

TEALS Educator Toolkit

Purpose: This toolkit is for educators looking to enhance their computer science (CS) classroom and content knowledge through support from industry volunteers.

Recruiting technical volunteers to support your CS program can significantly enhance classroom instruction. These volunteers provide students with real-world insights into computer science, enriching their learning experience and preparing them for future careers, while also acting as content support for the teacher.

How to use this guide: This guide will help you think about how to incorporate and assist volunteers in your school setting, no matter your background experience with CS.

- For teachers *new* to computer science, the first sections will give you an introduction to typical curriculum types, training, and how to connect your CS program to a broader support community.
- For *experienced* computer science teachers, feel free to jump “skip” to Volunteers 101 to learn more about how to get started with engaging volunteers in your classroom.

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Computer science curriculum and teacher community support

Computer science courses are usually stand-alone courses in upper grades, although computer science and computational topics can be incorporated into units or inter-disciplinary coursework in the elementary grades. At the high school level, computer science curricula can be broadly categorized into these several types:



Introductory courses provide a foundation in computational thinking and basic programming concepts through project-based learning environments. They can be coding-based or more of a survey course, exploring a variety of topics within computer science. For a coding course, your school may need to procure an integrated development environment, or IDE. There are many IDEs available- work with your IT team to procure what your curriculum needs.



Advanced Placement (AP) courses like AP Computer Science Principles and AP Computer Science A offer college-level content, with the former covering a broad range of computing fundamentals and the latter focusing on object-oriented programming in Java. Check the [College Board website](#) for up-to-date information.



Specialized courses include topics like cybersecurity, data science, machine learning, and artificial intelligence, which delve into specific areas of CS and often involve hands-on labs and projects.



Interdisciplinary courses integrate computer science with other subjects, such as visual arts, data visualization, and game development, providing a broader context for applying computing skills.

Training and ongoing support

- Professional development (PD) is closely tied to the curriculum you choose. Training can be:
 - One-time (onboarding in a cohort or asynchronously).
 - Ongoing trainings and resource updates.
 - Communities of practice with other educators using the same curriculum (either locally or across the globe).
- Additional support with a specific curriculum or general CS pedagogy can be found through department level support from teachers within your building (if there are any), district, or sometimes educational service associations.



Connect your CS program to the broader community

- Connect with other CS teachers – wherever you can find them! Look across your district or region to find other educators you can build connections with, especially if you are the only CS teacher in your building.
- The [Computer Science Teachers Association \(CSTA\)](#) and similar organizations or industry groups might be available for you to tap into.
- Meetups on technical topics or specific industries relevant to your area can be a great place to learn and network.
- If existing communities don't exist, create one of your own!

Classroom



Student recruitment considerations

- If CS is new to your school, make sure you use the appropriate channels and protocols to get it added as a course to your school's schedule. Make sure the course description and prerequisite information align with the curriculum you are using.
- Recruit students! You need to fill your roster. Think about the demographics of your school community. How can you recruit students from across the different populations of student groups in your school community? Some ideas:
 - Advertise the new class with a flyer or internal post to a student-facing platform.
 - Recruit peer groups involved in afterschool activities (band, sports, etc.).
 - Host an "Hour of Code" during [Computer Science Education Week \(CSEdWeek\)](#) in early December to get students interested in CS! This is also a great opportunity to engage community volunteers.
- Check out the computer science recruitment strategies from the College Board: [Aka.ms/AP-Central-Recruitment-Strategies](https://www.collegeboard.org/aca/ms/ap-central-recruitment-strategies).



Physical class considerations

1. Provide each student with a desktop or laptop computer. Consider your room set up. Do you want students to work in pods of desks? Can everyone see the front of the room?
2. Prepare, test, and have the equipment ready before the first day of school.
3. Think about your physical environment and your student population. What interests do they have? How can you design the physical space to be welcoming for all students?



Volunteers 101: From recruitment to onboarding

1 Educational expectation setting

Goal setting

Think about your motivations to get connected with industry volunteer(s). What's your main goal or outcome you are trying to drive?

- **Enhancing Learning Experience:** Are you interested in having volunteers provide real-world insights and industry relevance to the students in your class?
- **Supporting Classroom Teachers in class:** Do you need assistance with teaching particular lessons, or want more assistance monitoring student work during lab time? Some volunteers even help with grading assignments.
- **Content coach:** Volunteers assist with the classroom teacher's content gaps in computer science.



Time commitment

Decide how much time per week your ideal volunteer(s) would support you. Do you want someone to come into the classroom multiple times per week? Do you need an ad-hoc mentor to help you debug programs and understand more complicated concepts? What time commitment will you advertise?



Type of volunteering

Volunteers can be in person if you live in a place where tech professionals live and work. If your school is in a community where this is not the case, you might consider recruiting one or more virtual volunteers. They can connect to the class or you via teleconferencing software such as Microsoft Teams.

2 Recruitment



What makes a great volunteer? Great volunteers come in all ages and with different motivations, including near-peer volunteers who are studying CS in a Technical and Vocational Education and Training (TVET) program, community college, TVET or four-year degree program, early in career, to even mid-career people and retirees!

If you want in-person volunteers, try scheduling the course first thing in the morning. This way, volunteers support the class before they head off to work in the morning.

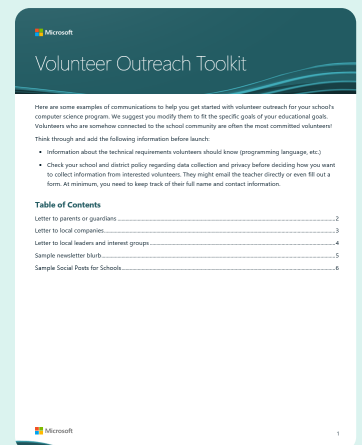
Tips:

- Ask your school community for support. Finding a volunteer with a strong connection to the school community (either an alumni or a relative of a current student) will often lead to stronger volunteer partnerships.
- Be creative! Where do tech professionals gather in your community? Join meetups or ask your local CS teacher's association if any.
- Who in your community can you partner with? Is there a local employer or industry council that might be helpful? Does the work-based coordinator at your school have helpful connections?



Recruit volunteers using our outreach toolkit. Find sample emails and social media posts you can edit for your use.

→ [Volunteer outreach toolkit \(aka.ms/TEALSOutreachToolkit\)](https://aka.ms/TEALSOutreachToolkit)



3 Vetting and onboarding

- Once you have interested volunteers, get to know them to make sure they would be a good fit for your school community. Look for someone who is motivated, willing to put in the work, and takes advice. It's okay if a volunteer doesn't have any experience with teaching or teaching your age group!
- How? We recommend screening them either over a call or in person. You could have them come to the school or meet in a public place like a library.
- *Tip:* Make sure you know the requirements for adult volunteers at your school ahead of your calls with volunteers. If you know they will need a background check or to submit medical records, it is a good thing to ensure your potential volunteer is comfortable with the volunteer requirements for your district.
- Ensure your volunteer has completed any required paperwork or screening processes well before the start of the school year.

4 Working with your volunteers

Training

- Send them the attached [TEALS Volunteer Toolkit](https://aka.ms/TEALSVolunteerToolkit) (aka.ms/TEALSVolunteerToolkit) which covers topics about what volunteering can look like at a school, policies to be aware of when at a school, and how to think of classroom support. It also has two useful resources embedded in it, included here in case you would like to share one or both of the resources:

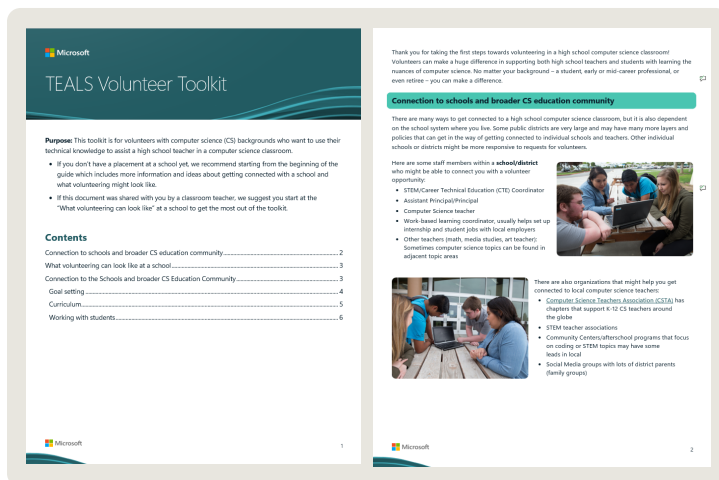
1. *Tips for talking about your tech journey:*

A two-page resource with advice to help volunteers engage and inspire teenagers when talking about their career.

You can use this directly with anyone participating in a panel or one-off career talk in your classroom.

2. *Computer Science (CS) Education Reference Guide:* This 32-page document is a wealth of information for volunteers who will be supporting your class on a regular basis! It has information with visual illustrations on topics such as instructional techniques, engagement techniques, and assessment strategies.

- Make sure you are clear about what you expect the volunteer to do during class.



Will they be teaching lessons?

- They may need tips and tricks about delivery: Reminders about facing the class when they speak, strategies for engaging students (like asking questions), and timing reminders so they don't over lecture.
- Volunteers can have 'expert bias,' or the tendency to perceive something as easier or simpler than it is due to one's own experience or knowledge of a subject. In a CS classroom, this might mean they underestimate the complexity of a concept.
- An introduction to whatever tech you use in your class (projection/interactive display).

Goals and expectation setting

Remember, as the classroom teacher, you lead the class. The role the volunteer plays in the classroom will be dependent on your goals and needs; they may act like a co-instructor, teaching assistant, or somewhere in-between!

- Use the [Classroom Plan](https://aka.ms/ClassroomPlan) (aka.ms/ClassroomPlan) document to collaboratively set expectations with your volunteer(s) about your computer science goals.
- Learn more about what they hope to get out of volunteering. Do they have a specific goal, such as becoming a better presenter or role model?
- Make sure you are aligned with expectations around the class schedule and when you are co-planning.
- Find a way to get your volunteer access to the teacher-facing portion of the curriculum so they can get a sense for lesson objectives and activities. Some providers offer a way to add a co-instructor to your class; make sure volunteer understand the terms of service of the provider (i.e., – not distributing answer keys and other lesson materials).
- It's best practice to give your volunteer access to the lesson plan for the day ahead of time. Some curriculum providers allow you to add a co-instructor to the platform. If your provider does not allow for this, you may want to think of a workaround like sharing a lesson plan directly. Ensure your volunteers know the terms of service for your provider (i.e., – not sharing answer keys, sample standardized tests, etc.)

The screenshot shows a digital form titled "Classroom Plan" with several sections:

- School information:** Includes fields for School name, School website, School address, School's online calendar, and Background check point of contact.
- Course & curriculum:** Includes fields for Course name and Curriculum.
- Class information:** Includes fields for Class meeting days/times, Class syllabus, Expected number of students in the class, Is there a projector and/or smartboard?, and Learning management system (LMS).
- Teaching team schedule:** A table with columns for Day (Mon-Fri) and rows for Classroom teacher and four Volunteers.
- Goal setting:** A section for setting goals for the year.

On the right side, there are additional sections:

- Daily handoff plan:** A section for planning daily handoffs between the teacher and volunteer.
- Back-channel communication:** A section for planning communication methods during class time.

5 Showing Appreciation

- Plan at least one meaningful token of appreciation for your volunteer(s).
- Ideas:
 - Thank you notes from the students in their class.
 - A framed class photo.
 - School themed 'swag' – a t-shirt, bag, sticker with the school's mascot/logo.
 - Find a way to feature your CS class and volunteer – a school/district blog, newsletter, social media post, special recognition at a board meeting or assembly.
 - Many countries celebrate some form of volunteer appreciation week or month; this is a great time to do something special for your volunteer(s)!

