Welcome everyone! Please introduce yourselves – tell us who you are, where you're from and your current role. We'll put up the first question in just a few minutes. #STEMTLdiscuss

Welcome!
Thank you for joining tonight's chat.
Please tell us who you are, where you're from, and what your current role is.

Live Twitter Chat 6/17 at 4pm -5pm EDT
Integrating CS & CT in the Pre K-8 Grades
#STEMTLdiscuss

3:58 PM · Jun 17, 2020 · Twitter Web App

2 Retweets 1 Like

Bobby Oommen @bobby_oommen · Jun 17
Replying to @STEMTLnet
Hey there - Middle School CS Tchr @Latin_School #STEMTLdiscuss.

Melissa Rasberry @MelRasberry · Jun 17
Replying to @STEMTLnet
Hello all! I’m the PI for the @NSF @CSforAllTchr virtual community. Happy to join the conversation today.

Jennifer Tsan @JennTsan · Jun 17
Replying to @STEMTLnet
Hi everyone! I'm a #graduatestudent in #k12csed from NC State. #STEMTLdiscuss
Melissa Rasberry @MelRasberry · Jun 17
Nice to "connect!" I work for @AIRInforms but work remotely from home in Durham and serve as the PI for @CSforAllTchrs!

Jennifer Tsan @JennTsan · Jun 17
Nice to virtually meet you! Do you offer PD @CSforAllTchrs?

CS for All Teachers @CSforAllTchrs · Jun 17
Yes! We are a FREE virtual community with over 7K educators who teach #CS. The PD comes through participation in discussion groups, webinars, Twitter chats (like this!) and much more. #STEMTldiscuss

Jennifer Tsan @JennTsan · Jun 17
I will have to check this out! I know teachers who are interested but may not feel quite confident enough to start teaching CS yet

nkol kuriakos @nkuriakos · Jun 17
Replying to @STEMTldiscuss
Noel UMD PhD student, focus on CT and data science for the middle school, for Non-STEM content domains.

nkol kuriakos @nkuriakos · Jun 17
#STEMTldiscuss

Lisa Rode @roderunners · Jun 17
Replying to @STEMTldiscuss
Hello! I am a 6th grade teacher at @KingsGlenES in Virginia.
Joni Falk @Joni_Falk · Jun 17
Replying to @STEMTLnet
Not sure everyone got to introduce our self. Please join in and use #STEMTLdiscuss. Looking forward to hearing from you!

Melissa Rasberry @MelRaspberry · Jun 17
Replying to @STEMTLnet
I am not in the classroom but from most PreK-8 teachers I know, #CS and #CT are integrated within the curriculum—if they are even offered. Still much to do to ensure #CSforAll in these grades. #STEMTLdiscuss

Mrs. Geeky @Themrsgeeky · Jun 17
Mrs. Geeky here, Anthem AZ, currently a PD Facilitator with @BootUpPD #STEMTLdiscuss

STEMTLnet @STEMTLnet
How is CS and CT being taught in grades PreK-8 in your district – as a standalone course or integrated within the curriculum? #STEMTLdiscuss

Q1

How is CS and CT being taught in grades PreK-8 in your district – as a standalone course or integrated within the curriculum?

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Naomi Harm @naomiharm · Jun 17
A1 I'm currently not in the classroom yet I support edu's w/ STEM, CT & CS professional learning exp's to model the importance & why hands-on learning experiences can build lifelong learning confidencee within computer science. A lot of #compsci rotation stations #STEMTLdiscuss
A1: I'm at an independent school. Our LS (PreK-4th) offers CS as a standalone course. The MS (5th-8th) offers CS as a standalone class for 5th & 8th, but we integrate CS/CT through collaborative projects in all four grades. #STEMTLdiscuss

Melissa Rasberry @MelRasberry · Jun 17
Wow, @bobby_oommen! Standalone course for PreK-4? What does that look like? How often do kids go? #STEMTLdiscuss

Bobby Oommen @bobby_oommen · Jun 17
Great question - @fadd is our LS CS Teacher. I believe Ss cycle through courses on a 6 day cycle. LS Ss attend their CS class 1x/cycle. @fadd, can you confirm?

Jennifer Tsan @JennTsan · Jun 17
Replying to @STEMTLnet
A1: In my district, most CS and CT instruction seems to be limited to media center time and electives. However, in charter schools in the area, it seems more common for more students to have access to CS and CT instruction #STEMTLdiscuss

Q #STEMTLdiscuss Q1 I am fortunate that I work with a variety of schools. I have seen both ways - with purpose across the K-5 and also teachers integrating in isolation

nancymclaughns @nancymclaughns · Jun 17
Replying to @Themrsgeeky
What are some methods of integration that you like as well as some you can suggest? #STEMTLnetdiscuss

Mrs.Geeky @Themrsgeeky · Jun 17
I love it when you ask a teacher if they teach CS - they say no, then ask their students to use LOGO to draw a triangle, Scratch to illustrate a verb, EarSketch to create a song. The "method" have teachers forget the word coding, CT and show them hands-on kinesthetic Teaching Tools
Joni Falk @Joni_Falk · Jun 17
Replying to @Themrsgeeky
#STEMTLdiscuss Q1 Mrs. Geeky, So do you have an opinion as to what is more effective and sustainable?

Mrs.Geeky @Themrsgeeky · Jun 17
Honestly it depends on so many variables. Ideally integration that scaffolds K-12 is ideal. But greatest success is to factor in what is most reasonable for your school environment, infrastructure, school day, constituency. Would rather have one or the other than not at all

Mrs.Geeky @Themrsgeeky · Jun 17
Replying to @Joni_Falk
Also if the integration path reflects what will work best for that district environment you will have better district wide buy in and success

Joni Falk @Joni_Falk
Replying to @Themrsgeeky
Q #STEMTLdiscuss Q1 Bobby-Oommen and @Themrsgeeky, which do you think is easier to implement, scale and sustain? Do teachers have the allocated time to do it as a standalone?

4:17 PM · Jun 17, 2020 · Twitter Web App

1 Like

Mrs.Geeky @Themrsgeeky · Jun 17
Replying to @Joni_Falk
Stand alone is easier in the begining if this is new to district and there is pushback. Gives teachers to see success, how it works and makes it easier- more comfortable to take the next step and integrate in classroom
Q2 - From an #equity lens, why is it critical to expose PreK-8 students to CS and CT? Don't forget to tag your responses with #STEMTLdiscuss! If you're just joining, feel free to introduce yourself and answer Q1

From an equity lens, why is it critical to expose PreK-8 students to CS and CT?

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Bobby Oommen @bobby_oommen · Jun 17
Replying to @STEMTLnet

A2: SO many ways to answer this! My school has taken the approach that CS is the "new" liberal art. As is the case w/ all other liberal arts, understanding CS is fundamental to understanding and functioning the world around us. #STEMTLdiscuss

Melissa Rasberry @MelRaspberry · Jun 17
Replying to @STEMTLnet

Q1 #STEMTLdiscuss: To me, #CSforAll is a moral and economic imperative. If we want to continue to be a global leader, we need everyone -- but especially underrepresented students -- to have access to #CS and #CT. It can no longer be just for the elite few.

CS for All Teachers @CSforAllTchrs · Jun 17
Replying to @JennTsan @MelRaspberry and 2 others

Yes! We are a FREE virtual community with over 7K educators who teach #CS. The PD comes through participation in discussion groups, webinars, Twitter chats (like this!) and much more. #STEMTLdiscuss
Jennifer Tsan @JennTsan · Jun 17
Replying to @CSforAllTchrs @MelRaspberry and 2 others
I will have to check this out! I know teachers who are interested but may not feel quite confident enough to start teaching CS yet.

nancymclaughns @nancymclaughns · Jun 17
Replying to @STEMTLnet
A2: The critical aspect of #CS and #CT in PreK-8 comes in the ability to solve problems using logical reasoning. This can be integrated into any subject. :) #STEMTLnetdiscuss

Jennifer Tsan @JennTsan · Jun 17
And it is especially important to teach #CS #CT in the context of solving real world problems.

Lisa Rode @roderunners · Jun 17
Replying to @STEMTLnet
A2: Providing opportunities for CS and CT in elementary supports development of problem solving strategies & creative solutions. It also provides time for a wider range of students to learn about CS without having to be during an elective or specials block. #STEMTLdiscuss

Melissa Rasberry @MelRaspberry · Jun 17
I'm curious, @roderunners. Have you seen students who may not excel in other areas do well in #CS/#CT? I can imagine that it may help some kids learn where their strengths lie. #STEMTLdiscuss

Lisa Rode @roderunners · Jun 17
Replying to @MelRaspberry and @STEMTLnet
I've seen so many times where students have been empowered by the use of coding/robotics.

Mrs.Geeky @Themrsgeeky · Jun 17
Replying to @MelRaspberry @roderunners and @STEMTLnet
Absolutely!!!! That is why robotics, programming etc. should never be for the gifted or after school programs. I can not begin to tell you how many kids we discovered through these experiences. And provides insight into learning styles. #STEMTLnet

Cleo QC 🇨🇦แง้ม pompompums 🍩 @Cleo_Qc · Jun 17
ITA, @Themrsgeeky! Kids with a low school-related self-esteem discover they're good at something! And the opposite happens too! Some straight A students may suddenly not be at the top of their class.
Jennifer Tsan @JennTsan · Jun 17
Replying to @STEMTLnet
A2: There are many resources online for PreK-8 students to learn programming. However, for students that do not have technology at home will be unlikely to learn from those resources #STEMTLdiscuss

nancymclaugh @nancymclaugh · Jun 17
Replying to @JennTsan and @STEMTLnet
@JennTsan @STEMTLnet
CSFirst has many unplugged lessons that fit into lessons for core classes. CSunplugged is also a wonderful resource for computational thinking: classic.csunplugged.org/activities/

nancymclaugh @nancymclaugh · Jun 17
Replying to @JennTsan and @STEMTLnet
@JennTsan CSFirst is very user friendly for elementary. csfirst.withgoogle.com/s/en/home #STEMTLdiscuss

Jennifer Tsan @JennTsan · Jun 17
Oh yes! I have helped out with a CSFirst initiative but I have also found that students struggle with focusing on video tutorials and instructions. Do you have any advice on that?

nancymclaugh @nancymclaugh · Jun 17
Be aware of the level of specific activities. The videos are very good, but if you have beginners I find it most helpful to work through the project using a team approach.

Naomi Harm @naomiharm · Jun 17
A2 from an equity lens - the research has proven that CS is the greatest learning opp to meet the diversified learn needs of each & every one of our Ss & w/ differing abilities. It also provides the necessary access and equity to necessary resources and exp's. #stemTLdiscuss

Mrs. Geeky @Themrsgeeky · Jun 17
A2 #STEMTLdiscuss even(s) the playing field. All students learn logic, problem solving... skills that transfer to all subject matters, helping them to be more successful learners overall
A1 Wanda Bryant, @Detroitk12 middle school teacher. I'd start here:
#STEMLTdiscuss

Some may think:
This problem is about “STEM” (Science, Technology, Engineering, and Math)...

The STEM problem is in computer science
67% of all new jobs in STEM are in computing
10% of STEM graduates are in Computer Science

Solving the diversity problem begins in K-12
K-12 computer science
University computer science
Software workforce

Support K-12 Computer Science Education in Michigan

A2. CS also is the number one indicator to empower /motivate more girl students to pursue a passion-driven career in STEM/CS as long as they have a supportive role model women mentor starting at elem, especially in MS & continued on w/ a strong women mentors in HS
#STEMLTdiscuss
Wanda Faye Bryant @wandabryant · Jun 17
A2 #STEMTldiscuss.
Harvard Business View
How Diversity Can Drive Innovation
Most managers accept that employers benefit from a diverse workforce, but the notion can be hard to... hbr.org

Mr. Scott 🐦 @mrscoottbot · Jun 17
A2: Critical before students step up to HS to not only expose them to CS/CT/STEM but to empower them...to have them get excited about it and verbally declare that they are strong at it. Otherwise we continue to lose kids as they come up. Big drop off from 8-9 #stemtidiscuss

STEMLnet @STEMTlnet · Jun 17
Q3- What professional development (if any) has your district provided to help PreK-8 teachers in learning how to teach #CS and #CT? Don’t forget to tag your responses w/ #STEMTldiscuss!

What professional development (if any) has your district provided to help PreK-8 teachers in learning how to teach CS and CT?

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Bobby Oommen @bobby_oommen · Jun 17
Replying to @STEMTLnet
A3: 2 yrs ago, @Latin_School held our own 1 day CS conf for our entire school - all Ts were in attendance. We discussed equity, increasing diversity in CS, and integrating CS in all courses. Had internal & external spkrs It was awesome! #STEMTLdiscuss!

Computer Science @ Latin Schedule & Directory
Latin School of Chicago, 45 W North Blvd, Chicago, IL 60610 - See the full schedule of even...
latincs.sched.com

CS for All Teachers @CSforAllTchrs · Jun 17
Bravo! That's wonderful, @bobby_oommen. I bet you had something to do with that :) #STEMTLdiscuss

Noah Hárm @naomiharm · Jun 17
A3. For some schools it's optional for some edu's to find their own CS PD, where other districts have a dedicated strategic plan to incorporate CS as a thematic unit approach throughout a k12 focus and every student is provided differentiated learning experiences. #STEMTLdiscuss

Mrs. Geeky @Themrsgeeky · Jun 17
A3 #STEMTLdiscuss as a tech coordinator I found that letting teachers have hands on time learning the resources combined with modeling works well. Also allowing teachers to take baby steps and provide support. Un realistic for those who are tentative to jump in with both fee.
Meet them where they are! So important! #STEMTldiscuss

Mrs. Geeky @Themrsgeeky · Jun 17
A3 #STEMTldiscuss as a tech coordinator I found that letting teachers have hands-on time learning the resources combined with modeling works well. Also allowing teachers to take baby steps and provide support. Unrealistic for those who are tentative to jump in with both fee.

Wanda Faye Bryant @wandabryant · Jun 17
A3 I found a suite of AMAZING, FREE Artificial Intelligence classes on Twitter #STEMTldiscuss

Mrs. Geeky @Themrsgeeky · Jun 17
Replying to @wandabryant
awesome! Thank you!

Jennifer Tsan @JennTsan · Jun 17
Replying to @wandabryant @ai4k12 also has resources that might be helpful for anyone interested in teaching AI at this level
**STEMTLnet** @STEMTLnet · Jun 17

Last question! Q4 - What resources have you found helpful for PreK-8 teachers in integrating CS and CT? #STEMTLdiscuss

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**nancymclaughn** @nancymclaughn · Jun 17

Replying to **@STEMTLnet**

A4: A great starting point is to look at your state DLCS standards or ISTE standards to see how #CS and #CT are already implemented in core classes. @STEMTLnet #STEMTLdiscuss

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**Bobby Oommen** @bobby_oommen · Jun 17

Replying to **@STEMTLnet**

A4: So many great, free resources, but IMHO, the best resources combine: free/low cost PD + high quality curriculum + community of fellow Ts. I've found this combo through @codeorg. In addition, local @csteachersorg chapters are invaluable! #STEMTLdiscuss

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**Mrs.Geekey** @Themrsgeeky · Jun 17

So true!
Naomi Harm @naomiharm · Jun 17
A4 I have personally found exemplar resources of CS/CT resources through @CSforAllThrs virtual community of practice, here is ex of how to start a girl's cloning club csforallteachers.org/blog/how-engag... Twitter hashtags #compsci & #csk8 Collaborating alongside w/other #CS edu #STEMTldiscuss

Mrs. Geeky @Themrsgeeky · Jun 17
A4 #STEMTldiscuss @TuftsUniversity legoengineering.com MIT Media Lab www.media.mit.edu @ucdcstem c-stem.ucdavis.edu have more on my@website.

Inspiration and support for teachers
Inspiration and support for LEGO-based engineering in the classroom
leoengineering.com
Mr. Scott @mrscottbot · Jun 17
A4: We have utilized @VEXRobotics VR during #remotelearning and will utilize moving forward in any setting #StemTldiscuss

VEXcode VR
The VEX Robotics Design System offers students an exciting platform for learning about areas rich...

🔗 vexrobotics.com

Wanda Faye Bryant @wandabryant · Jun 17
A4 @mieducation offered this course for free: michiganvirtual.org/professionals/... #STEMTldiscuss

Computer Science Standards Course | Michigan ... In partnership with the Michigan Department of Education, we have developed a course that...

🔗 michiganvirtual.org