Calculator and Electronic Device Policy
2016-17
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Calculator Policy—Paper-Pencil Assessments

Calculators are not required, but approved calculators may be used on the following paper-pencil assessments.

Students should understand that, while calculators are allowed, showing their work is still essential when responding to short-answer items.

Mathematics
- Smarter Balanced Mathematics, grades 6 to HS – sessions 2 and 3 only
- Year 1 (Algebra/Integrated Mathematics 1) End-of-Course Exit Exam (EOC) – all sessions
- Year 2 (Geometry/Integrated Mathematics 2) End-of-Course Exit Exam (EOC) – all sessions
- Mathematics Collection of Evidence (COE)

Science
- Measurements of Student Progress (MSP), grades 5 and 8 – all sessions
- Biology End-of-course (EOC) – all sessions
- Biology Collection of Evidence (COE)

Calculator Use and Restrictions
- Students should be thoroughly familiar with the operation of the calculator they plan to use on the assessment. This includes calculators provided by the school.
- During approved testing sessions, students may use their own calculator.
- Calculator memory must be cleared before and after testing. See the Calculator Memory Clearing section for specific directions.
- Calculators may not be shared and communication between calculators is prohibited during testing.
- Calculators must operate in silent mode during testing.

Unapproved use of a calculator may create undue advantage for a student. Students who use unapproved calculators or use a calculator on an assessment for which a calculator is not allowed must be logged as a Testing Incident and submitted to the State Test Coordinator, via ARMS or the SFTP site.

Allowed Calculators
- Four-function calculators
  NOTE: A four-function calculator may be used but is not recommended for mathematics EOC or COE assessments.
- Scientific calculators
  NOTE: A scientific calculator is sufficient for all items on all assessments
- Graphing calculators without CAS, with memory cleared both before and after each test session
  NOTE: The TI-85 is not recommended due to programming errors in certain mathematical algorithms
- Graphing calculators without CAS, enabled in Press-to-Test mode for:
  - TI-84+
  - TI-Nspire calculators without CAS, only in the following three cases:
    1. With the TI-84 Plus keypad and the memory cleared OR
    2. With the TI-84 Plus keypad and enabled in Press-to-Test mode OR
3. With the Nspire keypad using operating system 1.7 or higher with both "Limit geometry functions" and "Disable function grab and move" invoked in Press-to-Test mode

For mathematics assessments, students need access to the following calculator functions:
- Exponents
- Square root
- Cube root
- Trigonometric functions (for Geometry/Integrated Mathematics 2 EOC)

Use of Calculators Among Students
When there are fewer calculators available than the number of students testing, a calculator may be used by more than one student when the following process is applied:
1. A student is required to check out a calculator, with the memory cleared, from a Test Administrator (TA).
2. When the student has finished with the calculator, he/she will check it back in to the TA. The TA will immediately clear the calculator memory so it may be used by another student. Students may not share calculators that are checked out from the TA.

Calculator Memory Clearing
Students with memory-enabled calculators are not allowed to bring stored examples into the exam, access programs during testing, or take secure test content out of the testing room. Students who attempt to take secure test content out of the room by any method will have their test scores invalidated.

Therefore, each memory-enabled calculator must either:
- have the memory cleared both before and after each testing session. This must be verified by the TA.
  OR
- be used in Press-to-Test mode. TAs must invoke Press-to-Test mode at the beginning of each test session and exit Press-to-Test mode at the end of each test session.

Please be advised that clearing the calculator memory deletes stored programs and applications. Before the test day, students should be told to store all data and software they want to save on a computer or a calculator that is not being used for the test.

If a memory-enabled calculator can neither have its memory cleared nor Press-to-Test mode invoked prior to the test session, students are not permitted to use that calculator during the assessment.

Prohibited Calculator Devices and Features
TAs are required to verify that each calculator is a hand-held device designed for mathematical computations. TAs are required to disallow the use of prohibited devices and devices with the prohibited features. If students are permitted to use their own calculators, it is the responsibility of the TA to certify that those calculators do not have any of the prohibited features.

The following devices are not allowed on state assessments:
- computers, tablets, electronic writing pads
- PowerBooks and portable/hand-held computers
- pocket organizers
- cell phones
- iPod calculators
- calculators with an algebraic operating system (CAS or Computer Algebra System)
- hardware peripherals used with a calculator
The following features are **not allowed** on devices used on state assessments:

- cellular or text messaging capability
- camera, scanning, or audio/video recording capabilities
- audio/video player
- wireless or Bluetooth capability or Internet access capability
- infrared capability (i.e. communicate wirelessly with other calculators)
- memory disks
- paper tape
- touch screen, pen, or stylus
- QWERTY keyboards or keypads as part of hardware or software
- audible sounds, i.e., “talking”
- requiring an electrical outlet
- graphing programs

**Some examples of specific calculator models prohibited**

- Casio: CFX-9970G series, Algebra FX 2.0, and ClassPad 300
- Texas Instruments: TI-89 series, TI-92 series, Voyage 200, TI-Nspire CAS

This list is not exhaustive and calculators that are not listed should be checked for the listed prohibited features. TAs are required to disallow the use of any calculator with the prohibited features. If students are permitted to use their own calculators, it is the responsibility of the TA to certify that calculators do not have any of the prohibited features. Failure on the part of the TA to verify that each calculator meets the above requirements will constitute a test incident and may invalidate the student's test score.
Online Calculators in the Test Delivery System

About Calculators in the Test Delivery System

Starting in the fall of 2016, a new calculator is embedded within the online assessments. This new calculator is modeled on the Desmos online calculator. The Desmos HTML5 calculator is used by millions of students around the world and can be accessed from the web, or on iOS, Android and Chrome apps. This calculator is fully accessible at the WCAG 2.0 AA level (optimized for blind and visually impaired students).

Three calculator versions are used in Washington’s online assessments, including Practice, Training, and Interim (starting in fall 2016), and Summative (starting in spring 2017). Summative assessments include the Smarter Balanced mathematics and science assessments. The embedded calculator is a universal tool and does not need to be turned on in TIDE.

Basic Calculator
Available for the following tests:
- Mathematics Grade 6 Assessments
- Science Grade 5 Assessments

Scientific Calculator
Available for the following tests:
- Mathematics Grade 7 and 8 Assessments
- Science Grade 8 Assessments
- High School Next Generation Science Field Test in Spring 2017
- High School Science Assessments beginning Spring 2018
Graphing Calculator
Available for the following tests:
- Mathematics High School Assessments.

The Desmos site contains a wide array of resources to help both teachers and students become familiar with the calculator, including a full user guide.

Teachers and students can practice using these calculators on the Training and Practice tests. Students should have experience with the online calculator prior to taking an interim or summative assessment.
Guidance for Bring Your Own Device (BYOD) and the Online State Assessments

If a district has an existing Bring Your Own Device (BYOD) Acceptable Use policy with established guidelines already in place, the district may choose to allow use of student devices for the state online assessments. If these elements are not already in place through an existing BYOD Acceptable Use policy, it is highly recommended that some mechanism is provided for parent approval/signature, a general understanding that student security settings on their device need to be activated and up-to-date to prevent issues with the school network, and an expectation that no attempt will be made to tamper with the code of the Security Browser or otherwise circumvent test security settings.

Additional Recommended Steps

1. An authorized district IT person should either install the Secure Browser software, or they should validate that proper steps have been taken to ensure test security (e.g., Windows Fast Switching capability must be disabled);
2. The Secure Browser operation on the student device should not be used for the first time on the operational summative test, but should be tested through a proctored training/practice or interim assessment to ensure readiness for operational testing; and
3. The same appropriate and high-level adult supervision should be provided during the operational test as for students using district-provided devices.

Minimum Requirements for Student Devices

- Windows laptops: Windows XP (service pack 3), Pentium 233 MHz processor, 128 MB RAM, 52 MB hard drive free space
- Mac OS laptops: Mac OS X 10.4.4, Intel x86 or PowerPC G3 (300 MHz) processor, 256 MB RAM, 200 MB hard drive free space
- Linux laptops: Linux (Ubuntu 9-10, Fedora 6), Pentium II or AMD K6-III, 233 MHz processor, 64 MB RAM, 52 MB hard drive free space
- iOS tablets: iPads 2 running iOS6
- Android tablets: Android-based tablets running Android 4.0+
- Windows tablets: Windows-based tablets running Windows 8+ (excluding Windows RT)
- Chrome OS devices: Chromebooks running Chrome OS (v19+)
- Screen Size for all devices: 10'' class or larger, 1024 x 768 resolution
- External keyboard required unless student uses alternative input devices as part of their classroom instruction
Additional External Device Policy

Keyboards
External keyboards are required for tablets 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.

Keyboards with Android
The Android mobile secure browser requires the secure browser keyboard to disable 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.

**NOTE:** AIR has determined that the EZOWare Slim Full Size Keyboard contains a shortcut button that opens the default keyboard and should **NOT** be used with Android tablets.

Headsets and Headphones
Students may need headphones to listen to audio in online assessments, and will need to use headsets (which have microphones) to record audio answers to ELPA21 tests. Below are some scenarios that require headsets or headsets:

- Students with the text-to-speech accommodation can use headphones to listen to stimuli or to test items being read aloud.
- Students with the enhanced accessibility accommodation can use headphones along with Job Access with Speech (JAWS®) or other screen reading software to complete online tests.
- Each NComputing terminal used for testing must have a USB headphone or headset.
- Students participating in ELPA21 must have a headset (with a microphone) to record responses to speaking items. Students must test with a headset throughout the entire ELPA21 test. ELPA21 Test Coordinators should determine how many students will need headsets to ensure that there are enough available at the time of a test.

For details on recommended headsets and functions, refer to the System Requirements for Online Testing manual.

Mice
Mice on mobile devices are not supported. Wireless or wired mice on desktops and laptops that are compatible with the operating system are supported.
## Appendix A: Revision Log

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