



Washington Office of Superintendent of

**PUBLIC INSTRUCTION**

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Washington Comprehensive  
Assessment Program

# Calculator and Electronic Device Policy

*Washington State Assessments*

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# Calculator Policy

This page describes the calculator policy as a universal tool for the paper-pencil Smarter Balanced Mathematics and Washington Comprehensive Assessment of Science (WCAS) assessments.

For online mathematics and science testing, students have access to an embedded calculator as a universal tool. For more information about the calculator available during testing, visit the [Desmos.com State Assessments webpage](#) or review the [Mathematics Online Training Test Activities Overview](#) document or the [WCAS Online Training Test Quick Start Guide](#).

Information about allowed accessibility features related to calculator use (such as Braille or talking) on both paper-pencil and online mathematics and science assessments is available in the [Guidelines on Tools, Supports & Accommodations for State Assessments](#) (GTSA).

## Calculator Use and Restrictions Policy

- Students should be thoroughly familiar with the operation of the calculator they plan to use on the assessment. This includes calculators provided by the classroom or school.
- Students must not use calculator memories to take secure test content out of the room. Students who attempt to remove secure test content from the room by any method will have their test scores invalidated.
- 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.
- Calculators must operate in silent mode.

Unapproved use of a calculator may create undue advantage for a student. Students who use unapproved calculators or use a calculator on an assessment or a session for which a calculator is not allowed must be logged as a Testing Incident and submitted to the State Test Coordinator, via Assessment Reporting Management System. This will result in invalidation of all involved students' tests, if such a situation occurs.

## Allowed Calculators for Paper-Pencil Mathematics Assessments

- Students in grades 3, 4, and 5 are not permitted to use any calculators for any session.
- Session 1 in grades 6, 7, 8, and high school is a non-calculator section of the assessment when students are expected to perform the skill without a calculator.
- Students in grades 6, 7, 8, and high school may use calculators for Sessions 2 and 3. Calculators with the following maximum functionality are acceptable for use.

Table 1. Allowed Calculators for Paper-Pencil Math Assessments

Grade	Calculator Type	Calculator Description
Grades 3-5 Mathematics	No Calculators Are Permitted	No Calculators Are Permitted
Grade 6 Mathematics Sessions 2 and 3 only	Four-function calculator	A four-function calculator with square root and percentage functions
Grade 7 and 8 Mathematics Sessions 2 and 3 only	Scientific calculator	A scientific calculator with exponents, trigonometry, and logarithmic functionalities
High School Mathematics Sessions 2 and 3 only	Graphing calculator	A graphing calculator with similar functionalities to a TI-84

## Allowed Calculators for Paper-Pencil Science Assessments

- Students in grades 5, 8, and High School can use calculators on the entire test. Allowable calculator types include four-function and scientific.
- Graphing calculators are not allowed.
- Calculators with the following maximum functionality are acceptable for use.

Table 2. Allowed Calculators for Paper-Pencil Science Assessments

Grade	Calculator Type	Calculator Description
Grade 5 Science	Four-function calculator	A four-function calculator with square root and percentage functions
Grade 8 and High School Science	Scientific calculator	A scientific calculator with exponents, trigonometry, and logarithmic functionalities

### Calculator Memory Clearing Policy

Students with memory-enabled calculators are not allowed to bring stored examples into the exam, access programs during testing, or take out the exam questions afterwards. For this reason, a memory-enabled calculator must either:

- have the memory cleared both **before** and **after** each testing session, **or**
- be used in Press-to-Test mode. Test Administrators (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.

TAs are required to check calculators before the exam and disable any stored programs and applications on all calculators by either clearing the memory both before and after the exam or by invoking Press-to-Test mode. **Please be advised that clearing the calculator memory will delete stored programs or applications; students should be told prior to the test day to store all data and software they wish to save on a computer, or a calculator not being used for the test.**

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

### Prohibited Devices and Features

The following specific devices are not allowed on state assessments: Computer, PowerBook and portable/hand-held computer calculators, pocket organizers, electronic writing pads or pen-input/stylus-driven devices, instruments with QWERTY keyboards, cell phone, and iPod calculators.

TAs are required to disallow the use of any calculator with prohibited features listed below. If students are permitted to use their own calculators, it is the responsibility of the Test Administrator to certify that calculators do not have any of the prohibited features. Failure on the part of the Test Administrator to verify that each calculator meets the above requirements will constitute a test irregularity and may invalidate the student's test score.

- Any device with cell phone or text messaging capability
- Any device with camera, scanning, or audio/video recording capabilities
- Any device with a digital audio/video player
- Any device with wireless or Bluetooth capability or that can access the Internet
- Calculators that can communicate wirelessly with other calculators (i.e., infrared capabilities)
- Calculators with memory disks
- Pocket organizers or personal digital assistants
- Hand-held or laptop computers
- Electronic writing pads with input devices such as touch screen, pen or stylus
- Calculators with QWERTY keyboards or keypads as part of hardware or software
- Calculators with paper tape
- Calculators that "talk" or make audible sounds
- Calculators that require an electrical outlet
- Graphing calculator programs

- Hardware peripherals used with any calculator
- Calculators with an algebraic operating system (CAS or Computer Algebra System)

## Online Calculators in the Test Delivery System

### About Calculators in the Test Delivery System

The online Test Delivery System provides an embedded calculator during calculator-allowed sections of the test, modeled after the Desmos online calculator. This calculator is fully accessible at the WCAG 2.0 AA level (optimized for blind and visually impaired students see [Available Accessibility Features](#) for additional information).

If a student requires a calculator with specific accessibility functions that the embedded calculator is unable to fulfill, they may be permitted to use a non-embedded calculator, as outlined in the GTSA, and so long as the need is documented in their IEP or 504 plan. This is the only time a nonembedded calculator may be used during the online test, and this accommodation must be marked in TIDE.

Use of a non-approved non-embedded calculator during an online assessment requires that the students test be invalidated in TIDE Appeals.

Three calculator versions are used in Washington's online assessments, including Practice and Training Tests, Interim Assessments, and the Summative Assessment. Summative assessments include the Smarter Balanced mathematics and Washington Comprehensive Assessment of Science (WCAS). The embedded calculator is a universal tool and does not need to be turned on in TIDE.

*Figure 1. Basic Calculator*



The **Basic Calculator** is available for the following tests:

- Mathematics Grade 6
- WCAS Grade 5

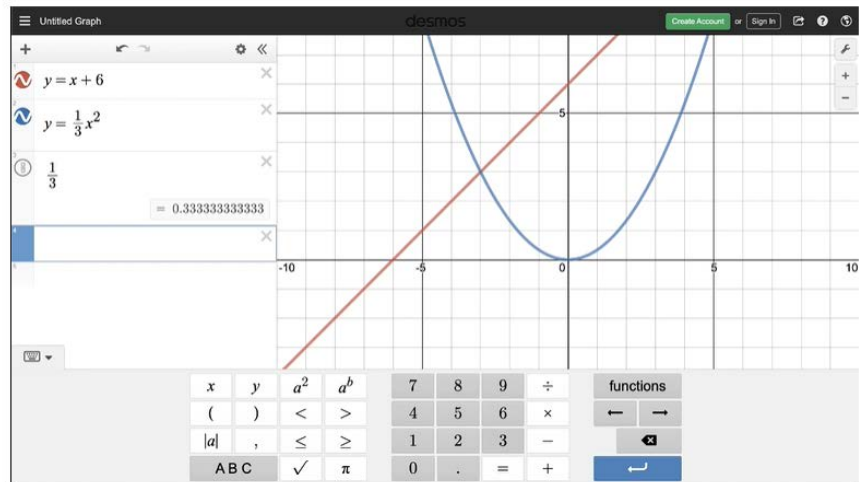
*Figure 2. Scientific Calculator*



The **Scientific Calculator** is available for the following tests:

- Mathematics Grade 7 and 8
- WCAS Grade 8 and High School

Figure 3. Graphing Calculator



The **Graphing Calculator** is available for the following test:

- Mathematics High School

The [Desmos](#) site contains a wide array of resources to help both teachers and students become familiar with the calculator, including a full [Desmos User Guide](#).

Teachers and students can practice using these calculators on the [Practice and Training Tests](#). Students should have experience with the online calculator prior to taking an interim or summative assessment.

### Available Accessibility Features

**Support for braille.** Students who are blind can read and write equations using the two mathematical braille codes used in the United States: Nemeth and Unified English Braille (UEB).

**Accessible graphs.** Students who are blind can create their own graphs in real time and determine the shape of a graph through audio trace. The pitch of the tone increases or decreases depending on the shape of the wave or graph. Students can then emboss their graphs and share print or braille versions with classmates and teachers.

**Support for screen readers.** Fully supporting keyboard navigation, the calculators communicate with screen readers, which voice additional cues to indicate a student's location within an expression or within a graph (numerator or denominator, superscript or subscript, baseline, points on the graph, etc.). Paired with a refreshable braille display, these features offer students who use braille the same opportunity as their peers to access an online calculator.

**Colors that have sufficient contrast.** The calculators provide support for students who have low vision or students who have difficulty with visual perceptual skills.

**Adjustable font-size settings.** The calculators allow students to adjust font size if they prefer larger print.

# Additional External Device Policy

## Keyboards

External keyboards for tablets should not be used for mathematics testing. There is an item type that does not interact well with external keyboards.

External keyboards may be used and are strongly recommended for tablets used for WCAS and English Language Arts (ELA) online 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. Below are some scenarios that require headphones or headsets:

- Students participating in ELA use headsets to listen to listening passage items.
- Students with the text-to-speech accommodation can use headphones to listen to stimuli or to test items being read aloud.
- Students with the permissive mode 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.

For details on recommended headsets and functions, refer to the [Operating System Support Plan for Test Delivery System](#) 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. No other mice should be used, especially mice equipped with a "browser back" button that could potentially kick users out of a test.

## Guidance for Bring Your Own Device (BYOD)

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 technology 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

For technical requirements, including minimum and recommended hardware specifications and supported operating systems, please see the [Supported Browser](#) page and the Configurations, Troubleshooting and Advanced Secure Browser Installation Guides on the WCAP portal.