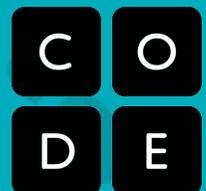# CS journeys

Teacher Guide

Teacher Guide: Engaging your students in CS Journeys

CS Journeys provides experiences and resources designed to illuminate real-world connections and get students excited about the career opportunities they'll have with a strong foundation in computer science.

> **What's in this guide:**
> - **Why CS Journeys**
> - **At-a-glance**
> - **Checklist**
> - **Programming descriptions & tips for use**

Why CS Journeys

Career exploration is fundamental to students' academic experience. Students as young as four are already forming conceptions about the world of work based on their interactions with parents, teachers, peers, and other community members. And, as early as the age of six, students are self-selecting out of career paths based on stereotypes around gender, race, and class. These conceptions are surprisingly sturdy — research shows they don't change much until students are out of high school, at which point it can be painful to pivot.

Exposing students to different pathways and introducing them to diverse role models helps to broaden their aspirations and dispel stereotypes, ultimately allowing students to explore careers in computing and technology they may not have otherwise been aware of or considered.

Why is this important? **The people who are creating tech should look like the people using it.** As Dr. JeffriAnne Wilder has said, "If we are ensuring that there are diverse teams and diverse folks at the table at every step of the pipeline, it creates the opportunity to have tech look like the world that it represents, which benefits us in a million different ways."

There are already 700,000 open jobs in computing nationwide, and this number is expected to balloon to 3.5 million by 2026. In fact, 58% of all open jobs in STEM are in computing *already*. Many of these are impactful, high-paying jobs that give people opportunities to use creativity and critical thinking in addressing real-world challenges.

Exposing students to the number of ways that computer science is used in different industries and career paths also helps to demonstrate its relevance to their lives and gets them excited about the possibilities. In short, **real world connections bring learning to life**.

We have also included resources for engaging families: research indicates that, for girls and young women in particular, **receiving encouragement from a parent is incredibly impactful**, boosting the likelihood that that student will continue taking computer or technology classes. When both a teacher and a parent are encouraging, the impact is even greater.

CODE

Finally, we've included resources that empower older students to explore on their own: Research indicates that **older students 'view themselves as their own best change agents'**, although they may not always know where to start. Extracurricular activities like coding clubs and hackathons help develop self-confidence and self-efficacy, particularly in girls and young women. Mentors and professional networks can help to guide students on their journeys and be resources for students as they move from school to internships to careers. Other resources, like scholarship finders, internship opportunities, and free online courses, are also curated as tools for students to use on their journeys.

At-a-glance

The table below is meant to provide a high-level overview of the resources and experiences available to and appropriate for each grade band.

Grades K-5	Grades 6-8	Grades 9-12
Classroom Experiences		
Virtual field trips	Virtual field trips	Virtual field trips
My Journey Chats (Recorded class chats with professionals)	My Journey Chats (Recorded class chats with professionals)	My Journey Chats (Recorded class chats with professionals)
		What's it like to take CS in college? (Recorded discussions for young women, by young women)
		Next Steps Discussions (Recorded discussions with college students and early-stage professionals)
Resources		
Career Exploration & Inspiration Resources	Career Exploration hub	Career Exploration hub
Letters Home (email templates for engaging families)	Letters Home (email templates for engaging families)	Letters Home (email templates for engaging families)
Computer Science At Home (activities that introduce families to CS)	Computer Science At Home (activities that introduce families to CS)	Computer Science At Home (activities that introduce families to CS)
Extracurricular opportunities	Extracurricular opportunities	Extracurricular opportunities
	Online courses	Online courses

		[Mentors & community](#)
		[Internship opportunities](#)
		[CS-focused scholarships](#)

Checklist

Whether your students want to develop games and apps, start businesses, or work in industries like agriculture or healthcare, they will need to know computer science. Your class is the first step on their CS Journeys, and with a little planning, you can use these opportunities to inspire them to keep journeying.

Step 1: Get set up on Code.org
- ☑ [Create a Code.org teacher account](#)
- ☑ [Create a classroom section](#)
- ☑ Familiarize yourself with the opportunities on the [CS Journeys page](#). Note that some options have specific details around timing and grade-appropriateness.

Step 2: Excite and inspire your students with engaging classroom experiences
- ☑ Sign your classroom up for [live or self-paced virtual field trips](#) with partners like NASA, Amazon, or Monterey Bay Aquarium
- ☑ Check out [recorded class chats](#) with professionals from Spotify, Oculus (Meta), Meow Wolf, Snapchat, and more!
- ☑ **(For grades K-5)** View suggestions for [structuring younger students' career exploration](#)
- ☑ **(For grades 6-12)** Watch [short video profiles](#) and give students time in class to [explore careers that match their interests](#) (view our [career exploration hub](#) for other options)

Step 3: Get families engaged and point students to opportunities outside the classroom
- ☑ Send [regular email updates to parents/guardians](#) throughout the school year
- ☑ Point students and families to [extracurricular activities](#) like coding clubs and hackathons
- ☑ **(For grades 9-12)** Encourage students to [connect with mentors and plug in to communities](#)
- ☑ Encourage families to [try CS at home with their student](#), to see how fun and easy to get started

<mark>We **strongly recommend** engaging families throughout, and getting started early.</mark>

Step 4: Empower older students to take control of their CS journeys by exploring next steps
- ☑ Encourage young women in high school to watch ["What's It Like to Take CS in College?" discussions](#) to get the inside scoop from undergraduate women pursuing computer science.
- ☑ Point all interested students to Next Steps Discussions — [recorded talks and Q&As designed to demystify next steps](#) in high school students' computer science journeys.

C O D E

☑ Point students to [our resource list of opportunities](#) like scholarships, internships, and more

Programming descriptions & tips for use

Virtual field trips

Live and self-paced experiences from companies and organizations like Amazon, NASA, and Monterey Bay Aquarium are designed to introduce students to the exciting, and often surprising, ways that computer science is used in the real world.

1. **Explore the options**. [Click around](#), noting timing, suggested grade levels, and other details. Determine which option will be best for your class before signing up.
2. **Sign up**. Note that different experiences may have different sign-up requirements. Experiences that require student sign-up are clearly marked.
3. **Prepare yourself and your students before the experience.** Contextualize the engagement for your students, making explicit connections between what they're learning and what the experience will offer. Make sure any required tech is prepared ahead of time. Sync with the engagement operator ahead of time, if possible.
4. **Participate!** Encourage students to participate and ask questions during the experience, if that's an option.
5. **Reflect as a class**. Ask students: What's the most interesting or surprising thing they learned? What did they find exciting? How is the activity/experience related to computer science?

My Journey Chats — conversations with professionals

Recorded discussions with professionals are designed to expose students to different pathways. Students will learn about a number of ways they can use computer science to impact the world, as well as different journeys that people have taken to get to meaningful careers and achieve their goals.

1. **Explore the options**. [Click around](#), noting class chat descriptions, suggested grade levels, and other details..
2.
3. **Preview the class chat to prepare yourself and your students before watching.** Contextualize the engagement for your students, making explicit connections between what they're learning and what the class chat will offer. View the [Teacher Guide](#) for suggestions on preparing your class to participate.
4. **Engage your students!** Pause the chat as you go to ask questions, to help students make connections to in-class learning, and get student feedback to help engage your students as they're watching.
5. **Reflect as a class**. Ask students: What's the most interesting or surprising thing they learned? What did they find exciting? How is the activity/experience related to computer science? View the [Teacher Guide](#) for suggestions on reflection and extending learning after the My Journey Chat.

Career exploration & inspiration resources for K-5 students

We've put together a collection of resources and research-based suggestions to help structure younger students' career exploration.

1. **Explore the options**. Click around, noting age-appropriateness and other details. Determine which option(s) will be best for your class.
2. **Make time in class for structured career exploration.** It's important to expose your students to a wide range of careers. Sign up for a virtual field trip or watch a My Journey Chat. Try fun activities that encourage students to explore their hopes and dreams for the future.
3. **Encourage your students!** Encouragement from teachers and parents can positively impact students' interest in CS and willingness to persist. This is especially true for girls.
4. **Let families know about extracurricular opportunities.** Extracurricular activities and programs like hackathons and coding clubs reinforce classroom learning and are often powerful motivators for students. All of the opportunities we recommend for elementary-aged students are remote-friendly.

Career exploration hub for middle and high school students

The career exploration hub for older students provides resources that can be used in or outside of class to make students aware of career opportunities with computer science.

1. **Explore the options**. Click around to determine which option(s) will be best for your class before signing up.
2. **Make time in class for structured career exploration.** It's important to expose your students to a wide range of careers. Have students watch the "Careers in Tech" videos and use the worksheet to reflect. Then give them an opportunity to explore careers themselves with an interactive tool like The Roadmap or the O*Net Interest Profiler.
3. **Reflect as a class**. Encourage students to share a sentence or two about what they found. Ask students: What's the most interesting or surprising thing they learned? What did they find exciting?
4. **If students have more questions, encourage them to post them at CareerVillage.org or a similar forum**. Account creation is required.

Letters Home

Sending updates to parents—introducing them to what their kids are learning, updating them on progress, and making them aware of the career possibilities CS offers—is a great way to engage them and turn them into advocates of their children's CS education.

1. **Peruse our templates**. We have suggested language for the various occasions you'll have to communicate with parents: Use these to introduce parents to a course at the beginning of a semester, update them on a student's progress, or make them aware of the many opportunities that CS can offer their child.

2. **Think about timing**. Determine when your communication is likeliest to have an impact—and when you'll have the time to send them.
3. **Personalize!** This is always a recipe for success. Even just a line—"Your child is really great at this and should think about going further!"—could turn a parent into an advocate for their child's CS education.
4. **It doesn't have to be an email.** Whether it's parent-teacher conferences or course info sheets sent home with students, if you can get parents excited about CS, you're likelier to have students who are excited about CS.

Encouraging families to try CS at home with their children

Organizing a family coding night can give parents/guardians a firsthand experience of what their children are learning, demonstrating how easy it is to get started with CS, and how fun it can be!

1. **Set a date or date range.** This could be during Computer Science Education Week, or some other special occasion, but setting a specific date or date range will make it easier for parents/guardians to make the time. They're also more likely to make the time if they know this is something the class is doing collectively.
2. **Identify 2-3 activities for them to try.** Give parents/guardians a few easy, engaging options to try— [Dance Party](#) is always a popular option. Make sure at least one of these is an unplugged activity, to ensure that families with little or no access to devices or the internet can participate.
3. **Send parents/guardians an email**. View our templates.
4. **Encourage students to be lead learners**. Students can show off what they've been learning and help guide their families through the activity.
5. **Encourage parents/guardians to provide feedback after the activity**. Ask them: How did it go? This is also a great time to let parents/guardians know about the opportunities CS offers their children.

Resources that empower older students to take control of their CS journeys

We've put together a collection of resources and opportunities that older students can engage with to learn more about computer science careers; find mentors, professional development opportunities, internships, and scholarships; or extend what they've learned in your classroom.

1. **Explore the resources yourself**. The more familiar you are with what resources and opportunities are available to your students, the better equipped you'll be to point them to an appropriate option.
2. **Make the pitch! And give students some time to explore what's available.** Spend a few minutes of class time making students aware of resources and opportunities available to them. Note that some opportunities like scholarships and internships are time-sensitive, so it may not always be best to wait until the end of the semester to do

this. Once you've pointed students to the appropriate resources and opportunities, give them some class time to explore.

3. **Let families know about opportunities available to students.** As noted previously, when families are encouraging, students are much more likely to stick with a subject.