The Ogden Trust | School Partnership

Contents

The **Farnborough Partnership** is part of the Ogden Trust's national network, bringing together local schools to promote **physics** education and enrichment. As we come to the end of another fantastic year, we would like to extend a heartfelt thank you to all the teachers across the Farnborough Partnership who have given their time, energy and enthusiasm. Whether you have hosted an event, shared resources, inspired students, or simply taken part in a conversation, your commitment has made a real difference.

These schools are proud to be a part of the Farnborough Partnership:

Talavera Junior School

South Farnborough Junior School

Tower Hill Primary School

St Bernadette's Catholic Primary School

St Peter's C.E. Junior School

South Farnborough Infant School

North Farnborough Infant School

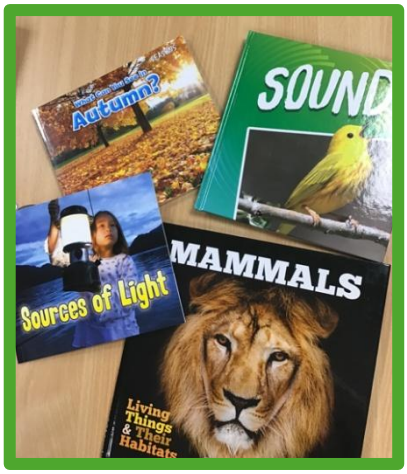
St Mark's C.E. Primary School

Farnborough Hill

Salesian College

The Wavell School

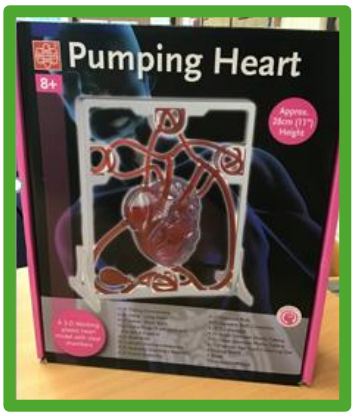
Our New Phiz Lab

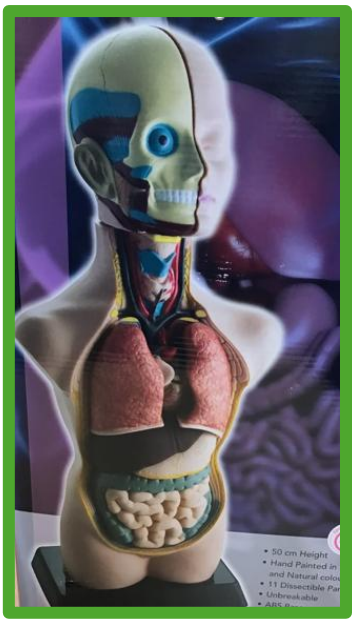


The Ogden Trust recognises the positive impact of a dedicated science teaching space within a primary school on pupils, staff and the wider community. Any Ogden partnership with primary schools has the opportunity to apply for funding to open a **Phiz Lab**, creating an environment to support teachers and engage pupils. There are now more than 50 Phiz Labs across England.

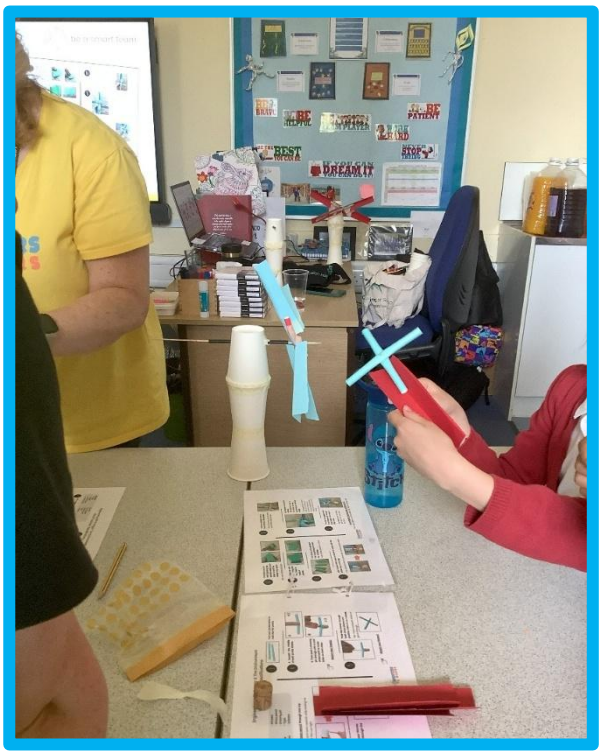
The Ogden Trust Farnborough Partnership will be joining the Phiz Lab family in September 2025 with a **wonderful new science space** at St Bernadette's Catholic Primary School in Farnborough. The new Phiz Lab will allow children to experience science in an awe-inspiring way, raising aspirations in STEM subjects and making it accessible to all learners.

A wonderful range of **new equipment** has already been purchased to support children's investigations which they will carry out in a room focused on science. There will also be a large selection of science-based books and a fabulous 'space' themed reading corner where budding scientists can relax whilst reading about their favourite science topics.

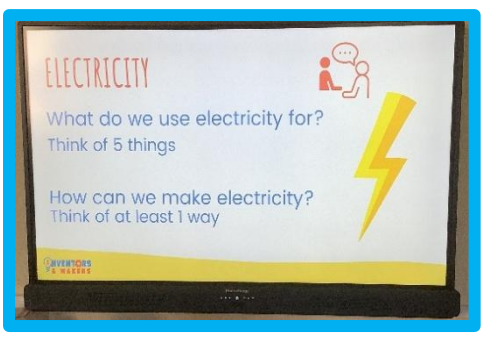




Inventors and Makers Workshop



All our partner junior schools participated in a fantastic workshop with **Inventors and Makers**. We learned about the need to change and adapt to more sustainable energy sources, including how **electricity** is generated. The children took part in engineering challenges to build and investigate a wind turbine and the gear box system found inside a wind turbine. Below are some of the children's comments about the event.



It was amazing. It was such a fun experience and I think that everybody should have a chance to do it. ***Mya***

I thought it was really nice there because we made new friends, made wind turbines, met new teachers and learned which energy sources are eco-friendly and which are not. ***Valentina***

Honestly, I thought it was quite entertaining and exciting. It was really fun making the turbines but most of all, walking. Having a little exercise, even if it was tiring for some people! I liked how they taught us about a way to provide electricity that is good for the Earth, then let us have the instructions and build the turbines. Also, I liked how they mixed us up to get along with each other. ***Vanessa***

I liked doing the windmills. I learned about loads of gases and how electricity is made. ***Cody***

9 ½ out of 10 as it was fun and I made friends. It was interesting. ***Mia***

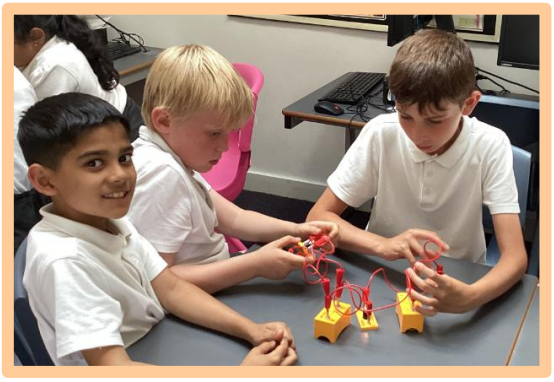
I liked learning about how different energies can be sustainable and unsustainable. ***Josh***

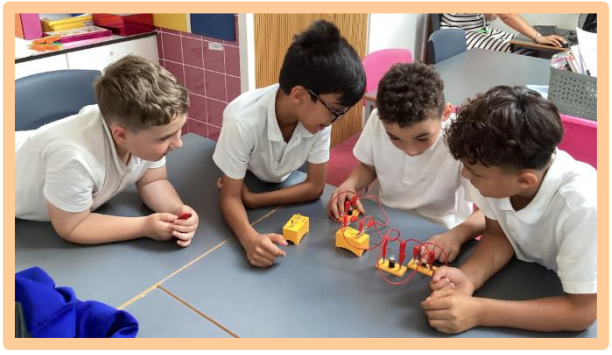
It was really fun and interesting and I learnt a lot. ***Florence***

The best bit was making the wind turbines. ***Isabelle***

Year 4 Electricity

Yesterday, we were seeing items that were isolators and Conductors. We used several different items like a pencil, a ring and a Book. We discovered that metal is a conducter and stuff similar to that like copper. to





what you need:

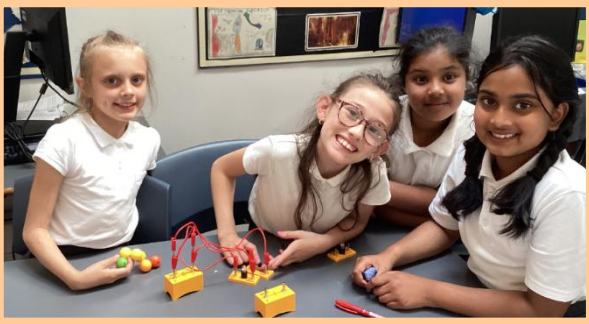
wires
battrie
buzzer
swich
bulb

what we are going to Power is a bulb and ce buzzer so first you need a battrie and 2 wires first Plug the wires into the battrie then Plug both into the bulb and thats is how to Power a bulb. DONT be SILLY with ELECTRIC

Insulators:
Insulators are objects/materials that don't let electricity pass through.

Yesterday, we put objects between two crocodile clips and saw if the lightbulb lighted up. If the lightbulb didn't light, that means the object is a insulater. If the lightbulb did light up, that means that the object is...

Conducters:
Conducters are objects which do let electricity pass through. One of these materials could be metal !!!



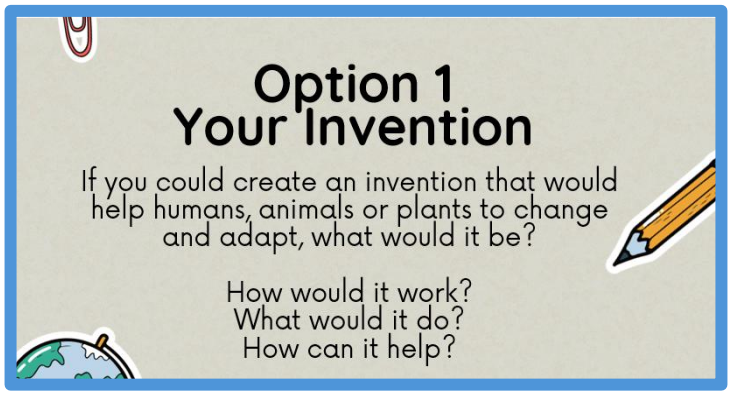
Object	Material	Insulator	Conductor
Pencil	Wood & Ink	✓	
Ruler	Plastic	✓	
Paper clip	Metal		✓
Rubber	Rubber	✓	
Sharpener	Tin		✓

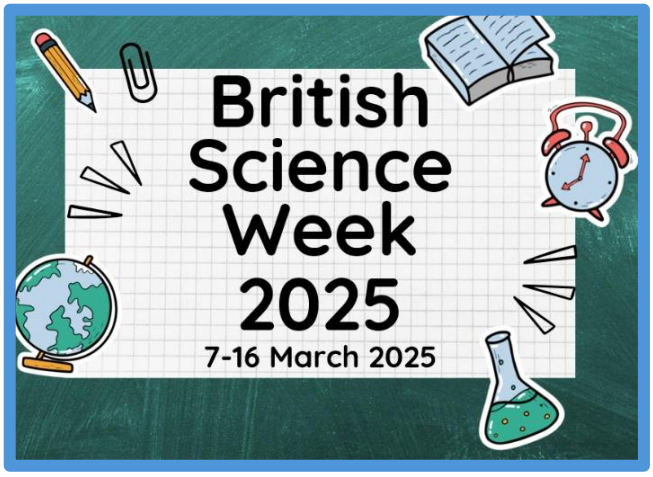
Object	Material	Insulator	Conductor
Pen	Plastic	✓	X
Clip	Metal	X	✓
B marker	Plastic	✓	X
Pencil	Pencil	✓	X

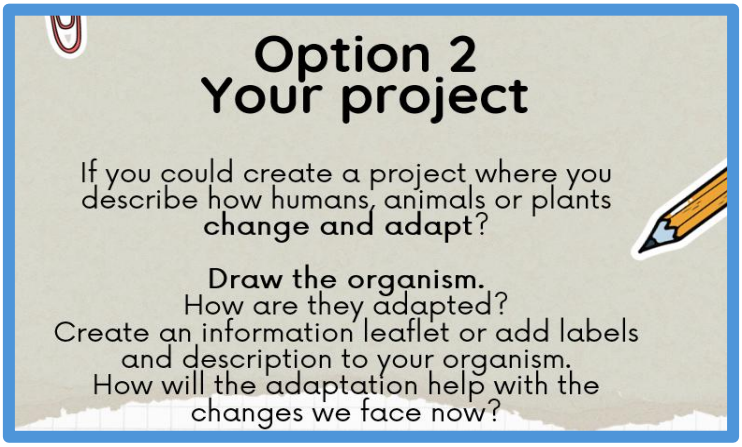
Object	Material	Insulator	Conductor
pencil	wood	✓	
ruler	plastic	✓	
paper clip	metal		✓
rubber	rubber	✓	
tin	metal		✓

British Science week competition

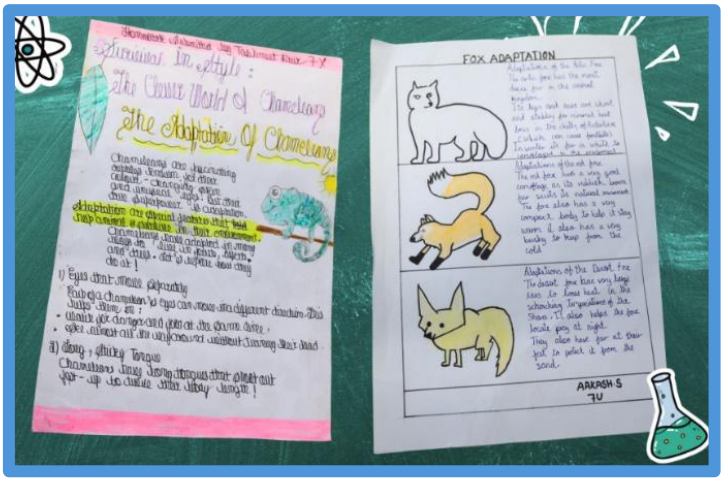
It has been amazing to encourage students to get involved in the **British Science week** between 7 – 16 March 2025. Year 7 and 8 students embraced this year's theme **Change and Adapt**. Students had to choose from two options:

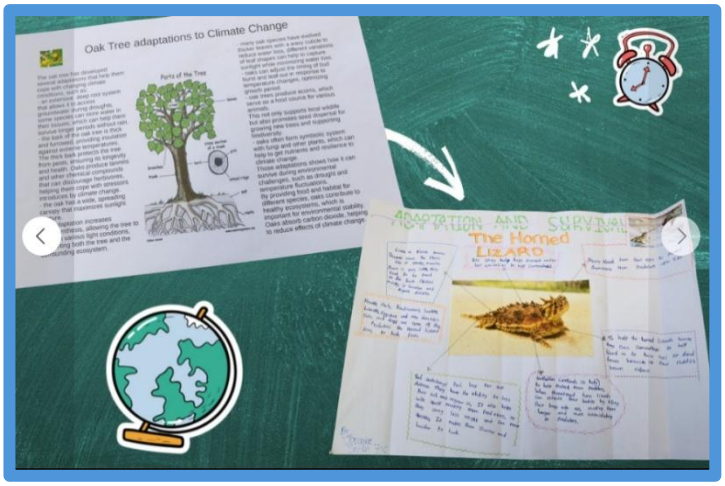






They wowed us with **creative projects exploring how humans, animals, and plants adapt to their environments.** Some even dreamed up incredible inventions to help them do it better.





Foreword: I have created this for **Option 2 (Your Invention)**. However, after re-reading the brief, I realised it also refers to existing technology. Because of this, you could say my project is a mix of both **past and future science**, innovatively using real genetic engineering tools.

Please refer to the glossary at the end if unsure on the meanings of some words

Science Project: Genetic Engineering for Drought-Resistant Corn

Climate change is rapidly warming our planet and pushing ecosystems to the point of destruction. Long droughts are sweeping across Africa, and flash floods are striking most parts of the world. Now is the time for action. In 2023, global precipitation levels were **46.2 millimetres below average**, based on records from 1901 to 2000. It was the **third consecutive year** of declining rainfall, and the trend is only getting worse. (Appendix 1)

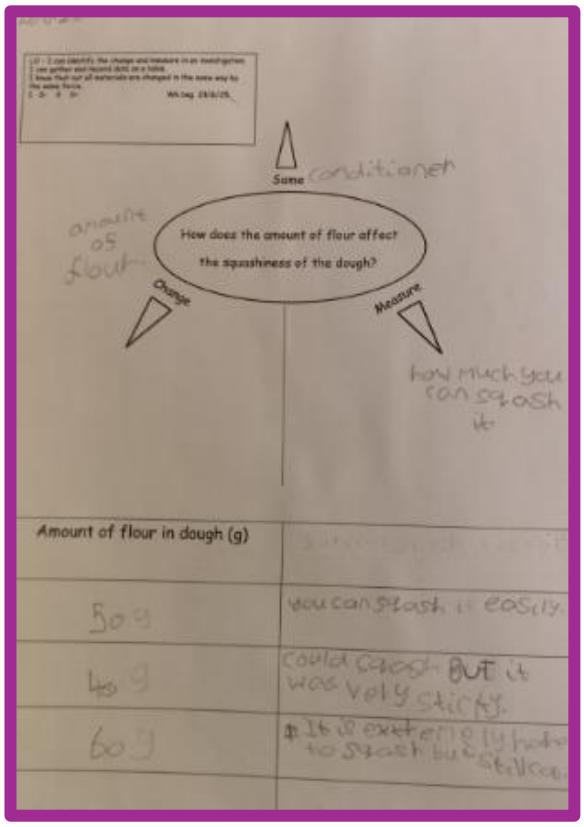
These environmental changes are damaging fragile ecosystems. In fact, over **571 plant species** have gone extinct in just the last 250 years. (Appendix 2) But there may be a way to stop these droughts from wiping out our food supply, which is essential to life. This is a process called **genetic engineering**.

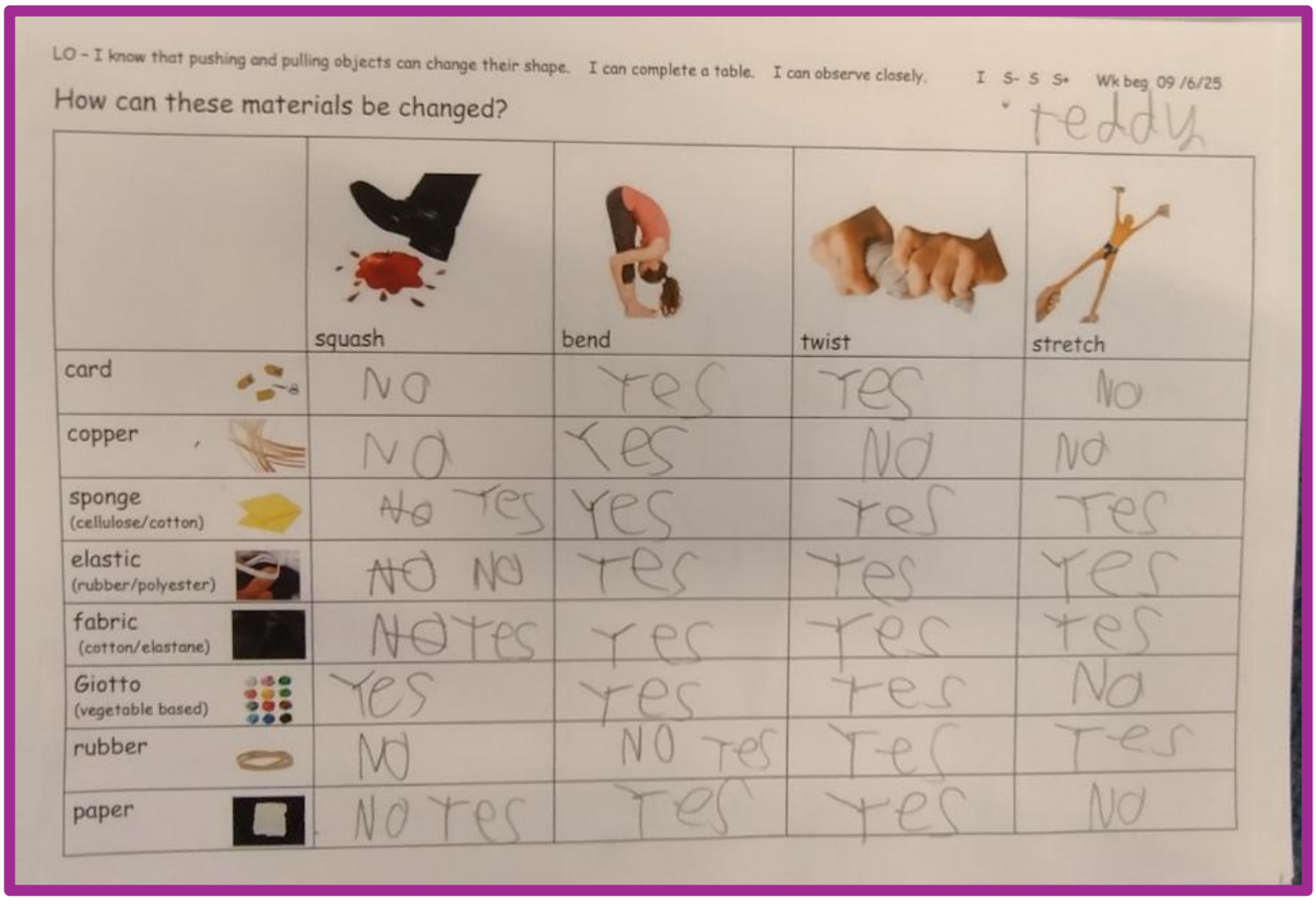
The entries were all judged, with the winner Keiyona receiving an amazing 'WalkingBot' contributed by the **Ogden Trust**! The runners-up all received certificates, badges and keyrings. The winners list has been published on the school website and social media.

Looking forward to encouraging more students to take part in the British Science Week next year. Amazing projects and creative writing! *Science Teacher* **– *Ionela Morit***

Materials and Forces

Y2 at South Farnborough Infant School have been exploring how **materials** can be changed by a force. They have been pushing and pulling materials and observing if they change and sorting materials according to whether they are **brittle** (break easily), **plastic** (change shape when bent but do not break or spring back) or **elastic** (return to their original shape when the force is removed). Next, they planned an investigation using dough made from different quantities of conditioner and flour. They tried to find the squashiest dough.



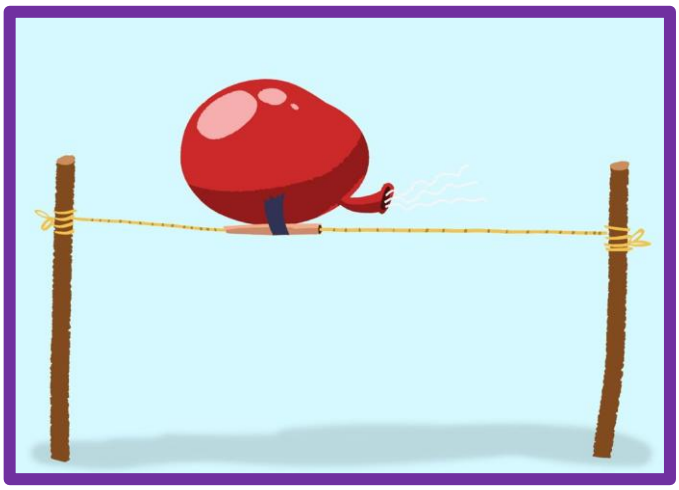


Try This at Home: Balloon Rocket

Turn a balloon into a rocket and explore the science of forces and motion!

You will need:

- 1 balloon (any size or shape)
- 1 long piece of string (about 2–3 metres)
- 1 straw
- Tape
- Two chairs or other objects to tie the string to



What to do:

1. Thread the string through the straw.
2. Tie each end of the string to a chair (or similar), pulling it tight and straight.
3. Blow up the balloon (don't tie it) and pinch the end to stop the air escaping.
4. Tape the balloon to the straw while still pinching the balloon shut.
5. Let go, and watch your balloon rocket shoot along the string!

What's happening?

The air rushing out of the balloon pushes it in the opposite direction. This is **Newton's Third Law**: for every action, there is an equal and opposite reaction.

Year 8 MagLev Talk

Year 8 students attended a talk on **MagLev** technology, given by engineers from the Japan Central Railway Company. Below are their thoughts on the experience.

I found the idea of Maglev very interesting and entertaining. There were crazy and cool models that showed the wonder of science, for example a "floating" train that seemed to be suspended in midair. We learned how it worked as well with detailed explanations from Japanese scientists about the **magnetic forces** and how it is applied in this context to create a train that can go over 500 km per hour. ***Roy***

The Maglev seminar was very interesting. I enjoyed learning about the train, and I did not know that the train could go from Manchester to London in 40 minutes. I really liked the experiments that they showed us, and my favourite was the model train. ***Anish***

I found the science talk presentation interesting, and it was fun to do all the practicals. The actual **schematics** and design of the train and railway system was very impressive. The statistics about how Japanese people use trains a lot more than us were also very intriguing. Overall, I highly enjoyed the presentation, and it made we want to learn more about bullet trains in general. ***David***

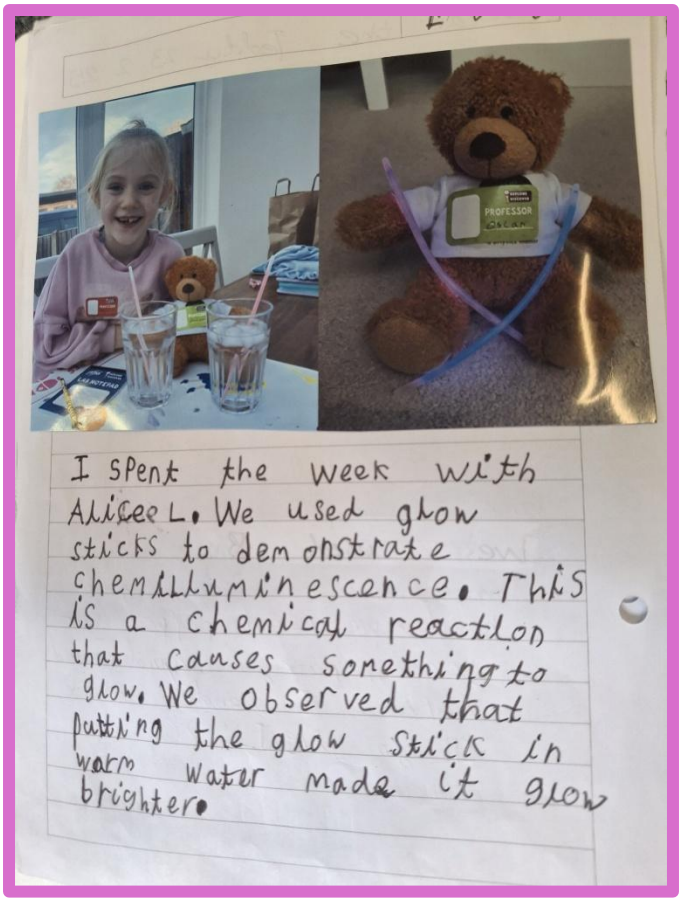
We had a presentation about maglev trains from people who helped make and design the SC maglev trains in Japan. They work from using magnets and coils to propel the trains by making metals **electromagnetic** to use energy to power the trains. Most trains use wheels but maglev trains levitate around 10cm. Maglev trains go so quickly because they eliminate **friction**. They can travel at more than 300mph. ***Maulik***

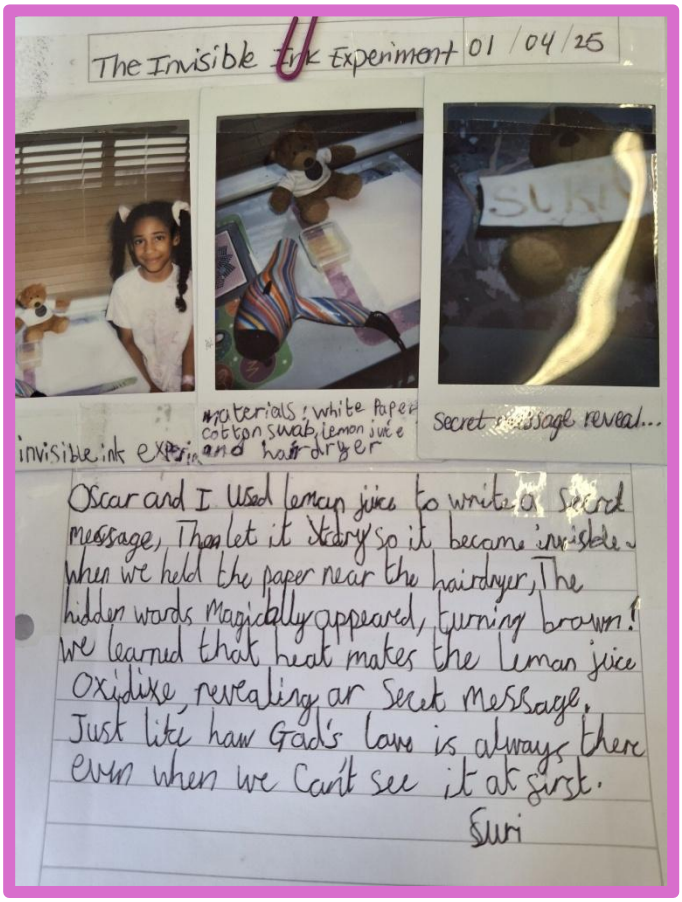
A group of Japanese engineers came in and talked to us about the Magnetic Levitation trains in Japan. They told us how the trains were developed and how the system works. The engineers talked to us about the difficulties and problems they encountered and how they got around said problems. There were a few models that helped us understand fully just how the incredible trains worked. This talk made me think about what I might like to do as my career in the future, and if that would be **engineering**. We were shown how the new train line was going to be even better (because they were using superconducting magnets) than the current train line. Overall, the talk was incredible, and I am grateful that I was able to attend. ***Evan***

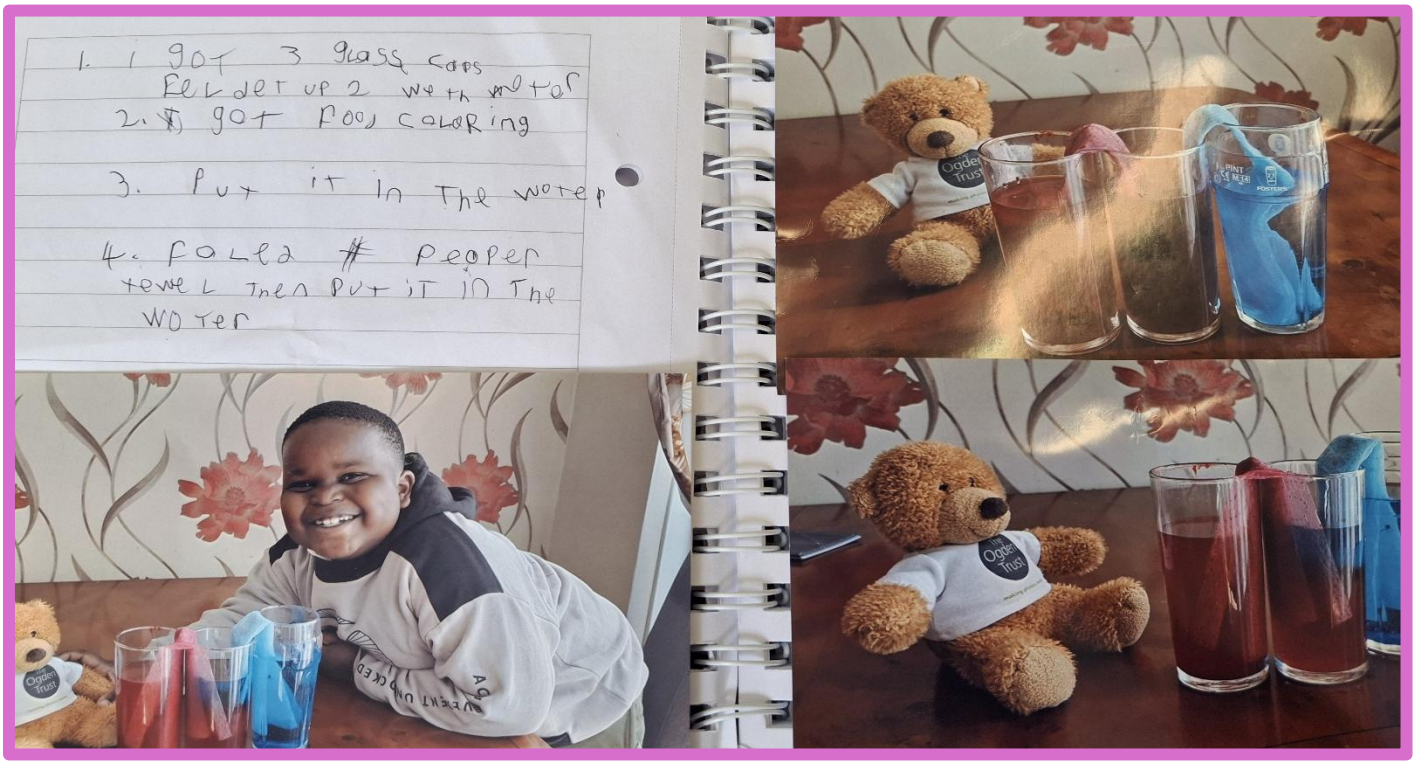
Science Investigations

Reception have been incredibly busy in their **Science investigation** area. They have explored many different Science concepts. Each Science investigation links to a book. Their favourite so far has been **'Teatime Around the World'**. They explored different types of tea in order to decide which one made the best cup of tea. The children were talking about how the tea dissolved. They also enjoyed 'What the Jackdaw Saw' where they investigated if they could feel or see sound. For this, they used balloons, rice on a drum and a tuning fork in water. It was funny to see the water jump when the tuning fork was added.

Oscar's Adventures

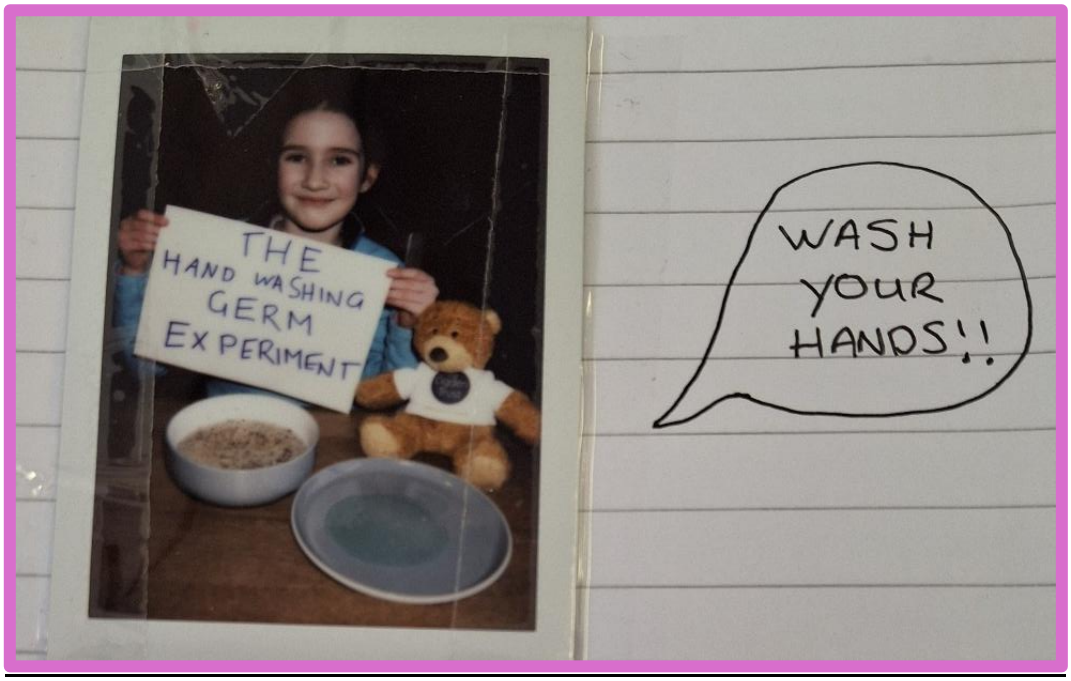




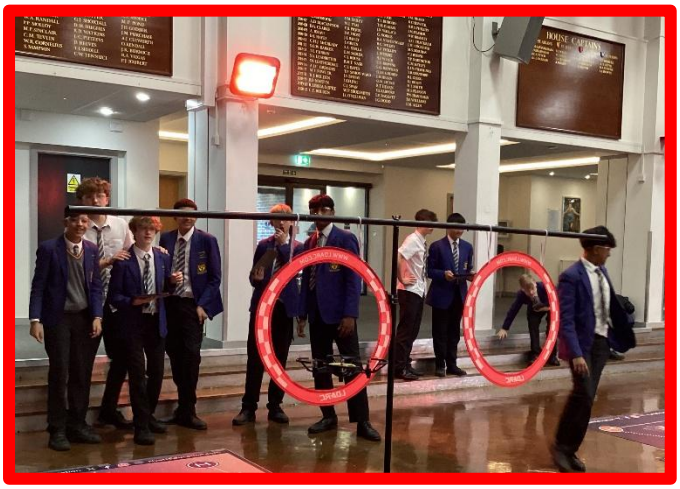


I Spent the week with lily. We made Oobleck. it is a non-newtonian fluid. It means that it like a liquid when you pour it or when you move your finger through it slowly. But when you move your finger through it faster (apply more force) it becomes a solid. you can pick it upp and when you have it in your hand roll it and then it becomes a solid and when you hold your hand still it becomes a liquid again. We made it out of Cornflour and some water it was very cool.

Today I did an experiment with oscar. It was an experiment that shows the importance of washing your hands. we used pepper for germes, fairy liquid and water. I wonder where Ill go Next !!! ♡☺



Year 9 Drone Coding Workshop

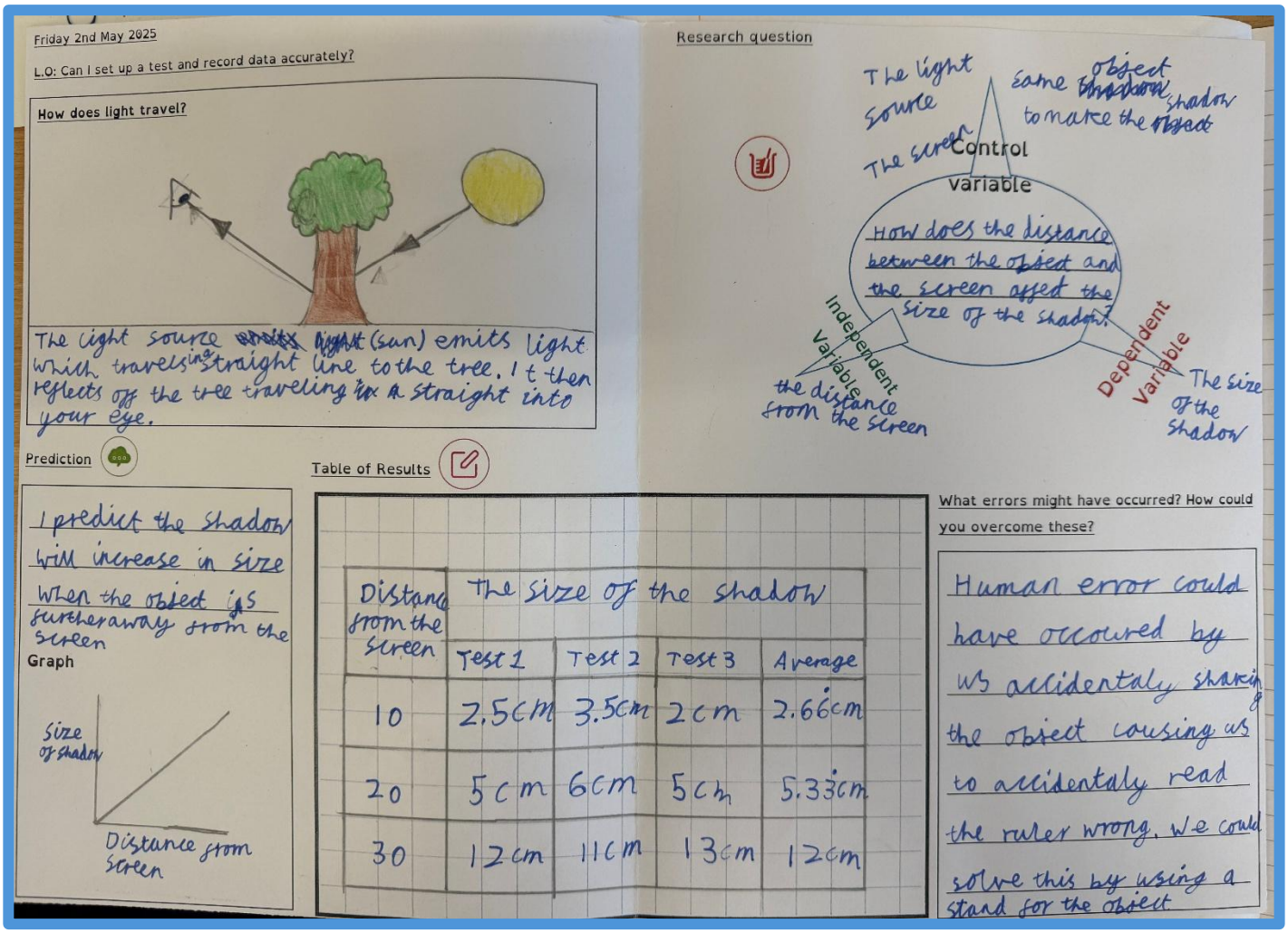


Y9 students had the opportunity to take part in a **drone-coding workshop** for a STEM enrichment activity. Students used **SWIFT** coding to programme drones to move in different directions, follow paths and fly through hoops. They built on their computing knowledge from Year 8. There were a few miscalculations with drones flying into the ceiling and the hoops, but most groups successfully followed the tasks set. It was great to see the students engaged in the activities and linking them to real-world examples.

Many remembered seeing the drone shows from New Year's Eve. Thank you to Hyett Education for providing the workshop.

Year 6 Light Investigations

Year 6 pupils have been busy exploring the fascinating world of light in their recent science lessons. By discovering how shadows are formed, they have enjoyed plenty of hands-on investigation. Using light from the sun, the pupils tested their own ideas and worked scientifically to make predictions, observe patterns and draw conclusions. It has been brilliant to see their curiosity shine as they developed their understanding of how light travels and how we see the world around us.



Friday 2nd May 2025

L.O: Can I set up a test and record data accurately?

How does light travel?

The light source (sun) emits light which travels in a straight line to the tree. It then reflects off the tree traveling in a straight into your eye.

Prediction

I predict the shadow will increase in size when the object is further away from the screen

Graph

Size of shadow

Distance from screen

Table of Results

Distance from the screen	The size of the shadow			
	Test 1	Test 2	Test 3	Average
10	2.5cm	3.5cm	2cm	2.66cm
20	5cm	6cm	5cm	5.33cm
30	12cm	11cm	13cm	12cm

Research question

The light source

The screen

same object to make the shadow

Control variable

How does the distance between the object and the screen effect the size of the shadow?

Independent Variable the distance from the screen

Dependent Variable The size of the shadow

What errors might have occurred? How could you overcome these?

Human error could have occoured by us accidentaly shaking the object causing us to accidentaly read the ruler wrong. We could solve this by using a stand for the object

Friday 25th April 2025
How does light travel?

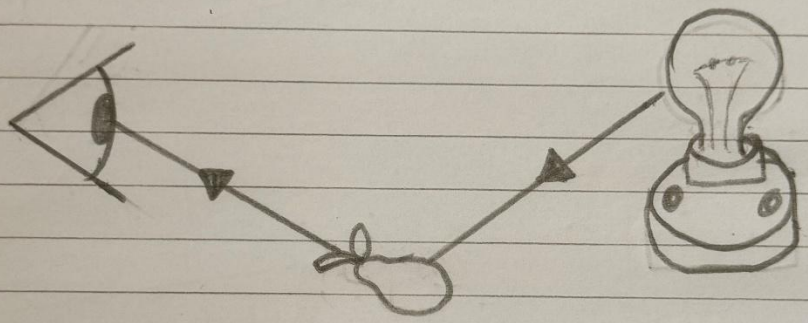
REMEMBER

Are the statements true or false?
Circle your answers.

Humans use their eyes to see.	true	false
Humans can see without light.	true	false
Mirrors are good reflectors of light.	true	false

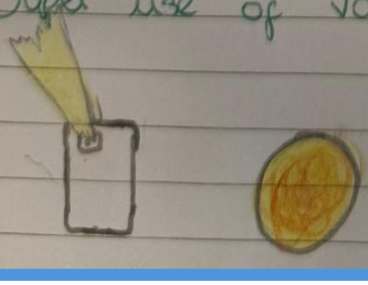
Match the types of materials to the definitions.

opaque material	material that does not allow light to pass through
translucent material	material that allows some light to pass through
transparent material	material that allows light to pass through

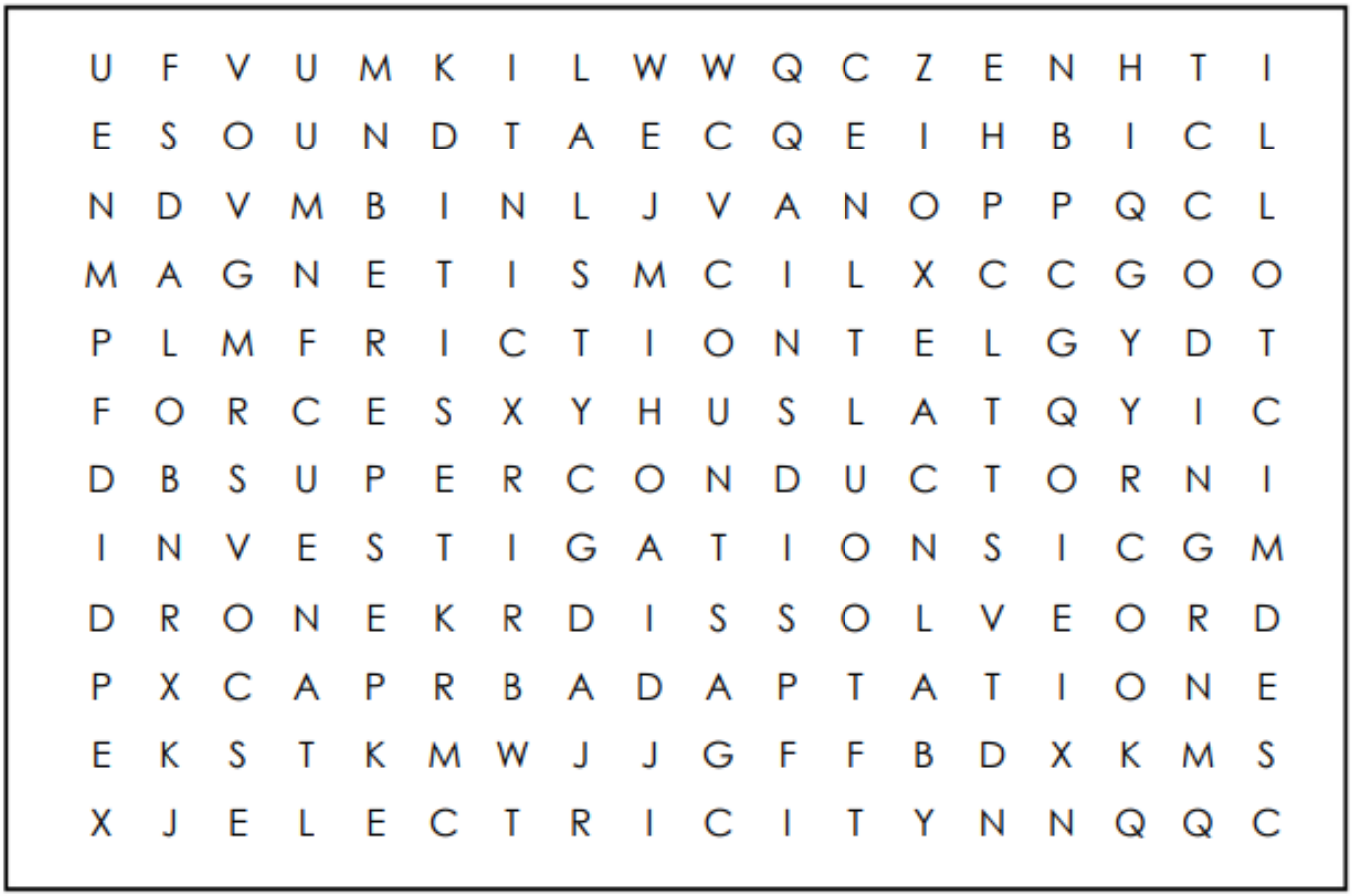


The luminous object (the ~~lightbulb~~ lightbulb) emits light, which travels in a straight line to the pear. It then reflects off the pear straight into our eyes. Light is the fastest thing in the universe.

Super use of vocabulary!



Wordsearch



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

Find the following words in the puzzle.
Words are hidden →, ↓, and ↘.

ADAPTATION
CODING
DISSOLVE
DRONE
ELECTRICITY
FORCE
FRICTION
INVESTIGATION
LEVITATION
MAGNETISM
SOUND
SUPERCONDUCTOR

Next Term…

Opening of our new **Phiz Lab**!

World Space Week: 4–10 October 2025

Tomorrow's Engineers Week: 3–7 November 2025

If your school has exciting plans, events or projects in the pipeline, let us know – we'd love to feature them in the next newsletter!