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IMAGINE STEM CLUB

The inaugural launch of the Imagine! STEM Club took place at Anglia Ruskin University (ARU) Chelmsford campus over three days (29-31 July 2019). Over twenty students aged between 12 and 15 attended with an approximate 50% male-female ratio.

CSES Imagine! STEM Club was conceived and planned in consultation with ARU and Essex County Council (ECC) with the aim of promoting STEM learning and career options to young local school students and home-schooled students. CSES Council Member Bob Easby drafted the programme together with Professor David Humber from ARU, who were keen to show off their new £4 Million SuperLab, and Ed Bye, a CSES member who works with Schools and ECC providing specialist STEM support. The interactive practical sessions were delivered in the SuperLab by David Humber, Bob himself and Paul Cotton the SuperLab Manager at ARU, with some additional help and support from some enthusiastic ARU Ambassadors.



Students undertaking urine analysis in the SuperLab

Students experienced some biochemistry by undertaking 'urine' analysis, investigated bacteria culturing of their hand before and after washing and found that the

washing technique is important as in some cases more bacteria was found after washing than before. Also they investigated the effects of sun cream SPF by coating special UV-reactive beads and placing them in sunlight and timing how long it took for a colour change to occur.



Student providing sample for bacteria experiment



Students timing and observing reaction of UV-sensitive beads coated in sun cream

Following the scientific experiments the focus shifted towards engineering and the students investigated buoyancy by floating a tomato in different concentrations

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of salt water. After this they performed an experiment adding small quantities of sand to a test tube floating in salt water until it sunk and plotted a graph finding a linear relationship.



Students altering salt water concentrations to float a tomato at different heights



Students investigating buoyancy by adding sand to make floating test tube sink

The engineering and construction of structures was also studied through experiments with spaghetti and jelly!



Spaghetti and jelly baby tower construction

The last day was dedicated to team building of a 'flying fish' from a kit to make a large radio-controlled model based on a helium-filled balloon. After construction each team attempted to fly their fish round a circuit.

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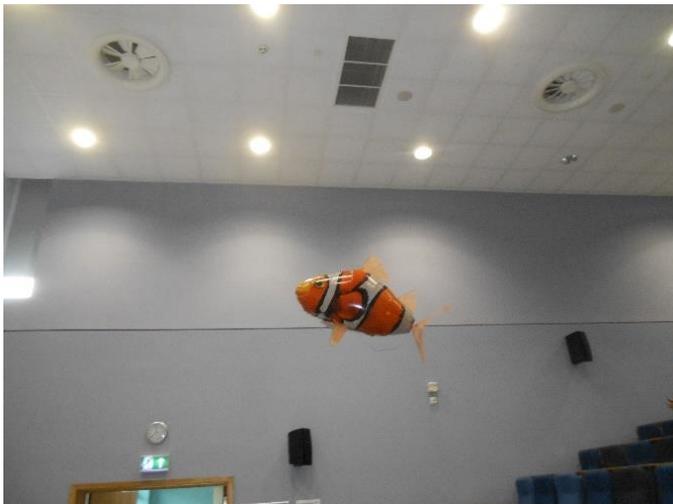
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Students making flying fish



The students with their certificates together with Ed, David and Bob (left to right in the background)



Completed fish on maiden flight

Finally all students were presented with an attendance certificate.

The resounding success of the Imagine! STEM Club demonstrates that there is a demand for STEM learning outside of school. The students were lively, engaged and all had much enjoyable fun. The event was a practical learning exercise for both students and the team.

Student feedback was unanimously positive, revealing an appetite for more such Imagine! STEM events. Interests spanned many topics from space, IT and maths to music, neurological science and architecture. Students were also very impressed with the SuperLab facilities with comments such as: "Amazing facilitates", "Impressive", "Excellent", "Unique", "Cool", "Very Hi-Tech", "Modern and advanced".

Thanks to all involved with the planning, preparation and delivery of this inaugural Imagine! STEM Club event, especially the wonderful ARU Student Ambassadors and staff who assisted. CSES gratefully acknowledge Professor David Humber and ARU for the use of the wonderful SuperLab and other facilities, and ECC for their financial support and assistance.

CSES together with ARU plan to offer further Imagine! STEM events. Register your interest via the Imagine! STEM Club application form (see link below).

See more on our website:
chelmsfordses.org.uk/imagine

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ESSEX 2020: A YEAR OF SCIENCE AND CREATIVITY



The coming year (2020) is a big one for CSES: it's our centenary. It also marks the 100th anniversary of the first radio entertainment broadcast by Dame Nellie Melba from the Marconi works at New Street, and the exciting news that Chelmsford will be hosting the 2020 British Science Festival.

All of this is brought together as Essex 2020: A Year of Science and Creativity.

CSES will be holding its usual programme of talks, socials and school activities, but look out for more events throughout the year as the celebrations take place. With our partner organisations we will be holding special events, some of which will continue in the future.

Our events pages have all the details (see link below).

Please keep an eye on the website and, if you are a member, look out for updates by email. If you're not yet a member, now is the time to sign up!

We look forward to seeing you at one of our events and celebrating this special year.

See more on our website:
chelmsfordses.org.uk/events

COMING UP

Tue 8 Oct 19:00 for 19:30: Quicksilver Water Speed Record (Talk, ARU, Que 101)

Sun 20 Oct 13:00 until 16:00: PhysicsFest (Great Baddow High School)

Wed 23 Oct 18:00 for 18:30: A Brief History of Electromagnets (Talk, ARU, Que 101)

Thu 7 Nov 19:00: Café Scientifique: Joint Replacement (ARU Café 92 Students' Union)

Wed 20 Nov 18:00 for 18:30: Future of Cyber Defence (Talk, ARU, Que 101) and CSES AGM

Wed 4 Dec 18:00 for 18:30: Understanding Space and Time (Talk, ARU, Que 101)

Thu 5 Dec 18:00 for 18:30: How AI and Big Data Reshapes the World – and Us (Talk, ARU, Mab 221)

Thu 12 Dec 18:00: CSES Christmas Drinks and Dinner (The Ivory Peg Wetherspoon's)

Wed 8 Jan 18:00 for 18:30: Battery Technology (Talk, ARU, Que 101)

Wed 22 Jan 19:00 for 19:30: Electricity Supply for the Future (Talk, ARU, Que 101)

Wed 5 Feb 18:00 for 18:30: Industry 4.0 3D Printing (Talk, ARU, Que 101)

Thu 6 Feb 19:00: New Year's Curry 2020 (Balti King)

Wed 19 Feb 18:00 for 18:30: The Sticky Business (Talk, ARU, Que 101)

Thu 27 Feb 18:00 for 18:30: Hunting for Dark Matter (Talk, ARU, Mab 221)

Wed 25 Mar 19:00 for 19:30: Saving Marine Fuel (Talk, ARU, Que 101)

Wed 22 Apr 18:00 for 18:30: Electric Car Charging Problems (Talk, ARU, Que 101)

More events will be added – please keep an eye on our website and/or look out for email updates.

chelmsfordses.org.uk/events

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BAE SYSTEMS

