THE STATE EDUCATION DEPARTMENT / THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234

OFFICE OF EDUCATIONAL DESIGN AND TECHNOLOGY
89 Washington Avenue, Room 319 EB
Phone: (518) 474-5461; Fax: (518) 473-2860
E-mail: edtech@nysed.gov; Web: www.p12.nysed.gov/technology

Minimum Technology Requirements for New York State Computer-Based Testing

Updated September 22, 2015

The New York State Education Department (NYSED) is providing these technology requirements to help districts and schools as they make technology decisions to meet the instructional and assessment needs in their classrooms. This information is intended to help districts and schools determine readiness of existing technology devices, networks, and hardware for the New York State Grades 3-8 ELA and mathematics computer-based tests administered by Questar Assessment, Inc.

New York's computer-based tests will be available on laptops, tablets, Chromebooks, and PCs. Research on computer-based testing has shown that all allowable devices meeting the minimum technology requirements functioned equally well. Additional research also suggests that students perform similarly on assessment items across different devices. While this information is important, we encourage you to implement technology based on what teachers and students will use in the classroom as this regular interaction with technology in the classroom will ensure a smoother transition to CBT.

NYSED recommends that districts and schools select technology and devices based on instructional needs, not computer-based testing. However, it is important to keep in mind the minimum specifications and technology infrastructure needed to support CBT. NYSED has worked with our test vendors to outline the minimum technology requirements. All computer-based testing documentation and resources will be available online at: http://www.p12.nysed.gov/technology/CBT.

New York State Computer-Based Testing
Minimum Technical Requirements

Updated September 22, 2015

Operating System	**Desktop / Laptop**	Windows: *Vista, 7, 8, 10 Mac: OSX 10.6+ *Linux: Fedora 16+; Ubuntu 10.4, 11.10, 12.4
	Chromebook / Tablet	*Chrome: Chromebook on OS v29+ iOS: iPad on iOS 7+ *Android: Android tablet on OS 4.2+ *Windows: Windows tablet on 8
Processor	**Desktop / Laptop**	Intel Core 2 Duo 1.6 Ghz equivalent or higher CPU
	Chromebook / Tablet	Chrome: 1.6 Ghz + or equivalent iOS, Android, Windows: 1.0 Ghz dual core equivalent or higher
System Memory	**Desktop / Laptop**	Minimum 512MB RAM Recommended 1 GB RAM Minimum 1 GB Free Storage Space
Supported Browsers		Internet Explorer v9+ Mozilla Firefox 38+ Google Chrome 42+ Apple Safari 8 *Microsoft Edge (beginning 2016) *Chrome Kiosk mode support coming Fall 2015
Screen Size & Resolution	**Desktop / Laptop**	Recommend 11.6" or larger for desktops Minimum 1024 X 768 screen resolution
	Chromebook / Tablet	Minimum 10" screen size Minimum 1024 X 768 screen resolution
LAN Network		Min: 802.11g Wireless 54Mbps or greater; 100 Mbps LAN for desktops / Minimum available LAN bandwidth at each workstation: 1Mbps Rec: 802.11n Wireless 150 Mbps or higher; 1 Gbps LAN for desktops / Recommended available LAN bandwidth at each workstation 2 Mbps
Internet Speed		Minimum per device: 150 Kbps Recommended: 300 Kbps
Universal Input Devices**		Required: Keyboard – wired or wireless/Bluetooth Optional: Pointing device, such as a mouse

* Grades 3-8 ELA and Mathematics Tests ONLY.
** School districts should plan for and test input/output devices required for individual student accommodations for the 3-8 ELA and Mathematics tests. These devices may include, but are not limited to, headphones/earphones, microphones, switches, and alternative keyboards.

NOTES:

(1) **Minimum technology requirements** address the oldest operating systems and the lowest levels of hardware that can reasonably be compatible with computer-based assessments in 2015-16. Computers that meet the minimum specifications will satisfy computer-based testing guidelines in 2015-16, but may be more likely to experience slower performance.

(2) **Recommended technology requirements** outline the levels of computer and network capacity that are more likely to meet growing demands for school technology to support learning, assessment, and administrative uses. They can be expected to satisfy computer-based testing needs beyond 2015-16.

(3) NYSED requires that schools using tablet devices during computer-based testing provide an **external keyboard** to all students to ensure equitable access to test content due to the location of the virtual keyboard. External keyboards must allow students to enter letters, numbers, and symbols and to shift, tab, return, delete, and backspace. Tablet touchscreen interfaces can be used for student interactions with the assessments other than text input. Keyboards may be wired or wireless. To meet security guidelines, each Bluetooth/wireless keyboard must be configured to pair with only a single computer during assessment administration.

(4) Each computer operating in a **thin client environment** should meet or exceed minimum hardware specifications, as well as bandwidth and security requirements. Schools utilizing virtual solutions are strongly encouraged to completely test their systems and setup prior to test administration to verify successful test delivery.

(5) Eligible devices of any type (desktop, laptop, netbook, tablet, thin client) or operating systems (Windows, Mac, Linux, iOS, Chrome OS, Android) must have the **administrative tools and capabilities to "lock down" the device** to temporarily disable features, functionalities, and applications that could present a security risk during test administration and should not prevent a secure browser or other test software from entering the computer into lock down mode. The operating systems listed here meet this security requirement, but provide different mechanisms for managing user security settings at the individual device and/or enterprise levels. School technology administrators should be familiar with the particular requirements of the systems they will be using for New York State assessments to ensure test security is maintained.