

Our Diverse Planet

Bancroft's School Science Fair 2020

It was a great pleasure to visit the 2020 Bancroft's Science Fair again this year, for what turns out to have been one of the last bits of normality before the coronavirus restrictions put a stop to such events.

This year 18 teams took part, which must be a record. They put together some impressive displays which were clearly enjoyed by the excited children who visited the exhibition. And it was good to see some novel topics that had not featured in previous science fairs.

As ever, it was a challenge to pick a winning team. Every display attracted a crowd and each did well according to at least some of the judging criteria.

Complexity

I was pleased to see the ambition of many teams, setting themselves the challenge of conveying difficult and complex ideas to their young audience - and, in doing so, often extending their own knowledge and understanding beyond their A-level curriculum.

Of particular note, the displays for Electromagnetic Waves, ElectrTrickery, Energy Generation and How Hard can you Radio? all involved the difficult physics topic of electromagnetism. Laminar Flow is another quite advanced physics topic; the Chicken and Egg team tackled complex ideas about the evolution of Earth's atmosphere and life forms; Fishalicious brought together aspects of physics and biology; and Bouba/Kiki explored the complexities of language.

Clarity of explanation

This is arguably the most difficult aspect of a display to do well. The more complex the topic, the harder it is to explain, as good explanation needs the explainer to have their own clear understanding, and use that to build on what might already be familiar to the audience. One common trap is launching into an explanation using ideas that are well known to the explainer but which go over the heads of the audience, and another is trying to pack in too many complex details - both can lead to confusion.

I was pleased to see that some teams had clearly thought carefully about the key point(s) that they were aiming to convey, and how best to get those across to their visitors using appropriate language, demonstrations and examples. The teams for Fishalicious, Tsunami, Weigh Yourself, Bouba/kiki, Bioluminescence and Solar Car all did well here.

Poster

A good poster should be eye-catching and advertise the display from the far side of the hall. It should convey a clear message (what is this display about?) and contain some relevant scientific information that can be read from the front of the stand. It should add value to the activities, demonstrations and explanations.

It was clear that a lot of work had gone into some of the posters - bold creative design, use of colour, eye-catching images, well-chosen words and relevant information that could be read from a distance.

The posters produced by the teams for Chicken and Egg, Fishalicious, Flame Tests, Change in State, Chemical Rainbow, Fluorescence and Bioluminescence were all good. The Fishalicious team also deserve a mention for their headgear which also contributed to the visual aspect

of their stand, while the Bouba/kiki team and Chicken and Egg are to be commended for interacting with their posters as part of their explanations.

Table displays and demonstrations

The table displays and demonstrations are the main focus of the exhibition; they are what the visitors engage with and remember, so I was pleased to see evidence for a lot of thought and preparation by the L6 teams.

Many teams deserve a mention here. Change of State had some attractively messy hands-on activities, as did Wonder of Water, Flame Tests, Chemical Rainbow and Chicken and Egg. Weigh Yourself had a simple but very effective and well thought out set-up. Fishalicious, Solar Car, Earthquakes, Radio, and Energy Generation all had items to engage their visitors in hands-on activity - as did ElectTrickery and Energy Generation, who made their own kit. Some teams adapted their displays as the day progressed - for example I noticed that Laminar Flow had found another vehicle whose square shape helped make a point about non-laminar flow. Fluorescence and Bioluminescence made good use of UV inside a dark box. Bouba/kiki had some effective visual aids, and had made recordings in several languages that enhanced their presentation. And not least, Tsunami had made their own slosh tank which was very effective both in attracting visitors and in demonstrating the key points of the display.

Relevance to the theme

The theme for the day was 'Our Diverse Planet'. The L6 teams responded well to the theme, with some emphasising the diversity (variety) of their chosen topic and others focussing on natural phenomena.

The Bouba/kiki display related particularly well to both aspects of the theme (global diversity of language), as did Fishalicious and Bioluminescence (diversity of habitats and species). Tsunami had a strong focus on natural events, while Change of State looked at the states of matter that make up our planet, and Electromagnetic Waves and Flame Tests showed the variety of em waves and elements (respectively) that are observed.

Engagement

One of the most pleasing aspect of the exhibition is seeing the sixth formers eager to engage with their visitors, urging them to come over to the display and keen to share their enthusiasm. The effectiveness of this engagement can be gauged to some extent by the size of the crowd around each stand. There were some stands where I had to wait quite a long time before I could get in to talk to the sixth formers - and that is as it should be.

Another indicator of engagement is the way that the visitors respond to the activities and explanations. Some of the teams were particularly good at holding their visitors' attention - not just showing the some fun activities, but also making eye contact, listening as well as talking to them, using appropriate language and examples, and responding to their comments and questions.

All the displays drew a steady stream of visitors. Change of state, Water, Flame Tests, Fishalicious, Tsunami and Bouba/kiki all did particularly well on this aspect, with the teams following up the initial interest by interacting and engaging with their audience.

The verdict

Now for the difficult bit... In no particular order, the teams I shortlisted were:

Fishalicious for clear relevance to the theme, simple but effective demonstration and an eye-catching poster (and headgear).

Tsunami for well designed and memorable demonstrations using a tank that they made themselves, and effective engagement with the audience.

Bouba/kiki for a novel choice of topic that related strongly to the theme, and effective interaction with the visitors using both visual aids and recordings.

Flame Tests and Change of State also did well, drawing good numbers with attractive posters and activities.

The overall winner was Tsunami. The design and making of the tank was outstandingly good, the demonstrations were very well thought out so as to convey the key ideas clearly, and the team engaged enthusiastically and effectively with their visitors. Very well done.

Many congratulations to all the teams and organisers of the science fair. A huge amount of work had clearly been done both beforehand and on the day. This work paid off with a highly successful event which I'm sure will have a positive impact both on the young visitors and on the Sixth Formers themselves.

Looking ahead, I hope that the coronavirus situation is resolved over the coming few months, and that science fair will be able to take place again in future.

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