

Bureau of Indian Education (BIE) Science Assessment

Science Benchmark 2023–2024

The Science Benchmark is offered as an optional, within-year, periodic assessment for use in BIE schools. All items on Science Benchmark forms are aligned to the Next Generation Science Standards (NGSS).

Forms Available by Grade Level

Science Benchmark forms are available at the elementary, middle, and high school levels:

For the 2023-2024 school year, the following **elementary** forms are available:

- 4 forms aligned to Grade 5 standards
- 2 forms aligned to Grade 4 standards

For the 2023-2024 school year, the following **middle school** forms are available:

- 6 forms aligned to middle school (Grades 6-8) standards

For the 2023-2024 school year, the following **high school** forms are available:

- 4 forms aligned to life science standards
- 2 forms aligned to physical science standards

Each form covers a different subset of standards and topics. For a listing of the standards and topics covered in each form, see the Science Benchmark Forms document

(https://bie.onlinehelp.cognia.org/wp-content/uploads/sites/24/2022/09/23-24-BIE-Science_Benchmark_Forms_v2.pdf) on the BIE Science Help & Support page.

Guidance on Timing and Grade for Administration

There is no set administration sequence or timing for the forms within the September–March benchmark testing window. Forms should be administered at a time that best aligns with the specific content being covered in the classroom. For example, if the Grade 5 topic and standards related to Earth’s Systems are taught in October, then that Grade 5 benchmark form can be administered at the end of that unit, whereas if Earth’s Systems is not covered until January, then the form can be administered in January. Scheduling of the benchmark forms is specifically designed to be unconstrained within the testing window so that teachers can schedule the assessments according to their curriculum pacing.

Testing is not restricted to only those students in the summative testing grades of 5, 8, and 11, and there are no restrictions on the grade at which a particular form may be administered. In elementary grades, because the standards are written by grade, it is expected that Grade 5 forms would be administered to Grade 5 students, and Grade 4 forms would be administered to Grade 4 students, to align instruction and assessment. However, in the middle and high school grades, the standards are written by grade band. Depending on scope and sequence, the topic and standards related to Motion and Energy, for example, might be taught in Grade 6 in one school/district but in Grade 8 in another school/district. In the first case the benchmark form for Motion and Energy would be administered to Grade 6 students, whereas in the second case that benchmark form would be administered to Grade 8 students.

Structure of the Science Benchmark Forms

Each Science Benchmark form consists of a fixed set of 10-12 selected-response items followed by 2 open-response items. The selected-response items are organized into item clusters. The item types and formats in the benchmark forms are also included in the summative end-of-year science assessment.

Science Benchmarks are untimed, but each benchmark form is designed to be completed in approximately 45-50 minutes, for administration during a class period. The test is divided into two sessions, however, and could be administered across two class periods if needed or desired.

Testing Mode and Scoring

The Science Benchmarks are available both online and for printing at BIE schools so that students can take the benchmark assessments using the same testing mode that they will use for the summative assessment. The online version is accessed through the same BIE Portal used for summative testing. Within this portal, there are also print-ready PDFs of each form available for schools to use as needed.

For online testers, selected-response items are scored on the eMetric platform, and scores are available the same day in the Data Interaction (D.I.) portal. Open-response items are scored by BIE educators using the rubrics provided by Cognia. For those utilizing the print option, an answer key is provided with the download for teachers to score their students' responses.

Students can take the same Science Benchmark form more than once, though the items in the forms are fixed and the same items are administered every time in a particular form. In order for a student to be able to test on the same form another time, the student must be scheduled into another class/test session. For support in scheduling students into testing sessions, refer to the guides on the Resources page of the BIE Science Help & Support site (<https://bie.onlinehelp.cognia.org/resources/>).