SYSTEM AND BANDWIDTH REQUIREMENTS

For quick reference, here are the minimum system requirements for the MAP® Suite. For full installation instructions, see the MAP Help Center.

Changes: Newer requirements appear after the minimums. These changes take effect **November 2020**.

Student Technology Requirements

Student technology requirements depend on whether your school policy requires secure 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, 5.4.117 minimum (5.4.180.0 suggested)
Mac®	MacOS® 10.12 minimum (10.13 suggested)	NWEA secure browser for Mac, 4.0.0.3 minimum (5.0.0.0 suggested)
iPad (not iPad mini)	iOS 9 minimum (12 or 13 suggested)	For MAP Growth, use NWEA Secure Testing App, 3.2 minimum (3.3 suggested) For MAP Reading Fluency™, use Reading Fluency Secure Testing App, 2.5 minimum
Chromebook*	Google Chrome OS™ 65 minimum (78+ suggested)	NWEA Secure Testing App, 3.0.2 minimum (3.1.0 suggested)

*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 (website is student.mapnwea.org), because the risk to assessment integrity is low. For MAP Growth testing (website is test.mapnwea.org), your school assumes the risk from browser-only testing.

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

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 (not iPad mini)	iOS 9 minimum (12 or 13 suggested)	No	Yes	No	No

*MAP Reading Fluency assessments:** Only the Chrome and Edge browsers are supported, and iPads require a testing app—see secure testing table. Also, you must meet headphone requirements; see Headphones for students on page 3.

Browser versions supported

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

Proctors, Teachers, 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 5
- 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: 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 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 , 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 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://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. 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:** 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. 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.