



Considerations for Choosing Chromebooks



Image: [Pierre Lecourt](#)

This guide is intended to help decision-makers in schools decide whether Chromebooks will be a suitable device for their situation and if so, what to think about when making a purchasing decision.

Chromebooks are relatively low-priced laptops, which are designed to be used mostly while connected to the Internet. They require the user to have a Google Account to be able to log-in or can be used by anybody with a Guest log-in. This account is usually provided as part of the school's G Suite for Education set-up.

Chromebooks enable students to gain ready access to the internet and the majority of things that can be done using the Chrome internet browser. They integrate particularly well with the Google Apps suite of learning tools, but can also be used successfully for most other web-based services and activities.

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Once you have read this guide you are welcome to contact the Connected Learning Advisory to get more personal assistance. We aim to provide consistent, unbiased advice

and are free of charge to all state and state-integrated New Zealand schools and kura. Our advisors can help with all aspects outlined in this guide as well as provide peer review of the decisions you reach before you take your next steps.

For more information visit www.connectedlearning.org.nz

Check out our resources at resources.connectedlearning.org.nz

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About Chromebooks



Chromebooks are laptops with the usual things that you'd expect from a laptop like a keyboard, trackpad, webcam and connections for USB devices or monitors.

Chromebooks run a very limited operating system that is like only having the Chrome Browser available instead of the usual range of software applications that Windows and Mac devices run. Chromebooks have limited computing capabilities and file storage as most of this is done in the cloud rather than on the computer. This means that they can be made with cheaper components and enjoy longer battery life than most other laptops.

As devices, Chromebook's key benefits include:

- ease of installation
- simplified management
- rapid boot-up time
- long battery life
- no requirement for virus protection software

A Chromebook receives automatic updates that improve and enhance the device and its operating system so they should be faster to start up and operate as they get older. Like any device, though, advances in hardware and technology eventually do make them out-of-date.

Chromebooks are designed to predominantly be used online but can be set up for offline access to the key apps such as Drive, Docs and GMail, Contacts and Calendar.

From 2017, some Chromebooks have begun to support running Android apps. See [Android Apps on Chrome FAQ's](#).

Chromebooks are made by a number of manufacturers. This [Chromebooks Specs](#) website and this [Chromebook Comparison Chart](#) may be useful to provide a list of what is available globally along with their specifications. Not all these models will be available in New Zealand, though.

[The Google for Education Training Centre - Chromebooks Unit](#) provides up to date information and tutorials on using Chromebooks.

Chromebooks and Learning



Before considering the devices themselves it is essential that you have some ideas on how the devices might be used to support specific learning outcomes or your vision for learning.

For example, you could consider how important for you are aspects such as:

- **Mobility** - devices being able to be used in different places. A Chromebook, like any laptop, is portable but may not be as truly mobile as a tablet. They tend to have very good battery life, lasting over a full day's use.
- **Communication, Connecting, Collaboration** - working together physically or digitally. A Chromebook is a good tool to foster these ways of working using Google Apps or other tools.
- **Simplicity** - Chromebooks are simple to use, allowing more focus on the learning rather than technology.
- **Creativity** - making new things. Using the Web Apps from the Chrome Web Store and other other websites, Chromebooks allow for creativity, particularly when it comes to writing. A Chromebook does not easily enable movies or photos to captured.
- **Inclusiveness** - will the devices support students with particular learning needs and support concept such as Universal Design for Learning? Chromebooks have a good set of tools for accessibility but these are limited for students who are blind or low vision.
- **Curriculum** aspects such as Numeracy, Literacy or specific activities (eg writing using a keyboard) or tools (eg specific creator software) that are necessary to access the curriculum
- Your school's overall **vision for learning** - what's important for your situation? eg. personalising learning, making learning authentic, involving the community, inquiry learning, differentiation, feedback from parents etc. How will Chromebooks specifically help with these aspects?

Trialling



A good way to find out whether Chromebooks are a suitable fit for your needs is to purchase or borrow one and discover what is involved in getting it set up and how it performs in everyday use by students.

Considerations



Once you are clear on the intended purposes of the Chromebook to support learning, there are other considerations that could be factored in.

Not all considerations will be relevant for your situation, of course.

The considerations needed for Chromebooks that are owned by the school and shared in classes with students are different to those for Chromebooks that students themselves will own and take to and from school. The requirements in a primary school may be different to those in a secondary school.

Deployment and Management

In general, Chromebooks are straightforward to deploy and manage. That said, consider what expertise and time is required to set up and deploy the Chromebooks, who will do this and how much will might cost. Check that your network and Wifi setup works ok for your Chromebooks.

See [CLA's Deployment and Management guide](#) for more information

Usage

- Consider what apps or extensions will you deploy to the devices and specifically consider accessibility and inclusion for all students when making these decisions.
- Will all the websites that are commonly used work ok on the Chromebooks? For example, some sites that use Java don't work on a Chromebook. Alternative solutions can most often be found if this is the case.
- How will you store, charge and keep your devices secure from theft or damage yet make them easy for students to access?

Procurement

- What is the price and availability of the Chromebooks?
- Reliability - does the particular Chromebook model have a good track record?
- See the [CLA procurement Guide](#) for more information about procurement.

Physical Characteristics

- **Robustness** - will the Chromebook be robust enough for your situation? This is often one of the most important things to consider. It may be worth paying a higher price for a model that is less likely to break over its expected lifetime.

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- **Weight** - varies from 1-2kg - this may be important if students have to carry the Chromebooks
 - **Touch** capability - there is an increased cost but many advantages to touch capability, especially for students that might find it difficult to use a mouse and keyboard. Google is beginning to roll-out the ability for Android Apps to run on Chromebooks which will make touchscreens increasingly compelling.
 - **Quality** of keyboard, camera/s, touch-pad, speakers, microphone.
 - **Connections** / expansion available (eg VGA, HDMI, USB, Memory cards).

Technical Specifications

- **Battery Life.** Many Chromebooks last up to 10 hours continuous use, while others around 4 hours. Consider your requirements before making a choice, otherwise charging during the school day may be necessary.
 - **Screen size and resolution.** Smaller screens are more mobile, but display sizes of 12" or lower can be difficult to work with for extended periods and are not as good for students working together in groups around a single screen.
 - **Built-in storage size and type.** This is not especially important on a Chromebook because the storage is used mainly for offline work. Note that the operating system installation will use up around 6GB of space, so for a 16GB model, there will be around 10GB available for storage of offline files.
 - **Memory.** More memory enables more browser tabs to be working simultaneously without slowing things down too much. This is an important consideration as typically students will be using multiple tabs.
 - **Processor.** A faster processor means that the device performs more snappily, particularly on websites and apps that have lots of scripts or multimedia content such as games . See <http://product.info/chromebooks/#f&> - the processor speeds ('octane') can be compared.
 - **Graphics Processing.** This is not usually an important consideration in the learning environment but is more important if the Chromebook is going to be used for games.
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- **Wireless frequencies.** Some Chromebooks do not work with the 5GHz wifi spectrum. If your school is capable of running 5GHz wifi then it is a good idea to choose Chromebooks that can use it. See <http://pocketnow.com/2014/01/23/5ghz-wifi> for more detail.

Other Considerations

- **Compatibility** with peripherals (eg printers and print accounting software, USB devices, how to display onto a projector or TV).
- **Warranty** period and in-warranty and out-of-warranty service offered such as on-site service or returning via a courier
- **Expected end of life** (see this [End of Life](#) site which provides advance notice when specific models of Chromebooks will no longer accept upgrades and patches - usually five years from when the device enters the market).

Chrome Education Licenses



By default, at no cost, the [Google Admin Console](#) (a website that the school's administrators can access to manage the G Suite domain for the school) enables the management of the user's experience such as:

- Automatically loading Apps and Extensions
- Adding Bookmarks for users
- Specifying the homepage or tabs to load at start-up
- Specifying the Chromebook desktop wallpaper
- Enabling or disabling Chrome Browser features, such as "incognito mode", guest login, etc.

In order to manage the Devices themselves, the school will need to purchase a Chrome Education Licence for each device from an authorised reseller (usually about \$40). Among other things, the Chrome Education Licence allows an administrator to:

- Track the usage of the Chromebook (eg time spent in use, who last used it)
- Manage who can log-in to a Chromebook (eg guest, school accounts only)
- Configure wireless, printing and other technical settings

	<ul style="list-style-type: none"> • Track the serial numbers of the Chromebooks for asset management • Manage Chromebooks from a Google Sheet using the Chromebook Inventory Add-on <p>For a list of all the settings that the Chrome Education License enables, visit the Manage Device Settings Google Support page.</p> <p>In general, if you are considering purchasing a reasonable number of Chromebooks, then we recommend you do also purchase the Chrome Education License.</p>
<p>Useful Links</p> 	<ul style="list-style-type: none"> • The Connected Learning Advisory's Chromebook Deployment Guide provides more detail about the initial configuration and on-going management of Chromebooks. • The Chromebook Youtube Channel provides many good introductory clips • The Considering a Chromebook section of Google's Support provides a list of common questions and answers. • The ChromeBook/Chrome User Group on the Virtual Learning Network (VLN) is a valuable resource to consider.

This guide has been produced in response to a number of specific queries about Chromebooks from schools. It should not be read as a recommendation or endorsement of any specific product. The Connected Learning Advisory is a Ministry of Education supported service that provides schools with technology information relevant to their queries and does not recommend one product over another.



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