

***i*-STEM Activities and Materials Matter**

Here at Benenden we have been working on a plan to integrate aspects of the study of the sciences, technologies, engineering and mathematics beyond the normal curriculum provision in what we are calling *i*-STEM. Neville Crouch, Director of STEM, explains more.

With shared goals and understanding across these subject bases we can optimise the excellent teaching and learning opportunities between *i*-STEM subjects to enable students to transfer functional skills and academic expertise in a cross-curricular way.

This June we spent three days exploring a range of *i*-STEM material as part of our Materials Matter week. The aim was to extend the girls' curriculum experience and show how these subjects interlace and overlap as subjects, at University level and beyond, for fascinating and rewarding careers.

It provided an opportunity for students from the Fourth right up to Six One to experience a whole array of STEM lectures and workshops from leading universities. We were also able to share the opportunity with some of our partner schools, including The John Wallis Church of England Academy, Cranbrook School and Kent College Pembury.

A real breadth of topics were on offer and all were delivered by leading role models in their fields, as you can see from the overview of the programme below:

- Dr Vladimir Gubala, from University of Kent School of Pharmacy, spoke on the medical applications of nano liquids in pharmaceutical procedures.
- Dr Suze Kundu, a Teaching Fellow at Imperial College London and the University of Surrey, told the girls about nano chemicals and solar energy capture materials and how nature inspires nanotechnology.
- Dr Jonathon Hare, from the University of Sussex, delivered a session on geodesic domes and 3-D molecular and mathematical modelling.
- Dr Anna Ploszajski, from UCL Institute of Making and also Young Engineer of the Year 2017, talked about 4-D printing and making 3-D printed smart materials which move in response to various stimuli.
- Incoming Benenden Head of Physics and Queen Mary University of London & IRIS President Professor Becky Parker also heavily involved in the week.

Throughout the three days there was also a circus of experiments designed by the Science Technicians for the girls and visiting students to try out.

They got the chance to investigate the properties of natural materials, polymers, SMART materials, shape memory alloys, thermocolour films, thermochromic pigments, hydrogels, 'Smart' putty, chromatic alginate and pyrography of wood.

Across the three days the *i*-STEM Activities were extremely well received and reviewed. We delivered sessions to more than 300 Benenden girls and more than 100 students from our partner schools - all keen to understand the importance and relevance of a STEM education in our rapidly changing technological world.

In fact it was so popular we have many requests to do more of these events next year and many universities are keen to sign up to our initiative.

Spring/Summer 2019