

System Requirements for Online Testing

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Overview

This document was developed by the American Institutes for Research (AIR) and the Florida Department of Education and contains technology requirements to help Florida districts and schools prepare for online testing using AIR's Test Delivery System. In the 2014–15 school year, the following Florida Standards Assessments (FSA) will be delivered using AIR's system:

- Grades 5–11 ELA
- Grades 5–8 Mathematics
- Algebra 1 EOC
- Geometry EOC
- Algebra 2 EOC

This document includes the following sections:

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Supported Operating Systems and Devices

This section lists the system requirements for running online tests.



Warning: Support for New Desktop Operating Systems

Operating systems that become available but do not appear in the following tables are not supported. Do not upgrade to new operating systems on computers that will be used to administer online assessments without ensuring the updates meet the required specifications.



Note: About the Minimum Requirements for Current Computers

AIR’s secure browser for desktops is based on the open-source Mozilla Firefox web browser. The current requirements align with the minimum recommendations for running Mozilla Firefox on supported operating systems ([Mozilla System Requirements](#)).

The recommended specifications are AIR’s guidelines for optimal performance. If your district or school is contemplating purchasing new computers, we suggest that you consider the recommended specifications. These specifications will ensure that your computers work effectively with the online testing system and provide additional functionality and longevity.

Desktops, Laptops, and Netbooks

Computers used for testing must meet the specifications for each supported operating system as shown in the table below. To ensure optimal student experiences for online testing, any computer that takes a noticeably long time (for example, 10 seconds or more) to start and run applications should be avoided for use with online testing.

| Supported Operating Systems | Requirements for Current Computers | Recommended Specifications for Future Purchases |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|
| Windows 7, 8.0, 8.1 | 1 GHz or faster processor 1 GB RAM or greater memory | Pentium 4 GHz processor 2 GB RAM 80 GB hard drive |
| Mac OS X (Intel) 10.7, 10.8, 10.9 | 1 GHz or faster processor 1 GB RAM or greater memory | Pentium 4 GHz processor 2 GB RAM 80 GB hard drive |
| Linux* Fedora 16, 17, 18, 19, 20 openSUSE 13.1 Red Hat 6.5 Ubuntu 10, 12, 14 (LTS) | 1 GHz or faster processor 1 GB RAM or greater memory | Pentium 4 GHz processor 2 GB RAM 80 GB hard drive |

* For additional Linux information, including required libraries, refer to the *Technical Specifications Manual for Online Testing*.

Tablets

While the specifications for computers, laptops, and netbooks are more general, only supported tablets also running a supported operating system are permitted. These supported tablets have been tested for use with AIR’s Test Delivery System and may be used for student testing.

| Supported Operating Systems | Supported Tablets | Related Requirements |
|--------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| iOS (iPads) 6.0, 6.1 7.0, 7.1 | iPad 2 iPad 3 Fourth-generation (Retina Display) iPad Air | Guided Access must be enabled. For more information, refer to the <i>Secure Browser Installation Manual</i> . |
| Android 4.0.4 through 4.4 | Google Nexus 10 Motorola Xoom Samsung Galaxy Note (10.1) Samsung Galaxy Tab 2 (10.1) | The secure browser keyboard must be enabled after installing the mobile secure browser. For more information, refer to the <i>Secure Browser Installation Manual</i> . |
| Windows 8.0, 8.1 | Surface Pro Asus Transformer Dell Venue | N/A |

Chromebooks

All Chromebooks running a supported Chrome OS may be used for student testing.



About Chrome OS and Automatic Updates

AIR recommends turning off or delaying automatic updates of the Chrome operating system. Doing so will allow AIR to review changes from Google and address any updates that pose a potential risk to student testing. The recommended period for delaying automatic updates is two weeks.

Automatic update settings are configured in Google’s admin console.

| Supported Operating Systems | Supported Devices | Related Requirements |
|-----------------------------|-------------------|---------------------------------------------------------------------------------------------------------------|
| Chrome OS 31+ | All Chromebooks | Kiosk mode must be enabled. For more information, refer to the <i>Secure Browser Installation Manual</i> . |

Thin Clients: NComputing for Windows

NComputing solutions can be used for online testing when used with supported operating systems, server software, and terminals. For an optimal online testing experience, AIR strongly recommends using Windows 7.

Table 1. Supported NComputing Information

| Supported Server Host | Supported Server Software | Supported Terminals |
|-----------------------|---------------------------|---------------------|
| Windows 7 | vSpace Server 6.6.2.3 | L230 L300 |



About NComputing Terminals

AIR conducts quality testing with L230 and L300 terminals. Other terminals should work provided the server host is a supported client Windows operating system.

Secure Browsers for Online Testing

The secure browsers must be downloaded and installed on all computers that will be used for student testing. All secure browsers can be downloaded from the FSA Portal (www.FSAssessments.org).

| Operating Systems | Supported Devices | Secure Browser |
|-------------------|--------------------------------------|-------------------------------------------------|
| Windows | Desktops, laptops, netbooks, tablets | Windows Secure Browser |
| Mac OS X | Desktops, laptops, netbooks | Mac Secure Browser |
| Linux | Desktops, laptops, netbooks | Linux Secure Browser |
| iOS | Supported tablets | Mobile Secure Browser (AIRSecureTest app) |
| Android | Supported tablets | Mobile Secure Browser (AIRSecureTest app) |
| Chrome OS | Chromebooks | Mobile Secure Browser (AIRSecureTest kiosk app) |

Supported Web Browsers for Training Tests

The following web browsers are supported for the training tests. Please note that the supported web browser version depends on the operating system being used (e.g., newer versions of Mac OS X do not support earlier versions of Safari.)

| Operating Systems | Web Browsers |
|-------------------|---------------------------------------------------------------------------|
| Windows | Internet Explorer 10 and 11 Google Chrome 31+ Mozilla Firefox 10–33 |
| Mac OS X | Google Chrome 31+ Mozilla Firefox 10–33 Safari 4–7* |
| Linux | Google Chrome 31+ Mozilla Firefox 10–33 |
| iOS | Safari 6 and 7 |
| Android | Google Chrome 31+ |
| Chrome OS | Google Chrome 31+ |

* While Safari is a supported web browser, it does not render all math symbols well. For this reason, AIR recommends using Firefox or Chrome on computers running a supported Mac OS X system.

Requirements for Appropriate Display

- Screen Dimensions: 10" class or larger (iPads with a 9.5" display are included in this class).
- The minimum required resolution for desktops, laptops, and tablets is 1024 × 768.
- The minimum required resolution for netbooks is 1024 × 600.

Depending on the screen size, students may need to use vertical and/or horizontal scroll bars to view all test-related information. Students may also use the Zoom tool in the online test to enlarge the content on the screen.

Note about brightness/contrast:

Some test items include images that are shaded. Because monitors and screens vary widely, we cannot guarantee that the “default” settings on monitors are optimal. Monitor settings may need to be adjusted if a student says test items with shaded images (e.g., pie charts) are very light or cannot be seen.

Additional Requirements

Keyboards

The use of external keyboards is strongly recommended for tablets that will be used for testing.

Students may use mechanical, manual, and Bluetooth-based keyboards. Some external keyboards have additional “shortcut” buttons that can create security issues. These buttons may allow students to open another application or the tablet’s default on-screen keyboard. AIR strongly cautions against using keyboards that have these shortcut buttons.

For Android and Surface tablet users:

The Android and Surface mobile secure browser requires the secure browser keyboard to be used because the default tablet keyboard includes a row for predictive text. Therefore, any external keyboard that has a shortcut button to open the tablet’s default keyboard is not permitted, as this default keyboard will override the mobile secure browser keyboard.

AIR has determined that the following external keyboard contains a shortcut button that opens the default keyboard and should NOT be used with Android or Surface tablets:

- EZOWare Slim Full Size Keyboard

Headphones

Some students will need headphones to listen to audio in online assessments.

- Some assessments contain several items that have recorded audio.
- Students with a text-to-speech accommodation can listen to stimuli or test items being read aloud.
- Students with a braille accommodation can use the Job Access with Speech (JAWS[®]) screen reading software.

School Assessment Coordinators should determine how many students will need headphones prior to testing to ensure that there is an adequate supply on hand.



Note: Text-to-speech requires the use of the secure browser. Students who require text-to-speech for the practice tests should use the secure browser.

Two types of headphones are supported: USB and Bluetooth.

- USB headphones are recommended over Bluetooth. These headphones provide reliable performance regarding clarity and accuracy.
- The following Bluetooth headphones are supported: Logitech H800, SoundBot SB270, and ECO Sound ECO-V300.