Lesson Topic:
Introduction to Coding with CS in Schools

Lesson Sequence:
1/8

Lesson Link:
https://csinschools.io/intro/1

How the Lesson Plans work
These lesson plans are a written description of how to use the CS in Schools teaching materials.

- Lesson Overview - describes what content is covered and offers suggestions on how to use it
- Learning Notes - shares tips for teaching the class
- Logistics Notes - offers tips for running the class
- Breakdown - suggests the amount of time to spend on each topic
  - NOTE: the breakdown sums to 90 minutes, while the recommended class length is 120 minutes; this creates flexibility to give the students a break, add in additional materials, and the ability to spend more time where it is needed.

We recommend watching the student video in preparation for delivering this lesson.

Lesson Overview:
Start by watching the student video available at https://csinschools.io/intro/1sv. The video includes a walkthrough of how to access the teaching environment and how to use our materials. It also covers what's explained throughout the remainder of this lesson overview.

This lesson provides an introduction to programming in general. The idea is that students understand what code is, and understand that coding produces software that's interesting to them.

To get started, particularly if you're teaching online, you can ask the class to watch the student video. Once the students have watched the video, we recommend bringing the students back together as a group and checking for understanding. You can then proceed to having them work through the slides.

This class contains a good icebreaker exercise in the form of a worksheet (MS). You could also ask students to include in their answer the job they'd like to do when they finish school (or university), and how coding can help them in their job. There is always an answer! For example, a hairdresser might have an online booking system or a hair style simulator. A mechanic might have a 3D printer that can print car parts.

If you have a volunteer in the classroom, there's a slide in this lesson that's there to introduce them. We recommend they use the template slides to create an interesting presentation to introduce themselves. If you don't have a volunteer in the classroom, delete the placeholder slide.

Students then have the opportunity to program the traditional first program that everyone writes (`"Hello, world!"`) and then a simple follow on that prints out their own name. They then execute a pre-written Snake game. They are encouraged to "hack" the snake code as part of exploratory learning. It's important that the students try hacking the code. It doesn't matter at all whether their changes work -- the goal is to get students looking at code, and building confidence in making changes and trying them.

If you're in the classroom with your students, the second supplementary lesson has a simple exercise (beginning on slide 3) that is an excellent addition to this lesson if you have time. It helps students think through how to communicate instructions precisely, which is an excellent precursor to teaching coding. This exercise doesn't work as well online.

Learning notes:

- Emphasise that it is okay to feel overwhelmed when confronted with the snake code at first.
- Some students will be hesitant to alter the snake code in any way. Reassure them that it is okay, they can always UNDO any changes.
- Stress that exploration and making mistakes are the keys to learning how to code.
- Keys for snake game are the **W, A, S** and **D** keys. It's a fun game to play! The goal is to eat food (shown as a strawberry). As the snake eats, it gets longer. You lose the game when you eat yourself.
- As you check out how students are playing and hacking snake, it's a great way to get a feel of who are the more advanced versus beginner programmers.
- There is a walkthrough video that explores the snake game

Logistics notes:

- Slides ideally to be presented to the class via a projector or screen, etc.
- Students can also follow along using the slides on their devices / computer
- Slides contain all the links to activities and worksheets which students need to click on

Suggested Breakdown for Topics and Timings:

Time (mins)	Topic covered	Student Activities	Resources
3	Roll and settle class		Slides | MS
2	Learning objectives		Slides | MS
10	Introduction to Programming Languages and Python	Introduction Worksheet	Slides | MS Worksheet | MS
30	Explore the materials at https://csinschools.io	Activity - Welcome to CS in Schools!	Slides | MS Activity - 01.01
10	Programming languages		Slides | MS
5	`print()` statement		Slides | MS
5		Activity - Hello, World!	Activity - 01.02
5		Activity - Hi to You!	Activity - 01.03
20	Watch Intro video and play/hack snake game	Extension Activity - Snake!	Slides | MS Extension - Snake!
5	Summarisation and reflection		Slides | MS

License Information