Google

CS First

Ready-to-teach computer science curriculum for elementary and middle school students

IN “GETTING STARTED WITH CS FIRST,” YOU WILL

1. Learn what computer science is (jump to section)
2. Learn about CS First (jump to section)
3. Learn about Scratch and block-based programming (jump to section)
4. Review the CS First curriculum (jump to section)
5. Test drive CS First (jump to section)
6. Explore CS First teacher resources (jump to section)
7. Create a CS First class (jump to section)

Learn what computer science is

How computer science helps students:

Computer science develops students' computational and critical thinking skills and shows them how to create, not simply use, new technologies.

Computer science is...

A tool that helps you tell a story or make something happen

A discipline that emphasizes persistence in problem solving

A set of skills that enable students to develop a ‘debugging mindset’, to solve real-world problems

Computer science is *not*...

Learning to type

Using a word processor to create documents

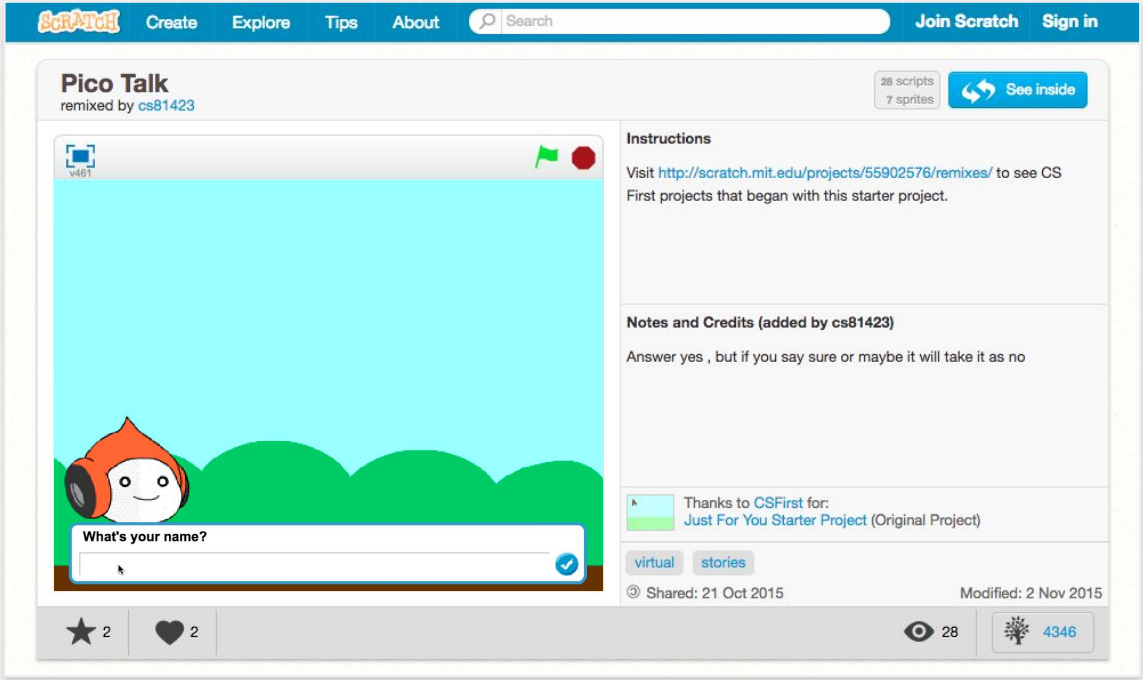
Computer repair

Playing video games

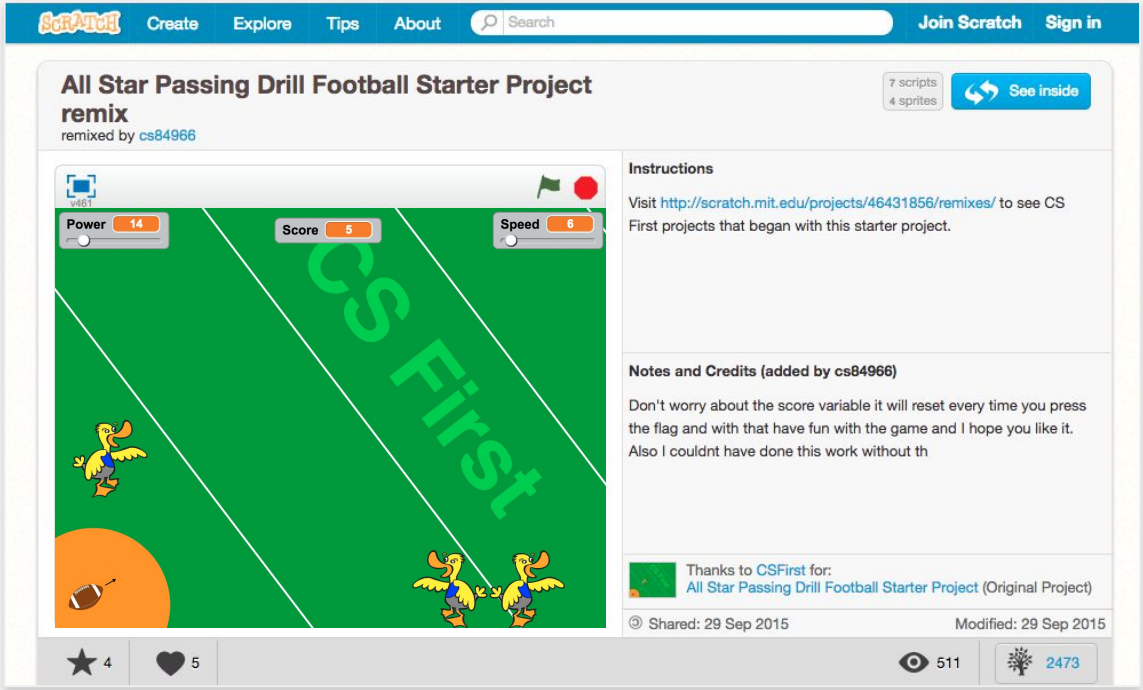
Surfing the Internet

Google

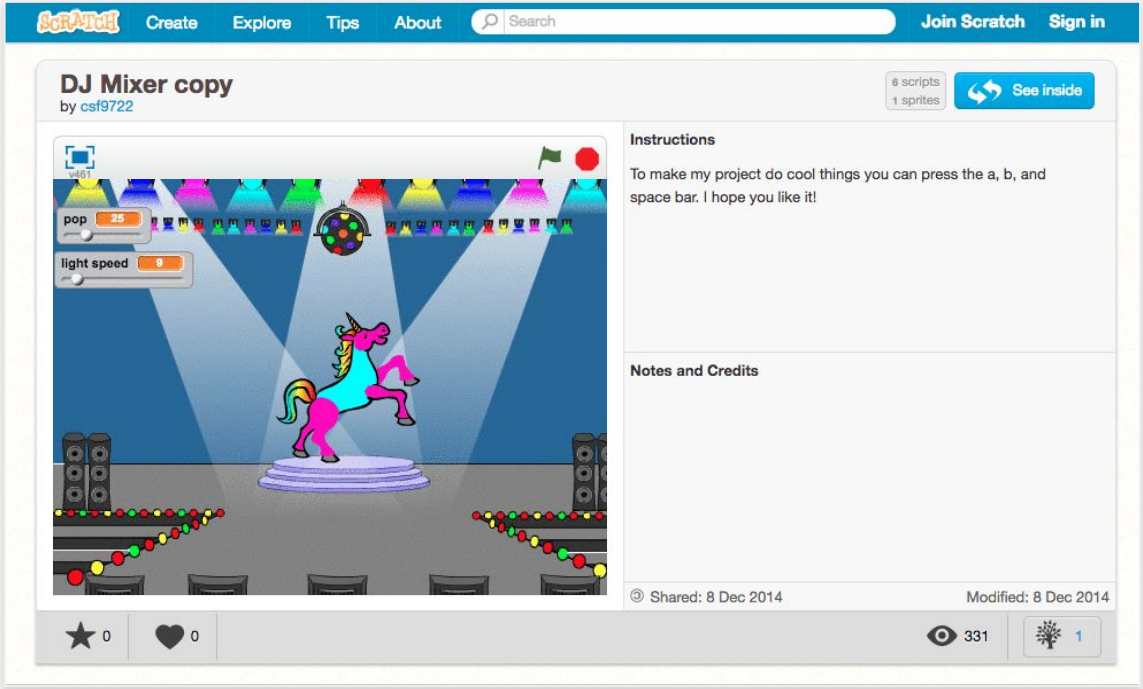
With computer science, students can tell their favorite **stories.**



With computer science, students design and build their own **video games**.



With computer science, students create **art** (even unicorn dance parties!).



Learn about CS First

WHAT IS CS FIRST?

A free, easy to use curriculum that introduces students to computer science

- Grades 4-8 (ages 9-14)
- No coding experience required
- Freely available online

CS First has been used by thousands of teachers and millions of students in 75+ countries.

CS First

WHAT IS CS FIRST?

Ready to teach, easy to use. CS First provides everything you need to teach computer science in your classroom for free:

- No computer science experience required – for students or for teachers
- Flexible curriculum that can be used across multiple disciplines and in a variety of learning environments
- Instructional videos, lesson plans, solution sets, passports, stickers, and more

Students:

Follow step-by-step instructional videos that introduce fundamental computer science concepts

Build computer programs using Scratch

Develop a “debugging mindset” to solve real-world problems

Practice teamwork and peer-learning through sample and interest-based theme activities

Learn independent problem-solving by working through projects at their own pace

Teachers:

Introduce and facilitate the activities, offering one-to-one support as needed

Circulate through the classroom to answer questions and facilitate sharing, discussion, and reflection

Develop confidence in introductory computer science concepts

Teachers use free instructional materials—accessed online or by mail

Lesson plans, solution sheets, and sample projects

Passports, badges, and certificates

Community boards and student rosters

Informational flyers and videos

Contingency plans

WHAT IS CS FIRST?

A curriculum developed by teachers and computer science professionals

Created by Google teaching fellows in South Carolina in 2013

Part of the worldwide computer science education community

CSTA
Computer Science Teachers Association

ISTE Seal of Alignment
Readiness
Student Standards
June 2018-20

Google

Learn about Scratch and block-based programming

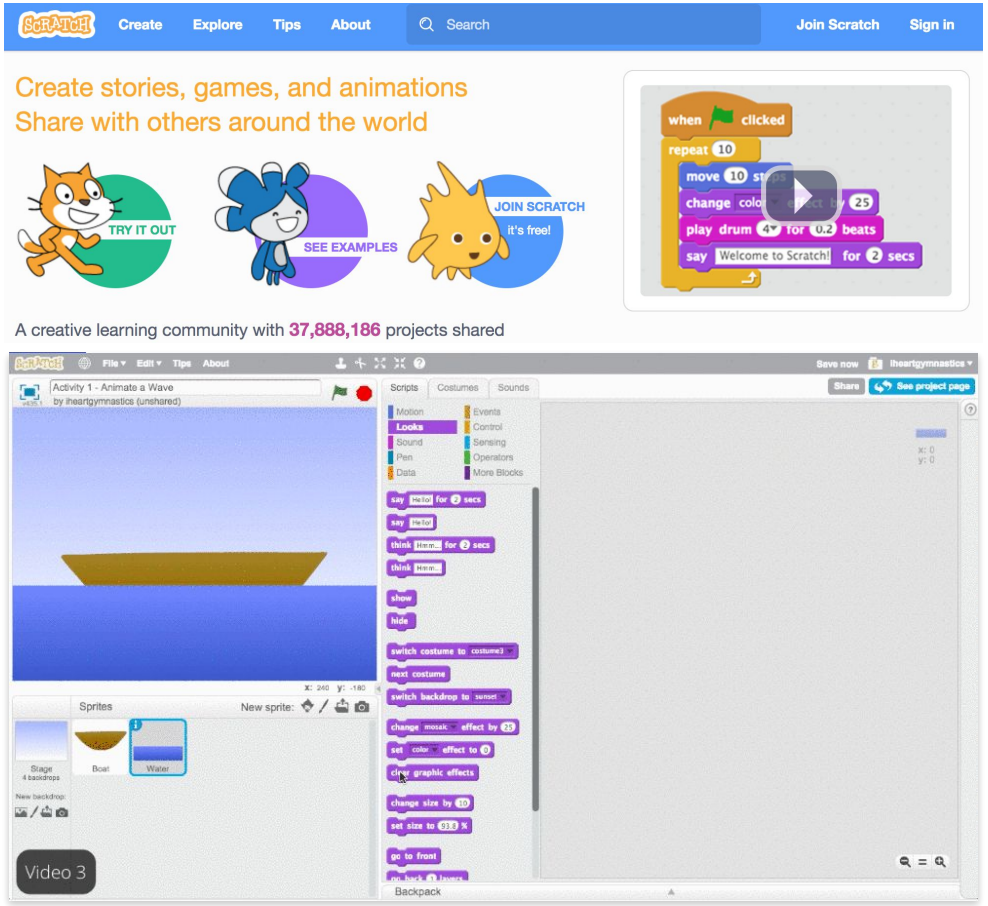
Why do we use Scratch?

Scratch is a free, block-based programming tool developed by MIT.

It's ideal for beginners to learn to code.

Reflection question:

What did you learn about Scratch from the model lesson?



Review the CS First curriculum

Sample activities help you and your students get started

Four activities are designed for beginners, and can be completed in less than an hour.

Sample activities teach introductory computer science concepts and build basic Scratch skills.

g.co/csfirst/curriculum

¡Disponible en español!

Difficulty: Easier

Animate a Name

Students pick a name and bring the letters of the word to life using code. Choose a nickname, a pet's name, an animal, a sport, a place or a hobby.

STUDENT ACTIVITIES | DIGITAL MATERIALS

Difficulty: Easier

Create your own Google logo

Be a designer and programmer – bring the Google logo to life using code.

STUDENT ACTIVITIES | LESSON PLANS | DIGITAL MATERIALS

Difficulty: Easier

High Seas Activity

In this sample activity students animate an ocean wave to create a setting, then tell a story that takes place on the high seas.

STUDENT ACTIVITIES | LESSON PLANS | DIGITAL MATERIALS

Difficulty: Easier

Gumball's Coding Adventure

In this sample activity students tell a story using the characters from Cartoon Network's "The Amazing World of Gumball."

STUDENT ACTIVITIES | LESSON PLANS | DIGITAL MATERIALS

Interest-based themes continue the fun.

Nine themes deepen computer science knowledge and let students get creative around their unique interests.

- Each theme includes 8 activities and 10 hours of video content
- Can be spread over several days or weeks
- Skill level ranges from beginner to advanced

g.co/csfirst/curriculum

Storytelling

Art

Game Design

Fashion

Music & Sound

Friends

Social Media

Sports

Animation

COMPLETE THEME

Storytelling

TIME FOR ACTIVITY

Around 10 hours of content; can be completed over several days or weeks

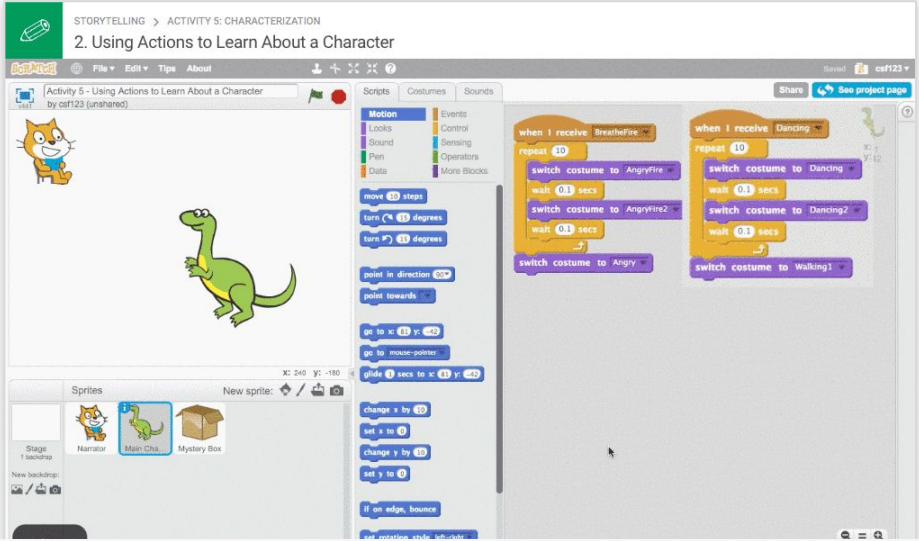
USE FOR

Introducing core computer science concepts and a variety of ELA topics*

MATERIALS

Instructional videos, lesson plans, solution sheets, passports, badges, posters, and more

*To learn about the instructional topics covered in CS First themes visit this Help Center article.



Activity 5: Characterization

- 1. Introduction to Characterization and Broadcast
- 2. Using Actions to Learn About a Character
- 3. Broadcasting Messages
- 4. Characters on Parade
- 5. Broadcasting Your Own Message
- 6. Add-Ons
- 7. Reflection
- 8. Wrap-up: Characterization
- 9. Wrap-up: Share Your Project
- 10. Wrap-up: Show Your Project

Google

Topics covered in themes.

Learn more about introductory computer science and cross-curricular instructional topics covered in CS First themes.

Visit bit.ly/CSFirst-InstructionalTopics

“

CS First made it very easy to integrate coding directly into my ELA instruction. I loved how using CS First allowed my students to engage it the 4 Cs - creativity, collaboration, critical thinking and communication.

Mrs. Craig, 5th Grade Language arts & Science teacher
Eagleville, PA

Beyond computer science

CS First teaches core computer science concepts — and so much more.

Courage

to try new things

Confidence

in using technology

Perseverance

when facing difficult challenges

Impact

on community and careers

Sense of belonging

in tech for underrepresented students

Google

Test drive CS First

STEP INTO THE SHOES OF A CS FIRST STUDENT

One of the best ways to learn about CS First is to experience the curriculum as a student.

In this section you will:

- **Explore** a CS First class as a **student** g.co/csfirst/signup
- **Test drive** the “Create your own Google logo” activity
- **Reflect** on learnings as a student

“

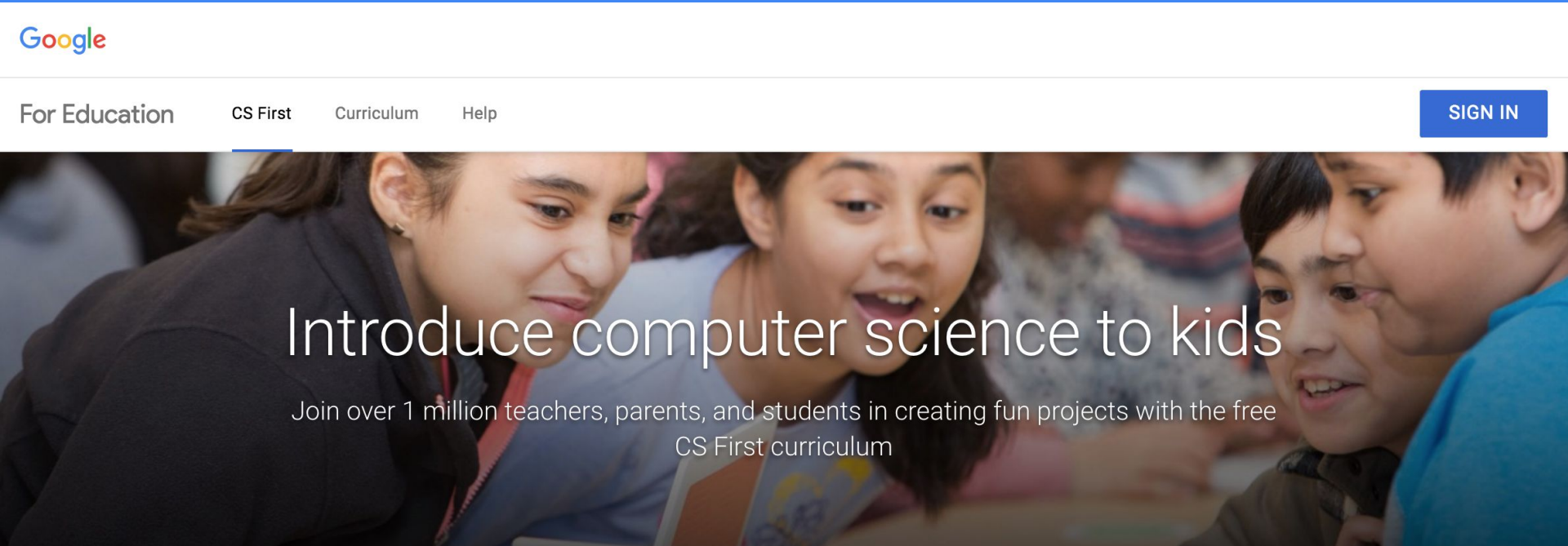
We understand that it is not just about coding. It’s about art and music and being creative... We want to teach students that this is not boring. It’s going to be fun and **we’ll show them different ways to think and be creative.**

Martin Sung, college student and CS First volunteer
Leon County Schools, Tallahassee, FL

EXPLORE

STEP 1:

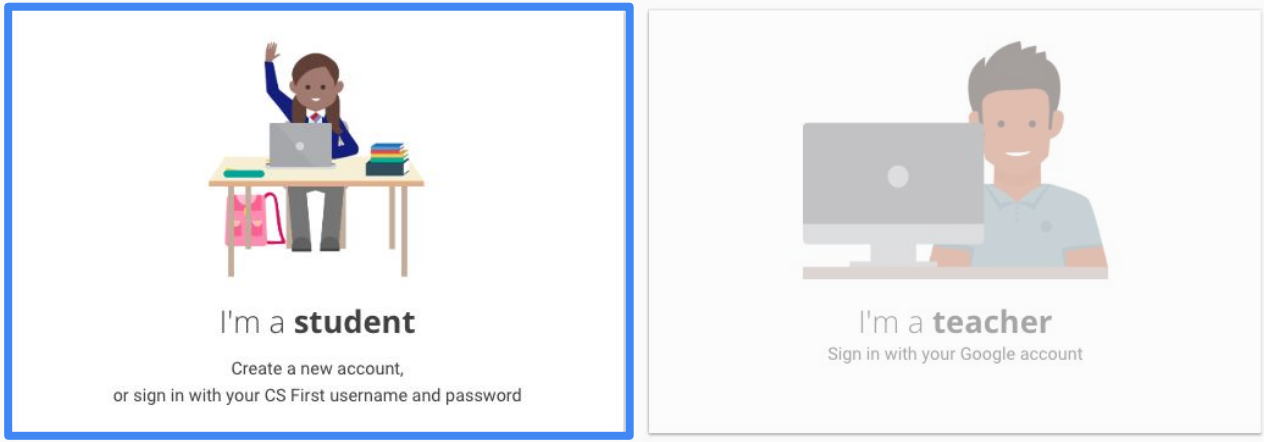
Creating a student account is a quick process. Go to g.co/csfirst.
Click “Sign in” to get started.



EXPLORE

STEP 2:

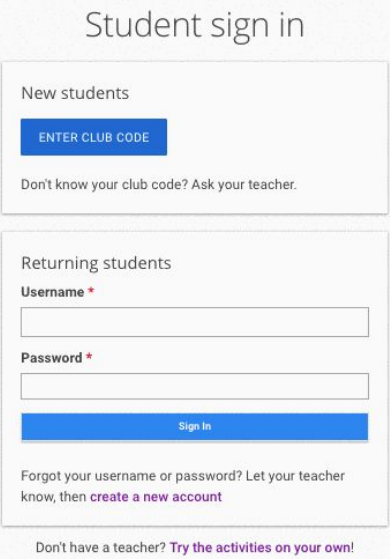
Select “I’m a student” to create a **student** account.



EXPLORE

STEP 3:

Enter the demo class code **8c1t-lq78** to become a **student** in the demo class.

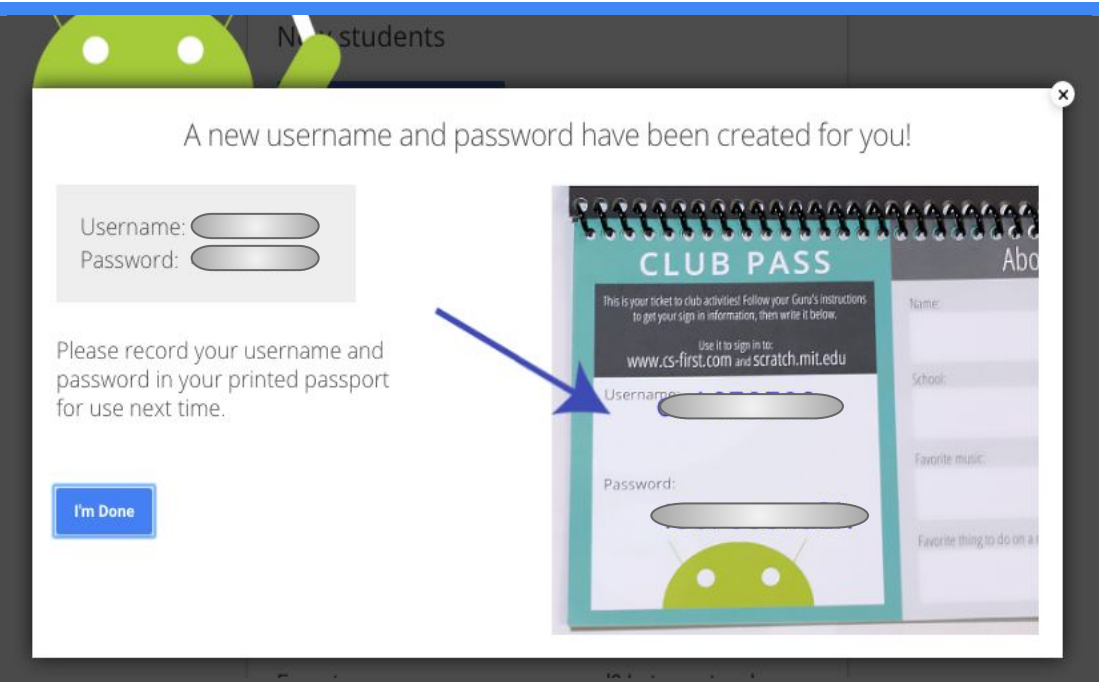


EXPLORE

STEP 4:

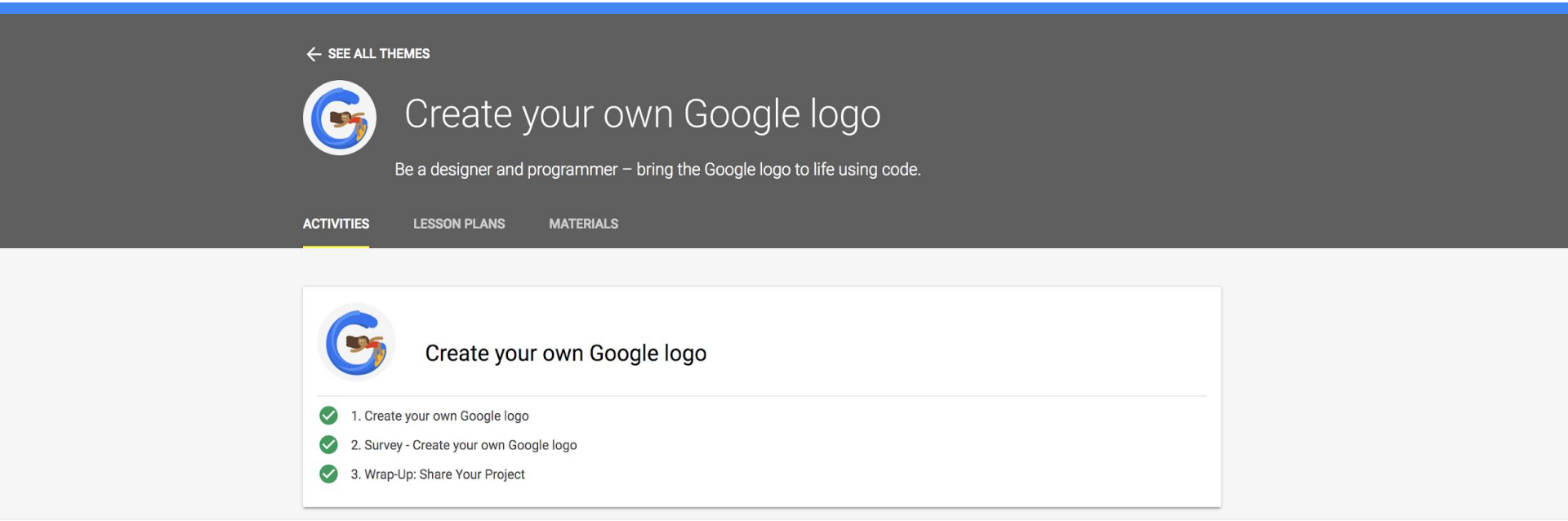
Write down your **student** Username and Password in a safe place.

Tip for the classroom: Encourage students to write down their **Username** and **Password** in their passport so they can access it for this and future CS First classes. It's important to keep passwords safe and secure.



TEST DRIVE

Visit g.co/csfirst/logo to try the “Create your own Google logo” activity.

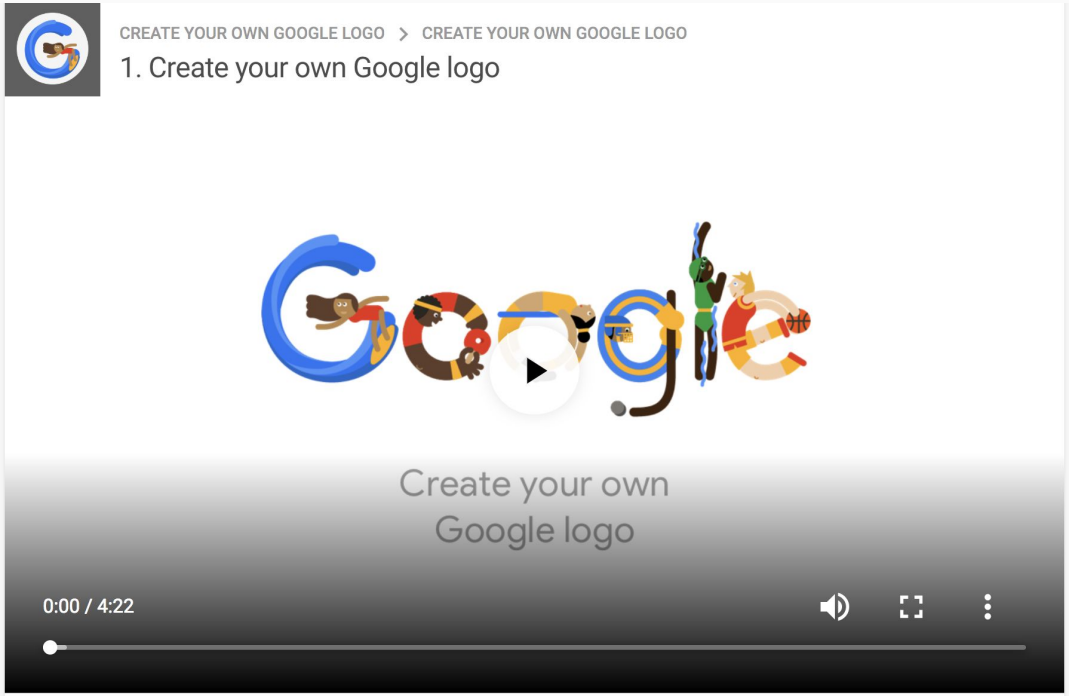


TEST DRIVE

Create your own Google logo

Watch the instructional video.
Click the "Starter Project" to start building your Google logo in Scratch.

Time permitting, explore the "Add-On" videos below the instructional video to explore what a student can do when they finish their core project and have time to spare.



g.co/csfirst/logo

REFLECT

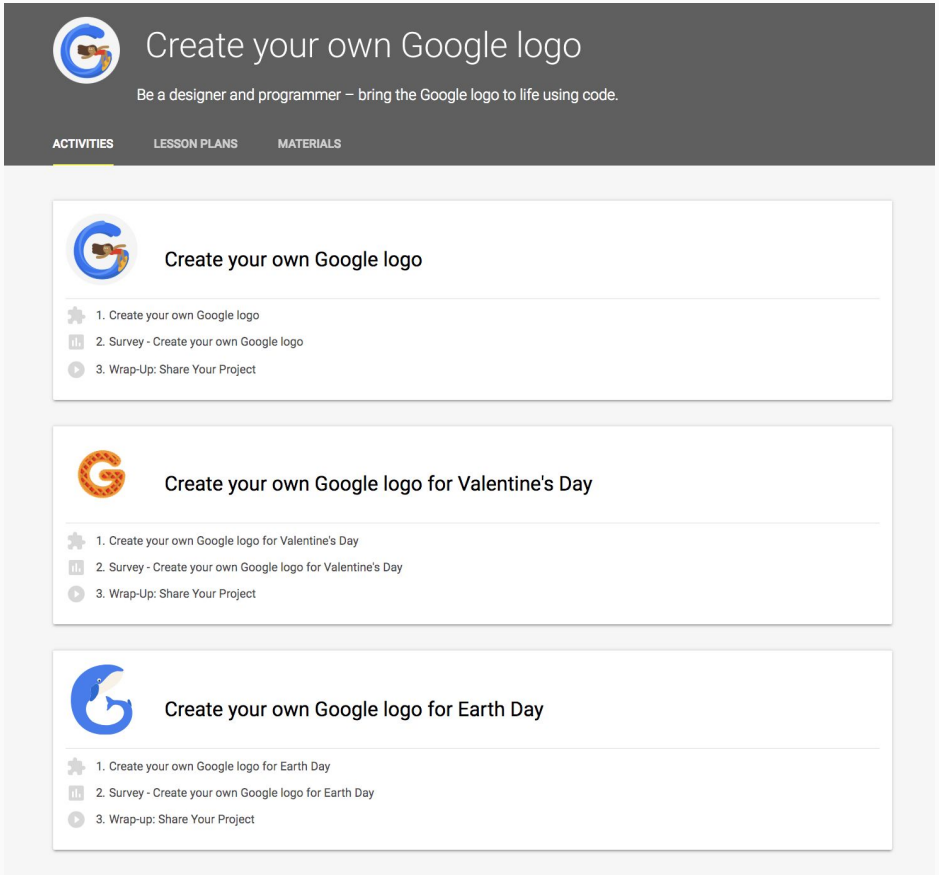
Think about your experience as a student and provide peer feedback.

Guiding questions:

Did this activity help develop your confidence in using CS First?

What were some of the challenges that you overcame to build a Google logo? How did you overcome them?

What else would you need to make a lesson like this one work for your own students?



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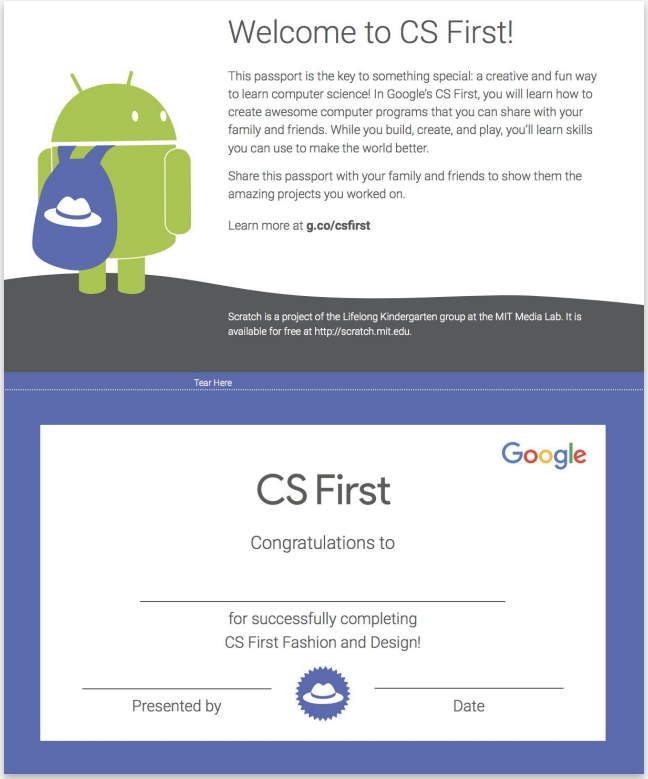
Explore CS First teacher resources



Welcome to CS First!

This passport is the key to something special: a creative and fun way to learn computer science! In Google's CS First, you will learn how to create awesome computer programs that you can share with your family and friends. While you build, create, and play, you'll learn skills you can use to make the world better.

Share this passport with your family and friends to show them the amazing projects you worked on.

Learn more at **g.co/csfirst**

Scratch is a project of the Lifelong Kindergarten group at the MIT Media Lab. It is available for free at http://scratch.mit.edu.

Tear Here

Google

CS First

Congratulations to

_____

for successfully completing
CS First Fashion and Design!

Presented by _____ Date _____

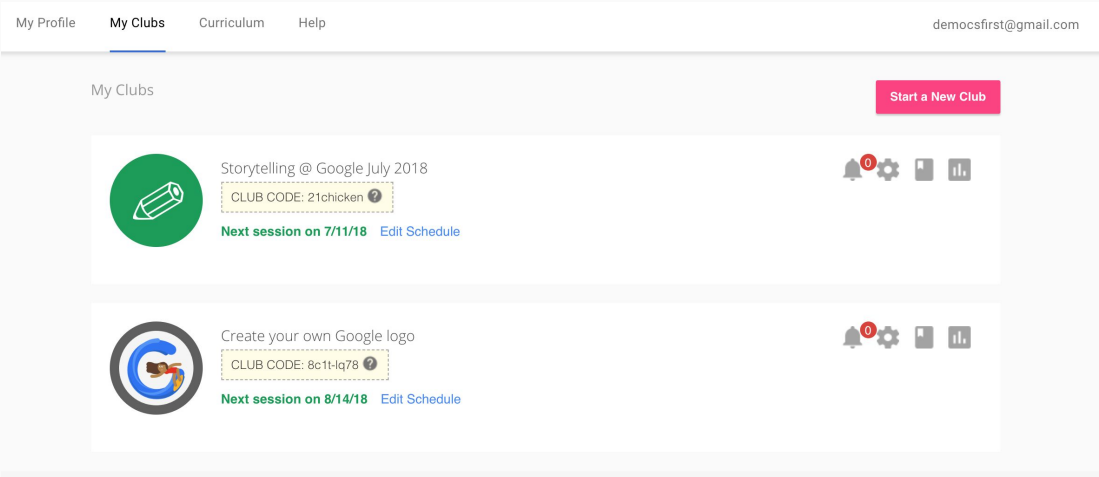
WHAT GOOGLE PROVIDES

1. Instructional online video lessons
2. Lesson plans and solution sheets for all activities
3. CS First kits
4. Professional development
5. And more!

TEACHER RESOURCES

Dashboard

Central hub for teachers to view their profile information, current and past classes, class codes for students to join, student progress trackers for each class, and more!

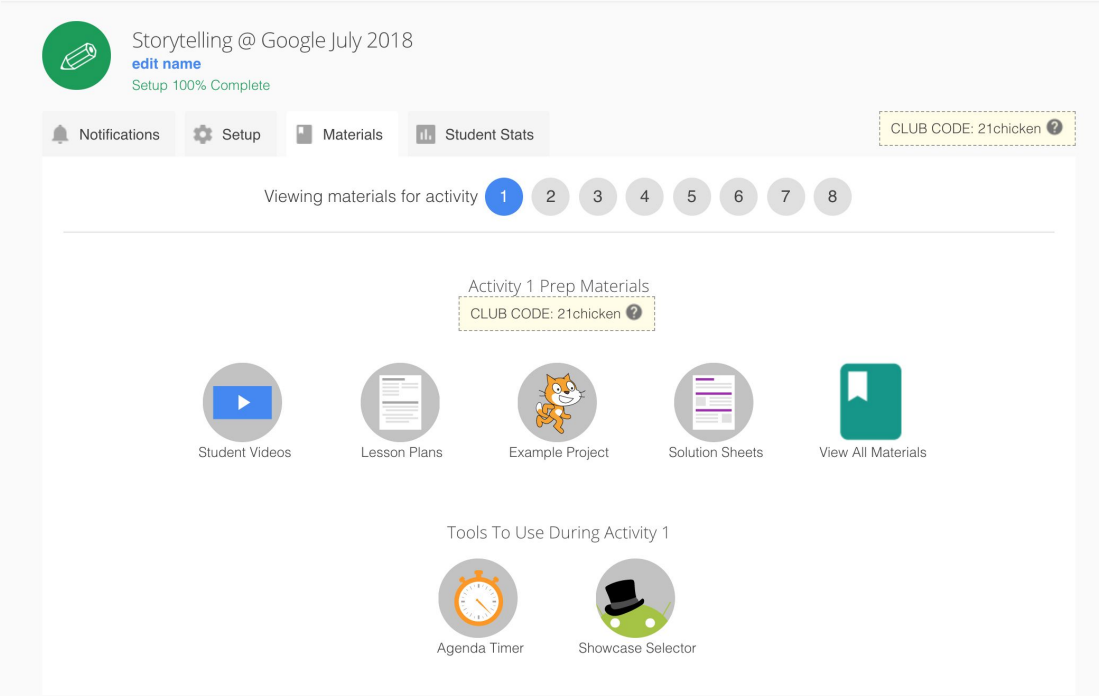


Google

TEACHER RESOURCES

Curriculum materials

One-stop shop for all materials for a CS First class including sample activities or theme activities.

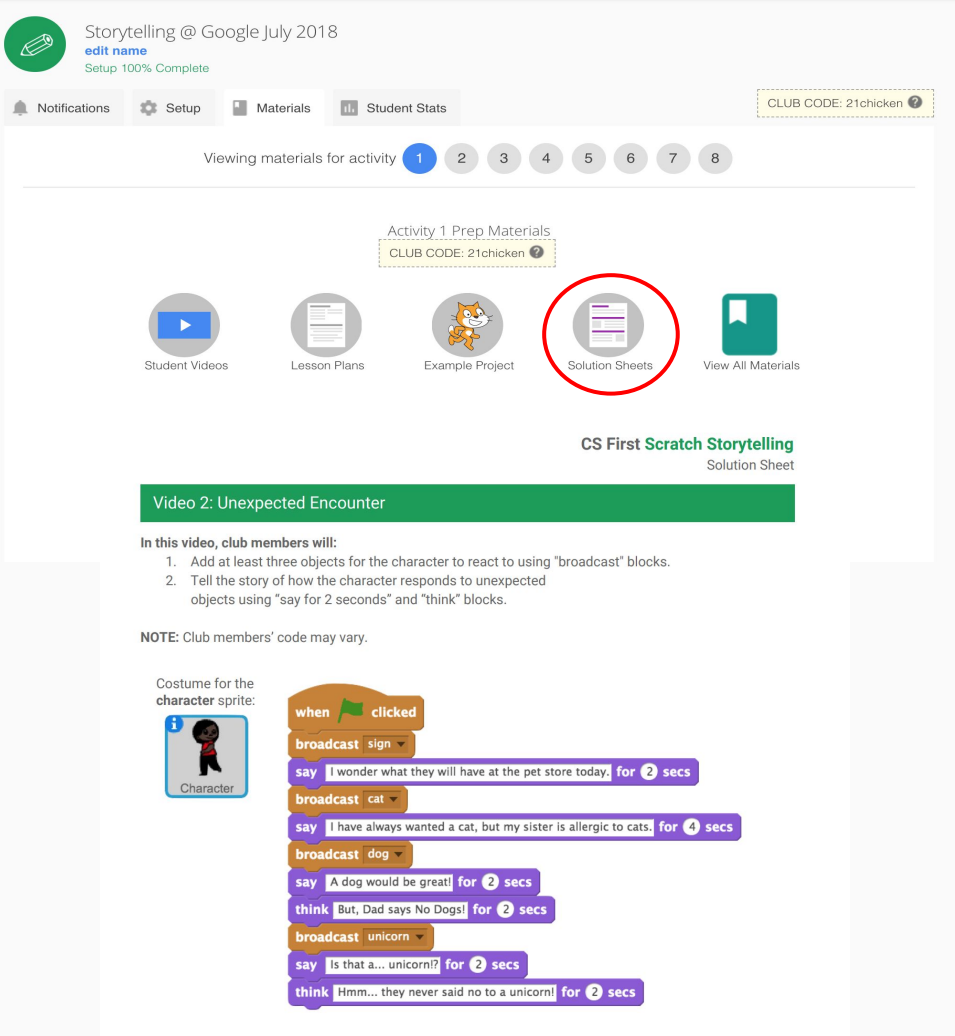


TEACHER RESOURCES

Solution sheets

Every Theme is accompanied by Solution Sheets. They provide example solutions with illustrations for every activity.

Tip for the classroom: Teachers can use solution sheets as a reference guide, following along with the concepts students are learning in Themes. They can also be used to help struggling students.



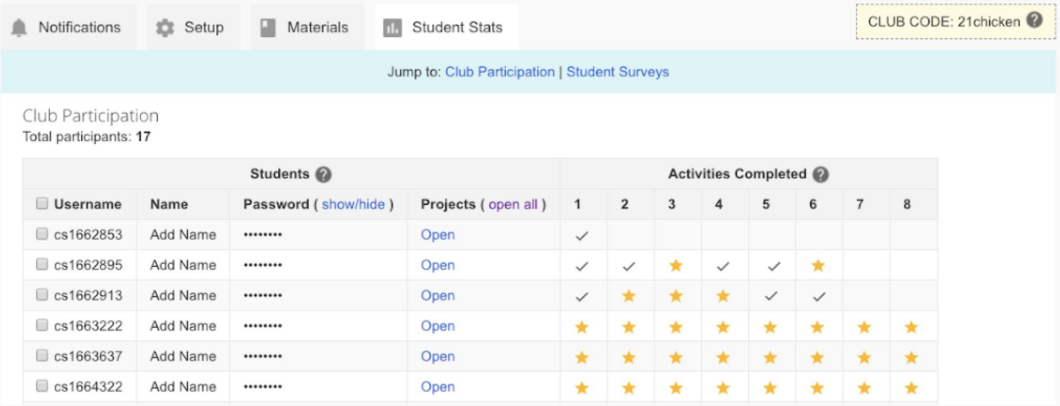
Google

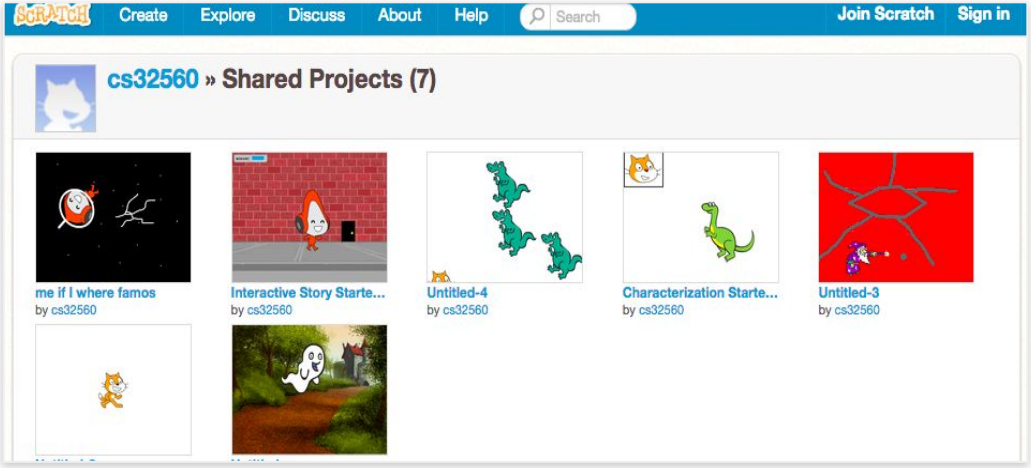
TEACHER RESOURCES

Student Stat dashboard

Follow along with your students' progress and monitor:

- Activities completed
- Videos watched
- Progress on projects
- Completion of surveys





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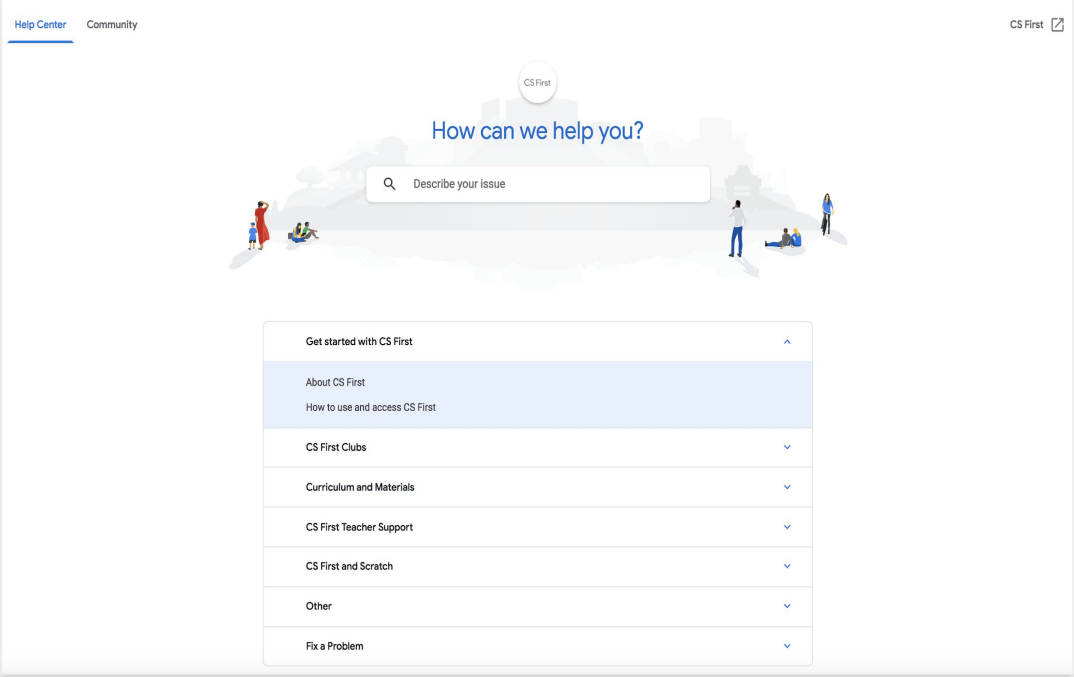
TEACHER RESOURCES

Help is just around the corner

The Help Center provides answers and step-by-step articles to frequently asked questions.

The Help Community connects teachers to other CS First teachers from around the world!

g.co/csfirst/help-community



TEACHER RESOURCES

Troubleshooting tech limitations

Designed with flexibility in mind, CS First can be used in a variety of tech environments.

Tips for tech-limited classrooms

“

As a rural teacher, it's my personal mission to provide educational opportunities to my 55-student school that will keep them competitive. I use CS First because the accessibility, teacher resources, and support made it easy to introduce Computer Science to students.

Kyleigh Lewis
7-12 Business, Technology and Computer Science teacher; Dorchester, NE

Create a class

BRINGING CS FIRST INTO THE CLASSROOM

In this section you will:

- **Create** your own CS First class as a **teacher** g.co/csfirst/signup
- **Explore** the curriculum to see what fits best for your students
- **Reflect** on how the CS First curriculum can be integrated into your classroom

> This makes computer science less intimidating and **more obtainable for both our teachers and students.**

Sarah Guillen, Teacher and Tech Coach
Terrace View Elementary School, Colton, CA

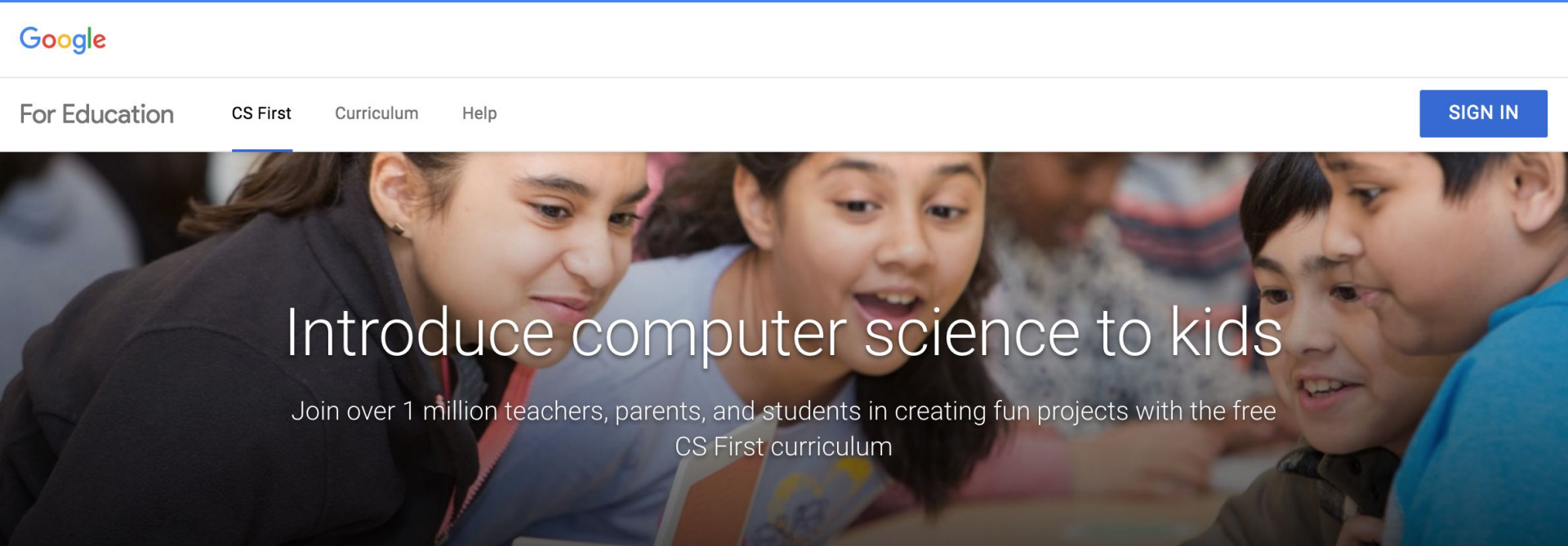
Google

CREATE

STEP 1:

Creating a teacher account is a quick process. Go to g.co/csfirst. Click “Sign in” to get started.

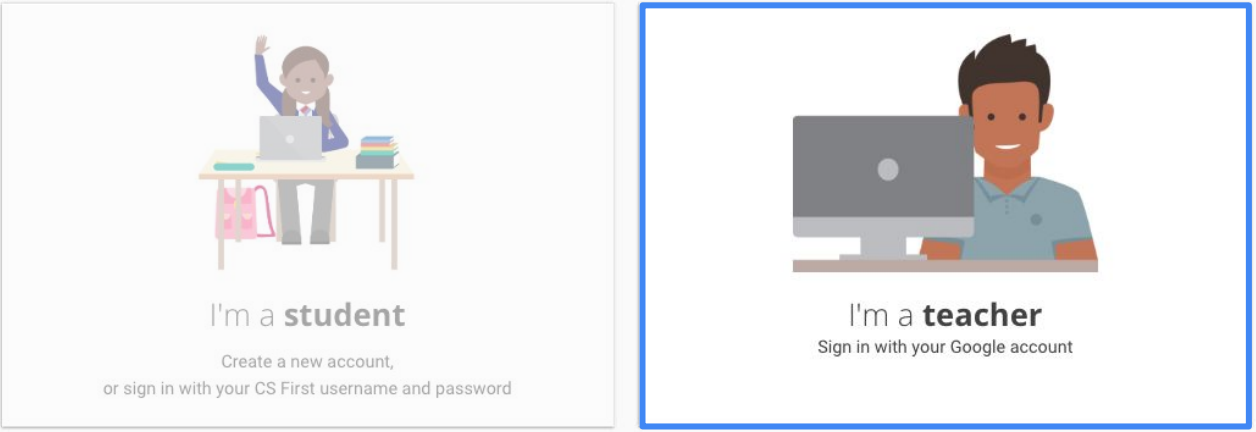
Tip: If you already have an account, click “Explore curriculum” to look around.



CREATE

STEP 2:

Select “I’m a teacher” to create a **teacher** account.

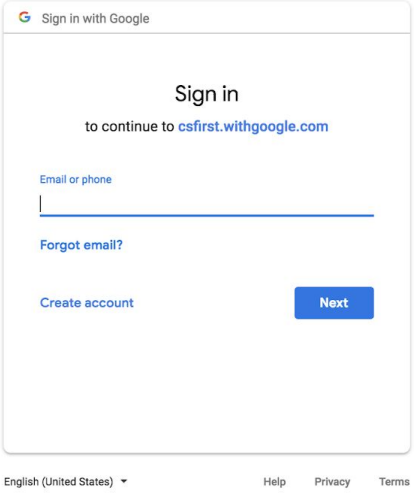


CREATE

STEP 3:

Create your **teacher** account. Sign up with an email account you'd like to associate with your CS First class.

Tip: It is not a requirement to have a teacher account to explore the curriculum. Learn more about resources available to teachers in this Help Center article.



EXPLORE

Tour the teacher dashboard and explore the CS First curriculum for your classroom.

Choose a **theme**

Invite students to join

Request **free print materials**

Collaborate with other CS First educators

REFLECT

Explore the Implementation Reflection Exercise that includes guiding questions to consider when bringing CS First to your students.

While doing this exercise is not required to implement CS First in the classroom, it may help teachers better understand how CS First can add value to their learning environment.

“

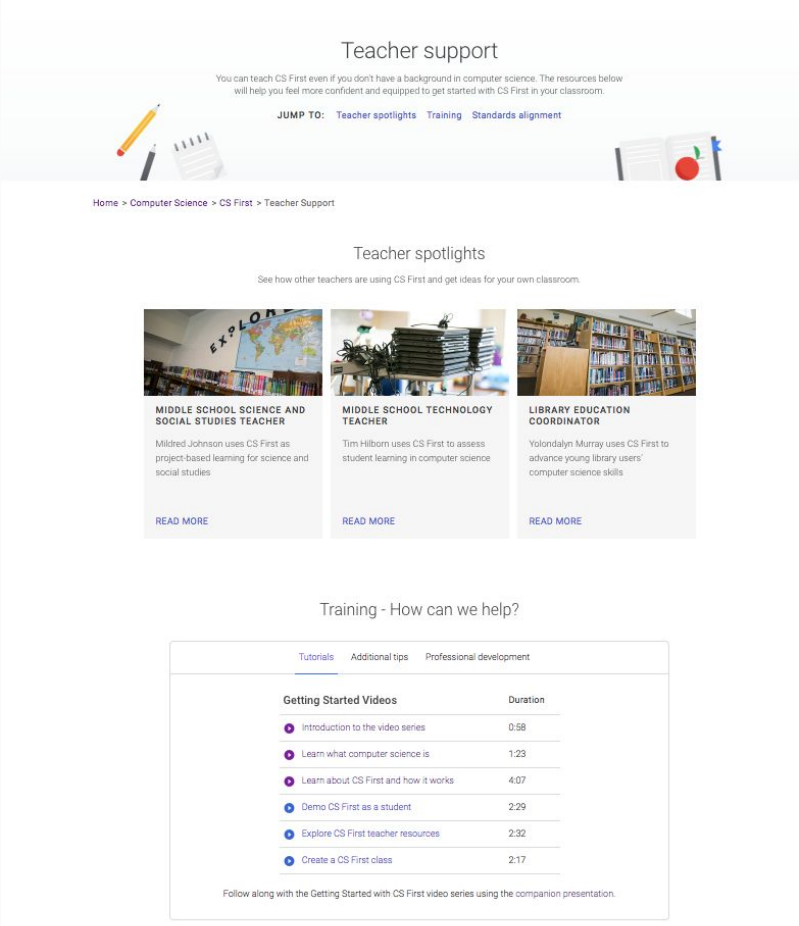
It’s great to use the lead learner approach when implementing CS First for the first time. Let the kids explore and don’t get caught up in ‘knowing everything’. It’s impossible to prepare for every question your students have - and that’s OK! That means they are using their creativity and learning.

Kyleigh Lewis, 7-12 Business, Technology and Computer Science teacher; Dorchester, NE

Teacher resources developed *by teachers for teachers*

- Learn from other CS First teachers
- Watch CS First tutorial videos
- Get tips and best practices
- Explore specific standards alignment to CSTA and ISTE

g.co/csfirst/teachers



HELPFUL LINKS FOR THE FUTURE

Getting started with CS First resources

- g.co/csfirst/help (Help Community)
- g.co/csfirst/guide (Quick start guide for a CS First class)
- g.co/csedu (Google CS education programs)
- g.co/cseduresearch (Google research on CS education)

“

Your materials, curriculum, and support have made a difference in my life and in my students’ lives. I currently have students who have signed up for technology classes in middle school that may not have considered it before. **You are leading the way for students who have little or no means for enrichment in technology to have platinum training on an aluminum budget.**

CS First teacher, Texas

Thanks for your time!

Want to learn more? We're here to help. Explore our online support materials or find us on social media:

CS First Help Center:
g.co/csfirst/help

CS First Help Community:
g.co/csfirst/help-community

CS First community on Twitter:
#CSFirst

Google