

Assessment Brief



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North Carolina Testing Program Calculator Requirements

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Calculator Use

Calculators are useful tools that link students to the world of technology while allowing them to demonstrate their understanding of complex problems. Several assessments in the North Carolina Testing Program require calculator use. These assessments include End-of-Grade Tests of Mathematics at grades 3–8, the End-of-Course Test of Math I, the high school Mathematics and Science North Carolina Final Exams, and the College and Career Readiness Alternate Assessments at grades 10 and 11.

Testing Policy

When applicable, all students must have access to calculators that meet the minimum calculator requirements during the administration of North Carolina assessments. Students are to use calculators that are similar to those used during classroom instruction within the current school year. Students who regularly use more than one calculator during classroom instructional activities may be permitted to use more than one calculator during the test administration. Students may use calculators with more than the minimum requirements (e.g., fraction keys, graphing capabilities), provided that those additional features are not prohibited. However, school systems should be cautioned that the use of these features without prior training may confuse students. This may adversely affect their performance during the test administration.

Students are not allowed to share calculators during test administrations nor are they allowed to use calculators on state assessments that include the following functionalities:

- Calculators with wireless communication technologies (e.g., Bluetooth, Infrared, and IEEE 802.11)
- Calculators that use a QWERTY (typewriter-style) keyboard
- Calculators with built-in computer algebraic systems (CAS) capable of doing symbolic algebra (e.g., factoring, expanding, or simplifying given variable output or symbolic calculus)
- Calculators built into cell phones or other electronic communication devices
(Note: Cell phones/electronic devices are not permitted during state test administrations.)
- Handheld, tablet, or laptop/notebook computers, unless specifically approved
- Calculators in pen-input/stylus-driven devices (e.g., palm-based devices, tablets, laptop/notebook and computers) (Note: Students participating in online assessments may use computers or electronic devices to test items if the computers/devices meet all technical requirements listed at <http://go.ncsu.edu.nct/>.)
- Pocket Organizers

- Calculators that use paper tape
- Calculators requiring access to an electrical outlet (except for students needing special accommodations)
- Calculators that make noises of any kind that cannot be disabled (except for students needing special accommodations)

The following list includes calculators not permitted for use on North Carolina assessments. This list is not all-inclusive. If the school system test coordinator believes calculator brands other than those listed below may need to be restricted, then he or she must contact the regional accountability coordinator (RAC) for confirmation before excluding them.

- Texas Instruments: All models that begin with TI-89 or TI-92; Voyage 200; N-Spire CAS
- Hewlett-Packard: HP 48GII and all model numbers that begin with HP 40G, HP 49G, or HP 50G
- Casio: Algebra fx 2.0, ClassPad 300, and all model numbers 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)

Texas Instruments TI-Nspire calculators without CAS are allowed only in the following two cases: (1) with the TI-84 Plus keypad and (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.

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

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 assessment. 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 different procedures. In some cases the calculator’s memory and applications are cleared or disabled and in others they are deleted (permanently removed).

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 told before the 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 the calculators most frequently used in the state testing program are provided for test administrators in each *Assessment Guide*. In addition, major calculator vendors have support teams who assist test administrators in clearing calculators. Vendor contact information can be obtained through the school system test coordinator.

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

Test	Minimum Calculator Requirements
<u>End-of-Grade Tests</u> Mathematics Grades 3–5	<ul style="list-style-type: none"> Any four-function calculator with memory key
<u>End-of-Grade Tests</u> Mathematics Grades 6–8	<ul style="list-style-type: none"> Any four-function calculator with a square root function, y^x, π (πi), and algebraic logic
<u>End-of-Course Tests</u> Math I	<ul style="list-style-type: none"> Graphing calculator
<u>NCEXTENDI</u> Mathematics Grades 6–8 Math I Grade 10 Grade 11 Mathematics	<ul style="list-style-type: none"> Four-function calculator with memory key
<u>North Carolina Final Exams</u> Physical Science	<ul style="list-style-type: none"> Scientific calculator
Chemistry	<ul style="list-style-type: none"> Scientific calculator
Physics	<ul style="list-style-type: none"> Scientific calculator
Earth/Environmental Science	<ul style="list-style-type: none"> Scientific calculator
Geometry	<ul style="list-style-type: none"> Scientific calculator
Math II	<ul style="list-style-type: none"> Graphing calculator
Algebra II	<ul style="list-style-type: none"> Graphing calculator
Math III	<ul style="list-style-type: none"> Graphing calculator
Integrated Math III	<ul style="list-style-type: none"> Graphing calculator
Advanced Functions and Modeling	<ul style="list-style-type: none"> Graphing calculator
Discrete Mathematics	<ul style="list-style-type: none"> Graphing calculator
Precalculus	<ul style="list-style-type: none"> Graphing calculator
<u>College and Career Readiness</u> <u>Alternate Assessments</u> Grade 10 and Grade 11	<ul style="list-style-type: none"> Any four-function calculator with memory key

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