

Connecticut Science Assessments Reporting FAQ

September 2019

Next Generation Science Standards Assessment and Connecticut Alternate Science Assessment



The 2018-19 school year was the first operational year for the Connecticut Science Assessments aligned to the Next Generation Science Standards (NGSS). (More information about the standards can be found here: <https://portal.ct.gov/SDE/Science/Science-Standards-and-Resources>.) Both the NGSS Assessment and the Connecticut Alternate Science (CTAS) Assessment were administered to students in Grades 5, 8 and 11.

1) Where are Connecticut Science Assessment results reported?

Preliminary secure results for the Connecticut Science Assessments for individual students, schools and districts are currently available to authorized school and district personnel in the Online Reporting System (ORS) located on the Connecticut State Department of Education (CSDE) Comprehensive Assessment Program Portal (<https://ct.portal.airast.org/>).

Connecticut Science Assessment final public results will be reported through EdSight (<http://edsight.ct.gov>) later in the fall. The Connecticut Science Assessment final secure results will also be reported on EdSight Secure along with the release on public EdSight.

2) What are the scale score ranges for the NGSS Assessment?

Each student who takes the NGSS assessment receives a scale score for the whole test. Scale scores are the basic unit of reporting. A scale score is derived from how a student performed on the items of a test, statistically adjusted for the test forms a student received. Scale scores are expressed on a standardized scale that permits direct and fair comparisons of scores from different forms of a test, either within the same administration year or across years. The scale score ranges for each of the grades is below. It is important to note that this scale is **not a vertical scale**, like the Smarter Balanced Assessment, so cross grade comparisons are not recommended.

NGSS Assessment Scale Score Ranges

Grade	Scale Score Range
5	400–599
8	700–899
11	1000–1199

3) What are the raw score ranges for the CTAS Assessment?

Each student participating in the CTAS Assessment receives a raw score point total. The raw score ranges for each of the grades is below.

CTAS Raw Score Ranges

Grade	Raw Score Range
5	0–88
8	0–84
11	0–84

4) How were the achievement-level ranges for the NGSS and the CTAS Assessments established?

The achievement level ranges for the NGSS and CTAS Assessments were established based on a standard setting process that was entirely guided by Connecticut educators. The CSDE conducted this activity in the summer of 2019 on July 30 and 31, as well as August 1 and 2. This standard setting process utilized Connecticut student assessment data from the first operational administration of the two tests in the spring of 2019. The process was facilitated by the psychometric teams from the CSDE,

as well as the American Institutes for Research, the CSDE’s testing vendor for the NGSS and CTAS Assessments.

5) What are the Achievement Level Descriptors for the NGSS and the CTAS Assessments?

Achievement Level Descriptors (ALDs) define the knowledge and skills that students are expected to demonstrate at the four achievement levels. These achievement levels are a reporting feature that has become familiar to many educators. Achievement levels should serve only as a starting point for discussion about the performance of students and of groups of students; the scale score is a more precise measure of a student’s achievement on the performance continuum. Below are the ALDs for the NGSS and the CTAS Assessments.

NGSS Assessment ALDs

Achievement Level	Achievement Level Descriptors for Science
Level 4	Exceeds the Achievement Standard: The student has exceeded the achievement standard for science expected for this grade. Students performing at this standard are demonstrating advanced progress toward mastery of science knowledge and skills. Students performing at this standard are on track for likely success in the next grade.
Level 3	Meets the Achievement Standard: The student has met the achievement standard for science expected for this grade. Students performing at this standard are demonstrating progress toward mastery of science knowledge and skills. Students performing at this standard are on track for likely success in the next grade.
Level 2	Approaching the Achievement Standard: The student has nearly met the achievement standard for science expected for this grade. Students performing at this standard require further development toward mastery of science knowledge and skills. Students performing at this standard will likely need support to get on track for success in the next grade.
Level 1	Does Not Meet the Achievement Standard: The student has not yet met the achievement standard for science expected for this grade. Students performing at this standard require substantial improvement toward mastery of science knowledge and skills. Students performing at this standard will likely need substantial support to get on track for success in the next grade.

CTAS ALDs

Achievement Level	Achievement Level Descriptors for Science
Level 4	Exceeds the Alternate Achievement Standard: The student has exceeded the alternate achievement standard for science expected for this grade. Students performing at this level are demonstrating advanced progress toward mastery of science knowledge and skills represented in the alternate assessment.
Level 3	Meets the Alternate Achievement Standard: The student has met the alternate achievement standard for science expected for this grade. Students performing at this level are demonstrating progress toward mastery of science knowledge and skills. Students performing at this level are demonstrating understanding of grade-level science skills and knowledge represented in the alternate assessment.
Level 2	Approaching the Achievement Standard: The student has nearly met the alternate achievement standard for science expected for this grade. Students performing at this level require further development toward mastery of science knowledge and skills. Students performing at this level will likely need continued support to

Achievement Level	Achievement Level Descriptors for Science
	demonstrate understanding of grade-level science skills and knowledge represented in the alternate assessment.
Level 1	Does Not Meet the Alternate Achievement Standard: The student has not yet met the alternate achievement standard for science expected for this grade. Students performing at this level require substantial improvement with continued support toward mastery of science knowledge and skills. Students performing at this level will likely need substantial supports to demonstrate understanding of grade-level science skills and knowledge represented in the alternate assessment.

6) What are the achievement level ranges for the NGSS and the CTAS Assessments?

Achievement level ranges are numeric ranges that establish the specific level of student performance. For the NGSS Assessment the ranges are in scale score points while for the CTAS Assessment, the ranges are in raw scores points.

NGSS Assessment Achievement Levels

NGSS Science	Grade 5	Grade 8	Grade 11
Level 4	535–599	842–899	1141–1199
Level 3	498–534	798–841	1099–1140
Level 2	468–497	772–797	1073–1098
Level 1	400–467	700–771	1000–1072

CTAS Achievement Levels

CTAS	Grade 5	Grade 8	Grade 11
Level 4	65–88	64–84	65–84
Level 3	57–64	57–63	57–64
Level 2	32–56	26–56	32–56
Level 1	0–31	0–25	0–31

7) What are the discipline level scores for the NGSS Assessment?

In addition to an overall score for the NGSS Assessment, students will receive scores for the three disciplines of science (Life, Physical and Earth). Depending on student performance, the discipline level scores are reported as Above Standard, Approaching Standard, or Below Standard. Aggregate discipline level scores for schools and districts will also be reported in the ORS. Below are the discipline level claims.

Discipline Level Claims

Discipline	Claim
Practices and Concepts in Life Sciences	The student is able to use the science and engineering practices to demonstrate understanding of the disciplinary core ideas and crosscutting concepts in Life Science.
Practices and Concepts in Physical Sciences	The student is able to use the science and engineering practices to demonstrate understanding of the disciplinary core ideas and crosscutting concepts in Physical Science.
Practices and Concepts in Earth and Space Sciences	The student is able to use the science and engineering practices to demonstrate understanding of the disciplinary core ideas and crosscutting concepts in Earth and Space Science.

8) What are the Disciplinary Core Ideas Scores for the NGSS Assessment?

The Disciplinary Core Ideas (DCI) define the most essential concepts in the major disciplines (Life, Earth and Physical) of science that all students should understand. The DCI progress across Grades K-12 as students become scientifically literate citizens.

Unlike an overall science score, the DCI scores do not present absolute performance; instead they present relative performance. The reports provide an indicator of relative strength/weakness in each area. *These results are available in the ORS for groups of students, but not for individual students.* (The methodology for establishing the DCI scores in science is very similar to that used for the Smarter Balanced assessment targets.)

To determine relative strength/weakness, the actual performance of the group of students on the items in a particular area is compared to their expected performance on those items. If actual performance is significantly better than expected performance, then the group receives a “+.” If actual performance is significantly worse than expected performance, then the group receives a “-.” If actual performance is statistically no different than expected performance, then the group receives an “=” for that DCI.

Two statistical approaches are used to establish expected student performance.

Relative to Overall Performance

The expected performance is determined based on the students’ overall performance on the entire assessment. For example, if the students in the group are extremely high performing overall, those students will likely be expected to do well on items in each DCI. If however, they do significantly worse than expected, then a minus sign must be displayed. This may not mean that the students are really low performing on that DCI; it may simply mean that their performance on that DCI was significantly lower than expected.

Description of DCI Level Performance Relative to Overall Performance in the ORS

Icon	DCI Level	Description
+	Better than performance on the test as a whole	This DCI is a relative strength. The group of students performed better on items from this DCI than they did on the test as a whole.
=	Similar to performance on the test as a whole	This DCI is neither a relative strength nor a relative weakness. The group of students performed about as well on items from this DCI as they did on the test as a whole.
-	Worse than performance on the test as a whole	This DCI is a relative weakness. The group of students did not perform as well on items from this DCI as they did on the test as a whole.
*	Insufficient information	Not enough information is available to determine whether this DCI is a relative strength or weakness. This is due to too few students in the group and/or insufficient assessment items for this DCI.

Relative to (Minimum Overall) Proficiency

The expected performance is determined based on a hypothetical student with minimum overall proficiency—one who is performing at the cut score separating Levels 2 and 3 (i.e., the lowest score in Level 3). Continuing the above example, the extremely high performing group may have done worse than expected on a DCI with somewhat challenging items but still better than the minimum overall proficiency would have done on those items. These students may earn a “check” to mean that their “Performance is above the Proficiency Standard.”

Description of DCI Level Performance Relative to (Minimum Overall) Proficiency in the ORS

Icon	DCI Level	Description
	Performance is above the Proficiency Standard	The DCI performance is above the proficiency standard. The group of student performed above the proficiency standard on this DCI.
	Performance is near the Proficiency Standard	The DCI performance is near the proficiency standard. The group of student performed near the proficiency standard on this DCI.
	Performance is below the Proficiency Standard	The DCI performance is below the proficiency standard. The group of student performed below the proficiency standard on this DCI.
*	Insufficient information	Not enough information is available to determine performance on this DCI. This is due to too few students in the group and/or insufficient assessment items for this DCI.

When pulling these reports in the ORS and used together, the two methods can provide greater insight into a group of students' strengths and weaknesses.

9) What are the Performance Task Scores for the CTAS Assessment?

In addition to an overall score for the CTAS Assessment, individual students will receive the number of raw score points for each of the six Performance Tasks. Districts and schools will also receive scores in each Performance Task expressed in average raw score in the ORS. Below are the six Performance Tasks administered in each grade. The number of available raw scores points varies across the grades for each Performance Task.

Performance Task
Earth Systems
Natural Resources
Living Organisms
Healthy Ecosystems
Forces in Motion
Using Energy Every Day

The Performance Tasks are non-secure materials, thus they can be viewed on the Connecticut Comprehensive Assessment Portal at <https://ct.portal.airast.org/ctas-required-materials/>.

10) What are the Core Extension Scores for the CTAS Assessment?

In addition to an overall score for the CTAS Assessment and the Performance Tasks Scores, students will receive scores for each Core Extension taken on the test. Core Extensions represent the derivative of the NGSS Standard Performance Expectation and represent the task that students should be able to complete. Students will receive scores of 0, 1 or 2 for 44 core extensions in Grade 5, 42 in Grade 8, and 42 in Grade 11. Schools and districts will receive the percent of points earned for all the Core Extensions.

The Core Extensions are non-secure materials, thus they can be viewed on the Connecticut Comprehensive Assessment Portal at <https://ct.portal.airast.org/ctas-required-materials/>.

11) Will there be an Interpretive Guide released for the NGSS and the CTAS Assessments?

A comprehensive Interpretive Guide will be published later in the fall of 2019.

12) Where can districts find more information about the Connecticut Science Assessments?

Contact the CSDE Performance Office at 860-713-6860 or ctstudentassessment@ct.gov.

The following two web sites also have many resources available.

- **Connecticut State Department of Education:** <https://portal.ct.gov/sde>
- **Connecticut Comprehensive Assessment Portal:** <https://ct.portal.airast.org/>