

# Maine Science Assessment: Questions & Answers

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The Maine Department of Education is committed to our mission of promoting the best learning opportunities for all Maine students by providing information, guidance, and support to our schools, educators, and leaders and by providing adequate and equitable school funding and resources.

**New questions and answers are added as they are compiled.** The most recent version of this document can always be found at the Maine DOE's Maine Science Assessment webpage:

[https://www.maine.gov/doe/Testing\\_Accountability/MECAS/Generalscience](https://www.maine.gov/doe/Testing_Accountability/MECAS/Generalscience)

## What is assessed?

The Maine Science Assessment assesses the Maine Science and Engineering Standards (i.e., the Next Generation Science Standards). The assessment focuses on performance level expectations based on three-dimensional learning that incorporates science & engineering practices and cross-cutting concepts with disciplinary core ideas.

## Who participates in the Maine Science Assessment?

Students in grades 5, 8, and 3<sup>rd</sup> year of high school participate in the Maine Science Assessment.

## What is the format of the assessment?

The assessment is online; paper-based forms are available as an accommodation per an IEP or 504 plan.

Questions occur in clusters around a common problem scenario.

## When is the assessment given?

The assessment consists of three 60-minute assessment sessions and one 15-minute questionnaire. In spring 2023, the Maine Science Assessment administration window is May 15-26, 2023.

## Is the Maine Science Assessment computer-adaptive?

No, the Maine Science Assessment is a fixed-form assessment in which all students in one grade level receive the same operational questions. The field test questions the students see may be different; field test questions do not contribute to a student's overall score.

## Why is the Maine Science Assessment fixed-form and not computer-adaptive?

Some assessments are question-by-question adaptive, or in other words the difficulty of the next question is determined by the correctness of the student's response to the previous question. For an assessment in which each question stands alone and is not directly related to other questions, this is possible because each question has its own level of difficulty and accompanying statistics.

The Maine Science Assessment, however, is cluster-based with questions grouped around a specific scientific phenomenon. This phenomenon is communicated through reading passages, images, diagrams, charts, and/or graphs. The order of the questions within the cluster is of utmost importance as they are designed to gradually build in cognitive complexity.

For a cluster-based assessment to be computer-adaptive, a student would need to complete the entire cluster before the assessment could adapt to provide a new cluster. Because the questions within a cluster gradually build in their cognitive complexity, the cluster as a whole cannot be aligned to a single level of difficulty. As a result, there is not a well-defined “harder” or “easier” cluster for the student to see next on the assessment.

## Why aren't questions on the Maine Science Assessment shuffled so that students see them in a different order?

For a non-computer adaptive test, best practice in psychometrics (the field of psychology devoted to testing, measurement, and assessment) is that all students receive the most similar testing design possible. This provides a fair testing experience and therefore valid and reliable test statistics.

A student that sees a cluster of questions as questions 1-4 and a student that sees those same questions as questions 15-19 have different experiences. One such difference can be testing fatigue. The questions that come first may receive more attention and focus from the student than the questions that are seen at the end. Therefore, for a question to have valid performance statistics, the question placement should not be a variable. All students seeing that question should see it in the same position or a very similar position.

## **NEW:** Can my student's Maine Science Assessment be reset (like the Maine Through Year Assessment)?

The Maine Through Year Assessment in Reading and Math is a computer-adaptive assessment that creates a unique assessment for each student based on the student's previous responses. As a result, if a student's Through Year Assessment needs to be reset, for example due to not receiving an accommodation identified in the 504 plan or IEP, we know with certainty that the student will not receive the exact same questions during the second administration of the Maine Through Year Assessment.

The Maine Science Assessment, however, is a fixed-form assessment. As a result, every student in a particular grade level sees the same operational questions presented in a specific and deliberate order within clusters chosen to gradually build in cognitive complexity. If a student's assessment were to be reset, the student would be seeing the same questions that they had previously responded to. This would provide the student an unfair and inequitable advantage over their peers. As a result, the Maine Science Assessment cannot be reset.