



CONNECTICUT STATE DEPARTMENT OF EDUCATION

Ways to Use the NGSS Interim Assessments



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How to Use this Document

Educators bring a wide variety of perspectives and experiences with NGSS-aligned assessments. This document provides educators with information and resources about how to use the NGSS Interim Assessments in support of student learning. For basic information on accessing the interims and related resources, go to this [overview](#).

It is recommended that you first read through this entire document to glean major points. Later, explore the resources in the embedded links to take a deeper dive into specific topics of interest.



Comprehensive NGSS Assessment System

The CT State Department of Education supports the use of a variety of assessment resources for use by local school districts. The goal is to support a comprehensive assessment system that provide useful information for various purposes and audiences in support of student learning.

Formative Assessment Resources*: Used every day by teachers to monitor student learning in the classroom and help make ongoing instructional adjustments to better meet student needs. **VOLUNTARY**

Interim Assessment Resources*: Assessments administered at the end of units or grades to evaluate the learning of groups of students to inform curriculum and instruction at the local level. **VOLUNTARY**

State Summative Assessments: Assessments given at the end of learning (Grades 5, 8 and 11) to track student performance and inform decisions about curriculum, instruction, professional development, and policy for a variety of stakeholders. **MANDATED BY FEDERAL AND STATE LAW**

↑
Greater frequency of use
More useful to students and teachers

* Formative and interim assessment resources come from a variety of sources and are shared by states around the country.



Getting Started with NGSS Interims



Using 3D interim assessments to support coherence, equity, and a shared understanding of learning

What Is The Issue?

A *Framework for K–12 Science Education*, NGSS writers, and [assessment experts](#) have put forth a vision focused on developing a “bottom up” system of assessments starting at the classroom level—when [integrated into instructional units](#). This helps teachers make ongoing instructional adjustments, and it would promote vertically coherent assessments at school-, district-, and state-levels. Interim assessments—that fall between formative and summative—can be a valuable part of a more balanced and comprehensive 3D assessment system.

WHY IT MATTERS TO YOU

- **Teachers**, collaborating with colleagues, should use interim assessments to analyze the extent to which their instruction is supporting student learning.
- **PD Providers** should provide learning experiences for teachers focused on using a system of assessment that includes the use of interim assessments.
- **School & District Leaders**, in collaboration with teachers, should use interim assessments to improve instructional or curriculum choices based on data analyzed across classes, classrooms, and schools.

This [practice brief](#) can be helpful in thinking about how to more effectively use interim assessments.

Use as a discussion starter among educators to think more carefully about the purposes of interim assessments.

Available at www.stemteachingtools.org

Recommended Actions You Can Take

- **Know what you want to measure before you begin.** Teams of teachers and local leaders should select assessment tasks based on the usefulness of the information they provide—not the topic or phenomenon featured.
- **Decide on the scale at which you’d like to aggregate the results from interim assessments** (e.g., across classes, schools, districts).
- **Start by implementing existing interim assessment tasks from high-quality sources, as opposed to creating new ones.** Here are good starting points that can be adapted into interim assessments: (a) Kentucky [Through Course Tasks](#), (b) [Next Generation Science Assessment](#), (c) [SNAP Assessments](#), (d) Wisconsin [Performance Tasks](#).
- **Deliberate on the outcomes that emerge from interim assessments and decide what they tell the team about student learning.** Discuss and take action to improve learning based on these outcomes/artifacts.

BY TODD CAMPBELL, JONATHAN HALL, PETER MCLAREN, JEFF GREIG, SEAN ELKINS, JOHN DUFFY, HOLLY HOLLANDER | JANUARY 2020

STEMteachingtools.org/brief/65

Basis for NGSS Interims



The NGSS Interim Assessments are based on a shared understanding that students learn science most effectively when they are:

- exploring phenomena or problems that are connected to real-world issues;
- using the science and engineering practices to apply their understanding of the disciplinary core ideas and cross-cutting concepts;
- engaged in sense-making by using the three dimensions in integrated ways; and
- instructed and assessed in ways that account for the wide range of student backgrounds and needs to ensure fairness and equity.

Ways to Use the NGSS Interim Assessments

The NGSS Interim Assessments can be used in a variety of ways including:

- 1. Provide students practice** with the types of items they will see on the state summative assessments.
- 2. Familiarize educators with NGSS assessments** that ask students to integrate the three dimensions to make sense of phenomena.
- 3. Inform and support student learning** by evaluating their performance on various aspects of the standards and help plan instruction.

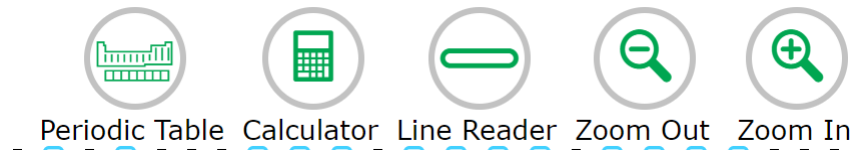
Each of these will be explored further in this document.



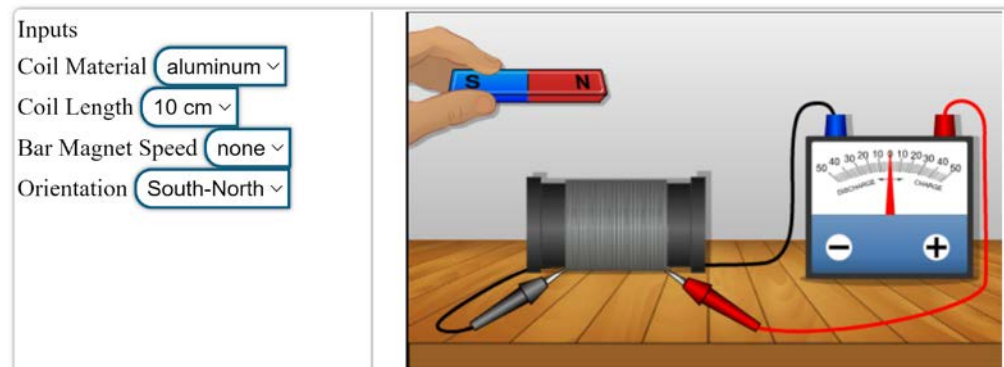
Practice for Students

Before taking the state summative NGSS assessments, students should be familiar with the types of items they will see, especially technology-enhanced interactions.

- Students should be comfortable navigating through the items and using the tools, supports, and accommodations available to them.



- Students need practice with using data and information from text, graphs, tables, simulations, etc. to apply their science knowledge to make sense of phenomena.



Practice for Students

- Did you know that students who use the interim assessments on a regular basis perform better on the state summative tests?
- Educators who use the interims with their students report that they are more comfortable and confident when taking the state summative tests.

The Relationship between
Student *Participation* on the
Smarter Balanced Interim Assessment Blocks and
Student *Growth* on the
Smarter Balanced Summative Assessment



Phase 1 Report: March 2020

The report above shows the positive relationship between interim assessment use and success on state summative tests.



Familiarize Educators with NGSS Assessments



- Working with colleagues to review and select appropriate interim assessment items for their classrooms can empower teachers and deepen their knowledge.

Analyzing assessments and developing a shared understanding of quality can be a valuable professional learning experience.

- Interim items show key features of NGSS-aligned assessments including phenomena-based scenarios, sense making and applications of the three dimensions.



Science Task Prescreen

Introduction

The purpose of the Science Task Prescreen is to conduct a quick review of assessment tasks to determine whether they might be designed for standards based on the Framework for K-12 Science Education, like the Next Generation Science Standards (NGSS). The Prescreen is intended to reveal whether tasks include “red flags”—i.e., challenges commonly found in science assessment tasks.

- Using task screeners to evaluate assessments can deepen educators understanding of tasks and the science standards.



Familiarize Educators with NGSS Assessments

- Having educators complete the NGSS Interim Assessment items themselves prior to administering them to students can provide a better understanding of what students are expected to do.
- Identifying the skills and understandings that students will need to be successful on the interims can help plan instructional strategies.
- The [NGSS Assessment Item Specifications](#) provide educators further information on what students are expected to know and do for each performance expectation.

This Performance Expectation and associated Evidence Statements support the following Task Demands.

Task Demands

1. Identify or assemble from a collection of potential model components, including distractors, components of a model that describes the structures of atoms, molecules, or extended molecules and/or how they interact, or explains how atoms of the same or different element(s) are arranged in repeated patterns in extended structures.
2. Describe, select, and/or identify the relationships among components of a model that describes the structures of atoms, molecules, or extended molecules and/or how they interact, or explains how atoms of the same or different element(s) are arranged in repeated patterns in extended structures.

Sample Task Demands from the NGSS Assessment Item Specifications



Inform and Support Student Learning

Careful consideration of the purposes of interim assessment is critical for their effective use, especially when administering across a school or district. Some questions for educators to consider include:

1. What do we want to learn from this assessment?
2. Who will use the information gathered from this assessment?
3. What action steps will be taken as a result of this assessment?
4. What professional development or support structures should be in place to ensure the action steps are taken and are successful?
5. How will student learning improve as a result of using this interim assessment system and will it improve more than if the assessment system was not used?

*Source: [The Role of Interim Assessment in a Comprehensive Assessment System](#)
by M. Perie, S. Marion, B. Gong.*



Inform and Support Student Learning



Centralized Reporting System

Access and download summative and interim assessment reports and results.

- Using interims as pre- and post-assessments for a unit can show student growth and reveal areas for further instruction.

- Results from the NGSS Interim Assessments are available immediately in the [Centralized Reporting System](#) (CRS). Results for every student on each item interaction can be viewed.

Total Items							
Item Numbers, Max Points and Points Earned							
1	1-1	1-2	1-3	1-4	1-5	1-6	1-7
NGSS-4-PS PS4 4-PS4-2	1 pt	1 pt	1 pt	1 pt	1 pt	1 pt	1 pt
12 pt							
Scoring Assertion							
1. The student draws an arrow from the mirror to the person and the line does not intersect the tall cabinet providing some evidence of an understanding that light reflected from the cat and then the mirror before entering the person's eye allows it to be seen.							

- Analyzing student performance on individual scoring assertions can indicate strengths and weaknesses regarding specific aspects of a performance expectation (e.g., designing a controlled experiment, analyzing data from a graph, or developing a model of a system, etc.).



Inform and Support Student Learning

- Results from the interim assessments can also:
 - provide students with feedback about their own progress;
 - support student growth through self-assessment and goal setting; and
 - help teachers in planning differentiated instruction to meet diverse student needs.
- Teachers could informally go through the interims together with students in small or whole groups to discuss their thinking. This formative assessment process can help teachers gain insights into their students' sense making.

<i>Informal: Evidence of learning generated during daily activities</i>		
Eliciting	Recognizing	Using
Teacher brings out or develops information in the form of a verbal response from students	Teacher reacts on the fly by recognizing students' responses and comparing them to accepted scientific ideas	Teacher immediately makes use of information from the students during the course of the ongoing classroom narrative
Example: asking students to formulate explanations or to provide evidence	Example: repeating or revoicing students' responses	Example: asking students to elaborate on their responses, explaining learning goals, promoting argumentation

Source: [*The Informal Formative Assessment Cycle as a Model for Teacher Practice*](#)



Inform and Support Student Learning

	Assessment Name	Test Group	Test Grade	Test Reason	Student Count	Average Score
⏴	Interim ES Earth and Space Science - PE 4-ESS2-1	Interim	5	Pretest	35	3/5 <i>i</i>
⏴	Interim ES Earth and Space Science - PE 3-ESS2-1 B	Interim	5	Pretest	65	1/1 <i>i</i>
⏴	Interim ES Earth and Space Science - PE 3-ESS2-1 A	Interim	5	Pretest	32	3/5 <i>i</i>

- Results for each interim item administered can be analyzed in the Centralized Reporting System. Looking at the performance by district, school, classroom or groups of students can provide insights into patterns of student learning.

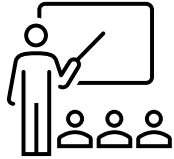
Looking at Data

Read an item with the corresponding data and then discuss the following questions:

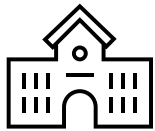
- What is this item measuring?
- How difficult is the item (easy, moderate, or difficult)?
- What content do you need to know to answer this question?
- What do you need to know about the words in the item responses in order to select the correct answer?



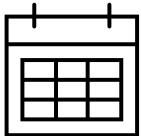
Inform and Support Student Learning



Teachers can analyze results from interim assessments given in their classroom to reveal student assets or gaps in understanding that need to be addressed. Patterns of performance for groups of students should be noted.



When common interims are administered, science leaders can look at the performance of groups of students at the school or district level. This can help with decision making around curriculum and professional learning supports.



Educators should maintain an archive of interim assessment results to inform long-term planning. This may include tracking quantitative data and/or noting qualitative insights into student learning to inform instruction.

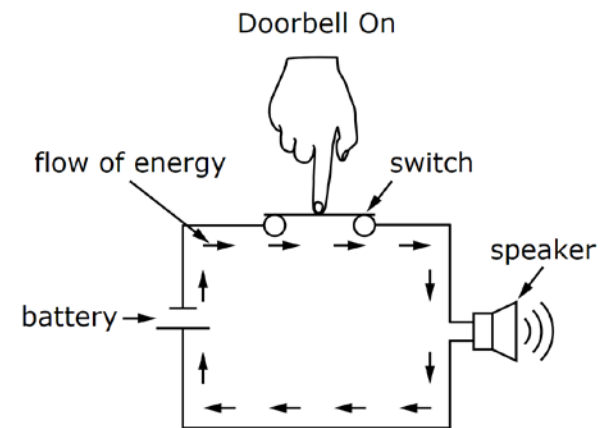


Inform and Support Student Learning

Effective instructional strategies that educators have used with the NGSS Interim Assessments include:

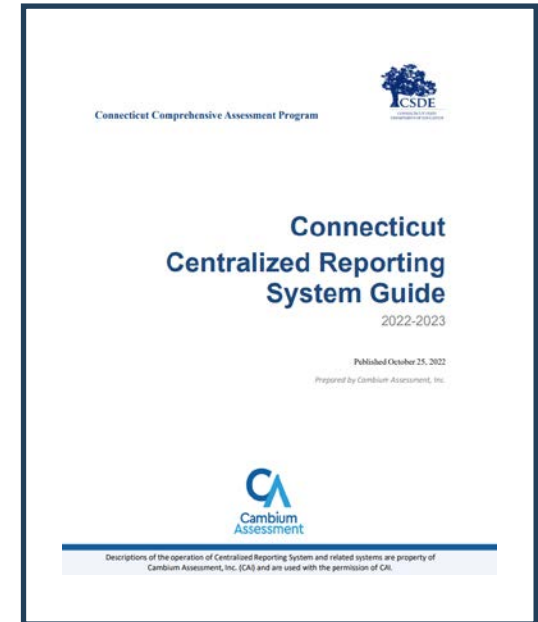
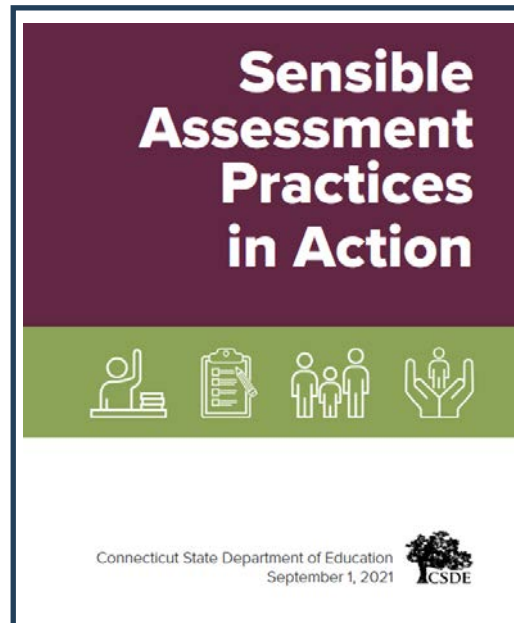
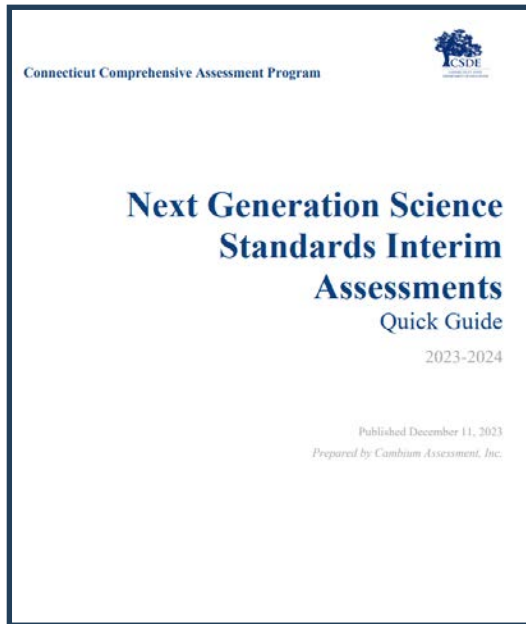
- Have students complete an interim item in small groups then discuss their responses and how they arrived at them through productive discourse in the classroom.
- Conduct a hands-on investigation or complete an engineering design challenge based on the scenarios shown in the interims.
- Provide additional source materials or have students search for their own sources to further explore phenomena found in the interims.
- Build a lesson around the phenomena used in an interim item using additional real-world applications of a science concept.
- Consider these 5 ways to make interims a natural part of instruction.

Figure 1. Simple Doorbell Circuit



Have student build and test their own electric circuits.

Additional Resources to Support NGSS Interim Assessments



Additional NGSS Interim Assessment Resources

The NGSS Interim Assessments can be used along with a variety of other resources in support of a comprehensive assessment system for your local school district.

NGSS Assessment Tools



Stanford NGSS Assessment Project

A listing of NGSS Assessment Resources can be found [here](#).

Questions about NGSS Assessments?

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