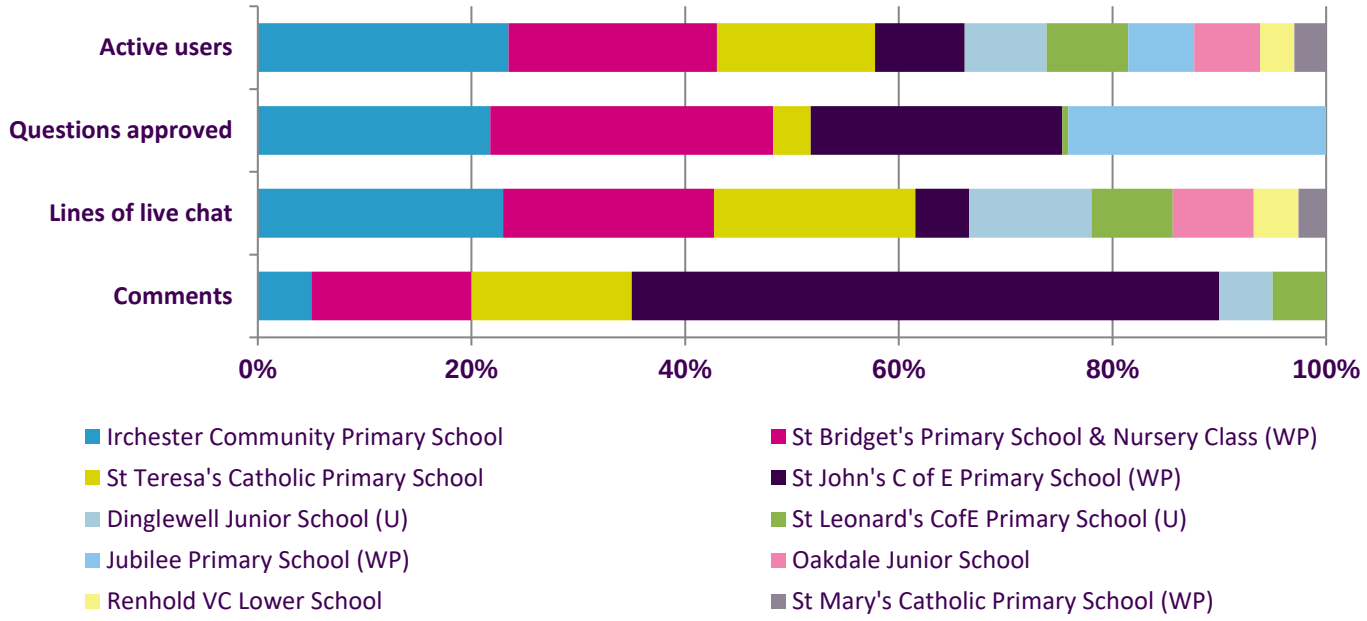
June 2018

The Heart Zone was a primary school zone supported by Wellcome.

- Samuel, the winner of the zone, works on new technologies for assessing the state of the heart and its arteries
- Pankaj is a doctor and scientist, who also lectures in cardiovascular medicine
- Lucy looks at the heart and blood vessels of unborn babies to see how they are affected by changes in their environment
- Kate is studying for her PhD and is focusing on the shape of the heart in patients with aortic stenosis
- Jordan processes blood samples, separating them into groups and filtering them before they are ready for testing
- Emma programs pacemakers, monitors patients during operations and performs ultrasound scans on the heart in her work at a hospital

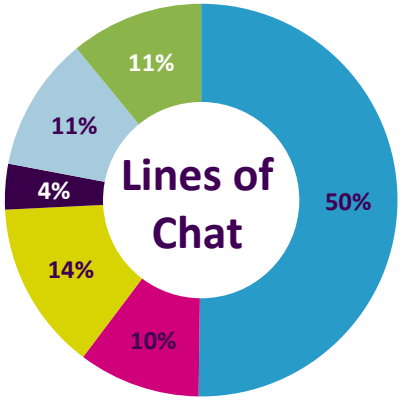
Students in this zone were very excited to talk with scientists which came across in the lively and fun chats. Students wanted to know about all things to do with the heart, as well as getting to know the scientists on a personal level.

School data at a glance



We want to increase the participation of under-represented groups going into STEM careers. Find out what we mean by our under-served (U) and WP schools (WP), and how you can support us in working with more of these at about.imascientist.org.uk/under-served-and-wp/

Scientist activity



SCIENTIST	PROFILE VIEWS	POSITION
Samuel Vennin	831	Winner
Jordan Moir	578	2nd
Emma Wellham	497	3rd
Pankaj Garg	596	4th
Lucy Green	475	5th
Kate Kuyt	503	6th

Key figures from the Heart Zone and the averages of the June zones

PAGE VIEWS	HEART ZONE	JUNE '18 ZONES AVERAGE
Total zone	20,067	19,125
ASK page	1,343	1,307
CHAT page	1,727	1,422
VOTE page	914	1,252

	HEART ZONE	JUNE '18 ZONES AVERAGE	IAS 2012-18 AVERAGE
Heart Zone Schools	10	9	10
Students logged in	470	393	387
% of students active in ASK, CHAT or VOTE	86%	91%	86%
Questions asked	367	461	689
Questions approved	169	225	300
Answers given	316	400	536
Comments	35	68	74
Votes	229	300	304
Live chats	19	18	16
Lines of live chat	6,782	6,513	5,509
Average lines per live chat	357	357	354

Popular topics

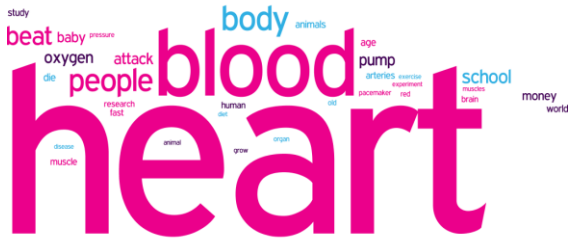
The primary school students in this zone engaged really well with the theme. It was clear they already knew a little bit about the heart and were very interested in finding out more about how the heart and circulatory system works, how much blood your body produces each day, how fast a heart beats under different circumstances and how to fix a heart when it goes wrong.

The students asked about how pacemakers work, prompted by Emma's work, and whether they could restart a heart if it stopped. They also asked Lucy about her work with unborn babies, asking how she can see if a baby is changing while in the womb, what is the most dangerous thing for an unborn baby and if she's ever studied twins.

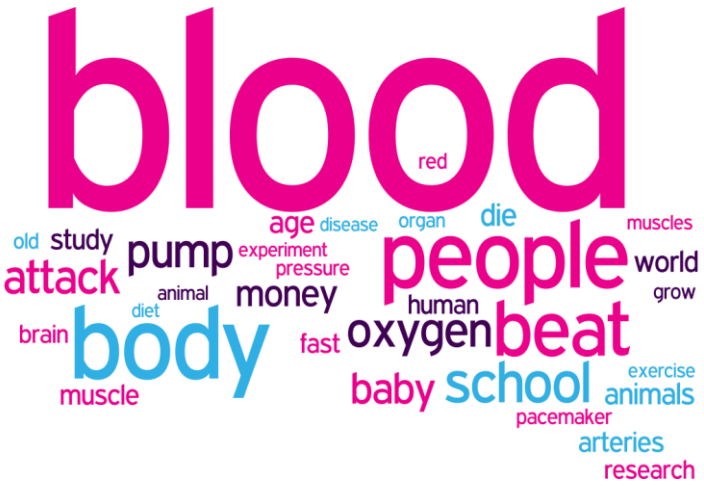
Students wanted to find out about the scientists as people, about their families, favourite things and hobbies. They were also interested in whether Samuel preferred France or the UK.

Chat

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



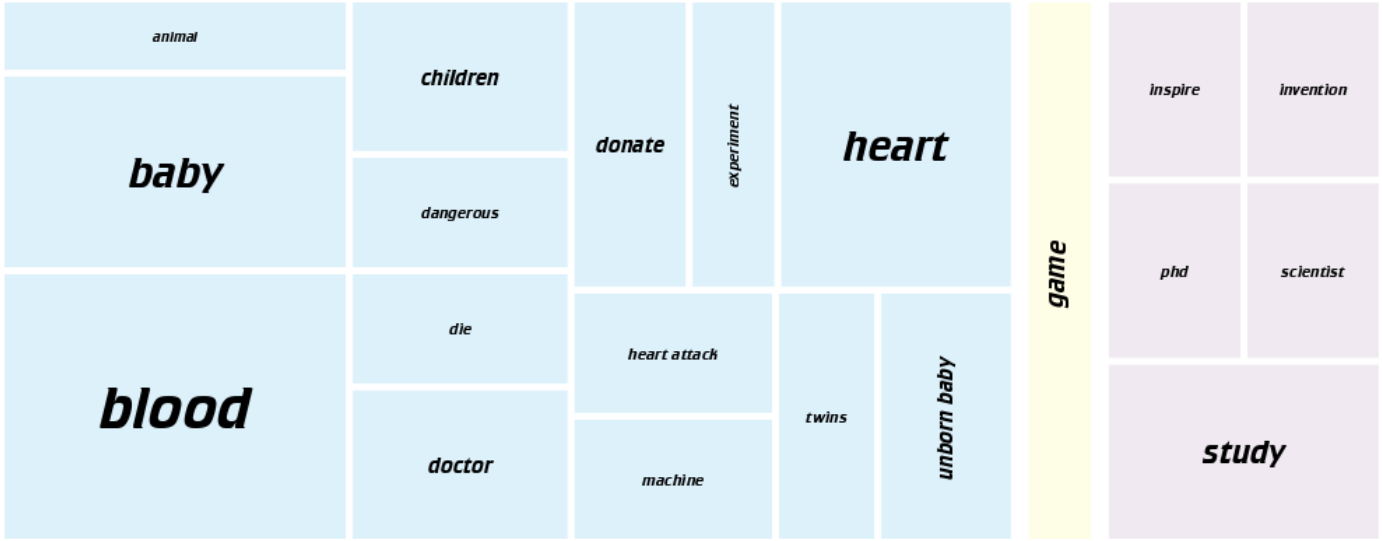
Keywords from chats with 'heart' included



Keywords from chats with 'heart' removed

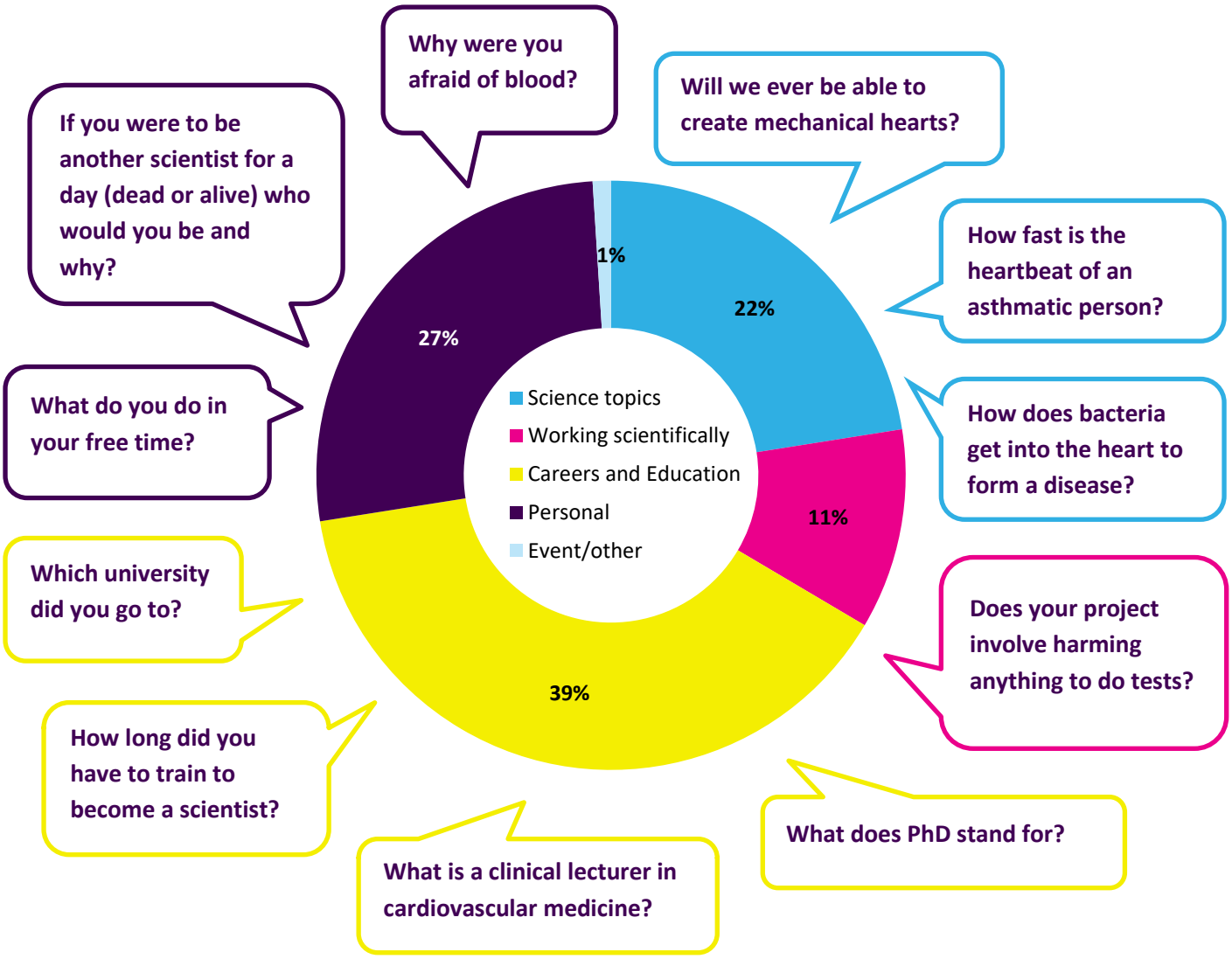
Ask

Top Keywords of questions approved in the Zone



Question themes and example questions in the Zone

Find out about how we've coded the questions at **about.imascientist.org.uk/2017/student-question-coding**



Examples of good engagement

Students shared their thoughts about what heart research might look like in their own futures, raising their Science Capital* by applying scientific knowledge into everyday life:

> *"Will there be an invention in our lifetime that can predict when a heart attack will happen hours or days before it happens?"* ***– Student***
>
> *"That is actually one of the things I am working on at the moment! We have nice results so far. But we don't know yet how early it can tell you this. We need more testing and that kind of patient is obviously hard to find..."* ***– Samuel, scientist***
>
> *"WOW!!! that will be so amazing! good luck"* ***– Student***
>
> *"Thanks! I am actually writing application at the moment (deadline at the end of next month) to get more funding for this work :-)"* ***– Samuel, scientist***

*Science Capital is a measure of someone's engagement or relationship with science, how much they value it and whether they feel it is 'for me'. More info at **imascientist.org.uk/science-capital**

There were lots of conversations about the scientists' individual research areas, with students especially interested in Lucy's work with unborn babies and what could go wrong during pregnancy. The scientists were great at making their answers accessible for primary school aged students.

> *"What is the most dangerous thing to an unborn baby?"* ***– Student***
>
> *"I think this is a great question but really tricky thing to answer. Probably the biggest danger is something terrible happening to the mother since the baby is reliant on her for food and oxygen. But the whole process of development is important and there are lots of steps at which things could go wrong… many. many babies are born just fine … that is an awesome feat of biology!"* ***– Lucy, scientist***
>
> *"How does alcohol and smoking affect the baby?"* ***– Student***
>
> *"The unborn baby has lungs but it doesn't use them like we do – to take in air and get oxygen into the bloodstream. Instead it gets oxygen from the mum's blood … it passes across the placenta into baby. If the mum smokes then this can stop the baby growing, raise its heart rate, and cause it to be born early. … If the mum consumes alcohol it stops the lung movements and they don't grow as well, so this can cause problems later with breathing."* ***– Lucy, scientist***

Scientist winner: Samuel Vennin

Sam's plans for the prize money: "*I will use the funds to design activities for a stand at the science section in the Greenman Festival, in Wales next August.*" Read Sam's **thank you message.**

Student winners: James and Bruno

For great engagement during the event, these students 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…

"One of my pupils faces barriers with Literacy. He was thoroughly engaged and was delighted that he had questions answered by the scientists. What a way to motivate children with additional support needs.

Another pupil took part in the family live chat in the evening. The next day she was so excited and told me she couldn't believe her luck in getting access to these scientists and getting all her questions answered. She had screen shot all her answers and brought them into class. Her motivation and love of learning was given a great boost."**— Teacher**

"I am really happy talking to a really cool scientist."**— Student**