

design:notebook



JOSHBOT TRIUMPH

Josh Curry, a Year 13 Arkwright Scholar, has won a top award with his 'Joshbot' project, see left. He was invited to attend the Arkwright Scholarship Trust Awards Ceremony in London in November, where he was awarded the 'Sir Henry Royce Memorial Foundation' medal and prize.

After a few purchases from eBay and car boot sales, and many hours of machining, wiring and software debugging, he created two fully functional robots. Called the JoshBots, they boast a wide range of features; from remote control via a smartphone, to speech recognition and face detection.

Both of the robots can be controlled over the internet from any location, and are capable of streaming their cameras to the same location to aid with navigation.

Josh has recently finished constructing a prototype sonar for the JoshBot V2, which can stream data from 360° around the robot to detect any obstacles or dangers.

As a STEM Ambassador, Josh has played an active role in the school's many STEM clubs over recent years and currently helps with the Raspberry Pi Club on a Thursday, see details below.

The Arkwright Scholarship Scheme is designed to encourage and stimulate high-ability 15/16 year olds to consider engineering and design as a career. The charity covers the whole spectrum of Science, Technology, Engineering and Maths (STEM) subjects, to seek out the very best students who are potential future leaders in engineering and design. The school currently has 4 Arkwright Scholars in Year 12. For more information, look at <http://www.arkwright.org.uk>

I am incredibly happy to receive such a prestigious award for my work. This project has been such a learning curve for me. I have had to learn how to program from scratch in three different languages.

INTERESTED IN CODING AND BUILDING COMPUTERS? COME ALONG TO THE RASPBERRY PI CLUB!

Student experts (Josh Curry, Ollie Ford, and Ed Uden) are regularly joined by Steve Howes from **Poundbury Systems**. The group has one working Raspberry Pi work station. Attendees are welcome to bring in their own equipment. The Thomas Hardy Raspberry Pi user group website is online here: <https://sites.google.com/site/hardyepigroup>

EVERY THURSDAY after school in T1



ART PANORAMA

Sixth Form Art students and staff have completed their collaboration with Damers First School, where they have painted two murals: a large learning wall and a 5ft long depiction of local Dorset landmarks. James Cartwright painted the second mural single-handedly through all weathers, cheered on by the lovely comments from the Damers pupils. Keep your eye out for these great pieces of local artwork!

thank you to contributors

DJS MM IMAJD SV
MRI APK

have you seen? have you been?

Things to inspire or entertain you:
locally, nationally & online

How changing learning environments, for example building a library on a bus or a circular classroom with no chairs, can change how children learn. Penny Hay from Bath Spa University said "Children don't learn from levels, they learn from feedback and dialogue, and negotiation and tricky moments, and sometimes failure." Read more in The Guardian online [here](#).

Designer Zoe Murphy 'upcycles' mid-century furniture with screen-printed patterns and typography inspired by her home-town of Margate. She has also collaborated with Liberty, Ealing Studios and Osborne & Little. Visit www.zoemurphy.com

The V & A Museum has a new furniture gallery, with complementary online content [here](#).

Fancy a quick route to fashion success? The one-year Vogue Fashion Foundation Diploma comes in at £19,560.00 excluding VAT. Take a look online [here](#).

**Paul Klee: Making Visible
Tate Modern Exhibition**
16 OCTOBER 2013 – 9 MARCH 2014
Adult £16.50 Concession £14.50
Paul Klee tea-towels also available from the shop!
www.tate.org.uk

FILM PRODUCERS

Product Design students visited the **V & A Museum** last term, and took part in a workshop. Year 12 student Stephanie Hagan made a film about it on an iPod touch. Watch it online on the makewaves site [here](#).

A line from design

As always there are so many events, opportunities and success stories to share with you – we can only include a selection on these pages.

It's great to read about Josh's success – he is a fantastic role model for other students, and we are very grateful to him for the extra-curricular work that he supports in the area.

I love the Valentine's Day recipe – just take care not to overcook it, as it has been known to break teeth!

Do take advantage of the links under 'design innovation' – this really is a fascinating subject area! Look out for our next issue, when we will be reviewing our lovely new 3D printer!

Mrs Cheney



FROM COW TO CONE

Year 12 Food Technology students visited **Craig's Dairy Farm** in Osmington to learn about the milk production business, from the birth of calves to the production of ice cream. The owner Trevor Craig and his team took the students on a tour of the farm, see above. They saw eight-week-old calves, the milking parlour, pasteurising and homogenising the milk, bottling, labelling and distribution. One of the highlights was learning how strawberry ice cream is made from scratch, with a free sample given to all students to try! Students also watched butter being churned from double cream, and were each given a dish of clotted cream to take home. It was an amazing learning experience about the cycle of food production.

Cut-out-&-Keep!

Home-made Honeycomb (DIY Crunchies)

INGREDIENTS:

1 tbsp vegetable oil, for oiling baking tray
80g/3oz butter
160g/5½oz caster sugar
80g/3oz golden syrup
2 tsp bicarbonate of soda
Melted chocolate (optional)

METHOD:

1. Grease a 20cm/8in square baking tin with the oil
2. Gently heat the butter, sugar and golden syrup in a large heavy-based pan until the sugar has dissolved. Turn up the heat and boil without stirring. If the mixture goes darker at one side of the mix, then gently tilt the pan to mix together. Keep boiling until the mixture goes a golden-brown, about 5 minutes.
3. Add the bicarbonate of soda and stir it for a few seconds, which will make the mixture expand and fizz. Be careful, the mixture will expand a lot. Tip the honeycomb into the oiled baking tin and leave until cold and set.
4. Cut the honeycomb into pieces and stir into ice creams or when cooled, dip piece into melted chocolate for added luxury - a great gift for Valentine's Day.

Try www.nigella.com & www.bbc.co.uk for more sweet treats.



design innovation

THE FIRST BIOLOGICAL COMPUTERS could be possible after scientists created a transistor out of DNA & RNA. This development could mean that changes in the body could be detected or drugs could be delivered using intelligent microscopic vehicles in the body. See more in The Independent online [here](#).

SUGRU This bright, self-setting rubber is mouldable and sticks to stuff, and is incredible for mending, fixing and 'hacking' (modifying) things. It was invented by MA student Jane Ni Dhulchaontigh, and can be used for the mundane, such as utensil holders or cable hooks or the ingenious, like tentacles on robots, sun-shields on Go-Pro cameras and solar mobile phone chargers. For a great story covering the development of the initial idea to the final product, and with lots of projects based on what it can do, take a look at sugru.com - it's in B&Q too!

FROM TYPEWRITERS AND FAXES to the Commodore 64 computer and Super-8 film, check out this gallery of semi-obsolete technological items, some of which have retained collector status or retro-cool, [here](#).

CODING TOP TEN With the advent of smartphones and apps, the way computing is viewed within education is also changing, with the emphasis shifting towards creating and programming. Take a look at this list of coding websites [here](#).

FLAT PACK TRUCK Designer Sir Torquil Norman, inventor of the Polly Pocket toy, range has created something at the other end of the scale: a truck for the developing world. It can be assembled in 11 hours by 3 people and can take more weight than a Landrover. Simplicity in design online [here](#).

LASERCUTTING HELP FOR ARTISTS AND DESIGNERS This lasercutting company has lots of research and advice on lasercutting materials, techniques and preparing design files. A brilliant resource for creative lasercutter use. <http://www.cutlasercut.com/showcase>

news in brief...

In November, ten Year 10 Food and Nutrition students took part in the cook-off in the first round of the Enterprise and Skills Company's **Yes Chef Competition**. They had to produce a 3 course meal in 2 hours. Congratulations to the five students who impressed the judges enough to go through to the next round were **Lucy Delamere, William Curtis, William Scott, Leah Halkerston, and Molly Cheney**.

Students enjoyed a visit from Joanne Holmes, a lecturer from the **Bournemouth University**. She gave a presentation on the different courses available based on food and nutrition, with an emphasis on the Nutrition degree and consequent employment, such as developing recipes for a food manufacturer or becoming a nutritionalist for a hospital.

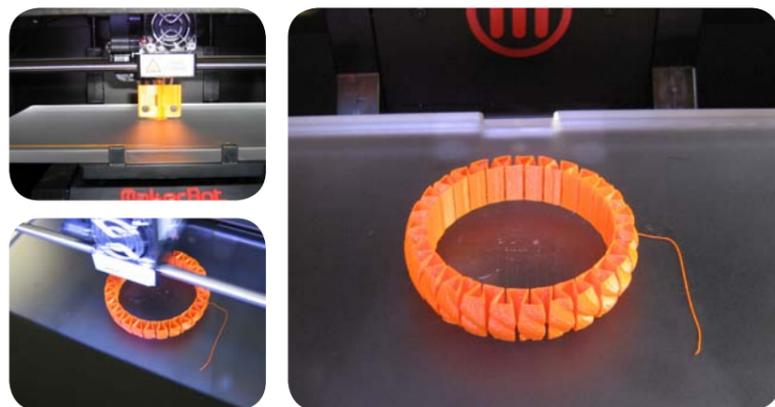
news in pictures...



The **Big Draw** in October was a great success again in the Art Department, with a wide range of workshops hosted for students and staff. The Drawing with Felt workshop, held by **Liz Walsh**, produced some brilliantly coloured work.

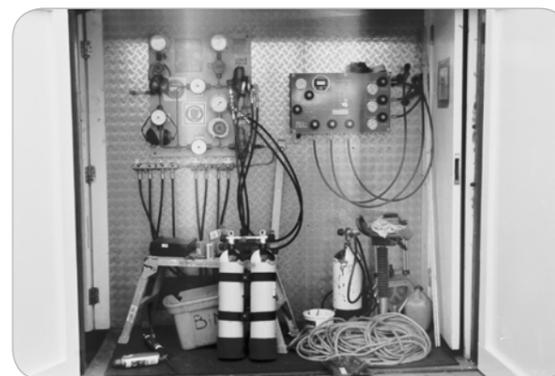


Year 12 Photography students visited the **Taylor Wessing Portrait Prize** at the National Portrait Gallery in November.



MAKERBOT

The arrival of a 3-D Printer Makerbot has caused excitement in the Design Department. Funding from Design and Arkwright means that students can use this cutting-edge piece of technology to model and to make aspects of their design solutions at GCSE and A level. The printer uses PLA material on spools, and builds objects up layer by layer. It is pre-loaded with some design files for objects such as a comb, bracelet and chain, and projects can be downloaded from <http://www.thingiverse.com/>. Students can also design their own work in software like Solidworks, Pro-Desktop and Google SketchUp. One of our current Arkwright scholars, Josh Curry, has already taken the basic functions of the Makerbot Replicator to a higher level by printing out a 3D model of himself.



Swanage proved to be inspiring to Photography students from Year 12. The diverse character of the seaside town is evident in this selection of interesting images taken on the trip.