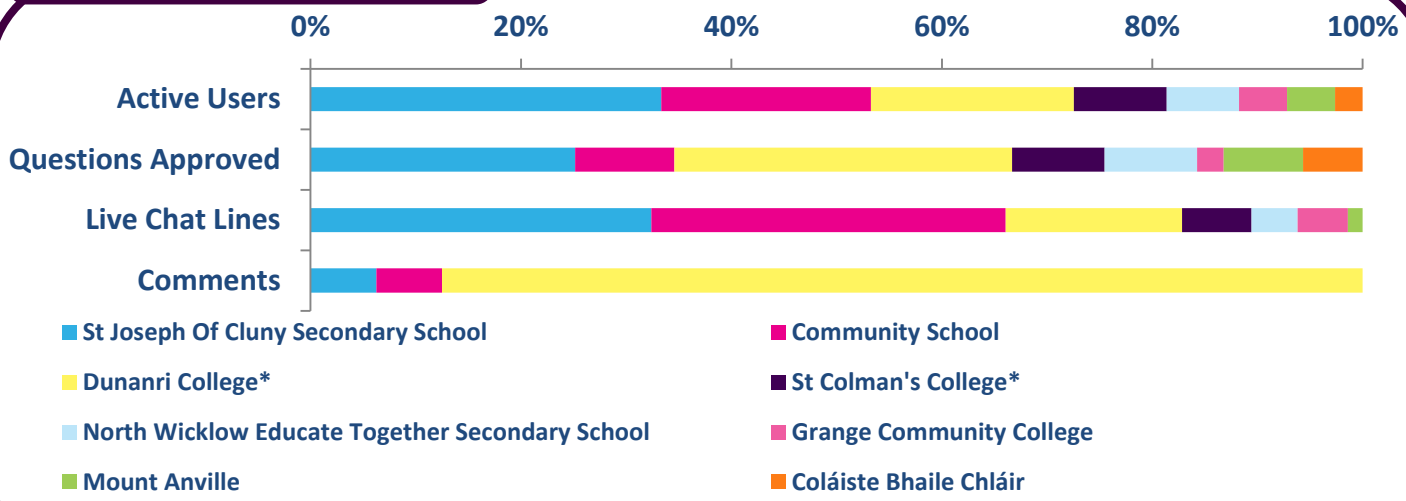
November 2016

This was a themed zone funded by the Royal Society of Chemistry of which Louise, Brian and Aoife are members and included five scientists working in a variety of areas. Matthew is a lecturer in chemistry who is working on creating tartan paint through chemical reactions, Louise is a PhD student trying to build a powerful, environmentally friendly and safe battery less than 1mm in size and Conor is a PhD student studying two dimensional materials less than a few atoms thick. Brian researches how cancer cells react with nanoparticles and Aoife, who was the winner of this zone, investigates how new materials can be used for clean energy production.

Aoife, Matthew and Louise were the most active scientists throughout the event, providing detailed and helpful answers within both ASK and the live chats. This was the quietest zone of the whole event, with some students unable to take part due to the Association of Secondary Teachers in Ireland strike action at their schools during the first week of the event.

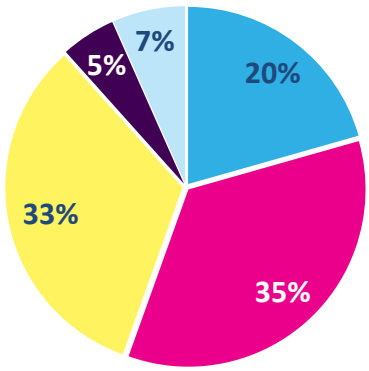
School data at a glance



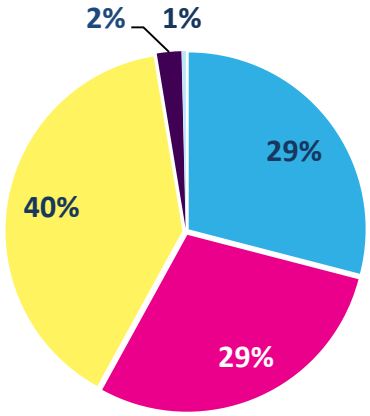
* Widening participation schools, as defined at http://about.imascientist.ie/widening-participation/

Scientist activity

Answers



Lines of Live Chat



Scientist	Profile views	Position
Aoife Lucid	323	Winner
Matthew Kitching	472	2nd
Louise McGrath	508	3rd
Conor Cullen	409	4th
Brian Caffrey	345	5th

Key figures from the New Materials Zone and the averages of the November zones

PAGE VIEWS	NEW MATERIALS ZONE	NOV '16 ZONES AVERAGE
Total zone	15,314	18,646
ASK page	1,011	1,758
CHAT page	1,764	1,587
VOTE page	1,254	1,396

	NEW MATERIALS ZONE	NOV '16 ZONES AVERAGE	IAS IRELAND 2012-16 AVERAGE
Schools	7	9	10
Students logged in	354	400	366
% of students active in ASK, CHAT or VOTE	86%	83%	84%
Questions asked	323	656	584
Questions approved	159	305	264
Answers given	301	462	488
Comments	35	75	66
Votes	265	311	288
Live chats	14	15	15
Lines of live chat	5,486	4,501	4,070
Average lines per live chat	392	292	273

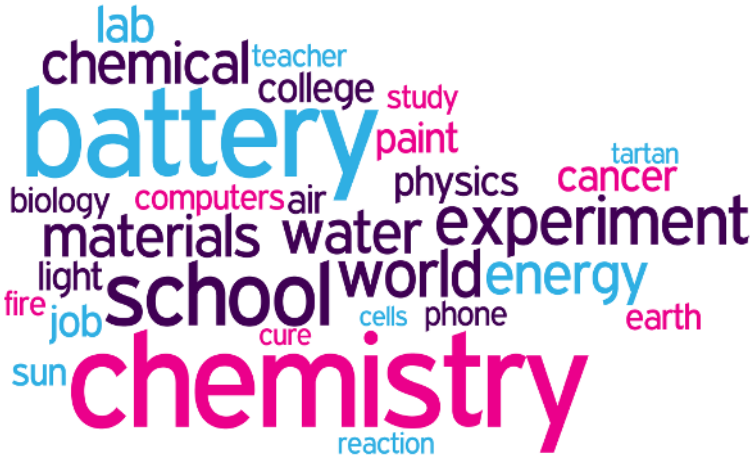
Popular topics

Students had read the scientists' profiles and asked many questions about their current research. For example, Louise was asked about the battery she is working on, how small it is and how powerful it can be. There was lots of interest in Matthew's tartan paint with students trying to get a better understanding of how it could be possible, and whether it will be available to buy. Many students asked about cancer in response to Brian's research, although questions were more general and less specific to his work with nanoparticles. They wanted to know what cancer is and how cancer cells multiply.

There were questions about the types of experiments the scientists had done and whether they enjoyed their jobs. Students also wanted to know why science was important, both to the world in general and to the scientists personally. Other questions revolved around science as a career path with students interested in which subjects are best to study if they want to be a scientist.

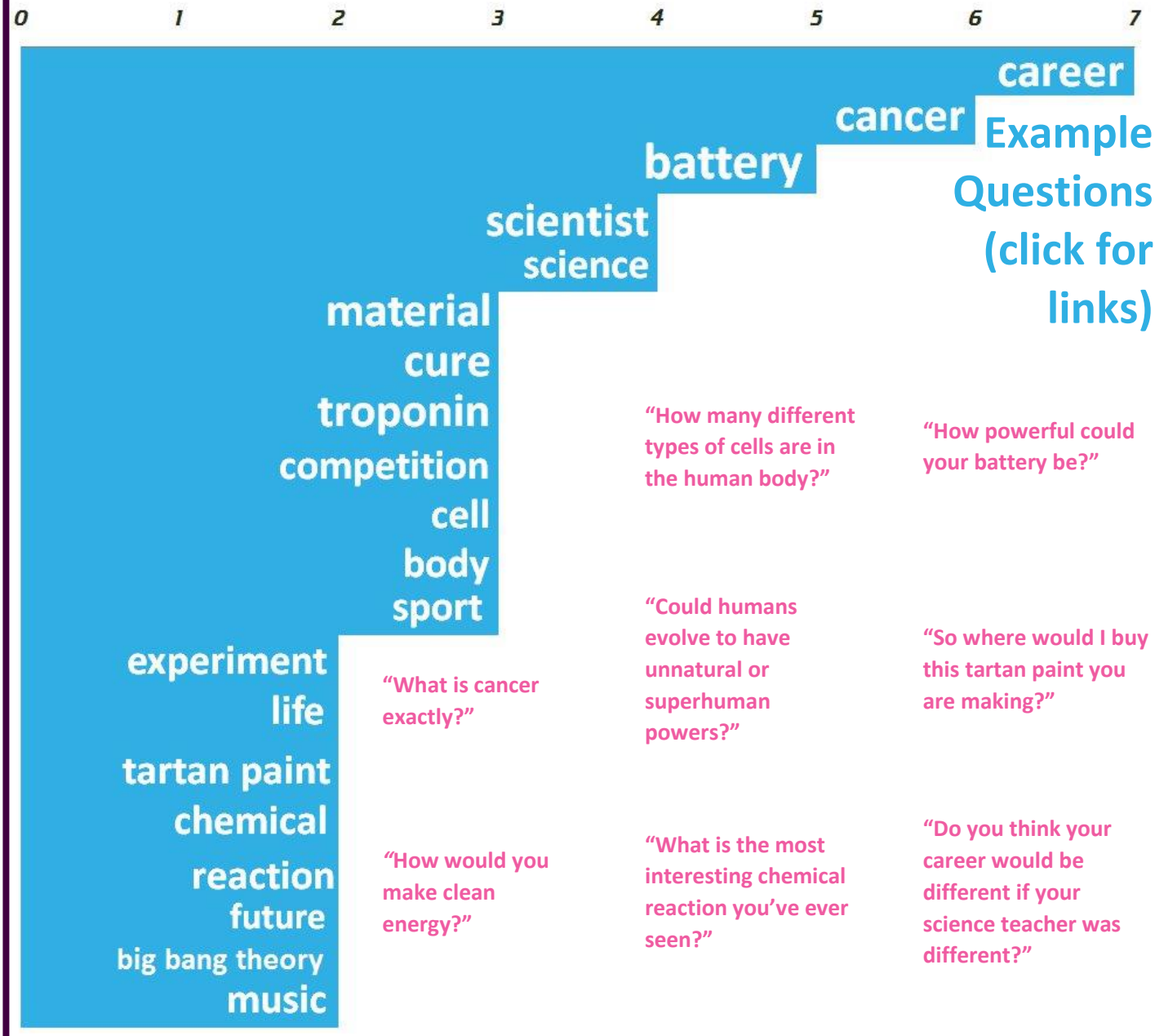
Chat

Keywords from live chats in the zone, size of the word represents its popularity



Ask ?

Keywords of questions approved in the zone, length of bar represents frequency of use



Example Questions (click for links)

"How many different types of cells are in the human body?"

"How powerful could your battery be?"

"Could humans evolve to have unnatural or superhuman powers?"

"What is cancer exactly?"

"So where would I buy this tartan paint you are making?"

"How would you make clean energy?"

"What is the most interesting chemical reaction you've ever seen?"

"Do you think your career would be different if your science teacher was different?"

"How do cancer cells multiply?"

"What are quarks and gluons?"

"Is there something that you think should have already been invented?"

"What theory of the universe do you believe in, like the multiple universe theory?"

"What subjects (other than science) would be good for a career in science?"

"What kind of cancer is the hardest to cure?"

"Can you make paint from tar?"

"How does ebola spread?"

Examples of good engagement

The ASK section had some great conversations, with scientists providing really detailed, accessible answers and students commenting back with their own thoughts. Students often showed a genuine interest in specific areas of scientific research, such as with this question about CRISPR:

> *"What is your stance on CRISPR and genetic modification?"* **– Student**
>
> *"This is a very thought provoking question. I don't think I can give you very clear answers for either of them because I agree with their use for some things but not everything! I don't really understand much about CRISPR, other than it is like a gene editing tool. Based on what I have read about it, it could potentially be promising if used correctly!"* – **Louise, scientist**
>
> *"Like Louise, I believe that CRISPR and gene modification in general is a fantastic tool so long as it's used for things which are beneficial to society. It's a really cool piece of science which could be the answer to a lot of health problems facing us today. I definitely think we will see a Nobel Prize for this work in the near future!"* – **Aoife, scientist**
>
> *"So CRISPR is AWESOME! Without going into how it works – it can "turn off" genes by damaging the DNA but also can "turn on" genes by splicing in genes that weren't in the cell to begin with…The potential for this technology is incredible! We can turn off cancer, treat genetic diseases, and remove HIV DNA from cells (all have these have been done in labs, but not people yet). So what's the bad news? Well the problem is you have pretty good control over the DNA present in Living cells – so you could give genes to people they never should have, or design babies to be exactly the way you wanted them to be (once the technology becomes advanced enough)…"* – **Matthew, scientist**
>
> *"Thanks I share the same stance ☺I have found an amazing video (and channel) about Science and CRISPR. Ill link it here- **https://www.youtube.com/watch?v=jAhjPd4uNFY**"* – **Student**
>
> *"Thanks a million for that! I will go have a nose at it there now!"* – **Louise, scientist**

Scientist winner: Aoife Lucid

Aoife's plans for the prize money: "*I would like to use it to put on some workshops for students related to using computers for chemistry to show them what you can do! I would also like to give some of the money towards some of the outreach work that already happens in our chemistry department related to teaching second level students all about chemistry!"*
Read Aoife's **thank you message.**

Student winner: 388newg35

For great engagement during the event, this student will receive a gift voucher and a certificate.

Feedback

We're still collecting feedback from teachers, students and scientists but here are a few of the comments made during the event…

"thank you all for answering me and i learnt a lot!" – **Student**

"I thought it was a unique and wonderful experience! I would definitely do it again!" – **Scientist**