General ICT requirements

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Increasingly, students and teachers are accessing most applications, communications, and storage online - the particular device, platform, or brand etc being used matters less and less.

In choosing an appropriate device for school the following points should be considered:

- You should expect to have at least 2 devices over your time at the College.
    - Students coming in at Yr 7 will likely want to upgrade their devices by Yr 10 or 11.
    - Students coming in at Yr 9 might wait a little longer.
- Tablets (iPads/Galaxy etc) are not suitable from Yr 9 onwards.
- Chromebooks have limited processing power to cope with tech heavy subjects like 3D design, Digital Technology.
- Do you have a suitable device already that will meet your needs for the first year or so?
- Will I be using this device for other than school work - if so, will I require something with higher specifications?
- At senior levels, examinations are increasingly being completed digitally and require devices with keyboards - we would encourage developing keyboard skills as early as possible.
- Size, weight, battery life etc are important considerations - you will be carrying this device to every class - it needs to be sufficiently robust and protected in a case or sleeve whenever possible.

Summary of Recommended Specifications

For those of you who just want to know the recommended specs.

- Form Factor: Laptop or Hybrid Tablet/Laptop (2 in 1)
- Operating System: Microsoft Windows 10/11 or Apple MacOS
- Processor:
    - Intel Core i5/AMD Ryzen 5 or better
    - M1 or higher for Mac
- RAM: 16GB (gigabytes) recommended minimum
- Storage: 256GB+ SSD (Solid State Drive) minimum 512GB+ recommended
- Screen size: 12” minimum, 15” maximum
- Graphics: Onboard graphics (for most users).
- Networking: Wireless 802.11n/ac (WiFi 5) or better. Laptop must support 5Ghz wifi
- Battery Life: 8+ Hours (under general use)
- At least 1 year warranty

It’s worth stressing that these are only a recommendation and not essential as budgetary constraints always come into play. There will likely be compromises on the above specifications and that is fine.

Detailed Specifications

Form Factor

Recommended: Laptop or Hybrid Laptop/Tablet (2 in 1)

A device that supports a full desktop Operating System and has an attached keyboard (i.e. laptop) or detachable (Hybrid Laptop/Tablet) is recommended. (see Operating Systems section)

CPU (Central Processing Unit or Processor)

Recommended: Intel Core i5/AMD Ryzen 5 (at least 4 core processor)/ M1 or higher for Mac This is the brains of the computer which does all the heavy lifting.

Laptops that have an Intel made CPU, fall into 3 main product lines; Core i3, Core i5, & Core 17. Within these product lines are a multitude of various models; too vast to go into here. You ideally want to aim for a Core i5.

The competitor to Intel is AMD. They have the Ryzen 3, Ryzen 5, Ryzen 7, and Ryzen 9 series. Anything from a Ryzen 5 and up should be suitable.

CPU Cores. CPU's regardless of manufacturer should have a minimum of 8 cores or threads (the processing centres of the CPU). The latest Intel i5 CPU's for Laptops, for example, have 12 cores. As does the previous Generation (12th). Current Apple MacBooks have 8 core processors (M1 and up) at a minimum. Ryzen 5 processors have 6 physical cores, but 12 threads....so they effectively have 12 processing cores.

RAM (Memory)

Recommended: 16GB+ (gigabytes)[1]

Not to be confused with Storage, memory is essentially how much working space the computer has when running. The more memory you have, the better the computer will perform when running multiple applications. Even if you only have your web browser open, every tab you have open uses more of the available memory.

512GB+ recommended particularly if students are going to do Digital heavy subjects at year 9 and up. Such as Digital Technology, Design and Visual Communications (DVC), Music and Photography (in senior school). These subjects require standalone (installed on device) applications that are large in and of themselves and also create large files as a result of the students' work. Therefore larger storage capacity is needed.

[1] ideally more if you are doing more computationally intensive work e.g. photo editing, 3D design, computer game development.

Hard Drive (Storage)

Recommended: 256GB+ SSD (Solid State Drive) minimum

The hard drive is where everything is stored including Operating System, Applications, and your files.

Traditionally you would choose based on the size/storage capacity of the drive. While that's still true today, there is another factor to consider, Hard Disk Drive or Solid State Drive.

Traditional drives are known as Hard Disk Drives (HDD) as they have a spinning platter that data is stored on. These types of drives have been around for half a century or more and have grown in storage capacity to multiple Terabytes (TB). However, while the capacity has grown, the performance has only marginally improved. Enter Solid State Storage (SSD), while they aren't really that new, their price levels have dropped to a point where decent capacities are now affordable. Solid State Drives tend to be lower in capacity when compared to a Hard Disk Drive of a similar price, but the performance (Data Read & Write speeds) is significantly higher than its predecessor. Another advantage is much lower energy consumption and smaller physical size.

What does these mean for you? Better performing laptop (i.e., everything loads/runs much faster) and increased battery life.

Circling back to capacity, take into consideration that the Operating System takes up a good portion of this already. Both Windows and Mac Operating Systems require about 20-30GB (Gigabytes) of space. Applications can vary greatly, while most take up minimal space, programs like Office will use several Gigabytes, while games can take up a lot more. Whatever space is left is what will be available to store files like documents, music, videos, etc..

GPU (Graphics Processor)

Recommended: Onboard graphics (for most users)[2]

When it comes to graphics processors, most laptops have onboard graphics processing which means that the graphics processing is built into the CPU itself. These have come a long way in recent years where an onboard graphics processor is more than capable of High Definition or 4K video playback without stuttering and slowing down the computer. And for most people that's all that they really need.

Being that these graphics processors are built into the CPU, the model CPU you choose will of course have a bearing on what internal graphics capability it has, but in general they are all more than capable for the average user.

If, however you like playing the latest games, editing your own videos, doing Graphic or 3D Design work, you would benefit from having a discrete GPU (Graphics Processing Unit). This means that in addition to the onboard GPU, there is a dedicated graphics processor ready to take over and do some heavy graphics work. There are many models

[2] For applications like 3D design, animation, movie making, game development etc a dedicated GPU is recommended. Ideally with it's own dedicated memory (8 GB+).

around by both major brands AMD and nVidia. You will have to do your own homework here. If you know the software you want to use, check the hardware requirements for it.

While a discrete GPU will give you a boost in graphics performance, it does mean that your battery will drain quicker depending on use.

Battery Life **Recommended:** 8+ Hours

Battery life, especially in a school environment, can be crucial, as ideally it needs to be able to last all day without requiring to be charged.

Being that a school day is about 6 hours long, a battery life of 8 hours or better, should be able to get you through the day.

Please keep in mind that with 800+ pupils, the school cannot facilitate the charging of all these devices. Devices should be charged overnight ready to go for the next day.

Other Things to Consider

Screen Resolution

Recommended: HD – High Definition (1920x1080 or similar)

The resolution of the screen is something that is low on the list of considerations, but again shouldn't be overlooked. The resolution is defined by the number of pixels (the tiny red/green/blue dots that form the image) horizontally and vertically. For example, that standard we generally hear about is "HD" or Full High Definition, which is 1920 pixels wide by 1080 pixels high, this was the standard for most modern flat panel televisions prior to '4K'. Essentially the higher the resolution, the crisper and clearer text and images look on screen. HD resolutions are becoming the norm for laptops while higher-end laptops are pushing into 4K resolution, which is essentially 4x the resolution of HD (3840x2160 pixels).

Construction **Recommended:** Metal Alloy

The construction of the device is important as the laptop will likely be stored in a school bag which can take a beating everyday if not looked after.

Cheaper laptops are generally made from various plastics which can twist and break relatively easily whereas premium laptops are usually made from aluminium or magnesium to create a stiff and strong laptop.

Some form of protective sleeve or cover for the device is recommended also.

Size/Weight

Recommended: 13-15 inch

Size really comes down to the individual. Most laptops fit in the 13-15 inch category (diagonal size of screen), the thing to consider here is that the smaller the screen, and depending on your eye-sight, it can be hard to focus on or see what's on screen. The average laptop screen size is around 15 inches which is generally a good fit for most, though ~13 inch has become a very popular size for those who move around a lot with their device. The weight of course is generally relative to the screen size; however, it is important to consider the weight that's being carried around. This is usually proportional to the thickness of the laptop as well as the screen size. This factor is low on the list to consider, but it shouldn't be overlooked.

Platform (Operating System)

Recommended: Microsoft Windows or Apple MacOS (user preference)

When it comes to choosing a platform, it comes down to user choice; try to make the most informed decision you can.

The major players are of course Microsoft Windows and Apple MacOS. The likes of Android and Apple IOS don't effectively support learning at a secondary school level.

Google Chrome OS. This Operating System is only found on what are known as "ChromeBooks". Essentially, it's just a very basic system based on the Google Chrome web browser. You cannot install traditional desktop applications like you can on Windows or Mac, i.e. Microsoft Office, Adobe Photoshop, Fusion 360, AutoCAD etc.

If Doing subjects like Digital Media Studies, Design and Visual Communication, Digital Technologies, then a traditional laptop running Windows or MacOS is essential.

Warranty & Insurance

Recommended: 3 year warranty, accidental damage & theft

Pretty much all devices come with a 1 year warranty. We recommend getting an extended warranty for 3 years (life of the device) to cover any issues that may arise. Ask your retailer about an extended warranty. We also recommend talking with your retailer (or insurer) to get the device covered for accidental breakage and theft for when it's at school and to and from school journeys.

Software

Microsoft Office

Microsoft Office is provided free for all students of Otago Boys' via the Microsoft Office 365 Student Advantage programme. This can be installed on up to 5 (Note, the full version of Office (Word, Excel, PowerPoint, etc. can only be installed on Windows or MacOS devices).

Adobe Creative Cloud

As of 2019, we can now offer students access to the full Adobe Creative Cloud suite of applications (Photoshop, Illustrator, Premiere Pro, etc..) for ~$10* per student per calendar year (while they are a student at OB's).

NOTE: Some subjects may require this as part of the course requirements.

Also note, that the Creative Cloud applications require at least the recommended specs outlined above.

**Please note the price indicated above is subject to change without notice*.

Antivirus

It is important to have antivirus software installed to help protect your device from unwanted malware/viruses.

There are plenty of good free antivirus programs available, including: Avira, Bitdefender, Ad-Aware Antivirus+, Avast, AVG. Just do a google search to find them.

Note: Windows 10/11 does have its own built-in Antivirus protection known as Windows Defender.