

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

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 3rd 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 2024, the Maine Science Assessment administration window is May 13-24, 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.

What measures have been taken to ensure the accessibility of text in ADAM?

The ADAM assessment delivery system is designed to support the accessibility of text and images for users with a range of needs and accommodations and is WCAG and Section 508 conformant.

ADAM supports custom configuration of onscreen interfaces to meet State of Maine preferences and guidelines, including text fonts, sizes, styles, and colors. The default fonts are sans-serif fonts for web applications, including font families Arial, Helvetica, and Roboto.

Students are also able to control the display of text during their assessment session through the use of Accessibility Features that include adjustments to color contrast settings for text vs. background colors, the selection of text settings at different percentages of enlargement, and the use of zoom magnification tools. The line reader and highlighter tools can also be toggled on and off by the student to assist their reading of text passages further.

ADAM accessibility features also provide an embedded text-to-speech tool that students can use and control based on their preferences. ADAM is integrated with TextHelp SpeechStream text-to-speech functionality. Click-to-read can easily be toggled on/off to allow students to select the text they want to be read aloud (i.e., item text, stimulus). ADAM also supports Alt Text for images and graphics that appear onscreen during an assessment, as well as the use of ARIA labels to support assistive technologies that may be used in conjunction with a student's computer device. **Please note that text-**

to-speech must be enabled in the ADAM platform by a School or District Assessment Coordinator or by the assigned Proctor within the proctoring dashboard.