North Carolina Calculator Requirements Assessment Brief

Calculator Use

When applicable, all students must have access to calculators that meet the minimum calculator requirements during the administration of required state tests. Students should use calculators that are routinely used during classroom instruction and on classroom tests during the school year when taking state tests. Students who routinely use more than one calculator during classroom activities may be permitted to use more than one calculator during the test administration. Students may use calculators on state tests with more than the minimum requirements (e.g., fraction keys, graphing capabilities), if those additional features are not prohibited. Schools are cautioned that the use of these features without prior training may confuse students and adversely affect their performance during a test administration.

An embedded calculator is available for students testing online. The embedded calculator meets the minimum calculator requirements for the specific test. Both a scientific calculator and a graphing calculator are available for the grade 8 mathematics (EOG) test. A handheld calculator is not required for online test administrations; however, students who routinely use a handheld calculator during classroom instruction and on similar classroom tests or have not had enough practice using the online calculator, should be provided a handheld calculator during the test administration. A student may also require a handheld calculator for accessibility purposes, when appropriate.

The online calculators available during state testing can be found at the links provided below.

- four-function calculator https://www.desmos.com/testing/northcarolina/fourfunction
- scientific calculator www.desmos.com/testing/northcarolina/scientific
- graphing calculator www.desmos.com/testing/northcarolina/graphing
- calculator practice environment https://data.ncsu.edu/nctest/Tutorial.html#StudentSignIn

All online calculators are free to use and are accessible for students who are visually impaired and blind. For more information, visit www.desmos.com/accessibility.

Calculator restrictions. Students are not allowed to share calculators during test administrations, nor are they allowed to use calculators with the following functionalities:

- calculators with wireless communication technologies (e.g., Bluetooth, Infrared, Wi-Fi),
- calculators with built-in computer algebraic systems (CAS) capable of doing symbolic algebra (e.g., factoring, expanding, simplifying given variable output) or symbolic calculus,
- calculators built into cell phones or other electronic devices (Cell phones and electronic devices are not permitted during state test administrations.),
- calculators in pen input or stylus-driven devices (e.g., palm-based devices, tablets, laptops, notebooks, computers),
- calculators requiring access to an electrical outlet (except for students approved via an *Accommodation Request Form*),
- calculators that make noises of any kind that cannot be disabled (except for students approved via an *Accommodation Request*),
- calculators that use a QWERTY (typewriter-style) keyboard, or
- calculators that use paper tape.

The following list includes calculators not permitted for use on required North Carolina state tests. The list is not all-inclusive. If the school test coordinator has a question about a calculator not included in this list, they should contact their regional accountability office.

- Texas Instruments: TI-84 Evo and all model numbers that begin with TI-89 or TI-92, Voyage 200, Nspire CAS (TI-Nspire CX CAS and TI-Nspire CAS with touchpad).
- Hewlett-Packard: HP 48GII and all models that begin with HP 40G, HP 49G, or HP 50G.
- Casio: Algebra fx 2.0, ClassPad 300, and all models that begin with CFX-9970G.
- Virtual calculators, downloaded calculators, and calculator apps.
- Calculators accessible by desktop, laptop, or other devices (e.g., iPad and Chromebook).

Students requiring the use of a calculator via a handheld device (e.g., tablet, notebook computer) or laptop must be approved via an *Accommodation Request*. Pocket organizers with a calculator function are not permitted.

Texas Instruments TI-Nspire calculators without CAS are allowed only in the following two cases:

1. with the TI-84 Plus keypad, or

2. 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.

NumWorks calculators are allowed if using operating system 22.2.0 or higher with “NC Exam Mode” enabled.

Before beginning and immediately following a test administration that requires calculator use, the test administrator or principal’s designee must clear the calculator memory and all applications (including preloaded) from all calculators that will be used during each administration of the test. Only the test administrator or principal’s designee is allowed to carry out this procedure. Procedures for clearing the calculator memory (including standard memory, ROM, and Flash ROM) that are appropriate for the specific calculator model(s) must be used. The test administrator or principal’s designee should use caution when clearing calculators because different calculators require specific procedures. In some cases, the calculator’s memory and applications are cleared or disabled and in others, they are permanently deleted.

Because the memory and all applications must be cleared and all data stored in the calculator erased, students who wish to use their own calculators must be advised before test day to back up all data and programs that they wish to save. After the test administration, the test administrator or principal’s designee should enable the memory and applications of the students’ calculators.

Comprehensive clearing procedures for calculators most frequently used in the Annual Testing Program are provided for test administrators in each test administration guide. In addition, major calculator vendors have support teams who assist test administrators in clearing calculators. Vendor contact information can be obtained through the public school unit test coordinator.

Minimum Calculator Requirements

The minimum calculator requirements for each state test that requires calculator use are listed in the following table. Additional features (e.g., fraction keys, graphing capabilities) are permitted but are not required. The North Carolina Department of Public Instruction does not endorse any brand of calculator.

Minimum Calculator Requirements By Test

Test	Minimum (At Least) Calculator Requirements
EOG Mathematics grades 3–5	four-function calculator with memory key
EOG Mathematics grades 6–7	any four-function calculator with a square root function, y^x, π (pi), and algebraic logic (scientific)
EOG Mathematics grade 8	a graphing calculator and any four-function calculator with a square root function, y^x, π (pi), and algebraic logic (scientific)
EOC NC Math 1 and NC Math 3	graphing calculator
NCEXTEND1 Mathematics grades 6–8, NC Math 1 at grade 10, and grade 11	four-function calculator with memory key
College and Career Readiness Alternate Assessment grades 10 and 11	four-function calculator with memory key

As curricula and technology change, the policy concerning calculator requirements on North Carolina assessments will be reevaluated.

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