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Gungahlin College Guide to selecting a Personal Learning Device

Table of Contents

Introduction	3
Considerations when choosing a device.....	4
Functionality: What does it need to do?	4
1. Wireless/Internet Connectivity.....	4
2. Content Creation.....	4
3. Battery Life	5
4. Headphone Jack and Headphones.....	5
5. Administrative Access	6
6. Anti-Virus/Anti-Malware Software	6
7. Device Warranties.....	6
“Nice to Have” features	6
1. Multimedia Peripherals – Camera and Microphone	6
2. Input Peripherals.....	6
3. Automated Backup Tools.....	7
4. Physical Protection and Transport.....	8
Technical Specifications and Device Suggestions	8
Form Factor: Tablet.....	8
Form Factor: Laptop.....	9
Specialist Subject Requirements.....	11
Media	11
Photography.....	11
Graphic Design	12
CADD/Architecture	12
Information Technology.....	12
Business Administration	13
Accounting	13
Science	13
Hospitality	14
Sports Studies, Exercise Science and Outdoor Education	14
Workshop Classes (Metalwork, Furniture Construction etc.)	14
Concerns? Questions?	14

Introduction

Gungahlin College has adopted a “Bring Your Own Device” (or BYOD) program for all students from 2016, on the basis that BYOD programs bring with them major benefits to student learning. The core of this is a strong preference for all students to participate in our curriculum via a personal learning device.

Some of the major benefits include:

- Tapping into the skills and device ownership preferences common to the current generation of students, many of whom grow up with access to computing devices from a very early age;
- The personalisation of learning that becomes possible when students are able to customise their learning tools through direct ownership;
- The enhanced organisational opportunities for student content and notes, including distribution of materials and schedules by teachers; and
- The advantages of specialised learning applications and materials becoming more available and accessible to students - anytime, anywhere.

Schools generally have enough funding to maintain some computer labs and devices for individual student access and study, but we cannot maintain a ratio of one computer per student, especially when many students work on multiple devices in any given day. Some devices are more suited to one classroom context, while others are necessary for specialised purposes.

For this reason, Gungahlin College maintains computer labs for subjects that require specialist equipment and resources – subjects like Media, Photography and Graphic Design. However, for the majority of classes that run on the Gungahlin College timetable, student owned devices don't need to be particularly specialised.

A BYOD program places a device into every student's hand at all times throughout the day, giving them immediate access to the world's information, and providing creative opportunities for engaging with the learning both within and beyond the school curriculum.

The question, then, becomes how students and families select an appropriate device for a student's learning program. The answer is not a simple one, and this guide is designed to assist you to make the most appropriate decision for your child. We cannot recommend specific devices, but we can provide you with the details you need to be able to choose from the many devices available on the market.

Note: At Gungahlin College, the primary device used by a student is expected to be a Tablet or Laptop computer. While Smartphones can supplement these devices and are ideally suited to some contexts, they are not capable enough to be a student's only device.

Considerations when choosing a device

When selecting a device, the first consideration must always be what will be best for your child's education. You may find it useful to ask yourself the following questions to better understand your child's learning needs:

- How does my child use technology at home?
- What kind of learning does my child already do on technology?
- How long do I expect this device to last / be relevant to their learning context?
- What kind of electives/classes are they likely to study at college and/or university/CIT?

Once you have an idea of how you might answer the questions above, read the information below to identify suitable options for your child.

Functionality: What does it need to do?

Regardless of the device you choose, the following list of functional requirements must be met to ensure the device is suitable for the school environment.

1. Wireless/Internet Connectivity

All ACT Education and Training Directorate Public Schools are hooked up to the Internet via a fibre optic backbone, and access to this infrastructure for students is via a modern, secure WPA2 Enterprise network. Therefore, **the device you choose must be able to connect to WPA2 Enterprise Wi-Fi**. Some older devices (particularly tablets) are not able to meet this important requirement, but any device built in the last few years should be ok. All Windows 8, Windows 10, OS X and iOS devices will be ok, however some older tablets, especially cheaper ones running old versions of Android, may not. If you're not sure, ask the retailer to confirm this for you.

2. Content Creation

Students are expected to be able to demonstrate their learning in all classes by creating materials that communicate what they have learned through a range of media. At a minimum, this means the device must be able to:

- **Produce word processed documents;**
- **Manipulate data and present it in various forms;**
- **Produce presentation materials; and**
- **Manipulate simple images and video content.**

Gungahlin College, through the Education and Training Directorate's licensing agreements with Google and Microsoft, have made available to all enrolled students access to the **Google Apps for Education** suite and **Microsoft Office**. These tools are both capable of addressing the minimum requirements above, so as long as the device is able to connect to the Internet to use Google Apps, or is able to install a copy of Microsoft Office (provided free through the ETD Office 365 subscription service), it will be ideal.

For the manipulation of simple images and video, free applications are generally available through the App Store (on OS X and iOS), Google Play (Android) and the Windows Store that will meet the needs of most students. OS X also ships with a suite of applications (iMovie, Photos and GarageBand) that include many of these features free with the purchase of a Mac.

It should be noted that some subjects may have additional requirements beyond those listed above. Refer to the relevant section later in this document for further information.

3. Battery Life

Students will ultimately be using their device for large chunks of time during the day, and will often use it between classes during their Personal Study Time. While not every class will make use of the device in every lesson (it is important to provide students with a variety of different, engaging learning experiences), ensuring the computer has sufficient battery life to get through a typical school day is important for continuity of learning and portability. The days at Gungahlin College are also quite long (8:30am-4:30pm), and students may have up to 6 hours of class on a given day.

Ideally, **the device should have a battery life of around 6 hours of typical use.** This should provide students with enough power to get through a typical school day without needing to charge it or plug it into power. If students are in the habit of charging their computer daily and bringing it to school with a fully charged battery, not having to worry about finding power during a lesson will ensure a more seamless experience.

Where students engage in activities that require more computing power (such as video and animation creation, games development or high-end programming tasks), higher capacity batteries are recommended.

Gungahlin College is a modern building and power is available for students around the college and in powered lockers available for hire from the front office. However, we cannot provide backup power packs for student devices – the variation in manufacturer power packs and plugs is too great for us to be able to offer this service. Therefore, responsibility rests with the student to manage the power and battery of their laptop.

4. Headphone Jack and Headphones

Students will often use multimedia assets in their learning, and as more personalised learning programs are offered at the school, this can mean students in the same class will be accessing a range of different sources of materials. Since this can provide disruptive if too many people are trying to listen to different things, **all devices should have a headphone jack** that will allow students to plug in headphones to listen without disturbing others. If a device doesn't have a standard headphone jack, adapters and/or USB options are available for purchase at major retailers.

5. Administrative Access

Students will be encouraged to install applications for use in their classes that the school has licensed for their use, or are free for personal use. To do this, **students will need administrative access to their device**. At this stage of their lives, students should be developing their device management skills and independence, so we would ask that any account set up for them not be restricted in any way.

6. Anti-Virus/Anti-Malware Software

An unfortunate reality of the modern, connected world is the increasing security threat associated with Viruses and Malware. While some platforms are more susceptible than others (Android and Windows tend to be much more risky than OS X and iOS), no platform is 100% secure. Therefore, **we recommend that students install Anti-Virus Software and/or set up appropriate security features** on their device to protect themselves from data loss and or security breaches, and regularly monitor the health and security of their device.

7. Device Warranties

Accidents happen, and any device can be susceptible to hardware faults and/or software corruption. For this reason, **we strongly recommend that any device includes a warranty/service agreement** that ensures it can be replaced or repaired in a timely manner should anything happen to it during the school year. While we can and will assist students in the event of a device failure, we cannot repair devices for them.

“Nice to Have” features

While the features above should be seen as being absolutely necessary for any device a student brings with them to school, you may also want to consider the following features for any device you purchase.

1. Multimedia Peripherals – Camera and Microphone

Portable devices now provide many simple tools that allow students to generate multimedia content to demonstrate their learning. Therefore, devices that have a built-in microphone and camera provide alternative ways for students to capture content. It is not uncommon for students to take photographs of diagrams and/or notes, or to record their own comments during study and/or class that provide further information beyond that provided by the class materials.

2. Input Peripherals

The way a student uses a device and the software they use regularly will influence the choice of peripherals they use to interact with it. Standard input methods on modern devices include:

- Keyboard
 - All devices will come with either a physical keyboard or a software keyboard that is available on the device. While a software keyboard is fine for casual use, if a student is going to be using the device for periods of extensive typing having a portable, physical keyboard is a good investment. There are many Bluetooth

enabled keyboards for iPads, Windows Tablets and Android Tablets available through major retailers.

- Touchpad/Trackpad
 - Many modern laptops use a trackpad as the primary mode of cursor input and interaction. While the touchpads on Apple devices are held in high regard across the board, the quality of trackpads on Windows and Android devices can vary greatly. Tablets tend to rely on touch-based input and don't require trackpads.
- Mouse
 - If the trackpad on the computer is of dubious quality, the student uses applications that benefit from using a mouse as primary input method (such as CADD or Photoshop), or the student has a general preference for using a mouse, you can purchase an inexpensive mouse (either wireless or cables) from any major retailer or department store.
- Touchscreen
 - Touchscreen input is the primary mode of input on many tablet devices, but some laptops also come with touchscreens. While this technology is still in its infancy in most cases, some types of input (such as "inking" i.e. using a stylus to write or draw) may be possible on devices that support it.
- Stylus and/or Tablets / Pen(s)
 - Some devices that don't ship with standard touchscreens (or use capacitive technology like the iPad) can still allow pen-based input through specialised styluses, or through external drawing tablet technology such as that available from Wacom. If you are interested in pen-based input, particularly for drawing and/or writing, you may want to consider these types of peripherals.
 - *Note: The Apple Pencil is ONLY supported on the iPad Pro – no other device manufactured by Apple or third-parties.*

Consider the information above before choosing a device on the basis of any form of input – it will help you choose an appropriate device without paying for unnecessary features.

3. Automated Backup Tools

Gungahlin College must abide by the Office of the Board of Senior Secondary Studies assessment policies, and these are quite strict regarding student submission of assessment. If a student loses their work as a result of computer failure or similar, this is not a sufficient excuse to grant an extension in normal circumstances. For this reason, you may find it useful to **ask if the device you are buying has a standard backup/restore procedure**, or supports software that does this for you.

All major operating systems include this feature:

- OS X (Apple devices) has Time Machine built-in, which will automatically back up the contents of your computer when you plug in an external drive;
- iOS devices (such as the iPad) can automatically back your content up to the Internet (via iCloud) or to a computer via USB;

- Android devices can backup to Google Drive or your computer (similar to iOS devices); and
- New versions of Windows include a Backup and Restore feature that you will need to activate, but perform similarly to Time Machine on OS X.

By using automated backup and ensuring you back your data up regularly, any catastrophic failure won't result in the loss of your data – you'll still have it around and will be able to submit it without missing an assessment deadline.

If you're purchasing a device that doesn't have an automated built-in feature, you may want to buy and install software that will do this for you; or you can develop your own backup strategy that will protect you in case of data loss.

4. Physical Protection and Transport

Remember that this technology is expensive, even if you only purchase it once every four years. Ideally you want the device to last the distance, **so investing in carry bags, protective cases/shells, extra warranty** (as mentioned previously) and reinforcing good behaviours with your child will help with that.

Technical Specifications and Device Suggestions

As with any purchase you make, the old adage *"you get what you pay for"* rings true. If you're looking for a device that will last well into the future, it doesn't hurt to spend a little bit of extra money on it by upgrading some of the components above the minimum specifications suggested below.

Taking the above into account, the following list of suggested devices would be suitable for a typical student enrolled at Gungahlin College.

Form Factor: Tablet

If you are considering purchasing a tablet device, we recommend:

- iPad
- iPad Mini
- iPad Pro
- Samsung Galaxy Tablet (or equivalent Android device)
- Windows 10 Tablets

Availability: All of these devices are commonly available at major electronics retailers and department stores, as well as manufacturer stores.

Benefits:

- Most tablets have very good battery life – usually 10+ hours of sustained use, which is ideal for the length of the school day;

- Access to the Google Apps for Education Suite and Office Suite is available on all iOS and Windows devices. Office is NOT available on Android, but the Google Apps are and are well supported on the platform;
- The App Store and Google Play have a wide array of Apps available, and many are free. There is usually an App available for any purpose or need a student would have in the classroom, and even paid Apps are inexpensive; and
- Tablets are highly portable, making them very suitable for students who do not need much computing power but are going to be working in highly practical subject areas. See the section on *Specialist Subject Requirements* for more details.

Weaknesses:

- Many tablets only have software keyboards, so extended periods of typing are not great ergonomically. They also tend to have smaller screens, which can lead to eye stress over extended periods of time if you are concentrating on small text, so you will want to consider external input peripherals such as those mentioned in the previous section;
- Tablets generally cannot be upgraded, so consider the specifications on the tablet such as internal storage and processing power – cheaper tablets tend to have a much shorter shelf life;
- The portability of tablets also makes them more susceptible to accidental damage through dropping them; and
- There are some things that students may need to do for their classes that just aren't possible on tablets (yet). Check the section on Specialist Subject Requirements below to ensure a tablet will work for your child's package.

Other Considerations:

- The size of the screen and features of the tablet are often restricted/dependent on the overall size of the device. Therefore, tablets like the iPad Mini or Nexus 7 are less powerful, and while the iPad Pro is much more powerful and capable, it is also very expensive; and
- If you are considering a "Pro" tablet of any brand/make, think carefully about whether or not the additional features are critical for your child's educational choices and experience.

Note: The Windows Surface is not mentioned here – it has been included in the Laptop section below.

Form Factor: Laptop

If you are considering purchasing a laptop device, we recommend:

- MacBook
- MacBook Air
- MacBook Pro
- Windows 10 Compatible PC Laptop (including Windows Surface)
- Linux Compatible Laptop (Students using Linux should be fluent in its use)

The technical specifications of laptops vary widely. While any of the Apple devices are suitable in their standard configurations, there is no “standard” configuration for Windows laptops, so when purchasing a Windows laptop consider the following as a set of minimum requirements:

- Intel i5 Processor
- 4GB RAM (8GB is recommended if affordable)
- 500GB Hard Disk Drive

Availability: All of these devices are commonly available at major electronics retailers and department stores, as well as manufacturer stores.

Benefits:

- Although generally less than that found on tablets, modern laptops and advancements in computer hardware technology mean that even inexpensive devices have reasonable battery life. Always check what the advertised battery life is, and shave an hour off to get an indication of what is likely to be typical in a school day;
- Laptops can be manufactured in a wide range of screen sizes and resolutions, meaning that the desktop real estate available to users is far greater than that of a tablet. If you’re going to be doing anything that requires working with a lot of graphics, media or text, a laptop with a larger screen will be highly beneficial;
- Capabilities of laptops far exceed tablets, and the software available for them is much more mature – for some subjects, this makes them a necessary purchase;
- External peripherals used in a range of classes (such as Dataloggers in Science, for example) are far more robust and powerful when used on laptop computers; in fact, many peripherals don’t support tablets at all; and
- Many laptops (but not all) are upgradeable, meaning that their useful life can often be extended without needing to purchase something brand new.

Weaknesses:

- Laptops are heavier (although UltraBook form factors and devices like the MacBook Air and MacBook are lighter than some tablets!) and not as portable;
- In practical subjects such as Hospitality or Furniture Construction, they are not as convenient as tablets and are susceptible to damage from things like food, oil, sawdust and other foreign objects that can get into moving parts and/or vents;
- Input on a laptop with peripherals such as a stylus or pen requires additional hardware purchases, and these are usually more expensive tablet equivalents; and
- Software for laptops is usually more expensive, although this is changing thanks to the Windows Store and App Store, and with an increasing number of Open-Source alternatives to common software packages.

Other Considerations:

- Applications used in some subjects (see Specialist Requirements Below) can be expensive and not all companies offer educational discounts, so if you’re purchasing a device for students to use in a subject like Media, consider whether you are willing to pay the cost of the software before purchasing the laptop – you may find a tablet is a

better option for your child in all other classes, and that the school-provided resources in specialist subjects are sufficient.

Specialist Subject Requirements

Some courses offered by the College will require students to use specific software, or to have access to a device that is more powerful and/or feature complete than what may be available in a basic, inexpensive laptop.

If a subject is not listed below, it indicates that a standard device with the features outlined above is sufficient for all class activities.

Media

Media students can't really complete the coursework on tablet devices – the form factor generally does not allow for sufficiently powerful hardware to be included.

Students who choose to study Media will have all of their Media lessons scheduled in a specialist Media computer lab. The computers in this lab are all high specification Apple iMacs that contain the necessary software to complete the requirements of the Media course. This means that students do NOT need to purchase specialised equipment if they are happy to use the school facilities.

However, some students would prefer to have the ability to complete all aspects of the class work on their own computers. If this is the case, they will need devices with higher specifications, including:

- A minimum of 8GB of RAM;
- An Intel i7 Processor or higher;
- A computer with a dedicated graphics card (usually manufactured by NVidia or ATI), rather than integrated graphics; and
- It would also be beneficial to have a higher screen resolution – something like the Retina display on the iMac/MacBook range, or a minimum of 1080p on a Windows PC.

Note that the school licensing arrangements do not allow for the school-licensed software (i.e. the Adobe Creative Suite) to be installed on student-owned computers, so students would need to obtain their own copy of the software for their own devices.

Photography

Photography students will be scheduled in a specialist computer lab for all lessons with access to iMacs and Photoshop (and similar software). Therefore, students do not need to purchase computers specifically for use in Photography classes.

As in Media, school licensing arrangements do not allow for the school-licensed software (i.e. the Adobe Creative Suite) to be installed on student-owned computers, so students would need to obtain their own copy.

Graphic Design

Graphic Design students will be scheduled in a specialist computer lab for all lessons with access to iMacs or Windows PCs with Photoshop (and similar software). Therefore, students do not need to purchase computers specifically for use in Photography classes.

As in Media and Photography, school licensing arrangements do not allow for the school-licensed software (i.e. the Adobe Creative Suite) to be installed on student-owned computers, so students would need to obtain their own copy.

CADD/Architecture

CADD/Architecture students will be scheduled in a specialist computer lab for all lessons with access to Windows PCs running a range of drawing and prototyping software. Therefore, students do not need to purchase computers specifically for use in CADD or Architecture classes.

Unlike Media, Photography and Graphic Design, Personal Editions of the Autodesk software suite are available to students to download free and install on their own devices. If a student would like to install this software on their own device, we recommend they purchase a device with specifications similar to those recommended to Media students:

- A minimum of 8GB of RAM;
- An Intel i7 Processor or higher;
- A computer with a dedicated graphics card (usually manufactured by NVidia or ATI), rather than integrated graphics; and
- A minimum resolution of 1080p;

Some software used in CADD/Architecture classes (and in the industry generally) is Windows specific, so before purchasing a Mac (if that is being considered), check whether or not the software being used or an alternative is available.

Information Technology

Information Technology students undertake a wide range of activities, and many of these will require them to install their own applications and undertake a series of programming and/or development tasks. The majority of these tasks cannot be performed on a tablet, so Information Technology students must purchase a laptop and have full, administrative privileges on the device.

Information Technology students are NOT scheduled in a computer lab – students are expected to be completing work outside of school hours, and to facilitate this and ensure students have maximum opportunities for engaging with the material, a full BYOD model is preferred.

Students in Information Technology classes generally do not require computers that have higher specifications than those listed as the minimum in the Technical Specifications section. However, if a student is going to pursue game design subjects, or is likely to undertake development projects in the future, we recommend upgrading the minimum specifications to:

- A minimum of 8GB of RAM;
- An Intel i5 or i7 Processor (or higher);
- A computer with a dedicated graphics card (usually manufactured by NVidia or ATI), rather than integrated graphics; and
- It would also be beneficial to have a higher screen resolution – something like the Retina display on the iMac/MacBook range, or a minimum of 1080p on a Windows PC.

All software used in Information Technology classes that students will be required to install is either licensed by the school, available to students for free from the publisher, or is available open-source and therefore at no additional cost to the student.

Business Administration

The Business Administration Course involves students learning and undertaking many activities that are typical in an office environment. For this reason, Business Administration classes are scheduled in a computer lab that also doubles as an office space with meeting table.

Students will find it beneficial to have their own computers, however any device used in the class as a primary computer should have a reasonable sized screen and an external keyboard/mouse for extended periods of typing.

The majority of tasks in the course require access to Microsoft Office, but this is provided free to all students through the ETD Office 365 subscription. Business Administration teachers will direct students to the online portal where a copy of Office can be obtained for installation on their devices.

Where specialist software is required that is not available to students at no charge, students will have access to it on the computers in the class teaching space.

Accounting

Students in Accounting classes will use spreadsheets and accounting software over the course of their study, however this is not required at all times. Therefore, their device of choice should be capable of manipulating spreadsheet data.

Gungahlin College will be using Xero – an online accounting software platform – in Accounting classes, and Xero is available in the browser for all laptop computers, and in browser and via native apps on iOS and Android. Therefore, students are not required to have a laptop for their accounting class, although a larger screen size is beneficial on their device.

Science

Science students will often use their computers to access materials published on Schoology – our online learning management system – but will also use equipment such as data loggers and/or digital microscopes that are only compatible with laptop devices. These activities are usually done in groups, so while each group would require access to the necessary software and

hardware, it is not necessary for every student in the class to have a laptop if they have access to one in their group.

If a student is intending to pursue Science beyond college, a laptop is recommended since there are many software packages and peripherals used in tertiary study that are not supported on tablet devices.

Hospitality

Students in Hospitality classes will often make use of online materials during practical sessions. Given the hazardous nature of kitchens to laptop keyboards, vents and hardware, devices such as tablets are preferred for both portability and robustness.

Sports Studies, Exercise Science and Outdoor Education

Students in Physical Education subjects, particularly those such as Sports Studies and Exercise Science, will undertake a range of activities examining things such as sport technique and physical movement. This is often done during practical sessions, so devices with cameras and simple video editing tools (such as tablets like the iPad) are very useful for recording activities and demonstrating knowledge acquisition. Note that these types of activities are also possible with Smartphones, so students may consider either a tablet for use across all of their classes, of a laptop coupled with a Smartphone for these kinds of use cases.

Workshop Classes (Metalwork, Furniture Construction etc.)

The wood and metal workshops are hazardous environments for devices with moving parts and vents. For this reason, devices such as tablets are preferred for both portability and robustness.

Concerns? Questions?

If you have any concerns about the contents of this document, or if you have any additional questions you would like answered, you can contact the school:

- By phone – (02) 6142 1000
- By email – gungahlincollege@ed.act.edu.au

Depending on the nature of your query, you should ask for:

- If it relates generally to the educational aspects of BYOD, you should ask to speak to the Director of Information Technology;
- If it is regarding specifics associated with device technical requirements and capability, you should ask for the Information Technology Officer (ITO); or
- If it is regarding the requirements of a specific subject area, you should ask to speak to the relevant subject teacher.