STUDENTS REPORT BACK FROM BERKSHIRE'S FOURTH

Boys process inspiring micro facts

By Kamila Sinoplu
Kennet School, Thatcham

AN enthusiastic team of seven from Langley Grammar School explored the ins and outs of a computer in an interactive session with Intel, one of the world's leading businesses in micro-processing technology.

As the Slough-based students walked into the 'Long Box'– a luxury room from which to watch the famous horse races – a figure clad in white protective clothing faced them, with an array of microscopes and micro-technology spread out on a table in front of him and the green turf of the racecourse behind.

He resembled one of the scientists the pupils had drawn when asked what they thought a scientist looks like – white zip-up protective suit, shoe covers as well as flattering head gear, which they were told everyone in the 'fab', or fabrication units, had to wear with a gas mask. This was, in fact, Charles Cochrane, an intern at technology company Intel. The students, comprising mainly of boys, surrounded the spread of microprocessors of all ages, shapes and sizes with intrigued expressions.

Charles introduced the processors as being the 'brain' of a computer and invited the students to look through a microscope at a complex-looking board made of millions and millions of tiny 'switches', called transistors, that together make a processor. Arvind Kang, 13, said: "It's really interesting to see behind the scenes of our computers that we usually take for granted and amazing to see how much detail is put in."

Facts such as that 8,000 transistors can fit around a single hair and that sand is the raw material needed to make the processors (to make the silicon) really seemed to impress the young people.

On top of this, the students really seemed to appreciate the fact that the processors that Intel has developed have become better over time, and seemed to relish the fact that processors could become even better, asking about the newest inventions and those that are currently being developed, too.

Who knows? These young people might be the ones who make them even smaller, with even more capacity

In the 'Insight Zone', there was a display of almost everything you can think of to do with technology, and pupils from all over the county seemed to benefit from learning how everything works.

Mark Dodson, the son of TeenTech co founder Chris Dodson, said: "It's days like today that are a great way to engage young people and smash down stereotypes about jobs in science and technology. "

It's a small, small world: The minute world of micro processors is explored by students from Langley Grammar School.

Open minded: Students from Forest School, Winnersh, find out more about the skills needed to work for BT Openreach at TeenTech science fair held at Ascot Racecourse.

More to mobiles than texting

By Carly Newman
Reading Girls School

PRIVATE boxes overlooking the track at Ascot Racecourse are usually filled with excited punters cheering on the favourite, but at TeenTech they were given over to enthusiastic students exploring the technology behind their BlackBerrys.

Year 8 students from Reading Girls' School listened intently to a presentation given by staff of Slough-based RIM, which produces BlackBerry mobile phones.

The students separated into two groups and were up against the clock to name as many forms of communication as possible – one team came up with 17 and the other with nine, with answers including as Morse code, smoke, messenger and of course, mobile phones. After a presentation about how signals are transmitted and received, how phones are developed and the many different jobs involved within the company such as designing new phones, testing them, and feeding back on how to improve them, the students were challenged to strip a BlackBerry smartphone down to its control panel.

This took a matter of seconds for winner Kate Addo – and a few minutes for teacher Kate Thompson!

The next challenge was to name parts of the phone; some obvious, like the camera, and others not, like the small sticker which when moisture is introduced within the phone, will turn red to show repairers why the phone is not working.

Kate Addo, 13, winner of the 'pulling apart a BlackBerry' challenge said: "My day has been very interesting and it showed me how many jobs are involved in the science and technology industry."

She added: "After my day at TeenTech I am now considering a job within the science and technology sector."

Teacher Ms Thompson, said: 'I think TeenTech is very good at showing the students what jobs are available in the industry. It also shows that maths, science and computing are very important at GCSE level."

In the 'Insight Zone' of TeenTech, different companies were displaying their work, some involved in science, some in technology and others in engineering. Most had a demonstration set up to show students some of their gadgets.

Graham Ludlow, from St Bartholomew's School, Newbury, said: "The day has been amazing and very interesting. I loved taking apart the BlackBerry in the Challenge Zone. I am now very interested in a career in science and technology, especially engineering."

Teacher Janet King, from John Madejski Academy, Reading, said: "The day has been very interesting and it was very important for the students to be able to see the amount of different jobs. It raised awareness and built confidence in the student's communication skills."

Welcome: Maggie Philbin explains the day at Ascot Racecourse.

BBs: Kate Addo and Ellie Hunt, from Reading Girls.

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TEENTECH EVENT, IN THEIR OWN WORDS

The appliance of science

By Carly Newman, Holly Hobson and Kamila Sinoplu

TEENAGERS became techies for the day when they delved into the world of maths, science and engineering.

More than 300 students from across Berkshire attended TeenTech 2012 at Ascot Racecourse.

Founded by former Tomorrow's World presenter Maggie Philbin and engineer Chris Dodson OBE four years ago, TeenTech is a county-wide event now rolled out across the country, inspiring young people to pursue a career or subject in the maths, science or engineering fields.

Supported by the Education Business Partnerships in Berkshire, a number of sponsors including the Institute of Directors, Reading UK CIC, Syngenta and BT allowed businesses and inventors to meet with Years 7 and 8 pupils from across Berkshire to showcase how fun their jobs can be, on Friday, May 4.

Chris, chairman of the Institute of Directors South, said that even though there are one million unemployed under 24-year-olds, there were actually 600,000 technical jobs unfilled. He said: "It's important to intervene in persuading young people to consider jobs in science and technology."

He said TeenTech was vital for the progression of more people into the world of science because companies and people working in that field

Newshounds: Our reporting team at work.

were given a chance to answer questions that parents did not know the answers to.

Beverley Graves, joint managing director of Central Berkshire Education Business Partnership, said they were finding that students were interested in science and technology because of their modern concepts but young people found it hard to relate engineering and maths to the real world.

She said: "This is a great opportunity for students to learn about what skills employers are looking for, the qualifications they might need for specific jobs and the different ways that exist to enter an industry."

To find out more about TeenTech visit www.teentechevent.com

Bug's life: BCA brought along creepy crawlies. Right, Jim Morton, from Warfield-based Syngenta.

Hands-on pupils get the bug

By Holly Hobson
Kennet School, Thatcham

STUDENTS from Edgbarrow School, Crowthorne, had a taste of producing and printing 3D models during one of their activities as part of their day at TeenTech.

With help from designers such as Ian Stratford, they used 'RepRap', which stands for Replicating Rapid Application Prototyping, to make small 3D models with software OpenSCAD.

The exciting task, set in the Challenge Zone, went beyond basic computer skills. Students planned and designed their own models on tinkercad.com, then watched them being printed in 3D in PLA plastic, a greener type of plastic that is biodegradable and made from corn starch. The students worked in pairs with designers and learnt how to change the fonts and the surface of their designs, as well as the amazing amount of information required to print such a small model, which could reach up to 23,000 lines of coded information on the computer.

Eleanor Bell, 12, and Lauren Simmonds, 13, who were watching how the information input onto the computer transferred to the 3D model printer, had already been hard at work in the Innovation Zone devising an app for a mobile phone. They said: "The day has been very interesting and we really enjoyed designing an app."

Venturing into the Insight Zone, people from many schools were engaged in the activities that TeenTech's sponsors had to offer. Students found a blender being powered by a bike, large insects at the Berkshire College of Agriculture stand and teachers trying out the Xbox Kinect. It seemed that the adults enjoyed the day just as much as the students!

Jim Morton, visits and education officer for Bracknell-based science company Syngenta said: "TeenTech is a good opportunity for employees to work in a friendly environment."

Newsdesk: 0118 955 3309

Money Matters

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MONEY MATTERS

With Peter Sharratt

Capital Gains Tax Planning

Q.

I use my ISA Allowance each year but do not use my Capital Gains Tax Allowance primarily because I do not understand how to make the most of it. Could you explain?

Mrs D.L. A.

A.

I think the best way to explain this is by using an example. Let's assume someone has £100,000 to invest and they have already used their full ISA Allowance. For the purposes of this example I am going to ignore charges and attitude to risk which in reality are of course important but they would only serve to complicate the explanation/example. The £100,000 could be allocated to an investment and for the purposes of this example what type of investment does not matter although it needs to be liquid i.e. one that you can buy and sell easily. We would typically recommend a Portfolio of Collective Funds such as Unit Trusts (UT) or Open Ended Investment Companies (OEIC). Both are a type of Fund and often what you invest in via an ISA. A year later the £100,000 may have increased to £110,000 giving you an unrealised gain of £10,000 (please remember this is an example, in reality the investment could have fallen). For the gain to become assessable to CGT it needs to be realised i.e. the investment needs to be sold. Selling it for £110,000 realises a gain of £10,000 and assuming you had no other realised gains this would be Tax Free as it is within your CGT Allowance which is currently £10,600. You can then reinvest the £110,000 immediately and any gain would then be based on growth over and above the £110,000. If the £110,000 then increased to £119,000 the following Tax Year it could be sold to realise the gain of £9,000 which once again would be Tax Free. Points to be aware of though; you cannot buy back into the same fund/s within 30 days, you have to invest in something different. It therefore makes sense to invest with a provider that gives you a broad range of funds to invest in. Having said I would ignore them charges do have a bearing and so it makes sense to choose a provider that has low or ideally no dealing charges. If you do not have the funds to pay in to an ISA in future, as part of this buying and selling process you could reinvest some in to an ISA. Finally the CGT allowance is a use it or lose it allowance; you cannot carry forward unused allowances from one year to the next.

Any reader interested in discussing this topic further can telephone Peter Sharratt on 01344 875000.

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