

# Farnborough partnership

The Ogden Trust

# Science news

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St Mark's C.E. Primary School



Living & Learning Together

## Houston we have a problem!

By two Year 5 Science Ambassadors at St Mark's C.E. Primary School

This project was about our wonderful solar system and the planets in it. The most important part was that we were trying to save Sandra Bullet from the inky darkness of space. We learned about the temperatures, sizes and atmospheres of the planets. We found what their names mean and if they were named after someone. For English, we wrote about the planets in a fact file. The rocky planets, gas giants and ice giants. We also wrote about a star, called the sun. In Art we drew the planets of our wonderful Solar System.



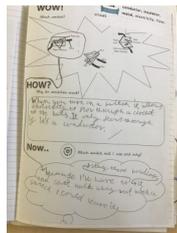
We did an exciting lesson with basketballs and a torch. We held the torch and turned the ball to show day and night. Then we moved around as if it orbiting the sun and we used it to explain the seasons and months. We looked at pictures and videos to see the whole solar system.



## WOW HOW NOW Energy

By Izzy and Jordyn year 4 St Peter's C of E Junior school

Switch 1 we made needed a paperclip and two split pins and a piece of card. You had to connect the paperclip with the split pin. Switch 2 we used two split pins touching and switch 3 use tin foil. They all worked because metal is a conductor. We recorded it in our WOW HOW NOW page—the WOW is what we did, the HOW is the science behind it—they fact that metal is a conductor and our NOW was deciding which switch to use for our DT project which was making a torch for a great person.



## Our work on the Circulatory System

By Olivia Year 6 St Patricks catholic primary school



So far in year 6 I have learnt a lot about the circulatory system. We did an exciting investigation to find out how the amount of oxygen in the air could affect the length of time that a candle flame burns. We did this is to help us understand how the body needs oxygen in order for all of our organs to work. We then looked at what blood actually is.

### THE HEART

What do you need to have a healthy heart?  
Need to exercise (at least 30 minutes a day)  
Not smoking (can damage the heart)  
Avoid soft drinks  
Eat fruit and vegetables each day



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### Are all circulatory systems the same?

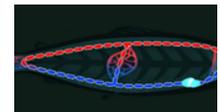
### MAMMALS

A mammal's circulatory system is made up of 2 circuits. The heart pumps oxygen the body and back again. Blood pumped back to the heart goes to the heart to collect oxygen. This system is perfect for mammals with a busy lifestyle.



### FISH

Fish have a circulatory system with just 1 circuit. The heart pumps oxygen to where there is deoxygenated blood. Then their blood flows around the body and back to the heart. This is because fish don't need as much oxygen.



### INSECTS

All insects have an open circulatory system. Fluid is not inside blood vessels but pumped into a cavity. This is inside their bodies where it circulates around their organs. The fluid gives nutrients for energy and growth. Insects do not breathe oxygen like mammals. Instead, they get oxygen from tiny openings (spiracles).



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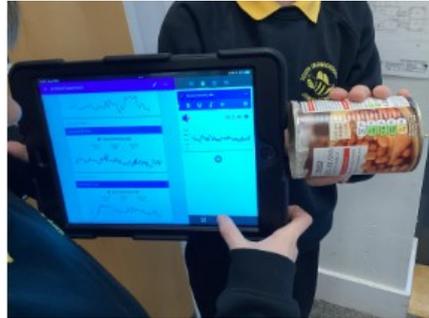
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## Calling all scientists

By Dolice, Isla, Leah, Kara, Tabitha, Ivy, Bluebell, Summer and Missy Year 5 South Farnborough Junior school



In our science lesson we were investigating whether the different strings allow sound to travel through them with different volumes.

We used:

- Tins x2
- White twine
- Twine
- Wool
- iPad - Science Journal app.

## Method:

- There was a hole in the bottom of the tin and we pulled the string through the tin and knotted it.
- Then we had a person stand at each side of the telephone. One person held it to their ear and one held the tin to their mouth. The person with the telephone to their mouth spoke into the tin with a repeatable sound.
- Then we used an app to work out how loud it was in decibels.

Type of string	1	2	3	Average
Twine	40	51	45	45
White twine	35	39	38	37
Wool	43	38	43	41

• In a table we filled in our results:

In September we launched our partnership of schools. The Ogden Trust aims to increase the uptake of physics post-16 by supporting physics education and engagement for all young people (4-18), particularly those in under-represented groups. The Trust supports schools, teachers, projects and programmes that are committed to enhancing physics teaching and learning.

St Peter's hosted training for the teachers for Earth in Space. , we are proud to lead local schools in collaborative events - bringing physics to life with our vision of 'life in its fullness' within our community.



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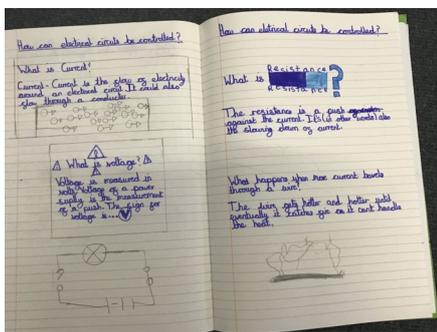
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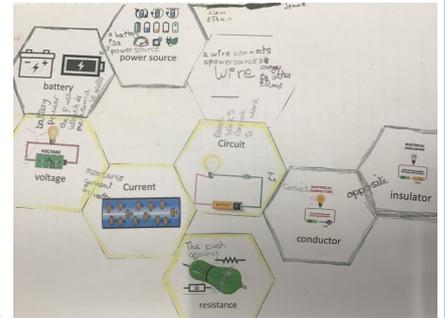
## Power to us!

By Max and Amelia G and Siddhi Year 6 St Peter's C of E junior school

In science, we do a hexagon grid to show what we understand and how the scientific elements link together.



We put pictures in the hexagons, and write what links them together in the gap as that shows us how they join. This picture is an example of a hexagon grid that we did.



All hexagon grids are based on a different topic and some words link to other topics.

We also do a double page spread at the end of every science term to explain what we've learnt during this topic. This is a double page spread from the end of our electrical topic. We do double page spreads for 3 reasons, 1; to show what we understand. 2; We also use them to evaluate our learning + work that we've done throughout this topic 3; So we can use year 6 science terms in our work. We really enjoy doing all the fun projects that we do in science.



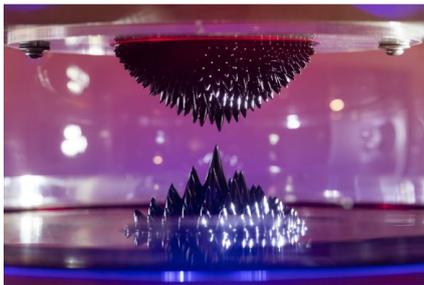
## Wonder Lab

By Ollie and Joseph Year 5 St Bernadette's catholic primary school

This is our article about our school trip to the London Science Museum. When we got to school we got on a coach to London. It took ages so we got there around 11 o'clock. We watched the Wonder Lab and the alien show.



Then we went to the Wonder Lab where you could wander around with your group and suggest areas to go. There was a spinning planetarium with the Sun, Earth, Moon and all the planets.



Then it was time to go home, we got back at 4pm.

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By Marcus S and Marcus L Salesian College

## Quantum battery development

Energy storage and electricity is in more demand now than ever before and our electricity demands continue to grow, and although there are varied methods of storing energy, will this be enough or will we need help from new breakthroughs in different storage methods like quantum battery storage.

### **What Is a Quantum Battery?**

Simply put a quantum battery, uses quantum mechanic principles to require less charging time, the bigger they get. Right now, the quantum batteries exist at an incredibly small scale, so they won't be powering our vehicles any time soon.

### **How do they work?**

Electrons in an atom exist in discrete energy levels, when light with a specific energy level is shot at the atom the electron, will be excited and jump to the next energy level. However, this is very unstable and the electron wants to jump down and release light. If we can keep the electron in the higher energy level, then we have stored energy and then we can release it when we want to use the energy.

### **What are the challenges?**

Keeping this electron from discharging is a highly debated field, with there being several theories. One such theory is utilizing electromagnetic fields to change the quantum properties of electrons. However, this would mean that you could absorb enormous amounts of energy, much more than is necessary. A new breakthrough with researchers in Korea has found that this cannot happen in micromasers, which reduce the risks of overcharging. The last challenge that a quantum battery still faces is how best to extract the energy stored, as the energy is released as light, which may not be of much use, but maybe this could be used with solar panel technologies. The University of Adelaide have been researching into quantum batteries that are capable of harvesting and storing light energy which would reduce significant costs on solar technologies. The new breakthroughs in concepts of a compact and powerful energy storage battery are very interesting and have opened up the possibilities of better energy storing methods.

## Upcoming events

Salesian college are hosting a star gazing event for year 5 on Thursday 26th January from 5.30-7pm. Invites to the event will be sent directly to your schools.

British Science week events 10th –19th March this years theme is connections. There will be lots of events across the partnership schools. If you work in a scientific field and you think you could help please email [f.burgess@st-peters-jun.hants.sch.uk](mailto:f.burgess@st-peters-jun.hants.sch.uk)



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