



High Flyers



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

Summer 2021 Highsted Grammar School Issue 6

On Your Mark, Get Set, GO!



Get ready for the Tokyo Olympics and Paralympics.



Discover the secret life of Parrots

Also inside this issue:

Author of the Term: Jess Butterworth



3D Printers and Pens!

Get a natural sugar boost.

Marvellous Maths!
Geometric Art patterns



Enter the Photography competition or Maths challenge to win prizes!!!





Contents



Welcome to our sixth issue of High Flyers. This term the Highsted Virtue we have been looking at is being focussed.

Which subject inspires you to unlock your potential?



Pages 3 Special Feature: Sport Tokyo Olympics and Paralympics 2021.

Page 4 Maths Geometric Art.

Page 5 Biology Classification.



● **Page 6 Food Technology** Sugar in our diet.

● **Page 7 Technology** 3D Printing.

● **Page 8, 9 Biology** Caring for Parrots.



Page 10 Challenge Test your knowledge on our Maths challenge.

Page 11 Photography Challenge Enter our summer competition.



Page 12 Recommended Reads Discover amazing adventures from Jess Butterworth.

Page 13 Challenge The answers to the Maths challenge from Issue 5.

Page 14 Competition winner and acknowledgments.





Tokyo Olympics & Paralympics 2021



If you are a fan of sport then this summer has a lot of excitement in store for you. The Tokyo Olympics and Paralympics are set to take place this July and August, but did you know that they should have already happened in 2020? They were delayed by a year because of the Covid 19 pandemic.

The Modern Olympic Games usually happens every 4 years and has done since 1896!

The Olympics is a festival of 33 different sports including 330 events over 19 days ranging from athletics, swimming, hockey, archery and equestrian sports. Athletes train for many years and compete to try to win gold, silver or bronze medals. The web address below will provide you with all the information you need to follow the Games.



Meet the mascots Miraitowa and Someity

<https://olympics.com/tokyo-2020/en/>

The Paralympic Games will feature 539 events across 22 different sports some of which are adapted versions of sports you would recognise such as wheelchair basketball but also some sports that you may never heard of such as Boccia. To find out what this is and the viewing schedule of the Paralympic Games you could visit the web address below.

<https://olympics.com/tokyo-2020/en/paralympics/schedule/>

Here are some inspiring athletes to look out for!

Sky Brown

Incredibly the skateboard star was born on July 12 2008 and will have just turned 13 when she competes for Team GB. Amazingly she already holds a World Championship medal from 2019 in Sao Paolo so she is one of the favourites to win a medal this summer.



Swimmer **McKenzie Coan**, who has osteogenesis imperfecta — a genetic disorder affecting the bones won four medals at the 2016 Paralympic Games in Rio.

The 24-year-old says that she loves that the Paralympics gives her and other Paralympic athletes the "chance to go out and show the entire world that we aren't limited or defined by our disabilities and that we're elite-level athletes who train day in and day out just like our Olympic counterparts."



Summer Olympic Games

R	L	W	L	L	G	N	I	X	O	B	R	P	Y	V	L	J
T	G	N	I	C	N	E	F	I	T	R	O	W	I	N	G	M
L	S	L	S	C	I	T	S	A	N	M	Y	G	T	S	X	L
L	P	G	L	R	C	Y	B	X	S	C	C	G	I	X	R	J
A	D	T	U	A	K	V	E	D	E	D	N	N	P	B	X	C
B	J	G	G	U	B	F	W	D	G	I	N	W	T	V	J	Z
T	C	D	D	D	H	E	P	Y	L	E	B	W	T	Z	Y	D
E	G	Y	Z	C	V	L	S	I	T	U	U	T	X	F	A	N
K	N	U	C	U	G	G	A	A	H	Y	T	Z	N	A	X	O
S	I	O	A	L	H	S	O	D	B	O	S	T	S	Q	G	T
A	M	G	R	W	I	L	R	L	S	L	C	K	M	H	G	N
B	M	N	U	A	L	N	X	O	F	H	D	K	O	W	D	I
C	I	I	G	O	X	V	G	O	C	W	U	V	E	M	D	M
W	W	V	B	O	D	F	T	C	M	C	J	C	T	Y	R	D
E	S	I	Y	R	L	U	C	M	D	U	D	E	F	P	T	A
E	Z	D	X	C	U	A	J	H	A	R	C	H	E	R	Y	B
J	T	W	A	F	O	O	T	B	A	L	L	X	B	V	Q	O

- | | | | |
|----------|-----------|------------|------------|
| Archery | Badminton | Baseball | Basketball |
| Boxing | Cycling | Diving | Fencing |
| Football | Golf | Gymnastics | Hockey |
| Judo | Rowing | Rugby | Sailing |
| Swimming | Tennis | | |



Dina Asher-Smith is a British sprinter. She is the fastest British woman in recorded history and became the first British woman to legally run under 11 seconds for the 100 metres in 2015. Five years ago Dina came fifth in the final of the Rio Olympics, but in 2019 she won silver in the 100m sprint and relay at the World Championships. This year she hopes to go one better and win the gold medal to become Olympic champion, something she has dreamed of doing since she was a young girl.



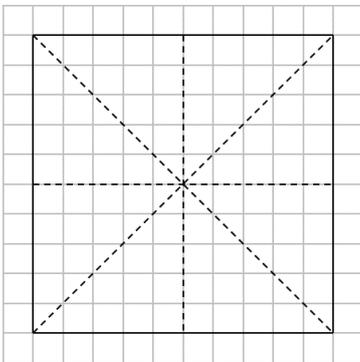


Geometric Art

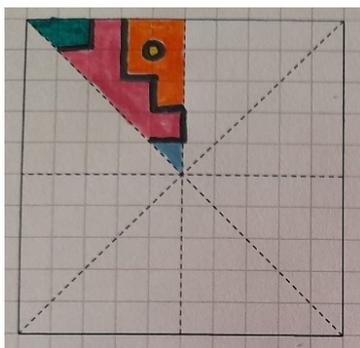
Many forms of art include mathematical shapes, repeating patterns or symmetry. Many cultures around the world use geometric art to decorate buildings or create decorations used for celebrations. One example of this is Rangoli patterns. These patterns are used by Sikh and Hindu families to decorate their homes on important occasions.

You can design symmetrical patterns using a ruler, pencil and squared paper.

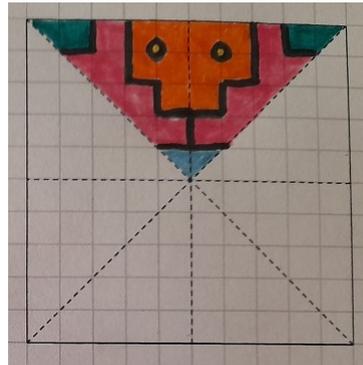
1. Construct a 10×10 grid. Split the grid into eight sections as shown here.



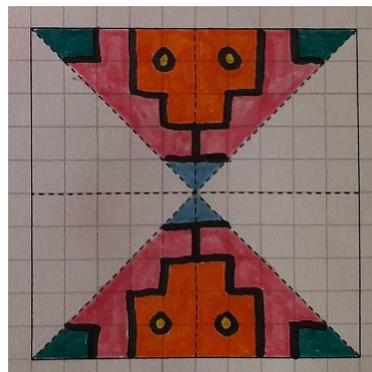
2. Start with the section in the top left. Using the squares as a guide, draw some lines. Be creative.



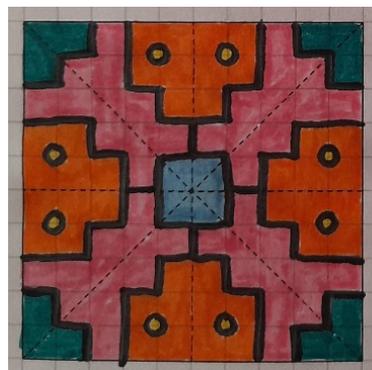
3. Reflect your lines in the vertical dotted line of the grid.



4. Reflect your lines in the horizontal dotted line of the grid.



5. Reflect your lines in the diagonal dotted lines of the grid.





Biology – Classification



Kingdom
Phylum
Class
Order
Family
Genus
Species

Every living organism is classified using the same system, initially designed by Carl Linnaeus in 1758. It was to group species of similar characteristics together and provide a uniform system for naming species. In this Issue we explore how animals are classified by their species.

Look at how the two very different birds, the African Grey and Hornbill are classified.



Psittacus erithacus

African Grey Parrot

- Kingdom:** **Animalia** Organism belongs to the Animal Kingdom.
- Phylum:** **Chordata** It is a vertebrate (contains a backbone).
- Class:** **Aves** It is a bird.
- Order:** **Psittaciformes** This order contains Parrots and related birds.
- Family:** **Psittacidae** They are known as 'true parrots'. Colourful flighted hook-billed birds
- Genus:** **Psittacus** Only two species of birds are classified with this genus.
- Species:** **Erithacus** Classified as such for their plumage and vocal differences.

Try it yourself!

Classify the Macaw.



Pretty Polly



Both African Grey parrots and Hornbills are omnivores, as they eat both seeds and insects.

Tockus deckeni

Von der Deckens Hornbills

- Kingdom:** **Animalia** Organism belongs to the Animal Kingdom.
- Phylum:** **Chordata** It is a vertebrate (contains a backbone).
- Class:** **Aves** It is a bird.
- Order:** **Bucerotiformes** This order contains hornbills and hoopoes.
- Family:** **Bucerotidae** Only birds found in Africa and Asia.
- Genus:** **Tockus** Small African birds with triangular shaped curved bills.
- Species:** **Deckeni** From East Africa.





Why do some people binge on sugar?

Eating too much sugar can lead to unhealthy eating patterns. Sugar can be a mood-booster as it prompts the body to release the 'happy hormone' serotonin into the blood stream.

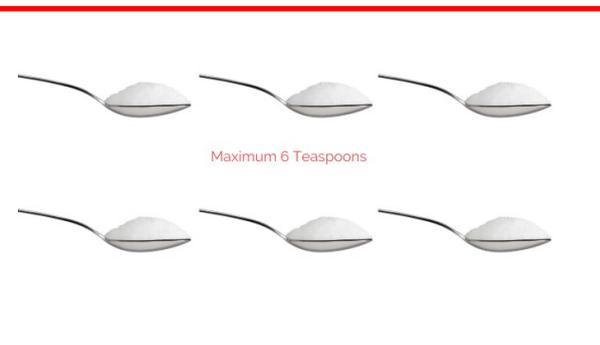


The immediate 'lift' we get from sugar is one of the reasons we turn to it at times of celebration or when we crave comfort and reward. However, the pleasing sugar flash triggers an increase in insulin as the body strives to bring blood glucose levels back to normal. This has the knock-on effect of causing a 'sugar crash' and makes many people crave for more sugar, which can lead to a cycle of binge-eating.

We don't know when enough is enough.

Our bodies are not able to tell when we have had enough of certain types of sugar. Researchers have found that food and drinks sweetened with the simple sugar fructose do not trigger the same sense of fullness as other foods with similar calories.

Children love to eat sweets and we also please them with special treats. But sugar can be extremely unhealthy as it may depress the immune system making the child more susceptible to falling ill. It causes spikes in blood sugar levels, which can create imbalances leading to chronic health problems like obesity, lack of concentration and dental problems, to mention a few.



The World Health Organisation recommends 6 teaspoons of sugar for children and 7 teaspoons for adults per day. A lot of sugar is however hidden in food and drink consumed everyday.

The substitute for sugar should never be artificial sweeteners, which come with their own harmful effects. They alter the arrangement of gut bacteria and promote metabolic conditions like diabetes, obesity and malfunction of the liver. It is always beneficial to check the ingredients in the food that we are fond of. Chewing gum and many children's toothpaste, may contain artificial sweeteners.

Try our refreshing smoothie recipe that uses natural fruit sugar as the summer approaches.

Groovy Green Smoothie Recipe

Ingredients:

Bananas

Strawberries

Apple juice

Spinach

1. Weigh 200g of banana and put it into the bowl.
2. Weigh 20g of strawberries and put them into the bowl.
3. Measure 200ml of apple juice and pour into a cup.
4. Add 1 1/2 cup of spinach.
5. Blend ingredients together.
6. Pour into a glass and enjoy!





What is 3D printing?

3D printing is a new technology which is being used in a lot of industries today. It is an additive manufacturing process of making three dimensional solid objects from a digital file.

3D printing is opposite of subtractive manufacturing which is cutting material away.

3D printing is used to make prototypes (models) and one off products. You are able to produce complex shapes, which uses less material compared to traditional manufacturing methods.

How does 3D printing work?

It starts with a 3D model design in special software for example TinkerCad which is a free online software good for beginners. There are many tutorial available for you to follow and develop your Computer Aided Design (CAD) skills. You can learn how to create simple shapes such as a Basic Ring to a pair of Minecraft Party Glasses.

The file is then exported to the 3D printer where layers of polymer beads are printed one on top of the other. Heat melts the polymer beads so that they form a solid structure and create the file designed.

Uses of 3D printing:

3D printing also known as Rapid Prototyping is used in several industries. Such as

- Fashion
- Education
- Medicine



Image credit: Cubify



3D pens

Using a 3D pen is like having your own miniature 3D printer for the fraction of the cost and without the need of creating files on 3D software. 3D pens have become very popular amongst designers and budding crafters.

3D pens are designed in the pen-like structure, but much bulkier. It uses a filament, mostly plastic filament that is melted and oozes from the tip of the 3D pen. You can easily draw in the air with the help of these 3D pens.



More to explore

Why not have a look online for some more details on 3D pens and check out some youtube videos of a 3D printer in action. (Check out on Youtube a 'MakerBot 3D Printing Timelapse' to see it in action)



Hello my name is Mrs Kerr I am a Psychology and RE teacher at Highsted. I have two parrots Peanut and Surya. Peanut is a Senegal Parrot, this breed originates in Senegal Africa. She is 10 years old and weighs about 150 grams. She has a grey head, green wings and a yellow and orange chest. She was named Peanut because, no surprises, she loves monkey nuts. Surya is an Eclectus Parrot and this breed originates from the small islands in the South Pacific Ocean. She is 3 years old and weighs about 450 grams, has a red head and wings but a purple chest. She is named Surya after the Hindu Goddess of the Sun.



Parrot Diet

My parrots are more than pets, they are my family, but they are hard animals to take care of properly. When people buy a bird they think all they will need is a small cage, water and seed bowls and maybe a couple of toys but this is the least of it! If your bird is going to be spending most of its life in the cage it must be the biggest size you can get, otherwise they can suffer from bad physical and mental health. You will need to clean this cage out daily and a couple times of the year give it a complete scrub down. Second you will need to check the diet of your bird, for example, Peanut could live her life on parrot seed however this would not be the healthiest, Surya on the other hand would become sick and not live up to her expected 60+ life span. So every morning they not only receive a small bowl of seed but they also receive something we call chop. This has either a grain or lentils alongside fresh fruit and vegetables, these need to be varied to keep them on a balanced diet. Sometimes their breakfast looks better than mine!

Parrot Entertainment

Next you will need toys, stands and special items such as sand covered stands to keep their beaks and claws trimmed as well as calcium blocks so they get enough calcium in their diet. They will need to be changed and checked regularly because parrots NEED to chew. This is something most parrot owners forget. For a parrot to have good mental health they must be allowed to chew, soft woods, cardboard and anything else they can get their beaks on!

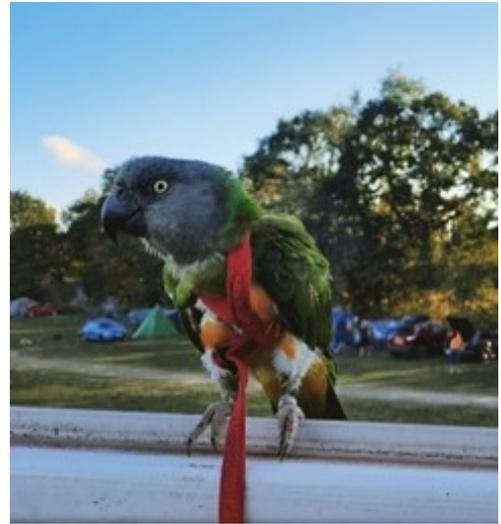




Biology: Caring for Parrots

Flying

The birds are not clipped (which means they do not have their flight feathers cut down) so both girls can fly. This means when we take them out for a walk we will need some way of making sure they do not fly off. The girls do not usually fly off but if they are spooked or scared they might so better safe than sorry we bought parrot harnesses. As you can see in the picture it looks like a lead but this is placed over the head around the wings and tightened enough so they can not slip out. The girls love coming out with us. Surya is younger and only likes going out for a little while before she gets grumpy and starts nipping. Peanut however loves a day out or even an overnight camping trip. Birds really enjoy social interaction and seeing new things, especially if they do live in a cage and not a big aviary with other birds.



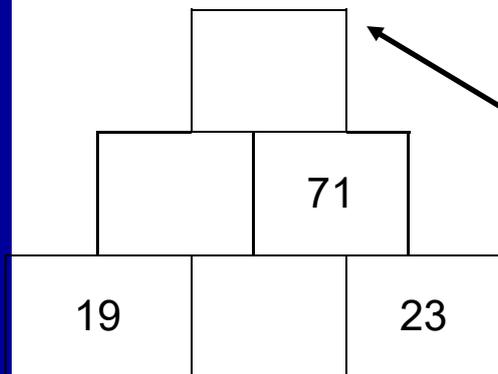
Parrot Talk

- You may think, but what happens when you take them out and they need to go to the toilet? Well as you probably already know parrots can talk by talk I mean mimic. They are extremely clever animals who have the intelligence of a toddler. So after training them they can now tell us when they need to toilet (by blowing a raspberry) when they are hungry (a small growl) when they are thirsty (a trickling water noise) as well as when they want to go out (the noise of a zipper). Parrots can be trained to do a lot of things and you can teach yourself how to understand them and their crazy language.

A couple things you need to know if you plan on looking after parrots is that: **they are noisy** (they love to sing as the sun comes up) **they are messy** (they throw food and water around, out of their cages and up the wall!) and most importantly **they can and will bite**. When they bite it can hurt a lot so if there are young children around a parrot is probably not the best. When looking after a parrot you have to be patient. In my experience parrots only bite for a reason and if you know your parrot well enough you can tell what they are thinking so you can remove your hand before they even bite it but this does take practice and the scars on my hand can prove it.

Overall I believe parrots are some of the most rewarding animals to take care of, they have their own personalities, they are clever and they make amazing friends but taking a parrot in should not be a quick decision. You must spend time thinking about the life you can give to this animal because if it is not cared for properly not only will the animal suffer but you will also experience stress. An unhappy parrot will make more noise and more mess than a happy one.





Reach to the Top

Each block is the sum of the two blocks it sits on.
Work out the missing values.

What am I?

- I have 4 sides.
- I have two pairs of equal sides.
- I have one pair of equal angles.
- I contain a reflex angle.

Crack the Code— Answer the questions below. Match your answer up with a letter to spell out two words.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

- What is $3 \times 5 - 7$?
- Two thousand divided by two thousand.
- The number of minutes in quarter of an hour, plus 1.
- Add one to the number of days in July, then halve your answer.
- Five squared.
- Area of a rectangle with length 2, width 4.
- The number of days in two weeks, plus 1.
- The number of hours in half a day.
- The number of sides in a nonagon.
- The number of sides in a quadrilateral.
- The number of right angles in a right-angled triangle.
- A quarter of 100.

★	Start with 10	- 6	X 10	÷ 2	$\frac{3}{4}$ of this	Double this	$\frac{1}{10}$ of this	X 7	+8	= ?
★★	Start with 24	X 3	÷ 2	$\frac{5}{6}$ of this	$\frac{1}{10}$ of this	Square it	X 4	+ 4	÷ 5	= ?
★★★	Start with 16	X 4	$\frac{3}{4}$ of this	+ 2	10% of this	Double this	Square it	$\frac{3}{4}$ of this	÷ 15	= ?

Calculation Challenge

Starting with the number in the first box, perform the operations in order, to get the final answer. Which row can you complete in two minutes?

Send your answers to:

ks3@highsted.kent.sch.uk:

Place **Maths Challenge** in the subject box: Please include; your name, age and school.

Competition closes: 10 September 2021



Photography



Photography Competition



Get involved today! This term's photography theme is Fun in the Sun. You could take an interesting photo of a beach or a park or something that captures summer for you.



Send your entry to:

ks3@highsted.kent.sch.uk

by 10 September 2021

Place in the subject box: **Fun in the Sun.**

Include:

Your name

Your age

Your primary school



The winning photo will be displayed in Issue 7 of High Flyers.





Recommended Reads

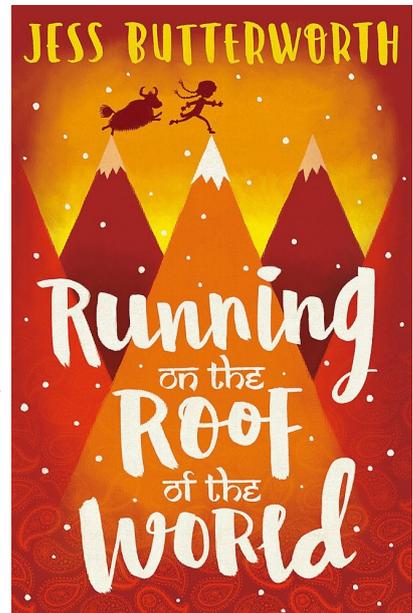


An epic story of survival and adventure!

Tash is used to living under strict rules in her village in Tibet. However after witnessing a shocking incident that led to her parents being arrested by the Chinese police, she and her friend Sam must undertake an epic and dangerous journey across the Himalayas to seek support from the Dalai Lama who is exiled in India. This is an excellent story, full of dramatic scenery, courage and friendship. It deals with the difficult political background simply, but impressing on the reader the importance of the situation. It manages this without being depressing and is filled with hope.

The author manages to make the relationship between the children and their yaks a highlight of the story and captures their individual characters perfectly.

The book also features beautiful illustrations based on traditional Tibetan prints.



“There are two words that are banned in Tibet. Two words that can get you locked in prison without a second thought. I watch the soldiers tramping away and call the words after them. Dalai Lama.”



Author of the Term: Jess Butterworth

Jess spent her childhood between the UK and India, and grew up hearing stories about the Himalayas from her Grandmother. As soon as she was old enough, she went on her own adventures in search of story ideas. After her Undergraduate Degree, Jess studied a creative writing Masters at Bath Spa University and now lives between the

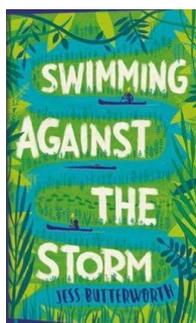
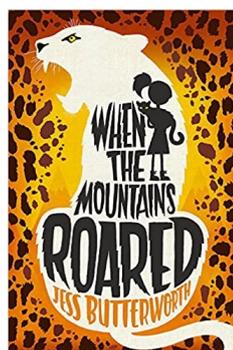
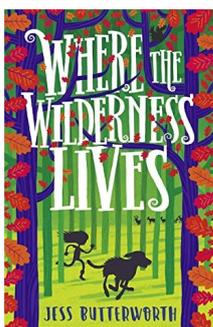
USA and the UK. She has written several other books that you might also enjoy.

If you like the sound of this book you should read [The Silver Sword](#) by Ian Serraillier.



It is a classic story of children crossing Europe in the aftermath of World War Two in search of their scattered family.

Once read, never forgotten.





Answers to Challenge 5

Featured in Issue 5 of High Flyers

Morse Code

A	B	C	D	E	F	G	H	I	J	K	L	M
. -	- ...	- . -	- -	- - - - -	- . -	. - ..	- -
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
- .	- - -	. - . -	- - . -	. - -	-	.. -	... -	. - -	- . - -	- . - -	- - ..

The words below have been coded using Morse Code. Use the key above to find out what they are.

1. . - - . - - . -

2. - . - - - - - -

3. - . - - - - . -

1. **Alan Turing (the code was missing the final letter g which would be - - .)**
2. **Samuel Morse**
3. **Encryption key**

Finding Prime Numbers

Find all the prime numbers less than 100 using the algorithm known as 'Sieve of Eratosthenes'.

	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Instructions for 'Sieve of Eratosthenes'

Shade all the multiples of 2, except 2.
 Shade all the multiples of 3, except 3.
 Shade all the multiples of 5, except 5.
 Do the same for multiples of 7, 11, 13, 17, 19.

The numbers you are left with will be prime numbers.

Prime Numbers less than 100:

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97

Extra Challenge Question: Why did we miss out multiples of 4, 6, 8, 9, 10, 12, 14, 15, 16, 18 in this method?

4, 6, 8, 10, 12, 14, 16 and 18 are multiples of 2 already. 9 and 15 are multiples of 3 already.





Competition Winner!



Congratulations to Oliver, aged 9 from Bapchild and Tonge C of E School who sent in this fantastic entry. We loved the different textures of green in this shot. Congratulations Oliver!



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 B Tirimisiu, Mrs R Ndlovu, Miss G Springhall, Miss S Appleton, Mrs J Hoyte, and Mrs C Day for sharing their enthusiasm for their subjects.

