Best Practices for MCAS Computer-Based Testing Set-Up, Administration, and Troubleshooting

The tables below describe some best practices for a successful computer-based test (CBT) administration:
1. Technology set-up
2. Steps for test coordinators and test administrators during test administration
3. Troubleshooting common computer-based testing issues

Further details will be provided in the MCAS *Principal's Administration Manual*. Direct technology questions to the MCAS Service Center at mcas@cognia.org or 800-737-5103 and policy questions to the Department at mcas@doe.mass.edu or 781-338-3625, and contact the MCAS Service Center to report any technology issues that cannot be solved quickly at the local level. Prior to testing, technology coordinators can also set up a call with technology support specialists, as detailed in the table below. During testing, if there is a situation in which a student is waiting for more than 15 minutes, then schedule the student to complete the session at a later time.

1. Technology Set-Up

Best Practice	Steps to Take	Description
Determine whether to precache test content based on the school's bandwidth.	• Review the *ProctorCache Recommendation for 2021-22 MCAS Computer-Based Testing*.	If you decide to use precaching based on the result of the Network Check, download ProctorCache and set it up in PearsonAccess^next for all test sessions.
Determine whether to conduct an Infrastructure Trial	Review the **Infrastructure Trial Overview** in the Infrastructure Trial Readiness Guide on the MCAS Resource Center, which provides an overview and purposes of the infrastructure trial. The trial is designed to confirm that: • TestNav is configured correctly • If precaching, the ProctorCache machine is properly configured to deliver test content to devices • Devices can successfully run TestNav • Participating staff know how to monitor and manage a computer-based MCAS test • Students are familiar with the computer-based tools and format	If your organization has successfully administered school-wide CBT, and you are able to confirm the five bulleted items in the list to the left, your organization may **not** need to conduct an infrastructure trial. If one or more items in the bulleted list to the left cannot be confirmed, or if your technology setup has significantly changed since the last CBT administration (including schools that will be using Bring Your Own Device for the first time), an Infrastructure Trial **is** recommended.

Best Practice	Steps to Take	Description
Verify that devices and operating systems meet system requirements prior to testing.	• Visit the system requirements page for the most updated information. • Turn off auto-update on Chromebooks to avoid auto-updating to an unsupported OS. See instructions under "Set up all Chromebooks" below.	Operating systems, particularly iOS and ChromeOS, update frequently. Students may not be able to test or may experience interruptions if the testing device/operating system is not supported.
Set up all Chromebooks to suspend OS updates, including peer-to-peer, during testing.	Sign into the Google Admin console, go to **Device,** click **Chrome,** click **Settings**. Choose the organization you want to update these settings for. Go to **Device,** click **Auto Update Settings,** select **Block Updates,** click **Save.**	If the ChromeOS is set to automatically update, this could take place during testing, which could cause student connectivity or device issues. This ChromeOS feature can be managed by a Chrome administrator. Chrome releases a full OS update about every 6 weeks, and releases minor updates approximately every 2–3 weeks.
Disable ChromeOS accessibility settings.	Sign into the Google Admin console, go to **Device,** click on **Chrome**, click on **Settings.** Scroll down to **Sign-in screen accessibility** and select **Disable…** for the accessibility features you wish to turn off.	ChromeOS accessibility settings can interfere with supports the student may have in TestNav. Disabling ChromeOS accessibility settings prior to testing allows for the students' supports to work smoothly.
Set up a Secondary Save Location in the TestNav Configuration in PAN.	When in PAN, click **Setup > TestNav Configurations > Create/Edit Configurations**. On the right-hand side, there are fields to set up a secondary save location on a local server.	Setting up a secondary save location will allow TestNav to write a student response file to both the device as well as the secondary location. It provides a backup in case of a lost response due to a connectivity, power, or device issue, when the primary response on the student device cannot be located. In the case of Chromebooks set to wipe data, this step is necessary to create a backup file of each student response. Chromebooks, iPads, and Android Tablets can **only** use an SFTP server for secondary save locations. These mobile devices cannot use UNC paths or mapped network drives. An example of the required SFTP path format is provided in the TestNav Configurations Menu.

Best Practice	Steps to Take	Description
Minimize system impact	Before testing: 1. Disable low-end wireless protocols that are not being used. 2. Turn off students' cell phones to avoid potential interference during testing. 3. Ask classrooms to stagger logins to minimize initial loading time. For example, in a class of 30 students, the test administrator can have 10 students log in each minute, decreasing the strain on the network.	Taking these steps in advance of testing will reduce the impact of testing on local networks.
Schedule a call with Technology Support Specialists	Before testing, schedule a 15-, 30-, or 60- minute call for one-on-one support with Pearson's technology support specialists (i.e., Field Service Engineering).	This is an opportunity for technology coordinators to receive support with the following: • Technology set-up and site readiness • Questions about TestNav • ProctorCache set-up • TestNav Configurations in PearsonAccess[next] • Infrastructure Trials (set-up as well as debriefing)

2. Steps for Test Coordinators and Test Administrators During Test Administration

Best Practice	Steps to Take	Description
Have the following materials available, and confirm if they are in working order: • power cords, power strips, extra batteries, extra computers to serve as back-up devices that can be used if needed • computer mice and wired external keyboards (strongly recommended for students using tablets) • headphones for students with disabilities using the text-to-speech accommodation (See the *Accessibility and Accommodations Manual* for details.) Ensure that devices will be charged prior to each test session.	• Use the device planner to determine the number of devices needed at a given time. • Students who will be using a touchpad (only) should complete practice tests with the touchpad to familiarize themselves with answering the different question types prior to testing. • External keyboards are strongly recommended due to the smaller screen size on a tablet when using the internal keyboard.	Schools have reported that some students had a challenging experience with some of the technology-enhanced test questions when they used a touchpad (only). Schools have reported that students cannot see all the parts in a test question or all the writing space available due to the reduced screen size when the keyboard pops up.
Keep a log of the devices that students will use during testing.	Mark the local device ID number on each student's testing ticket or an internal tracking form, or maintain a spreadsheet.	If a student's device experiences an interruption in testing, responses are saved on that device. If it appears that the student is "missing answers," resume the student's test in PAN and have the student sign back into TestNav on the **same device** to transmit responses. If the device cannot be located, and there is no secondary save location, there is no way to find a student response file.
If the student is in Resumed Upload status, **do not** skip upload when prompted by TestNav.	Contact the technology coordinator to upload the student response file for the student.	"Skipping upload" tells TestNav that there is no student response file to be found, and the system will then auto-delete any previous student response files and create a new one. If the student had missing responses, there will be no file to locate.

3. Troubleshooting Common Computer-Based Testing Issues

Issue	Solution
Loss of Internet connection	• If the Internet connection does not restore before students are finished, have the students exit TestNav, write down the device IDs, and have them sign back in **on the same testing device** when the Internet connection is restored, so that the students can submit their final answers. If the student is testing on a Chromebook, do **not** power off the device, unless there is a secondary save location already set up. • If the issue cannot be resolved immediately, the test administrator should instruct students to stay logged out of TestNav. Testing can resume when Internet connectivity is restored that day (or the next day if connectivity is not immediately restored).
Loss of power	• When power is restored, the test administrator should instruct students to log back in on the same testing devices; this will ensure that all saved responses are transmitted properly. • If a school uses Chromebooks that are set to wipe data on reboot, the technology coordinator will need to find students' response files in the secondary save location and upload them to TestNav before the students' tests can be resumed.
A student runs out of space on the ELA test, or the character counter shows 0.	• Check the character counter to see if the student used all of the available characters. If the student has reached the maximum number of characters, instruct the student to edit their work so that it will fit in the space provided. • Students whose computer shows fewer characters than what appears on-screen may have hidden spaces or other characters in the text box taking up space. To restore the full character count, highlight the entire box, scrolling all the way down to catch any hidden characters, and click delete.
A student started testing with the wrong accommodation (e.g., a student needs text-to-speech but does not have TTS enabled).	• Follow the steps in the "Resolving Incorrect Accommodations During Testing" module, which is available at mcas.pearsonsupport.com/training/.
TestNav Error Codes	• TestNav error codes contain a reference number that can be used to troubleshoot the issue and view recommended actions. Error codes are available here: https://support.assessment.pearson.com/display/TN/Error+Codes