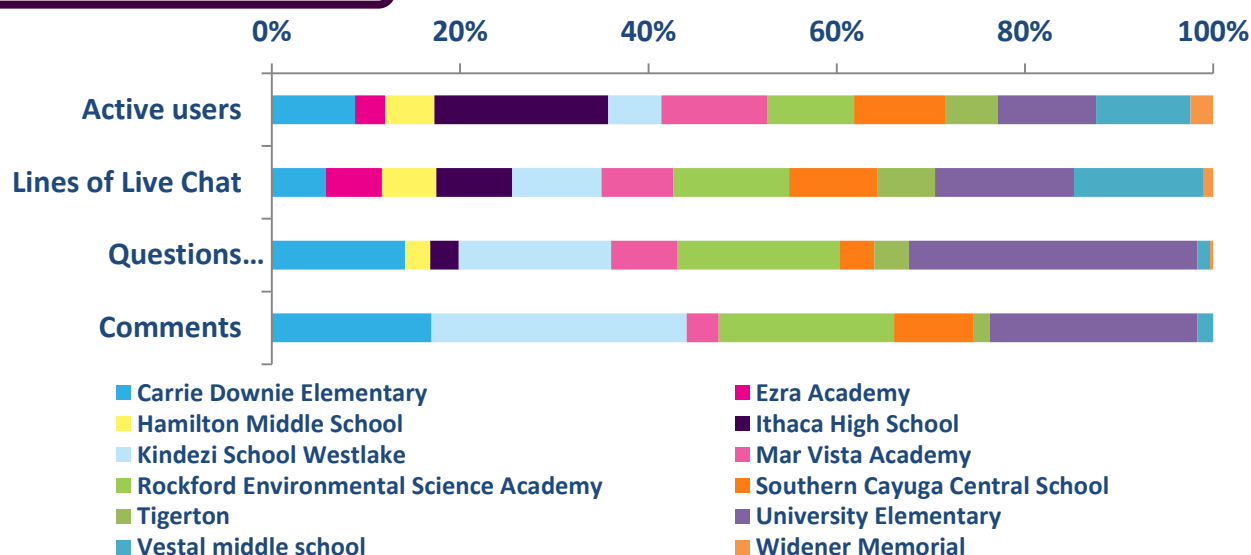


May 2016

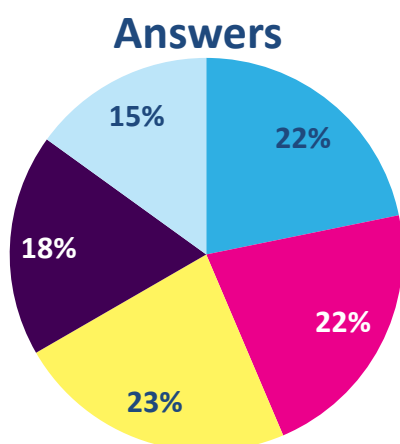
The Helium Zone was a general science zone featuring scientists working across a range of life science and medical subject areas. The zone had 299 participating students in comparison to 262 in the previous year's Hydrogen Zone. Students were spread fairly evenly across the schools taking part with classes ranging from 6 to 28 members. Some schools enrolled multiple classes and some classes undertook multiple live chats. There were more chats in the first week than the second, with eighteen chats overall.

There were a very large number of questions submitted and approved, with more questions asked by the students than the previous hydrogen zone. Chats were well attended with many featuring three or more scientists. The average number of scientists per chat was three. Schools attended all their live chats, though some booked chats required rescheduling due to teacher mistakes with regard to their time zone. All the scientists were very engaged and quick to reply to the students' questions.

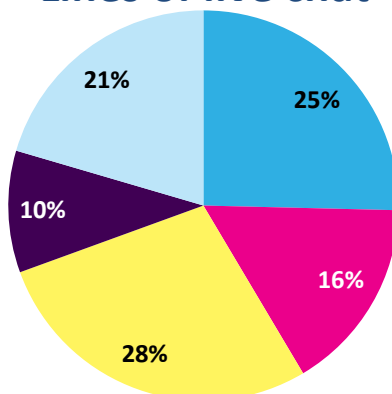
School data at a glance



Scientists' activity



Lines of live chat



Scientist	Profile views	Position
Melissa	470	Winner
Jonathan	482	2nd
Kevin	404	3rd
Kellie	423	4th
Stephanie	341	5th

Key figures from the Helium Zone
and the average of the USA zones

PAGE VIEWS	HELIUM ZONE	USA ZONES AVERAGE
Total zone	25,106	19,836
ASK page	2,194	1,537
CHAT page	2,536	2,417
VOTE page	2,993	2,326

Popular topics

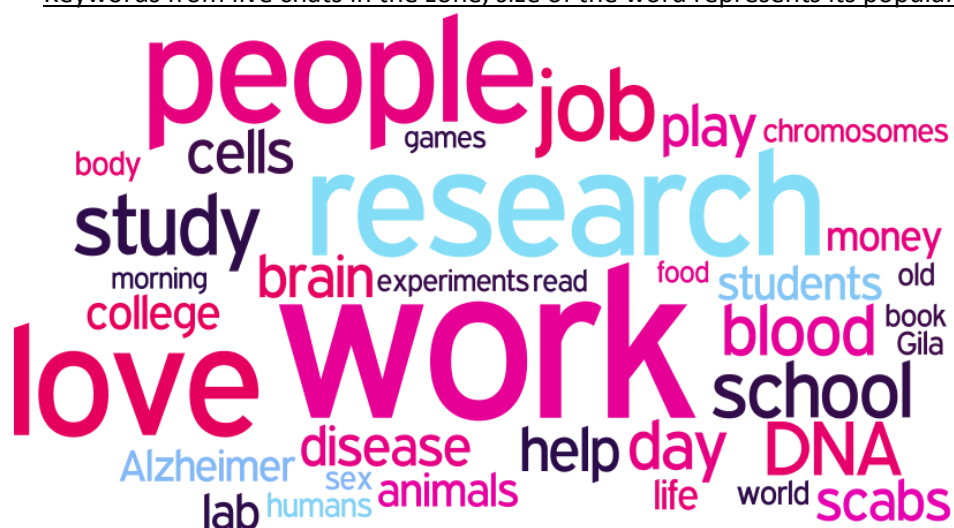
As a general science zone the questions were quite varied. Popular topics in the zone were brains, mosquitos, scabs and disease. The students were interested in the research topics of the scientists as well as their day to day work and what it is like being a scientist. The interest in the different topics was fairly evenly distributed among the scientists with no one topic predominating. Chats predominantly featured biology and often topics overlapped, with Melissa, Kellie and Jonathan co-operating to answer the students' questions.

Many students asked the scientists how they got interested in their subjects, what they liked at school and how they ended up doing the work that they do. Many of the students were interested in whether the scientists worked with animals and whether animals were hurt in their research with the scientists providing excellent explanations about their involvement in animal research, or its' importance.

	HELIUM ZONE	USA AVERAGE
Students	299	292
% of students active in ASK, CHAT or VOTE	83%	82%
Questions asked	517	366
Questions approved	297	227
Answers given	711	434
Comments	99	61
Votes		
Lines of live chat	5,684	3,967
Live chats	18	16
Average lines of live chat	316	245
Schools	13	12



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





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

0 2 4 6 8 10 12 14 16 18 20



Example Questions (click for links)

"How do mosquitos get the zika virus?"

"How do you analyse DNA?"

"What makes a good scientist?"

"Why will this experiment help the economy?"

"What are genetic conditions and how do they affect the way the human cell works?"

"What's your favorite part of the brain?"

"Are dragons real in your opinion?"

"About how many patients do you work with each week?"

"How do scabs form?"

"Is pain really just in your brain?"

"Do you believe that diabetes can be cured?"

"What information can we get from studying sex chromosomes?"

"What is the process in becoming a scientists and how long will it take?"

"Do bones get scabs?"

"Do you harm any animals at your work?"

Examples of good engagement

All the scientists were very good at engaging students during the live chats. There were lots of questions about science and being a scientist, the scientists daily work, how they became interested in their field of study and their personal lives. Students were often just as interested in the scientists as they were finding out the answers to their science questions.

Getting to know the scientists

"@kevin: what are the names of your pets?" – **student**

"My cats are Oliver and Captain McPaws, and my rabbit is named Marceline." – **Kevin, scientist**

"@kevin your not as old as i expected what do you do for fun?" – **student**

"nope, I am very young scientist. I like to play video games, watch TV, and read books for fun. What about you?" –

Kevin, scientist

"i like to read about bats" – **student**

During one chat the students talked with the scientists at length about books and movies"

"what is your favorite book?" – **students (Kid Genius, <3HarryPotter, 346hemb33, Eli)**

"I LOVE reading. I love the Golden Compass, all sci fy/fantasy... Patricia McKillip books are great too & also Star Wars books!!" – **Stephanie, scientist**

"My favorite book is currently The Orphan Master's Son, by Adam Johnson" – **Jonathan, scientist**

"@Eli, my favorite book is The Metamorphosis." – **Kevin, scientist**

"The Metamorphosis is about a man that wakes up as a cockroach one day! Very weird book, but I love it." – **Kevin, scientist**

"@Stephanie What book would you recommend to a fourth grader?" – **346hemb33, student**

"@346hemb33 I've heard the eragon books are good for that level and they are good books!" – **Stephanie, scientist**

"have you read divergent?" – **IceCreamTacoSushiCat, student**

"@IceCreamTacoSus hi Yeah! I liked that first book a lot too!! I have them all tho but haven't read Four yet" –

Stephanie, scientist

"@IceCreamTacoSus hiCat No, but I've heard of it. Is the Divergent series any good?" – **Jonathan, scientist**

"@stephanie have you read you hunger games" – **mystery, student**

"@mystery yes! I love that book too. The first one was the best 😊" – **Stephanie, scientist**

"@stepiane i love the first book the second book was okay.but it was basically a replay in the plot that wasnt even better then the first the third one was a total drag Do you agree?" – **mystery, student**

"@mystery I agree- I like how the second book had them go different places in the city though" – **Stephanie, scientist**

"@stepiane oh i hate the part where they go to disrict 11 its so horrible yet alittle happy" – **mystery, student**

Choosing science and working as a scientist

"why did you become a scientist?" – **'beststudentevs'**

"I became a scientists because I love figuring how things work!" – **Kevin, scientist**

"I've always liked science - I went into my particular area (computational biology), because I liked mathematics and logic, and I really like being able to use those to make meaningful discoveries in biology using the giant datasets that are coming out." – **Melissa, scientist**

"I became a scientists because I wasn't happy with the response "we don't know why this works in medicine" I wanted to find answers to be able to help more people. Plus I always loved science growing up." – **Kellie, scientist**

"At everyone, Do you help other scientists?" – **ann, student**

"@ann Yes! I help other scientists all the time. I peer-review, organize conferences and meetings, read manuscripts, assist with experiments. Science is collaborative! (Or, at least it can be.)" – **Melissa, scientist**

"How long do you guys work for?" – **student**

"I work about 9 hours a day but it depends!" – **Kevin, scientist**

"I usually work 8-10 hour days. I try not to do so much work at home or on the weekends, though sometimes I need to when a deadline is coming up." – **Melissa, scientist**

"@all scientist do you get to have time for you husband/ wife?" – **student**

"my husband is also a scientist and we work together!! so definitely 😊 but otherwise we would totally have time together anyways!!" – **Stephanie, scientist**

"I make time for my husband but its not easy. Sometimes we work side by side and help each other with writing and things. We plan date nights though where we can't do work so we can go out to eat or a movie." – **Kellie, scientist**

"@melissa you must be very busy" – **Chris, student**

"There were more than 14 students at my office hours yesterday. It keeps me busy." – **Melissa, scientist**

"well it sounds fun but jam packed" – **Chris, student**

"DO you sometimes feel like you messed up really bad and felt really bad and just wanted to SCREAM." – **student**

"I do mess up. It used to bother me more. But now I just own up to it, and figure out how to fix it." – **Melissa, scientist**

"that is a really good way of handling it i wish i could do that" – **student**

"when can we do this again" – **student**

Questions about the scientists' research

"Could I somehow get Zika virus in US?" – **student**

"It would be very very hard to get Zika virus in the US, but it\'s probably transferred in blood." – **Stephanie, scientist**

"Do any of you use monkeys to test your experiments" – **student**

"Nope, but we can grow monkey cells in the lab and I've used them before (they came from a monkey a long long time ago and we can grow them forever in the lab)" – **Stephanie, scientist**

"No, scientists have moved away from using monkeys in Alzheimer's research (and research in general)." – **Jonathan, scientist**

"Nope, only mice." – **Stephanie, scientist**

"thank you fore not useing monkeys @ kevin @stephanie @ jonathan" – **student**

"How do blood clotts form @kevin" – **student**

"blood clots form when things called platelets bind together with fibrin to form a clot." – **Kevin, scientist**

"are scabs important to are survival? " – **student**

"scabs are very important to survive. Without them you would lose all your blood if you got a cut." – **Kevin, scientist**

"what purpose do mosquitoes have on the earth?" – **student**

"Great question! We don't know exactly how important mosquitoes are to the environment. They have a freshwater stage before they can fly, and they eat bacteria when they are larva in the water... so they probably have an important role. Also bats and birds eat them! So if we got rid of all mosquitoes we might have some big problems." – **Stephanie, scientist**

"would people have white blood if people had more white blood cells than red blood cells?" – **student**

"people would not have white blood if they had more white blood cells. White blood cells are actually colorless." – **Kevin, scientist**

"whats you fav experiment :0" – **student**

"I enjoyed doing behavior and diabetic pain monitoring with rats. I had to play with them to get them used to me first" – **Kellie, scientist**

"I like old school physics experiments. Like the double-slit experiments to prove that light has properties of a wave or a particle, and I like the idea of proving Einstein's theory of relativity by using solar eclipses!" – **Jonathan, scientist**

"My fav experiment was infecting cells with Dengue virus and then looking at how the virus affected gene expression in the cell" – **Stephanie, scientist**

General science questions

"about how many organisms in the world...or just make a guess" - **student**

"According to a recent estimate there's 8.7 Million species of organisms on earth!!!!" – **Kellie, scientist**

"ohh that's alotttttt.... but thanks for looking it up 😊 your awesome" - **student**

"is there any type of zombie-like infection (not actually a real zombie)" – **student**

"I think there's an ant fungus that turns ants into the walking dead ." – **Stephanie, scientist**

"I know there is nothing that brings the dead back, but thank- you guys for answering my questions!!" – **student**

"haha I just think that's the biggest thing about zombies, right?" – **Stephanie, scientist**

During one chat with a special education school serving students with physical and medical disabilities the students were able to ask the scientists a lot of questions that related to themselves.

"What causes people to have seizure?" – **student**

"how quickly does your brain heal after you have a seizure???" – **student**

Kevin : @848hemb26, there are many causes to seizures. One is light sensitivity, certain lights cause people's brains to become overactive." – **Kevin, scientist**

"There are many different causes, and figuring out the cause is especially important to understanding if they'll happen again." – **Melissa, scientist**

"As you can tell, my students deal with a lot of medical issues, especially seizures. They are loving this!!!" – **Patti de Luca, teacher**

"how do you get a headache?" – **student**

"Ooh, headaches can occur when the vessels in the brain get constricted." – **Melissa, scientist**

"what color are peoples brains?" – **student**

"Brains are actually kind of gray." – **Melissa, scientist**

One of the most interesting and engaging chats involved students sharing their STEM poems with the scientists:

"@everyone in school we are learning to write poems about stem we are having a world fair Friday 😊" – **Millie, student**

"I love the idea of writing poems about STEM. That sounds really great!!" – **Stephanie, scientist**

"@everyone we need more STEM poems." – **Stephanie, scientist**

"I would love to read Millie's poem!!" – **Stephanie, scientist**

"there are many ways to classify things

one people classify vertebrates and invertebrates depending on the backbone

two people classify other and make them feel like a microorganism.

three people also classify other peoples skin color but its not thier fault its all in the genes

four if you want your teacher to like you.... you have to show then what you want them to be classified as

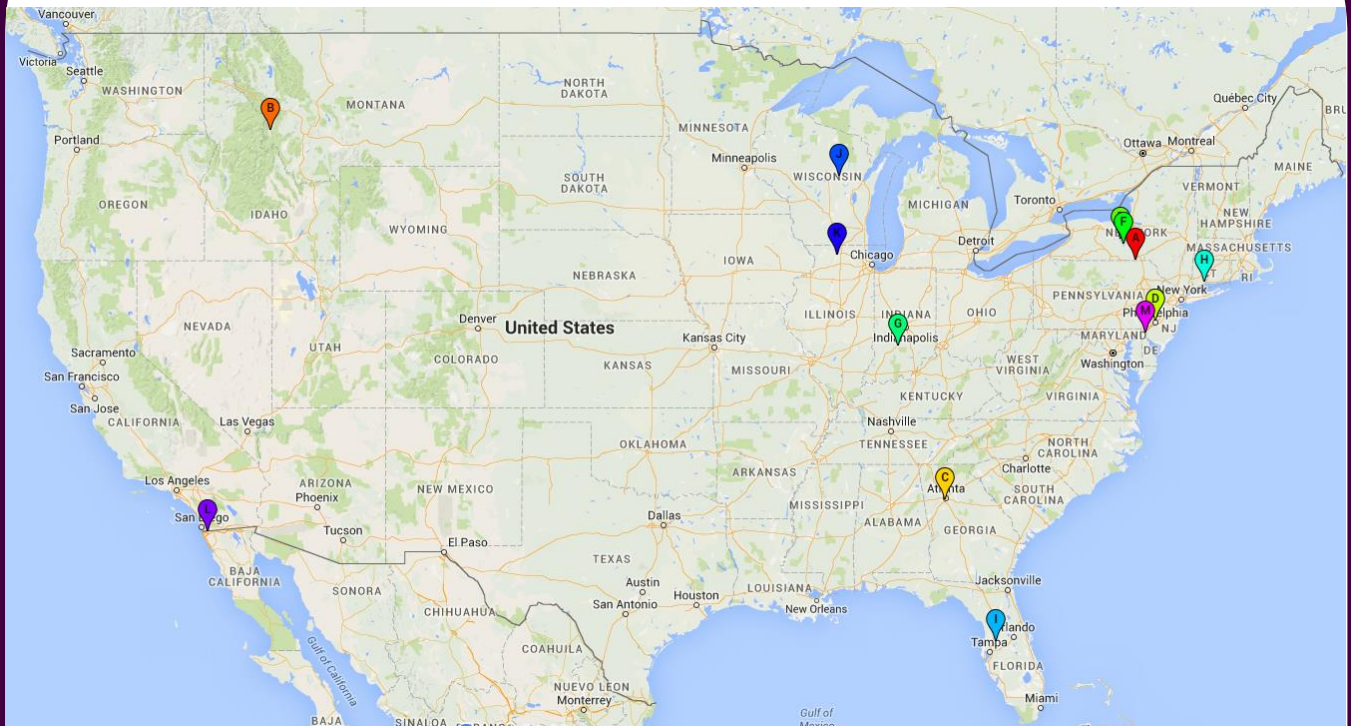
five people classify plants depending on its ecosystem cloning

six you can make yourself a twin by cloning yourself" – **Millie, student**

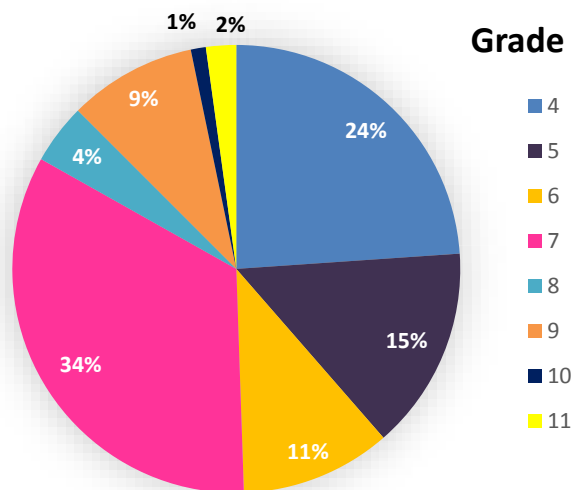
"@Millie that is an amazing poem!!" – **Stephanie, scientist**

"I would write a STEM poem about little cells growing in a dish" – **Stephanie, scientist**

Schools and students taking part in the Helium zone



- A** Vestal middle school
- B** Hamilton Middle School
- C** Kindezi School Westlake
- D** Widener Memorial
- E** Southern Cayuga School
- F** Ithaca High School
- G** University Elementary
- H** Ezra Academy
- I** Pasco Middle School
- J** Tigerton
- K** Rockford Env Science Acad
- L** Mar Vista Academy
- M** Carrie Downie Elementary

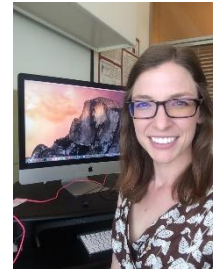


Percentage of students participating by grade.

(Data based on pre-event survey responses from 184 students)

Scientist winner: Melissa Wilson Sayres

Melissa's plans for the prize money: "I'd use the money for a 3D model for outreach. I rarely have tangible things to show people, because we do analysis of DNA sequences. Also, Gila monsters are protected and cannot be readily transported places. So, a 3D model will allow me to have something to take around to show people what we're working on, including its inner anatomy." Read Melissa's [thank you message](#).



Student winner: Christa, Kindezi School Westlake

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

Feedback

Here are a few of the comments made during the event...

"I can't tell you how excited they were to actually be chatting live with scientists. If you could have seen my class set up, you would have been amazed too. Students using a head mouse to chat on their computer, aides getting on to help other students, it was great!!" – Ms Patti de Luca, Teacher

Madiyn Zingre : @kellie me and you have SO MUCH in common!!!
Madiyn Zingre : @kellie Your awesome and you made my day!!!! 🙌

Kellie Jaremko
@Neuro_Kellie

Following

This has been an amazing experience so far. All scientists should apply! I can't wait for the next chat [#imascientist](#)

Fran : Thank you so much for answering my questions! You inspire me to continue working hard in the field of science. x

"@everybody, you rock, bye!" – student

"Bye. Thank you so much for the answers. I have learned a lot. From Layla" – student

"hey stephanie ur like the coolest scientist ever!!" – student

"@Melissa when can we do this again" – 'beststudentevs'

"Thanks for the chat but i don't want to leave it was great time talking with you" – student

Ms. Burke's Class
@Daring_Dolphins

Following

Kristein actually asked real scientists from [@imascientistUS](#) questions to help her with her project [#cddolphins](#)



"Usually when I perform science engagement and outreach, I speak with older adults who ask very different questions about my research. Through I'm a Scientist, I was able to see my research in a whole new way. It created a feedback loop of questions and answers and more questions - everything that science was always meant to be. The rapid-fire chats and eliminations were occasionally stressful, but in this day and age, scientists need to learn to communicate quickly and clearly at short notice. I'm a Scientist has definitely raised my sci-comm game." – **Jonathan, scientist**

"It was much more interactive than social media or blogging, the two primary mechanisms for my science communication efforts. In terms of education, it was great because students from all over the country could participate, so class size, cost and location weren't an issue." – **Stephanie, scientist**

"I really enjoyed the entire process and I would definitely do it again if I had the chance! The chats were really fun and I really liked answering questions in the 'ask' section."
– **Stephanie, scientist**



Mari Venturino
@MsVenturino



Following

Loving the lively Helium Zone chat this morning! Thanks @imascientistUS!



Rosy Burke
@rosy_burke



Following

Some great @imascientistUS Qs coming from my kids! Also, I love that they're learning scientists are real people & funny too!
#cddolphins

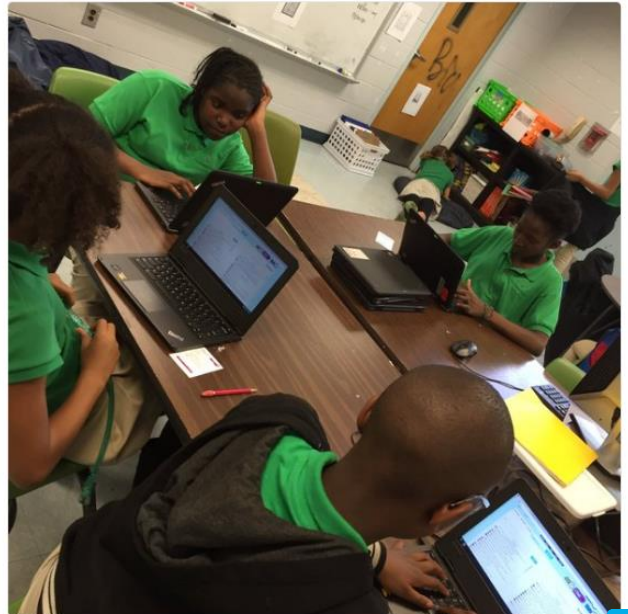


Kamilyah
@KSH_TheDreamer



Following

Great chat today with @imascientistUS! My kids asked some thoughtful questions and the scientist were very engaged!

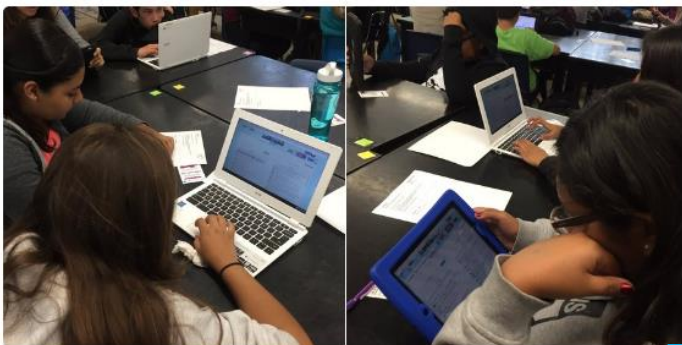


Mari Venturino
@MsVenturino



Following

So much fun having student chat with scientists on @imascientistUS this morning! #flyhighfri



Ezra Academy
@EzraAcademyCT



Following

@imascientistUS Our students loved learning with you! thank you for your lesson.



"Loved it, I wish there were more opportunities like this. I felt the online aspect of it was nice, but I do wish there could have been face to face (although, it would have been very difficult)." – **Kevin, scientist**

"This was an excellent way to start our day. Thanks so much." – **Ms Minniecheske, Middle school teacher**

"Thank you so much for chatting with us! I learned a lot! Good luck to both of you in your research and work!" – **Ms Burke, Elementary school teacher**



Stephanie Moon
@smslmoon



Following

All of the students we've chatted with this week have asked great questions!



"@everyone i want to vote for all of you because you all are awesome but i only can vote for one 😊." – **Millie, student**
"goodbye thank you for you time and thanks for answering all my question" – **Nickolas, student**