

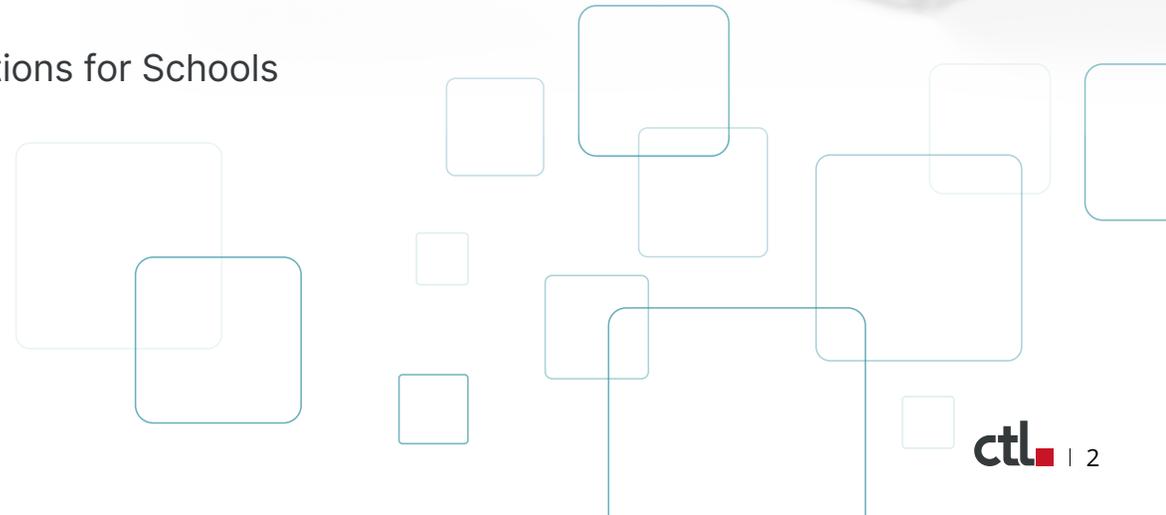
# Mastering 1:1 Chromebook Deployments

School IT best practices for deploying devices to transform learning and empower students this school year.



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# Charting Your Chromebook Course:

## Crafting a Device Strategy for Schools

**Equipping your school with Chromebooks offers a powerful opportunity to enhance learning, collaboration, and administrative efficiency. But embarking on this journey requires careful planning and a well-defined device strategy. This article will guide you through the key considerations.**

### Understanding your needs.

Consider these essential factors when evaluating your Chromebook investments.

**Grade levels.** Different age groups demand diverse features. Younger students benefit from rugged devices, while high schoolers might require more processing power.

At CTL, we've seen customers enact a series of strategies to work through these challenges. Examples of some customer models include:

### Device features by grade level.

- **Grades K through 2:** Devices with tablet capabilities while they learn to read and write.
- **Grades 3 through 5/6:** Basic Chromebook devices, ruggedized versions, ideally with protective snap-on cases.
- **Grades 6/7/8:** Chromebook devices, possibly with rotating world view cameras for greater online collaboration, ruggedized versions, ideally with protective snap-on cases.
- **Grades 9-12:** Ultra performance Chromebook devices, with advanced processing power, higher levels of RAM and storage, pens for use with 2-in-1 convertible Chromebooks, and other higher function features.

**The "hand-me-down" method.** Purchase high level Chromebooks for high schoolers only. Middle school students receive the used high school devices, and elementary students receive the used middle school devices.

**Curriculum.** Assess software and platform compatibility with your curriculum and any specialized needs, like multimedia editing, video collaboration, or STEM applications.

**Budget.** The initial device price is just the beginning. As with any technology program, it's important to determine your total cost of ownership over the length of your program. Consider provisioning and set-up costs and ongoing costs like repairs, software licenses, maintenance, and repair support. Perhaps you can trade in old devices and receive a discount on new ones? If so, explore services like [CTL's Chromebook trade-in program](#) and build that in to your formula.

Work with your vendor to understand what's included in the initial purchase price (and what's not), the available warranty and service plans, and cost it out over the length of your program.

**1:1 vs. shared devices.** 1:1 programs offer personalized learning but pose higher investment and management demands. Shared devices can be cost-effective but might limit individual access.

## Tailoring your solution.

With your needs identified, it's time to understand how you might build a solution comprised of hardware, software, and device management strategies that best suits your budget and your deployment model. Here are several items to consider:

**Model selection.** Match features like durability, performance, peripherals, and screen size to your specific device strategy. Consider the benefits of clamshell vs. 2-in-1 convertible tablet devices and touchscreen vs non-touchscreen for your needs.

**Software licensing.** For affordability and easy management, choose cloud-based solutions like Google Workspace for Education. Explore third-party software for specialized requirements. Chromebooks require Google Education Upgrade licensing, which may or may not be sold from your vendor. We recommend working with a partner who can offer you both the Chromebook hardware and required licensing in a bundled solution, such as CTL.

**Deployment and management.** Leverage Google Admin Console and the power of cloud computing to easily manage all of your ChromeOS devices. Consider third-party solutions like GoGuardian or Lightspeed for granular control and security.

**Vendor mix n' match.** Implementing a single vendor strategy for Chromebooks in K-12 school districts offers significant advantages in terms of standardization, partnership benefits, repairability, operational efficiency, and additional support services. By standardizing devices across the district, schools can streamline management processes, ensure consistent performance, and plan budgets more effectively.

Direct partnerships with manufacturers like CTL provide tailored lifecycle services, competitive pricing, and specialized support for the educational environment, including:



### Consistency in make and model.

Ensure uniformity across the district, simplifying management and troubleshooting.



### Competitive pricing.

Economies of scale and negotiated rates provide cost savings.



### Single point of contact.

Simplify communication and support processes for faster issue resolution.



### Price consistency for non-covered damages.

Predictable costs for parts and labor aid in budget planning.



### Direct lifecycle services partnership.

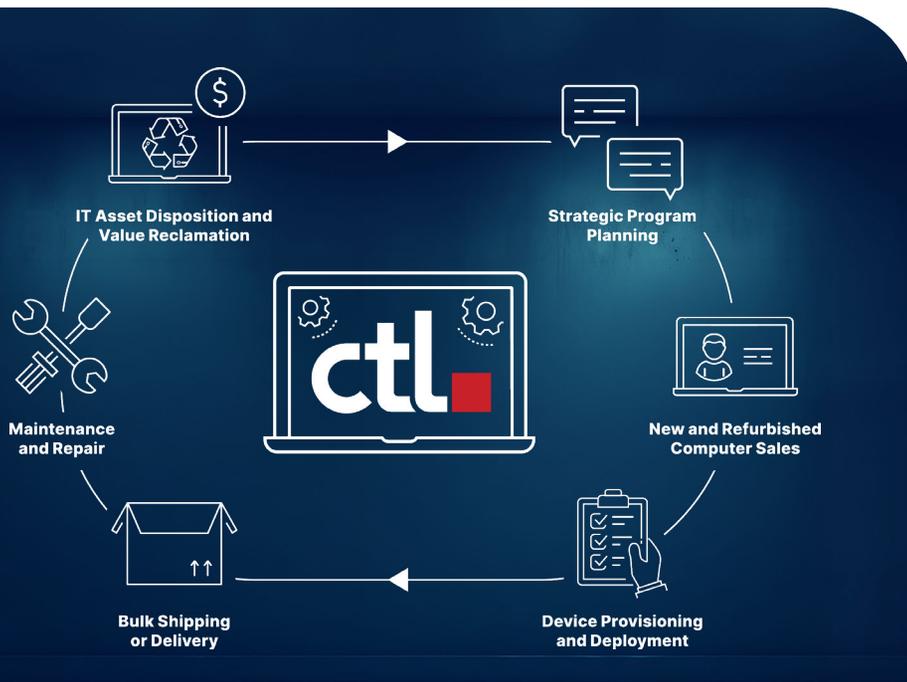
A direct relationship with the manufacturer, such as CTL, facilitates better communication and faster resolution of issues, available stock of parts for faster service, and other benefits.

## Maximizing value.

Purchase and set-up is just the first step. Plan for your whole life cycle of device deployment and management, keeping these important factors in mind:

**Ongoing support.** This is a crucial factor for most schools. If you've bought from a 3rd party, what is the package for ongoing support? Here are some components to consider:

- Warranties and accidental damage plans
- Self-repair via students or staff
- OEM-expert repair
- 3rd party repair partners near you



## Select a True EdTech Lifecycle Partner

**Whole-life cycle management.** Consider buy-back programs to leverage their value into new programs or responsible recycling services to manage device end-of-life sustainably.

**Future-proofing.** Choose Chromebooks with upgradeable components or consider leasing options to stay ahead of evolving technology needs.

**Spares and loaners.** Ensure you plan for devices to be lost, stolen, or out of service. CTL has customers that purchase refurbished equipment, for example, to cover these gaps.

## Partnering for success.

The partners you select for your technology journey can make a significant difference in your experience. If you have a trained in-house team, perhaps ordering just the devices alone, online, from a reseller, with no support will work just fine. Or, perhaps you're new to 1:1 device deployments and require best practice advice, full-service warranties and service plans, or just someone to talk to on the phone. Ensure the vendor you select can provide not only the hardware, but also the services you think you'll need.

**Engaging a trusted vendor.** Choose a vendor with dedicated expertise in education technology and Chromebooks. Look for comprehensive solutions and responsive support. Request a dedicated service team and account manager for your important investment.

**Professional development.** Invest in training for teachers and IT staff to maximize the potential for learning and administration.

By considering these key factors, you can create a Chromebook device strategy that empowers your students, faculty, and IT team while keeping your budget in check.

# Making the Smartest Investments:

## Choosing the Right Chromebook Hardware

Navigating the world of educational technology can feel like a budgetary tightrope walk. Striking the balance between affordability and functionality is crucial, especially for schools grappling with limited resources. Chromebooks offer a powerful, cost-effective solution that empowers learning without breaking the bank.



We'll guide you through choosing the right Chromebook hardware for your school's diverse needs, exploring several key considerations.

### Budget.

This is most often the biggest question: how much can you buy with the budget you have? We suggest you consider all of the costs of a Chromebook program to ensure you're planning for the entire lifetime of the program. In a typical IT environment, 20% of the budget is spent on new devices, 20% on configuration and set-up, and then 60% on maintenance, repair, updates, and other services that may require downtime. Ensure you look past that initial purchase price to see what you're actually getting. Are you receiving free zero-touch enrollment configuration services, for example? What kind of service plan are you buying with that? What downstream expenses should you anticipate?

### Performance requirements.

Does your curriculum involve multimedia editing, STEM activities, or specialized software? Match device capabilities to specific needs. Some students may do fine with 8 GB of RAM and 64 GB of memory, while others may require higher RAM and memory. A previous-generation processor may be fine for younger students, while high-schoolers may require the latest Intel chipset for advanced applications that are aided by AI.

## Type of Chromebooks needed.

You'll probably need Chromebooks for different grades and different use cases. Are Chromebooks for shared use in labs or individual devices for a 1:1 program? Shared environments might allow for lower-cost options but restrict at-home learning, while 1:1 programs deliver anytime learning but require greater durability and manageability. Don't forget special populations, such as virtual learners or low-income households without Wi-Fi — they may require an always-connected Chromebook such as an LTE-enabled device.

Consider the differences between new Chromebooks, or if, for some use cases, refurbished equipment will satisfy the need.

Considerations can include:



### Student processing levels required

Advanced, intermediate, low



### Expected lifetime of device use

A few years, up to 10 years



### Device use cases

1:1 daily use, occasional library use, loaners, spares, summer school, test centers, and other scenarios



## Durability.

Younger students require rugged devices with spill-proof keyboards and shockproof designs, while high schoolers might benefit from higher-performance models for demanding applications. Ensure you look for:

- Testing to MIL-STD-810H standards for shock, vibration, and other rugged performance indicators
- Spill-resistant keyboards and track pads
- Ease and cost of repairability of common points of breakage, such as individual keys or screens
- Easy tech support and repair videos for your purchased model from the OEM

## Screen size.

This may sound obvious, but match your screen size to your use case. Younger students may do fine with an 11.6" device, while your high-schoolers and teachers may need a 14" screen size model.

## I/O requirements.

Check the ports to ensure the device not only offers what you need, but is built for what may happen to it in the future. As an example, some manufacturers have gone to a single USB-C charging port. While this lowers the overall device cost, if a student breaks it, the whole motherboard will need replacing at a high cost per device. With 2 USB-C charging ports – on a mother and daughter board – you can keep the device running if one of the ports is broken by a student.

## Connectivity needs.

Chromebooks make the most of cloud computing, but it all depends on the strength and reliability of the connectivity system. Do you have reliable Wi-Fi coverage across the school? Are you moving to a private wireless network to ensure all students can access the network from wherever they are? Select models incorporating the improvements of Wi-Fi 6E to ensure enough user bandwidth. Or, explore LTE-enabled Chromebooks for off-site or away-from-network access.

As with any technology, it's important to keep an eye on trends. Ensure you understand the options for 5G LTE connectivity and private wireless network technologies like CBRS. CTL posts on these topics frequently, so feel free to follow us on social media for the latest updates.

## Warranty and service options.

These plans are the unsung heroes of Chromebook hardware purchasing. Due to the time and cost models of any Chromebooks that might need servicing, ensure your investments are protected with a solid warranty and service plan from the OEM manufacturer. Third parties may offer these but buyer beware — they can require lengthy turnaround times with non-original parts. Many manufacturers offer extended warranties as well as bundled Google licensing, premium battery replacement plans, and accidental damage repair plans. Work with your OEM to put together a plan that works best for your use case and budget. CTL, in particular, offers accident packs that offer repair capability — not tied to a serial number — for maximum repair flexibility.

## Making informed choices.

Choosing the right Chromebook hardware doesn't have to be a daunting task. By understanding your needs, creating your TCO model, and optimizing your investments by use case, you can empower your school with technology that fosters learning without breaking the bank.



# Navigating the Journey:

## Chromebook Deployment for Seamless Integration

**Equipping your school with Chromebooks is an exciting step, and deployment is the next challenge. This chapter will guide you through various deployment methods, to ensure a smooth transition and maximize the potential of your new technology.**

### Deployment options.

These are just a few of the options to consider for your deployment, with the benefits and considerations of each.

#### Onsite deployment.

- **Ideal for:** smaller deployments, hands-on control, and familiarity with your IT infrastructure.
- **Process:** IT staff unpacks, configures, and enrolls devices individually.
- **Considerations:** time-consuming for large deployments, requires technical expertise.

#### Vendor white glove deployment.

- **Ideal for:** larger deployments, streamlined experience, reduced IT burden, professional configuration.
- **Process:** your vendor, like CTL, pre-configures and enrolls devices at their facility, minimizing onsite setup. Options can include asset-tagging, custom branding, battery locking, case application, .csv reconciliation, and other configuration and deployment services.

- **Considerations:** depending on the vendor, there may be additional cost, requires accurate device pre-configuration information.
- **Suggestion:** understand what your Chromebook supplier may include for free.

#### Zero-touch enrollment auto deploy.

- **Ideal for:** large deployments, minimal IT involvement, automated setup.
- **Process:** devices automatically configure and enroll upon network connection.
- **Considerations:** requires compatible network infrastructure, limited customization options.
- **Suggestion:** understand if your Chromebook supplier, like CTL, may offer pre-configuration of your devices with ZTE for free.

#### Hybrid approach.

- **Ideal for:** flexibility, combining different methods based on specific needs.
- **Process:** utilize a vendor for white glove service for bulk configuration combined with onsite deployment for specialized setups.
- **Considerations:** requires careful IT group planning and vendor coordination across methods.

# Top deployment services requested by CTL customers

Ensure you review your own program to include Chromebook deployment to smooth your deployment process.

1. 1:1 customer service
2. Zero-touch enrollment with configuration services such as asset tagging
3. Extended warranties and protection plans
4. Google Chrome Education Upgrade licensing bundle
5. Free order shipping
6. Free 2-way RMA shipping
7. OEM-expert repair
8. Cases installed on devices before delivery
9. Trade-in programs for credit toward new devices
10. Asset tagging and device branding

## Beyond hardware: software licensing and configuration.

Seamless deployment involves more than just hardware setup. Consider these crucial software aspects:

**Google Chrome education upgrade licensing.** Each Chromebook will require a dedicated license to manage it through your Google domain. To save time, ask if your Chromebook supplier can provide a bundled Google Education Upgrade license for you. This service enables the Chromebook to “see” the license associated with it upon zero-touch enrollment.

**Google Admin console.** This central hub manages user accounts, device settings, and security policies. Ask if your Chromebook provider can assist with initial setup and provide ongoing support.

**Google Workspace for Education.** This is a set of Google tools and services that are tailored for schools and homeschools to collaborate, streamline instruction, and keep learning safe. The core module, Google Workspace for Education Fundamentals, provides tools to aid teaching and learning, such as Classroom, Google Meet, Google Docs, Google Forms, and Google Chat. Additional subscriptions are required for upgraded functionality. You'll also access your Google Admin console as part of Google Workspace. Some Chromebook OEMs and servicers are authorized to bundle this on a device order for you, including CTL.

**Additional applications.** Integrate essential educational apps and tools. Work with your Chromebook vendor for advice on compatible options and potential configuration assistance.





## Selecting your deployment partner.

Working with a partner can greatly smooth your deployment phase. Select a qualified partner that offers full lifecycle services to make the most of your investment. Technology lifecycle services to consider include:

**Pre-program planning services.** Your partner should be able to offer best practice advice and guidance, credit for trade-ins of old equipment, and advice on device purchase, rental, and leasing programs. CTL is one Chromebook supplier that offers these services free of charge.

**Device configuration and deployment services.** A partner can deliver free or premium zero-touch enrollment services with additional services such as case application, asset logging, custom branding, and more. In some cases, partners like CTL can assist with setup, troubleshooting, and user training. Your partner should also be able to provide you with asset management software, if needed.

**Warranty and service plans.** If you're planning to maximize the life of your Chromebook investments, no device should go without protection. We offer you this data from research: the majority of Chromebook buyers prefer OEM-expert service.

Opt for customizable plans, where you can add and subtract services you need or don't need, such as the configurable plans offered by CTL on its devices. Be sure to dig into the details of accident protection plans, extended warranties, and battery service plans. Finally, demand free RMA shipping and service turnaround times of less than a week. Partners offering this do exist.

**Continuing care.** You've bought your device fleet, you've had it configured and deployed, and you've protected it with a warranty plan. Don't forget this last step - think about continuing care and your end-of-life plan up front, during deployment. Your partner should offer end-of-life refurbishment and recycling, trade-ins, genuine OEM parts for the life of the Google AU, and other ongoing services.

## Making the right choice.

The best deployment method depends on your school's unique needs, resources, and technical expertise. Select an expert partner who can help you navigate the options to ensure a successful deployment that minimizes disruption and maximizes impact.

# Delivering Digital Equity:

## Connectivity Considerations for 1:1 Chromebook Deployments

The Chromebook is a powerful device when paired with a great connection. There are a few topics to consider when deploying a connected Chromebook program.



### Chromebook connection methods.

Today there are multiple methods for connecting to the internet with a Chromebook.

**Wi-Fi.** The most common option, Chromebooks connect to wireless networks using current Wi-Fi standards. Wi-Fi is continually evolving, and CTL recommends at least Wi-Fi 6E, to provide uncongested access for your myriad of users and future-proof for a smooth transition to Wi-Fi 7 and beyond.

**Wired ethernet.** Ideal for computer labs, libraries, or other stationary device scenarios, Chromebooks can also connect via Ethernet using a USB-to-Ethernet adapter.

**5G, 4G LTE and private wireless network access (on select models).** Some Chromebooks, like [CTL's PX112C Series](#), include built-in LTE connectivity for anywhere access across your district. This is especially useful for districts with rural or virtual learning populations where connectivity beyond the school building is needed but not always available. If your Chromebooks do not offer this embedded capability, you can accomplish the same with a paired standalone hotspot, although it may require additional cost and management for that separate device.

The CTL Chromebook PX112C Series delivers 5G, 4G, and private wireless connectivity in one integrated device. Certified on Verizon.

[View details](#)

## Rolling out connected Chromebooks.

Deploying 1:1 Chromebooks requires a well-planned connectivity approach. Here are some key points to consider:

**Network assessment and upgrade plan.** Before deployment, evaluate your existing network bandwidth and wireless capacity. A significant increase in devices can strain your existing network. Plan for an upgrade to your internet bandwidth to accommodate the additional traffic from the Chromebooks. This will ensure smooth operation and avoid frustrating slowdowns.

**Wireless capacity.** Alongside bandwidth, consider the wireless access points (WAPs) throughout the school. You may need to add more WAPs or upgrade existing ones to handle the increased number of devices connecting simultaneously.

**Redundant connectivity.** Having a backup internet connection is crucial. Explore options like a secondary internet service provider or a cellular data plan to keep students connected even if the primary connection goes down.

**Pilot program.** Test the waters with a smaller group to identify and address any potential connectivity issues before a full-scale rollout.

**Device management.** Utilize the Google Admin console to monitor device health and network usage. This allows for proactive troubleshooting of individual device connectivity problems.

**Acceptable use policy (AUP).** Establish an AUP outlining expectations for Chromebook usage, including internet access and AI tool usage. This promotes responsible use and reduces network strain. Get a head start on your policy with

[CTL's Acceptable Use Policy template.](#)

## LTE Chromebooks: Better Than Hotspots

The key advantages of a Chromebook with integrated 4G or 5G LTE over hotspots include: easier operation for students, versatile and reliable connection capabilities, and simplified IT management due to integrated hardware.



**More cyber-secure.** Hotspots carry significant security risks. Eliminate them altogether and enjoy seamless CIPA compliance in one integrated, secure device.



**Easier operation for students.** No need to hassle with external hotspots — or split bandwidth with others in the household. Students simply open and automatically connect.



**Simplified IT management.** Streamline your student connectivity with this one connected device. Manage everything through the Google Admin console and eliminate any management of hotspot hardware, separate security updates, and individual device tracking.

## Creating and funding a private wireless network (PWN).

If you're exploring the development of a private wireless network for Chromebooks, funding it can be expensive. Here are a few resource ideas to help navigate this evolving technology.

**E-Rate program.** The federal E-Rate program offers discounts on internet connectivity for schools and libraries. The FCC regularly updates the E-Rate rules and programs, check their website for the latest offerings and guidelines.

**High speed "Internet for All" program, U.S.** The National Telecommunications Information Administration administers 3 grant programs for the states, including the Digital Equity Act, which dedicates \$2.75 billion to establish three grant programs that promote digital inclusion and equity to ensure that all individuals and communities have the skills, technology, and capacity needed to reap the full benefits of our digital economy. Check with your state government on how and when to apply for funding.

**Other grants.** Several organizations offer grants specifically for educational technology initiatives. Research grants in your area that align with your Chromebook deployment goals.

**Budget allocation.** Reevaluate existing school budgets and consider reallocating funds to prioritize network infrastructure upgrades to support your Chromebook connectivity program.



CTL works with private wireless network development in partnership with customers. Here are two recent case studies in which CTL worked with school districts, city government, private wireless network providers, and others to help customers build and deploy private wireless networks to close the digital learning equity gap.

**Enabling learning equity for home-insecure students with LTE-enabled Chromebooks.** In partnership with the Murray City School District, CTL provided Chromebooks provisioned with 48 CBRS private LTE connectivity and device charging solutions to provide learning equity to home-insecure students. [View the case study](#)

**CTL empowers school district to roll out LTE connectivity for students.** In partnership with the City of Tukwila, the Tukwila School District, and Federated Wireless, CTL Chromebooks provisioned with 48 CBRS private LTE connectivity enabled students to access online learning at home. [Read the case study](#)

By understanding your connectivity options, following best practices for deployment, and exploring funding sources, you can empower your 1:1 Chromebook program with a reliable and secure connection, fostering a dynamic learning environment.



## CTL recently deployed 3500 LTE-enabled Chromebooks to 3500 homes of virtual learners for Baker Charter Schools.

“*CTL's LTE-enabled devices keep our virtual learners connected, allowing them to learn regardless of their home connectivity. They manufacture high-quality hardware, pair each device with Google licenses, provision the devices, drop-ship them directly to students, and provide tracking information to Baker Charter faculty. We have found the devices to be sturdy, the connectivity reliable, and the devices easy for students to use.*

*Our partnership with CTL is truly a win-win, and we are so grateful for the flexibility, expertise, and support of the entire CTL team.*

**Leah Weiske, Asset Manager**

Tech Dept. | Baker Charter Schools



# Keeping Your Fleet Rolling:

## How to Manage Chromebook Repairs and Services

**Equipping your school with Chromebooks unlocks a world of learning possibilities, but even the most durable devices might need occasional repairs.**

### **Prioritizing serviceability from day one.**

Chromebooks are renowned for their reliability and long life, but wear and tear, accidents, or component failures can happen from daily use - especially among elementary and middle school students. Thinking ahead here can help you. If you're still in your device buying journey, here's what to consider to ensure your devices are equipped with high serviceability, making repairs quicker and more cost-effective:

**Modular design.** Opt for Chromebooks with easily accessible components like keyboards, batteries, and RAM, allowing for easier replacement instead of whole-device or whole-component swaps. It's no fun to replace an entire keyboard, for example, when a simple key replacement will suffice.

**Spare part authenticity.** If you work with a third-party servicer, ask about spare part availability. Do they stock the genuine OEM parts? Do they repair with genuine parts or functional replacements? Decide what's important to you, and then ensure your servicer can meet your needs.

**Spare part availability.** If you're self-repairing, ensure the Chromebook manufacturer offers readily available spare parts to avoid lengthy wait times for repairs. CTL recommends selecting a vendor with 24/7 spare parts ordering portal for the fastest delivery.

**Comprehensive manuals, guides, and tutorials.** Access to detailed product and repair resources empowers your IT staff to handle minor repairs in-house, reducing reliance on external services. Typically these resources are offered only from the OEM. Check to see if the device manufacturer offers fast online video tutorials for commonly seen issues.



## Understanding your repair options.

When a Chromebook requires repair, you have multiple options, each with its advantages:



If your school or district has trained IT staff and readily available parts, minor repairs can be handled in-house, minimizing downtime. Some districts accomplish Chromebook repair with students or interns and provide credit as a technical education program. CTL, for example, offers a turnkey [student Chromebook repair curriculum](#), featuring 12 modules of learning for students. Students end up certified by CTL as a repair technician, earning a certificate and emerging job-ready complete with a portfolio of their repair experience.



Returning devices to the manufacturer for service ensures you receive OEM-expert repairs using genuine parts for service. Plus, if you've purchased an extended warranty or service plan, you may be 100% covered. Check with your Chromebook manufacturer for OEM services. Read carefully to understand if there are shipping costs and what the turnaround time service level agreement (SLA) is. CTL, for example, offers its device customers free 2-way RMA shipping plus a 5-day turnaround time guarantee for any needed repairs.



Third-party repair services can potentially serve your needs, especially if local. Caveat: read the fine print. Here's a list of questions to ask:

- Are deductibles involved?
- Do they charge for RMA shipping?
- Do they use genuine parts?
- What is the turnaround time guarantee?
- Does your OEM offer competitive repair services near your location?



## The right to repair movement

Around the United States, there is an ongoing movement to ensure consumers have the right to repair their own purchased equipment. Various states have passed laws guaranteeing this right and manufacturers like CTL offer self-repair tutorials to help realize this vision.

Visit [repair.org](https://www.repair.org) for the most up-to-date information for your area.

## Empowering your IT team.

If you're considering building an on-site repair team, empowering them with basic repair skills can further enhance serviceability. Here are a few tips:

- **Invest in training.** Provide your IT staff and/or students with training on common Chromebook repairs using manufacturer resources and guides, [such as those offered by CTL](#).
- **Maintain a spare device inventory.** Stock frequently needed parts like replacement keys and batteries for prompt in-house repairs.
- **Develop internal repair procedures.** You can loan out whole devices in exchange for those in for repair. One cost-saving tip: buy refurbished devices for this purpose.
- **Serviceability is key to maximizing the lifespan and value of your Chromebook fleet.** By prioritizing modular design, readily available parts, and a strong repair strategy, you can ensure your devices stay operational and minimize downtime. Partnering with a reliable provider streamlines the repair process, can reduce cost, and offers additional guidance and support for a worry-free experience.

### Additional resources:

- [CTL Chromebook maintenance and support resources](#)
- [CTL Tech TV](#)



# Planning for the End Game:

## Responsible End-of-Life Solutions for Schools

Chromebooks, like all devices, eventually reach their end of life and responsible disposal extends beyond simply discarding them. Here are a few sustainable practices to plan for in your yearly technology roll out program.



### The importance of responsible e-waste management.

Every year, IT administrators consider how to responsibly dispose of old equipment. The current post-pandemic Chromebook refresh will certainly create more disposal opportunities and fortunately, several sustainable options for end-of-life management now exist:

**Refurbishing:** Extends the life of older devices by refreshing hardware and software, making them suitable for continued use in schools or donated to communities. Consider trading-in your used equipment to be refurbished, such as with [CTL's Chromebook trade in program](#), where you receive cash credit you can leverage to fund toward new devices. Or, consider supplementing your existing stock by purchasing refurbished devices for any number of use cases including library loaners and repair spares.

**Recycling:** Breaks down devices into their basic components, recovering valuable materials like metals and plastics for remanufacturing into new products. While some schools pay for the removal of old devices for recycling services, consider checking CTL, where you may receive free pickup and documented, compliant R2v3 recycling and NAID-certified data destruction to meet your state's compliance requirements.

## How to pick a sustainable partner.

Sustainability can come in all shapes and sizes. Review your options, ask sincere questions, and select carefully to ensure your devices are responsibly recycled as promised.

CTL recommends you achieve your compliance standards with audited recycling and data destruction certificates, such as those offered by CTL.

As a certified B Corp, CTL puts people and the planet on par with profits and is committed to the concept of circularity. This means CTL prioritizes social responsibility and sustainability with eco-friendly practices throughout the device development process: from design and manufacturing to shipping packaging to end-of-life trade-in services for refurbishment and responsible recycling.

## The benefits of sustainable practices for your school.

Adopting sustainable e-waste practices benefits schools and the environment in several ways:

- **Reduces environmental impact:** Responsible disposal minimizes e-waste pollution and conserves valuable resources. Purchasing refurbished devices keeps components out of landfills.
- **Cost-savings:** Trade-in programs can provide credit back toward new device purchases. Refurbished devices cost significantly less than new equipment, and can augment your program for certain use cases.
- **Promotes environmental awareness:** Schools can instill eco-friendly habits in students by demonstrating responsible technology disposal.
- **Community outreach:** Donating devices bridges the digital divide and empowers individuals with valuable technology access.

Responsible e-waste management is not just an option; it's a necessity. By partnering with a sustainability-focused provider like CTL and exploring creative ideas, schools can ensure their Chromebooks have a positive impact throughout their lifecycle, minimizing environmental harm and maximizing their potential for learning.

### Additional resources:

- [CTL's recycling and social responsibility programs](#)
- [CTL's certified IT asset disposition and computer trade-ins for schools](#)



# Refurbished Chromebooks:

## Six Ways to Use Them in Schools

Save money, go green, and add value to your EdTech IT program with refurbished Chromebooks:

### 1. 1:1 Chromebook deployments with tight budgets.

Purchase refurbished Chromebooks with years of AU left for your program.

### 2. Loaner lifesavers.

Refurbished Chromebooks ensures students don't miss out on learning should their primary device require repair.

### 3. Supporting transient students.

For students experiencing sporadic attendance or summer-school students, ensure they can access online resources, assignments, and communication tools, minimizing any disruptions to their learning journey.

### 4. Test-taking powerhouses.

With their clean installs secure configurations, and affordability, refurbished Chromebooks are perfect for creating a controlled testing environment.

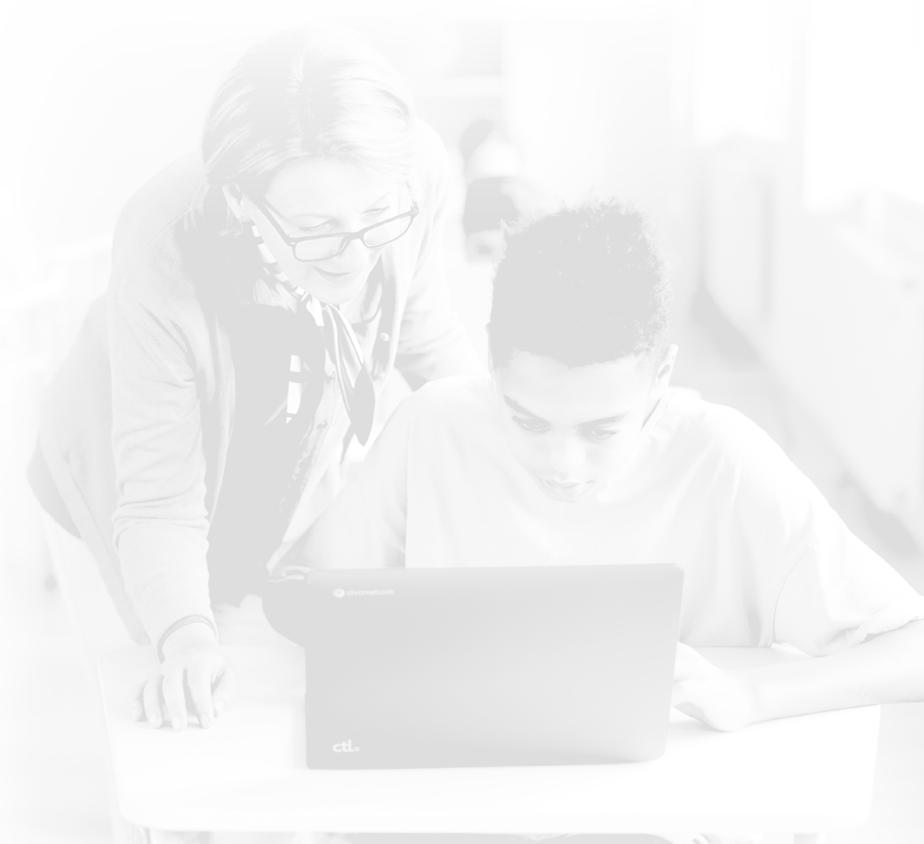
### 5. Library learning hubs.

Provide students with access to e-books, online research materials, and educational applications.

### 6. Spare parts saviors.

As technology ages, mine refurbished Chromebooks for spare parts to extend the lifespan of your existing fleet.

View the whole article, with bonus ideas, on [CTL's blog](#).



# Next Steps and Resources

Thank you for taking the time to work through this ebook. We sincerely hope the strategies, tips, and tactics we've outlined here smooth your 1:1 Chromebook deployments and set you up for future success.

## Additional resources:

- [Everything you need to get set for next year's refresh, including checklists, webinars, handbooks and more](#)
- [CTL Learn, a best practice blog](#)
- [CTL support website](#)
- [CTL TechTV](#)

## Innovate Next with CTL.

For school tech leaders stretched thin, CTL is more than a vendor — we're your strategic technology lifecycle partner. CTL replaces transactional vendors with a side-by-side partnership, delivering the most complete set of award-winning product and service solutions that streamline the entire EdTech lifecycle. Today, customers in more than 65 countries rely on CTL's Chromebooks, Chromeboxes, and video collaboration tools, as well as deployment, maintenance, and IT asset disposition lifecycle services.

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For further information on CTL solutions, visit [ctl.net](https://ctl.net).

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