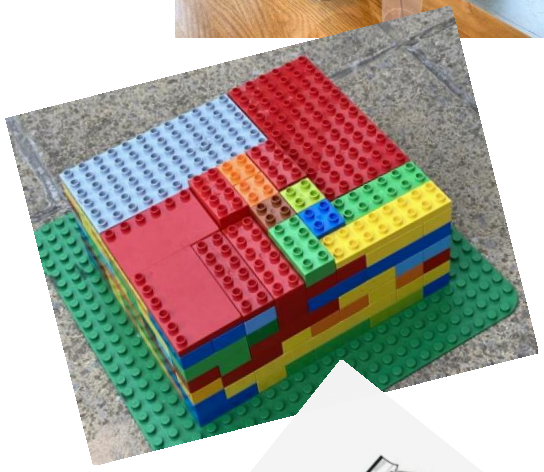
Science Challenge

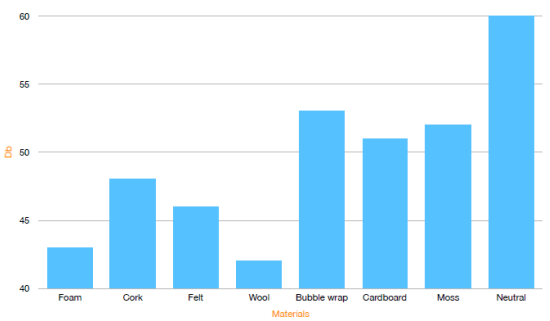


Over the last few weeks, Year 4, 5 and 6 have taken part in our ‘Science Challenge’! Each class was set a different scientific task from their teacher and asked to produce a presentation showing their methods and results.

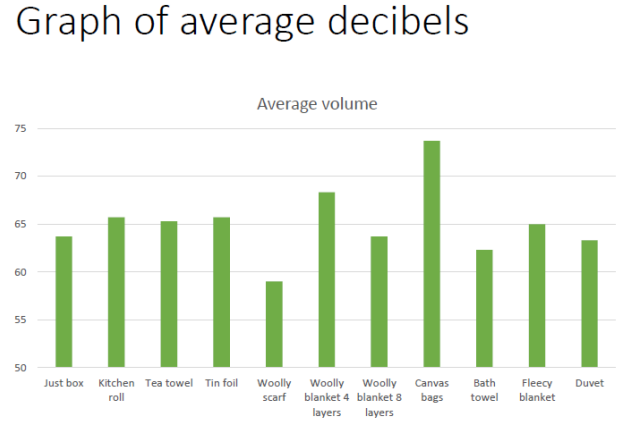
Year 4

Year 4 were asked to find the best material to sound proof a recording studio. They had to test different materials and measure the sound that could be heard.

We chose the materials we wanted to test, downloaded a decibel meter app and got to work! We made predictions about which material we thought would be the best at sound proofing.



dB - the unit used to measure the intensity of the sound



Name of the product used	Average of decibel	Max decibel
Only Box	106	136
Newspaper	98	123
Wrapping paper	95	117
Cotton	93	108
Tin Foil	91	104
Sponge	84	100
Bubble Wrap	82	97

We presented our results using tables and graphs. Some of us made PowerPoints, some made posters and some produced videos!

My Predictions!

Material (in ascending order of sound proofing)	
Kitchen Roll	LEAST
Foam Sheet	
Cling Film	
Bubble wrap	
Leather	
Muslin	
Aluminium Foil	

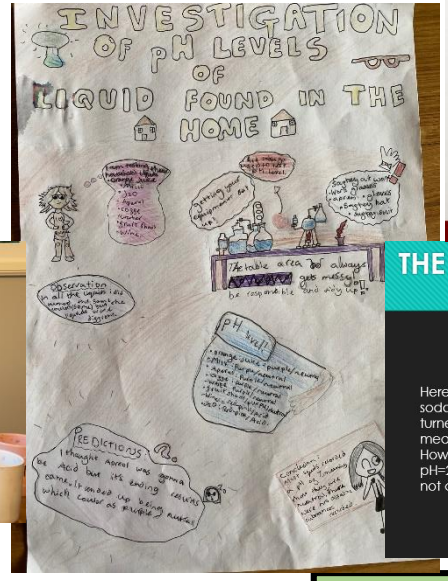
Year 5

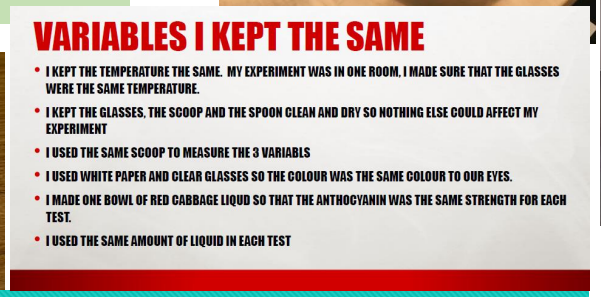
Year 5 pupils were challenged to set up investigations at home that would test the pH levels of household products.

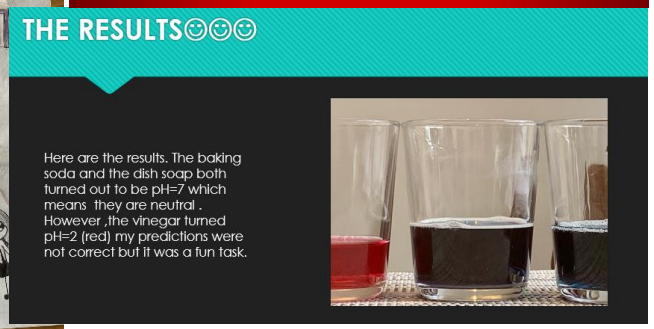
Did you know red cabbage water contains a chemical which can help show what the pH level of a liquid is? It is called ANTHOCYANIN.

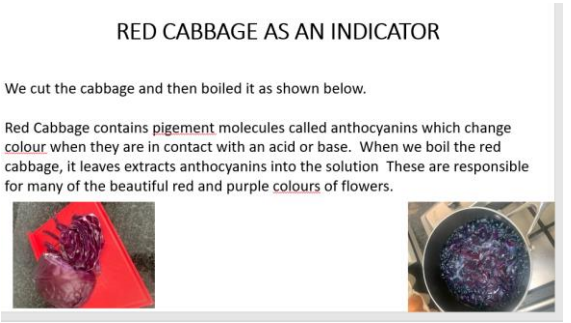
The children chose different ways to present their investigations. They made videos, PowerPoint presentations, posters and even Scratch games!

As this science experiment had to be conducted at home the children had to find an indicator which would help demonstrate pH levels.







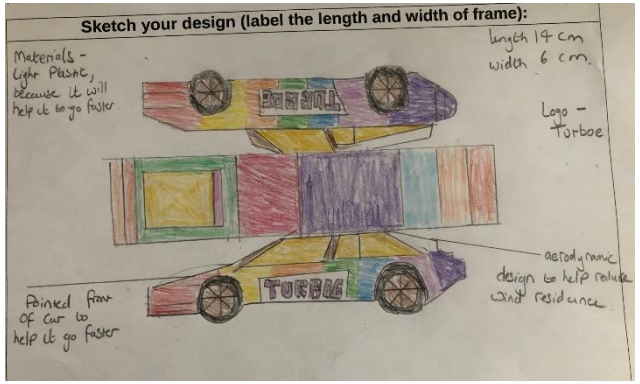


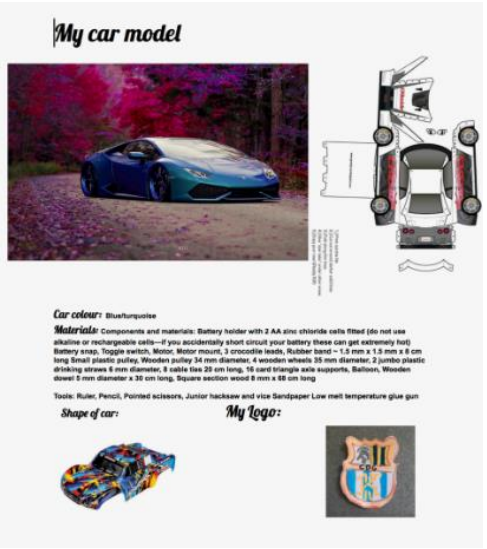
The children had to make red cabbage water and then combine it with different household liquids to show what the pH level was.

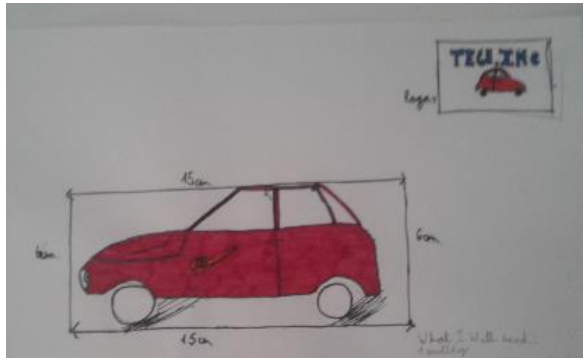
The children had to make predictions of the pH levels before carrying out the experiment. They also decided a method, the variables that should stay the same or change and how to present the results.

Year 6

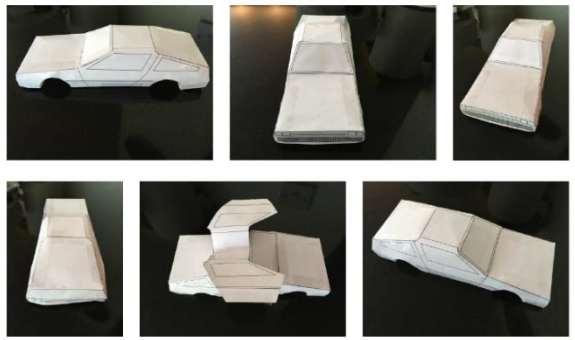
Year 6 had the challenge of researching and designing moving cars. Children were asked to look at what is currently on the market as inspiration for shell designs, and considered materials logos for their cars. They had to show understanding of scientific circuits which would ensure a car could move using a motor and represent this as a diagram using the correct symbols. They also had to consider pitfalls that may occur and how to overcome them.

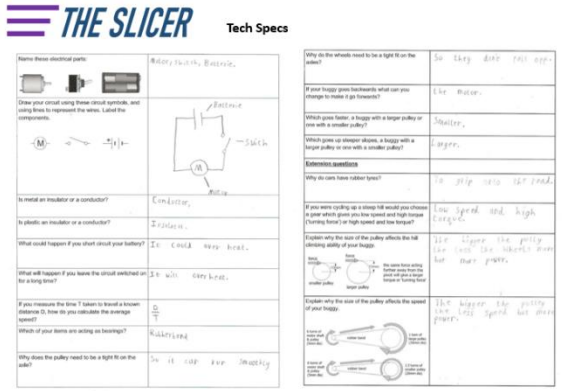


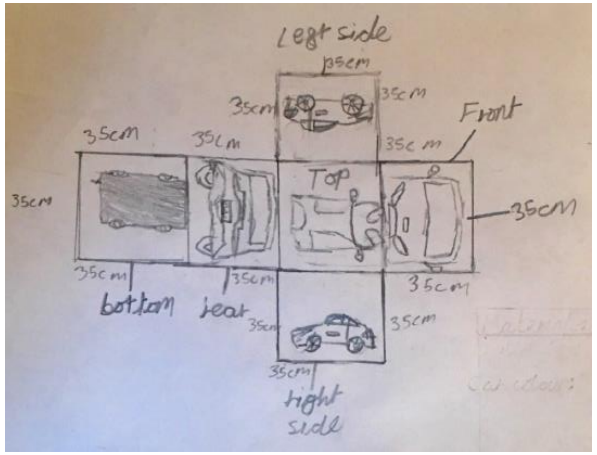


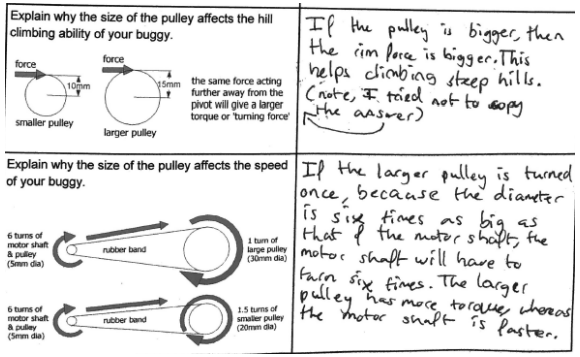


Paper Prototype Model

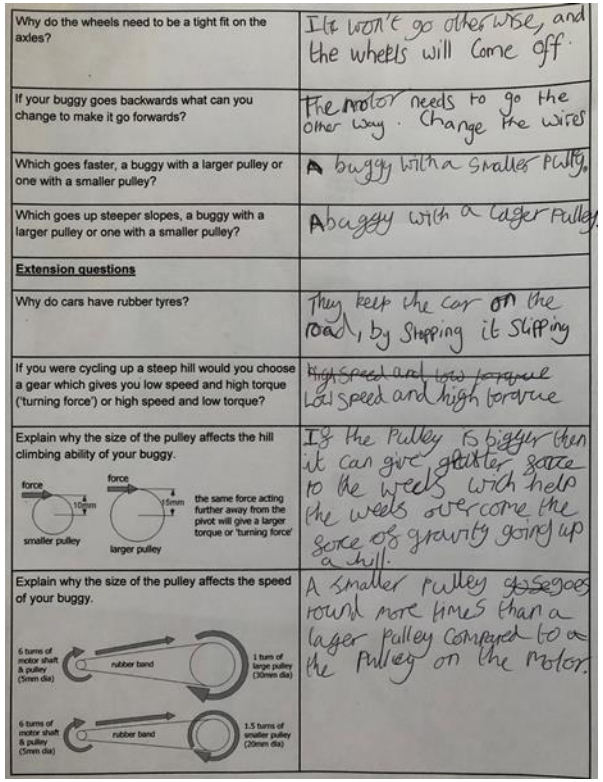








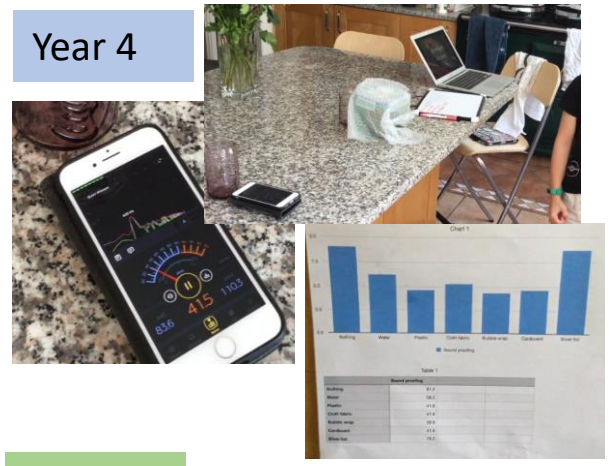
Year 6 had to use their knowledge about belt and pulley systems from their work in Year 5 when they made moving fairground rides.



And the winners are...

Miss Brenta, Mrs Manning-Bennett, Miss Parsons and Miss Melling had a VERY tough decision to make!

Year 4



Our winner is Zachary! Zachary produced a video of his investigation which he edited and added effects to. Zachary highlighted that it was important to keep the recording device at the same distance from the speaker and he also found that using a constant noise instead of a song gave a more precise decibel measurement. Zachary presented his results in a clear bar graph and found that in his investigation, bubble wrap was the best sound insulator.

Method

1. Turn the bluetooth speaker on to maximum volume. I will keep the volume at maximum through out the experiment to make sure the test is the same for each material tested so that it is fair.
2. I downloaded an app called Decibel Meter to record the decibels
   A decibel is the unit used to measure the intensity of a sound
3. I will also use the same song each time I take a measurement
4. Before I test the sound proofing materials I will test the decibel level of the speaker at full volume without any covering.
5. Then I will put the speaker in a cardboard box "the studio" and I will then wrap each sound proofing material around the box once and measure the sound using the decibel meter.
6. I will play the song for 30 seconds for each material and take the highest decibel measurement recorded on the decibel meter for each.

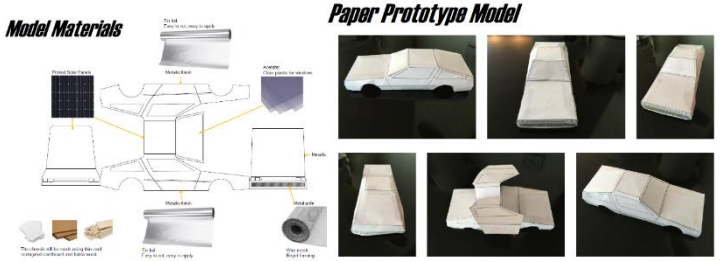
Our runners up are Ilia and Max. Ilia got creative and tested moss for its soundproofing qualities and Max carefully considered which variables he needed to keep the same to ensure his results were accurate.

Year 5

Our winner is Danny H! Danny's presentation was very impressive. He clearly showed his predictions, his method and his results. Danny created his own pH testing paper using the red cabbage water and also recognised he needed to keep the amount of household product the same for each test. He displayed lots of scientific skills. Once Danny had completed his initial investigation, his results encouraged him to create his own enquiry question. Danny went on to investigate what would happen when he mixed an acid with an alkali. His presentation was clear, very well researched and easy to understand.

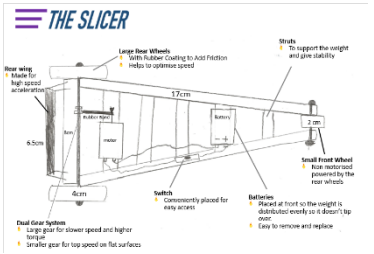
Our runners up are Seb and Daisy. Seb's investigation was very impressive. Not only did Seb carry out the investigation thoroughly at home, he then produced his presentation as an interactive Scratch game that he wrote all the code for. Daisy's investigation was very thorough and her presentation was eye catching, informative and clear. Her conclusion was very clear and showed her understanding of pH levels and sliding scale that all liquids will appear on.

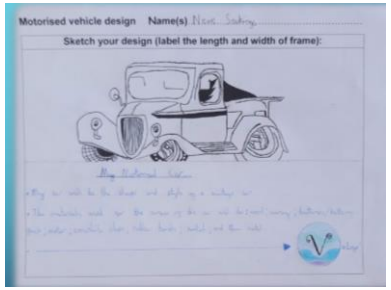
Year 6



Our winner is Oliver! Your overall presentation is fantastic and you have thought of EVERYTHING! You have cleverly made prototypes for your shell before deciding your final design, have considered different materials that you may use and drawn many of your ideas from inspiration of what is currently available on the market today. An outstanding collection of work!

Our runners up are Neve and Beckett. We loved your vintage shell design, Neve. It is so unique!
Beckett we love the name 'The Slicer' and your diagram is drawn and labelled clearly.





It was really tough to decide winners and runners up in every class. Well done to everyone who took part and thank you for the effort you put into your presentations. We were all very impressed and hope you enjoyed taking part!

By taking part you showed lots of working scientifically skills!

Special mentions to…

Elianah in Year 6 for a very well-planned presentation. You considered the pitfalls carefully and thought of ways to overcome any challenges you might face!

Imogen in Year 5 for combining your science and computing knowledge to create a clever presentation using Scratch!

Agnes in Year 4 for carefully considering lots of ways to ensure your results were accurate. You thought of everything!

If you are a winner or runner up, Miss Brenta will be in touch soon!