

Welcome in the New Year with a brand new Right2Education podcast episode! In episode five, we travel through time to explore the history of fireworks - listen to the episode [here](#), and you can find the transcript below! Enjoy!

Hello everyone and welcome to another brand new episode of the Right2Education podcast. And Happy New Year! That's right! We're now in 2022! I hope that you are doing well and staying safe as we enter into a new year. And I hope that you were able to celebrate the start of the new year as well! I always think New Year's Eve is such a great night to celebrate. It's a night that everyone can share in celebrating, all over the world. It can bring everyone together, and makes everyone look forward to another year and the opportunity for a fresh start. It can make everyone forget about anything bad from the last year, leave it behind, and move into the new year with a smile and motivation to chase after new dreams.

But just because it's celebrated all over the world, that doesn't mean that all the celebrations are the same. All across the world, there are different traditions for welcoming the new year, there are lots and lots of different ways of celebrating New Year's Eve. Maybe you can think of a special tradition that you have for celebrating New Year's Eve. One tradition that is very common across lots of different countries and cultures, is to make a New Year's Resolution. A resolution is a decision to do something or not to do something, it is a promise that you will either do or not do something. So, a New Year's Resolution is a decision that you make at the start of the new year. Usually, the decision will be to change a habit that you don't like, or to adopt a habit that you think would maybe improve your life - it could be a decision to stop drinking so much coffee, or maybe a decision to stop eating so much unhealthy food. Or it could be a decision to get into the habit of always taking the stairs rather than the elevator, or to exercise a bit every day. And the resolution can also be a decision to accomplish a specific goal in the new year which has just begun. For example, it could be a promise that, in the new year, you will run a marathon. Or it could be a decision to read at least one book every month. But, if you are going to make a New Year's Resolution, the most important thing is that you make one that is personal to you and that you truly want to achieve. Because if it is something that you truly care about, then it is much more likely that you will achieve your aim, and you will feel really great when you accomplish it. And you will probably enjoy it as you do it as well!

So, making a New Year's Resolution is one tradition that is very common all over the world. But it's not my favourite New Year's Eve tradition. My favourite tradition has to be the fireworks. I really love watching all the big firework displays that are put on to celebrate the start of a new year.

If you were in Amsterdam for the New Year, I'm sure you will have seen lots and lots of fireworks. In the Netherlands, they are really very popular - the Dutch really love their fireworks! In fact, because so many fireworks used to be set off all the time, the government got so worried about the impacts of the fireworks that they made a law that says you can only set off fireworks on New Year's Eve. But this means that on New Year's Eve, when it is allowed to set off fireworks, everyone really tries to set off as many fireworks as they can! People will go out into the streets and into their gardens, and they will set off so many fireworks that the sky doesn't stop flashing for hours! It's crazy!

It's not just The Netherlands that uses fireworks to celebrate the New Year. And it's not just ordinary people setting off their own fireworks. In lots of capital cities, there are huge displays which are filmed and shown on TV. They really are very impressive, and it's really cool to see lots of different countries putting on their own display. And often they'll include famous landmarks from the country. For example, in England, the firework display takes place on the London Eye; in France, they are put on the Eiffel Tower; in Australia, they are set off from the famous Sydney Harbour Bridge and the Opera House. And it's really very spectacular to see all the colourful explosions lighting up the famous sights.

But, I really love fireworks so much that it doesn't have to be a massive display for fireworks to impress me. Even the most simple firework will make me stare in wonder with a big smile on my face. Ever since I was little, they've always seemed so amazing to me, they've always seemed so magical. There's something in the flash of bright colours, and the surprise and excitement of the loud bang and crackle, that always fascinated me. And the speed with which they fly into the sky, disappearing before bursting - that always amazed me! They really are incredible!

But have you ever wondered about where fireworks first came from? Have you ever thought about the history of fireworks? When was the first firework set off? And what did it look like? And how have fireworks changed since their invention? How have they developed and evolved? Well, that's what I want to talk to you about today: the history of fireworks. And I hope that it's a topic that you find interesting. I hope that it's a topic that you find enlightening. Did you catch that? Did you notice the joke? Describing the topic as 'enlightening' was a play on words called a pun. A pun is a sort of joke which uses a word that has more than one possible meaning and uses the ambiguity of the meanings to allow for there to be multiple understandings of the expression at the same time. So, in this case, the pun uses the two meanings of the word 'enlightening'. 'Enlightening' can be used in a very literal sense to describe the action of giving out light, of lighting something up. But it can also be used in a more metaphorical sense to mean the action of giving knowledge or information. So the history of fireworks can be enlightening in two ways: because fireworks give out light when they explode, they enlighten in the literal sense of the word, while the information about the history of fireworks is enlightening in the metaphorical sense, giving new knowledge.

Anyway, that's enough of my silly attempts at jokes. Are you ready to learn about the history of fireworks? Are you ready to travel through time to see the development of fireworks? Then let's begin!

The very first fireworks were invented in China in the year 200BCE - that's over 2000 years ago! It's thought that the first fireworks were actually created by accident, when bamboo sticks caught on fire and exploded. When people saw this happening, they realized that they could make their own firecrackers by throwing the bamboo into the fire to create a loud bang along with a flash of an explosion.

But it wasn't for another one thousand years until these firecrackers were used to make fireworks that could explode by themselves. Many scientists were trying to create a potion that could let someone live forever, and, around the year 800, when one of these mixtures of chemicals caught on fire, the first gunpowder was made. This invention of gunpowder is one of the four Great Inventions from Ancient China. The other three inventions are: papermaking; the printing of texts and images; and the compass which used for showing which direction is North, East, South and West.

After gunpowder was invented, it could be used to make fireworks that could be contained within their own tubes. The gunpowder could be packed into a stick of bamboo or into a roll of paper, and then it could be lit on fire to explode with a loud noise.

But a fireworks show in the year 800 probably wouldn't have looked anything like the firework shows we see today! There were no colours to the fireworks, and the sticks were simply set on fire and exploded where they were, rather than flying into the air. The fireworks in 800 were really just small and noisy explosions. But, just like today, they were still used for celebrations - fireworks were set off to celebrate weddings and births and lots of other big events. And they were also used for protection - people would set off fireworks as they thought the explosions would scare away evil spirits and keep them safe from harm.

It wasn't very long after the invention of gunpowder, that the military began to use it. With gunpowder, the Chinese army built the first ever rocket cannons, which let them fire objects at their enemies. And this discovery that gunpowder could be used to fire something into the air led to another invention away from fighting - it allowed for the invention of the first aerial fireworks, the first fireworks that could fly! Using tubes made from sheets of paper, the gunpowder was packed into little containers and a fuse was attached so that there would be enough time between lighting the firework and the firework flying into the air to get safely away. And with this invention, firework displays became really much more impressive, and they became much more exciting and intricate with lots of detail. The fuses that were attached to the new fireworks meant that many fireworks could be set off at once. Lots of the tubes could all be grouped into large clusters, which would all fly into the air at the same time for some really massive explosions! And the fuses also allowed for the fireworks to be set off one by one in a sequence. This meant that the fireworks displays could be prepared to follow a specific order, they could be choreographed to follow a certain scheme or design.

Around the year 1200, 400 years after the invention of gunpowder, more and more Europeans began to visit Asia and China. And when they returned to Europe, they brought back the invention of gunpowder. And, of course, this introduction of gunpowder was used to develop weapons, and, by the year 1600, European countries had lots and lots of artillery weapons, weapons that can shoot an object. But, just like in China, the introduction of gunpowder was also used for fireworks. In Europe, like in China, fireworks were used for celebrations, and big shows were planned to observe large events. But the shows were also arranged simply for the purpose of entertainment; in Europe, firework shows were put on just for the enjoyment of the display. The fireworks still didn't have any colour to them, but, like our fireworks today, most of them were aerial fireworks, and the displays were very organized events with large teams preparing the show and lighting the fireworks.

In the teams, there were two different roles for the workers of a firework shows. One of these roles was the 'Firemasters'. The job of the Firemasters was to keep the crowd entertained when the fireworks weren't going off, and get them very excited about the display. They would tell jokes to the crowd, and do little performances themselves, and they would make sure that the crowd stayed super happy and amused. The other role on the team was the assistant to the Firemasters, and it was their job to set off all the fireworks, they were responsible for lighting the fuses of the fireworks. This job was very dangerous because if a firework didn't work properly, it could explode right next to them, and they had to work with a lot of fire and right near lots of flames. To give them a bit of protection from the sparks, the assistants would wear outfits made from leaves so that they were less likely to catch on fire. Because this meant that they were dressed in outfits that were entirely green, the assistants to the Firemasters were often also called the 'Green Men'.

Soon, fireworks became really very popular. It was even possible to go to a special school to learn how to make fireworks! Across Europe, there started to open pyrotechnic schools which taught how to create explosions. And with so much interest, firework displays continued to develop into really massive spectacles, they became something to watch and enjoy. And the firework displays became really super impressive. In fact, King James the Second in England was so impressed with the firework displays he saw that he awarded his Firemaster a knighthood, he made his Firemaster a knight! In England, that's really a very big honour!

But still the fireworks throughout all this time were not coloured! It wasn't until the 1830s that the first coloured fireworks were created after Italian inventors started adding different metals to fire to make different colours. And, funnily enough, the idea to add these metals to fire to make colours actually came from Ancient Chinese science. In scientific texts from 14th Century China, there were instructions for how to create coloured smoke and fire through applying different chemicals, and the Italian inventors thought that this could be used to add colour to the fireworks and to make the displays even more magical. And that's when fireworks really started to look like the fireworks we have today.

But, of course, the development of fireworks didn't stop there. Still, firework creators have continued to invent new designs, and firework displays have continued to evolve into massive events. Now, you can see fireworks with a huge number of different effects.

They can be made to make a huge range of different noises. There are the classic fireworks, which simply explode with a loud 'BANG!'. But there are also fireworks which crackle when they explode, and there are some that make a humming noise, and there are others which make a high-pitched whistle.

And there are so many different shapes in which fireworks can explode. And often they're named after an object that they remind us of. There's a type of firework called a 'fish' where the spark of the firework quickly flies away from the explosion, and looks a lot like a fish quickly swimming away. And there's another type of firework that's named after a plant called 'chrysanthemum' because it looks like the petals of the flower when it explodes - the firework explodes into a cloud of colourful sparks, and all the sparks leave a trail as they begin to fall. Another firework, called '*kamuro*', also gets its name from its appearance. In

Japanese, *kamuro* means 'boy's haircut', and this firework, when it explodes bursts into a very packed glitter of stars which leave a trail behind them, and shine really super brightly in the sky - because of the shape that is left behind, the effect of the firework really does look like a classical boy's haircut! And I'm sure that you can guess where the 'spider' firework gets its name from - it explodes to look exactly like a spider! And there's also the 'palm' firework. I really do love these ones - they look just like palm trees! They leave a long, thick trail behind them as they fly into the air, which looks like the trunk of the tree. And then, when they explode, they shoot off a few stars that burst with long arms to look like the leaves of the plant. And some of them even contain another small firework within them that will explode in another colour to look like a coconut attached to the tree!

It's really quite amazing how fireworks can be made, packed up so small in just one little tube, and designed so that when they explode way up in the sky, they'll draw out a very specific shape or pattern.

There have been fireworks made so that when they explode, they draw a smiley face in the sky, or so that they explode in the shape of a heart. And still people are inventing more and more impressive fireworks, still people are finding new things to do with fireworks, new ways to make firework displays even more remarkable. There are even special firework competitions where different teams will put on their own specially designed firework display with the very best fireworks that they have, and the team with the most impressive firework display wins! The most famous of these firework competitions is the Montreal Firework Festival, which is held once a year in Montreal in Canada, and starts in June and runs all the way until the end of August. Every team has to create a firework display that will last for 30 minutes, and each display uses around 6000 fireworks. They even have to set the display to music as well. So it's no wonder that the event is really super popular. Over three million people gather every year to watch the event!

And that's not the only firework competition. You've probably heard of the Olympics before, but did you know that there's also a World Pyro Olympics where countries take part in a huge firework competition? This is another annual event, so it takes place every year, and it is held in the Philippines, with loads of spectacular displays!

But because fireworks are so much fun to watch, it can be really super easy to forget just how dangerous they can be. So if you're planning on setting off fireworks, remember to stay safe! After all, when you think about it, they are really just huge explosions! Only they usually happen so high in the sky that they seem too far away to cause any kind of danger, they seem too far away to be a real threat. But fireworks can be a really big fire hazard, it is very easy for them to start a fire by accident. Sometimes they don't fly into the air properly, and end up exploding too close to another object, or they might fall onto something when they're still hot and cause a fire that way. And sometimes something goes wrong, and they don't fly into the air at all! And that can be really dangerous!

So remember to take good care whenever you set off fireworks!

And, even though they're really good fun and super exciting, it's also important to realize that fireworks can cause a big problem for the environment. Because of all the smoke that is

produced in the explosions, fireworks can cause a really huge amount of pollution. And they can have a very bad impact on the wildlife. Because they are so noisy, fireworks can very easily scare animals so much that they end up running away from the sound, and they can injure themselves as they try to escape, or sometimes they will never return, and the entire ecosystem can be affected!

But, thankfully, there are firework creators who are working to design fireworks which do not cause these problems for the environment, but which are still super impressive to watch. There have already been silent fireworks invented which can still give a very beautiful display without scaring the local wildlife, and these are becoming more and more popular. In fact, there is a whole town in Italy which switched entirely to silent fireworks in 2015, seven years ago! And hopefully, it won't be too long before fireworks are made environmentally-friendly, and don't produce too much pollution. Perhaps that's where the future of firework invention lies - in the creation of pollution-free fireworks. Even over two thousand years since the invention of the very first fireworks, it seems that the story of fireworks is far from over, it seems as if there are still many new discoveries to be made, and many more wonderful ways for fireworks to develop and continue to impress and entertain us all!

But, though the story of fireworks is not yet finished, that's the end of today's podcast! Thank you for joining me today. Next time, I'll be back with another brand new topic for you to enjoy, and in the meantime, carry on practising your English. Just a little bit of practice every day can have a really huge effect! And if there's a topic that you'd love to hear about in a future episode of the podcast to explore further, or to learn about in English, feel free to send me a message at the Right2Education email address! I hope you have a great start to this new year! Stay safe, take care, and I'll see you all again next time!