Microsoft

TEALS Volunteer Toolkit

Purpose: This toolkit is for volunteers with computer science (CS) backgrounds who want to use their technical knowledge to assist a high school teacher in a computer science classroom. Portions of the toolkit may be adapted for use with lower grades such as middle school and upper elementary.

- If you are not already connected and/or working with a school, we recommend starting from the beginning of this toolkit which includes more information and ideas about getting connected with a school and what volunteering might look like.
- If this document was shared with you by a classroom teacher, we suggest you start at the "What volunteering can look like at a school" to get the most out of the toolkit.

Contents

Thank you for taking the first steps towards volunteering in a high school computer science classroom! Volunteers can make a huge difference in supporting both high school teachers and students with learning the nuances of computer science. No matter your background – a student, early or mid-career professional, or even retiree – you can make a difference.

Connection to schools and broader CS education community

There are many ways to get connected to a high school computer science classroom, but it is also dependent on the school system where you live. Some public districts are very large and may have many more layers and policies that can get in the way of getting connected to individual schools and teachers. Other individual schools or districts might be more responsive to requests for volunteers.

Here are some staff members within a **school/district** who might be able to connect you with a volunteer opportunity:

- STEM/Career Technical Education (CTE) Coordinator
- Assistant Principal/Principal
- Computer Science teacher
- Work-based learning coordinator, usually helps set up internship and student jobs with local employers
- Other teachers (math, media studies, art teacher): Sometimes computer science topics can be found in adjacent topic areas

There are also organizations that might help you get connected to local computer science teachers:

- Computer Science Teachers Association (CSTA) has chapters that support K-12 CS teachers around the globe
- STEM teacher associations
- Community Centers/afterschool programs that focus on coding or STEM topics may have some leads in your local area
- Social Media groups with lots of district parents (family groups)

What volunteering can look like at a school

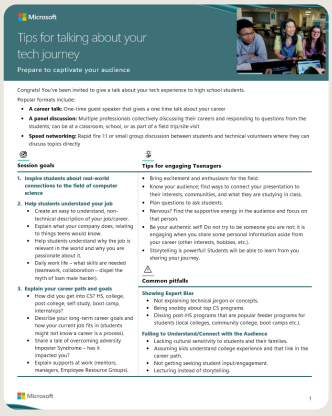
One-off volunteering

What is it?

This includes giving a career talk or being on an industry panel. It might be directly in a classroom or even at a special event at the school, like a career day.

Featured resource

Use Tips for talking about your tech journey (aka.ms/TEALSTechJourney) to help you talk about tech in a compelling way with students.


Microsoft

Tips for talking about your tech journey

Prepare to captivate your audience

Congrats! You've been invited to give a talk about your tech experience to high school students.

Popular formats include:

- **A career talk:** One-time guest speaker that gives a one time talk about your career
- **A panel discussion:** Multiple professionals collectively discussing their careers and responding to questions from the students; can be at a classroom, school, or as part of a field trip/site visit
- **Speed networking:** Rapid fire 1:1 or small group discussion between students and technical volunteers where they can discuss topics directly

Session goals

1. **Inspire students about real-world connections to the field of computer science**
2. **Help students understand your job**
   - Create an easy to understand, non-technical description of your job/career.
   - Explain what your company does, relating to things teens would know.
   - Help students understand why the job is relevant in the world and why you are passionate about it.
   - Daily work life – what skills are needed (teamwork, collaboration – dispel the myth of loan male hacker).
3. **Explain your career path and goals**
   - How did you get into CS? HS, college, post-college, self-study, boot camp, internships?
   - Describe your long-term career goals and how your current job fits in (students might not know a career is a process).
   - Share a tale of overcoming adversity Imposter Syndrome – has it impacted you?
   - Explain supports at work (mentors, managers, Employee Resource Groups).

Tips for engaging Teenagers

- Bring excitement and enthusiasm for the field.
- Know your audience; find ways to connect your presentation to their interests, communities, and what they are studying in class.
- Plan questions to ask students.
- Nervous? Find the supportive energy in the audience and focus on that person.
- Be your authentic self! Do not try to be someone you are not; it is engaging when you share some personal information aside from your career (other interests, hobbies, etc.).
- Storytelling is powerful! Students will be able to learn from you sharing your journey.

Common pitfalls

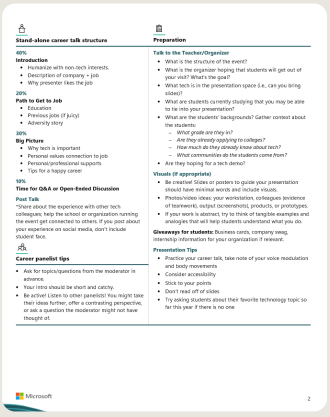
Showing Expert Bias

- Not explaining technical jargon or concepts.
- Being snobby about top CS programs.
- Dissing post-HS programs that are popular feeder programs for students (local colleges, community college, boot camps etc.).

Failing to Understand/Connect with the Audience

- Lacking cultural sensitivity to students and their families.
- Assuming kids understand college experience and that link in the career path.
- Not getting seeking student input/engagement.
- Lecturing instead of storytelling.

Microsoft 1


Stand-alone career talk structure

40%

Introduction

- Humanize with non-tech interests.
- Description of company + job
- Why presenter likes the job

20%

Path to Get to Job

- Education
- Previous jobs (if juicy)
- Adversity story

30%

Big Picture

- Why tech is important
- Personal values connection to job
- Personal/professional supports
- Tips for a happy career

10%

Time for Q&A or Open-Ended Discussion

Post Talk

Share about the experience with other tech colleagues; help the school or organization running the event get connected to others. If you post about your experience on social media, don't include student face.

Career panelist tips

- Ask for topics/questions from the moderator in advance.
- Your intro should be short and catchy.
- Be active! Listen to other panelists! You might take their ideas further, offer a contrasting perspective, or ask a question the moderator might not have thought of.

Preparation

Talk to the Teacher/Organizer

- What is the structure of the event?
- What is the organizer hoping that students will get out of your visit? What's the goal?
- What tech is in the presentation space (i.e., can you bring slides)?
- What are students currently studying that you may be able to tie into your presentation?
- What are the students' backgrounds? Gather context about the students:
  - *What grade are they in?*
  - *Are they already applying to colleges?*
  - *How much do they already know about tech?*
  - *What communities do the students come from?*
- Are they hoping for a tech demo?

Visuals (if appropriate)

- Be creative! Slides or posters to guide your presentation should have minimal words and include visuals.
- Photos/video ideas: your workstation, colleagues (evidence of teamwork), output (screenshots), products, or prototypes.
- If your work is abstract, try to think of tangible examples and analogies that will help students understand what you do.

Giveaways for students: Business cards, company swag, internship information for your organization if relevant.

Presentation Tips

- Practice your career talk, take note of your voice modulation and body movements
- Consider accessibility
- Stick to your points
- Don't read off of slides
- Try asking students about their favorite technology topic so far this year if there is no one

Microsoft 2

Ongoing volunteering

What is it?

Classroom volunteer: Some teachers want ongoing support in their computer science classroom and have volunteers join 2–3 times a week for an entire school year. In this case, a volunteer is really embedded in the classroom as a teaching assistant and might even teach lessons sometimes! You may need to ensure the timing of the class meets a volunteer's needs (like being early in the morning so volunteers can support the class before their workday starts).

Mentor: Some volunteers act more as content mentors for teachers, being available for questions about specific topics or even debugging help.

Will likely need:

- Access to the curriculum (as a student or preferably instructor access).
- School systems access:
  - Guest ID/Parking pass.
  - Web credentials.
- To onboard more formally with the district, which may involve:
  - Fingerprinting/background check.
  - Medical records/vaccine submission.

Did you know?

Volunteers can come into the classroom in-person or virtually through teleconferencing software like Microsoft Teams.

Schools are complex organizations which may or may not have an organized way to help a volunteer get acclimated to the school. It is best practice to treat everyone you encounter in the process with respect and patience.

Due to district changes and administrative/staff turnover, sometimes it may be less straightforward than you expect to get the answer to your questions. Be patient and ask your teacher for help if you have any questions!

Best practice

Most schools and districts have set policies on how to engage as a volunteer. Be sure to research your school district's policies online. Be aware that classroom teachers often aren't responsible for onboarding volunteers or getting them access to school IT resources. An administrator, work-based learning coordinator, or even the business manager at the front office might be good points of contact to have for help around these issues. Ask your classroom teacher to get connected.

Classroom support

Goal setting

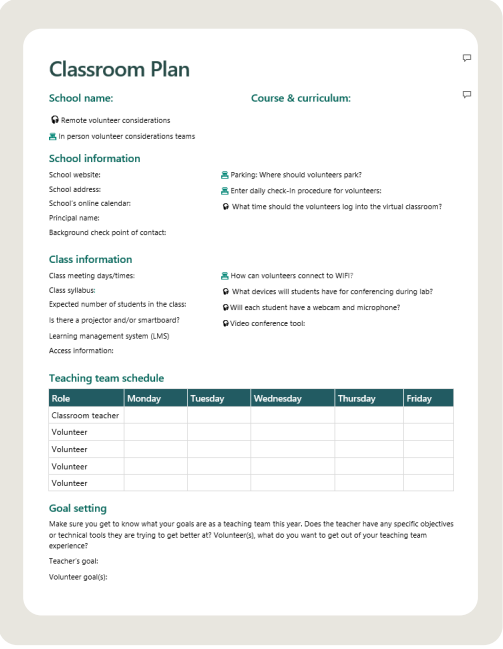
Once you get connected to a teacher, it is important to have an open conversation about their goals and motivations for having you as a part of your computer science class. Use the classroom plan (aka.ms/ClassroomPlan) document to help get on the same page.

Teachers might want:

- Help with solidifying content knowledge (especially if they don't come from a CS background).
- Supporting with incorporating industry-relevant topics.
- Role model for student population.
- Some other motivation!

Be open with your teacher about what you want to get out of volunteering. Volunteers also have a variety of motivations including:

- Desire to give back to the community with skills-based volunteering.
- Love of teaching.
- Desire to improve presentation skills.


Classroom Plan

School name:

Course & curriculum:

Remote volunteer considerations

In person volunteer considerations teams

School information

School website:

School address:

School's online calendar:

Principal name:

Background check point of contact:

Parking: Where should volunteers park?

Enter daily check-in procedure for volunteers:

What time should the volunteers log into the virtual classroom?

Class information

Class meeting days/times:

Class syllabus:

Expected number of students in the class:

Is there a projector and/or smartboard?

Learning management system (LMS)

Access information:

How can volunteers connect to WiFi?

What devices will students have for conferencing during lab?

Will each student have a webcam and microphone?

Video conference tool:

Teaching team schedule

Role	Monday	Tuesday	Wednesday	Thursday	Friday
Classroom teacher					
Volunteer					
Volunteer					
Volunteer					
Volunteer					

Goal setting

Make sure you get to know what your goals are as a teaching team this year. Does the teacher have any specific objectives or technical tools they are trying to get better at? Volunteer(s), what do you want to get out of your teaching team experience?

Teacher's goal:

Volunteer goal(s):

Curriculum

What exactly will you be teaching? Great question! High school computer courses and other technical courses can cover a variety of topics.

Type of course:

- **Programming-focused course:** Students explore a variety of programming topics through project-based learning. They might use a block-based teaching language (like Snap!) or a text-based programming language used in industry (like Python, JavaScript, or even Java). AP Computer Science A is one example of an advanced programming-focused course from the College Board, which is popular in schools, especially in the United States.
- **Survey course:** This type of course explores a survey of topics in computer science, often including some programming, but might also cover other topics like algorithms, design-thinking, or even the social impacts of computing and artificial intelligence. AP Computer Science Principles is an example of this from the College Board.
- **Special topics courses:** Some high schools might offer other courses in cybersecurity, data science, artificial intelligence, and machine learning courses.
- **Interdisciplinary course:** These integrate computer science with other subjects, such as visual arts, data visualization, and game development, providing a broader context for applying computing skills.

Are you qualified to support your teacher's course?

That depends! Do you have experience with the programming language or topics in the course? You might still be qualified even if your expertise is in another language.
Remember, high school computer science classes cover introductory topics; you might need to learn a new language, but typically the level is simple enough for someone with advanced knowledge that it is easy enough to catch on.

Other tips and tricks:

- Curriculum providers sometimes have open professional development opportunities (like asynchronous training modules) that you can take advantage of to get an introduction to the curriculum.
  - Tip: Sometimes you need a teacher/school email address with a district domain to get access to curricula. Your school might be able to provide this for you.
  - Some curriculum platforms allow teachers to add co-instructors to the course which would give you a teacher's view of student work. Some schools will use a Learning Management System (LMS) outside of a curriculum provider to have students submit assignments. If all else fails, you might be able to get added as a student so you can get a view of what it is like from their perspective.
- Respect your curriculum provider's Terms of Service. This often means respecting answer keys and keeping them private!

Working with students

Top tips

Build positive relationships: Students learn best when they feel safe enough to take risks and ask questions. You can help create this space in the classroom by getting to know students.

- Learn student names – Your classroom teacher might have some great tips for remembering names!
- Ask questions – Get to know your students and their interests. Are they involved in extracurricular activities? Do they have a favorite sports team or interest? Knowing your students better can also help you come up with analogies and examples when helping teach classroom topics.

Boundaries and role: Remember you are NOT the classroom teacher; you should never be alone with the students by yourself, and you should always respect the rules and structure the classroom teacher has set up in the classroom.

Featured resource

Supercharge your experience with our Computer Science (CS) Education Reference Guide (aka.ms/TEALSReferenceGuide), a 32-page visual guide to help you learn more about:

- Volunteer support scenarios and co-teacher configurations
- Tips for student engagement: Building rapport, active learning, questioning techniques, Socratic questioning
- Strategies to increase your background knowledge in teaching
- Lesson structure, instructional strategies, assessment information