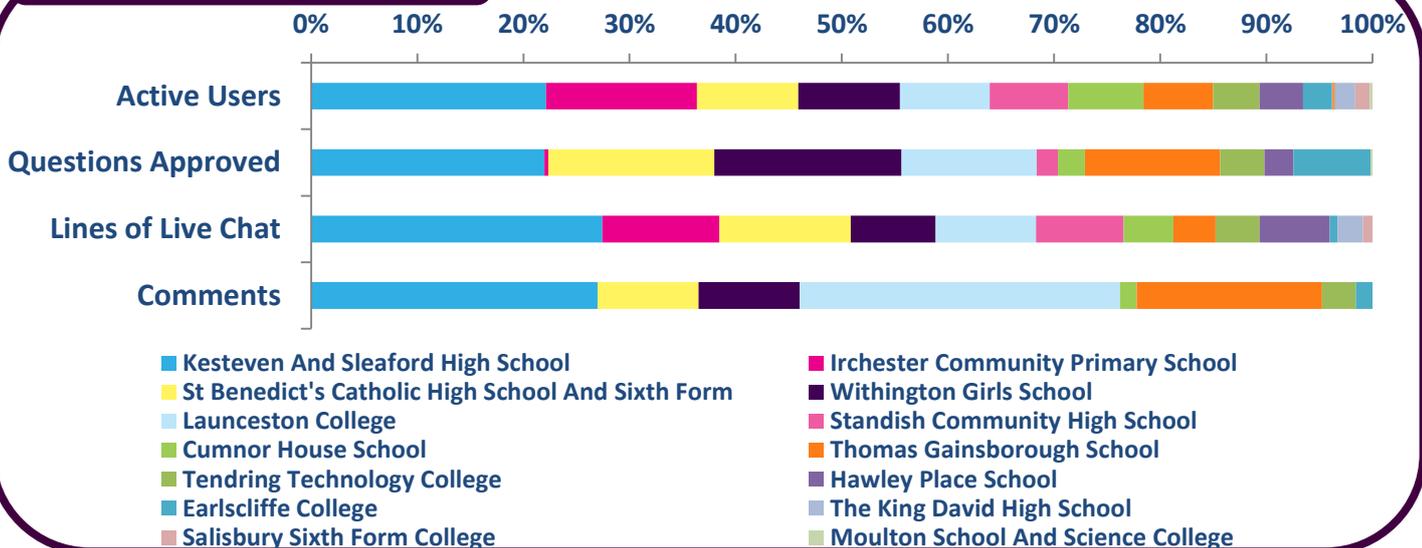




June 2015

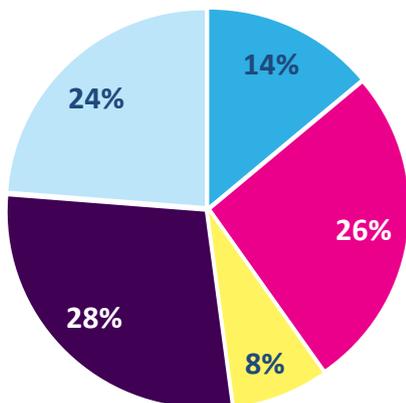
The Extreme Force Zone was a themed zone funded by the Science and Technology Facilities Council (STFC). It involved five scientists whose work was supported by the STFC and was related to the fundamental forces of nature in extreme situations. The topics discussed in the Zone were focused around physics and related strongly to the research carried out by each scientist. It was the one of the busiest June zones and both ASK questions (550 approved) and the live chats were extremely busy. This high level of engagement from the students was matched by most of the scientists in a competitive zone. For example, Steven, Lidunka, and Jillian each answered between 200 and 300 questions each and the scientists evicted early in the competition continued to attend the live chats.

School data at a glance

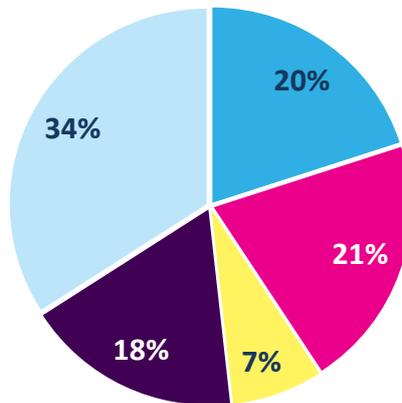


Scientist activity

Answers



Lines of Live chat



Scientist	Profile views	Position
Sarah Beasley	1,179	Winner
Steven Thomson	1,092	2nd
Connor Macrae	961	3rd
Lidunka Vocadlo	1,521	4th
Jillian Scudder	814	5th



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

0 5 10 15 20 25 30 35



Example Questions (click for links)

“What is the difference between starquakes and earthquakes?”

“Can you get any natural disasters in space? (Earthquake/Hurricane/Tsunami)”

“What makes an electron negative and a proton positive - why do they want to attract each other?”

“I wonder what kind of laser can cause damage to people?”

“If the core of the earth is really hot why has the earth not melted?”

“If atoms make up everything, do atoms make up atoms?”

“What are the strongest forces in the sun, and what do they do?”

“Do you think that in the future wars will be fought with cyber attacks rather than men? And if so could an energy wave be created to power off every single thing?”

“Why is fusion power not sustainable at the present moment?”

“Will I ever be able to record my brain like I can record a programme on television?”

“Why do quantum computers have to be at room temperature?”

“Do all planets have cores, or is it just rock planets, and if so are they solid?”

“As the universe expands, do we expand with it as well?”

“How should we store the antimatter that we would produce to make an antimatter bomb or generator?”

“Do scientists get health issues because they work so hard?”



Examples of good engagement

The students asked many thought provoking speculative questions that the scientists took seriously as an opportunity to engage, but also with humour, including one in ASK about the electromagnetic field of a human that lead to an [international twitter debate](#). This trend was also apparent in live chat:

"In Star Wars, laser is shot like bullets, but all the lasers I see IRL are beams that don't seem to have an end. Are the films realistic?" – Student

"In reality we wouldn't be able to see them at all, because it moves so fast, especially not in space. We can only see the actual beam of the laser if it has something to reflect off, like smoke in the air. Otherwise all we see is something like a dot on a wall! Have you seen a laser pen used? We can't see the beam of that can we? They don't usually make that pewpew sound." – Sarah, scientist

"If you were to eat the earth how many calories would it give you???" – Student

"Well the earth is about 10^{24} kg so if it was about 500 calories per kg then it would be about 10^{26} calories" – Lidunka, scientist

"If you shine a really strong laser at the moon for a long period of time would it heat up and explode?" – Student

"Not with the kinds of lasers we have now - I did some math a while ago, and even to blow a big hole in the moon would take more energy than we have in nuclear bombs" – Jillian, scientist

"Is it possible to become like the Flash?" – Student

"I think the Flash would be melted by the heat caused by air resistance if he tried to run that fast in the real world..." – Steven, scientist

"Superheroes are not known for their compliance to physics" – Jillian, scientist

Scientist winner: Sarah Beasley

Sarah's plans for the prize money: *"I would spend all of the money on resources to create experiments or activities which I could then take to schools. I would build up a repository ranging from straws and cotton wool to run an egg dropping exercise to materials suitable for trying to create aircraft or catapults! I've been waiting to get my hands on some frozen carbon dioxide, or dry ice, so that I can temporarily recreate the tail of a comet, which I think is pretty cool (excuse the pun)".* Read Sarah's [thank you message](#).



Student winner: Harry

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...

'This is kind of weird, we're chatting to actual scientists!!!!!!' – Dragonlover, student

'BYE I ENJOYED ALL OF IT :-[' - 125frcc23, student



Steven Thomson
@PhysicsSteve

Just did my first @imascientist live chat - that was intense, fast-paced and absolutely great fun. Lots of brilliant questions!