

2022-23 Aims

- To promote the teaching of science within and beyond the guidelines of the national curriculum.
- To monitor the use of scientific vocabulary and progression across year groups.
- To assess children's understanding of science and scientific enquiry.



Investment in the **playground** and **Forest School** have served to boost biodiversity within the school grounds. In Forest School sessions, the children planted vegetable seedlings in the large planters in the playground and have all enjoyed looking after the plants, observing their growth and have spotted some green tomatoes. Year 1 moved into the non-statutory aspects of the national curriculum by searching for seasonal plants and animals in the new bark and log areas, finding a huge range including woodlice, centipedes and beetles and were able to compare the fruit trees in the playground planters with the range of trees that run from the sensory garden to the far end of the playground.



Science Review 2022-23

Autumn

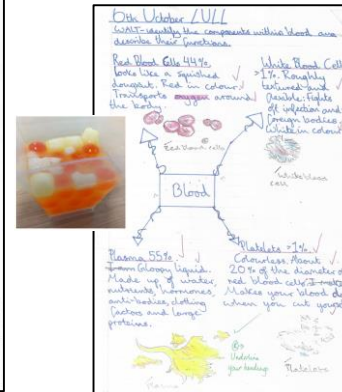
Year 5 made parachutes and investigated air resistance.



10/11/22
WALT: Investigate air resistance

PARACHUTE INVESTIGATION	Enquiry question/s	Which material makes the most effective parachute?
Varying on last time: Design string, string length, string weight	Variable's changed: Material of the canopy	Overall result: 10
Equipment used: Plastic bag, Paper, Kitchen Roll		
Overall recommendations	The length of the string should be roughly equal. The size of the canopy should be equal.	
Scientific rationale	We are looking for the material which catches air particles the best, causing the greatest air resistance.	
What else could we have investigated?	Possible improvements to our investigation: More exact measurements for string and canopy size.	
	The size, shape of the canopy, the length of string.	

Year 6 made models of blood.



Spring



In the **Year 4 Chocolate Workshop**, combining science, geography and history, children learned where chocolate comes from, its history and how it is made.

Year 1 trip to Brooklands Museum

In the Aircraft Factory, the children learned about the materials used (by virtue of their properties) to make aeroplanes over the years.



In the Loopy Gliders workshop, the children learned about the science of flight.

Summer

Year 4 trip to the London Wetlands Centre.

The children had a great day learning to identify pond life and spotting a range of bird species. Later, remembering the trip in a pupil voice session, they said they had learned about otters and that "they are very vicious. They bite you." They also enjoyed pond dipping, saying they had caught "two newts".



Year 2 trip to Wisley.

The children enjoyed learning about plant adaptations to climate, life cycles and taking cuttings which they were allowed to keep and grow at home.



Reception trip to Bockett's Farm.

The children met, fed and learned about farm animals as well as enjoying the pig racing!



A mobile **planetarium** visited the school to support the space topic in **Reception**, the moon topic in **Year 1** and the national curriculum space topic in **Year 5**.



Scientific vocabulary and progression across year groups.

Sofia, **Year 1:** Day Length... "we have been learning how days get longer in the summer and shorter in the winter."

Year 5:
Day length and time zones.

25/1/23
W.A.L.T - Investigate night and day in different parts of the day.

Complete the following table. Pick a different country to the UK for midday. Using the Time Zones Country Map calculate and find countries to fit in the other categories.

Time	Sunrise (on average around 6am)	Midday (12pm)	Sunset (on average around 7pm)	Night (12am)
Country	Paraguay	Kenya	Japan	Alaska

Now write a conclusion explaining why night and day take place at different times in different parts on Earth.

Due to the Earth's tilt (23.5°) there is less sunlight in winter than in summer. The Earth rotates fully once every 24 hours. As one country enters into sunlight, another enters into darkness. There are 24 times zones (longitude). This is why some countries are so large they require more than one time zone. For example, America has 4 time zones.

The colour and smell of the flower attracts the insects.

The insect takes on the flower to collect nectar.

When collecting nectar the insect rubs against the flower and has this rub pollen onto the insect.

Year 3 book explaining **pollination** with accurate use of vocabulary (*colour, smell, insect, nectar, pollen*). The book also shows that during the course of the activity the misspelling of nectar has been noticed and explained. Alexa then shows correct spelling in the notes under her final drawing.

After collecting the nectar.

Scientific Investigation and topic specific vocabulary:

Year 2: Investigating the fire triangle.
"We had three candles and we looked at three things..." We found out "that candles can go down in different ways" and that "fire needs air".

Candle Experiment
19.1.23 W.A.L.T: understand what a fire needs to burn

What we did: Miss Hornblow put a glass over the flame.

What happened: She put a glass over a flame and at first the flame was still there and then it slowly went out.

What we did: Miss Hornblow put a candle up and she put a bit of water.

What happened: The candle went out since air went out.

What we did: We put a candle up.

What happened: We left it for a long time and it went out on its own because it ran out of fuel.

I found out that a fire needs these things to burn.

18th October 2022
W.A.L.T: Describe the effect of exercise on pulse rate.

Time	Pulse rate 1	Pulse rate 2	Pulse rate 3	Mean
1	20	23	19	20.67
2	30	29	34	31
3	38	35	36	36.33
4	36	35	33	34.67
5	47	40	42	43
6	32	28	32	30.67
7	29	33	25	29
8				116

13x4 = 52
Aim: How exercise affects our pulse rate.

Prediction: I predict that when I exercise, our pulse rate will rise.

Conclusion: When we exercised, we discovered that our pulse rate increased. When we stopped exercising, we discovered that our pulse rate decreased. This is because when we exercise, everything in your body needs oxygen and nutrients. When you exercise you need more of it so the blood travels faster.

SP subscripts

Tuesday 4th of October 2022
W.A.L.T: identify the life cycle of a plant.

Seeds hold 0 tiny plants with leaves, stem and root parts and also a small embryo.

Plants need water, light and air to grow.

Great work.

What is fertilisation? A fertilisation is the process where the pollen gets inside the ovary and forms a seed. When the seed is ready, it will pop out.

Year 5 book showing **pollination**, fertilisation and seed production referenced in the life cycle of a plant.

Year 6 pupil voice discussions included confident and accurate use of scientific vocabulary... *habitats, mammals, amphibians, light, evolution, the heart, reflection and refraction*. The children supported each other in discussion and spoke with enthusiasm.

Year 6: Investigating the effect of exercise on pulse rate.

- Aims for next year**
- To promote, develop and monitor children's understanding of scientific thinking.
 - To promote and monitor inclusion.
 - To continue to monitor and develop the teaching of science through book looks, learning walks and pupil voice.