

Edition 74 – 1<sup>st</sup> April 2021

## End of Term 4

This term has been one of hope and optimism, very fitting with the time of year, as we finish for Easter!

It has been such a delight to welcome all students back to face to face learning, and well done to our whole school community as lessons are such a pleasure to see great learning happening again.

Last week saw the launch of this year's enrichment programme and it has been a huge success with 254 students staying for an enrichment session in the first week. The field was full of students doing sport along with lots of other activities (see later photos)

When you receive this we will have concluded our second virtual celebration assembly which I hope all the children (and staff) have enjoyed. An extra thank you to all the brave staff who took part in our 'masked singer' slot and Mr Mineur and Mr Jones for all the tech involved!

While we are pleased that some lockdown restrictions are now lifting you will want to ensure over the break that your children are still following the national rules of only meeting friends outside and only up to six people or two households.

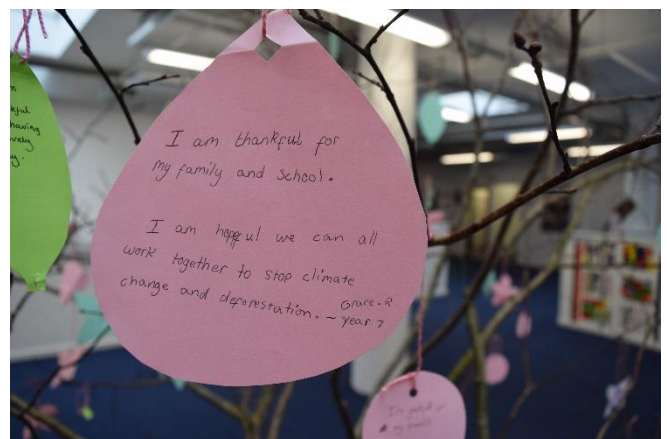
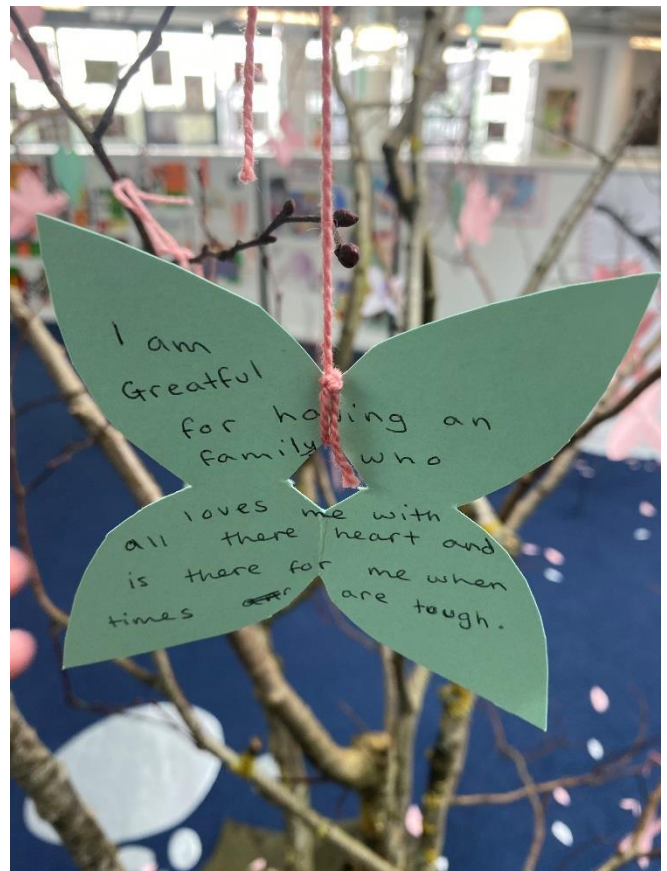
I have been incredibly impressed by the way students have adapted to their twice weekly home tests, please do keep doing these.

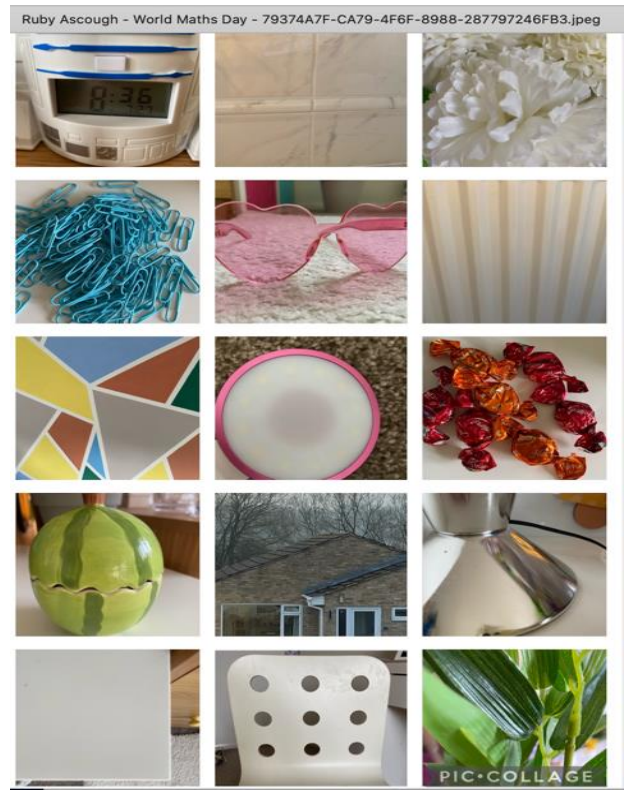
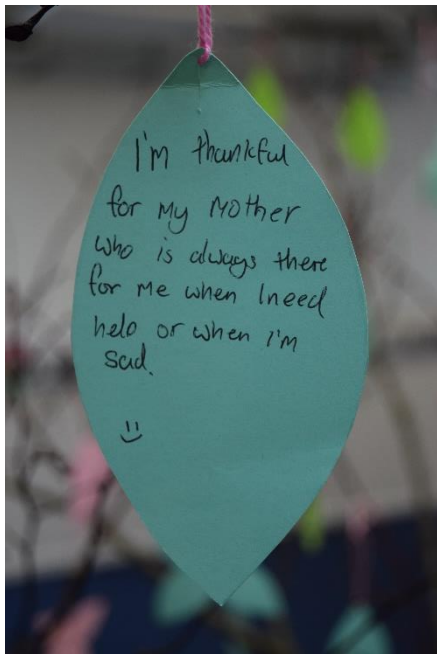
Enjoy the Easter break and I hope you are able to share some quality family time together (and hopefully the sun will shine too!)

Mrs Moore – Headteacher

## Sarum Tree of Hope and Gratitude

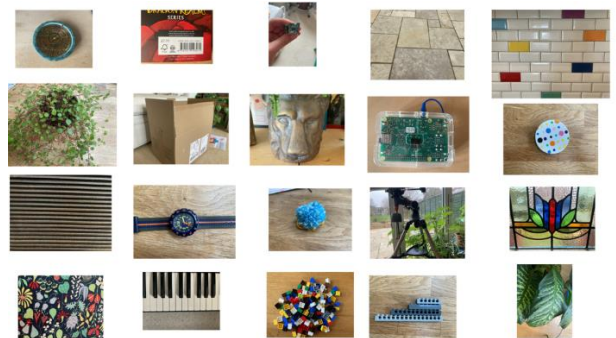
Thank you to Mrs Millidge and Mr Gulliver who created our lovely blossom tree of hope and gratitude. There are many lovely messages on the petals which represent new life and a hopeful future.





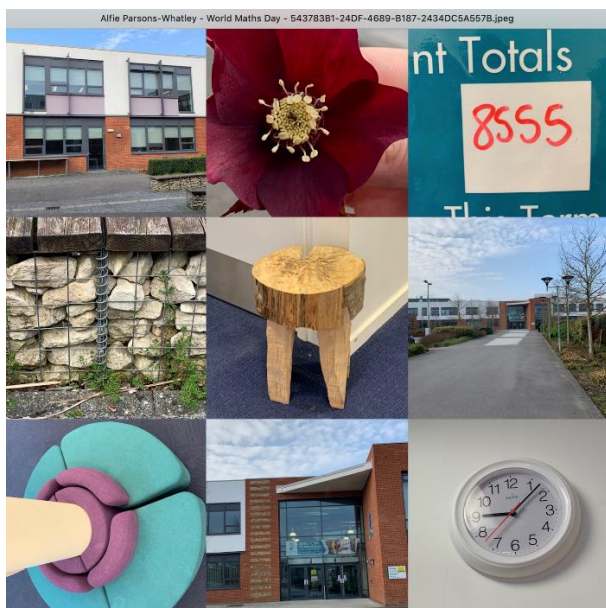
## World Maths Day

To celebrate World Maths Day this year we set a scavenger hunt to help students appreciate the Maths that is all around them all of time. It was a great opportunity for pupils to understand that Maths is more than just methods in the classroom. Patterns, geometrical architecture, hidden shapes and symmetry surround us every day and the students were very creative in their submissions. We had a great selection of photos from around the Academy and from those students working from home. Well done to Ruby Ascough, Jacamo De Bens and Alfie Parsons-Whatley for these creative displays.



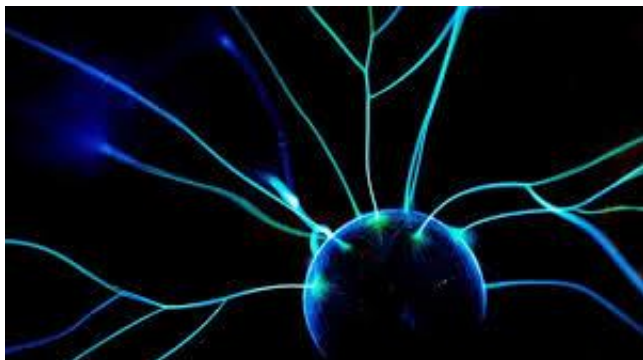
## British Science Week

The theme for British Science Week 2021 was 'Innovation'. At Sarum Academy we celebrated all things innovative through daily tasks as well as a Rube Goldberg machine task completed in tutor groups. The daily tasks were posted on the school Facebook page and included; rockets, aeroplane design, windmill creation and robots. The in-school innovation was a pleasure to see, with all the tutor groups creating their own Rube Goldberg machines. The students used these machines to drop objects in bins, move glue sticks from one side of the room to the other and so much more. In addition to this, Mr Parr delivered an assembly on innovation delving into 21<sup>st</sup> century innovators in science. He inspired the students with information on COVID-19 vaccine creation, Jewel Burks' engineering app and the scientists who changed





the use of lenses to improve our understanding of the world around us. The joy of seeing the students so involved and passionate about science is what British Science Week is all about, it gives us, as teachers, an opportunity to share a love for the subject with students outside of their lessons.



## Duke of Edinburgh

For most of our students, COVID-19 has caused unprecedented challenges. DofE students have not been slowed down by lockdown however and have returned to school having undertaken a huge range of activities to support their sections. From Astronomy, to model building to cooking, students have demonstrated their capacity for learning new things - even under tricky circumstances! At the end of next term, students in Year 8 will be able to sign up to participate in the Duke of Edinburgh's award from next year – please look out for more information that will be mailed through to all Year 8 parents and students next term.

Our expedition schedule has taken a knock, due to lockdown, but we are still keen to run them this year. For Gold participants, we have made the decision to bump both training and expedition to next year. For Bronzes, our prospective plan is as follows;

- Training Day 1 - May 22nd 8:30 am - 5pm  
On-site training here at Sarum
- Training Day 2 - Friday 11th June  
during school day on Cranbourne Chase
- Bronze Assessed – Saturday 12<sup>th</sup> to Sunday 13<sup>th</sup> June 2021, North Wessex Downs

We are keen for students to camp on the Saturday of the assessed expedition, but all will be COVID rule dependent, if not, we will simply bring students home at the end of each day and then take them out again the following day, having slept at home.

We will let you know more information as soon as plans have been confirmed!

# BIG BANG

## ORIGIN OF ELEMENTS

A relatively small number of elements make up our entire existence. Our bodies, Earth, the sun and everything we know in the universe is composed of a pool of a little over one hundred different atoms. That is it. Most of us are familiar with Mendeleev's periodic table of elements, which ingeniously maps the elements by their properties. Many of us are also aware that the atoms of these elements make up all the material in the universe.

## AGE OF THE UNIVERSE

No one really knows the true age of the universe we think it was about 13-14 billion years ago. If we had a movie of the expanding universe and ran the film backward, what would we see? The galaxies, instead of moving apart, would move together in our movie - getting closer and closer all the time. Eventually, we would find that all the matter we can see today was once concentrated in an infinitesimally small volume. Astronomers identify this time with the beginning of the universe.

We can make a reasonable estimate of the time since the universal expansion began.

### FIRST METHOD

$$\text{Formula: } \frac{D + \Delta P}{D_0} = \frac{\Delta P}{P_0} \left( \frac{P - \Delta P}{P} \right) + \frac{D}{D_0}$$

here, D is the initial concentration of the radioactive daughter element (constant all time), P is the amount of the parent nucleus that has decayed in time t  
the left side is the ratio of the current concentration of the radioactive daughter to the non-radioactive daughter so both are measurable right now  
the slope of this line depends only on the time that's elapsed, so you get an age + you also calibrate the method, because the degree to which the points do not fall on a line tells you about other effects that might have entered

### SECOND METHOD

uses our understanding of stellar evolution  
stars spend most of their time fusing hydrogen into helium on the 'main sequence', then a much shorter time going through the rest of their evolution until they become a stellar remnant (i.e. a dwarf, neutron star or black hole)  
the time they spend on the main sequence depends almost entirely on their initial MASS, we can look at a large, isolated group of stars that we think all formed at the same time.



4 of 4

