



High Flyers

To seek, to learn, today...to shape, to lead, tomorrow



Winter 2021 Highsted Grammar School Issue 8



UN CLIMATE CHANGE CONFERENCE UK 2021

COP26

**ONE
KIND
WORD**

#ANTIBULLYINGWEEK

15-19 November



Also inside this issue:

The impact of climate change on Scotland's coral reefs



Competitions:

Proud to be me - T-shirt design competition

Christmas Maths Challenge

Masterclass review

Highsted students review Ri computing masterclass.





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Welcome to our eighth issue of High Flyers. This term the Highsted Virtue we have been looking at is Community Conscious.

Which subject inspires you to unlock your potential?



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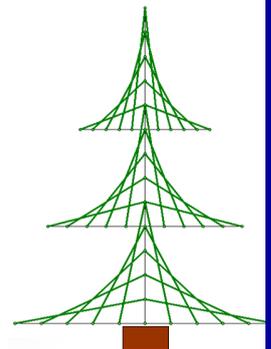
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The Royal Institution
Science Lives Here





What is COP26?

First things first – what does ‘COP26’ even mean? Well, ‘COP’ stands for **‘conference of parties’** – a meeting that involves lots of **different people** working towards the **same global goal**. COP26 was the **26th** meeting of members of the **‘United Nations Framework Convention on Climate Change’**

All you really need to know is that COP26 was a huge, important meeting all about **taking action against climate change**.

It began in 1994, when many **world leaders** became part of the UNFCCC and agreed that their countries would help to **combat global warming**. Since then, a **COP** has been held every year so decision-makers can get together and discuss **what to do next**.

COP26 took place in **Glasgow** and was the biggest meeting of world leaders that the UK has **ever hosted!**

Each year, COP takes place in a **different country**. **COP25** was held in **Madrid**, Spain, in 2019, during which **Greta Thunberg** gave a now-famous speech. During this meeting, important **targets for cutting carbon dioxide emissions** were agreed.





Who was at COP26?

Representatives from nearly **every country in the world!** This included world leaders like the Prime Minister, **Boris Johnson**, and President **Joe Biden** of the U.S.A., along with a whole host of other important people. Members of the **press attended** to report about the conference on TV and radio.

Plus, representatives from **over 2,000 companies** were present too.

At COP meetings, governments from across the globe agreed on **targets for the future**, with the aim of **reducing greenhouse gases** and **protecting the planet**.

These decisions affect people all over the globe; they help us all work together to become **greener** and more **sustainable**.

Five years ago at COP21 in Paris, every member of the UNFCCC signed the **Paris Agreement** – an international commitment to tackle climate change. At COP26, members will **review** whether this agreement is working, and highlight any **progress** on...



1. Reducing greenhouse gas emissions and investing in renewable energy sources, like wind and solar power.

2. Preventing global temperatures from warming by more than 2°C and trying to keep the increase as low as 1.5°C.

3. Helping less-developed countries become more environmentally friendly, by supporting them financially.

4. Reviewing progress on the Agreement every five years.

What can you do?

You might not be able to attend COP26, but you can still **make your voice heard!** There are tonnes of ways to get involved with the UK's '**Year of Climate Action**'.

Simply **talking about climate change** with family and friends can inspire others to learn more about it and why they should care. Or if you want to take your passion one step further, why not **write to your MP?** You could tell them what **YOU** think is important and let them know how passionate you are about saving our planet!



The impact on coral reefs

When we think of coral reefs we automatically associate them with the tropical climate of Indonesia and Australia. Would it be therefore surprising to read that our closet coral reef is in Scotland! The coral reef lies 185 Kilometres northwest of Scotland, where the COP 26 in October was held.

Darwin Mounds, 1000 metres under the sea were discovered in 1998 by the research vessel

named 'Darwin' after, yes you guessed it Charles Darwin. The cold water coral reefs span 100 Kilometres and are made up of hundreds of individual reefs each up to 5 metres high and 100 metres wide. Unlike tropical reef building coral, cold water reef coral grow in the dark, and in cold water. *Lophelia pertusa* is the only reef building coral present. The cold coral reefs are home to a vast array of different species including sponges, starfish, sea urchins, crabs, deep sea fish, Blue ling, Roundnose Grenadier, making them some of the most biodiverse ecosystems on the planet.

In 2004 Darwin Mounds was recognised for the important habitat that it provides and was protected by law due to the threat from deep water trawlers. These trawlers, pull fishing nets along the sea bed, cause devastation for anything in their path. Now, the reef is threatened by climate change.

Marine scientists at Edinburgh University's school of geosciences have produced research warning that changes to winter weather conditions could threaten the long-term survival of coral populations, upsetting fragile ecosystems that support an array of marine species.

Sea temperature rise threatens tropical coral reefs causing death of the coral, resulting in bleaching. Cold water corals can withstand a rise in temperature if they increase their food intake.



Impact of Climate Change

Cold water corals feed using tiny tentacles which capture microscopic food in the water. If the temperature rises further resulting in further melting of the ice caps, the gulf stream will be affected meaning that the direction of currents could change. As a result of this less food is brought to the coral, which could result in their demise.

The increase of greenhouse gas emissions, increasing the level of carbon dioxide in the water can alter the waters acidity. This impacts the strength of the coral skeleton formed, weakening it, meaning they are prone to more damage.

The aim of COP26 is to initiate strategies to prevent the loss of these biodiverse areas.



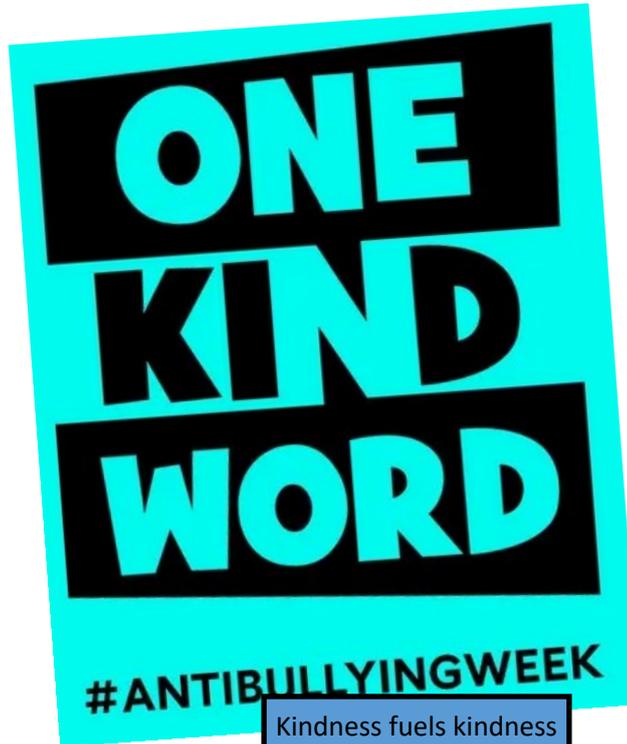
Antibullying Week 2021



This years Antibullying week fell between 15– 19 November 2021, with the theme, One Kind Word. Organised by the Antibullying Alliance, the week called for action! To take on the act of being kind to one another. It is estimated that 80% of schools in the UK took part, reaching 7.5 million children!

The week was to recognise how positivity spreads positivity. Saying one kind word to one person, can have a huge positivity impact. Just one word can be a turning point, mood and change conversation and break the cycle of bullying. From smiling at someone, to asking if they are ok. There is no cost to being kind but, it can have a huge impact.

- simple acts, such as saying one kind person, can have a huge positivity impact.
- Just one word can be a turning point, mood and change conversation and break the cycle of bullying.
- From smiling at someone, to asking if they are ok. There is no cost to being kind but, it can have a huge impact.



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As part of this week taken part in World Kindness Day on the 13 November or Friendship Friday on 19 November.

you may have also taken part in Kindness day on the 13 November or Friendship Friday on 19 November.

World Kindness Day was created so you could celebrate good deeds on this special day and inspire others to follow your example! On November 13th each year, people from around the globe came together to create a chain reaction of compassion by performing random acts of kindness for total strangers.



In the UK, Kindness Day UK is organised by Kindness UK, a non-profit organisation. Kindness Day UK was launched on 13th November 2010, and the event has continued to grow in popularity every year with increasing numbers of individuals, schools, charities, institutions and businesses taking part.

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Following on from the paper plate project last term, many of the plates have been chopped up and refashioned into these letters which will form the backdrop to Highsted's fashion show.



Using the amazing plate designs as a starting point from last term, students have been translating these into fabric using lots of different techniques such as tie dye, printing, batik and silk painting. Students have been doing this during their lunchtimes and we are almost ready to start constructing these into some striking designs which will be worn and paraded along the catwalk.

Year 7 students have been taking the lines and patterns from the plates and drawing these onto polystyrene tiles which have been printed onto calico fabrics. Students have then been embellishing, which means to add decoration to these with embroidery threads to give them a bit of extra dimension and flare.

The Year 8's researched different tie dye techniques and experimented with tying these in different ways to create patterns. We chose to dye these in the blue and white theme inspired by the Willow movement in crockery in the eighteenth century.

We have spoken about the possibility of lot of new ideas and next term we hope to be redesigning t-shirts, using Milton to personalise leggings and jeans to show off our **personalities through our clothes and be proud about who we are.**



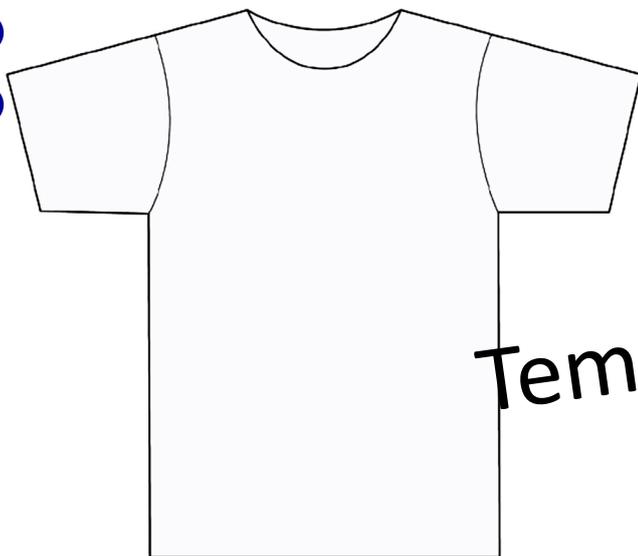


Art: Proud to be me

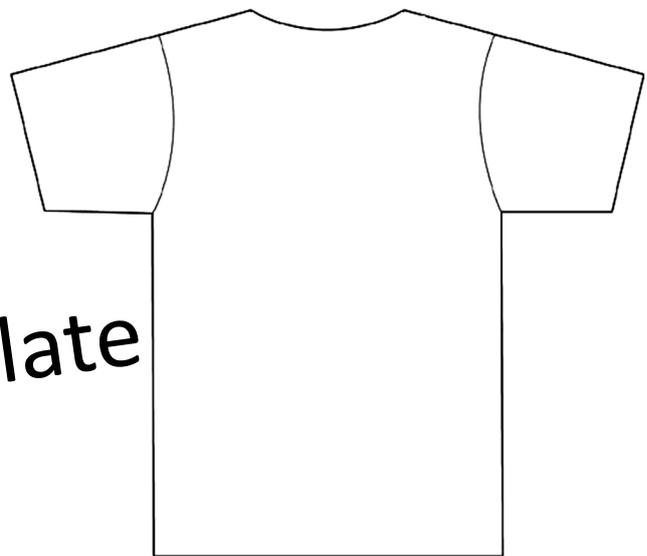


Can you create your own t-shirt design? You can either do this onto an actual t-shirt and send in a photograph, or find a template like the one below to draw your design into.

- *You can put absolutely anything you like on your t-shirt design, it can be as simple or as detailed as you like.
- *You can use any materials at all that you wish, colouring pencils, biros, collage, paint, the world is your oyster!
- *Have fun and be creative.



FRONT



BACK

Template

Send your entry to:

ks3@highsted.kent.sch.uk by 31 January 2022

Place in the subject box: T-shirt.

Include:

Your name

Your age

Your primary school





Sport: Lets put the Fun into Run 2021



How many of you enjoy playing TAG, netball or football at school? Within your playground games you are constantly running throughout your lunchtime, but many children dread the thought of a long distance run.

Lets discuss why? Sometimes it may just be the thought of the longer distance that puts you off but, once you get started you feel fine and gain a sense of achievement after your run.

How do you pace a run? This is certainly a difficult question to answer. We can repeat that we need to start slow and then finish fast. However, by establishing some good running habits, you will be able to run longer, be more successful, and have more fun!

[Here are some tips to start thinking about pacing!](#)

- Go out for a run with a family member and think about your pace.
- Break it up with a few minutes of running at an easy pace and walking. For example 100m run and 200m walking.
- Teach yourself to try and talk during running or run with a friend. Being able to have a conversation while running is a good indicator that you are running at a pace that you can maintain.
- Add some challenges! Change your race run for a few minutes, then do some jumping jacks or frog jumps. Use landmarks to mark off the course— run to the next lamppost, then to the post box, then to the corner....it will give attainable goals!



Can you name this athlete?



British long-distance runner Paula Radcliffe was a three-time winner of both the London and New York City marathons. She twice broke the women's marathon world record and in 2005 she claimed a world championship in that event.

Paula was born 17 December 1973. Despite suffering from asthma she took up running at the age of seven, encouraged by her father who was a keen marathon runner. By the time she was a teenager, she had emerged as a running talent.

Her first race at a National Level came as a 12-year-old in 1986, when she placed 299th out of around 600 in the girls' race of the English Schools Cross Country Championships. She finished fourth in the same race one year later.

In 1991 Radcliffe won the English Schools 1500 metres title that was just the start of her running career.

There are many programmes that can help you build upon your running.



For your age group you can look at trying a 1 mile run or working up to a 5k (3.1 miles) run. The couch to 5k is a popular programme.

Parkruns are a 5K run across local areas every Saturday, at Sittingbourne Milton Park, The Leas Parkrun Minster, Gillingham Great Lines and Canterbury The Pavilion.

Junior Parkruns 2k run for ages 4-14 years, every Sunday at 9.30am at Faversham Recreation Ground and The Strand Gillingham.

If you are interested in running and would like to find out more information have a look through the Parkrun website: <https://www.parkrun.org.uk/>





Secret Musician

How would you describe your job? Assistant producer at Radio 1

Which instrument do you play? I used to play the Bassoon when I was at school

How old were you when you started learning? 11 years old

What did you enjoy most about learning to play? Meeting new people and making friends for life at orchestras etc.

How did you train for your career? I learnt mostly on the job, getting stuck in and asking for feedback.

What is your favourite piece of music? Sampha Without

Your top tip for young performers? Be brave, never fear being different.

Can you find a recording of The Dance of the Sugar Plum Fairy from The Nutcracker by Tchaikovsky? This piece uses the Celesta

Could you use the information below to describe the dynamics of this piece of music?

Have you considered learning to play an instrument?

Welcome to the Music page. Here you will learn about careers in music, unusual instruments and some of the signs and symbols that enable musicians from around the world to communicate through the universal language that is Music.

Lesser spotted instruments....

The Celesta

Habitat: the Celesta is an orchestral keyboard instrument

Played: like a piano, by pressing the keys.

Looks: a lot like an upright piano.

Sounds: the Celesta has a bright, twinkly sound created when the hammers inside hit metal chime bars

Claim to fame: This is the instrument used to play Hedwig's Theme in John Williams' score for the Harry Potter films .



Musical signs and Symbols

Abbreviation	Full word (Italian)	Definition
<i>pp</i>	Pianissimo	Very soft
<i>p</i>	Piano	Soft
<i>mp</i>	Mezzo-piano	Medium soft
<i>mf</i>	Mezzo-forte	Medium Loud
<i>f</i>	Forte	Loud
<i>ff</i>	Fortissimo	Very Loud
	Crescendo	Gradually Louder
	Decrescendo	Gradually Softer

Dynamics

Did you know...

-Dynamics is the volume of the music

-Italian words are used to describe this

-There are also words for getting louder and getting quieter



Computer Science: Extra Curriculum



At Highsted Grammar School students are encouraged to do extracurricular activities in computer science. Girls are very apprehensive to think about computing as a future career. Computing is an ever-evolving subject where there is a shortage of women in the field. During the covid pandemic students have had first hand experience on the importance of technology in the real world. Lessons were delivered on digital platforms and were welcomed by many students as they had a chance to use technology in real time by doing collaboration, online polls and other activities involving the use of technology. Some students took technology to a higher level by doing some extracurricular activities powered by their interest and passion in the subject.

Ri The Royal Institution Science Lives Here

Chloe in Year 9 has participated in a computer science masterclass organised by Ri Institute in October. She attended sessions on cybersecurity, programming and

hacking. She found the course informative and at the same time got an overview of the careers in the IT industry. Chloe had an interesting session, 'Robotics' which according to her "was very intriguing". One of the other sessions she enjoyed was 'Hacking' where alone with other participants on the course they did a crash course on how to hack each other's virtual machines.



Grace In Year 10 did a crash course in cybersecurity, 'Cyber Defenders' offered by CyberFirst during the summer holidays. The sessions have introduced her to the world of cybersecurity and have equipped her with practical skills to better develop her knowledge and understanding in the subject. Grace always had a passion in computer science. By completing the CyberFirst course she has strengthened her passion and interest in computer science.

Sahanna in Year 8 has taken her programming interest and learning to a new level at such an early stage. She has been teaching herself JavaScript on Hour of Code. She has also been designing a Lord of the Flies scratch game version. She has been very proud of her progress and has been sharing her interest with other students and teachers.



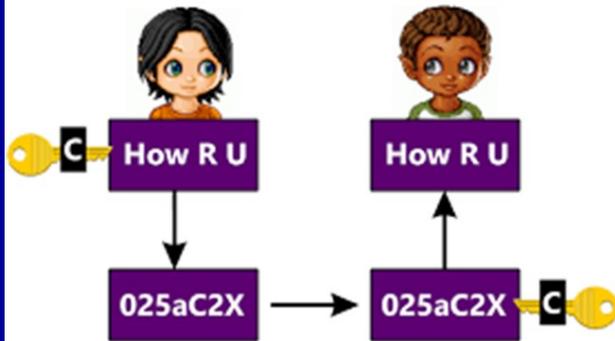


Computer Science: Masterclass in Ri computing



Several Highsted students undertook an Ri computer Masterclass every Saturday for 4-5 weeks.

Read below to hear their reflections.



Tell me about the course you attended.

The course we did was an online course over 4-5 weeks. The topic was varied. We did some programming, ethical hacking, robotics and cryptography.

How was the course structured?

The lead teacher gave a bit of a lecture at first then gave us some activities to do, which he explained. We were given either worksheets or links to websites where we did live coding.

What did you learn?

We developed our use of scratch, incorporating a physical motor which we controlled virtually and we could make it move forward and move backwards.

We also did some hacking. At first it was scary as we thought we would hack real programs. But it turned out to be fun and not scary at all as we only hacked our group's virtual machine.

Did you do any collaborative work with other students on the course?

Yes. We had the chance to talk to other students from all over the country and some of them were funny. We were able to share some of our school experiences with each other.

What did you like about the course?

Although the course was virtual, the tasks were interactive. We got to do some practical activities.

Has this course made you think about computing in a new or different perspective?

During the course the teacher told us about new things about computer science, how in the real world it is a very sought after career, far beyond coding. You can work in cyber security in a bank.

Would you do another course similar to this one?

Yes. It allowed us to do things outside the school classroom and be introduced to other areas of computer science.

Would you recommend this type of course to other students?

Yes. We would. We found this type of course fun and we got to meet other students and talk about our experiences and make new friends.



Quotes from the students

Dolapo O

The course was helpful. It showed me how varied the fields of computer science is. Although some of the tasks were challenging but looking back at the lecture I was able to work my way through. I was feeling a bit more confident after completing this course as I have gained a good understanding of what I did.

Yola S

The course was very fun to do and quite interesting. I would definitely want to do something like this again.

Summer M

I found the master classes very fun and interesting. The course has shown me a lot about different things that you can do in computing. I would definitely recommend it so other students have a chance to try different things.

Chloe L

It was very interesting to be part of the master class. It really widened my understanding of the world of computer science and broadened my knowledge of different topics.





CHRISTMAS FRUIT MINCE SLICE

Ingredients

200g (2 cups) oats

150g brown sugar

150g (1 cup) plain flour

1 teaspoon baking powder

185g butter, melted

300g fruit mince, warmed

30g flaked almonds,

roughly chopped



Method:

Preheat oven to 180°C. Grease a 20cm x 30cm pan and line the base and long sides with baking paper, extending the paper 5cm over sides.

Combine oats, sugar, flour and baking powder in a mixing bowl.

Add the melted butter and mix well.

Press half the mixture into the tin and spread the fruit mince in an even layer.

Add the flaked almonds to the remaining mixture. Crumble it over the top of the mince layer and bake for 30 minutes.

Remove from the oven and cool in the tin before cutting into squares.

Enjoy your Christmas bites.

We wish you a Merry Christmas!!

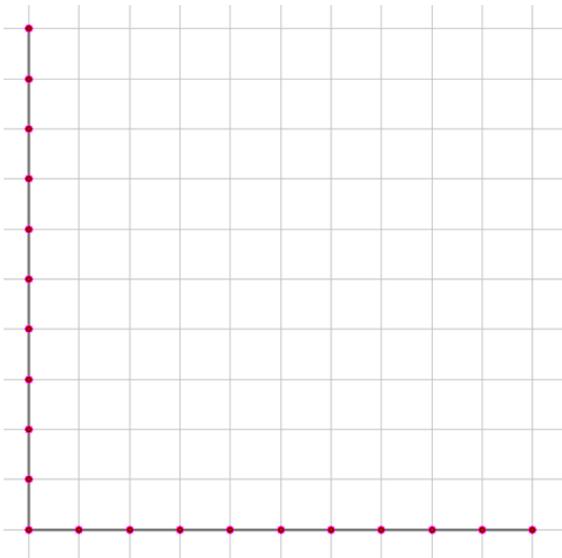


Christmas Maths and Art

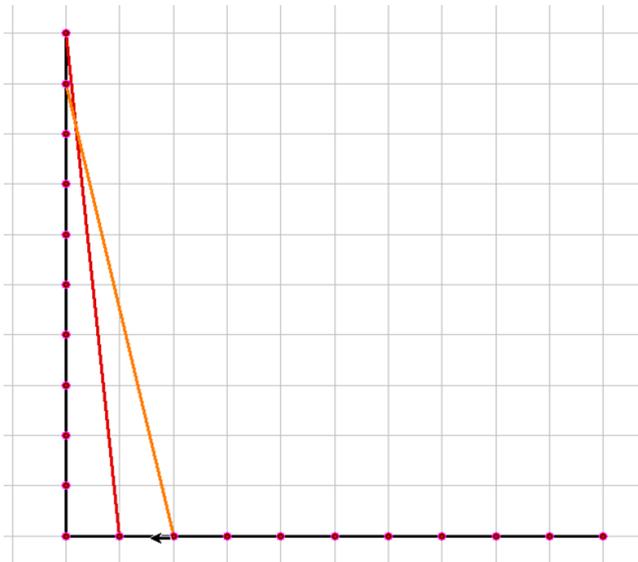


How to make a curve out of straight lines

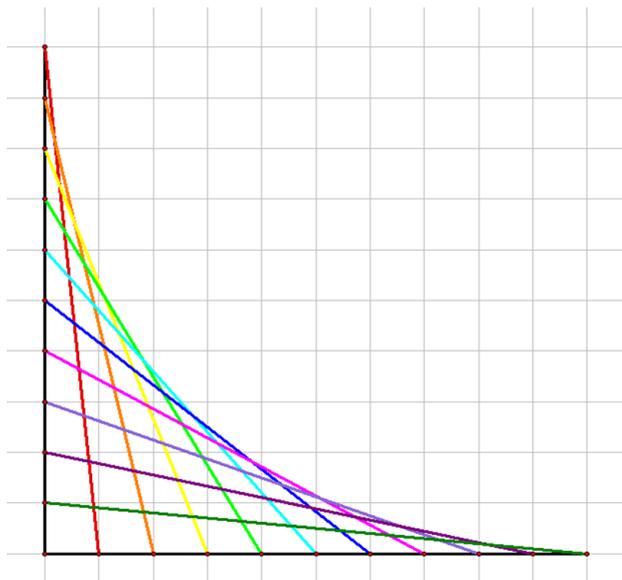
1. Using a ruler and pencil, draw a set of axes on a piece of paper, mark every 1cm in both directions as shown below:



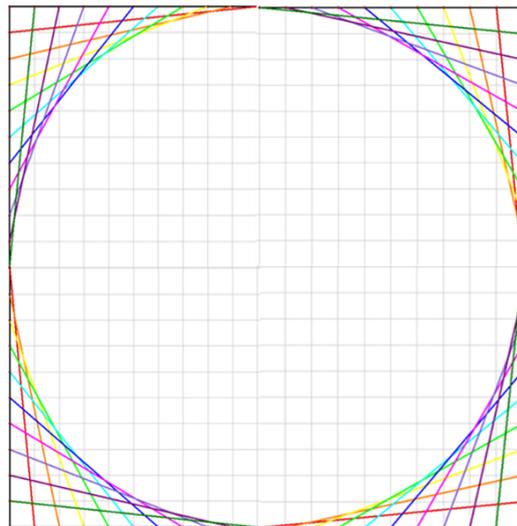
2. Connect the highest dot on the y-axis to the first dot on the x-axis. Then continue to join as shown:



3. Keep going until you have no more dots to join.



Can you extend the pattern grid to make a circle?



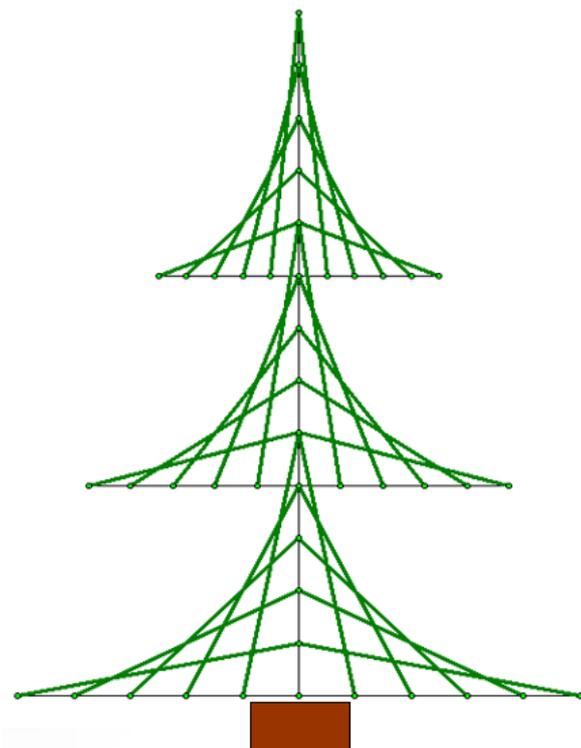
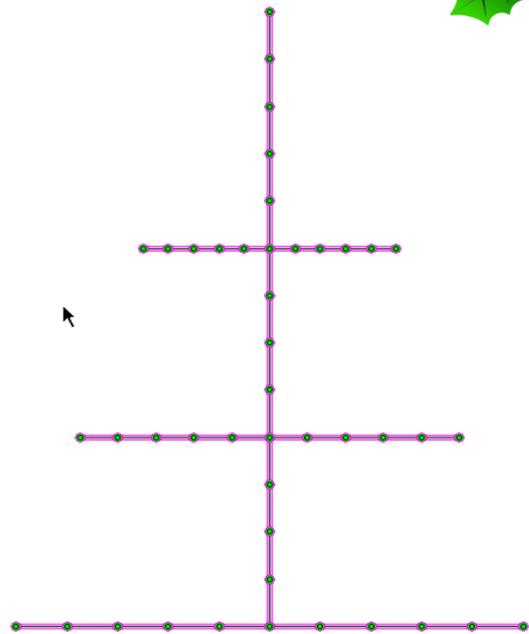


Christmas Maths and Art



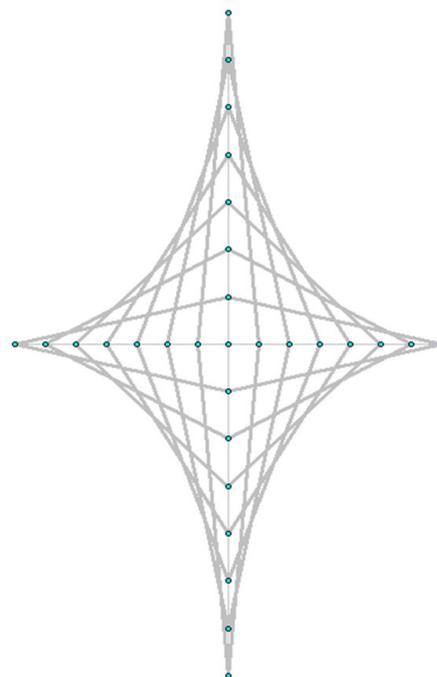
Design for a Christmas Tree

1. Measure and draw a 13cm vertical line, mark every 1cm.
2. 5cm from the top, draw a horizontal line 2.5cm either side of the vertical. Mark every 0.5cm.
3. 9cm from the top, draw a horizontal line 3.75cm either side of vertical. Mark every 0.75cm.
4. At the bottom of the vertical line, draw a horizontal line 5cm on both sides. Mark every 1cm.
5. Using a pencil and ruler, join the dots together as shown below.



Design for Christmas Star

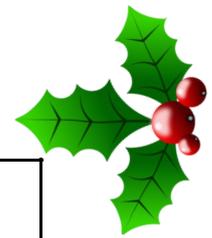
Can you explain how to construct this pattern?





12 Days of Christmas

For each day, find the correct expression to represent the number of presents received that day. Choose from the selection on the right to match up.



On the 1st day, my true love gave to me ... n presents.	n^2
On the 2nd day, my true love gave to me ... half as many as the 1st day.	$5 - n$
On the 3rd day, my true love gave to me ... double the number on the 1st day.	$2n + 12$ or $2(n + 6)$
On the 4th day, my true love gave to me ... two more than the number on the 1st day.	n
On the 5th day, my true love gave to me ... two less than the number on the 1st day.	$2n + 6$
On the 6th day, my true love gave to me ... two subtract the number on the 1st day.	$6n + 4$
On the 7th day, my true love gave to me ... six more than double the number on the 1st day.	$5 + \frac{n}{2}$
On the 8th day, my true love gave to me ... six more than the number on the 1st day, times two.	$n + 2$
On the 9th day, my true love gave to me ... the square of the number on the 1st day.	$2 - n$
On the 10th day, my true love gave to me ... three times the number on the 3rd day, plus four.	$\frac{n}{2}$
On the 11th day, my true love gave to me ... seven minus the number on the 4th day.	$n - 2$
On the 12th day, my true love gave to me ... five plus half of the number on the 1st day.	$2n$

If I received one present on day 1, how many presents were there in total?



Answers to Maths Challenge 7-



Featured in Issue 7 of High Flyers

There is a 3 x 3 grid of whole numbers with one number in each square.

Use the cards below to decide which number goes in which square.

11	7	2
9	18	12
15	5	10

No number is bigger than 18 or smaller than 2.

The difference between the smallest and largest number is 16.

The largest number is in the centre square.

No number is repeated.

The number in the middle square is double the number to the left of the middle square.

The numbers in the first column are all odd.

The sum of the numbers in the first column is 35.

The numbers in the top row are prime numbers.

The numbers in the bottom row are all multiples of 5.

The right column contains no odd numbers.

The sum of the numbers in the bottom row is 30.

The smallest number is in the top right square.

The middle number in the right column is the sum of the numbers in the top right square and the bottom right square.

The sum of the numbers in the second column is 30.

Key words:

A **prime number** is a number that is only divisible by itself and 1. It has two distinct factors.

'**The sum of**' means the total of the numbers when added.

'**The difference**' means the result we get when we subtract the smaller number from the larger number.

Helpful hint: the first 10 prime numbers: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29





Practicing mindfulness within our daily lives has seen to help minimize anxiety and increase our happiness, but what actually is mindfulness? Mindfulness can be a simple – but individualistic – technique that emphasises **paying attention to the present moment**. It has been seen to be very effective for children and young people as it promotes focus which has a positive impact on the development of skills such as patience and judgement.

Here are some good ways to begin practicing mindfulness – some of which you may already be doing

1. Turn on your “Spidey Senses”!

Spiderman uses all his senses when saving the world, why don't you give it a try? Focus on your sense of smell, sight, hearing, taste and touch when you feel stressed or upset as it can help you calm down. Practicing this can also encourage observation and curiosity.

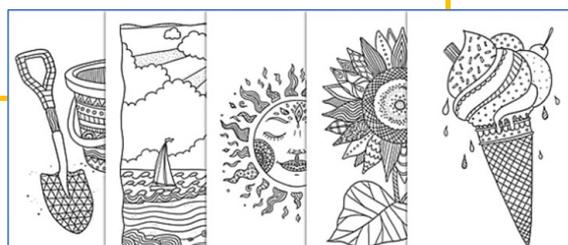


2. Make your own mindful jar

Fill up a clear jar almost to the top with water and add a big spoonful of glue and some glitter. Shake the jar and imagine the glitter is your thoughts and feelings. It will be difficult to see through the jar at first, but then the glitter will start to settle, which shows us that these emotions will pass, and our feelings will become clear soon. This is even more effective at the time of feeling emotional.

3. Do some mindful colouring

Get your pens/pencils out and search for 'mindfulness colouring' on the internet. Thousands of different images will be available for you to then print out and colour in. Focusing on the picture is a great way to de-stress and settle your emotions. As well as making yourself feel better, you'll have a great picture put onto you wall.





Acknowledgements



High Flyers was produced by Highsted Grammar School to inspire Key Stage 2 students in local primary schools to develop a passion for learning across the curriculum.



With thanks to Mrs H Rennie, Mrs R Ndlovu, Miss G Springhall, Miss S Appleton, Mrs L Tress, Mrs K Aubeeluck, Miss Hyde and Mrs A Reed for sharing their enthusiasm for their subjects.

