

Lesson 1: Welcome to CSP

Overview

Welcome to Computer Science Principles! The first lesson is about getting students excited about the course and connecting their own personal interests to computer science. Students are asked to share something they know a lot about and teach it to a small group. Groups make a “rapid” prototype of an innovative idea and share it. Students watch a brief video about computing innovations. The lesson ends with students logging into the Code.org CSP course web site, and answering a brief prompt about what “computer science” means to them.

Purpose

This activity plants the initial seed for students to think about the ways in which they might be able to solve some problems relevant to their lives with technological innovations.

Standards

Full Course Alignment

CSTA K-12 Computer Science Standards (2017)

- **IC** - Impacts of Computing

Agenda

Lesson Modifications

Tech Setup

Before your first class

Join Section

Warm-Up (15 minutes)

Teacher Message

Important! Have your students take the CSP Pre-Course Survey!

Topic Brainstorm

Activity (20 minutes)

Identify impacts and prototype an innovation

Brainstorm Technological Innovation

Rapid Prototype one idea

Share Prototypes

Wrap-up (10 minutes)

Welcome students to the course

Objectives

Students will be able to:

- Communicate with classmates about computing innovations in their lives.
- Describe positive and negative effects of computing innovations.

Preparation

- Procure poster paper for sharing innovations
- Queue up CS is Changing Everything video
- Setup section in Code Studio for this course
- Have student sign-up link ready to share

Links

Heads Up! Please make a copy of any documents you plan to share with students.

For the teachers

- **How to Administer a Locked Assessment**
- **CSP Unit 1 - Digital Information** - Slides

For the students

- **Personal Innovations** - Activity Guide
- **Computer Science is Changing Everything** - Video (**Download**)
- **Personal Innovations** - Rubric
- **How to videos** - Video

Teaching Guide

Lesson Modifications



Attention, teachers! If you are teaching virtually or in a socially-distanced classroom, please read the full lesson plan below, then click **here** to access the modifications.

Tech Setup

Throughout the year, in order for you to be able to see student work, and for students to be able to connect to each other on tools like the Internet Simulator, all students need to be in the same section on Code Studio. To see assessments and answer keys that Code.org provides, you also need to be a "verified teacher".

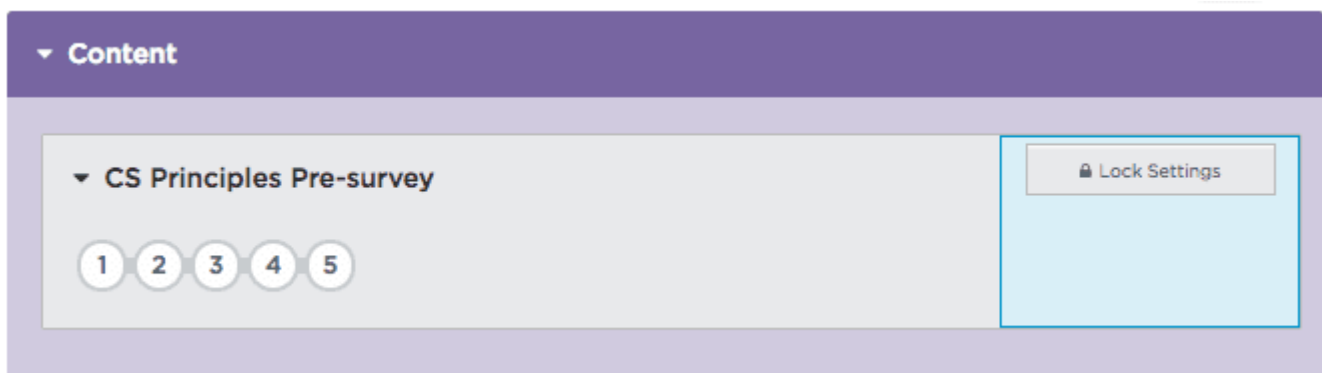
💡 Teaching Tip

How-To Videos: The following steps are also covered in a series of **How to videos** available on Code.org's Teacher Support website. You may decide to watch these videos before reading the instructions below.

Before your first class

Do This: Ensure you are registered on Code Studio as a "verified" teacher account

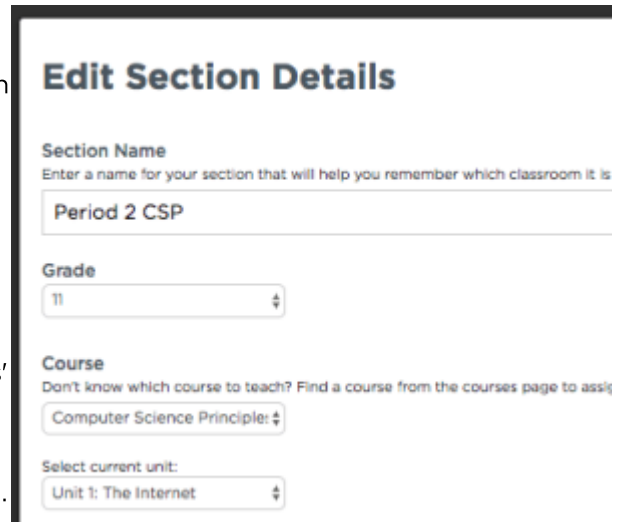
- Anyone can create a teacher account on Code Studio, which means that we need an extra layer of authorization to allow CS Principles teachers to see assessments, answer keys, and any other collateral that students should not be able to trivially get access to. If you attended a Code.org 5-day workshop during the summer, you should already have this access.



- To check if you have access:
 1. Navigate to the **Unit 1 overview page**
 2. Do you see the CS Principles Pre-course Survey at the top of the unit overview page?
 3. If not, you need to verify your teacher account. Please fill out **this form**. Note that it can take 5-7 business days to become a verified teacher, so please do this step early!
- If you are *not* a verified teacher account, you can still create a section for your class, but you will not be able to administer the pre-course survey on the first day.

Do This: Create a class section on Code Studio.

- You can either...
 - Go to the **How to videos** for a video walkthrough of these steps and more on navigating your Code.org account.
- Or...
 - Follow these steps to create a section:
 - Navigate to the **My Dashboard**
 - Click 'New section' under 'Classroom Sections'
 - Choose 'Email Logins'
 - If logged on through Google you can choose to sync to your Google Classroom.
 - Give your section a name, and choose the most appropriate grade level of students in your class
 - Set the course to be "CS Principles"
 - Set the unit to be "Unit 1: Digital Information"
 - If you're NOT using Google Classroom:* Once the section is created, click the name of the section to show the unique "join link" for your section.



The screenshot shows the 'Edit Section Details' form. It has four main sections: 'Section Name' with a text input field containing 'Period 2 CSP'; 'Grade' with a dropdown menu showing '11'; 'Course' with a dropdown menu showing 'Computer Science Principle'; and 'Select current unit:' with a dropdown menu showing 'Unit 1: The Internet'.


Join Section

NOTE: the following steps are only needed if you are not using Google Classroom


Do This:

- Have students create a Code Studio account at <https://studio.code.org> if they don't already have one

Tell your students to create their own accounts and join your section at
<http://studio.code.org/join/RBVPWC>

 Share the section Join URL with students and tell them to navigate to it to join your section. It will look something like what's shown at right.

- You can confirm that a student successfully joined your section by having the section progress page on the Teacher Home Page open and hitting refresh as students join.
- Students should also see a small green bar at the top of their page that says 'You've successfully joined ...'
- Have students navigate to the course on the home page.
- From the *student's* homepage at **studio.code.org** they should see a "tile" for Computer Science Principles. Click 'View course', then go to Unit 1.
- Once students are looking at the Unit 1 overview page, they will be ready to take the CSP Pre-Course survey

The slide icon  indicates that there is a slide in the unit slide deck that corresponds to this activity or prompt.

Warm-Up (15 minutes)

Teacher Message

Remarks

- Welcome to Computer Science Principles! This year we're going to learn a lot about computer science, but before we begin, we want to learn a little bit about you and your thoughts on computer science in general. Let's take the CSP Pre-Course Survey.

Important! Have your students take the CSP Pre-Course Survey!

Do This: Students can find a link to the survey in Code Studio as the first item on the Unit 1 overview page. To ensure that students only take the survey at the appropriate time, it is "locked" and unviewable by them until you "unlock" the survey. The **How to Administer a Locked Assessment** document provides details on how to do that when you are ready. Note that the instructions for administering an assessment and a survey are the same.



Topic Brainstorm

Remarks

One thing that makes this class unique is that you have to invent solutions to problems and create things all the time, both alone and with others. Everyone has a unique and creative perspective they bring to the table.

Let's start by seeing how creative we can be right now!

Do This: Take out a journal or a piece of paper.

Teaching Tip

If students need help coming up with ideas, share these tips:

- This doesn't have to be a subject in school - it very well might not be.
- As a person, as an individual who is living and breathing in this world, there is something that you probably know a lot about - maybe you feel like you know more about than most people. What is that thing?

 **Prompt:** What's something that you know a lot about? Something that you could teach somebody?"

"Why do the pre-course survey?"

- A major goal of CS Principles is to broaden participation in computer science.
- It is *crucial* therefore to have insight into students' attitudes and beliefs about computer science *before* the course so that we can measure the amount of change that occurred *after* the course is over.
- Please note that this survey is **anonymous for students**
- Completing it also helps us understand important improvements we can make to the curriculum to improve the teacher and student experience.

Please help by having your students contribute to this vital dataset. Their voices make the difference!

How much time does it take?

- The survey is roughly 40 quick response items. We expect it to take 5-10 minutes to complete. You might consider administering it on an admin day at school, or as an early homework.
- Because it is a pre-course survey it is important that students take it as early in the course as possible, before they have had much (or any) exposure to the class so that we may accurately gauge changes in attitudes and beliefs caused by the course.

Thank you!

-- The Code.org Team

What you're trying to do here is get students to state something that they are interested in, but also know a lot about - something they might have insights into.

A big part of students' enthusiasm for sharing will come from your enthusiasm and genuine interest in getting to know them.

Students might need prodding: there is something that makes them interesting and unique. Something they like to do, have interest in, read about, have some expertise in, a hidden talent.

Discuss: With a partner or a small group:

- introduce yourself
- explain the thing you know a lot about
- tell the group something interesting about that topic

Activity (20 minutes)

 **Group:** Place students in small groups.

Identify impacts and prototype an innovation

Remarks


People seem to say that technology is all around us, that it affects everything we do. Is that true? Technological Innovation/csp/2021 is about recognizing a problem that needs to be solved, or

technological [v innovation/csp/ 2021] is about recognizing a problem that needs to be solved, or recognizing something needs improving and then building a tool to solve it.

As a class we're going to see how innovative we can be. We're going to do something called "rapid prototyping."

"Prototype" is a fancy word that means a simple sketch of an idea or model for something new. It's the original drawing from which something real might be built or created.

Brainstorm Technological Innovation

 **Do This:** Go around the group, and for each individual's area of interest:

1. Identify some way that technology is used with, or affects that thing
2. Make a suggestion for either:
 - a way that technology might be improved to make it better, faster, easier to use
 - a creative or innovative new technology that might help solve some problem within that area, or at least make better

Everyone in the group should make suggestions for any of the areas of interest in your group.

💡 Teaching Tip

Keep things quick. If a group is worried about not being innovative enough, remind them that very small ideas can have big consequences. People once thought it was ridiculous that you would want to send a short text message to another person over a phone.

Alternatively, a group may have a great idea that they want to spend more time on. They can do that later. For now, just remind them it's a rapid prototype.

Rapid Prototype one idea

Remarks


As a group you have just brainstormed about the technology ideas at the table.

Now, come together and get excited about **one** of them.


As a group, nominate the idea you've discussed that you think would be the *most interesting* to everyone else in the class.

Start to sketch out that idea on a poster. Make a visual representation of your ideas.

- Remember this is a rapid prototype. Just something to quickly convey the idea.

 **Do This:** As a group, nominate the idea you've discussed that you think would be the most interesting to everyone else in the class. Start to sketch out that idea on a poster. Make a visual representation of your ideas.

Share Prototypes

 **Share:** Do a "Gallery Walk" or a whip around so that each student can see all of the other students' work.

- Put prototype posters on the wall
- Give students time to survey the various posters

Wrap-up (10 minutes)

💡 Teaching Tip

Take this opportunity to explain the importance of bringing individual interests and perspectives to this course. From day one, students should be thinking about how to apply the principles they learn to their own lives, and hopefully they will be excited to do so.

Welcome students to the course

🎤 Remarks

- We are just starting this class, but you all bring passions and knowledge about things you care about. And whatever those things are it is likely (if not inevitable) that they involve computing technology in some way.
- Everyone is unique, but we're all in this together.

📺 Video: Play **Computer Science is Changing Everything**

- The video is available for students in Code Studio as well.

📺 1

Computer Science is Changing Everything

🗨️ Discuss: *What are you excited to learn about in this course?*

Discussion Goal: Students can discuss in small groups and then share out with the whole class. It's ok if at this point students don't have an answer to this prompt.

Assessment: Check For Understanding

Check For Understanding Question(s) and solutions can be found in each lesson on Code Studio. These questions can be used for an exit ticket.

Computer science has changed the way we communicate with each other, make art and movies, grow food, and even treat illnesses. Everyone can learn computer science and make a difference.

Still, we understand that taking a computer science course can be difficult at first. Here are a few student quotes describing their strategies and tips for taking this course. Please read the quotes carefully and respond to the prompt below.

Question: What are your own strategies and insights about how to learn best? And, how are they similar or different to the ones that you just heard about from other students?

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Check For Understanding