

SYSTEM AND TECHNOLOGY GUIDE

This *System and Technology Guide* is written for anyone who:

- Needs to understand the technology requirements for MAP[®] products
- Prepares the network environment
- Prepares computer devices
- Helps staff access the Comprehensive Assessment Platform

Main Sections:

- [System Requirements](#) on page 2
- [Desktop Computer Setup](#) on page 8
- [iPad Set-up for Students](#) on page 16
- [Chromebook Setup for Students](#) on page 17
- [Staff Login](#) on page 19

System Requirements

For quick reference, here are the minimum system requirements for the MAP[®] Suite.

Student Technology Requirements

Student technology requirements depend on where your student is testing (at school or remotely) and on your school's policy requirements (secure testing or browser-only testing).

- **Secure testing:** Recommended for MAP Growth[™] when testing at school (for remote testing, use browser only). With proper setup, NWEA tools will prevent students from accessing other websites.
- **Browser-only testing:** Only recommended for MAP Skills[™] and MAP Reading Fluency[™] (except iPad[®]—see the following table). For MAP Growth, testing with a standard browser is possible, but students can access outside resources during testing. As a result, you risk compromising your assessment.

Secure testing

As a best practice, use NWEA secure testing browsers and apps for MAP Growth testing. With proper setup, these tools prevent students from accessing other websites.

Device	Operating System	Secure Testing Tool
Windows [®] PC*	Windows 7, 8.1, or 10	NWEA secure browser for PC, 5.4.180.0 minimum
Mac [®]	MacOS [®] 10.12 minimum (10.13 suggested)	NWEA secure browser for Mac, 5.0.0.0 minimum
Chromebook*	Google Chrome OS [™] 65 minimum (78+ suggested)	NWEA Secure Testing App, 3.1.0 minimum
iPad (not iPad mini)	MAP Growth: iOS 9 minimum (12 or 13 suggested) MAP Reading Fluency [™] : iOS 10 minimum	MAP Growth: NWEA Secure Testing App, 3.3 minimum MAP Reading Fluency: use Reading Fluency Secure Testing App, 2.6 minimum

*Touch screens are not supported, and Chromebook[™] tablets are only supported with an external keyboard.

Recommended: Set up computer user accounts dedicated to testing, and disable digital assistants (Siri[®] and Cortana[®]), voice dictation, and unsupported screen readers (Chromevox[™] and VoiceOver[™]). See [Computer User Accounts for Testing](#) on page 9 for details.

Browser-only testing

In situations where test security is less concerning, students could use a standard browser, following these requirements:

Device	Operating System	Chrome*	Safari®	Firefox	Microsoft Edge*
Windows PC	Windows 7, 8.1, or 10	Yes	No	Yes	Yes
Mac	MacOS® 10.12 minimum (10.13 suggested)	Yes	Yes	Yes	No
Chromebook	Google Chrome OS™ 65 minimum (78+ suggested)	Yes	No	No	No
iPad†‡ (grade 2+ testing)	iOS 9 minimum (12 or 13 suggested)	No	Yes	No	No

†iPad testing with MAP Growth K–2: Students must use the NWEA Secure Testing app. See [Secure testing](#) on page 2.

‡iPad testing with MAP Reading Fluency: Students must use the NWEA Secure Testing app. See [Secure testing](#) on page 2.

*MAP Reading Fluency assessments: Only the Chrome and Microsoft Edge browsers are supported.

Browser versions supported

- Chrome 71 minimum (78+ recommended)
- Safari 11 minimum (12+ suggested)
- Firefox 64 minimum (71+ suggested)
- Microsoft Edge 79 minimum

Testing sites

For MAP Growth testing, students open either of the following sites:

- <https://test.mapnwea.org>

This site restricts the student’s browser to a single tab. Browser settings might need adjustment.

Note: A pop-up window opens when you access test.mapnwea.org. In the browser settings, either disable pop-up blockers, or allow the testing site as an exception.

- <https://test.mapnwea.org/#/nopopup>

This site has no browser restrictions. Default browser settings typically work.

For MAP Reading Fluency and MAP Skills testing, students will use a different website:

<https://student.mapnwea.org>

Proctor, Teacher, and Staff Requirements

To administer testing, access reports, and use other administrative features:

- Follow the same requirements as browser-only testing
- Allow cookies and pop-ups—see [Staff Browser and Other Settings](#) on page 7
- iPad limitations for staff:
 - Not fully supported for MAP Growth (have a back-up device)
 - Will not allow access to MAP Reading Fluency

Hardware Specifications

Computer hardware must meet the minimum requirements specified by the manufacturers of the operating system and browser in use. Hardware that exceeds the minimum requirements is recommended for an optimal experience. For computer display, follow these specifications:

- Screen Resolution Minimum—MAP Growth: 1024 x 768 for students, and 1280 x 1024 for staff
For MAP Reading Fluency: 1280 x 720 for both students and staff
- Scaling or Zoom: 100%
- Color Depth: 32-bit recommended (minimum 16-bit)

Headphones for students

For tests designed for early learners, students can hear questions read aloud through audio playback. For the best experience, use headphones.

In addition, there are specific headphone recommendations for testing with MAP Reading Fluency:

- Over the ear, not buds
- Noise cancellation
- Boom microphone on the end of a stiff arm that extends in front of the child's mouth, rather than attached to the headphone cord
- USB connection for better sound quality

Network Bandwidth

The following bandwidth recommendations are based on best-estimate calculations. Test sites that do not meet these recommendations will be able to deliver assessments, but they may experience delays.

- Grades 3+ testing—**2 Mbps** for every 30 computers concurrently testing.
- Grades K–2 testing—**3 Mbps** for every 30 computers concurrently testing. More bandwidth is required because of audio and interactive features.
- Look for limitation points in your internal network (such as school-to-district connections when the district has the main internet connection).
- You may need to calculate the bandwidth requirements separately for each term, depending on the number of tests planned. The requirements increase when you test more students, more subjects, or more schools.

Note: Additional bandwidth is needed at the beginning of each MAP Growth assessment. The initial load is approximately 2.2 MB, and the load time varies based on available bandwidth.

To perform an internet speed test, use a website such as www.speedtest.net and select Portland, Oregon (the primary location of NWEA servers). For each building where testing will take place, perform the test at different times during the school day to understand the variations in bandwidth usage. Record the download speeds and use them to approximate your available bandwidth during testing.

Wireless Recommendations

Here are general guidelines for Wireless Access Points (WAPs), based on 802.11 g, n, or ac:

- Under 25 devices per WAP = acceptable
- Between 26 to 50 devices = check the performance
- Over 50 devices = try to decrease the number of devices
- WAP should be in the same room as the testing devices

In the WAP configuration, strive to limit connections to just testing devices. Also, limit devices to connect only with the closest WAP (for example, avoid overlapping channels and disable promiscuous mode on devices). During testing, monitor for interference from rogue WAPs, non-testing devices, and non-testing activities, like iOS updates. If errors occur, try disabling automatic load balancing.

Firewall Allowlist and Email Configuration

For the following URLs, you should: add to your allowlists, exclude from caching, and prioritize the traffic. Update both hardware (such as firewall, content filter, and proxy server/cache) and software (such as antivirus and anti-malware). Allow the changes to propagate before testing.

- **Sites for test and administration:**

For MAP Suite:

fonts.googleapis.com
gstatic.com
<https://cdn.jsdelivr.net>
<https://cdn.mapnwea.org>
<https://item.mapnwea.org>
<https://practice.mapnwea.org>
<https://studentresources.nwea.org>
<https://sso.mapnwea.org>
<https://teach.mapnwea.org>
<https://test.mapnwea.org>
newrelic.com

Also, if using Text-to-Speech accommodation tools:

https://*.speechstream.net
<https://speechstreamtoolbar-webservices.texthelp.com>

Also, if using MAP Skills (separate product):

<https://skillsnav.mapnwea.org>
school.nettrekker.com

Also, if using MAP Reading Fluency (separate product):

<https://readingfluency.mapnwea.org>
<https://readingfluency-cdn.mapnwea.org>
<https://student.mapnwea.org>
<https://lmapi.mapnwea.org>

- **Sites for training, documentation, and analytics:**

<https://nwea.force.com/nweaconnection/>
<https://dpdol.nwea.org>
<https://legal.nwea.org>
<https://prolearning.nwea.org>
<https://prolearningonline.nwea.org>
<https://start.nwea.org>
<https://www.surveygizmo.com>

- **Allow in email spam filter (both server and clients):**

*@nwea.org

For example, MAP-AutoResponder@nwea.org is used to send login credentials to staff. Also check whether your filters will block bulk emails from arriving in a short period of time. Either temporarily disable that filter or add an exception for *@nwea.org.

Staff Browser and Other Settings

You can either push the following configurations to staff devices or instruct staff to make changes themselves (if they have permission).

Browser settings:

- **Enable JavaScript.**
- **Enable cookies.** This setting can be applied globally or directly to the staff site teach.mapnwea.org.
- **Allow pop-ups.** Add the site teach.mapnwea.org to the list of allowed sites in the pop-up blocker settings, including pop-up blocker add-ons. If pop-ups remain blocked, then PDF reports will not display automatically and you must click an additional link to open it. For staff completing NWEA training, also allow the above list of training sites.
- **Disable saved password.** Recommended for security purposes.
- **See also:** [Proctor, Teacher, and Staff Requirements](#) on page 4.

Other settings:

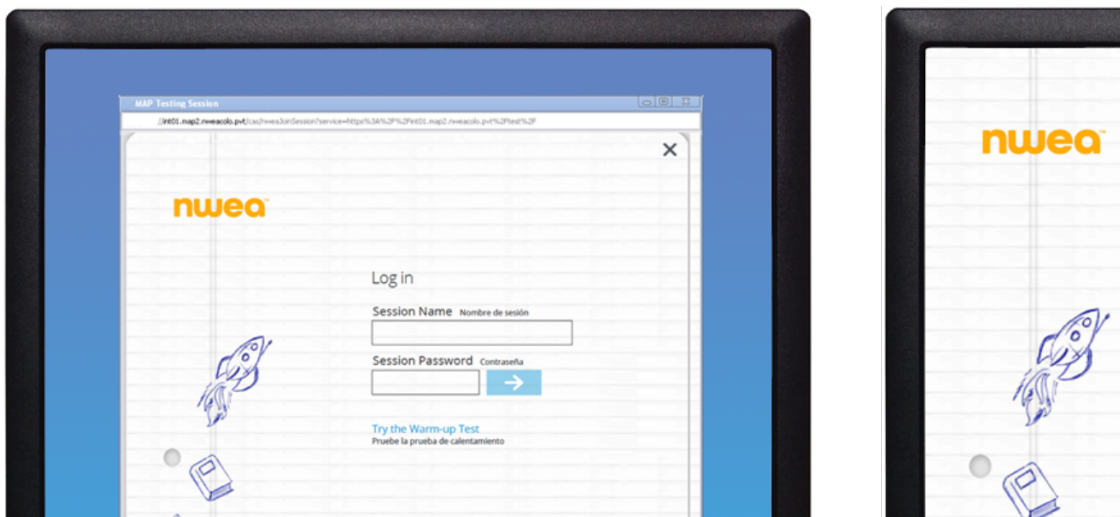
- **Set screen resolution.** Optimal screen resolution is 1280 x 1024.
- **Adjust clock if incorrect.** The device clock must be within 5 minutes of the official standard time in your area. If the time does not match, then access to reports and other parts of the site might fail.
- **Allow NWEA email.** If the device has a spam filter, ensure it allows email from *@nwea.org to receive the automated email with login credentials. Also check whether your filters will block bulk emails from arriving in a short period of time. Either temporarily disable that filter or add an exception for *@nwea.org.

Desktop Computer Setup

To ensure security during MAP Growth testing, students on Windows or Mac desktops use a secure browser from NWEA. This browser restricts access to outside resources. You will download the browser from NWEA, and then install or distribute it to each computer.

The tasks are:

- [Computer User Accounts for Testing](#) on page 9
- [Download Secure Testing Browser](#) on page 9
- [Windows Setup](#) on page 10 or [Mac Setup](#) on page 12
- [Checking Desktop Computer Readiness for Testing](#) on page 14



Local vs. Network—The secure browser should run on each computer locally. Do not run it from a server, because testing will be too slow. However, you can install or distribute the browser over the network.

Update Frequency—If updates are required for the NWEA browsers, they typically occur during summer, ahead of the standard school year. However, there may be *optional* upgrades available mid-year to support new versions of operating systems or browsers.

Computer User Accounts for Testing

As a best practice, create a dedicated computer user account for use during MAP Growth testing and apply the following account settings. In fact, you may want two accounts: one with accessibility features disabled and a separate account for those students who need accessibility features enabled. Choose the option that best fits your student population. Set up the account (or accounts) in your Windows or Mac group policy.

Alternatively, you could temporarily apply the following settings to your standard student accounts.

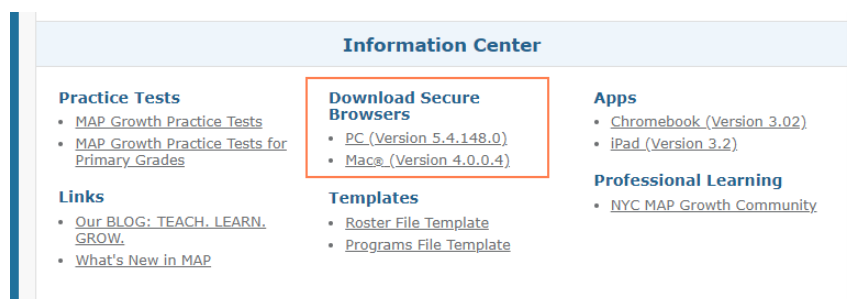
User account settings

- Disable virus and malware scanners, because they can interfere with testing.
- Prevent screen savers, because they can interfere with testing.
- Disable automatic updates to software and the operating system.
- Disable system notifications, such as email alerts.
- Extend the time for power-saving sleep mode to at least 30 minutes.
- Disable any pop-up blocker software tools.
- Disable assistants like Siri and Cortana, as well as voice dictation.
- Disable screen readers that are not supported, such as ChromeVox and VoiceOver. Only use JAWS[®] for those students who need it—see [Screen Reader Guidelines](#) on page 18.

Download Secure Testing Browser

You can download from the homepage of the MAP site (*MAP login required*):

teach.mapnwea.org



The screenshot shows the 'Information Center' section of the MAP website. It is organized into four columns: 'Practice Tests', 'Download Secure Browsers', 'Apps', and 'Professional Learning'. The 'Download Secure Browsers' column is highlighted with a red border and contains two links: 'PC (Version 5.4.148.0)' and 'Mac® (Version 4.0.0.4)'. The 'Practice Tests' column has two links: 'MAP Growth Practice Tests' and 'MAP Growth Practice Tests for Primary Grades'. The 'Links' column has three links: 'Our BLOG: TEACH. LEARN. GROW.', 'What's New in MAP', and 'Roster File Template'. The 'Apps' column has two links: 'Chromebook (Version 3.02)' and 'iPad (Version 3.2)'. The 'Professional Learning' column has one link: 'NYC MAP Growth Community'.

Windows Setup

For Windows computers, use the NWEA **PC Version** browser, available from the MAP home page (teach.mapnwea.org). It includes an installation program.

To install individually on a PC:

1. Log in to the computer with an account that the student would use or with an administrator account.
2. In a browser, log in to **teach.mapnwea.org**.
3. From the home page, download the **PC Version**.
4. Either run the installation at the download prompt, or save the file and then double-click the downloaded file, located here by default:

```
/Downloads/Setup Lockdown Browser.exe
```

5. If prompted, **Remove** the previous version.
6. When prompted, accept the default installation directory or choose another location.
7. To start the NWEA browser, look for the following icon on the computer desktop:



To check the installed version:

If you encounter issues, contact NWEA support, and let them know the version number of the installed NWEA browser. On the PC, launch **NWEA Secure Testing Browser** from the Start menu and type: **Ctrl+Alt+V**.

To push installation over the network:

Network vs. Local—Although you can push the browser executable over your network, the executable itself should run on each computer locally. Do not run the executable from a server, because testing will be too slow.

The following steps require administrator privileges:

1. In a browser, log in to **teach.mapnwea.org**.
2. From the home page, download the **PC Version**.
3. At the download prompt, save the file, located here by default:

```
My Documents/Downloads/Setup Lockdown Browser.exe
```

4. At a command prompt, change to the download directory.
5. Choose the installer that works best with your software deployment tool, and then continue with the appropriate step:

- a. *Option A* = NWEA installer
- b. *Option B* = Microsoft Installer Package (MSI), together with your software deployment tool (not compatible with the Microsoft Group Policy Object tool)

6. *Option A*: To use the NWEA installer, use this syntax in your software deployment tool:

```
"setup lockdown browser.exe" /v/qn
```

Note: There's no space in the parameter /v/qn. You can also choose to run in silent mode by adding the /s parameter, which prevents the installation prompts:

```
"setup lockdown browser.exe" /v/qn /s
```

7. *Option B*: To use the MSI package, first extract it from the download.

- a. At a command prompt, change to the download directory and type the extraction command:

```
"setup lockdown browser.exe"/b"./
```

- b. Cancel the InstallShield prompt.
- c. Use this syntax in your software deployment tool (not compatible with the Microsoft Group Policy Object tool):

```
MSIExec /i "NWEA Secure Testing Browser.msi" /qb  
ALLUSERS="1"
```

Note: If you are overriding an existing installation, first uninstall the Lockdown Browser:

```
MSIExec /x "NWEA Secure Testing Browser.msi" /qb  
ALLUSERS="1"
```

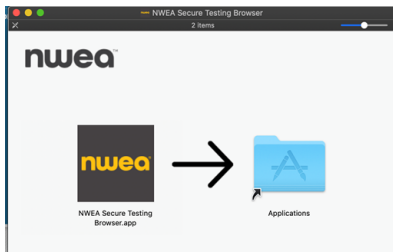
Mac Setup

You can set up the NWEA secure browser one device at a time or through a device management tool.

Note: The setup includes steps to grant permission for accessibility settings on the device (under the Security & Privacy settings). These steps are needed to suppress keyboard shortcuts during testing.

Option 1: Set up one device at a time

1. Open the .dmg file you downloaded.
2. Drag the NWEA Secure Testing Browser icon into the Applications folder.



Note: If prompted, choose to overwrite any existing files with the same name.

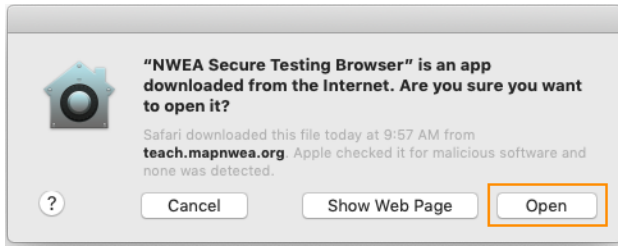
3. For other Mac devices, you can save a step by copying the NWEA Secure Testing Browser app from the Applications folder on this device to same folder on other devices. Alternatively, if you have automated tools, you could push the app across the network.

Initial start and Mac settings

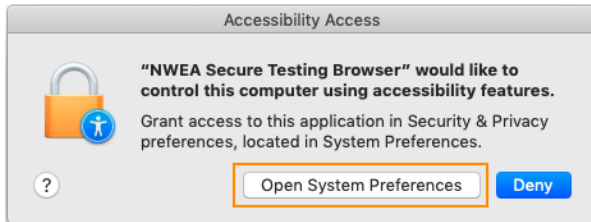
In the following steps, you will grant permission to suppress keyboard shortcuts under the accessibility settings.

Note: These steps require administrator privilege on the device.

1. Start the **NWEA Secure Testing Browser.app**.
2. If you receive the following message, click **Open** to allow it.



3. At the following prompt, click **Open System Preferences**.



4. In the Security & Privacy window, click the **lock icon**, enter your user password, and then select the **NWEA Secure Testing Browser** app:



Note: If the app was already selected, you probably have an older version that you must first disable. Select the NWEA app and click the minus button. Close the window and re-start these steps.

5. Close the Security & Privacy window.
6. Restart the **NWEA Secure Testing Browser.app** to ensure all the prompts are dismissed.

Option 2: Distribute across the network

These example instructions are based on the device management tool Jamf®.

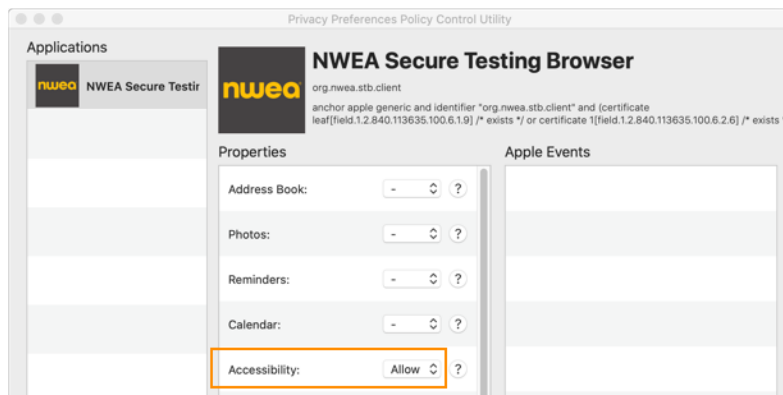
Prepare package file

The .dmg file from NWEA will not install over a network, so you must convert the .dmg file into a package file (.pkg). In Jamf, you would use the Composer tool. Once the package is ready, add it to your distribution point.

Prepare configuration profile

To automatically grant access to required device settings, you need to create and distribute a configuration profile. An easy way to create the configuration profile is using the Privacy Preferences Policy Control (PPPC) Utility.

1. Download the PPPC utility from Github:
<https://github.com/jamf/PPPC-Utility>
2. Open the PPPC Utility on a computer with the NWEA secure browser installed.
3. Drag the NWEA Secure Testing Browser.app to the left column labeled Applications in the PPPC Utility.
4. Under Properties, change **Accessibility** to **Allow**.



5. Click **Save**.
6. Upload the saved profile to the Configuration Profiles section in Jamf.

Checking Desktop Computer Readiness for Testing

Check each computer to ensure it is ready for MAP Growth testing. Allow time after checking the computers to resolve any issues before the first day of testing.

First, check that you have the most recent version of the NWEA Secure Testing Browser installed.

To check the version on Windows:

If you have previously installed the testing browser, you can check the version number by starting the browser and typing: **Ctrl+Alt+V**. You can also use the following steps:

1. Navigate to C:\Program Files (x86)\NWEA\NWEA Secure Testing Browser (newer computers) or C:\Program Files\NWEA\NWEA Secure Testing Browser (older computers).
2. Right-click on the file **NWEA Secure Testing Browser**.
3. Select **Properties**.
4. Select the **Details** tab. **File Version** is listed under **Description**.

To check the version on Mac:

1. Open the Finder and click on **Applications**.
2. Navigate to **NWEA Secure Testing Browser.app** and click once to highlight it.
3. Check the application details on the right. The version number is at the bottom of the list.

To check a student computer for readiness:

1. Start the following icon on the computer desktop:



2. Observe one of these results:
 - **Success:** The Join Session page appears.
 - **Failure:** The page identifies the computer components that failed. Make a note identifying the computer and its failing components.
3. Close the browser by clicking the "X" in the upper right-hand corner.
4. Resolve all failures or report them to your device manager.

iPad Set-up for Students

To prepare iPads for secure testing, install the **NWEA Secure Testing App**, which automatically opens to the student testing site (test.mapnwea.org) in full-screen mode.

- Access—Under the iTunes App Store, search for "NWEA testing."
- Distribution—Use a mobile device management tool, such as Apple's Profile Manager. If needed, use the following IDs:
 - Bundle ID—org.nwea.maptesting
 - App ID—1087546325

If the iPad app freezes...

The app could freeze if there is a break in the wireless connection. You need to exit the app and restart.

Tip: If pressing the Home button fails to exit, then try pressing both Home and Power buttons at the same time until the iPad restarts.

Next, on your **proctor computer**, select an action depending on the Status:

- *Confirmed*—Choose **Select Action > Do Not Confirm** (you will confirm later)
- *Testing*—Choose **Select Action > Suspend**
 - Once suspended, chose **Select Action > Test Again**

Ask the **student** to sign in again, and then confirm as usual.

If you need to interrupt testing at the iPad...

The easiest way to interrupt iPad testing is through the controls on your proctor computer. However, if you are unable to use a proctor computer, it is possible to interrupt directly at the iPad:

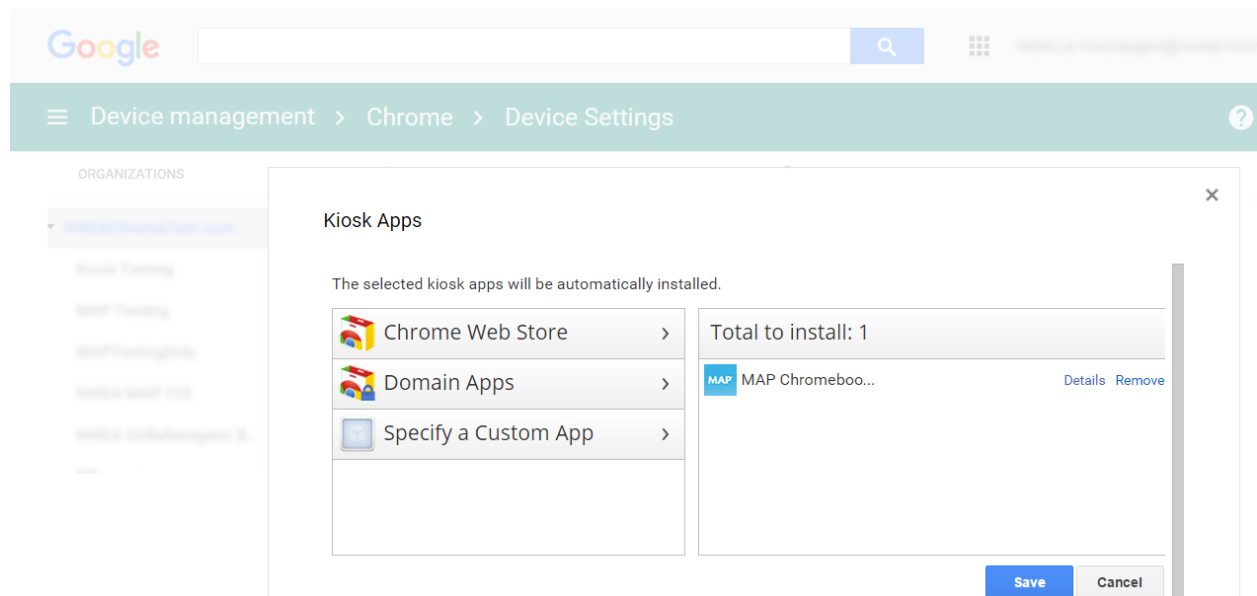
- Connect a keyboard directly into the iPad (you will need an adapter and a simple, low-power keyboard).
- Type the interrupt shortcut: Ctrl + Shift + P.

Chromebook Setup for Students

To prepare Chromebook devices for testing, install the **NWEA Secure Testing App**, which allows students to test in a secure, full-screen kiosk mode. It automatically opens to the student testing site. The app is available from the Google Play(TM) Store, but do not install it directly from the store.

Install the app through the **Chrome Management Console** using the [Google recommended settings](#) for student assessments (Scenario 1 is recommended).

Exiting the app—Earlier versions of the app (below 3.1.0) did not have an exit icon (X). For these earlier versions, tell proctors to press **Shift + Alt + K** when testing is complete and they need to exit the app.



Screen Reader Guidelines

For students who need screen reader technology, you can use JAWS[®]. Other programs may be compatible, but only JAWS has been successfully evaluated for use with MAP Growth testing.

Note: Students who are using screen readers like JAWS may not see the orange focus indicator, because JAWS uses audio navigation instead of visual navigation.

Setup for JAWS Screen Reader

On the student desktop computer:

1. For the student browser, use **Firefox[®]**.
The NWEA secure browser does not support JAWS.
2. In the JAWS settings, ignore the **OnClick HTML attribute**. See the instructions "Ignoring HTML Attributes" under [Speech and Sound Schemes](#).
3. Provide headphones to avoid distracting other students.
4. In the MAP testing session, assign a test labeled **Accessible**, such as "Growth: Math 6+ NWEA 2017 (Accessible)."

These tests work like other MAP Growth assessments, but they ensure all questions have alternative text descriptions for pictures.

Note: There is not currently an accessible test for early learners (grades K-2).

Braille Setup

Students may use a refreshable braille display that is compatible with JAWS. However, support for braille is still in development. If students use a refreshable braille display, please note that there may be some inconsistencies, particularly in the areas of math and science.

Staff Login

For staff to access the MAP Suite, they use this site address:

<https://teach.mapnwea.org>

As a best practice, take advantage of the feature that automatically emails staff their login information. The requirements for this feature are:

- The sender address, MAP-AutoResponder@nwea.org, must be permitted in your email system. Add the following to the email spam filter (both server and clients):

*@nwea.org

- A valid email address must be included in the Email Address of each user profile. Coordinate with the Data Administrator.

An email message is also triggered for a password reset or for changes to the User Name.

Note: As an alternative to the automatic email, it's possible to copy the temporary password that appears on screen when creating a single user (**Manage Users** feature). The temporary password appears only once. If you do not copy it, you will need to reset the password.

Linking to MAP

Try these suggestions to make it easy for staff to open their site (teach.mapnwea.org):

- Push a shortcut to the computer desktops.
- Place a shortcut in a network folder where users can access it, and ask them to copy the shortcut to the desktop (one time per computer).
- Add a favorite or bookmark when you configure the browsers.

Login Issues

If staff encounter problems with their login, make sure they meet the requirements listed under [Staff Browser and Other Settings](#) on page 7.

For a forgotten password, each person can request a reset. Alternatively, you can generate a temporary password by updating the user's profile. See [Resetting a User Password](#) on page 20.

Resetting a User Password

In most cases, users should reset their own password by clicking **Forgot Username or Password?** under the main login prompt. However, if needed, you can generate a temporary password by updating the user's profile.

Note: Your role may prohibit you from resetting the password of users with a role higher than your own (hierarchy depicted in the list of roles below).

Required role: **System Administrator** or **District Assessment Coordinator** or **Data Administrator**

1. In the left navigation pane, click **Manage Users**.
2. Enter your search criteria.
3. Select the correct profile and click **View/Update**.
4. In the All Roles section, click **Request Password Reset**.

Important:

- The new password does not take effect until you submit all changes to the user profile.
- If the user profile:
 - includes an email address, the password is automatically sent via email;
 - has no email address, the password displays on the screen after you submit all changes, and you must email it to the user manually.

5. At the bottom of the screen, click **Submit** when the page refreshes.

The User Profile Summary page appears.

- If you are resetting the password for an Instructor, you must click **Submit** a second time on this page.
 - A message states that the profile has been updated successfully. The page displays the new password or a confirmation that the password was sent by email.
6. If the password displays on the screen after you submit the profile, communicate the temporary password to the user.

When logging in with the temporary password, the user is immediately prompted to create a new password.