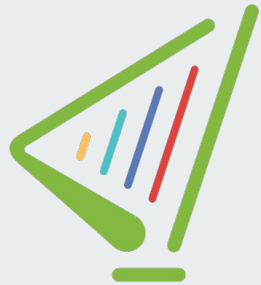


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# Primary Teacher Webinar


January 2022



**CODING**  
**IRELAND**

# Agenda

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1. Introduction
2. Best device to use for coding (PC v Laptop v Chromebook v iPad)
3. How to share equipment amongst students
4. Open teacher chat 

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# Introduction

- Meet once a month online. We will send invites to all teachers on the list.
- Coding Ireland present a new coding/STEM topic each month.
- Open teacher chat at the end to discuss common issues and ideas.
- Help each other to become better at teaching coding & STEM.
- Webinar is being recorded for teachers that can't make it.

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# Best device to use for coding

## *PC v Laptop v Chromebook v iPad*

- **Usability** - how student friendly is it to use?
- **Cost** - how expensive are they?
- **Durability** - how durable is it?
- **Portability** - how portable is it?
- **Coding Suitability** - how suitable is it for coding and programming?

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# PC

## Personal Computer



Personal computers, also known as “desktops” or “tower computers”, are computers with large box-like cases that hold the computer’s hardware components.

Desktop computers have an external monitor with a display screen, an external keyboard and mouse, which are plugged into ports on the computer case.

They do not normally come with a webcam, microphone or speakers so these usually need to be purchased and plugged into the PC.

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# PC

## Personal Computer



### Usability

PCs do require some setup to plug in all the external devices into the computer case and then to install them. Installation is normally straightforward but sometimes issues with drivers and software can occur.

Score: 7/10

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# PC

## Personal Computer



### Portability

PCs are designed to sit on a desk and they would be quite cumbersome to move around as they are heavy and all the external devices need to be plugged out and then back in when they're set up again.

Score: 2/10

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# PC

## Personal Computer



### Durability

PCs are known for their durability as they aren't trying to fit all the computer components into a small case such as laptops or tablets.

Also because they are rarely moved and just sit on the desk they don't often get dropped or damaged. If a component does fail then they are designed to be easily replaced so that you don't have to replace the whole system.

Score: 9/10



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# PC

## Personal Computer



### Cost

A PC desktop with a monitor, keyboard and mouse can cost anywhere from €500 to €3,000+ depending on the specs of the PC.

For learning to code we don't need too much processing power (such as you would need for video editing or high graphics gaming) so somewhere in the region of €500 to €800 should be sufficient.

**Score: 6/10**

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# PC

## Personal Computer



### Coding Suitability

As they have a physical keyboard and mouse they are very suitable for learning to code as these are quite frequently used when coding.

Generally you don't need a large amount of processing power for the type of coding you'll be doing when learning to code so even an inexpensive PC should be suitable.

**Score: 9/10**

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# PC

## Personal Computer



## Overall

### The good

- Have a physical keyboard and mouse
- Very usable once setup

### The bad

- Not very portable
- Webcam, microphone and speakers need to be purchased and installed

**Score: 33/50**

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# Laptops/MacBooks



Most modern laptops will also come with a webcam, microphone and speakers though some older laptop models don't but they can be purchased separately and plugged into the laptop.

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# Laptops/MacBooks



## Usability

Laptops are very easy to use as the computer, screen, keyboard and trackpad are contained in the one device. Most modern laptops will also come with a webcam, microphone and speakers.

Laptops have a rechargeable battery so can run out of power unless they are appropriately charged.

**Score: 9/10**

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# Laptops/MacBooks



## Portability

Laptops are designed to be light and portable so they are very easy to move around and quickly get setup and going.

**Score: 10/10**

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# Laptops/MacBooks



## Durability

They're quite durable but as they are designed to be portable, they can be dropped and therefore more prone to suffer damage.

If a component is broken then you'll likely need to take it to a specialist shop to get it fixed.

**Score: 6/10**

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# Laptops/MacBooks



## Cost

Laptops range in price from around €150 to €3,000 plus depending on the specifications.

For basic coding a price of €250 to €400 should get a suitable laptop that students can learn how to code.

**Score: 9/10**



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# Laptops/MacBooks



## Coding Suitability

As they have a physical keyboard and mouse they are very suitable for learning to code as these are quite frequently used when coding.

Generally you don't need a large amount of processing power for the type of coding you'll be doing when learning to code so even an inexpensive laptop should be suitable.

**Score: 9/10**



# Laptops/MacBooks



## Overall

### The good

- Have a physical keyboard and mouse
- Very usable and portable
- Relatively inexpensive

### The bad

- Not the most durable
- Need to be charged

Score: 43/50

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# Chromebooks



A Chromebook is a laptop like device running the Linux-based Chrome OS as its operating system.

Initially designed to heavily rely on web applications for tasks using the Google Chrome browser, Chromebooks have since expanded to be able to run Android and full-fledged Linux apps since 2018. All supported apps can be installed and launched alongside each other.

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# Chromebooks



## Usability

Chromebooks are very easy to use as the computer, screen, keyboard and trackpad are contained in the one device. Chromebooks also come with a webcam, microphone and speakers.

They have a slightly different keyboard layout to Laptops and MacBooks so some features take a bit of getting used to.

Chromebooks have a rechargeable battery so can run out of power unless they are appropriately charged.

**Score: 8/10**

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# Chromebooks



## Portability

Chromebooks are designed to be light and portable so they are very easy to move around and quickly get setup and going.

**Score: 10/10**

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# Chromebooks



## Durability

They're quite durable but as they are designed to be portable, they can be dropped and therefore more prone to suffer damage.

If a component is broken then you'll likely need to take it to a specialist shop to get it fixed.

**Score: 6/10**

# Chromebooks



## Cost

Chromebooks range in price from around €150 to €1,500 plus depending on the specifications.

For basic coding a price of €250 to €400 should get a suitable Chromebook that students can learn how to code.

**Score: 9/10**

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# Chromebooks



## Coding Suitability

As they have a physical keyboard and mouse they are very suitable for learning to code as these are quite frequently used when coding.

Generally you don't need a large amount of processing power for the type of coding you'll be doing when learning to code so even an inexpensive Chromebook should be suitable.

Some applications may not be available to install onto Chromebooks but these are more generally high-end programming applications.

**Score: 8/10**



# Chromebooks



## Overall

### The good

- Have a physical keyboard and mouse
- Very usable and portable
- Relatively inexpensive

### The bad

- Not the most durable
- Need to be charged
- Some applications may not be available

**Score: 41/50**

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# iPads/Tablets



iPads and tablet computers are mobile devices, typically with a mobile operating system, touchscreen display and a rechargeable battery in a single, thin and flat package.

Tablets, being computers, do what other personal computers do, but lack some input/output abilities that others have as they don't have physical keyboards or mice. They generally come with a webcam, microphone and speakers.

They largely resemble modern smartphones, the only differences being that tablets are relatively larger than smartphones, with screens 7 inches (18 cm) or larger.

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# iPads/Tablets



## Usability

Tablets and iPads are very easy to use and user friendly. There's virtually no setup required to start using them.

However if you need to use a physical keyboard or mouse/trackpad then you have to purchase and connect them.

**Score: 9/10**

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# iPads/Tablets



## Portability

Given that they are small and thin they are very portable and easily fit in a school bag.

Even the keyboards and trackpads are designed to be portable and often can come as part of a case that easily attaches to the tablet/iPad.

**Score: 10/10**



# iPads/Tablets



## Durability

They are quite durable particularly when a protective case is used. However the screens can break when dropped.

Protective covers/cases are recommended.

**Score: 8/10**

# iPads/Tablets



## Cost

Tablets and iPads range in price from €100 to €1,000+ depending on the specifications (iPads tend to be the more expensive of the two).

For basic coding a price of around €200 should suffice but we would recommend getting a physical keyboard and trackpad to use with them.

**Score: 7/10**

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# iPads/Tablets



## Coding Suitability

Not having a physical keyboard and mouse/trackpad is a big disadvantage when learning to code as students will need to type a lot.

If you do choose a tablet/iPad we would strongly recommend getting physical keyboards and mice/trackpads for them also.

The smaller screen size compared to laptops and PCs is also a disadvantage as code editors are more suited to large screens.

**Score: 3/10**



# iPads/Tablets



## Overall

### The good

- Very usable and portable

### The bad

- Don't have a physical keyboard and mouse/trackpad
- Small screen

Score: 37/50



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# Laptops/MacBooks /Chromebooks



## What we recommend

When purchasing a device for students to learn coding we recommend getting a **Laptop or MacBook or Chromebook**.

In our opinion the most important factors are having a **physical keyboard with a mouse/trackpad** and a **good sized screen** that will be easy for the students to see and use the code editors.

Laptops/MacBooks/Chromebooks have these and are also **portable and not too expensive**, making them our number 1 recommendation.

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# How to share equipment amongst students

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# Sharing the equipment



Not all schools have the facilities to provide one computer per student. To cater for situations where there are more students than computers, lessons can be taught by:

## **Pair Programming**

In this format two students work together using one computer.

## **Splitting Classes**

The teacher might split the class into groups to take turns using the available computers.

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# Sharing the equipment



## Pair Programming

- Students work in pairs to do a lesson/project.
- Both students should read and discuss the instructions.
- Students take turns “driving” the computer and making the code.

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# Sharing the equipment



## Splitting Classes

- Students are put into groups according to the number of computers available.
- Each group has their turn on the computers working on a lesson/project.
- This is more time consuming.

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Teacher chat



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# Next Primary Teacher Webinar

Monday 21st February 3:30-4:30pm