

## STEM Ambassador Newsletter

Welcome to the August Newsletter for STEM Ambassadors and welcome back after the summer. We have had a break from school requests while the schools have been closed but now they are starting to fly in! Schools are moving into the adoption phase of Curriculum for Excellence and translating the Scottish Government policy documents into practice. Teachers need Ambassadors' help to provide assistance in areas such as Topical Science as well as most of the experiences and outcomes in Sciences and Technologies. The list of requests this month is the longest yet!

Please have a look at the requests over the page and if you are able to volunteer to help out, please contact our co-ordinator, Gail, at [ambassadors@physics.gla.ac.uk](mailto:ambassadors@physics.gla.ac.uk) and she will put you in touch with the teacher. We have a particular focus on Ayrshire schools in this edition due to a campaign we ran last term in Ayrshire to promote the Ambassador scheme – obviously very successful!

### STEMNetworking is now live! A great online resource

There is a new area on the STEMNET website, STEMNetworking, which makes it easier for you to participate in the STEM Ambassador Programme and lets you access many free resources for use in schools and colleges. As a STEM Ambassador you are now able to:

- Upload and share useful resources and activity ideas with other STEM Ambassadors
- Add blog posts about your STEM Ambassador activities to your profile page
- Look at other STEM activity including schools and employers in your local area
- Indicate your willingness to respond to teachers online requests for STEM Ambassadors

You also have the option to make your STEM Ambassador profile publicly viewable (please note, no contact details or personal information will be displayed) and link your profile with your employer if they have a STEMNetworking profile. If you think your employer would be interested in setting up a STEMNetworking profile then send us an email entitled 'STEMNetworking Employer Profile'.

If you'd like to be part of STEMNetworking then you can do this by logging on to your database record at [www.stemnet.org.uk](http://www.stemnet.org.uk) and opting in to STEMNetworking via your Data Protection page. You can then follow the login link on STEMNetworking and start taking advantage of all these exciting new features.

Note that all responses to online requests for Ambassadors will be routed through Science Connects. Teachers will not be able to contact Ambassadors directly until we have made the link between them.



## REQUESTS for HELP

The following requests have been made by schools and organisations. If you can help please email us at [ambassadors@physics.gla.ac.uk](mailto:ambassadors@physics.gla.ac.uk) or phone on 0141 330 6396 and we can liaise with the school on your behalf.

SCHOOL / EVENT	DATE	REQUEST
<b>Ayrshire:</b>		
Carrick Academy, Maybole	As soon as possible	Ambassadors with links to forensic science, or windfarm industry
Ayr Academy, Ayr	As soon as possible and January/ Feb 2011	Scotland Day. Would like help with historic element of Scottish science. Also see section below for other help required.
Queen Margaret Academy, Ayr	As soon as possible	Engineering and ecology type help.
Auchinleck Academy, Auchinleck	As soon as possible	Help in many subjects, primarily Biology related but other areas also. See section below
Garnock Academy, Kilbirnie	As soon as possible	Talk to Intermediate 2 "Skills at Work (Laboratory Skills)" pupils about various careers within the NHS
Garnock Academy, Kilbirnie	September 2010	Careers talks relating to Healthcare, farming, animal welfare or transport companies. Also talks on alternative energy to S1 pupils by end of Oct.
Greenwood Academy, Irvine	As soon as possible	Help with Biology/Chemistry related topics
Kilwinning Academy, Kilwinning	November/ December 2010	Motivational career talks to S5. Also Geology help for Earth Science Unit -Feb/Mar 2011
St Matthews Academy, Saltcoats	As soon as possible	Looking at eco and conservation topics.
Arran Science Fair, Ayrshire	6 <sup>th</sup> September 2010	Help with Science Fair for P6, P7 and S1 pupils from all over the island.
<b>Other:</b>		
Bannerman High School, Glasgow	As soon as possible	Help with promoting careers in physics to pupils.
Cedars School, Inverclyde	As soon as possible	Help with Intermediate 2 Skills at Work Lab Skills pupils about pharmacy/ Engineering/Animal work/Hospital work. Also help with Investigation work.
Lenzie Academy	As soon as possible	Looking for Systems Analyst to talk about their job to Computing Science. Also looking for companies to engage with Design, Eng and Technology Dept.
St Aloysius College, Glasgow	18 <sup>th</sup> October 2010	Chemistry related Ambassador to give careers talk on Chemistry
Williamwood High School	9 <sup>th</sup> November 2010	Ambassadors to have a stand at Careers Evening.
Kirkintilloch High School, East Dunbartonshire	January 2011	Help with S1 Renewable Energy topic
Cedars School, Inverclyde	June 2011	Help with maths/engineering challenges for P1 to S5 pupils at Science Fair. Also help with murder mystery challenge.
<b>Lab in a Lorry:</b>		
St Mungo's High School, Falkirk	6, 7 & 8 <sup>th</sup> September	Help with Physics experiments on board the lorry

Moffat Academy, Moffat	9 <sup>th</sup> & 10 <sup>th</sup> September	Help with Physics experiments on board the lorry
Govan High School, Glasgow	13 <sup>th</sup> & 14 <sup>th</sup> September	Help with Physics experiments on board the lorry
St Benedict's High School, Linwood	20 <sup>th</sup> & 21 <sup>st</sup> September	Help with Physics experiments on board the lorry
Bishopbriggs Academy, Glasgow	18, 19 & 20 <sup>th</sup> October	Help with Physics experiments on board the lorry
Girvan Academy, Girvan	8, 9 & 10 <sup>th</sup> November	Help with Physics experiments on board the lorry
Castlemilk High School, Glasgow	8 & 9 <sup>th</sup> December	Help with Physics experiments on board the lorry
<b>Researchers in Residence:</b>		
Bearsden Academy, East Dunbartonshire	As soon as possible	Chemistry help
Largs Academy, North Ayrshire	As soon as possible	Help with Science Baccalaureate projects in physics, biology and chemistry
Moffat Academy, Moffat	As soon as possible	Help with Science projects
Dumbarton Academy, West Dunbartonshire	As soon as possible	Physics Help
<b>Business Dynamics:</b>		
Douglas Academy	13 <sup>th</sup> & 20 <sup>th</sup> Sept	Help with team work, communication skills
Lenzie Academy	27 <sup>th</sup> & 28 <sup>th</sup> Oct 2010	Help with team work
Bearsden Academy	18 <sup>th</sup> November 2010	Help with team work

## Carrick Academy, Maybole, South Ayrshire

Carrick Academy is keen to do more with STEM Ambassadors and thank you to the Ambassadors who volunteered last term to help the school. The teacher will be in touch with you in the near future. The requests from the school are as follows:

- Link with Hunterson Power Station
- A forensic science link would be very useful to address curriculum requirements
- Whitelee windfarm link or local person in windfarm industry would be very useful to address curriculum requirements

If you are able to help with any of these requests, in addition to Ambassadors already volunteering, please get in touch with us.

## Ayr Academy, South Ayrshire

Ayr Academy is hosting a Scotland Day for senior school pupils in Jan/Feb 2011. The teachers would like involvement from Ambassadors about the historic element of Scottish science or cutting edge side of Scottish science.

The science department is also interested in

- getting support with practical side of new Higher courses for Biology and Chemistry. These are currently in draft but will be finalised in October
- Help with any aspect of Biotechnology and DNA / PCR forensics (i.e. amplifying DNA).

If you are able to help with any of these requests please get in touch with us.

## Queen Margaret Academy, Ayr, South Ayrshire

Queen Margaret is looking for Ambassador help with the following:

- S1 Career Talks
- Help with wind farm / renewable topics
- Help with design engineering / practical engineering opportunities
- Links with artisan skills / skilled craftsmen
- Links with apprentice opportunities
- Help with conservation issue topics and ecology topics

If you are able to help with any of these requests please get in touch with us.

## Auchinleck Academy, South Ayrshire

Auchinleck is very interested in the Ambassador programme and are looking for lots of help in various areas:

- Hands on help with advanced higher projects (biology and chemistry)
- Hands on help with advanced higher projects – especially labwork – running practical experiments (Cell / Molecular Biology and Environmental Biology)
- Biotechnology input with standard grade pupils (practical work / practical applications)
  - How biotechnology relates to everyday life e.g. sewage treatment
- Genetics input into Higher Biology curriculum
- Science / Maths / Engineering Careers Days (S4-S6)
- S1/2 – help in developing workshops to meet CfE experiences and outcomes
- Chemistry – help with topics about protection of metals e.g. galvanising / tin plating
- Forensics – talk to pupils about the use of forensic science in their job

If you are able to help with any of these requests please get in touch with us.

## Garnock Academy, Kilbirnie, North Ayrshire

Garnock Academy is keen to embrace STEM activities and recently took a group to visit Whitelees Windfarm in Eaglesham in addition to other activities. They are keen for quite a few Ambassadors to visit the school. Ambassador visit requests include:

- Skills at Work for Intermediate 2 i.e. How lab skills are used in local / national / global industries. They would like industry visitors to talk / demonstrate / work with pupils with a possibility of work experience in their workplace from August onwards
- Talk to S1 pupils on alternative energy sources such as solar/wind power.
- Careers Talks for S2 in October before subject choices made, particularly relating to Health Care, farming, animal welfare or transport companies which are the industries close to the school
- Use of experts for aspects of Curriculum for Excellence courses
  - e.g. Construction industry experts for energy efficient housing
- Topical Science - Anyone who could shed light on 'big questions' e.g. is there life elsewhere?

If you are able to assist with any of these areas please get in touch with us.

## Greenwood Academy, Irvine, North Ayrshire

Greenwood Academy is looking for help with S1 specialist talks about reproduction / contraception, Advanced Higher – chromosome walking and jumping and the technology of chromosome mapping and Advanced Higher – any help with forensics topics. If you are able to help with any of these requests please get in touch with us.

## St Matthews Academy, Saltcoats, North Ayrshire

- Help with recycling topic
- School has Malawi Week – about recycling / reclaiming / water / global issues
- Uptake in 3rd yr physics poor. Five classes down to three classes now. Help from Ambassadors to promote physics and engineering
- Advanced Higher Biology investigations – help with pupils individual projects
- Help with alternative energy topics and promoting eco schools

If you are able to help with any of these requests please get in touch with us.

## Arran Science Fair

The Institute of Physics (West of Scotland) is running a science festival day on Arran on 6th September. Learning Teaching Scotland is helping out and running workshops for P6, P7 and S1 pupils focussing on Forces. They would like Ambassadors who would be able to come and help them with this event. Ideally they would need 2 Ambassadors but any help would be gratefully received. There is the possibility that LTS will film a workshop run by one of the Ambassadors for Glow, the schools' intranet network. Time is quite tight on this one so if you can help with please get in touch with us asap.

## Bannerman High School, Glasgow

Bannerman High School is looking for an Ambassador to visit the school in August/Sept to discuss ways of support the Physics Dept, not just with Advanced Higher, but in a broader way. As a starting point they would be interested in discussing ways to getting more girls into Physics and about career advice in general relating to Physics.

Many of the pupils at Bannerman go on to study Engineering or Physics, not only at HE or FE but also go into apprenticeships or other training programmes. Their philosophy is very much that Physics is for everyone and at all levels and has a functional value in society in general.

If you are interested in helping promote Physics at the school please get in touch with us.

## Cedars School, Inverclyde

Cedars School in Greenock is a small independent school with 120 pupils, aged between 5 and 16. They are looking for help with Intermediate 2 Skills for Work in Laboratory Science in the following ways:

- Ambassadors to visit and speak to S3-S4 pupils about working in a lab in the areas of Pharmacy/Engineering/Animal work/Hospitals. This is to outline their job and role of lab science in this job. The duration of the visit will be one hour and as many speakers as possible are welcomed!
- Also looking for ambassadors who may have some ideas for a suitable investigation that could be used for a lab course.

In addition to these requests, the school is holding a Science Far in June 2011 for all pupils. They would like an Ambassador (s) who can help with Maths/Engineering Challenges eg model bridge challenges, and anyone else who could help out with a Murder Mystery Challenge. Both will be required to be adapted for the different age ranges (between 5-16).

If you are able to help with any of these requests please get in touch with us.

## Lenzie Academy, East Dunbartonshire

The Computing Department at Lenzie Academy is keen to have a Systems Analyst to visit classes to talk to/explain about the job requirements in this field.

The Design, Engineering and Technology Dept would like to liaise more closely with employers, bringing experience into the classroom. This can be in any field related to DET.

If you can help with either of these requests please get in touch with us.

## St Aloysius College, Glasgow

St Aloysius College in Glasgow is running a chemistry careers event for Highers students on 18th October, called "Look what Chemistry has done for me". They are looking for a STEM Ambassador with a background in chemistry (ideally an RSC member) who could come along and talk for about 20 minutes about their career in chemistry and what chemistry has done for them. The event will be in the evening from 7-9pm and they will have 3-4 different speakers.

Please get in touch with us if you are interested in being involved.

## Williamwood High School, East Renfrewshire

Williamwood High School is again hosting its popular careers evening on 9th November from 7-9pm. Many ambassadors have taken part in this event before, coming along to represent their company to inform pupils of careers open to them. The careers staff are currently looking for expressions of interest of those willing to attend. A more formal invitation will be sent out in September.

If you would like to participate, either with your company, or as an ambassador to talk about your career in general, please let us know and we will put you in touch with the careers staff.

## Lab in a Lorry, all over Scotland

Lab in a Lorry is an interactive mobile laboratory, run by the Institute of Physics, which gives 11-14 year olds the opportunity to explore science through open-ended experiments. Volunteers guide the students through the experiments (oil and viscous liquids, sound and resonance, light scattering and colours, climate change and energy sources, optoelectronics) and makes sure everyone gets to be involved through hands on experience.

What would you have to do as an Ambassador? You'd be asked to oversee an experiment for the day. On the morning of an event, you receive training on the Lab and the organiser sends you all the background material in advance.

Ambassadors commit to a minimum of one full school day but you are welcome to come along for as many days as you like – there have plenty of freebies for you, such as T-shirts, magnets and your very own Lab in a Lorry! You also receive free affiliate membership to the Institute of Physics.

The Lab requires a minimum of 3 volunteers to run the experiments and can take a maximum of 6 people.

Please see the Requests table above for schools and dates in our area until Christmas. If you would like to be involved school please get in touch with us – you don't have to be a Physicist to take part!

## Researchers in Residence – various schools

Researchers in Residence is a placement scheme funded by the UK Research Councils and the Wellcome Trust that places leading PhD and post-doc researchers in schools for up to 24 hours of student contact time. Projects can be tailored to suit schools needs; for example, targeting gifted and talented students, students doing coursework or National Science and Engineering Week. Placements can be flexible, including practical classroom activities, after-school club projects, lunchtime talks, careers advice or support for small groups.

Researchers in Residence and STEM Ambassadors have a common goal in promoting STEM to pupils and hence we are pleased to offer RiR placements to Ambassadors. Currently the following schools have vacancies for assistance:

Bearsden Academy - Chemistry  
Moffat Academy - Help with Science projects  
Largs Academy - Science Baccalaureate projects in physics, biology and chemistry  
Dumbarton Academy - Physics

To become a Researcher in Residence you must be a PhD or post doctoral researcher funded directly or indirectly by one of the seven UK Research Councils or the Wellcome Trust.

If you would like to be involved in Researchers in Residence and want visit [www.researchersinresidence.ac.uk](http://www.researchersinresidence.ac.uk). If you would like to assist any of the above schools please get in touch with us and we will put you in contact with the organiser for more information.

## Business Dynamics, various schools

Business Dynamics is a national business education and enterprise charity aiming to bring business to life for young people aged 14-19. They run interactive Programmes in schools, using business people as role models and real life business situations to open pupils' eyes to the range of careers available, teach them the key employability skills needed for work, and help them understand the importance of business in the economy.

We have been working with Business Dynamics over the last 2 years to provide STEM Ambassadors for their programmes in schools. Ambassadors help with the Core Skills Programme, working on communication, team working and problem solving.

Ambassadors talk about their expertise and role within their company or organization and pupils then work in groups and participate through group-discussion, and practical exercises.

In our area, Business Dynamics will be running in the following schools and we are looking for as many STEM Ambassadors as possible to help out:

Douglas Academy 13th & 20th Sept 2010  
Lenzie Academy 27th & 28th Oct 2010  
Bearsden Academy 18th November 2010

Please get in touch with us if you are interested in being involved.

## Kirkintilloch High School, East Dunbartonshire

Kirkintilloch High School is looking for an Ambassador to present to S1 pupils about renewable energy: in particular wind turbines, location, efficiency, benefits etc. The science department is developing a new CfE S1 course and is including a sustainability/renewables unit of work. The dept will be linking with the Technical Department to enable

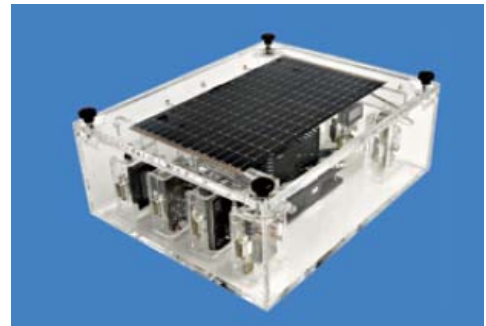
pupils to build prototype wind turbines and ultimately present their work. Timescale for this would be around mid January, possibly start of February. Please get in touch with us if you are interested in being involved.

## Other information of interest to Ambassadors...

### S Cubes – Solar Science kits for Ambassadors to use in schools

Renewable Energy is a favourite topic for schools to ask for Ambassador help with. The topic of Planet Earth in the Curriculum for Excellence Sciences area includes “Energy Sources and Sustainability” and teachers are starting to request more and more visits from Ambassadors to help pupils gain a better understanding of this topic.

To help Ambassadors work with pupils, we will have a new set of resources available for Ambassadors to borrow by the beginning of September. These are “S” Cubes, manufactured by Solar & Wind Applications. There will be 8 Cubes which will be a big enough set for a class of 30 pupils to use at the same time.



The ‘S’ Cube is a ‘hands-on’ approach to helping P4-7 and S1 pupils understand how renewable energy works. The ‘S’ Cube contains a solar panel and allows pupils to power a torch or thermometer, hook up a capacitor and voltmeter to learn more about the energy of the sun. Worksheets are provided for the pupils to work through and there is a CD of additional material.

If you are interested in taking SCubes into schools to cover renewable energy areas, please get in touch with us. You are welcome to take an SCube home to experiment with before committing to taking a set to a class!

Visit [www.solarwindapplications.com](http://www.solarwindapplications.com) for more information. Contact Gail to arrange to borrow the SCube resource.

### National Science and Engineering Week FREE information Session

The British Science Association would like to encourage as many people as possible to become involved in National Science & Engineering Week (NSEW) which will take place from 11-20 March 2011. ‘Communication’ will be the theme for 2011. The programme of science, engineering and technology events and activities across the UK is aimed at people of all ages.

To assist any potential event organisers, a series of FREE NSEW Information Sessions are being held throughout the UK. In Scotland these will be held from 3-5pm at:

- Museum of Communication, Burntisland, Fife, on 4th October 2010
- Kilmarnock College, Kilmarnock, on 19th October 2010

Each session will comprise background information on NSEW as well as presentations on Astronomy, Dark Skies, Young Engineers Clubs and Lighting up the Curriculum for Excellence. In addition there will be information on Case Studies of actual events, resource packs on running events, obtaining funding, publicising and activity/challenge packs which are all available for free. Both events are free but pre-booking is required.

To book a place please visit [www.britishscienceassociation.org/nsew](http://www.britishscienceassociation.org/nsew)

## Astronomers of the Future

Two of our STEM Ambassadors are very keen astronomers and have recently set up a new club, Astronomers of the Future, for beginners who are keen to find out more about astronomy and space. At monthly meetings members will enjoy talks and activities, have their questions answered and discuss the latest news from space, and observing nights and visits will be arranged. There is also an opportunity for members to take an on-line 12 modules beginners' course. The club magazine will include news and features by a variety of contributors, as well as guides to what's in "The Sky above You", by science writer and lecturer Duncan Lunan.

If you are interested in joining the club or are able to help with positions of Editor, Researchers, Art Editor, Designer, Secretary, Photographer visit the website [www.astronomersofthefuture.net](http://www.astronomersofthefuture.net)

## Induction Training

If you have not already undertaken your induction training, the next session will be run on **Tuesday 7<sup>th</sup> September at 3:00pm** in the University of Glasgow. If you would like to register for this induction please email or call us and we will reserve a place for you. The training will last around 2 hours and will enable you to complete your disclosure form also. The next training after this will be Tuesday 26<sup>th</sup> October 2010 at 3pm.

Thank you once again for all your efforts and please take a good look at the requests on offer and see where you can help out. Please remember to record your activity at [www.stemnet.org.uk](http://www.stemnet.org.uk)!!

Regards



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