



# Mobile Device Management 101

FOR EDUCATION

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Unlock the power of Apple in education



The state of Apple  
in K-12 education



## Education technology



### Why iPad for education

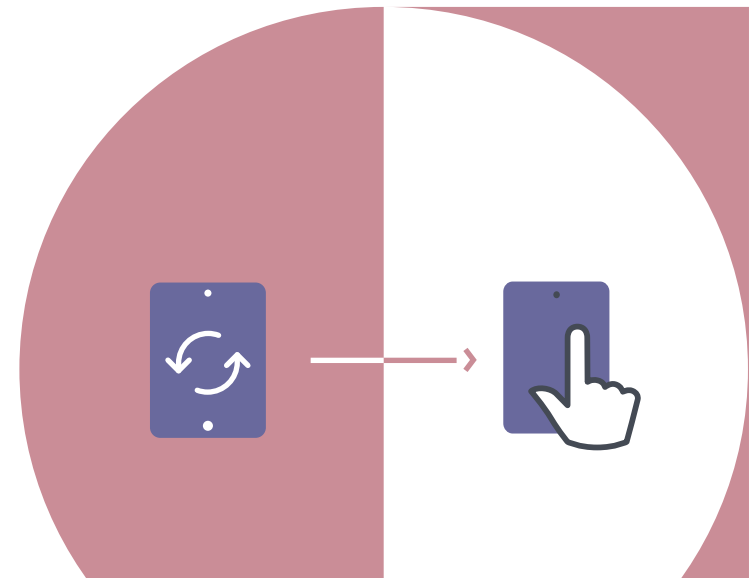
Now more than ever, education technology is shaping and advancing the way we think about modern education and it is essential to the distance-learning environments many are now accustomed to. iPad transforms the static classroom setting and further streamlines distance learning by offering interactive learning tools to foster creativity and curiosity, no matter from where a student may be learning.

iPads are the gateway to educational transformation, and as schools look to modernize teaching and personalize learning, iPadOS apps are a mechanism to turn rooms into interactive environments and provide individualized learning paths.

### Transformation

With the need for technology and distance learning becoming more prolific in the lives of teachers and students, they're pairing innovative teaching methods, such as blended learning or flipped classrooms, with education apps to achieve individualized learning and enriched educational opportunities. The result is higher student engagement, addressing the needs of all students and delivering on the goal of academic success.

iPads are the gateway to educational transformation





## Productivity

Communication is simply a steppingstone for what is possible with iPad. Paired with classroom management apps, teachers are better equipped to create productive learning experiences and maximize the value of precious classroom time.

## Communication

Once devices are in the hands of teachers and students, IT needs to enable basic communications for them. This includes access to email, Wi-Fi and VPN settings — all without adding unnecessary bloat. On top of the basic communication functions, apps offer an additional layer of connectivity, which is crucial in keeping everyone connected when learning from a distance.

## Deployment

Schools need to tackle the challenge of deployment, device configurations and inventory. This is the foundation for any school looking at significant quantities of iPadOS devices. With the help of a mobile device management (MDM) solution, schools can take advantage of zero-touch deployment to make this process as seamless as possible.

**With the help of a mobile device management (MDM) solution, schools can take advantage of zero-touch deployment**



## Apple School Manager

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### Everything you need in one location

First introduced with iOS 9.3, Apple School Manager is a tool that allows IT administrators to more easily manage people, devices and content in a central, web-based portal. Apple School Manager simplifies education deployments by consolidating previous Apple deployment programs into one. Now with iOS 10.3 and higher, it is even easier to manage educational devices with Apple School Manager.

**When schools pair iPad with education-supported mobile device management (MDM) solutions, they are able to:**

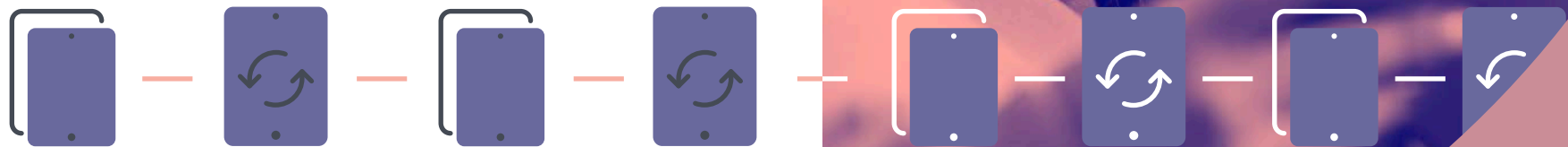
- Automate device enrollment, setup and distribute apps and content
- Create Managed Apple IDs
- Utilize Shared iPad



## Shared iPad

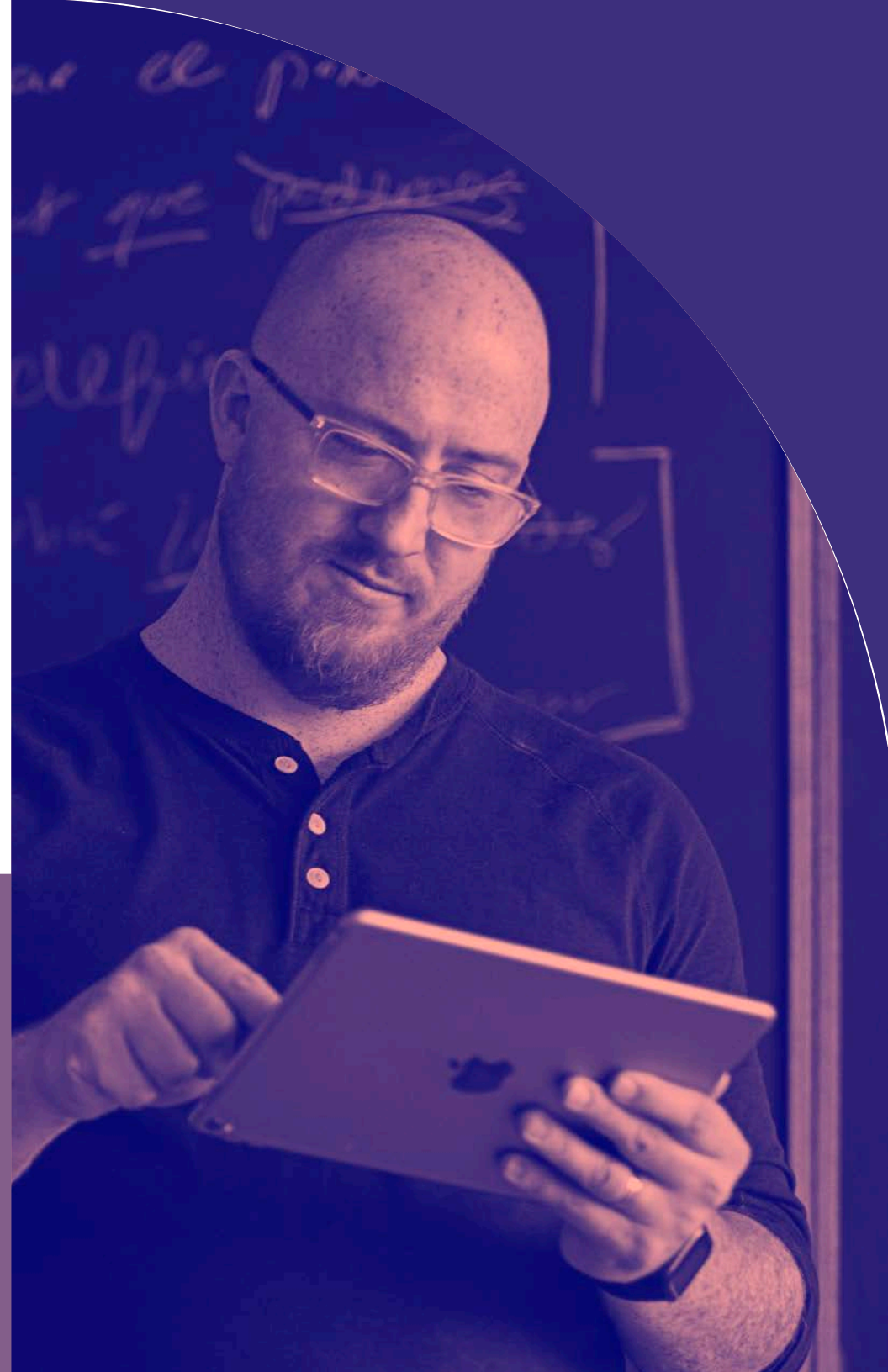
By using the capabilities of Apple's Shared iPad feature, schools can extend the personalized learning experience iPad offers to all students. While allowing multiple users to engage with an iPad throughout the day, Shared iPad provides a unique experience to each user by giving students access to their own apps and content. The only thing students share is the iPad itself. This allows students to pick up where they left off the day before and creates a streamlined learning experience.

The benefits of Shared iPad are expansive and cater to all ages. Younger students, who may not be as familiar with iPad devices as their older classmates, can access their own personalized apps and content by simply tapping their photo on the device's home screen. This capability is possible when schools integrate Shared iPad, Apple School Manager and a student photo server within their MDM.





# Mobile device management overview

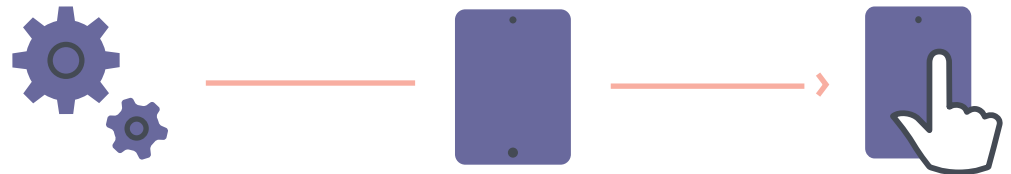


## Why MDM is necessary

MDM is Apple's framework for managing iPadOS (operating system for iPad). To effectively manage iPadOS devices and unleash their full potential, organizations require an equally powerful MDM solution. From deploying new devices and gathering inventory, to configuring settings, managing apps or wiping data, MDM provides a complete toolset to address deployments and ensure device security.

## Deployment

Before you can use an MDM solution to manage your iPadOS devices, you first have to enroll them. For iPad, an MDM tool allows you to easily enroll devices into management, consistently distribute apps and content, and set up security and access profiles. There are several methods to enroll an iPad, including enrollment via Apple Configurator, a user-based enrollment via a webpage, or automated zero-touch deployment with MDM and Apple School Manager.





Deployment methods	Description	User experience	Supervision	Best for
<b>Automated deployment with MDM and Apple School Manager</b>	Automatic enrollment over the air (also referred to as zero-touch deployment)	User receives shrink-wrapped box, and the device is automatically configured when turned on	Yes, wirelessly	Everyone
<b>Apple Configurator</b>	Enrollment through a Mac app that connects to devices via USB	N/A — IT manages this process and hands devices to users	Yes, wired	iPad carts
<b>User-initiated via URL</b>	Manual enrollment over the air	User visits a specific URL to automatically configure their device	No	BYOD

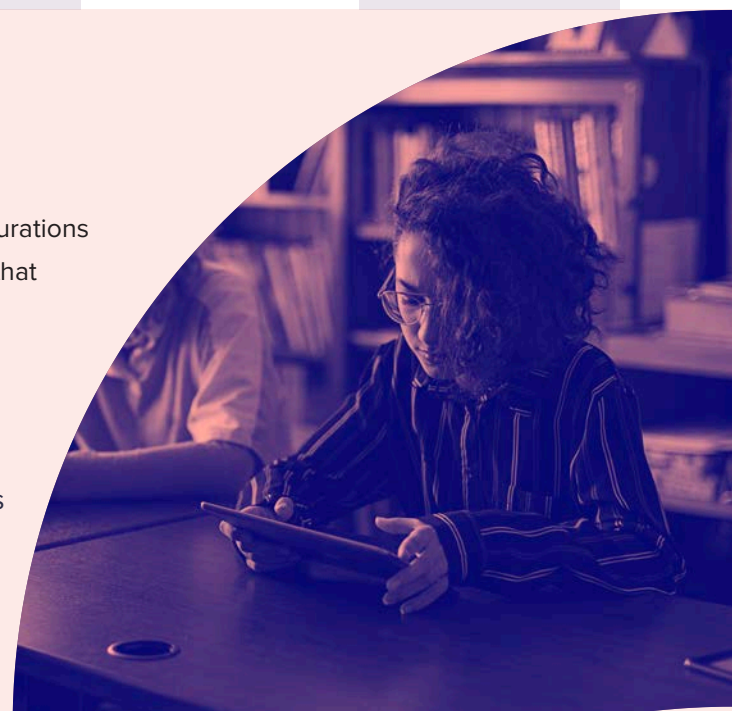


### Supervision

Supervision is a special mode of iPadOS that enables deeper management by an MDM solution. A growing number of configurations are only available if a device is supervised. It is recommended that school-owned devices are put into supervision mode.

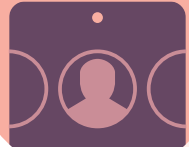
#### Examples of Supervision-only commands:

- Disable Camera
- Disable App Store
- Disable Safari
- Disable modifying wallpaper
- Disable adding email accounts
- Plus, many more....



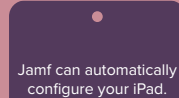
## Zero-Touch deployments with MDM and Apple School Manager

1



Sign up for Apple School Manager via <https://school.apple.com/> and add your MDM server to the Apple School Manager portal.

2



Purchase devices and link them to your Apple School Manager account. No need to unbox devices.

3



As a user turns their iPad on for the first time, the device will automatically be enrolled — no additional interaction is needed.

4



Device enrolls with the MDM server. Prepare any configuration profiles and apps you'd like to apply to devices through your MDM solution.

5



Device receives configurations and apps scoped to it, and the user is brought to the Home screen. The device is now managed and configured — all without IT having to touch it.

## Inventory

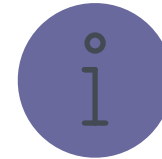
MDM solutions are capable of querying an iPad to collect a large amount of inventory data. This ensures you always have updated device information, which allows you to make informed management decisions or trigger automated actions. Collect inventory information, such as serial numbers, iPadOS version, apps installed and more, from devices at various intervals.

## Examples of data collected with MDM



### Hardware Details

- Device Type
- Device Model
- Device Name
- Serial Number
- UDID
- Battery Level



### Software Details

- iPadOS Version
- List of Apps Installed
- Storage Capacity
- Available Space
- iTunes Store Status



### Management Details

- Managed Status
- Supervised Status
- IP Address
- Enrollment Method
- Security Status



### Additional Details

- Profiles Installed
- Certificates Installed
- Activation Lock Status
- Purchasing Information
- Last Inventory Update



### Why does inventory matter?

Use the inventory data from the MDM and empower yourself to answer common questions like: Are all my devices secure? How many apps do we have deployed? What version of iPadOS do we have deployed?



## Configuration Profiles

Configuration profiles give you the ability to tell your devices how to behave. While you once had to manually configure devices, MDM technology allows you to automate the process of configuring passcode settings, Wi-Fi passwords, VPN configurations and more. Configuration profiles also have the ability to restrict items in iPadOS, such as the Camera, Safari web browser or even the ability to rename the device.

### Available Profiles for MDM

#### The Basics



Passcode



Restrictions



Wi-Fi



VPN



Home Screen Layout



Single App Mode



LDAP



Web Clips

#### Email Accounts



Mail



Exchange ActiveSync



Google Account



VPN



Calendar



Contacts



Subscribed Calendars



macOS Server Account

#### Internet Settings



Global HTTP Proxy



Content Filter



Domains



Cellular



Network Usage Rules



Certificates

#### Other Settings



AirPlay



AirPlay Security



Conference Room Display



AirPrint



Fonts



SCEP



Lock Screen Message



Notifications



Single Sign-on



Access Point Name



## Restrictions

Using configuration profile restrictions, IT can select individual items to restrict in iPadOS devices, such as the Camera or Safari web browser. This functionality is especially helpful when schools need to limit student access to certain apps and websites.

Restrictions also allow schools to create age-appropriate iPadOS experiences for their students.

For example, in an elementary setting (K-5): To keep students from installing apps beyond those that are pre-determined to be age appropriate and necessary for learning, IT can:

- **Disable the App Store**
- **Disable side-loaded apps and certificates**
- **Disable Siri**
- **Disable iCloud, FaceTime and iMessage**

When restrictions are applied, elementary students will have access to a pre-determined set of apps. Additional functionality on the device will be limited. By allowing students to access only what they need for their academic success, the school proactively mitigates class distractions and encourages engaged learning.

Whether it is schoolwide or for a specific grade, schools apply restrictions for a variety of reasons. They often include creating a more focused classroom and establishing a safer technological experience for students.



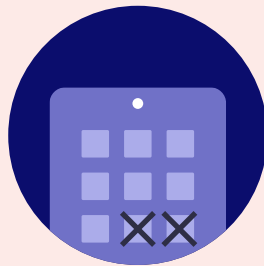


## iPad display configuration

In education, one size does not fit all. Providing consistency throughout a classroom's iPads (in-person or remote) does not mean giving up personalization for each student. When you personalize iPad, you are able to provide users with an easier setup and allow them to get started on learning without having to find apps.

### Three ways to tailor the iPad display for students:

1



#### Show/hide apps

Show only the apps you need. Hide the ones you don't. This makes the learning experience as relevant as possible for the student.

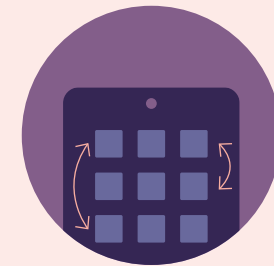
2



#### Wallpaper

Set the Home screen wallpaper to your school's mascot or classroom name.

3



#### Home screen layout

Define the placement of apps and folders, along with web clips. Put mission-critical apps on the first page and less important apps on other pages.



## Management commands

Management commands (also known as MDM commands), are specifications you can apply to individual devices to ensure security of student data. Leverage this capability within MDM to take action on lost or stolen devices by locking a device or wiping it completely. Additional commands allow you to send push notifications, update iPadOS to the latest version, and change the device name to make it easier for IT to manage their devices.

### Available Commands for MDM



Update Inventory



Lock Device



Clear Passcode



Clear Restrictions



Unmanage Device



Wipe Device



Send Blank Push



Set Wallpaper



Send Notification



Update iOS



Change Name



Lost Mode & Sound



Shutdown Device



Restart Device

### Shared iPad Only



Logout User



Delete User



## Manage Activation Lock with MDM

Activation Lock is designed to prevent the theft of iPhone and iPad devices. They both require an Apple ID and password, which means only those with that information can activate the devices. This feature is great for theft prevention, but can also cause problems for IT admins if they are not managing their students' Apple IDs. This, however, is easier to manage when pairing Activation Lock with an MDM. If a device is enrolled in an MDM, and it is supervised, an Activation Lock Bypass Code will allow the IT admin to unlock the device.

1



Device is already enrolled in an MDM server and is supervised. An Activation Lock Bypass Code is generated and stored in the MDM server.

2



A locked device is returned to IT. They retrieve the Bypass Code stored on the MDM server.

3



IT reboots the device into the Setup Assistant, and the first screen asks for the previous student's Apple ID and password. To bypass the Activation Lock, IT enters the code in the password field and leaves the Apple ID field blank. The device is now unlocked.

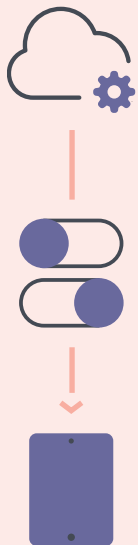


## App deployment

iPad serves as a great out-of-the-box communication tool on its own, but the rich library of personal and education apps in the App Store can enhance a student's productivity and overall learning experience. Apps can transform an iPad into a video production studio, science laboratory, planetarium and much more. With an app strategy and MDM to manage your app deployments, you will ensure students and teachers have the apps they need — configured and secure for your school.



## App management strategies



### Managed App Configuration

Sometimes deploying an app isn't enough. You'd like to pre-customize some of the settings. This is the premise for Managed App Configuration. App developers can customize what settings can be pre-configured by an MDM server for their app. For example, you could deploy the Box app with a pre-populated server URL. After entering a username and password, the app is operational.

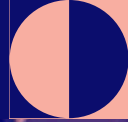
### Managed Open In

Managed Open In takes the concept of managed apps a step further by controlling the flow of data from one app to another. With MDM, organizations can restrict what apps are presented in the iPadOS share sheet for opening documents. This allows for truly native data management without the need for a container.

### What is a Managed App?

Introduced in iOS 5, managed apps differ from a standard app, because they are flagged as owned by an organization. Specifically, managed apps are distributed via an MDM solution and can be configured and reassigned by MDM.





## Managed Apple IDs



### Benefits of Managed Apple IDs

Schools can create Managed Apple IDs in bulk for all teachers, students and staff across an entire district. Unlike a personal Apple ID, a Managed Apple ID is controlled by the school and can be customized with specific user roles and service restrictions. For example, Managed Apple IDs cannot be used with Apple Pay or to purchase apps through the App store. When a student graduates or leaves the district, their school administrator can transfer their Apple ID account, which gives them the ability to take all their school-related work with them.



### What is an Apple ID?

An Apple ID is a personal account for users to access Apple services, such as the App Store, iTunes, iCloud, iMessage, FaceTime and more. An Apple ID is identified by an email address and password, and may be linked to contact, payment and security details.



### Why are Apple IDs important for schools?

An Apple ID allows students to take full advantage of iPadOS and the app ecosystem. For example, students can download educational apps, e-books and iTunes U content using their Apple ID.



### Shared iPad: Managed Apple ID required

With Shared iPad, a student can leverage their Managed Apple ID to log into a specific iPad to access their assigned apps and content, as well as their individual schoolwork.

## Security and privacy

Security and privacy are major concerns for schools. iPadOS has a number of security features built into the operating system to keep both student and teacher data safe. Additionally, with Apple's commitment to student privacy, parents and students can take comfort knowing Apple does not allow geo-tracking for devices. Coupling these features with MDM, you can ensure your devices, apps and network are secure, and users feel protected.



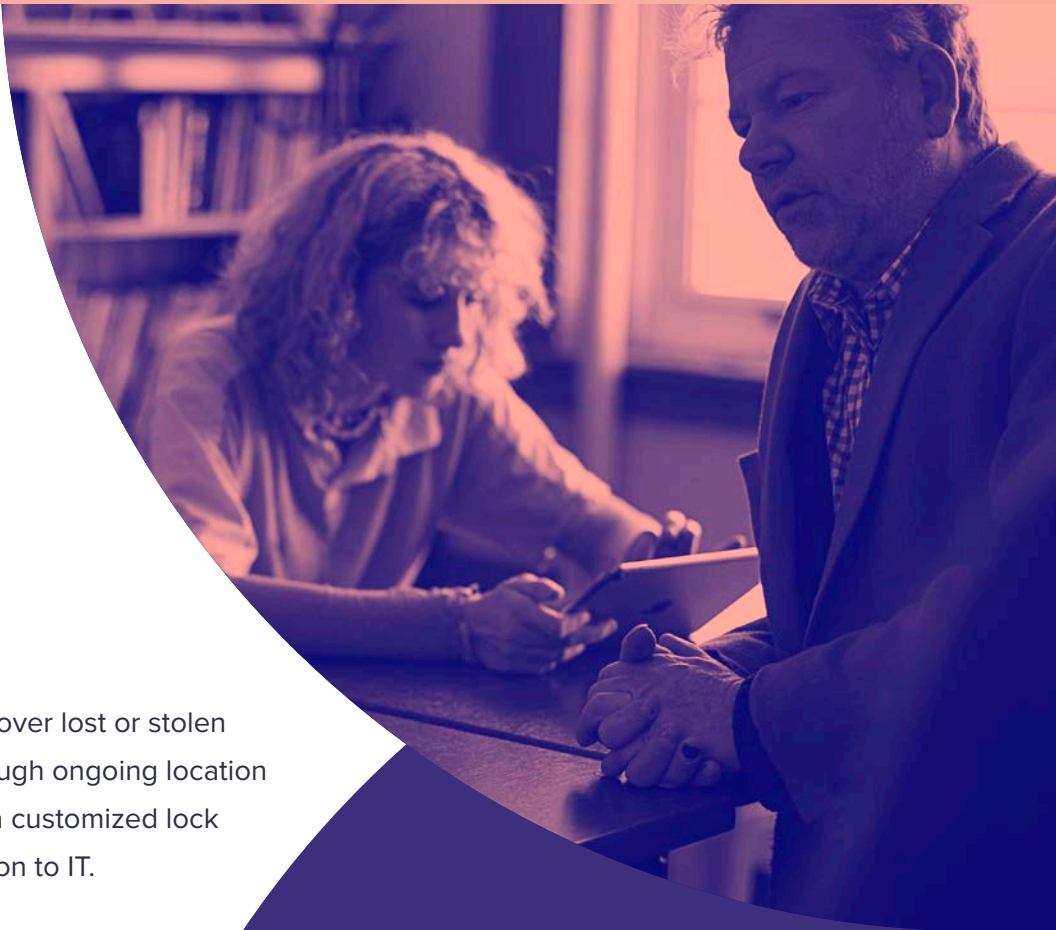
### Lost Mode

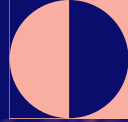
With Lost Mode, schools have the ability to locate and recover lost or stolen Apple devices without compromising student privacy through ongoing location tracking. When Lost Mode is activated, the iPad receives a customized lock screen message, is disabled from use and sends its location to IT.



### Encryption

iPadOS has a built-in 256-bit encryption and is automatically enabled if a passcode is in use. This means the data on your devices remain secure without having to add additional software bloat to the operating system. Since Apple makes both the hardware and software, the encryption is virtually unnoticeable to the user.

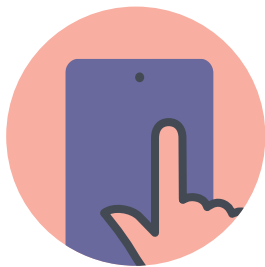




## Using an MDM solution for loss prevention

When a school manages their iPadOS devices, they can take advantage of various security features that help reduce the number of devices that are lost or stolen. The following steps will help ensure a school can locate their devices when they go missing.

Additionally, by requiring a passcode on the device, access to the home screen is prevented, data privacy stays intact and the device is encrypted.



Ensure devices are Supervised and disable the removal of the MDM profile using your MDM solution.

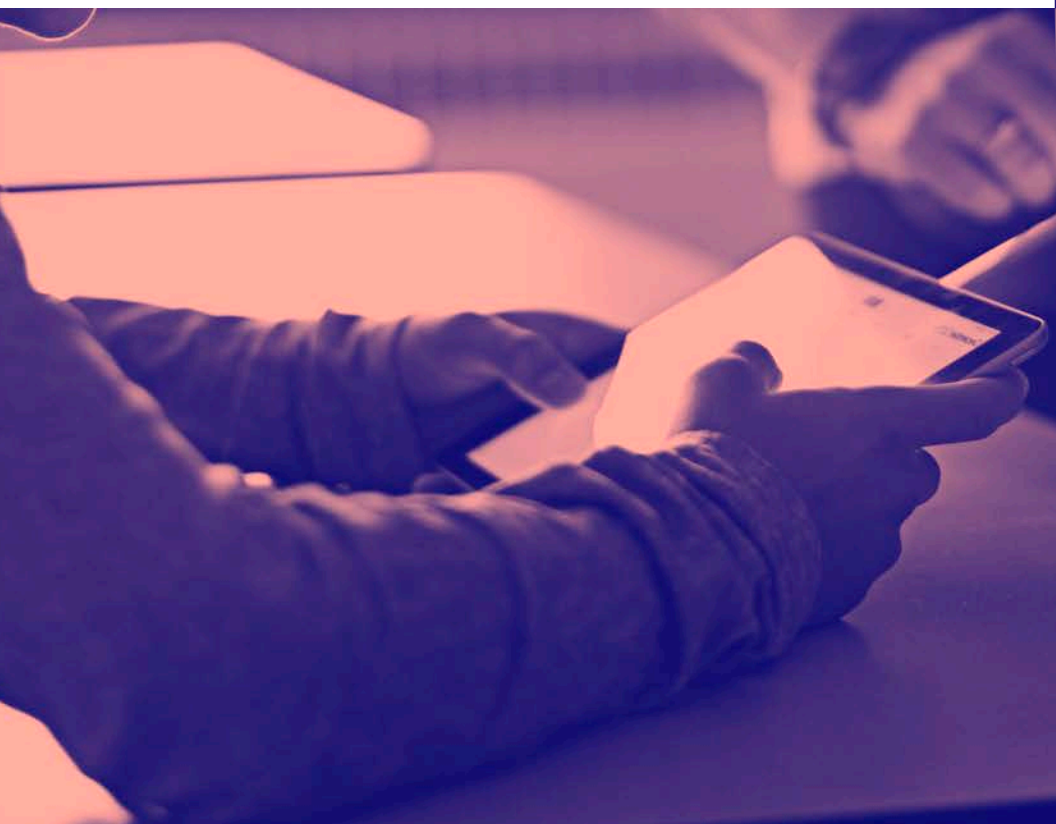


Set a lock screen message and apply physical asset tags that clearly show the device is owned by the school. This will help deter theft.



Utilize Lost Mode if a device is missing. This disables the device, displays a custom message and reports the GPS coordinates.

# iPad in the classroom





## iPad in K-12

### iPad and teacher app management with Classroom

iPad transforms the way teachers teach and students learn. With the right classroom management strategy and a robust tool to support it, teachers feel more confident enhancing the classroom experience with technology.



**With Apple's Classroom app, configured by MDM, teachers have a tool to manage four common classroom challenges:**



#### **Transitions**

Streamline transitions to maximize class time. Easily switch students from one app to the next as the lesson continues. Regain attention on the teacher by momentarily locking the screen. And, reset forgotten passwords immediately without calling IT.



#### **Focused engagement**

To help students stay on task, teachers can easily focus a student's iPad on a specific app or webpage. This can be helpful during both work time or when it's time for an assessment or quiz.



#### **Collaboration**

Encourage interactivity and collaboration through the app. When it's time to share work with the class, a teacher can easily project a student's iPad to the big screen using Apple TV — making the transition seamless for the student when it's time to present.



#### **Classroom awareness**

Check in with each student and see where they are at in the lesson or how they are tackling an assignment. Teachers can view what each student is working on and see what they see on their iPad.

## iPad and teacher app management with Jamf School

Jamf School is accessible management for IT, teachers and parents. Jamf School management also helps foster education with the Jamf Teacher, Jamf Parent and Jamf Student apps.



### Jamf Teacher

Gives teachers the tools to manage their class and keep students focused on their education — regardless of where they are learning. This includes restricting websites, apps and the camera, plus locking all student devices at once.



### Jamf Student

Gives students restricted permissions over their own device, allowing them to focus on their education and eliminate distractions.



### Jamf Parent

Gives parents the ability to limit apps and device functionality on their student's device; again, eliminating potential distractions from learning.

## Educational apps and Apple Books for iPad

With more than 75,000 education apps in the App Store that are designed specifically for the iPad, Apple has the strongest education app ecosystem for students of any grade level, age or learning style. In addition to a wide variety of education apps, students can also enjoy a new learning experience through interactive Apple Books.

One of the biggest advantages of utilizing education apps and Apple Books on the iPad is the ability to be interactive and provide engaged learning for students — a stark difference to only viewing a lesson on a web-based device. With Apple Books, students can interactively highlight text, leave comments and even collaborate with other students.

With so many apps available, it is essential that every district has a way to evaluate what apps will provide the most benefits to their students.

Jamf recommends leveraging an app rubric, such as “**Substitution, Augmentation, Modification and Redefinition**” (**SAMR**) and/or the **4C’s model (Communication, Collaboration, Critical Thinking and Creativity)** as part of the app evaluation process. This will ensure the apps that students are using will truly engage them in curriculum and help them continue to progress in their studies.



### Explain Everything

Interactive whiteboard for sketch noting or real-time collaboration



### Sphero EDU

Bridge the physical and digital world with an approachable robotics platform

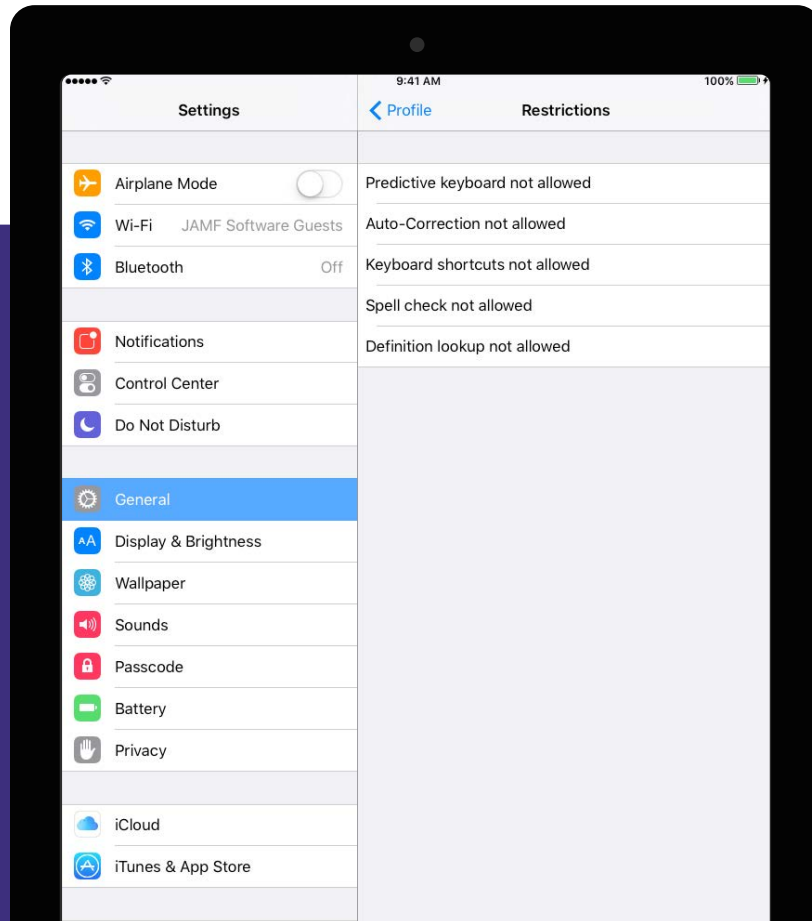


### GeoGebra 3D Graphing Calculator

Perform advanced calculations and render beautiful graphs

## Secure Assessments with iPad

Whether administering formative or summative assessments, have peace of mind that iPad provides a secure platform. By combining MDM restrictions and a classroom management app, you can focus each student on a specific webpage or app until the assessment is complete.



**With MDM, IT can configure restrictions on an iPad during the assessment.**

**Common restrictions include the ability to disable:**

**Predictive Keyboard**

**Keyboard Shortcuts**

**Auto-Correction**

**Spell Check**

**Definition Lookup**

Read how Sewanhaka Central High School District leveraged GeoGebra, iPad and Jamf to conduct the New York State Regents exams.



[Read Now](#)



### Apple TV in K-12

Apple TV is proving its value to students, faculty and staff in a wide variety of ways. Within the classroom, students can use AirPlay to display their Mac, iPad or other device screen on an HDTV or projector. With the ability to instantly share content, teachers can seamlessly highlight student work, encourage collaboration and keep the class engaged. With access to the latest technology, students gain real-world presentation experience with iPad and Apple TV.

With MDM and Apple TV, schools are able to unlock the full potential of the large screen in a manageable and scalable way. Schools see the benefits of Apple TV beyond the classroom and are already using them to:

- **Serve as kiosks in media centers**
- **Provide districtwide emergency notifications**
- **Display messages on welcome screens**
- **Deliver upcoming event notifications**
- **Post the cafeteria menu**
- **And much more**

### Learn More

Read about how schools can leverage Apple TV devices to make the classroom a more collaborative and engaging learning environment.

### Apple TV Management: Moving Education Forward



[Read Now](#)



# MDM for iPad

Jamf is the leading mobile device management tool for iPadOS. Designed to automate common tasks around Apple deployment, inventory and security, it makes mobile device management easy. A transformative learning experience is within reach.

**Put Jamf's iPad management capabilities to the test with a free trial today.**

[Request Trial](#)

