



Engineering



Non Sibi Sed Aliis
'Aiming at Excellence'

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CONTENTS

- pg 1 Welcome
- pg 2 Balshaw's Beauties Hit The Streets Again; Galileo's Telescope; Global Warming
- pg 3 School Trips
- pg 4 Year 11 Ski Trip In Austria
- pg 5 James Sumner; Marcus Brigstocke
- pg 6 Interest In Genealogy; Eco Schools Update
- pg 7 Bowling Trip; Bat Box
- pg 8 'Our 21st Century School'; Lift Off At The Spring Fair
- pg 9 Balshaw's Knitting Revival
- pg 10 Inspection Reports; Darwin - The Origin Of The Species
- pg 11 NUCLEUS: Balshaw's Science News
- pg 13 Engineering Meets Geography; The Physics Of Golf
- pg 14 An Interview With...; Year 7 Lancashire Mathematics Challenge
- pg 15 Eco Day; Spring Concert
- pg 16 Stem Pathfinder... A Roaring Success
- pg 18 Maths Buddy Scheme; Mathematics Transition Event
- pg 19 Tetrahedron Challenge Day; Lamark
- pg 20 Technology Tournament: What A Day!; Lions Competition Winner

TRANS-FORM

THE ENGINEERING NEWSLETTER
FOR BALSHAW'S C.E. HIGH SCHOOL

Life at Balshaw's is always exciting, well busy certainly, and the time since the last editorial is no exception. We still await re-designation but we are delighted to report that the Diocese rated us as an "Outstanding Church of England High School" and Ofsted stated that Balshaw's is a "very good school with outstanding features". Details of our Inspection can be found inside "Transform" together with the many Darwin 200 activities, the excellent STEM project with Year 11 boys, the visit of the Royal Society of Science to Leyland Museum and so much more from all departments. How we get time to continue writing articles for this most professional publication, I shall never know. Enjoy reading.

Yours sincerely

J M Venn, Headteacher

BALSHAW'S BEAUTIES HIT THE STREETS AGAIN

■ HOW MANY MUSCLES DOES IT TAKE TO WALK ONE STEP? 200 AND EACH AND EVERYONE WAS USED BY THE BALSHAW'S

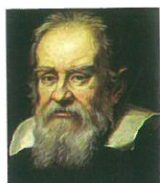
Beauties at this year's fundraising Moonlight Walk in aid of St Catherine's Hospice. This is the second year a team from Balshaw's has taken part in the annual walk which sets off at midnight and consists of 13.1 miles of walking through the streets of Preston and surrounding area until the early hours of Sunday morning. The route goes through the grounds of St Catherine's Hospice where everyone is silent and this gives time to reflect on why the money is being raised and emotions run high. The support the walkers give each other along with encouragement from the marshals and passers by certainly helps keep spirits up on the 'tougher' parts of the walk, not to mention the thought of the bacon sandwich at the very end. In total the team raised £1513 for St Catherine's and enrolment forms are already being filled in



for next year. Well done to everyone who took part and many thanks to everyone who has supported the team.

· Nicki Websdell

GALILEO'S TELESCOPE

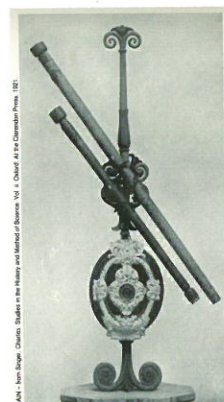


■ DID YOU KNOW THAT 2009 CELEBRATES 400 YEARS OF GALILEO'S TELESCOPE. GALILEO

was an Italian mathematician, astronomer and physicist. He developed the astronomical telescope and was the first to see sunspots. He was in Venice when he heard of an invention that allowed him to see distant objects as distinctly as if they were nearby. Galileo worked out the principal of the telescope. He gradually improved the power of his telescope, ground the lenses himself and began observing the heavens. It was a refracting telescope. It is no longer used in astronomy although it is still used in principle

in opera glasses. It consists of a bi-coma objective.

The telescope was a wonderful invention in the world of astronomy and science. We are lucky that we were awarded a telescope to celebrate the year of Astronomy from the Society for the Promotion of Astronomy. Year 9 Astronomers have learned about telescopes from Mrs Hayes.



Galileo's Telescopes
The cracked lens is mounted in centre

GLOBAL WARMING

■ GOVERNMENTS MAY BE DEBATING ABOUT THE CARBON FOOTPRINT OF THEIR COUNTRIES BUT YEAR 7 PUPILS AT

Balshaw's could show them a thing or two. As part of their topic on energy they were set a project to produce a model to explain how using fossil fuels leads to the greenhouse effect. The pupils presented their models, explaining their findings, to the class. The standards were very high and some were

outstanding and attained a Headteacher's commendation.

One model in particular caught the eye of Mrs Hayes and the science staff. Grace Thomson showed the fate of the earth hung in the balance and what would happen if we didn't reduce our carbon footprint. Well done Year 7.



SCHOOL TRIPS

■ SOME FOR SCIENCE, SOME FOR ICT, SOME FOR ENGINEERING, SOME FOR ENGLISH, DRAMA, RE. WHY DO THE STAFF DO IT? COULD THIS BE THE REASON?



Dear Mum,

A little postcard, just to tell you I'm all right.
The Channel was quite choppy
When we sailed across last night.
And mum you're not to worry,
But you know my anorak,
Well Wayne from Mr Wilson's class
Threw up all down the back.
But I'm not really all that bothered
As Thompson from form three
Said that when we get to Calais
We can wash it in the sea.

Dear Mum,

Well here we are
We've got to Paris, what a dump!
The drivers ARE ALL MAD HERE,
And they really make you jump.
We saw some boring statues,
But there's not much else to see
The French speak far too quickly and a coke costs 90p.
The Arc de Triomphe's crucial
And the Eiffel Tower's cool,
But on the whole this trip's
About as bad as being at school.



Dear Mum,

It's getting better.
Last night we stayed out late
Then Thompson met this older girl
Who asked him for a date.
The rest of us went drinking.
Then we woke up in a park,
But managed to get back
Into our pension in the dark.
And mum, you're not to fret,
But Mr Wilson called the police.

Dear Mum,

I've found out something,
Are you wondering what it is?
Well I've only just uncovered
The most wicked kind of swizz.
You know that you and dad
Paid for this holiday for me,
Well all the teachers on this trip
Came absolutely free!!
It really is a fiddle,
But I'll tell you what I'll do,
When I grow up, I think that I'll
Become a teacher too!





SKI TRIP IN AUSTRIA

■ ON 4TH APRIL 44 PUPILS FROM BALSHAW'S TRAVELLED TO BISCHOFEN IN AUSTRIA FOR THE FIRST SKI TRIP TO BE HELD

in nearly 10 years.

Following a long journey by coach the pupils were keen to get started on the slopes and although this was a mixed group of age and skiing ability, everyone progressed and enjoyed the pleasures skiing has to offer.

The pupils were asked as part of the trip to consider the engineering aspects of skiing. An evening was given to discussing the ways in which skiing has developed including ski lifts, skis and bindings and possible suggestions were made for a report the pupils were to produce when they returned to England.

There were two reports that were worthy of mention and

indeed the pupils were awarded a prize for their efforts. These were Megan Makinson and Jacob Ashton, who produced a full project on ski lifts, how they work and the various types of lifts. This report is available to see in the school office. The second was by Charlotte Salisbury, Sian Dunwell and Lily Simmons and this was again focussed on ski lifts and how they helped the group progress on different areas of the ski resort. An extract of this report is below:

"The instructors introduced us to skiing with some basic skills. We firstly used a banana lift. This meant that you picked it up and put the hard piece of plastic behind our legs. This was quite hard and there was a lot of falling over. The lift was powered by a strong metal wire, powered by a machine..." The rest of the report can be found on the school website, www.balshaws.lancs.sch.uk, or in the office.



JAMES SUMNER



■ DID YOU KNOW THAT 2009 IS THE 85TH ANNIVERSARY OF THE DEATH OF JAMES SUMNER WHO

was one of the founders of Leyland Motors. He was born in Water Street in Leyland in 1860. He became fascinated by steam power and produced a 5ton steam wagon in the 1880s for Stannings bleachworks. Stannings has a major link with the school and there is an annual John Stanning prize of £500 awarded to someone going off to University or College and a board in the Hall highlights the recipients.

Sumner's original workshop is on Towngate. When James inherited the works he did a lot of experimenting with a steam powered tricycle. He then developed a successful steam lawn mower and then put the lawn mower engine into a 3 wheeled car. The business increased and became associated with the Stott Company of Manchester.

In 1896 James and his brother Henry persuaded their father to finance a new company the 'Lancashire Steam Motor

Company' and moved to premises off Hough Lane. They produced a 30cwt steam van, powered by an oil-fired boiler. This won a silver award by the Royal Agricultural Society.

In 1940 they introduced the first experimental petrol engine vehicle, known as the 'pig.' This was not a popular model but, when developed, the company received its first order for petrol-engine double decker buses.

Expansion continued in the First World War and vehicles were built for the armed forces including 6,000 petrol engine vehicles. After the 1st World War Leyland Motors expanded its sales both at home and abroad and Leyland grew rapidly. Changes in Industry and commerce affected Leyland over the years leading to Leyland Motors splitting into the various contributors.

James Sumner died in Southport on 27th July 1924 and he had been totally blind for the last five years of his life. He is buried in the Parish Church Cemetery. We all owe a lot to James Sumner for the development of Leyland as it is today. We are lucky that Dave Sherliker retired Human Resources Director from Leyland Trucks is on our Engineering Steering Group.



■ THANK YOU SO MUCH FOR YOUR KIND OFFER AND FOR GETTING IN TOUCH WITH ME. I'D LOVE TO COME TO YOUR ECO DAY ON THE 2ND JULY BUT I'M SORRY TO SAY THAT I CANNOT AS I WILL BE WRITING AND RECORDING "THE NOW SHOW".

Given that I cannot be there I'd like to send a message to you, your teachers and most importantly your students.

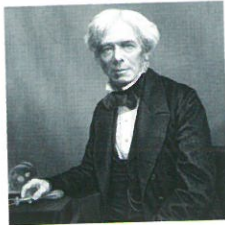
'This is a very exciting time for anyone interested in the future of our shared planet. Too many of the stories we hear are about disaster and destruction, doom and gloom, threats and warnings. Too many of the words used to describe climate change are expressed in the language of fear, which has never been a great motivator for real and lasting change. It's important to know what is at stake and to understand what we have to lose but, having done that it is vital that we begin to talk about how we embrace the opportunity to make this better. That is a tremendously exciting challenge. We have before us the opportunity to create a world filled with new and inspiring ideas, brilliant innovations and ways of living which rather representing sacrifice are in reality more fun, more healthy and more rewarding than how we live now. Growing your own food is fun. Thinking about what you eat... How it was produced? Where does it come from? Could it be from a farm you've been to?

Cycling, walking, camping, recycling, reusing, these things are good and what's more they feel good to do. Clothes, toys, electronics, books, and ideas can be swapped for free! Science can be marvelled at, engaged with and can spark the imagination like nothing else. Today's children will, I have no doubt, create the energy production methods of the future. Who knows how we will light our homes or travel the world in ten, twenty or thirty years time? The future is bright. We must act fast, yes because the stakes are high but we can act with courage and with optimism. I wish you the very best for your Eco-Day - enjoy it and share your brilliant ideas with each other. Let the language of hope and inspiration be the theme of the day.

My best wishes and apologies that I cannot be there

Marcus Brigstocke

INTEREST IN GENEALOGY



■ SINCE WE PUBLISHED THE FAMILY TREE OF CHARLES DARWIN IN THE

last issue of Transform, there has been a lot of interest in genealogy, not least our evening in April when Mr Banks,

Miss Hodgson and Mr Temmen gave us a superb evening showing us how to start, how to use war records and other official documentation, and even tracing the history of one of our former pupils William Hampson, who was killed in the First World War and whose grave, the school trip to the Battlefields went to investigate. Over 40 people came to this excellent evening.

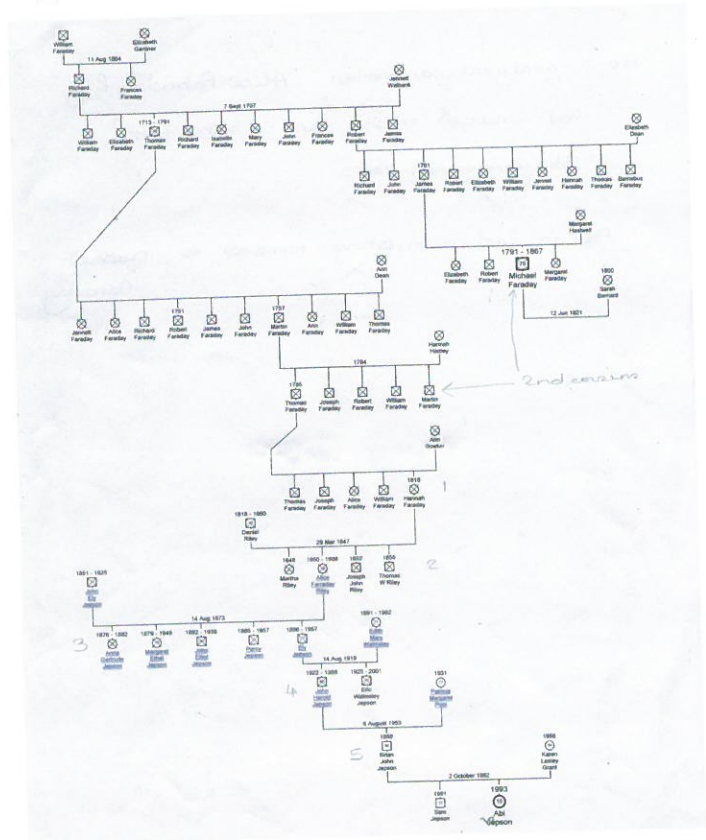
Not only has Balshaw's got a link between Charles Darwin and Victoria Williams but also between Abigail Jepson and Michael Faraday, the famous English chemist and physicist who contributed to electromagnetism.

Faraday established that magnetism could affect rays of light and that there was an underlying relationship between the two. It was largely due to his efforts that electricity became viable.

As a chemist, he discovered benzene and invented an early form of the bunsen burner and popularised terminology we have all heard of such as anode, cathode, electrode and ion.

Unlike pupils at Balshaw's he received little formal education and yet he was one of the most influential scientists in history.

You can see the family tree of Abigail. Her great great grandmother was called Alice Faraday Riley which is an unusual middle name and came from Stanningley in Yorkshire.



Abigail is second cousin, six times removed to Michael Faraday. Who are we going to find who is related to another famous scientist or engineer?

Faraday was highly religious and a member of the Sandemanian Church, which was a Christian Sect founded in 1730 which demanded total faith and commitment. His dates 22 September 1791 - 25 August 1867.

ECO SCHOOLS UPDATE



■ BALSHAW'S IS ALL SET TO BECOME AN ECO FRIENDLY SCHOOL AND SAVE ENERGY. WE CAN'T SAVE ENERGY UNTIL WE KNOW

how we are using it. Balshaw's has now reached the research part of the scheme and year nine pupils:

Siobhan McCann, Beth Fox, Lucy Baehran, John Tran, Stacey Swarbrick, Nathaniel Morris and Lucy Farrington are set to discover Balshaw's energy and water consumption by carrying out several tests over the next few months. They will discover when we are using energy, how much we are using and how much it is costing the school. They will do this by regularly reading the school's meters and checking how many lights and computers are left on unnecessarily, among other tests. Once we have discovered this the eco team will come up with a plan for Balshaw's to start saving this energy.

So get behind the team and help them out.

Caitlin Graham (10CL8)

BOWLING TRIP

■ THERE CAN BE FEW MORE POPULAR EVENINGS OUT THAN A NIGHT AT THE BOWLING ALLEY, AND IN FACT, AS OFF-TOPIC

as it may seem, trade union leaders have always been big supporters of bowling... largely because the best players love a strike!

Dismal jokes aside, each year, companies like Megabowl make huge sums of money from groups of enthusiasts hiring out 18.9 square metres of polished alley and bowling balls ranging from eight to 16 pounds. The new Prefect Body enjoyed their first group trip, at the Capitol Centre, Preston, on Tuesday June 9th, with some high-standard technique on show, admittedly as well as some distinctly average displays too!

On the night, it's easy to miss the huge part that engineering plays in the bowling industry, but it is, in fact, 95 years since the new Mineralite bowling ball was introduced – which explains female superiority in the sport, given the fairer gender had four years to hone their skills before the men



returned from the Great War!

But without opening that contentious can of worms, from 1914, the need for a new type of pinsetter was prominent. The new bowling ball material increased the demand for the average man to be



able to go bowling.

Without an electronic automatic pinsetter, the game was played slowly. At this stage, young boys were employed to reset the pins, when they could find the time away from cleaning out chimneys!

By the late 1940s, in the US, bowling was a billion-dollar industry, and this was when technology intervened. When the 50-plus Year 10s made their visit, the engineering made for a much more smooth-running evening, as well as eradicating any indiscrepancies in the scoring stakes!

There are many fine margins in bowling; the precision of the foul line sensors, and the exact twelve inch measurements between the pins. Invariably, there are the occasional problems with the technology, but all in all it has made for a much more engaging bowling experience, as the pupils compounded two games with a meal and fizzy drinks laid on by Miss Venn, who was accompanied by Miss Molyneux, Mr Riley and Mrs Wilson to upkeep the staff bowling reputation of Balshaw's!

With the trip open to all of the new prefects for 2009/2010, a second phase of selection for new prefects is currently underway, and with fun events like this, what greater incentive would you need? Whilst nobody was fortunate enough to score 300 in a 'perfect game' – that's 12 consecutive strikes – a good time was had by all!

Jack Hepworth

BAT BOX

■ THE PUPILS UNDERWENT A DESIGN DEVELOPMENT PROCESS IN ORDER TO ENSURE A SUCCESSFUL PRODUCT. THIS

involved making a mock up of a bat box from plans and assessing any faults. Several faults were identified and eliminated and this ensures less waste during the manufacturing process and a more ecologically friendly product.

The need to use plastic on the top of the boxes as a hinge was offset by using reused pond liner off cuts and again ensuring the product was more ecologically friendly.

For ease of manufacturing the boxes were produced on

a production line, devised by the pupils and the boxes were produced in batches. This was a new area of study for the pupils and they soon learnt this produced a better product much more quickly. The speed of production also reduced overheads in production such as lighting and heating in the classroom, helping to make the product cheaper and more environmentally friendly.

Overall this was an extremely good exercise for the pupils and they learnt a lot about production methods, costs and environmental considerations in manufacturing. The most important lesson was teamwork, without which the production line would not work

'OUR 21ST CENTURY SCHOOL'

A Conference for North West Pupils



ON FRIDAY 5TH JUNE FOUR PUPILS FROM YEAR 9, SIOBHAN MCCANN, GINA WREN, SAM ROBINSON AND JOHN TRAN WERE

chosen to represent Balshaw's at this conference at The Pines Hotel, Chorley. It was a really interesting conference involving schools from around the North West and our pupils heard about the student voice and the difference it can make within schools. The pupils also shared good practice and ideas with pupils from other schools and they heard about initiatives in other schools. Our students spoke to many pupils from schools with different types of specialism and the other schools were very interested in Balshaw's Engineering Specialism and how we celebrated it.

Here are a few of the ideas of good practice the pupils

heard about happening in schools around the North West -

- » Radio station within school, run by pupils, playing at lunch and at break times
- » Peer mentors, every Year 7 assigned with a Year 10 mentor
- » Anti-bullying action group - a phone number which pupils can anonymously text messages to if they are being bullied
- » Healthy and unhealthy food being served at dinner - give the pupils a choice
- » TV screens in the canteen
- » Forum for pupils on the internet - so pupils can contact teachers or ask questions about coursework or homework, can be anonymous
- » When pupils are in Inclusion at dinner they can help in kitchen or with maintenance team, visible deterrent to other pupils - they could wear a tabard like community service
- » Blouses and shirts with school emblem on collar so no ties required

The pupils also took part in designing their idea of a perfect school. They came up with a brilliant design... if money was no object! If you have any ideas about the above or any suggestions how Balshaw's can develop and celebrate our pupil voice, please let Miss Venn know.

Maxine Tetlow

LIFT OFF AT THE SPRING FAIR!



THIS YEAR'S SPRING FAIR SAW THE

ultimate in engineering advances when a Schweizer H300C Bi helicopter

landed on the school's grounds to give pupils, parents and staff an up close and personal view of its controls, with a fantastic prize of a trial lesson in the helicopter being offered by the Pilot in Command, Garry Tetlow from Ventbrook Air in Blackpool.

Original designs for the helicopter were first drawn by Leonardo da Vinci as early as 1490 and the helicopter we were lucky enough to see on the day saw how da Vinci's original drawing had advanced beyond all engineering

expectations into a sleek, powerful and compact machine.

Miss Venn took to the skies in the helicopter after the Spring Fair for a panoramic tour of Leyland and the school grounds. Lucky pupil, Graham Clarke, who is currently training for his Private Pilot's Licence, and had helped to sell raffle tickets all day for the trial lesson prize, was then given the amazing opportunity to fly back to Blackpool Airport in the helicopter. Describing it as a 'fantastic experience' he is now more determined than ever to pursue his goal of becoming a pilot.



Miss Venn prepares to take to the skies with pilot Garry Tetlow

BALSHAW'S KNITTING REVIVAL

■ THE EARLIEST KNOWN KNITTED ITEMS IN EUROPE WERE PRODUCED BY MUSLIM KNITTERS EMPLOYED BY THE SPANISH ROYAL

family, back in 1275. At Balshaw's a group of knitters have developed a style of their own – knitted handbags from recycled carrier bags.

Historically knitting made from recycled goods started during the second world war when men and women were encouraged to unpick old woollen clothing and re-use the wool. They were issued with knitting patterns so that balaclavas and gloves could be made for the army and navy.

After the war years, knitting had a huge boost by the introduction of great colours and styles of yarns, as well as fashionable knitting patterns. Girls were taught how knitting is a useful skill as well as a good hobby.

During the 1980s knitting saw a decline when cheap machine knitted clothing became available and it was no longer worth knitting your own jumpers but the 21st century has seen a resurgence. Celebrities such as Julia Roberts, Cameron Diaz, Russell Crowe and Winona Ryder have all been seen knitting, helping to make it a popular craft.

The Knit and Natter Eco Club at Balshaw's are also helping to make it a favourable hobby by knitting stylish handbags from a range of plastic carrier bags. The carriers, donated by staff, are carefully separated and knitted into individually designed bags with handpicked recycled embellishments such as beads, chains,

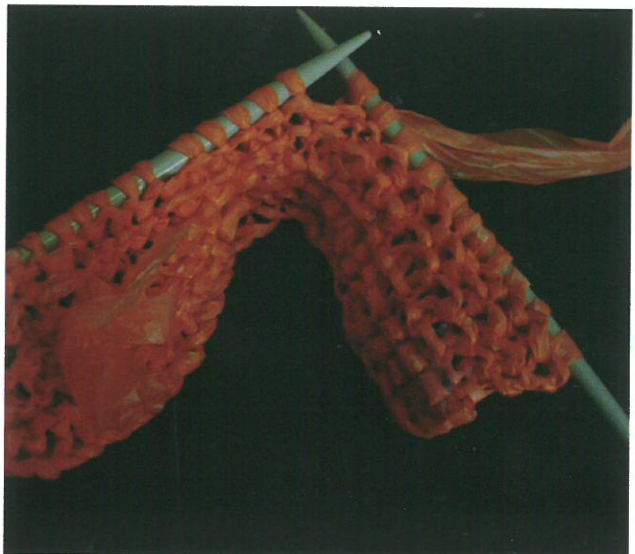


fabric flowers and buttons. The original knitting pattern the group drew up is adapted so that each handbag is unique. The handbags proved so popular at the Spring Fair that they sold very quickly, making £190 for school and orders were taken, provided the customer collected their own carrier bags.

The club were asked to demonstrate their skills at the Schools Eco Day where members of the group taught as many people as possible to knit with recycled goods and a selection of their handmade bags were available for sale.

Everyone has been amazed by the quality and styles of bags that have been made, many finding it hard to believe they are made from recycled plastic. Over the weeks the knitters have become experts on which carrier bags are the best to knit and which stores have the best coloured bags.

The group are hoping to have a range of bags available for Christmas parties with plenty of silver, gold and black. The only limitation will be the knitters' imaginations!



Ofsted INSPECTION REPORTS

■ THE DISTINCTIVENESS AND EFFECTIVENESS OF BALSHAW'S AS A CHURCH OF ENGLAND SCHOOL ARE OUTSTANDING.

This was the view of the Diocesan Inspection after our Ofsted report on 4 June. Diocesan Inspector the Revd Canon Dr Peter Shepherd and HMI Ruth James and Inspector Tony Pearson agreed that the school is doing very well indeed and we were delighted.

One of the paragraphs in the report compliments us on our Specialist College Status:

Specialist status has been used extremely effectively. Very good results are achieved in the specialist subjects and technology resources have been enhanced and put to good use. The science curriculum has been developed to offer a variety of courses that meet the needs of different groups of students and this is impacting very positively on achievement in science, with a significantly higher proportion expected to gain two grades A* to C or equivalent in science subjects this year. A recent project to build a go-kart, involved a STEM (science, technology, mathematics and engineering) club for a small group of Year 11 students at risk of underachieving. Subject teachers commented on the improved motivation and positive outlook of the students in lessons as well as improved subject understanding. An additional benefit was the teamwork generated by staff from different departments, who

were able to exchange ideas and good practice. Excellent use is made of the school's links with local engineering industries.

Transform was mentioned in the Diocesan report:

"The school's distinctive identity is strongly promoted by staff and comprehensively understood by pupils. Pupils' differing needs, abilities and interests are met through a broad and balanced curriculum with an emphasis on engineering (the links with faith exemplified in the school's newsletter 'Transform') and a commitment to equality and fairness."

We were delighted to receive the following letter from St Andrew's PCC:

I'm writing on behalf of St Andrew's PCC to congratulate you and your staff on your recent Ofsted report. We are aware of the excellent work you do at Balshaw's and it's good that it has been officially recognised and praised. We are delighted that the Diocese has given the school the rating 'outstanding'.

We appreciate and are grateful for the Christian ethos at Balshaw's and the close connection the church family has with the school.

Thank you for all you do.

Joan Buckley PCC Secretary

St Andrew's Leyland

DARWIN – THE ORIGIN OF THE SPECIES

Draw Your Own Conclusion...

■ ON THURSDAY 21ST MAY 2009 TWO FRIENDS OF BALSHAW'S CAME ALONG TO TALK TO YEAR 11 ABOUT THEIR EXPERIENCES ON THE

Galapagos Islands. Scientist Joan Farley and Theologian Glynne Ward really got the grey matter working as they took students on a whistle stop tour of Darwin's life aboard the famous Beagle ship and presented some of their very own photographs taken during their trips to the Islands. The audience were asked to participate by thinking of examples of evolution today. Here are some of the things they came up with;

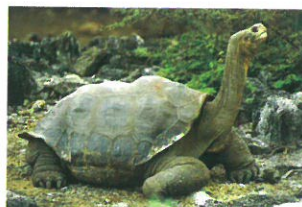
Telephone Boxes have been replaced by house phones and these days by mobile phones

Record players (do any mums and dads remember these?!) have been replaced by CD players and more recently mp3 players

Balshaw's School has evolved from its old site as a grammar school to its current site and new buildings.

The Galapagos Islands were brought to life by the wonderful pictures of the rare species of animals that live there.

We would like to thank Joan and Glynne for their wonderful presentation!



The last known surviving Galapagos tortoise



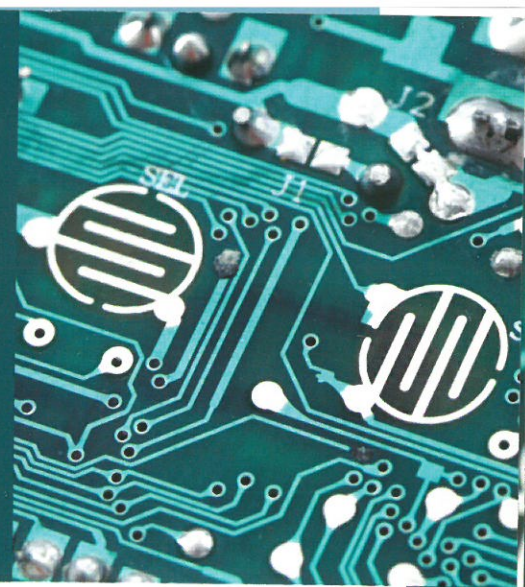
Land Iguanas live on the dry islands

As Part of the Darwin Year Celebrations. In association with the

welcometrust

NUCLEUS

BALSHAW'S SCIENCE NEWS



ADULT CLASS SUCCESS FOR SECOND YEAR RUNNING

■ MEMBERS OF THE GCSE SCIENCE ADULT CLASS 2009 TOOK THEIR FINAL EXAMS IN JUNE AFTER AN ENJOYABLE BUT CHALLENGING

12 months of weekly Science lessons at Balshaw's.

Nine adults this year enrolled on the course and this has allowed them to help their children with their own Science or take them further in their own career paths.

Registration for the 2009/10 GCSE Science Adult class is NOW OPEN! Email us: science@balshawshigh.co.uk or ring the school 01772 421009 for more details!

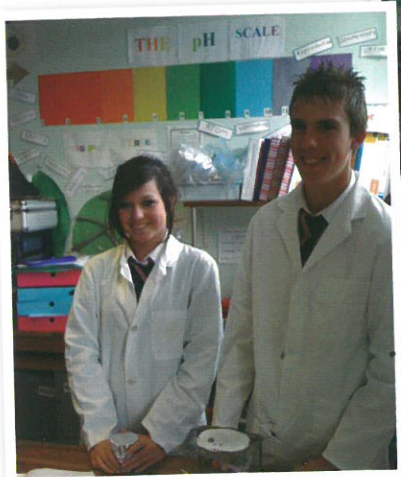


Gillian Wells gets to grips with polymers!



Stewart Murphy and Ikram Alchane study the properties of gloopy materials

LAB-COATS FOR YEAR 11 SEPARATE SCIENCE STUDENTS



Emma and James keep out the microbes with their smart new lab coats!



Ryan and Sam are making yoghurt using *Streptococcus* bacteria

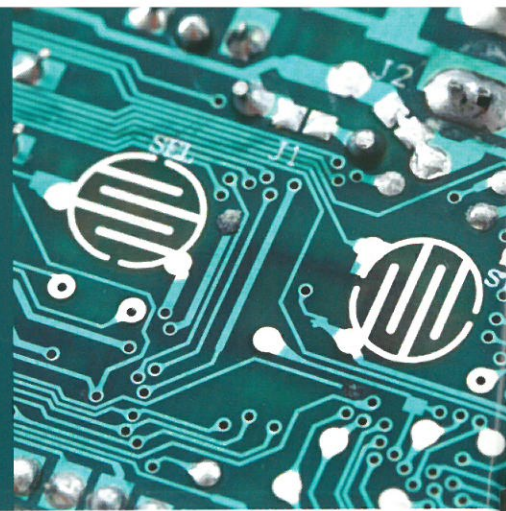
■ AS PART OF THEIR GCSE BIOLOGY COURSE, YEAR 11 STUDENTS MUST UNDERTAKE A MODULE IN MICROBIOLOGY.

They learn about how to work in laboratory aseptically (in sterile conditions) and how to prevent the spread of Microbes from experiments to the outside world. The Science Department was therefore very grateful to receive a donation of 65 Laboratory White Coats to allow the students to take part in potentially dangerous experiments safely. Chorley Hospital very kindly donated the coats to Balshaw's this year and as you can see...they are being well used!

Thanks again to Chorley Hospital!

NUCLEUS

BALSHAW'S SCIENCE NEWS



BTEC UPDATE

■ THE FIRST EVER BTEC APPLIED SCIENCE STUDENTS AT BALSHAW'S HAVE PASSED THEIR COURSE. THE FINAL MODULE –

Scientific Principles was completed in June with a final practical activity for students – a sheep lung dissection.

All 22 students passed the BTEC giving them a minimum of 2 GCSE Grades A*-C equivalent. Many of our students are planning to go on to Runshaw to courses including Health and Social Care and BTEC National Diploma in Applied Science.

Well Done to all our BTEC Students!

Vicky and Zack discover the secrets of the respiratory system



DARWIN DEBATE AT ST. ANDREW'S CHURCH

■ AS PART OF DARWIN YEAR AT BALSHAW'S THE SCIENCE DEPARTMENT HELD A DEBATE AT ST ANDREW'S CHURCH WHERE YEAR 10

Separate Science students prepared arguments for and against the statement "Charles Darwin's theory is widely accepted today".

The teams produced some fantastic arguments and visual aids to fight their corner and over 150 Balshaw's students and members of the public gave up their lunchtime to hear the debate. Ex-Balshavian Philip Wynne did a superb job of chairing the event. Thank you and congratulations to Jessica Potts, Alex Taziker, Chris Burns, Katie Burgess, Alison Bird, Tom Watson, Lucy Halsall and Joe Gold.



(above) Joe and Tom take the audience through their argument



(right) The two teams with Chairman Philip Wynne

ENGINEERING MEETS GEOGRAPHY

■ IN MARCH, NINE Y10 GEOGRAPHERS TOOK PART IN THE MAKING OF AN EDUCATIONAL VIDEO FOR UNITED UTILITIES.

The water company, based in Warrington, serves over 7 million customers and manages 42,000km of water pipes. From this spring it has started constructing a new £125m 'Water Motorway' allowing the transfer of water from Liverpool's and Manchester's water supplies for the first time. Engineers are building 20 separate tunnels along the pipeline route from Prescott to Bury, excavating at an average depth of 10 metres, crossing obstacles such as the M6, M61, and M66.

Our Geographers carried out an environmental impact survey of human activity at the River Lostock, estimating how run-off in a river may be affected by work undertaken on a similar river, during the pipeline project. They were able



to demonstrate techniques used in their recent fieldwork, measuring river velocity. Our students were filmed using highly accurate flow meters purchased with school's 'Engineering bid monies'.

Both pupils and staff felt the experience was very enjoyable and relevant to the Geography GCSE. United Utilities and the film crew assure us that they have great footage and found our pupils articulate, polite and very knowledgeable about river hydrology. The video will be made available in the education section of the United Utilities website www.unitedutilities.com in the coming months. A great example of geography making sense of engineering!

THE PHYSICS OF GOLF

The golf swing has 'physics' written all over it.

■ THE FASTER THE CLUB HEAD IS GOING AT THE BOTTOM OF THE SWING, THE GREATER THE AMOUNT OF KINETIC ENERGY THAT WILL BE

transferred from the club to the ball.

$$\text{Kinetic energy} = \frac{1}{2} \times \text{mass} \times (\text{velocity})^2$$

Most professional golfers achieve a club head speed of 100 m.p.h at the bottom of their swing. Tiger Woods can reach up to 125 m.p.h. by maintaining his position above the ball so wasting little energy.

At the back of the swing Woods utilises his flexibility to reach far back extending his range of motion while keeping his rotating torso over his right leg.

Woods turns his torso quickly and presses his right leg forward.

He drives through the ball, concentrating his force to create a very high initial ball speed of about 180 m.p.h.

Woods allows the club head's momentum to extend his follow-through far around his back.

When chipping out of a sand trap, a golfer hits the sand behind the ball with his club head. The sand between the club and the ball provides cushioning by absorbing some of the energy. The distance of the shot is determined by how far

behind the ball the club head hits the sand.

There is a relationship between the speed of the club head and the initial velocity of the ball. This depends on the coefficient of restitution of the ball. When the ball is struck it is deformed (flattened) by the force of impact. Balls with harder cores deform less. During impact between club head and ball, kinetic energy is transferred and stored as the ball tries to regain its original shape.

RK Woodcock: Governor and ex-science teacher Balshaw's CE High School.

BALSHAW'S SUCCESSFUL GOLF TEAM 2009, FROM LEFT: HARRY FINCH, MATTHEW CRAGG, JONATHAN MOTE.



AN INTERVIEW WITH...

■ IN AN EARLIER TRANSFORM WE WELCOMED KATHY PASSANT AS THE NEW PRINCIPAL OF RUNSHAW. ONE YEAR IN WE ASK HER

to reflect on that first year. Our joint Youth Chaplain Sarah Ferguson also joined us. We share her with St Andrew's and are delighted that the collaborative work is going from strength to strength.

We asked Kathy and Sarah to tell us a little bit about themselves, what they most enjoy about their post and what they enjoy doing when not at work. This is what they said:

KATHY PASSANT



When I look back over my first year as Principal at Runshaw I am surprised by how quickly it has all gonein a flash! Of course it has been wonderful to see all our students working hard with their teachers to do the best they can but, just as important has been the fun and enjoyment all around me, working with the staff and young people in college and seeing them taking part in our enrichment activities, charitable fundraising, sport and entertainment. It has also been a pleasure and inspiration to get to know good schools like Balshaws better and to be able to work with Headteachers like Miss Venn.

I feel so lucky to have my job. One of our students recently said to me he thought I had the best job in the world and I had to agree with him.

When I am not at Runshaw I enjoy working in my house and garden. It used to be a vicarage and it is a bit lopsided where the foundations moved, but it was built in 1882 and is full of character as well as cracks! I live with my husband who is a teacher, two rescue cats and my son who has just

finished a Masters Degree in Sport but has only found unpaid work at the moment, doing what he really wants to do, coaching elite sports people. My daughter is just finishing her training as a child care lawyer.

I love food and try to compensate for this by going to the gym at 6.30 a.m. every weekday where I meet friends who must be just as mad as me to be out at that time!

SARAH FERGUSON



Although this is only my fourth week working as a chaplain, I feel like I have been here for years! The welcome I have received from all the staff and students at both Balshaw's and Runshaw has been second to none.

Before taking up this post I completed a degree in Accounting and Financial Management and worked for a while before deciding that I wanted a bit more of a challenge and retrained as a Social Worker! I then spent 2 years full time at a church in Lancaster working with students and young people.

What I love best about working with young people is that they are so full of enthusiasm and always willing to listen to new things. It is certainly a privilege to help them think through what they think about their faith in God at such a key stage of their lives. Being able to provide a place where young people can come, chat things through and feel supported in their faith (and occasionally eat chocolate!) is a really fun and rewarding job.

Outside of School and College, I spend a couple of days each week working with young people at St Andrew's church, and in the time that is left over I love sleeping, eating and generally relaxing. My favourite place to be is near the sea, preferably when it's hot and sunny!

Year 7 Lancashire Mathematics Challenge Runners up 2009

■ MRS LLEWELLYN WAS DELIGHTED WITH

the performance of her team in this years challenge held at All Hallows in April.



ECO DAY



■ ON THURSDAY 2ND JULY, ON A VERY SUNNY, HOT DAY, BBC RADIO LANCASHIRE LAUNCHED BALSHAW'S ECO DAY, WITH A LIVE

performance of the pupil "Recycled Band", playing instruments made during their music lessons. The music was provided throughout the day by a solar powered radio set up by Jamie Clarke the school's Assistant Site Supervisor.

The school was supported on the day by local and national, companies and charities including BAE systems, Environment Agency, Fair Trade, South Ribble Borough Council, Brothers of Charity and Body Shop. Pupils and the local community were invited to join in with activities, all with eco themes and some with engineering basis, including the manufacture of bat boxes by pupils following an award from the Green Partnership Awards. Nicki Elliott brought in hens that had been saved from going to the battery and Bob Hardwick brought in fresh produce from his allotment.

The Prefects and Middle School Council were very busy all day helping with the activities and running the Fair Trade Coffee Shop. Thank you to Mrs Barker in the Technology for her help in producing 150 Fair Trade scones, which were superb and very popular. In September we will start working toward becoming a Fair Trade school.

Every lesson in all curriculum areas was based on an Eco theme, MFL produced posters in French and Spanish to help promote the Eco theme while the Maths department based their work around reduce recycle theme. Mr and Mrs Downing (from Christian Ecology) came into school to support the RE department and they produced a Christian Ecology Role Play for pupils in Year 10.

The day proved a great success and hopefully everyone who took part benefited from the experience and will now feel confident to take the message into the community.

SPRING CONCERT

■ WELL, ENGINEERING GETS EVERYWHERE, EVEN IN TO OUR SPRING CONCERT WHICH WAS HELD ON ST GEORGE'S DAY. IT WAS

a superb event when the Choir sang Chattanooga Choo Choo, as well as having the Orchestra play, sadly with Ashleigh Branston for the last time. Young musicians coming through include Orla Green on the piano and cornet, David Morris playing the cornet, Amy Kirk playing the cello, Shaun Dempsey on the piano, Alex Hardman playing the trumpet, Chloe Morley singing, and Aimee Hobin playing the flute.

Chattanooga Choo Choo

Pardon me boys, is that the Chattanooga Choo Choo?

Track twenty nine, boy can you give me a shine?

I can afford to board the Chattanooga Choo Choo,
I've got my fare, and a trifle to spare.

You leave the Pennsylvania station at a quarter to four,

Read a magazine and then you're in Baltimore.

Dinner in the diner, nothing could be finer

Than to have your ham and eggs in Carolina.

When you hear the whistle blowing eight to the bar

Then you know that Tennessee is not very far.

Shovel all the coal in, gotta keep it rollin

Woo woo Chattanooga there you are.

Chh Chh chh chh woo woo

There's gonna be (there's gonna be)

A certain party at the station (they'll be waitin)

Dressed in satin and lace (yeah yeah)

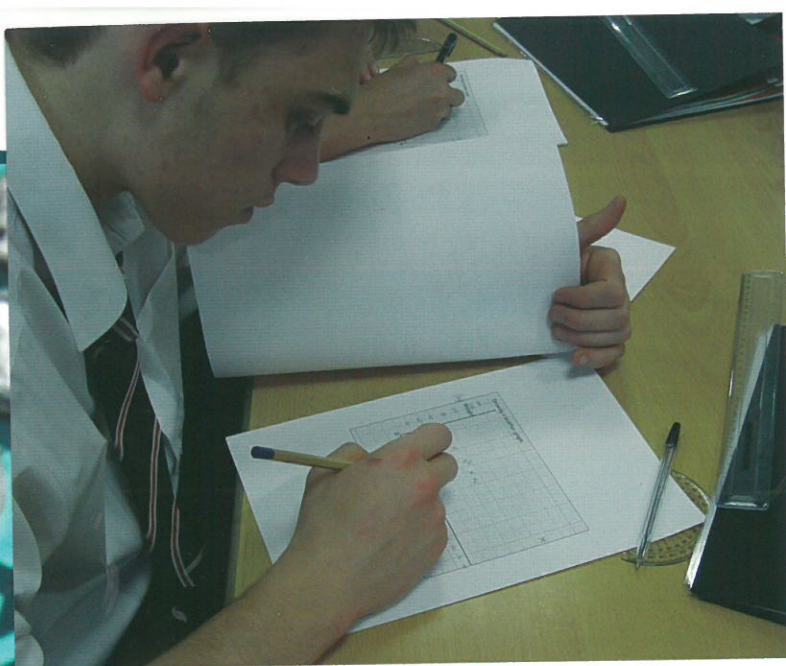
Used to call funny face. (I'm gonna meet em with a smile
on my face)

She's gonna cry until I tell her that I'll never roam,

So Chattanooga Choo Choo, won't you choo choo me home.

So Chattanooga Choo Choo, won't you choo choo me home.





STEM PATHFINDER ...

■ BALSHAW'S WAS VERY PRIVILEGED TO BE ASKED TO BE INVOLVED IN A GOVERNMENT INITIATIVE CALLED THE STEM (SCIENCE, TECHNOLOGY, ENGINEERING AND MATHS)

Pathfinder project. We were given £10 000 to try out new and exciting ways of introducing the STEM subjects into our and partner schools. One of the ways we did it was to form the STEM club that was made up of 10Y11 boys who wanted to guarantee them achieving at least a grade C in the STEM subjects.

Mr Melling who was in charge of the STEM project decided that the pupils would build an off road kart after school. It was also decided that instead of simply building the kart the pupils would also work in small groups and receive booster lessons in Maths and Science. Miss Tarling and Mr Jennings were recruited to the STEM project and were given time every week to prepare their booster activities. Mr Crabtree was also recruited to assist on the technical side of the build and to be the project's official photographer.

The club started off by visiting the factory that makes the

kart kit and they were shown how the factory operates. The following day the club started and we worked from 3.45 until 5.15 every week for 10 weeks. At the first session the pupils were introduced to another member of the STEM team Damien Coyle a graduate engineer from United Utilities who worked with them for the whole project. This is another example of the link we have with United Utilities and the pupils benefited a great deal from Damien's knowledge, expertise and enthusiasm.

At the end of the very successful project we held the very first Balshaw's STEM Grand Prix at which the pupils raced in a time trial to find the fastest STEM diver. The track was set up on the rugby pitch using 200 traffic bollards kindly loaned to us by A1 Traffic Management, a local Leyland firm. At the end of the Grand Prix a tense race off between Jack Stevens, Michael Cuming and Daryl Briers took place. Mr Jennings was very upset that he didn't make it through to the final but as the fact he has held a driving licence for over 10 years was felt to be an unfair advantage, he was disqualified.

After the Grand Prix the drivers plus their families who





...A ROARING SUCCESS

had been invited to the event retired to the Design and Technology block to enjoy a buffet of the finest Indian food. This was a special request of the pupils and Mark Rawcliffe in particular. After the refreshment in a tense presentation ceremony the fastest driver was announced and in a very tight contest Michael Cuming was announced as the winner and was presented with a trophy made by the D&T department. Following on from this Mark Rawcliffe was also presented with the overall STEM Champion trophy as the pupil who had displayed the greatest commitment to the Project.

All the pupils, staff and parents involved thoroughly enjoyed the project and more importantly the pupils all agreed that the work they had done had greatly increased their chances in their forthcoming GCSE exams. It was also good to read how much the OFSTED inspectors thought of the project with a whole paragraph of the report singing its praises.

Mr Melling Director of Engineering



MATHS BUDDY SCHEME

JUNE 2009

■ MRS PURCELL ASKED US, ANNALISE TOPHAM AND MEGAN YATES, ALONG WITH HENRY ANDREW, CHRIS DURBER, ASHLEY SMITH AND

James Plant to go to Moorhey School in Lostock Hall, to help the pupils there with their maths.

When we got there, Mrs Doyle met us and led us to room 4, which we stayed in during their Monday morning assembly. There were 9 pupils in the class and we each got assigned to a pupil. Some of us had two buddies. The first Monday we were helping the pupils with division using subtraction. We didn't get very long to spend with them but we enjoyed the time we had.

The next Monday we played a game of splat using subtraction sums. We helped them work out the sums by counting down on our fingers out loud. Afterwards, we carried on with division and subtraction, but this time we used white boards and cubes to help. We had to leave after a short time again, but we would have liked to have stayed longer.

We all had a good time getting to know our buddies and we wish we could help them again!

Our Comments:

'I thought it was different to work with pupils who don't find maths as easy as us!' – *Megan Yates*

'I really enjoyed working with Moorhey pupils. I wish I had more time to spend with my buddy Lauren!' – *Annalise Topham*

'It was a great opportunity for all of us and the children at Moorhey. We learnt to socialise with them.' – *Ashley Smith*

'It was really interesting and an enjoyable experience.' – *James Plant*

'It was interesting and I enjoyed working with the younger children' – *Chris Durber*

'It was a good experience, also it was very interesting learning to understand people who do not find learning as easy as me' – *Henry Andrew*

By Annalise & Megan



MATHEMATICS TRANSITION EVENT

■ ONE WEDNESDAY MORNING IN JUNE THE BALSHAW'S MATHEMATICS' DEPARTMENT PLAYED HOST TO ALMOST SEVENTY YEAR 6

pupils from Leyland Methodist Primary School. They took part in activities designed to help their transition from primary to secondary school.

One activity involved a visit to the dining room and introduced them to the dinner card system. Their task was to make choices from a menu for a given amount allocated to their dinner card. Another activity involved a trail around the school, solving clues along the way in order to move from room to room. The third activity introduced them

to Balshaw's sports day where they competed in field events including the paper plate discus, cotton wool shot putt and straw javelin.

Both pupils and staff thoroughly enjoyed taking part, and pupils appreciated the certificate and gift of a ruler given to serve as a pleasant reminder of their experience.



TETRAHEDRON CHALLENGE DAY

20TH MARCH 2009



ON FRIDAY 20TH MARCH TWO GROUPS OF YEAR 9 & 10 PUPILS ALONG

with some pupils from Leyland St Mary's High School took part in the Tetrahedron Challenge.

The challenge was to build a giant tetrahedron out of just rubber bands and wooden dowels. At the same time we had to answer mathematical questions about the number of rubber bands used for each stage of the build and the number of dowels used.

A tetrahedron is a three

dimensional shape made from 4 triangles, sometimes called a triangular based pyramid. Each tetrahedron needed 12 dowels and 4 joints made using elastic bands.

Stage 1 was to make individual triangles and then put four together to make a tetrahedron and then for stage 2 four of these were put together to make a larger tetrahedron. The third stage was to join these tetrahedrons to make an even bigger model. Eventually we had made a tetrahedron that measured a staggering 4 metres high. It was a really impressive piece of teamwork.

All in all it was a fun afternoon with the chance to mingle with other schools and actively participate in Maths.

Alison Bird & Lucy Halsall

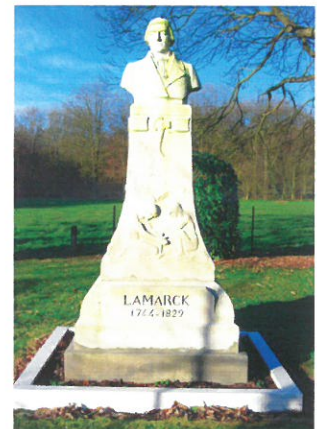


LAMARCK

THE YEAR 11 FRENCH AND SCIENCE REVISION TRIP WENT TO THE SCIENCE MUSEUM AS PART OF DARWIN'S YEAR AND

learned about Jean-Baptiste Pierre Antoine Monet, Chevalier de Lamarck. Phew what a name – no wonder he was normally just called Lamarck. Born on August 1st 1744 and died December 18th 1829. He was a French naturalist like Charles Darwin. He was in the army until injured in 1766 then returned to his medical studies. He published several books on Botany and Zoology. He is remembered mainly for a theory of inheritance of acquired characters called soft inheritance. This is where it was believed that living things could pass on characteristics that they had gained throughout their life to their offspring e.g. scars. Lamarck's contribution to evolutionary theory consisted of the first truly cohesive theory of evolution. Although he was not the first thinker to

advocate organic evolution, he was the first to develop the theory. He explained the two forces he saw as a compromising evolution, a force drawing animals from simple to complex forms and a force adapting animals to their local environments and differentiating them from each other.



Charles Darwin specifically rejected Lamarck's mechanism whilst praising him for the eminent service of arousing attention to the probability of all change in the organic world, being the result of law, not miraculous interception

TECHNOLOGY & ENGINEERING WERE NOT TWO OF THE WORDS THAT

our Spelling Bees had to spell when they took part in the first ever Times Spelling Bee Competition.

Our chosen representatives from Yr

7 were Chloe Nickeas, Sophie Kelly and Melissa Leung who did very well indeed and came joint first in the group spellings. The best speller of the Competition was Chloe Nickeas. This was against 9 schools from the North West of England. It was a very tense Competition at the Odeon, Riversway.

Excellent fun and a lot learned.



THE TIMES
SPELLING
BEE

TECHNOLOGY TOURNAMENT WHAT A DAY!



■ FOR THE FIRST TIME EVER THE ROTARY CLUB OF LEYLAND HELD ITS LEG OF THE NATIONAL TECHNOLOGY TOURNAMENT

sponsored by BAE at a school. Yes you've guessed it; they held it here at Balshaw's and what a huge success it was.

160 pupils from 20 local secondary schools descended on to Balshaw's for the day and were ably looked after by around 15 representatives of the Rotary Club and Balshaw's staff and pupils. The pupils worked in teams of 4 and were set 2 slightly different challenges, one for the KS3 team and one for the KS4. During the day they had to design, build and test a system of firing a table tennis ball as far into the air as possible. The ball also had to pass through a hoop positioned 3 metres off the ground and for the KS4 teams the ball had to deploy a

parachute that allowed it to float gently back to the ground.

At the end of a frantic day of much hard work and head scratching, it all came down to the final. After a tense series of launches the victors emerged and the great news for Balshaw's was we had a first and second place. The winning team was in the KS3 category and was made up of Gina Wren, John Tran, Siobhan McCann and Sam Robinson. The second place was in the KS4 category and lucky runners up were Sam Lowe, Adam Bee, Oliver Hatton and Danielle Humber.

Well done to everyone involved, from the successful teams to all Balshaw's pupils who made our visitors feel so welcome. We looked forward to next year.

David Melling *Director of Engineering*

LIONS COMPETITION WINNER

■ ONCE AGAIN THE YEAR 8 TOOK PART IN THE LIONS INTERNATIONAL PEACE POSTER COMPETITION 2008-2009. THE THEME FOR

this year was "Peace Begins with me". This is an opportunity to encourage the young people in our community to think about the importance of world peace, tolerance and international understanding, and to pass it on. The school

entered the Leyland and Chorley competition and Emily Allen won this and also the North West competition. She was presented with the shield in assembly. This is her winning entry and some of the others. Sadly she did not win the British Isles and Ireland National Competition, but nevertheless did very well.

