



# Next Generation Science Assessments

State assessments aligned to the Next Generation Science Standards (NGSS) are administered to all public school students in Connecticut at Grades 5, 8 and 11. The tests at each grade assess students' understanding of the NGSS across the corresponding grade band (3-5, 6-8 and high school). Information about the science standards can be found at [www.nextgenscience.org](http://www.nextgenscience.org).

## Testing Time and Schedule

Below are the estimated testing times and schedule for the standard spring 2023 NGSS assessments.

Grade	Estimated Time*	2022 Testing Schedule
5 and 8	90 minutes	March 27 – June 2, 2023
11	90 minutes	February 6 – June 2, 2023

\*The tests are untimed and students may be provided as much time as they need to finish. The tests may be given on a single day (with a break recommended) or over multiple days. Students within a school or district do not need to be tested on the same day or at the same time. Students may be cycled through rooms with computers any time during the testing window.

## Online Test Administration

The NGSS assessments are administered using an online Test Delivery System (TDS) maintained by Cambium Assessment Inc. (CAI). This is the same online system and [technology resources](#) that support students taking the Smarter Balanced assessments in mathematics and language arts.

## Test Design and Item Types

The NGSS assessments at each grade include six item clusters and 12 stand-alone items. Additional items being field tested are also embedded in the live test. **Item clusters** include a stimulus and a series of questions that generally take students about 6-12 minutes to complete. **Stand-alone items** are shorter and generally take students 1-3 minutes to complete. All items ask students to use science and engineering practices and apply their understanding of disciplinary core ideas and crosscutting concepts to make sense out of [real-world phenomena](#). There are a variety of item types including selected response, multi-select, table match, edit in-line choice, graphs, and simulations of science investigations. All items on the live assessments have been reviewed by committees of science educators and field tested with a representative sample of students.

## Practice Tests

Practice items that include a variety of sample items for the NGSS assessments can be found on the Connecticut Comprehensive Assessment Program Portal at <https://ct.portal.cambiumast.com>. After selecting NGSS Assessments, click on the icon shown below.

SYSTEM



**Practice and Training Tests**

## **Universal Tools, Designated Supports and Accommodations**

A variety of tools and supports are available for all students completing the NGSS assessments. These include such features as text-to-speech or use of a bilingual dictionary for English learners. In addition, accommodations such as large print or Braille versions of the tests are available for [special populations on the state summative assessments](#). A Spanish translation of the test is also available for qualifying students.

## **Reporting and Standard Setting**

An overall score in Science, as well as three discipline claim scores for students' use of the science and engineering practices to demonstrate understanding of the disciplinary core ideas and crosscutting concepts in Life, Physical and Earth/Space Science are reported. These scores and additional detailed reporting are available for schools and districts through the Centralized Reporting System (CRS). Public reports of results are available at <http://edsight.ct.gov>. Standards that establish the performance levels for the NGSS assessments were set by a committee of Connecticut educators following the spring 2019 administration.

## **School and District Accountability**

Connecticut's [Next Generation Accountability System](#) is a broad set of 12 indicators that help tell the story of how well a school is preparing its students for success in college, careers and life. Results from the spring 2022 NGSS assessments will be incorporated into school and district accountability. This includes a target of 95 percent participation for all students.

## **NGSS Interim Assessments**

Interim assessments are an additional NGSS resource available to local school districts. The NGSS interim assessments include individual item clusters each aligned to a single performance expectation across a variety of content areas. All items are machine scored with instant feedback provided to educators through CRS. Educators may view the NGSS interim assessment items using the Assessment Viewing Application (AVA).

## **Connecticut Alternate Science Assessment**

The [Connecticut Alternate Science Assessments](#) (CTAS) are available for a select group of students with significant cognitive impairment. The CTAS at each tested grade (5, 8 and 11) includes six performance tasks related to key topics in science (e.g., Living Organisms, Earth Systems, Using Energy Every Day). Each performance task includes a series of activities that the teacher in the classroom administers to the student and scores the response. The CTAS is completed throughout the school year with student scores submitted online in the spring.

## **Further Information and Resources**

Additional information and resources including updates about all of the [Connecticut Interim Assessments](#) is available at the [Connecticut State Department of Education website](#).

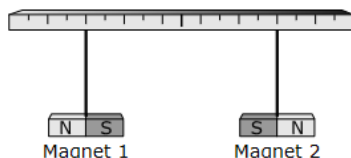
## Sample NGSS Assessment Item Cluster for Grade 5

**Aligned to 3-PS2-3** Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.

Two magnets are placed right next to each other. They seem to pull together. A third magnet is then placed right next to the first two magnets. This magnet seems to push away from the first two.

To help better understand these forces, you can conduct an experiment by tying two magnets to strings and hanging them from a meter stick. You can then observe how the magnets interact with each other. The setup of the experiment is shown in Picture 1.

**Picture 1. Hanging Magnets Experiment**



In the experiment, you will be able to change the orientation of each magnet as well as the distance between the magnets. The orientation of the magnet depends on the direction that the N (north) side is pointing.

For example, a magnet's orientation can start with the N side pointing to the right. If the orientation is changed, then the N side is pointing to the left.

### Your Task

In the following questions, you will set up and perform an experiment that will help you understand what affects the force between the two magnets.

Each item cluster includes a **stimulus** based on a real-world scientific phenomena. It provides background information for the student and is used in answering the item interactions.

**Item interactions** including a computer simulation of a science investigation involving magnets. Students collect evidence to develop a cause and effect relationship.

### Part A

Select a testable, scientific question that can be answered by performing an experiment with the setup shown in Picture 1.

- A How does the distance between the magnets affect the force?
- B How does the orientation of the magnets affect the force?
- C Will the force between the magnets always exist?

### Part B

Use the table to select the properties you want to hold constant and the properties you want to change when you run your experiment to answer the question you chose in part A.

Select a box to identify whether each property should be held constant or changed in your experiment.

	Constant	Change
Magnet orientation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Magnet type	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Magnet size	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Distance between the magnets	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Part C

Use the Hanging Magnets Experiment simulation to run the experiment and gather observations to answer your question from part A.

First, select the Distance and Orientations. You must select an orientation for each magnet in each trial. Then, click Start to run the simulation.

- You will be limited to **three** rows of data.
- Be sure the final data table includes data that answers your question.
- Click on the trash can icon if you want to delete a row and generate new data.

Trial Number	Distance	Orientation of Magnet 1	Orientation of Magnet 2	Observations
1	Far	1	1	Magnets remain still
2	Closer	1	1	Magnets move toward each other
3	Closer	1	1	Magnets move toward each other

## Additional Features of Online NGSS Sample Assessment Items

**Choose Settings:**  
Review the following test settings. You can change the options, if necessary.

**Science Sample Items**

**Literacy Assistance Tools**

Text to Speech: Items and Stimuli

TTS Tracking: ON

**Visual Assistance Tools**

Color Choices: Black on White

Mouse Pointer: System Default

Streamlined Mode: OFF

Zoom: 1X

**Concentration Assistance Tools**

Line Reader: OFF

Masking: OFF

Settings allow for a variety of tools to meet the individual needs of students.



- Tutorial
- Mark for Review
- Notepad
- Score Item
- Highlight Selection
- Strikethrough

Features such as a calculator, zoom and notepad are available to assist students with the item interactions.

The **Periodic Table** is available for the Grade 8 and 11 NGSS assessments.

A **Tutorial** demonstrating each item interaction type is also available.

The **Score Item** feature allows for instant feedback to students.

Your response earned 5 point(s) of a possible 8

Scoring Criteria	Your Answer
The student selected "A- How does the distance affect the force" or "B- How does the orientation affect the force," indicating that they understand what questions are scientific and can be tested.	✓
The student selected "Distance Between Magnets" as the only variable to be changed in part B, if they selected "A" in part A, or selected "Magnet Orientation" as the only variable to be changed in part B, if they chose "B" in part A, indicating understanding of how to carry out a valid scientific experiment to determine the cause and effect relationships of magnetic interactions.	✓

