Here are the minimum system requirements for the MAP® suite. See the MAP Help Center for details.

**Student Testing Requirements**

Student technology requirements depend on whether or not your school uses secure testing:

- **Secure Testing:** Recommended for MAP Growth™. With proper setup, tools from NWEA will prevent students from accessing other websites. When implementing MAP Growth, your district can choose a setting that requires all students to use one of the secure testing tools.

- **Browser-Only Testing:** Only recommended for MAP® Skills™ and MAP® Reading Fluency™. 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** of their performance and growth.

**Secure testing**

As a best practice, use NWEA secure testing browsers and apps (also called "Lockdown Browser") for MAP Growth testing. With proper setup, these tools prevent students from accessing other websites.

<table>
<thead>
<tr>
<th>Device</th>
<th>Operating System</th>
<th>Secure Testing Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows® PC *</td>
<td>Windows 7, 8.1, or 10</td>
<td>NWEA secure browser for PC, 5.4.117 or higher</td>
</tr>
<tr>
<td>Macintosh®</td>
<td>Mac OS X® v10.12 to 10.15</td>
<td>NWEA secure browser for Mac, 4.0.0.3 or higher running on Safari® 11 or higher</td>
</tr>
<tr>
<td>iPad</td>
<td>iOS 11 to 12 and iPadOS 13</td>
<td>For MAP Growth, use NWEA Secure Testing App, 3.2 or higher</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For MAP Reading Fluency™, use Reading Fluency Secure Testing App, most recent version (updated regularly—check the maintenance dates and NWEA status page)</td>
</tr>
<tr>
<td>Chromebook *</td>
<td>Google Chrome™ OS 65 or higher</td>
<td>NWEA Secure Testing App, 3.0.2 or higher</td>
</tr>
</tbody>
</table>

For installation instructions, see the System and Technology Guide.

* 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 the System and Technology Guide for details.
Browser-only testing

Testing with only a standard browser is advised for MAP Skills and MAP Reading Fluency, because the risk to assessment integrity is low. For MAP Growth, your school assumes the risk from browser-only testing.

<table>
<thead>
<tr>
<th>Device</th>
<th>Operating System</th>
<th>Browser Choices for:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MAP Skills or Growth</td>
</tr>
<tr>
<td>Windows PC</td>
<td>Windows 7, 8.1, or 10</td>
<td>Firefox 64 or higher, Chrome 71 or higher</td>
</tr>
<tr>
<td>Macintosh</td>
<td>Mac OS X® v10.12 to 10.15</td>
<td>Chrome 71 or higher, Firefox 64 or higher, Safari® 11 or higher</td>
</tr>
<tr>
<td>iPad</td>
<td>iOS 11 to 12 and iPadOS 13</td>
<td>Safari® 11 or higher</td>
</tr>
<tr>
<td>Chromebook</td>
<td>Google Chrome OS 71 or higher</td>
<td>Chrome 71 or higher</td>
</tr>
</tbody>
</table>

Note: For MAP Reading Fluency, you must also meet headphone requirements; see [Headphones for students](#) on page 3.

Proctors, Teachers, and Staff Requirements

To administer testing, access reports, or use any other MAP Growth features, staff must meet these minimum requirements.

<table>
<thead>
<tr>
<th>Device</th>
<th>Operating System</th>
<th>Microsoft</th>
<th>Safari</th>
<th>Firefox</th>
<th>Chrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows PC</td>
<td>Windows 7, 8.1, or 10</td>
<td>Edge 16 or higher (not Internet Explorer)</td>
<td>Not supported</td>
<td>64 or higher</td>
<td>71 or higher</td>
</tr>
<tr>
<td>Macintosh</td>
<td>Mac OS X® v10.12 to 10.15</td>
<td>Not supported</td>
<td>Safari® 11 or higher</td>
<td>64 or higher</td>
<td>71 or higher</td>
</tr>
<tr>
<td>Chromebook</td>
<td>Google Chrome OS (v65 or higher is best)</td>
<td>Not supported</td>
<td>Not supported</td>
<td>Not supported</td>
<td>71 or higher</td>
</tr>
<tr>
<td>iPad</td>
<td>Not fully supported</td>
<td>Not supported</td>
<td>Not supported</td>
<td>Not supported</td>
<td>71 or higher</td>
</tr>
</tbody>
</table>

Other requirements: Follow specific browser settings, such as allowing cookies and pop-ups—see [Staff Browser and Other Settings](#) on page 5.
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: 1024 x 768 for students, and 1280 x 1024 for staff
- Scaling or Zoom: 100%
- Color Depth: 32-bit recommended (minimum 16-bit)

Headphones for students

For tests aimed at early learners, students can hear questions read 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.
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 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 Whitelist and Email Configuration

For the following URLs, you should: add to your whitelists, 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.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://lmapi.mapnwea.org
  ```
- Sites for training, documentation, and analytics:
  
  https://community.nwea.org
  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.

**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.

- Disable saved password. Recommended for security purposes.

- See also: Proctors, Teachers, and Staff Requirements on page 2.

**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.