelligence Programmes can also be included to make it even better!

Further to the above, China invented the 5G communication technology, and 6G is already in the pipeline. These technologies offer zero delays in transmitting signals, far quicker than making instant noodles. Given this, I think it would be possible for the "Flying Robots" to render First Aid Treatment.

The potential of "Flying Robots" in China is undoubtedly massive. China is a vast industrial and farming country and would benefit greatly from this invention. They will allow farmers to monitor crop and livestock conditions from the air to keep watch for potential problems and help optimise agricultural management. The digitalised, highly effective, and precise field monitoring these robots offer will help spray pesticides and fertilisers quickly over huge areas. The improved operation efficiency may gain explosive yields, too. My father explained to me that the Chinese government has always sourced agricultural products from around the world to meet the needs of its billion citizens. Perhaps we can grow the pie even bigger with these "Flying Robots". Before long, we could even ship out our livestock and wheat to anyone and anywhere suffering from poverty.

"Flying Robots" could change the business landscape in the industrial sector. Special cargo robots will be designed to carry heavy goods, revolutionising transportation operations. Moreover, these robots will play a crucial role in rescue missions. For instance, when mountaineers or divers get stuck in mountains or underwater, these robots can bring necessities, medicine and rescue beds to save them. They can even have a joyride to the hospital or go home directly.

In the entertainment world, "Flying Robots" will be able to record an entire gig instead of relying on a big crew of cameramen moving amongst the artists on stage. Then my parents, and anyone else for that matter, can easily record videos of performances merely with their fingertips. There may also be some programmed dancers; they can fly, jump and give laser beam shows. Most importantly, some of them can deliver drinks, potato chips and nuggets.

China has produced many super inventions, but I am confident that "Flying Robots" could be the biggest success ever emerging from China. They could surely become the most loyal friends or partners of human beings.

One of the Greatest Chinese Inventions

St. Stephen's College Preparatory School, Cheung, Yin Ronnie Chun – 12

When you think of China's inventions, one of the first things that comes to mind is paper. It is something that we use subconsciously in our everyday lives and is a crucial part of it, so I think it's important that we know of its origins and how it has affected our daily lives over the past nineteen centuries.

Although paper has existed since the 3rd century BCE, the first modern piece of paper was invented by Cai Lun, who was a Chinese eunuch court official of the Eastern Han Dynasty. He played a crucial role in the history of paper due to his addition of pulp using tree bark and hemp which is a versatile plant with fibers and seeds. He made paper with the inner bark of bamboo, mulberry trees, cloths, and nets. He used the mixture and combined it with water, and when the mixture started to soften he poured it onto a piece of stitched cloth. After that, he removed the water, and dried the mixture until it was a thin matted sheet. Given there were no machines at the time, this was extremely impressive and revolutionized the papermaking process forever. Unfortunately, Cai Lun took his own life as there were false rumors that said he was intending to harm the emperor of the Han Dynasty.

Now that we have talked about how paper was invented, let's see how paper has changed our daily lives. Around the late 16th centuries, paper was used for toilet paper and is crucial for our day to day hygiene. Tea, which is the second most consumed beverage in the world, is commonly made with tea bags, which, you guessed it, are made of paper. How about banknotes? Bank notes, were introduced during the Song Dynasty and is something we can't live without today. And lastly, origami, which is the art of paper folding. It was introduced in Japan in the 6th century and is a hobby for many people around the world today. These are just a few out of hundreds of uses for paper, there are so many more that I can't even list out, and even if I were to, it would probably take me a few weeks!

In my opinion, paper is single handedly the most influential invention not just of China, but of all time. I can't even imagine a world without paper and I don't think it would be liveable. I think we should be grateful that we are able to have paper in our daily lives and to cherish it as some people in the world don't have the luxury of it.

New Tales of China's Inventions

St. Stephen's College Preparatory School, Cho, Tsz Long Tristan – 10

China has been one of the greatest inventors in the world to create significant inventions which have a profound impact on people's lives. Influencing areas include medicine, science, technology, society and more. In the past, China had four famous inventions: Papermaking, printing, compass, and gunpowder. Recently, there have been important advancements in high-speed rail technology and E-commerce platforms such as Alibaba and Taobao. All these inventions represent the great revolution and improvement in our lives. Not only do these inventions make remarkable contributions to China, but they also exert a global influence on people worldwide.

China has a rich history of innovation and one of its most fascinating inventions is gunpowder. It has an interesting story on its path of discovery. While it was controversial to define who was the first to find the formula of gunpowder, it was believed to be discovered accidentally by Taoist alchemists during their quest for a life-extending elixir in the Tang Dynasty. Through the persistent practices and experiments, alchemists found out that there would be an explosion when saltpetre, sulphur, and charcoal were mixed together. The pharmacologist and alchemist Sun Simiao in the Tang Dynasty recorded these important ingredients and usages of gunpowder in his written work "Dan Jing Nei Fu Liu Huang Fa" (Method of Embedded Sulphur in the Alchemy). This is regarded as the earliest known formula for gunpowder in Chinese literature.

The Chinese gradually summarized their experience in the use of firearms, which led to the compilation "Wujing Zongyao", a comprehensive military publication written around 1040 to 1044 in the Northern Song Dynasty by Zeng Gongliang, Ding Du and Yang Weide. It is the first official military techniques book in China that describes the use of gunpowder weapons. It meticulously records the manufacturing and usage of firearms at that time, promoting the development of firearms in later generations and even serving as a manual for ancient Chinese. Subsequently, during the Song and Yuan Dynasties, gunpowder was found widespread in military applications, leading to the emergence of various gunpowder-based weapons like cannons, rockets, and fire lances.

The invention of gunpowder had a revolutionary impact on military technology and warfare, not only within China but also on a global scale. Its explosive properties brought about important changes in military tactics and weaponry in the world. For instance, the introduction of firearms in Japan during the Warring States Period (Sengoku Period), which lasted from the late 15th century to the early 17th century, brought a significant shift in warfare from Bow and Arrow to matchlock guns. Matchlock guns, known as Teppo, were introduced by Portuguese traders in the 16th century. These early firearms utilized a matchlock mechanism to ignite gunpowder and propel projectiles. The Teppo allowed for more powerful and long-range attacks compared to traditional weapons like bows and swords. The battle of Nagashino in 1575 was a famous one which marked the success of firearms. Oda Nobunaga used the three-stage shooting tactic to create chaos to the enemies. It was believed that over 70 percent of the Takeda clan's samurai were killed by the matchlock guns.

Apart from the application of gunpowder in the military sphere, it extended to the development of firecrackers and fireworks, adding to the cultural and festive traditions of various societies. For example, setting off firecrackers was believed to be able to keep villagers safe from the beast "Nian" in ancient China. This custom spread to every corner of China and developed into one of the most important customs during the Lunar New Year. There is a well-known saying "With the sound of firecrackers, the old year is swept away". Firecrackers have long been a symbol of driving away evil spirits and bad luck. The loud noise they produce is believed to scare away negative energy and clear the path for a new start. Fireworks in China also play a significant role in celebrations such as Lunar New Year and National Day. These colorful and explosive displays have become integral parts of festivals, symbolizing joy and good fortune.

The application of fireworks (Hanabi) in Japan is another good example. Fireworks first became popular during the Edo period. It was a symbol of spiritual beauty. Fireworks have been historically used to ward off evil spirits and have become celebrations in summer festivals, musical events, and the New Year. Large-scale Hanabi Festivals take place

during the summer holidays in July and August every year. They are regarded as huge events and traditions in Japan. These firework shows attract many spectators from local people to overseas tourists to watch.

Overall, the invention of gunpowder from ancient China showcases its enduring importance in shaping human history. From its accidental discovery by alchemists to its widespread military applications, gunpowder revolutionized warfare and led to the development of powerful weapons. The impact of gunpowder extended beyond the military realm, as it also influenced cultural traditions with the creation of firecrackers and fireworks, symbolizing joy and adding colour to festive celebrations. The invention of gunpowder remains a proof to China's great contributions to technology and its lasting global influence.

New Tales of China's Inventions

St. Stephen's College Preparatory School, Hui, Hailey Doria – 10

Many things we use today were invented in ancient China by Chinese inventors of the past. Many inventions have evolved into better and more convenient tools.
Ancient China's four great inventions changed the world. It is important to recognize that these inventions were crucial. Without them, we would not have paper to write on, compasses to determine direction, gunpowder for signalling, or the ability to print words.

Perhaps more new inventions will appear in the future to help us solve everyday problems. Let's see how the Chinese inventors of the past can inspire me to predict some more magical inventions.
The inventors of the four great inventions are as follows: Cai Lun, who discovered a way to make lightweight and inexpensive paper by observing paper wasps building their nests; Shen Kuo, who invented the compass by researching magnetic declination towards the North Pole; the Chinese Taoist alchemists who discovered the key ingredient, saltpeter, for making gunpowder; and Bi Sheng, who invented movable type printing. Bi Sheng was inspired by his experience making various objects out of mud, such as tables, chairs, benches, and pots and pans. After moulding and baking them, he realized they could be arranged as needed, which gave him the idea for movable type printing.

Now, I have thought of some future inventions or gadgets that may help people. For instance, imagine a portable invention called the Mini Aircold. It could be useful for people on scorching hot days when they are outdoors and need a portable mini air conditioner to stay cool. Another incredible invention could be a self–drawing tool that sketches images directly from your brain to the paper. By connecting a wire from your brain to the pencil, whenever you think of an image, the pencil would automatically draw it.
These are just examples, but in the future, inventions could become even more astonishing and creative. I hope that China can invent more convenient tools to assist humans and other creatures. Lastly, I would like to express my gratitude to the people who invented the four great inventions. The world would not be the same without them. Keep innovating!

Spooky Action at a Distance

St. Stephen's College Preparatory School, Leong, Lek Pong, Lucas – 12

Have you ever heard about Quantum Mechanics? Quantum Mechanics or Quantum Physics is a fundamental theory in modern physics that describes the behavior of nature at the scale of atoms and subatomic particles. Quantum Mechanics was invented in 1925 by a few German physicists such as: Werner Heisenberg, Max Plank and Erwin Schrodinger. When Einstein was introduced this new theory of physics, he was really surprised and couldn't really process the theory of quantum mechanics. There is a fascinating finding no matter how far apart they are in space. This explains how mysterious Quantum Mechanics really is. When Einstein first heard about this theory, he describes it as 'spooky action at a distance'.

Nowadays, Quantum Mechanics is getting more and more advanced. As China has proved to the world that China's Quantum Technology is indeed the leader of the world. This dates a few years back to 2016, when China had launched the first quantum satellite named Micius. Micius uses the theory of Quantum Entanglement that creates a line of communications where the ground stations are 1200km apart. It also uses the technology of Entanglement–based quantum key distribution which is so called 'hack–proof'. It lets you communicate at vast distances without any interruptions by evil hackers. Once interruption is detected, both stations will be noticed. This technology uses the theory of Quantum Entanglement which can lead to a much safer network.

Few years after the invention of the Micius quantum satellite, China has improved the Quantum key distribution (QKD) technology once more! They have now set a milestone of 4600km of two ground stations apart. They are willing to create a quantum secure network in the future. The entire network covers 32 nodes in four provinces and three cities in China, including 4 quantum metropolitan area networks in Beijing, Jinan, Hefei and Shanghai. It is currently connected to finance, electricity and more than 150 users in the government affairs and other industries. This is a huge milestone in China's Quantum communication network which is in lead of the world.

I hope that China's Quantum technology will keep improving and make quantum communication a real thing. As quantum technology is improving, this can also decrease the risk of users being hacked or intercepted. This also helps with instant communication without delay at vast distances. Let's watch the China's invention soar!

The Super App

St. Stephen's College Preparatory School, Pang, Alexis – 10

China has recently been considered a leader in science and technology. It is well known for its four famous inventions: gunpowder, which has unfortunately been very effective in warfare, but is also very useful in civil engineering projects; the compass, which made navigation far easier and safer, and brought about the discovery of a new world; and paper making and printing, making the mass propagation of knowledge possible. But unfortunately, due to its emphasis on humanistic studies, China has neglected and even discouraged innovation and studies in science. China hasn't had any new inventions for a long time—until recently.

WeChat began as a project at Tencent Guangzhou Research in October 2010 and was launched in 2011. The original version of the app was created by Allen Zhang. It started out as a simple communication app and evolved to become a super app. It is so successful and admired that it is considered as one of four new great Chinese inventions: super apps, high–speed rail, online shopping and bike–ride sharing. Super apps are apps that contain numerous functions, some beyond even your imagination. They are very useful in daily life because you can do anything in just one app.

On WeChat you can broadcast live, scan a product, chat with others around the world, search, play games and participate in mini programs. But amazingly, it also provides a whole range of services which are almost beyond expectation. For financial management, it includes receiving payments, making payments for credit cards and wealth management. For domestic services it can help you manage your phone bills, make payments for living expenses, invest and manage your crypto currency, arrange your charity payments or donations and schedule medical health services, like booking medical appointments and taking out health insurance.

WeChat also includes transportation services, online shopping, house hunting and most importantly, city services. City services can help you with social security, provident funds, payment for traffic violations, making contact with public security offices, traveling, conveniences provided by cities, civil administration and even paying your taxes.

WeChat is also connected with a music app named JOOX. JOOX is also owned by Tencent, launched in January 2015. It is the biggest music streaming app in Asian markets, as well as in South Africa. JOOX has a free and a premium service.

Super apps contain almost anything you need in your daily life. They help make everything more convenient; it is really hard to think of something in your daily life that a super app can't satisfy. Super apps are just what you need to make your social life, financial management, obtaining civil services, traveling and almost any aspect of your daily life within the reach of your fingertips.

Some people may argue that a super app is not an "invention". It is true that other apps with particular functions already existed. For example, people used Facebook for social communication, PayPal for making payments, WhatsApp for instant messaging, etc. But according to the Cambridge Dictionary, invention is defined to mean "something that has never been made before, or the process of creating something that has never been made before." I would argue that a super app like WeChat qualifies as an invention by falling within the second limb of Cambridge's definition. Admittedly, most of the functions have been available via other apps for quite some time, but it remains for China to come up with a super app.

The mass usage of Chinese supper apps has left many software companies in the west trailing and attempting to create their own counterpart. As Elon Musk once said, "There's no WeChat equivalent outside of China", and he plans to use his various platforms such as X to create a super app—"there's a real opportunity to create that", but that is yet to be done.

New Inventions of China

St. Stephen's College Preparatory School, Tam, Yi Sum Yzabela – 10

I've seen a lot of inventions from mainland China in history, like tea and gunpowder from a very long time ago, and WeChat and TaoBao from more recent years. But there still bears a question: Now that we've got awesome things from the past and the present years, what about the future? I have gathered some ideas that I think would be amazing if they were spun into reality from my thin threads of imagination.

I always thought that having a small personal Siri that you could use at any time would be very popular. Though we already have Siri in our phones, you would still have to say "Hey, Siri" or just "Siri". And no matter how many times you try, sometimes Siri just doesn't understand what you're saying. They would either call someone by accident, or interpret your voice input wrongly, which is annoying, and I'm sure that you would understand. I hope for a better, more evolved and more precise Siri, and it would be called MeiHua. Her form could be customisable, as an accessory like a bracelet, or a watch. All you would have to do is to press and hold MeiHua and ask. You could even call someone with this device at any time, any place, and anywhere possible! I just hope that it could be real one day. For now, I'll just continue spinning my fine threads of imagination.

A Flying Car

St. Stephen's Girls' Primary School, Tse, Chi Shuen Sheryl – 12

I have decided to write about a car invention that every child has dreamed of having−−−−−a flying car.

I believe that it could be possible, however, there are many things preventing this concept from happening. For example, there might be traffic accidents in the sky. Helicopters, planes, or even more flying cars will be a headache for the government to control.

In addition to the problem, inventors will have to think of the air pressure and issue a driver license for the car. Although these might be big problems, there are always solutions to solve them.

The inventors can make the structure like a car but with engines powered by sun panels. The car's windows should be in an oval shape to prevent the air pressure from shattering them.

As for the traffic, I believe that the airplanes will fly above the clouds, the helicopters in their normal height, and the flying cars above the normal cars. Traffic shouldn't be a problem if the sky road is only for the rich and wealthy. As the flying cars have an expensive cost, only rich families will be able to afford it. I think that the flying cars will be just like the phones in the olden days when only rich people can afford it. Nowadays, even people working in factories have phones.

I am sure that this will be eventually invented and designed in the near future.

Robots for Company

St. Stephen's College Preparatory School, Wong, Rose – 10

I was visiting the elderly as community service at school with my classmates. As we stepped into the care home, I could feel a sense of loneliness and grief in the atmosphere. There were a few old ladies sitting on chairs, their eyes empty with boredom. The place was a mess: ripped newspaper covered the floor and a pool of soup landed on the sofa. "What a mess!" my friends exclaimed. The surroundings seemed barely habitable. We decided to clean the room. The place wasn't well ventilated and pungent smells came out from every corner. The kitchen was damp, and mould grew on the walls. After cleaning, I couldn't help but to ask, "Does anyone come and help you?", and I got a shocking response. The facilities provided to them were limited: only cooked meals would be provided three times a day, nobody would come out and help them. I also learned that most of the elderly there were disabled. Their families could not afford a helper and mostly worked overseas.

Since nobody would take care of them, I thought of an idea to improve the situation. The Hong Kong government could lend a hand by producing robot helpers to support the elderly. The robots can complete household chores and provide all kinds of entertainment for the elderly. They can also monitor physical health and dispense medication as required. They can bring joy to the old people and decrease the stress placed on their families. The robots can also be a form of communication. Once a week, they could give a relative of the elderly person a video call to assure them that they are healthy and safe. However, this does not mean that families can leave the elderly alone with helper robots. Life with such robots would not be perfect. The robots cannot show the affection and love that life with a caring family provides, but visits from families could show the elderly person that they are not alone and bring them joy. While using the helper robots, it is also suggested that relatives visit whenever possible. A life away from their families could make them feel distant and ignored.

Helper robots can also be used for other purposes, such as taking care of people with disabilities or as babysitters. They can also reduce the need for helpers, which are usually unaffordable for many citizens under the poverty line. The use of helper robots can help societies to manage the burden of an ageing population by providing care for people in society who are dependent on others, such as the elderly and people with disabilities. This could be an opportunity to help us improve our daily lives and take away the worry of our ageing population.

However, helper robots should not be used for self–benefitting purposes. The activity of the robots should be monitored by the government. If a helper robot is misused, it could be taken away by the government and deactivated. The cost of the robots could be supplemented by charity funds and mandatory taxes from those who are wealthy. The robots would only be provided to elderly people over the age of sixty–five, children under eighteen and citizens with disabilities with a doctor's note. Whenever a person who fulfils the requirements of having a robot is in need of assistance, they could call a charity and a helper robot would be delivered to their door automatically. The robot could be charged by sunlight and a person can refill its battery by taking a walk outdoors. It also has a seat equipped with safety features that can act as a wheelchair for those who have trouble with walking. After launching these robots, we can also produce a batch for other countries to help them solve the world's ageing issues. The robots can be sold out to other parts of the world, and the money can be used for further improvement on the robots. As a nonprofitable government fund, the robots can help us create a better society.

As the needy suffer from living in uncomfortable circumstances, it is most necessary for helper robots to be provided.

Paper Money

Stamford American School Hong Kong,Fk Kumar, Ishaan – 9

Money is something everyone wants. Have you wondered where the concept of paper money came from? In this article, I will teach you everything you need to know about the origin of the first paper money. Definitely there cannot be a banknote without paper, so it seems quite intuitive that paper money first appeared in China, which was the country not just the inventor of paper but was also the first to develop printing.
China used different kinds of objects as money. The Chinese used spade coins in the central area of the Middle Kingdom but in the north of China, they used cowry shells. Cowry shells are known as gifts. At that point of time the emperor got the most cowry shells, these shells were also used to make jewellery, like necklaces. So when central China created spades as their currency, they thought it was too big and heavy that they invented a bronze cowry. While central China was using this new currency, northern China made another currency, the knife coin. Knife coins were in the shape of a knife but edge less not compared to that of a normal knife. It is more rounded. The northern lowlands area wasn't the common residential place and was mostly inhabited by nomads and huntsmen. The huntsmen used standard knives to hunt animals. So in the form of a hunter's knife they made a mini knife coin which then had found its way to Mongolia and Korea.

Money is used to trade goods and services. People before paper money used their own items to barter for things they needed, many families at that point of time traded cowry. The last milestone was the era of coins used as currency. Around 650 to 600 B.C, copper and metal coins became the currency to pay with. Coins were made of metal like bronze and copper. Later, coins of silver and gold were also used. This was important because coins were by count, not by weight. Thus, serving as the first currency. The first metal coin was dated back to 1000 B.C in China. For centuries, the bronze and copper coins were widely used for trading. These coins were circular and had a small hole in the middle for stringing. As a single coin was not of much value, traders would form a string of 1000 coins typically. When customers purchased goods, they paid in terms of string. If they wanted to buy objects in bulk, a lot of strings of coins were needed. Carrying many coins was difficult because of their weight. So, merchants came up with the idea of promissory notes.

Promissory notes were made in China in 700 to 800 A.D and were created to make it easier to carry. To make sure nothing bad would happen such as printing paper money illegally, the merchants who gave them iron/copper coins, the shopkeepers gave them a bank note of how much silver/copper coins they gave them with hard textures to copy so it's not easy to replicate the note. Then the Qing Dynasty opened shops like banks but in the size of a shop. This was where they exchanged coins for the banknotes, like in our world we have credit cards instead of coins to get paper money from the automatic teller machine (A.T.M.). The Qing Dynasty made China one of the most commercialized countries in the world. After the conquest of Mongolia they opened routes to Russia and interior parts of Asia. And with this came the rise of the Qing dynasty empire. The paper money was printed in factories with woodblocks and used six different colours of ink. Different factories used different fibres to mix in their paper so that it was difficult to copy. It was believed that a paper money factory at Hangzhou employed more than 1000 workers. They also invented methods to detect forgeries/counterfeit notes like imprinting secret marks on the note, and delivering strict punishments to forgers.

Then, Marco Polo came to China to study paper money. In his book, *"Travels of Marco Polo"*, the voyager wrote about early banknotes in China and how they were created from the bark of trees. This inspired Europeans with the idea of paper money and they started creating their own version of the same. Paper money only started

catching on in Europe in the 17th century which was almost 500 years after its use in China. Interestingly in 1455, the Chinese discontinued the use of paper money and did not use them again for many centuries. This was because paper notes led to very high inflation as too much of them were issued irresponsibly.

These are some of the reasons why paper money is better than coins. It was easier to store and organize paper money in a vault than coins as it required less space in comparison than metal coins. Paper money is lighter, hence easier, to carry than metal coins. So it makes it easier to travel with than metal coins . It was hard to counterfeit paper money as they put complicated textures on it. Paper money was easier to count. It would be easier to count notes in a purse comparing to the coins in your piggy bank! Knowing the worth of coins could be difficult if they weigh or size differently. Paper money has clearly marked denomination so it is easier to understand the value.

It's harder to print because you have to put textures so it doesn't get counterfeited. Factories needed to be set up to print paper money and to safely be guarded as well. Paper money can get damaged with water or rain but coins are made of metal so they are more sturdy. There are still limits to how much money you can carry without becoming an easy target for thieves.

Money has kept evolving with time, it moved from coins to paper money. With advances in technologies, the digital world transactions are becoming paperless with people using credit cards or other digital payment methods. Happy spending!

Gunpowder

Stamford American School Hong Kong, Yau, Siu Leung Edward – 10

Introduction

In the 9th century CE, the Chinese monks discovered gunpowder technology, for life–extending elixir. Gunpowder, used as propelling charges and mining. It was found incendiary and was immediately applied to warfare. It is documented that the technology has reached the Middle East in the 13th Century CE. Read on to discover about gunpowder's disadvantages and advantages, empires and the plot!

Gunpowder Abilities, Basic Information and Advantages vs. Disadvantages

Gunpowder is a mixture of saltpetre, sulphur and charcoal. The key ingredient is saltpetre, which is also the most expensive ingredient. It was found to be incendiary and was immediately applied to warfare. Today, gunpowder is used for fireworks, fire arrows, firework – making apparatus, weaponry, certain types of ammunition and many other industries. Industries to produce fertilizers, dyes and pigments. Moreover, it is also used for mining and processes such as cement production and iron smelting.

Sometimes, it is also used to make incendiaries which are fireworks that contain a burning fuel which is usually charcoal. Sometimes, gunpowder is used to make loud noises. Gunpowder is surprisingly also can be used as a medicine! Plus also as a painkiller. It is known how to treat burns and other injuries. Gunpowder can also detonate explosives and fire projectiles. It can produce a colorful smoke and some smoke machines can produce bubbles. Some advantages of gunpowder are easier to be lit using a fuse rather than an igniter. It also can be sorted into small packages. Third, it can be easy to store, light and economical. Fourth, it has the ability to clean fireplaces and make papers or cardboards. This material is environmentally friendly, so it doesn't end up in landfills. It stops leaks plus keeps all the insects out of the way. On the other hand, there are going to be some disadvantages. Smokes from gunpowder can make you unhealthy. For the manufacturing, it takes lots and large amounts of energy to make it. It is extremely dangerous to work with it and one false move can cause explosions. However, gunpowder has not been used for weaponry since the late 19th Century.

The Gunpowder Plot: Bonfire Night

During the opening of the parliament of King James I, there was a failed attempt to assassinate him. Robert Casteby, a devout English Catholic who was the one who organized to kill him. Plus, also to establish Catholic rule in England. Part of his plan, Catesby was to kidnap James's nine year old daughter Princess Elizabeth, and install her as a puppet queen. The Gunpowder plot was foiled in the early hours of 5th November, 1605. On 20th May 1604, Catesby and the group of conspirators first met. Firstly, they planned to dig a tunnel beneath the Houses of Parliament. In 1605, they rent a cellar that was directly below the House of Lords. Dozens of barrels of gunpowder were moved in by Guy Fawkes, one of his conspirators, who was an explosives expert. He was the one to prepare to ignite the cache during the Opening of Parliament. Some other people were also involved in the gunpowder plot. 11 other men joined. Their names were Thomas Wintour, Jack Wright, Thomas Percy, Robert Keyes, Robert Wintour, John Grant, Kit Wright, Thomas Bates, Ambrose Rookwood, Francis Treshan and Sir Everard Digby. However, on 26th October, 1605, Catholic peer Lord Monteagle, Francis Tresham's brother–in–law, was handed an anonymous letter by a servant. The letter was delivered by a stranger on the road, warning Monteagle not to go to the Opening of Parliament. This was why the gunpowder plot failed.

Empire Events

The Gunpowder Empires are the three dominant Muslim empires that encompassed Eurasia during the late 18th and 19th centuries. These empires were the Ottoman Empire, the Safavid Empire and the Mughal Empire. The Ottoman Empire was actually involved in World War I! The Ottoman Empire started and rose from the Anatolia region in Turkey during the 13th century. It then became one of the most powerful empires for nearly 600 years. The leader was Osman I, who founded the Ottoman Empire in 1299. Osman only lived from 1258 to 1324. They fought against the Christian Byzantine Empire, failing them. The Ottoman Empire's soldiers were called Islamic soldiers known as Ghazis. They started to conquer the Christian − ruled strongholds in Turkey and the Ottoman Empire spreaders. In 1453, the Ottoman Empire conquered the former capital of the Byzantine Empire. However, the Ottoman Empire was starting to drop in the late 1600s. By 1914, the Ottoman Empire was diminished significantly. The Ottomans lasted until the end of World War I (1918). Now, to the Safavid Empire, it took control of Persia by about 1511. This empire learnt about the value of firearms and artillery early, from the neighbouring Ottomans. After the battle of Chaldiran, Shah Ismail built a corps of musketeers. In 1598, the Safavid Empire had a corps of cannons as well. They defeated the Uzbeks in 1528 using Janissary − like tactics against the Uzbeks. On the other hand, the Safavids had a disadvantage to the Ottomans. The Safavid Empire lasted until 1736. Our last one would be the Mughal Empire. It was also known as India's Mughal Empire. Babur, who was the founder of the empire, was able to conquer Ibrahim Lodi of the last Delhi Sultanate in the First Battle of Panipat in 1526. He coached the military with the Ottoman's techniques. Babur's victorious Mughal Empire used a combination of traditional horse cavalry tactics, and new−fangled cannons. It spooked Lodi's war elephants. Then, they ran away. There was another victory for the Mughal Empire. However, the Mughal Empire only lasted until 1857. The Ottoman Empire lasted the longest, followed by the Mughal Empire and the Safavid empire.

Conclusion

As you can see, Chinese monks discovered gunpowder technology in the 9th Century CE. It was immediately applied to warfare. However, it was not used until the late 19th Century. I had three body paragraphs in total. Gunpowder abilities have advantages and disadvantages, the plot and the empires. Gunpowder can be used with lots of things instead of guns. It can also detonate explosives. The empires that used gunpowder had lasted for a long time. The Ottomans lasted the most. The Gunpowder plot was very exciting when Robert Catesby wanted to assassinate King James I.

The Inventions of the Chinese

The French International School, TKO, Cui, Elva – 9

Introduction

The Chinese have invented lots of things that changed our lives.As far as we know the they're still trying to create more inventions .They are also improving the old inventions.So in today's article we will be learning about Chinese inventions and inventors.

Gunpowder

Gunpowder was invented by the Chinese in the late song Dynasty. It's made when the Chinese Taoist was trying to make a potion for immortality.It was the first explosive. It was made from charcoal elemental surlfur saltpeter mixed together .At first it was used to make fireworks for festivals and important events. In the 9th century CE.people started to use gunpowder for war. Fire lances were the first guns ever used in the Chinese military. The gunpowder was very destructive.

The Printer

The printer was invented in around year 100.It's made because the Buddhist needs a quicker way to make more copies of the scrolls and the imperial .The first type of printer is called a wood block printer.It was made of wood ,firstly the wood is shaped into a small cuboids then 1 or more words are carved out on the surface of the blocks .Finally the block is dipped in ink and stamped on the paper.

After, the invent of the printer it dramatically changed the price of books since using the printer was quicker than writing them by hand.

Paper

Paper is invented by Cai Lun in the Han dynasty.Paper used to be bamboos sewn together.They were very heavy .One day when Cai Lun was having fun with his friends , he put his hands into the pond in the back yard .Suddenly, he felt a soft fabric in the water, he told his friend that he was going to make a new type of paper .Cai Lun used the soft fabric to make paper and that was the first paper to be made. Cai Lun's paper was made of mull berries, fishing nets and wood.

The compass

The compass is also invented in the Han dynasty by Shen Kuo. It was originally used to worship the Buddha,fortune telling and geomancy. It was later used for terrestrial navigations.The compass was used to be made of a metal spoon that always point towards the south.Later the metal spoon was replaced by a pointy blade to increase accuracy . The early compass was made from loadstone.

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Silk

Silk was invented by princess Xi Ling Shi 5,000 years ago.She discovered that cocoons can unravel into soft thread. She used the thread to make a blanket and it felt so soft and comfortable That she decided to teach others how she

did it.The The cocoon is spun by a silk worm .Only wealthy people can afford silk clothes .After Silk was discovered by people in other countries,the Silk Road appeared to trade silk for things in other countries such as spice in India or carpets from Egypt .

Chinese inventors

There are so many Chinese inventors of the past , Here are a few examples .

1;Cai Lun;Cai Lun was a great inventor he was born in the Han dynasty he invented paper .

2;Zhang Heng was an astronomer .He discovered that the moon cannot glow, it's light comes from the reflection of the sun light..

3;Ma Jun DengHeng invented the south pointing chariot.It was used to alert soilders of incoming enemy .

Legendary inventor;Cang jie was said to be the creator of Chinese characters. His job was to remember the important events for the Yellow Emperor.

Conclusion

The Ancient Chinese inventions contributed a lot to this world, paper decreased the price of books , the inventions of the printers speeds up the process of making books. Although paper is enough for many people we still should save and recycle paper for a better in environment.

Inventions of the Near Future and Now

The French International School, TKO, Gui, Austin – 10

I have been seeing quite a while that the world is suffering from problems such as overfishing, pollution, climate change, overpopulation, overhunting e.t.c., so when i had time, i would brainstorm some ideas such as planting more to regain trees lost to deforestation, feed fish food containing chemicals that makes fish more active to breed, launch space houses into space and even make a machine that can recreate living, healthy things.Since gunpowder and paper was invented, things has been going romping fast, but after many modern such as the nuclear reactor, things has started to slow down a bit. Even if technology was slowed for the time being, you could still think about the future, for example planes that could go faster than light?cyborgs?AI that could think and have real life difficulties, they were all achievable.

I think that one of the most useful prototype transportation vehicles is a multi−terrain car,they can go on sky,water and land, but it is very pricey, I hope that will change. I also hope that one of the future transportation vehicles will be the magnet car, instead of wheels, is has magnets,the magnets will act as a anchor to the ground, the fuel will be electric so that it is eco friendly it has no friction to limit its speed so it can go as fast as a bullet train(estimate).Another amazing idea is printed food(edible) that would easily solve world hunger but many countries would not be happy for the food price deflationThis invention will boggle your mind! Energy storing bricks is another cool thing humanity made, it is made by coating smart bricks in a reactive polymer, then you charge it with a solar panel(all sizes though smaller solar panels take longer to charge the brick), you can glue/tape a wire(or any kind of metal, copper, zinc, metal e.t.c.) on the brick, then the light source will automatically light up, yes it does work on phones too.

These inventions below save energy and resources:

1.Sweat powered smart watches
Engineers have found out that smartwatches can be powered by sweat,the smartwatch is made from a special kind of cloth, it can absorb chemicals inside sweat, it will then convert the chemicals into energy.

2.Self−healing living concrete
Scientists have created concrete made out of bacteria, chemicals, sodium and more, it is also a lot more eco friendlier than regular concrete.

3.Teleportation or highly advanced transportation system
In the near future I believe that advanced transportation technology will be developed, such as light speed flying spaceships, teleportation, drone transportation and much more.

Thank you for looking through Inventions of the world, see you next time!

The Invention of Gunpowder

The French International School, TKO, Nguyen Huu, Kiana – 10

Do you know any facts about gunpowder? What was it invented for? Who created this dangerous substance? Well, you're going to find out some interesting facts in this article.

It is believed that gunpowder was invented during the 9th century by monks in the Tang Dynasty. Gunpowder is one of the 'Four Great Inventions'.

Gunpowder was initially invented because monks tried to find an immortality elixir. By doing this, they created the most destructible tool in history. Once it was produced, it was first used for medicinal purposes. Then, later, it was stumbled upon that gunpowder would work terrifically for fireworks. During the Song Dynasty the Mongols tried to invade China. The Chinese military forces used gunpowder devices to defend themselves against the Mongols.

Throughout the late – eleventh century, the Song Dynasty's government became concerned about their gunpowder secret leaking out. Throughout time, gunpowder became popular for crusaders and traders.

Gunpowder had to be measured very,very precisely or too little amounts could result in the device using the gunpowder not working. But too large amounts could cause bigger explosions, therefore could cause serious, maybe fatal injuries.

After that came the influenced development of every military force in Eurasia throughout the middle ages and beyond. But in truth, the Chinese actually didn't want to spread their gunpowder secret.

In the end, many may debate whether gunpowder is good or bad but both sides have their reasons. Gunpowder is extremely dangerous but it allows you to marvel your eyes at fireworks. Leaving the topic debated whether the invention of gunpowder is good or bad, few agree they are both.

Whether it is a gun held by a military soldier or pretty, multicoloured fireworks, we can all agree that gunpowder is important to the whole world. If there weren't any gunpowder, there would be no fireworks and military forces might not be able to fight in wars due to the lack of better weapons.

Past inventors in China

The French International School, TKO, Oh, Yuna – 8

China is an ancient and big country with a large population and a long history that spans over 5,000 years. Throughout its long history, many brilliant people in China have created amazing inventions that have had a big impact on the world. Let's take a fascinating journey and learn about some of these clever inventors and the fantastic things they invented!

ZHANG HENG

Zhang Heng was a remarkable person born in China in the year 78 AD. During the Eastern Han Dynasty he already invented the world's first device to measure the time and location of earthquakes. It was very important to help people know when the ground shook. He also developed a special cart that measured distances, somewhat similar to our modern-day odometers in cars. Additionally, he was incredibly good at studying the stars and planets. One of his most incredible inventions was a special water-powered sphere that he made in 117 AD. This amazing sphere helped people understand more about the sky and how it works.
And he also authored a really exciting book called "Return to the Field."

CAI LUN

Cai Lun lived in China from the years 50 to 121 AD. He made something super important to people or us – paper! He was the first person to invent paper and innovate the modern paper-making process in 105 AD.
Cai Lun invented paper when he saw a wasp knitting his hive. So as soon as he went home, he cut bamboo fibre then put it in hot water, smashed it on a wooden stick after he poured the whole mixture on a flat and smooth bit of carpet. Finally he let it dry then Voila! The first piece of paper was made!
Before we made paper, people carved the information in animal bones, skin or other heavy things.This was a very big deal because paper changed the way people wrote and shared information. It made it much easier to write things down and share stories or ideas.

BI SHENG

Bi Sheng lived in China from 990 to 1051 AD. He invented a really special way of printing called movable type. This new way of printing made it much faster and easier to print books. It was a big step forward in making books quicker to produce. However, this type of printing also had some bad effects on nature, which wasn't so good.

SHENG KUO

Sheng Kuo lived in China from 1031 to 1095 AD. He was a very clever person who created something very helpful – the magnetic compass. This invention was like a magical tool for travellers as it helped them find their way while exploring new places. Sheng Kuo discovered something amazing – that the compass doesn't point exactly to the regular North Pole but to something called the magnetic North Pole. This invention changed how people travelled and explored new lands.

HUA TUO

Hua Tuo lived a very long time ago, maybe between the years 108 and 208 AD. He created a special medicine named Anaesthetics that made people not feel pain during surgeries. This was a huge help to people who needed surgery because it made them more comfortable. Hua Tuo was also very skilled at using herbs and acupuncture to help people feel better.
These inventors from past China were incredible! They not only changed China but also influenced the entire world. Their remarkable innovations continue to impact us today. Think about it – paper made writing and sharing stories easier; the compass guided explorers on exciting adventures, and anaesthesia helped people during surgeries. These inventors were like superheroes, using their brains to make life better for everyone!
But it doesn't stop there. China is still inventing fantastic things today. Some are gadgets that make our lives easier, while others are fun and make us laugh. These new inventions show how smart and creative people in China are, just like their ancestors from the past.

Remember, even though these inventors lived a long time ago, their brilliant ideas still inspire us to dream big and create something amazing. So, who knows? Maybe one day, you could be the next great inventor, making something incredible that changes the world!

Sharing Our Heart Innovating Our World

The French International School, TKO, Takeuchi, Yuki – 8

Good morning, and a warm welcome to our Parents. Today we arrange an adventure on Ancient Chinese Inventions. We want to motivate our kids to be more creative and innovative. Every child should have a right to grow towards their potential. Children should be allowed to learn, to explore, to create and to innovate. However, children who live in poverty in China lack of opportunities to learn, to develop their curiosity and to realize their potential. Your unwavering support can help them to meet their education needs and grow towards their potential. Your sponsorship can drive them to become more motivated, more creative and more innovative. Hope everyone has a wonderful adventure this morning!

"Here!" a boy grabbed my hand and brought me to his stall. His name is Tom Gates. "Please take a card," he asked. I took a blue card and there were words 'guess what am I' on one side and the other side was a picture of a spoon at the center of a square bronze plate. "Compass?" I said. "Bingo!" said Tom. "The inventor of the compass was a Chinese named Shen Kuo. He invented the compass in the fourth century BC. Kuo made use of lodestones and shaped them into a spoon shape. Lodestones are naturally magnetized. Kuo placed the spoon on a square bronze plate. The bronze plate is a replica of the Earth magnetic field. When the spoon is spun, the neck of the spoon points to the South. In other words, the bowl of the spoon points to the North. The spoon is a replica of the "South Pointing Spoon". One interesting fact is the first compass was not used for navigation or finding land direction. It was used for locating good sites for constructing a tomb," said Tom, looking at me. I spun the spoon on the demonstration table and waited until it stopped. Tom took out a compass from a drawer and put it next to the spoon. What a surprise, the bowl of the spoon was in the same direction as the iron needle of the compass. Suddenly I heard a thunderous applause from the adjacent stall. Without thinking, I moved to the crowd in front of the adjacent stall.

Looking through the crowd of parents, I could see some black powder in a transparent container and some fuses on the table. Mr. Fullerman, year six class teacher, put one end of a fuse into a small pile of black powder. He ignited the fuse and the heat travelled along the fuse until it reached the black powder, eventually forming low explosive fireworks. "Gunpowder was invented by Alchemists in China during the Tang dynasty in the ninth century. It is listed as one of the "Four Great Inventions" of China. Gunpowder in ancient China was a mixture of saltpetre, charcoal and sulphur. It was known as black powder. When gunpowder was just invented, it was low explosive and was widely used in propellants in firearms, rocketry, mining, quarrying and building pipelines, tunnels and roads. Since the eleventh century, gunpowder had been used in making war weapons," explained Mr. Fullerman.

Many parents were queuing up in front of the bookmark stall. Some year six students were busy making the paper. The paper was used for making bookmarks. "Ancient Chinese were writing thousands of years before the paper existed. People carved words on clay or stone tablets. Some wrote on silk, which was very costly. Some used the stems of the papaya plant. Ancient Chinese wrote on bamboo. They tied bamboo strips to make books. This book making process took a long time and those books were heavy to carry. A Chinese, named Cai Lun, who was a court official, always used bamboo for writing and reading. He therefore understood how inconvenient it was. Cai wanted to solve the problem. He mixed the tree bark, hemp, fishing net and cloth. The mixture was used to make paper. The materials Cai chose were lighter and easier to write on. Cai brought his invention of paper making to the Chinese Emperor during the Han dynasty and he kept on improving the paper making process. Eventually the use of paper spread throughout China. We are now going to use Cai's method to make paper," a primary six student, Delia explained to the parents. Rolls of paper were generated and kids cut the paper into pieces with different shapes. Parents were so excited, and they couldn't wait to design their own bookmarks. "This time we are going to use woodblock printing to print your name on your bookmark. Woodblock printing was believed to be invented in the Tang dynasty in the seventh century AD. Printing stimulated the development of a sophisticated paper industry with many different specialized papers created for different purposes. Wood for printing blocks usually came from date or pear trees. Text to be printed was first written on a piece of paper. The paper was then glued face–down to the wood block and the characters on the paper were carefully engraved on the wood using a knife. The surface of the wood block was then inked and covered with a sheet of paper. By brushing the paper gently over

the engraved characters, the text was printed," another year six student, Rita, briefed the parents. The students helped the parents to print their names on the bookmarks. "Fabulous!" I said. I felt amazed when I got my bookmark.

"Ladies and Gentlemen, feel free to go to our Charity Sale Table. Our students have made a lot of lovely items relating to Chinese Inventions, such as oil paper umbrella, abacus, mechanical clock, noodles, dim sum …… for sale. Your donation will all go to KIND HEART for helping the poor children in China," said the principal.

Parents took the opportunity to purchase and make their donation to KIND HEART. "What a wonderful and meaningful adventure I have!" I said.

The Way of the Compass

The Independent Schools Foundation Academy, Chua, Chung Hei – 9

Imagine you're lost in a forest, your phone has unfortunately run out of battery, and you are alone. How are you going to get back home? You scream and shout for help, but no one is around to hear you. You lose hope and drop your head in despair. You see your shadow and a lightbulb goes on in your head! You smile and look up to find the hot, bright sun and remember that you brought your compass. You quickly reach inside your pocket, take out your compass, put it on the palm of your hand, and start walking north, the direction of your home. You finally get back to town and the Chinese have saved your life. How?

You may be surprised to know that the compass was actually not invented for navigation. Instead, it was used for geomancy and fortune–telling. Feng Shui is another word for geomancy and can be viewed as a type of art. Feng Shui has a specific way to design and rearrange objects, buildings, and space in an environment to create peace and harmony. It is said that it can also bring good fortune and lots of money. The roots of Feng Shui are planted in Taoism and mean "the way of wind and water." Although it started in China, it has spread to the West. Many people have used and still use Feng Shui to navigate their lives from where their beds should be placed at home to where they should put their work desk in the office to make more money. Facing the wrong direction could affect your concentration, luck, and livelihood. Feng Shui is taken very seriously in China and now all over the world.

The compass was first used for navigation aboard a ship in 1371 when a Chinese explorer named Zheng He led a fleet of ships through seven major ocean voyages across Asia, east Africa, and the Middle East. It was later used throughout Europe with other explorers. The first compass that the Chinese invented was made out of lodestone. Lodestone is a type of mineral magnetite that is a naturally occurring magnet that aligns itself with the Earth's magnetic fields. People in Ancient China discovered that if lodestone was suspended, it would be able to move freely, and they noticed that it would always point towards the magnetic poles. Nowadays, compasses use a magnetic needle which is free to move and the Earth's magnetic field pushes the needle to face the same direction as the magnetic field. The Ancient Chinese compass also had distinct markings on it with Chinese characters indicating the directions north, south, east, west, as well as northeast, northwest, southeast, and southwest.

Besides these directional markings, there were other symbols that were also found in the philosophical Chinese text called I–Ching. The Taoist belief is that the Universe is balanced from the Yin–Yang polarity and the connection between the two. The philosophy of the I–Ching allows and encourages change, movement, transformation, momentum, and regeneration. The I–Ching lives within us and the symbolism found in the I–Ching and virtues define us. The ancient sage is symbolised with an image of a dragon. It describes the goodness that is born in all of us. The sage lets his virtues determine his actions as a living practice. By doing so, the sage is able to lead by shining his inner light and becoming an example for others.

Comparatively, ISF's "Eight Virtues + One" is similar to the I–Ching compass where each virtue inspires students to respect and follow them, and by embracing these virtues, students will change, move, transform, and regenerate into a new being, better than when they first walked into school on the first day. The virtue Zhi means intelligence and wisdom. Zhi is in the center like the Yin–Yang symbol in the I–Ching compass as it demonstrates the polarity of how one's intelligence and wisdom can be used for lightness or darkness. The ISF Chinese virtues guide and educate its students to nurture creativity, critical thinking, and lifelong love of learning for academic, personal and social development. These virtues allow its students to build life skills through experiential learning and encouraging learners to act as empowered and resilient global citizens who act with the care of others. By doing so, it enriches everyone's life.

The Ancient Chinese compass, originally used for feng shui to bring people good luck and prosperity, has similarly brought good luck and prosperity to aircrafts, ships, and land vehicles by guiding them safely back home. Without this Chinese invention, we would literally be lost. With this Chinese invention, the principles of the I–Ching and ISF's Eight Virtue's + One have counseled millions of people around the world by directing them down the right

path. Modern technology such as the mobile phone is not 100% reliable, therefore, learning about our history and their inventions that have shaped the way we live today is important. Our Ancient Chinese history will always be a part of our lives. Whenever you feel lost, look up towards the sky towards the sun and you will be led safely back home.

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A Sweet Invention of Ancient China

The Independent Schools Foundation Academy, Zhang, Rachel Ruochu – 10

Imagine a world without ice cream, the creamy, cool delight that tantalizes our taste buds and offers sweet respite on a scorching summer's day. We owe our gratitude for this frozen treat to the ancient Chinese, who unlocked the secrets to crafting a dessert that would soon be enjoyed across the globe. While ancient China is well known for a multitude of remarkable inventions such as papermaking and gunpowder, the invention of ice cream, though seemingly less important, holds a special place in history as well, enticing us with its unique blend of flavors and its ability to transcend cultural boundaries.

Although many give the credit of inventing ice cream to Marco Polo, an Italian explorer, modern discoveries and research have found that the origins of ice cream can be traced back to ancient China, where the invention dates back to around 200 BC. During the Tang Dynasty, the ancient Chinese are known for the development of a frozen dessert made from a mixture of ice, rice, and snow. The earliest known method of making ice cream involved mixing milk with ice and then packing the mixture in snow to freeze it, creating a tasty treat that would be slowly developed over time.

One of the earliest mentions of a frozen dessert resembling ice cream was around 618–907 AD, when the imperial court is said to have enjoyed a frozen mixture made from buffalo milk, flour, and camphor. This early form of ice cream was a delicacy reserved for the elite. This frozen dessert was also mentioned in the "Nong Shu," a Chinese agricultural encyclopedia written by the scholar Wang Zhen in the 14th century. It describes a method of creating a frozen dessert by mixing buffalo milk with rice flour and allowing it to solidify in ice or snow.

The Chinese were pioneers in the art of chilling and freezing food. They developed sophisticated techniques for preserving food using ice and snow, which included making flavored ices and frozen desserts. These early frozen treats were often made by combining fruit juices, honey, and sometimes even wine with ice or snow.

Early Chinese versions of ice cream differed from the creamy, dairy–based confections we are familiar with today. They were more akin to sorbets or frozen fruit desserts. Nevertheless, these early experiments laid the foundation for the evolution of ice cream as we know it.

However, during the Song Dynasty (960–1279 AD), a more advanced technique for making ice cream was developed. This involved using a mixture of milk, rice, and salt, which was packed in metal containers and then packed in a mixture of ice and salt to freeze. It is believed that these delights had a slightly better taste resemblance to the ice cream as we know it today. The sweetness gave the people enjoying the treat a happy, fluttery feeling, just like ice cream does to us today.

The techniques and knowledge surrounding frozen desserts gradually spread beyond China's borders. Arab traders encountered these frozen delicacies during their travels and introduced the concept to the West. Over time, ice cream recipes and methods were adapted and refined by different cultures, leading to the diverse range of ice cream varieties enjoyed worldwide today.

While the exact process and ingredients used in ancient Chinese ice cream may differ from modern recipes, the Chinese influence on the development of frozen desserts cannot be denied. Their early experimentation with freezing

techniques, use of natural ingredients, and appreciation for sweet and refreshing treats laid the groundwork for the delightful indulgence we now cherish.

Although the ice cream today bears little resemblance to the frozen dessert that was enjoyed thousands of years ago, there is no doubt that ancient China played a significant role in the development of the delightful treat people all over the world enjoy every day. A magnificent country that invented several great things in the past, present, and probably will continue to do so in the future, China's inventions have affected us and our daily life today in every important detail.

The Excellent Machines in the Future

YK Pao School, Chang, Ruby – 9

Most people has known that the technology is very advanced in China, so I think something incredible will happen.Maybe in the future, robots can help people do a lot of things or the world will have no people and just robots.many amazing things could happen, but sometimes It could also be scary too!

I think in the future there will be a machine that can let you rest and relax.You could sit in that machine which is a bathtub and enjoy or have a rest.there are ten legs under the bathtub, so it can move like a car. You can use the controllers inside the bathtub to control it.the controllers are waterproof so you don't need to worry.this machine can do six things at the same time because it has ten legs, two legs need to walk and run, two can give you a massage .It can help you cook, clean the floor, fold clothes, give you a massage, and do many other things too!If I have this machine I would give it to my mom for a birthday present.She will like it very much!

This is an more amazing machine!this machine is a very intelligence table.It looks like a common table but there is a huge cabinet besides it.Inside the huge cabinet is a lot of fresh fantastic foods that you will definitely like.When you tell the cabinet what do you want, it can put the foods on the table and the table can cook the foods for you.I really want this table because I want to give it to my dad for his hard work everyday.He will must like it!

The technology will get better and better.I think someone can invent those two cool machines one day.But it can be very hard!

Red Envelope

YK Pao School, Li, Tsz Ching Hannah – 8

China is an ancient civilization with a long history of five thousand years. It is also a country with many inventions. Today, I would like to introduce to you a very interesting traditional invention – red envelope.

The red envelope, which has long become a symbol in modern society, can be traced back to ancient China. It was not until the Song Dynasty that red envelope culture really became popular. Since Zhao Kuangyin, Emperor Taizu of Song Dynasty, showed great kindness to scholars. The emperor always caught every opportunity to please his courtiers. Therefore, giving red envelopes to ministers during the New Year also became a custom in the Song Dynasty to keep in touch with the feelings of Kings and ministers.

In ancient times, people folded red paper into the shape of money bags, filled them with money, and gave them to their relatives and friends. This way not only expresses the blessing, but also reflects people's yearning for a better life. In fact, it first appeared to send blessings to elders during New Year's greetings, expressing love and respect for them. Over time, red envelopes have gradually evolved into a tool to express emotions and are widely used on important occasions such as getting married, giving birth to children and going to school.

The value of red envelopes lies not only in the amount of money they contain, but in the emotions and blessings they carry as well. Each red envelope is a token of one's heart, a gesture of care and blessing for one's relatives and friends. It is a kind of emotional exchange rather than material exchange.

> Nowadays, red envelopes usually refer to electronic red envelopes, that is, red envelopes sent via mobile phones or computers. This kind of red envelope is more convenient and faster since it can be sent anytime and anywhere, no matter friends who are far away or relatives around them, they can express their hearts through electronic red envelopes.

With the development of science and technology, red envelopes will be more widely used. For example, in the future, red envelopes may not only be money, but also various forms of gifts, such as books, music, movies etc.

As a traditional invention, red envelopes not only enrich our culture, but also bring a lot of joy to our lives. Let's pass on and carry forward this excellent tradition together, and let red envelopes play a greater role in our lives.

Tik Tok

YK Pao School, Dong, Sophia – 9

A long, long time ago, in USA, people mostly use Instagram, WhatsApp, Facebook or whatever. But one day, until the year 2016, TikTok became America's most useful App.

What's TikTok anyway?

TikTok, is a App that people communicate with short videos.

When did TikTok "born"?

It was born in AD 2016, September 20th.

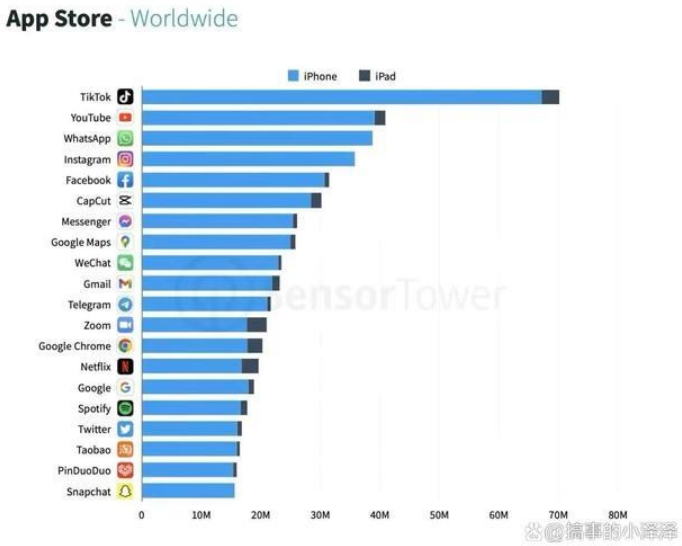
TikTok facts

1, After TikTok borned, it became the world–famous App.

2, TikTok was designed by a man called Zhang Yi Ming from a company called "Byte Dance".

Why was TikTok invented?

The most popular reason is it is just an easier way to show your personality.



TikTok was a really big invention from China, and it stands out a HUGE step for China's inventions.

Chinese Inventions

YK Pao School, Goh, Rei – 9

A presentation about the invention Of paper and the inventor

About the inventor

Cai Lun (the inventor of paper)formerly romanized as to ts ai lun,was a Chinese court official of the eastern Han dynasty.he is traditionally regarded as the inventor of paper and the modern paper making process.although early forms of paper has existed since the third century BCE, he occupies a pivotal place in history of paper due to his addition of pulp via tree bark and hemp which resulted in a large scale manufacture and world wide spread of paper.at the year 105 Cai Lun confiscated his idea of forming pieces of paper from the macerated bark of trees, hemp waste, old rags and fish nets.

How paper is made

The cellulose is extracted from the wood chips and put into a machine called a digester that breaks down the wood. The bits are all made into a paste–like substance called pulp, which is the processed by a machine that flattens and dries it into paper.

How he thought of it

He said the invented method of paper making was inspired by wasps and bees. Only scholars like Confucius could decode the meaning.cai lun came up of the idea of making sheets of paper from macerated tree bark,hemp waste,old rags and fishnets around the year.

The use and purpose of paper

Paper is a thin substance that people use for printing, painting, graphics, drawing, signage, printing, design, decoration, packaging, writing and so much more.We can use paper to make lots of things that can actually help your daily life.Although it can some times effect the forests,trees that they cut down to make more building spaces won t go to waste anymore.and crating paper is now one of the 4 Chinese inventions.

A world without paper

Can you Think about if the world had no paper.there will be no news paper,paper–tape,origami/folding,notes,diary,printing,books/comics for entertainmen and lots more. There might not event have paper money in this world if paper was not invented.wouldn t that be horrible!

How the word paper was invented

Did you know the word (paper)came from the Greek word papyrus."which refers to the plant used by ancient Egyptians to make a writing material.papyrus was made by weaving together strips of stem from the papyrus plant.

Oldest surviving paper

The oldest surviving piece of paper is from long ago at the 2nd century CE,known as the dunhuang paper."and of course it was discovered in dunhuang ,china,that contains lots of texts and artworks.

Japanese inventing origami

Did you know that according to research the Japanese devised origami,The art of folding paper, about a thousand years ago,but its origins could be in china.its also possible that the folding method was used on other materials before the paper was produced,so the origins of recreational folding could be traced back to fabric or leather.

The first piece of paper

The first paper in history was made by the papyrus plant.this type of paper was discovered in the tombs and temples of ancient Egypt dating back to 2700 b.c. The amazing thing about papyrus paper is that it is extremely strong,durable,and elastic,produced naturally.

A Great City from Chinese History

YK Pao School, Gu, Sihe – 8

Xi'an, formerly known as Chang'an, is one of the birthplaces of the Chinese nation and eastern civilization. There is a local saying that goes like this: if you want to see China over the past 5000 years, go to Xi'an. Xi'an has a history of over 6000 years and had been the capital of countries for 1200 years. Xi'an played a crucial role throughout Chinese history, with 13 dynasties having the city as their capitals.

"Chang'an culture" represents the backbone of Chinese culture. Xi'an was once China's political, economic and cultural center and one of the earliest cities opening to the outside world. Since the Western Han Dynasty, Xi'an has become the key city of economic and cultural exchanges and friendly relationships between China and other countries. It was the eastern starting point of the ancient Silk Road, connecting Asia with Europe.

Xi'an is also the home of one of "Eight Wonders of the World" Terracotta Warriors, showing the city's profound history and culture. With historical and cultural heritage, Xi'an enjoys a reputation as the a "Living History Museum". The amount and value of its cultural relicsranks No. 1 in the world.

The little dictionary↓

Civilization means：a relatively high level of cultural and technological development specifically the stage of cultural development at which writing and the keeping of written records is attained.

Dynasty means ：a succession of rulers of the same line of descent. A dynasty that ruled China for nearly 300 years

Political means：of or relating to government, a government, or the conduct of government

Profound：having intellectual depth and insight

Heritage：something transmitted by or acquired from a predecessor

Reputation：overall quality as seen or judged by people in general

The New China Paying Model

YK Pao School, Xu, Yachen Claire – 10

Do you need to take wallet with you everyday? In China, the answer is no. Most people go out with just a phone, because every social and paying needs can be satisfied on the phone thanks for many new inventions of China Apps, like Wechat, Alipay, Meituan, Douyin, Taobao, etc. Today, I want to talk about Alipay, this is a super app you can basically do everything about money.

The very basic function of Alipay is to receive and pay money. Say for example, if you need to buy a bottle of water in a convenient store, you just need to show the QR code of your Alipay account, the cashier of the store will scan it and the payment is done immediately. The same practice applies to receiving money as well, you could show your QR code to others, and they scan it so that they are able to pay you.

The more advanced function is that you can loan money from Alipay just like credit card. It will assess your identity and profession, and then decide your loan quota. Afterwards, congratulations, you can spend before you own the money. But remember, you need to pay back the money before the monthly due date. You need to be careful of not spending too much!

Alipay also possess other mini apps, like Eleme, Gaode, Taobao, and even small games. By having these mini apps, you don't need to downland these apps but just open them in Alipay.

To me, my connection with Alipay is that I receive my monthly pocket money on Alipay. I have a sub-account under my mom's, she can easily transfer pocket money from hers to my account. I have smart watch and it has my Alipay QR code inside. So when I go out without my parent, I can turn on the Alipay QR code in my watch and I can pay and treat my friends with snacks and drinks. I really love it!

What I introduced is only a tiny part of Alipay, it has other more functions you can explore. It is fantastic that China has so many useful and friendly inventions, you use it anytime anywhere that makes your life easier and happier.