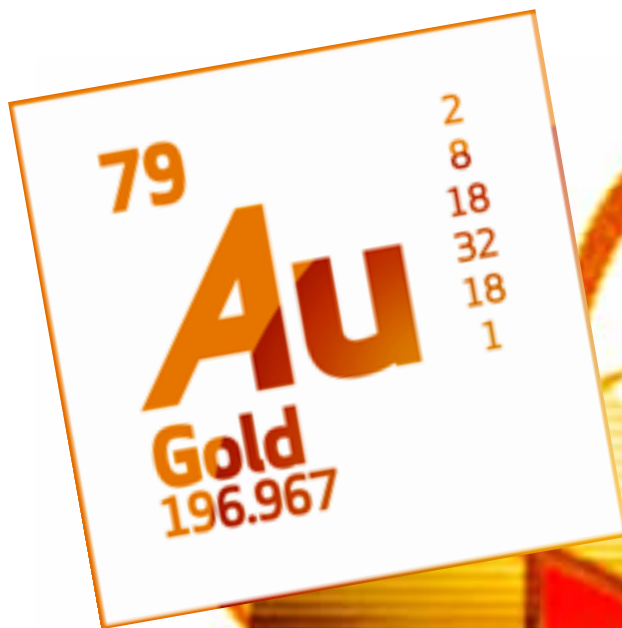




science4u.info Schools Science Conference 2012

# Science for Gold

Scientists and Healthcare Professionals showcasing exciting careers in science



# Science for Gold

The 9th Annual Schools Science Conference is presented by science4u.info in partnership with The Royal College of Pathologists



science4u.info  
showcasing exciting careers in science



The Royal College of Pathologists  
Pathology: the science behind the cure



# Chair's Report 2012

The 20th of March dawned as 100 volunteers prepared to describe to 250 secondary school students how science can lead to gold: **Science for Gold**.

Registration was swiftly followed by some brief housekeeping guidelines and then the students plunged into the day. This was our 9th annual conference and the third in this prestigious building. There was a real buzz of excitement and anticipation from the students and presenters. Throughout the day, the Royal College of Pathologists hummed with discussion and laughter as the students voted for the best medical device, compared animal and human athletic abilities, presented their own projects and , learned what our volunteer scientists do in practise. The students were encouraged to take part in many of the scientific displays and to find out why the scientists do what they do.

There were four exciting sessions.

## Battle of the Devices

This Interactive session sponsored by Medtronic had the students listening to 6 speakers trying to convince them that their device is the most innovative technology in healthcare today. The students were captivated by these speakers and following the talks, the students asked many intelligent questions before voting for their favorite device. The 6 devices (Stents, Implantable Cardioverter Defibrillators [ICD], running blades, insulin pumps, DIDGET glucose monitoring and MRI) show cased the advances in medical technology and the students were fascinated with video footage of a footballer implanted with an ICD “coming back to life” after a heart rhythm abnormality. Although close, after all 4 sessions the MRI edged out the ICD as the students choice.

## Olympic Gold

Sponsored by Twig Science, this session enabled the students to watch video clips to learn the science behind human ability. The clip of the swimmer and the dolphin was particularly popular; generated lots of discussion and showed the students the limits of human ability and the advantages of equipment such as ‘shark suits’.

## Science in Practice

A series of hands-on interactive displays showcasing what healthcare scientists do and giving the students a chance to meet the scientists, discover what they do and why, as well as trying some of the tasks for themselves. In this informal and fun session, the students were able to see the practical application of what they have been learning in the school classroom and gain an insight into the different career paths available to them. The activities ranged from blood transfusion, microbiology, transplantation, radiotherapy, resuscitation, physiotherapy, perfusion, immunology, histology, haematology, audiology, cardiology, genetics, pharmacy, nuclear medicine and much more. There were lots of opportunities to win prizes for taking part. The students asked lots of searching questions, including what the scientists enjoyed about their jobs and what qualifications were needed.

## Project Competition

In this session, the students presented the results of their own scientific research. The projects ranged from testing orange drinks for vitamin C to examining bacterial growth on prewashed supermarket spinach. The standard of research and presentation was excellent, and the judges had a difficult time in determining the winners.



## The Conference

Over 250, years 9 to 11, students (ages 12-16) and their teachers attended the conference. They were split into groups of about 75 per session. The sessions were repeated 4 times, but each was very different because of the involvement, enthusiasm and questions from the different groups of students and the volunteer scientists. There were many things to collect and the students went home with bags full of pens, toys, sweets, rulers, pads, prizes and leaflets about careers. Importantly, many of the students who attended state that they will continue to study science at A level and beyond. Equally import, a number of students who plan to leave education at 18, are now considering careers in science and the NHS.

Several of the students wrote excellent reports of the day for the Reporter Competition and these along with photographs can be seen on the conference website: [www.science4u.info](http://www.science4u.info).

Feedback has been very positive. One teacher wrote, 'Seeing the creative aspect of science and proving that scientists are interesting and the clear demonstration of the importance of science in everyday life was inspiring'. Another wrote, 'The various careers and activities were engaging and our students were extremely enthused'. Many of the volunteer scientists have made equally positive comments. One said 'It was nice to educate students that there are more than just doctors and nurses in hospitals'.

Most importantly the students had a great educational time with comments ranging from 'Amazing' and 'Awesome' to praise for the speakers and volunteers, plus 'Fascinating, emphasized the importance of healthcare and the existence of amazing technology which many of us are not aware of'. Of the students who completed the evaluation after the event, when asked whether they would recommend this event to their friends all said YES! When asked after the event, whether they would consider a career in science, 98% of the students said definitely, or probably and only 2% said probably not.

The Organizing Team and I are very grateful to all of our presenters for giving their time and for their inspirational sessions. We are indebted to the College and our many sponsors (listed on the programme and website). This event would not be possible without them. We particularly want to thank Medtronic for sponsorship and running a fabulous session **Battle of the Devices**, and Twig for their exciting session showing the science behind sporting achievement. Finally, thanks to the students and their teachers for the wonderful presentations about the school science projects.

This was the third time that the College has hosted this event and it was wonderful to promote healthcare science to these students: our future pathologists and healthcare scientists, within its Educational Centre and under the gaze of the portraits of its past Presidents.

Yours sincerely

**Kimberly Gilmour**  
Kimberly Gilmour  
Chairman of the Organising Committee

Chair's Report



# Science for Gold - Conference Evaluation

Schools Science Conference, March 2012

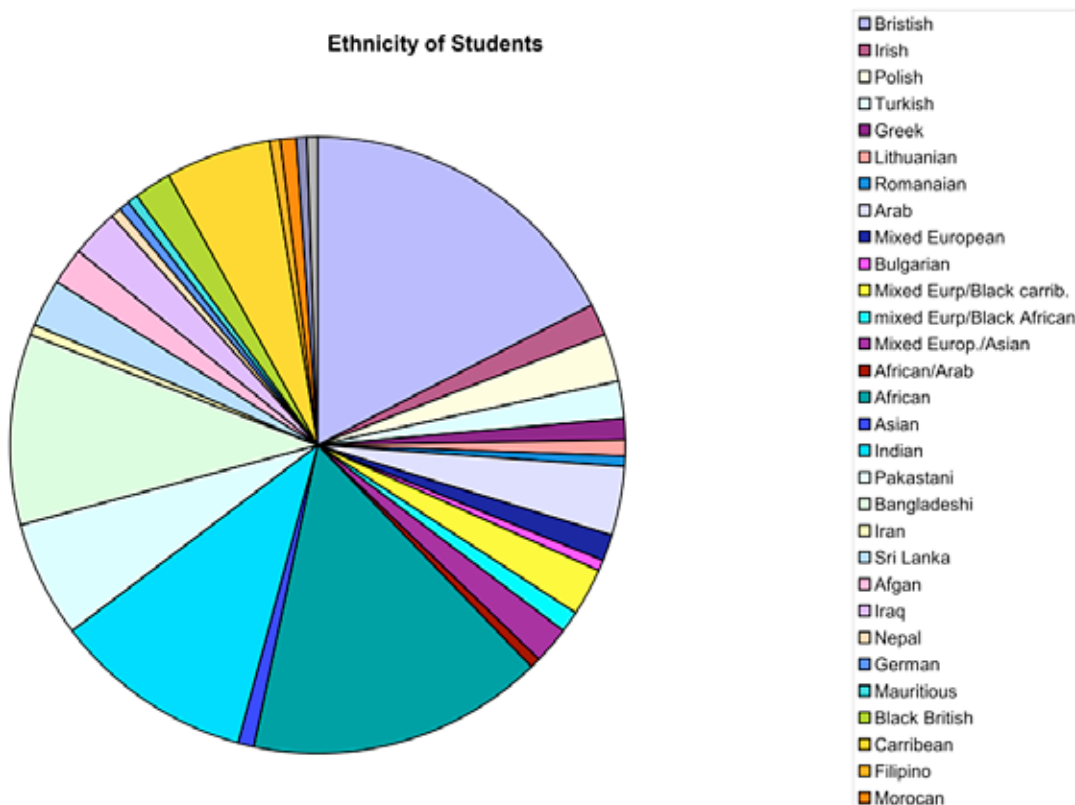
250 London students from years 9 to 11 in secondary school, plus their teachers attended this year's annual schools science conference, entitled **Science for Gold**. The conference was held at the Royal College of Pathologists. It was the 9th annual event organised by an enthusiastic group of healthcare scientists from various London hospitals and colleges. Those attending were asked to complete an evaluation form and this is the summary of the responses.

## About the schools and colleges

This students attending came from schools throughout the greater London area: NW6, N2, HA3, CR5, W7, W3, E2, NW5, E14, KT2, NW1, EN5 (several schools came from the same postcode).

Evaluation returns were obtained from a high percentage of students, with one school achieving a 100% return and others ranging from 30–90%. As an incentive, the returns were put into a draw for the students to win prizes.

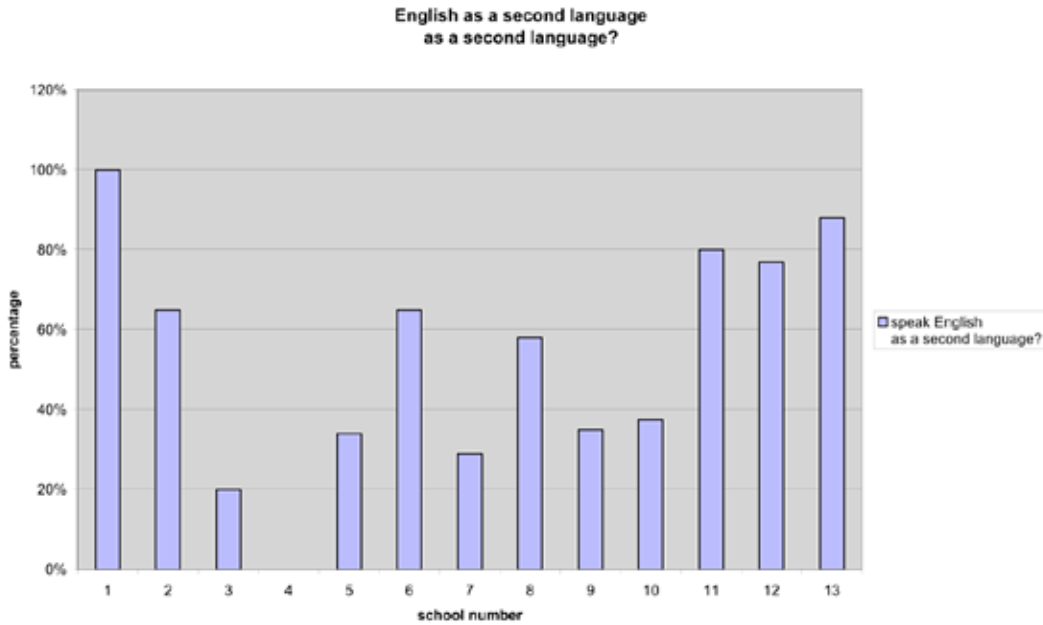
Figure 1 shows that the students attending were from a range of ethnic backgrounds.



Conference Evaluation

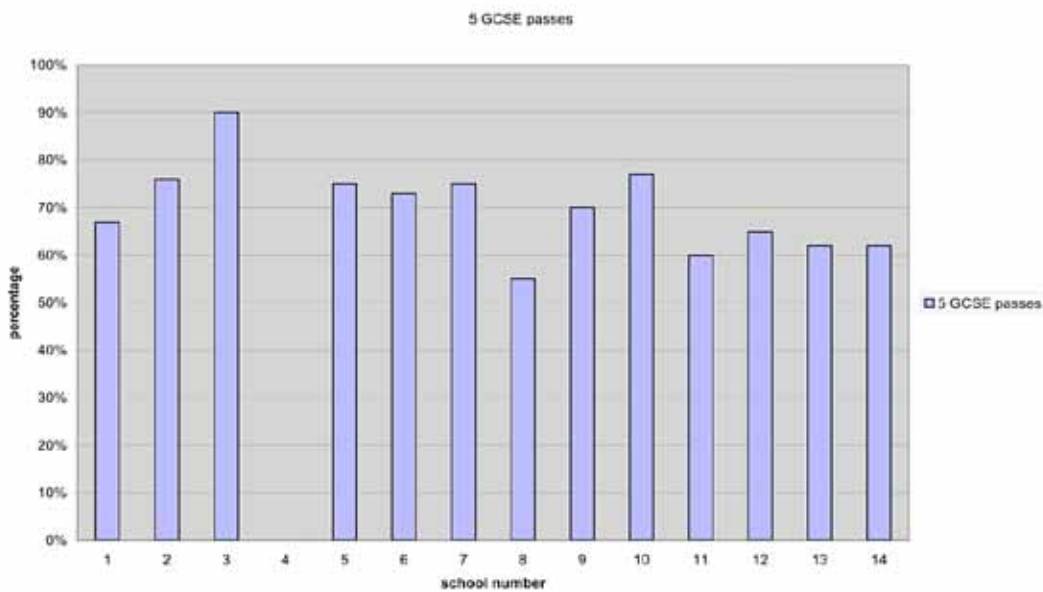


In quite a number of the schools, English is the second language for a high proportion of the student population.



Students receiving free school meals are an indication of the relative deprivation of the students. 43% of the students who attended the conference received free school meals. An objective of the conference is to showcase science to students from disadvantaged economic backgrounds.

The government target is 70% A-C GCSE passes. The figure below shows that 42% of the schools attending are below this target. This figure shows the GCSE pass rates for the attending schools.



# Conference Evaluation

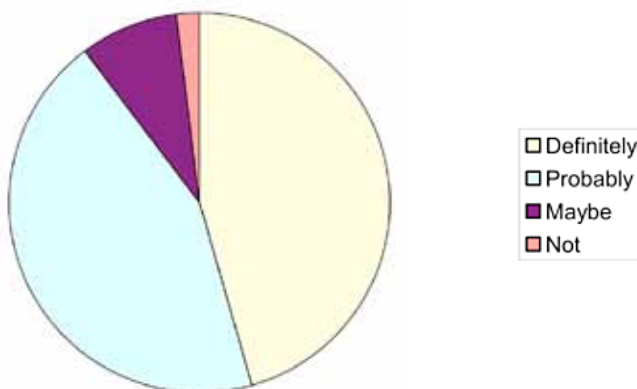


### About the Students and what they thought about the conference

This figure shows that the conference re-enforced the students' intention to follow a career in science.

The table below shows that the conference broadened the number of different science based careers that the students would consider.

Are you more or less likely to consider a career in science?



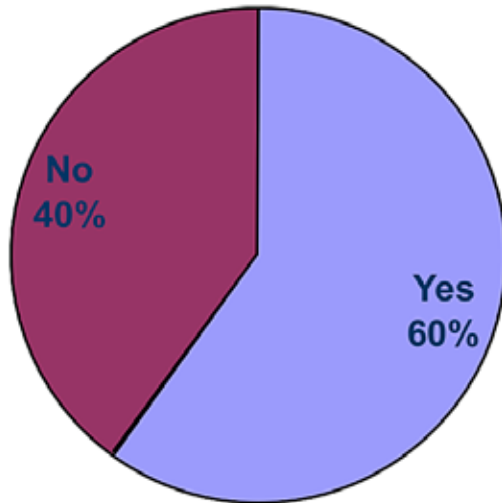
### What science based careers have you considered?

Before the Conference		After the Conference	
Doctor	51	Medicine/Doctor	28
Nurse	15	Biology	6
Denstist	16	Biomedical Science	3
Pharmacy	13	Engineering	9
Health care science	12	Physio	1
Clinical Physcologist	1	Dentist	4
Midwife	1	Forensic	3
Pathologist	1	Pharmacist	8
Surgeon	2	Ophthalmology	4
Therapist	1	Pathologist	1
		Research	3
		Teacher	6
		Nurse	2
		Haematology	1
		Science	2
		Surgeon	2
		Physics	5
		Environmental	2
		Physiologist	0.6
		Dietetics	0.6
		Midwifery	0.6
		Physiology	3
		Biology	0.6
		Astronomer/Astrophysiocs	3
		Diagnostician	1
		Midwifery	1
		Vet	3
		Paramedic	1
		Healthcare science	1
		Chemist	1

Conference Evaluation

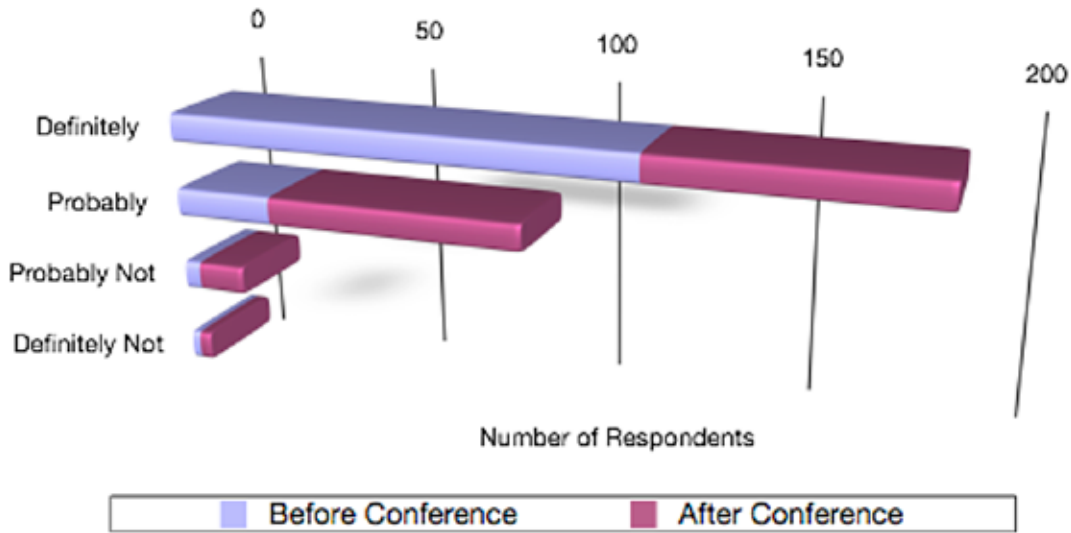


### Did Conference influence Student's subject choices ?



The conference re-enforced the students' intentions of going onto University

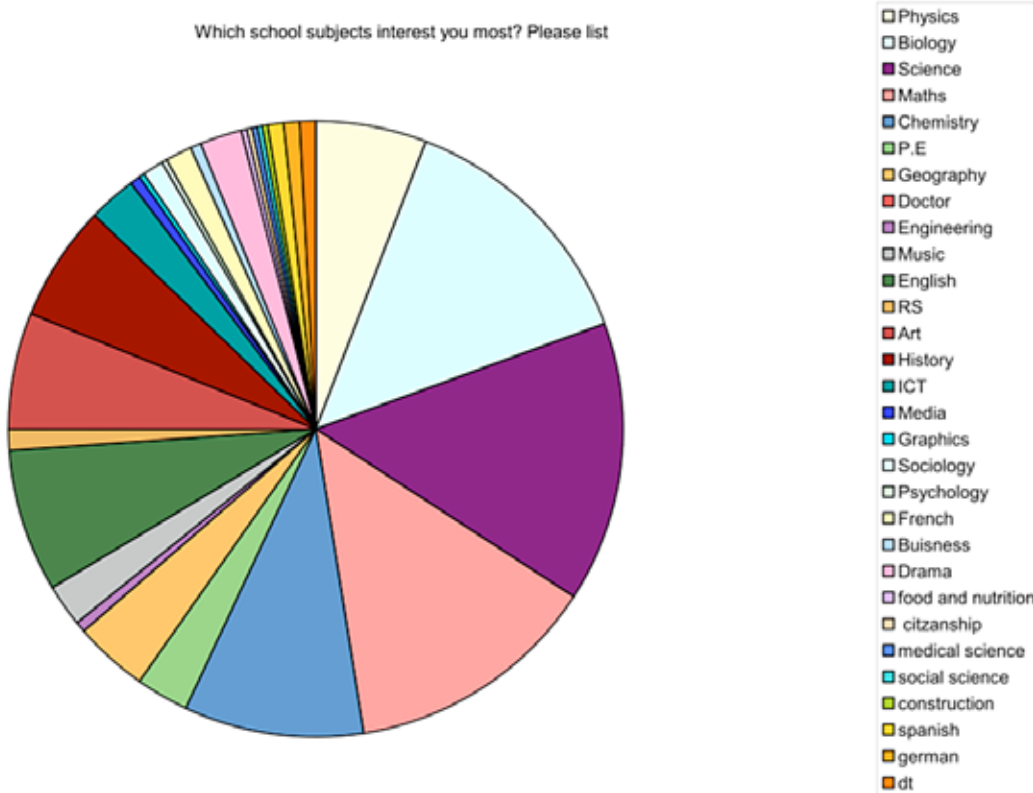
### Were you considering going to University or Further Education College?



The conference made students aware that there are science based careers and pathways into science that do not require a university degree.



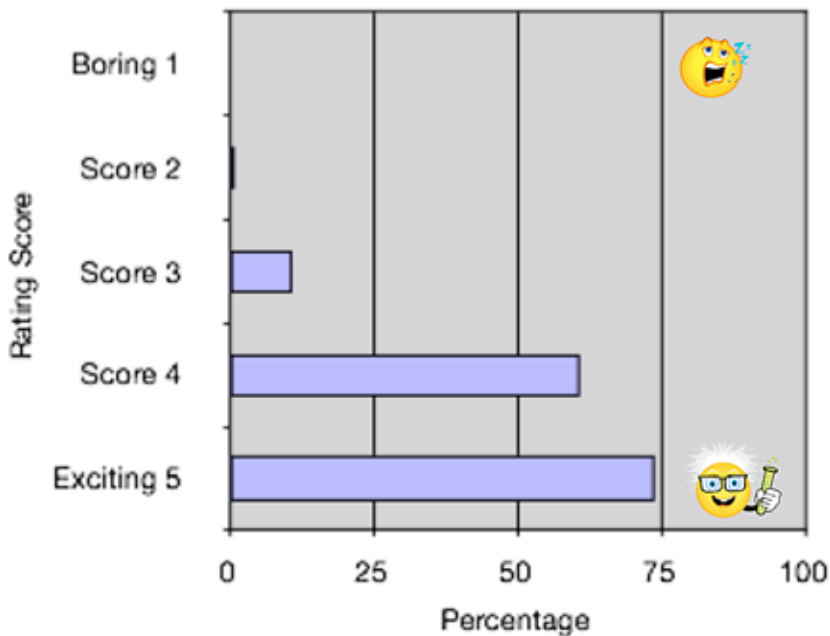
Biology was the most popular school subject of those attending the conference, followed by chemistry, mathematics, science and physics.



The conference had a positive impact on the students' subject choices.

The majority of students found scientists exciting.

**How Students rate Scientists after the Conference**



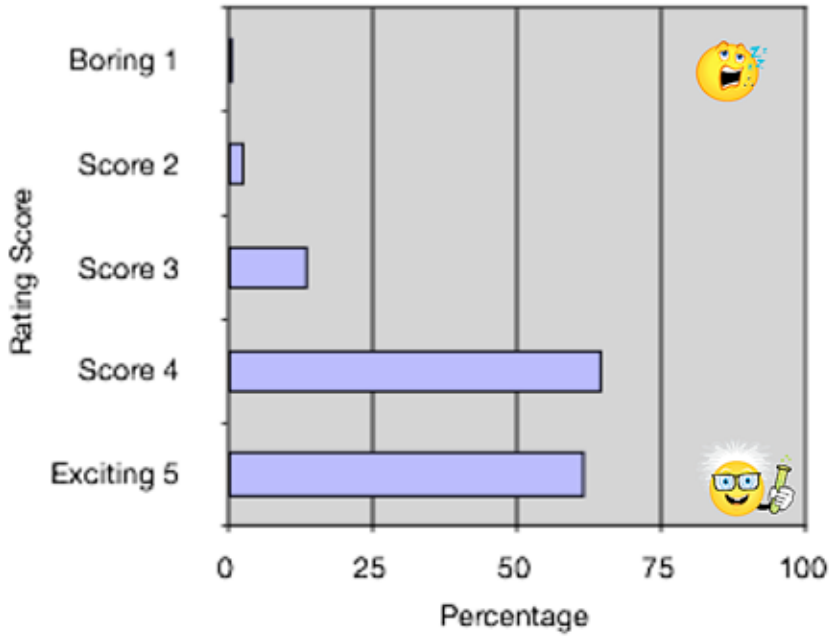
Conference Evaluation





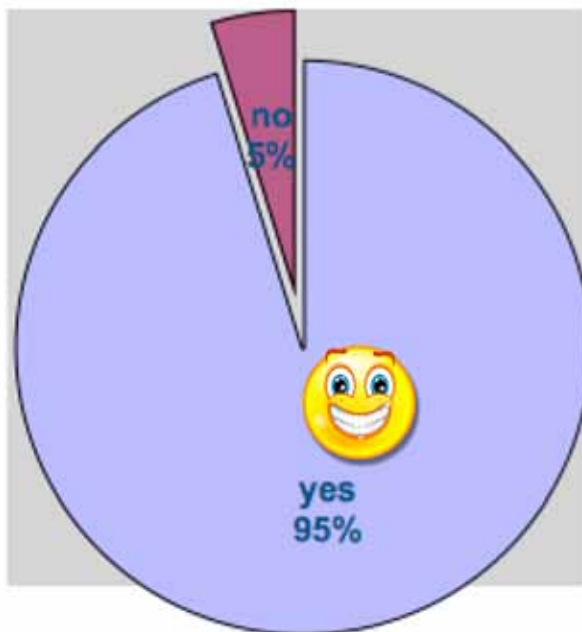
The students thought that healthcare scientists were caring and exciting.

### Student ratings of Healthcare Scientists after the Conference



The vast majority of the students said that they would recommend that their friends should attend these conferences.

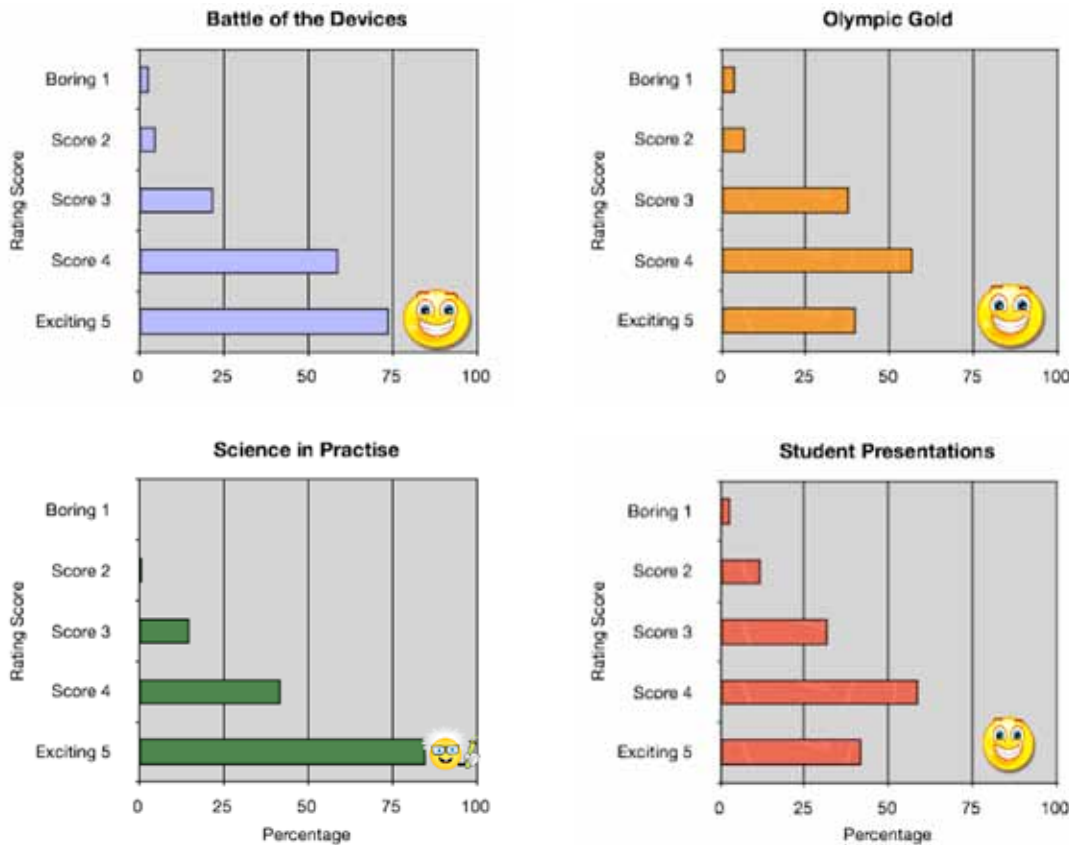
### Would you recommend these conferences to your friends?



Conference Evaluation



The students found the **Battle of the Devices** and the **Olympic Gold** workshops to be exciting, enjoyable and informative. The students enjoyed the hands-on interactive stands and the opportunity of meeting professional scientists (**Science in Practise**) and were fully engaged in the **Student Presentations**.



The students were asked to say what they thought about the conference

**What students said about the Science for Gold conference**

*This event has made me even more excited to progress with science in the future*

*It was a great and inspirational event which I would recommend to others*

*The workshops were interesting*

*It was very fun and I got a lot out of this event*

*I learnt a lot.*

*The event was enjoyable and fun day out.*

*Just to say thank you to everyone who gave up their free time to be here*

*I really enjoyed and will recommend it, I am very impressed and encouraged to be in the science industry*

*It was interesting and exciting. I would happily come here again*

*Today's event helped me to learn a lot about science and what I want of be in the future*

*Its amazing. I hope I could come again I have learnt so much*

*I have enjoyed today and it has influenced me to take further science, thank you*

*A really good and interesting opportunity, it inspired us to achieve whatever we set our minds to*

*Science in practice needs to be longer because it was the most exciting event*

*I have enjoyed today and it has opened my eyes to consider a career in science*

*I thoroughly enjoyed today's events, not only did they inspire me to peruse a career in science but I learnt and experienced many new things such as finding out my fitness and pricking my finger to discover my blood group*

*A great experience to have and attend wish that they were more opportunities like this*

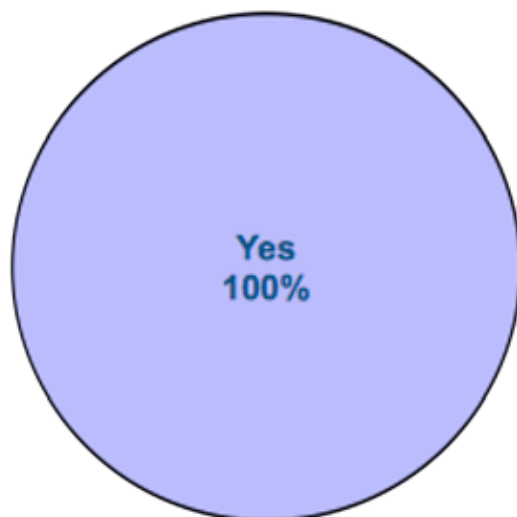
*It was an exciting experience it was fun and educational*

Conference Evaluation



The teachers were asked what they thought about the conference

What was the most benefit to you and your students?	
The <b>Science in Practice</b> session	The presentation on devices, group discussions and exhibitions
Box activity during teacher workshop	<b>Presentations</b> by different schools
Hearing professionals talk about their work	The <b>Science in Practice</b> session
Diversity of professions and resources	<b>CPD</b> session for teachers
Hands-on	<b>Battle of the Devices</b>
Institute of Physics Science Learning Centre	Exhibition Stands
Seeing the skills with the options and talks about different career paths	<b>Science in Practice</b> - good to see different jobs in science
Hands-on stalls	Careers and HSW
Students can see opportunities to pursue science careers. See what other schools are doing.	The <b>Science in Practice</b> and <b>Battle of the Devices</b> was fantastic!
Students were inspired by lots of different ideas and were able to have a better insight into science in practice. They were motivated	<b>Science in Practice</b> and opportunity to see different careers and talk to practitioners. Teacher workshop was excellent
Exposure to careers in science and meeting people who work in the field	The various careers and activities were engaging and our students were extremely enthused.
Seeing the creative aspect of science and proving that scientists are interesting and clear demonstration of the importance of science in everyday life	Medical devices was very informative relating science in school to everyday life and industry - How science works
Having to do <b>Presentations</b> - great confidence builder	Students enjoyed <b>Battle of the Devices</b> very much

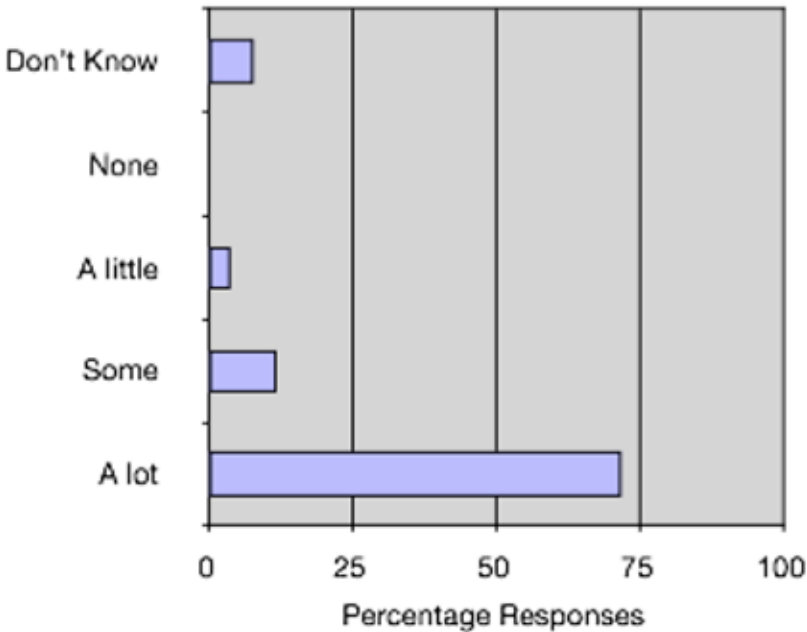


All of the teachers found the conference useful for themselves and their students.



The teachers stated that these conferences had influenced the students that they had brought this year and in previous years.

**Impact of Conferences on previous students' aspirations**



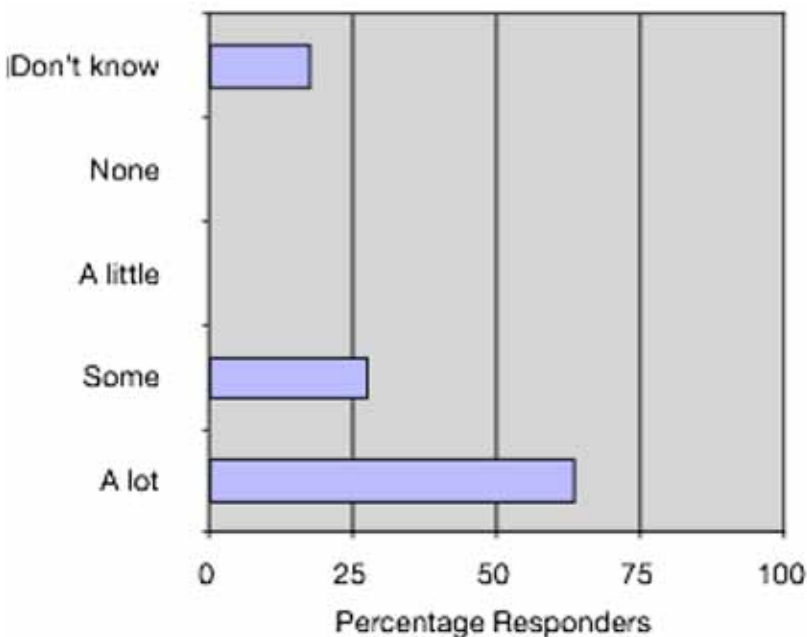
The conferences have had a positive impact upon the career aspirations of their students.

The conferences motivated their students to study science.

The conferences have encouraged their students to choose subjects and career pathways into science.

Teachers were asked about the impact of past conferences on their students career pathways.

**Impact of Conferences on previous students' motivations**

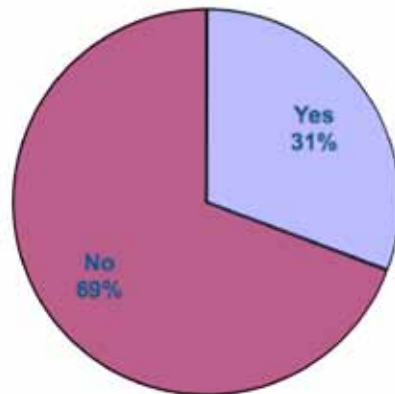




Do you know of any instances where students attending one of our previous events have chosen a career pathway into science?	Yes	No
Many of the students go onto to study science at university	5	4
Previously brought sixth form who had chosen A level subjects this year brought year 10 and much better		
Radiographer x2 Biomedical x4		
Every year students realise that the NHS is not just about doctors. Many more consider radiotherapy and radiography as a way of using their science. Nearly all attendees opt for 2 sciences at A levels		
Most of our students who attend this conference go on to study science at A level and follow careers in science		
Every year students from the trip opt for science A level normally two sciences		
Ex students wanting to study science related career eg forensic science		

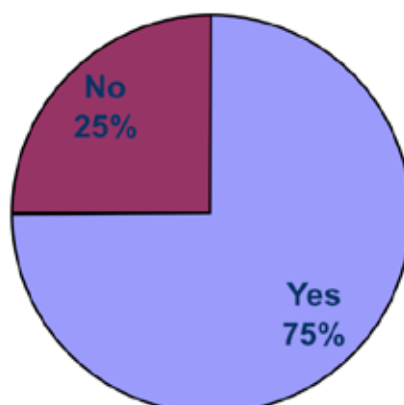
Under half of the teachers attending had used the conference website [www.science4u.info](http://www.science4u.info). This is one area where science4u needs to inform attendees.

75% of the teachers thought that the **Virtual Laboratory Tour** on the website would be useful for their lesson plans.



The following specific comments about how to improve in the future were obtained from the teachers.

**Will the website's Virtual laboratory Tour help with lesson**





## How could we improve this event for you and your students?

<i>More time/expand science in practice</i>	<i>Tired at last session</i>
<i>Cake, biscuits etc needed</i>	<i>Possibly a student presentation on a device they have researched for that to be voted on, or to present on a device they have created in their science or STEM club</i>
<i>Shorter lunchtime, more space for lunch and bins for rubbish</i>	<i>Have some podcasts of scientists for the event beforehand so students can prepare questions to ask</i>
<i>More schools? Not a lot!</i>	<i>Bigger venue</i>
<i>Organisation - IT and time keeping</i>	<i>More students could get involved</i>
<i>Shorter lunch hour and fit more time for activities</i>	<i>More interactive and hands on</i>
<i>Would have liked to have seen Battle of the Devices. Maybe let teachers opt into workshop when they wanted?</i>	<i>Include science careers outside of health care; more interactivity</i>
<i>Research a device that is being discussed prior to coming to prepare them for event eg research insulin pump and prepare questions</i>	<i>Split hands on so students go twice to break up the day; first one room then the other room</i>

## Volunteers

This year too few responses were obtained from the volunteers for analysis.