*****Massachusetts Department of***

***Elementary and Secondary Education***

### 75 Pleasant Street, Malden, Massachusetts 02148-4906 Telephone: (781) 338-3000 TTY: N.E.T. Relay 1-800-439-2370

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| Jeffrey C. Riley  *Commissioner* |  |

# MEMORANDUM

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| **To:** | Members of the Board of Elementary and Secondary Education |
| **From:** | Jeffrey C. Riley, Commissioner |
| **Date:** | June 11, 2021 |
| **Subject:** | Innovative Science Assessment |

This memorandum updates the Board of Elementary and Secondary Education (Board) on initiatives undertaken by the Department of Elementary and Secondary Education (Department or DESE) to support the implementation of the Innovative Science Assessment.

**Background and Context**

I included innovative approaches to assessment in the 2019 guiding document [Our Way Forward, which was grounded in four themes:](https://d279m997dpfwgl.cloudfront.net/wp/2019/06/Our-Way-Forward-vFF.pdf)

1. Deeper Learning for All
2. Holistic Support and Enrichment
3. Innovation and Evidence-Based Practices
4. The State as a Partner

Our plan for innovative assessments stems directly from these themes, especially the theme of deeper learning for all. One key initiative is our work to redesign the Massachusetts science assessments with a new performance task component that signals the state’s focus on deeper learning. Through engaging with these tasks, students will be able to apply their knowledge of science content and practices and wrestle with scientific phenomena as they participate in the authentic work of the discipline. The innovative elements in this pilot are inspired by similar innovations on the National Assessment of Educational Progress (NAEP).

As I visited schools, I would commonly hear from teachers, especially those working in schools with high levels of poverty, about the challenges of teaching all the standards and dedicating time to formative assessments and preparation for MCAS tests. While standards-based instruction and data use are powerful approaches and are used effectively in many districts, sometimes an over-emphasis on curriculum coverage and test preparation deprives students of high-quality learning that is rigorous, relevant, and engaging.

Our work to promote deeper teaching and learning aligns with innovative approaches to student assessment. In early 2020, we applied and received approval from the U.S. Department of Education for Innovative Assessment Demonstration Authority (IADA), with a proposal to create a new assessment for Science and Technology/Engineering (STE). The innovative assessment will feature more in-depth, computer-based performance tasks in which students engage actively with simulations of authentic scientific phenomena by applying science knowledge and practices. Our initial work is focused on the tests for grades 5 and 8, and we plan to evaluate similar approaches for high school science tests in future years.

**Goals**

We have multiple goals for this innovative science assessment:

* to serve as a model of deeper learning tasks and illustrate the desired shift in classroom instruction;
* to measure not just what students *know* (science content) but also what they *can do* (science practices)
* to be more engaging, culturally inclusive, and relevant for students; and
* to create more equitable opportunities for all students to demonstrate what they know and are able to do.

Since beginning this work in late 2019, DESE has received grant awards from the U.S. Department of Education ($2.9 million) and a Gates and Walton Foundations joint grant program for innovative assessments ($1 million).

**Progress to Date**

DESE has contracted with top experts in science instruction and assessment from WestEd, Pearson, and Concord Consortium to create performance tasks for the June 2021 pilot assessment, using cycles of rapid prototyping with input from teachers and students through the year of development. Within DESE, we have engaged a wide range of staff on this initiative: science team members from the Center for Instructional Support, Student Assessment Services, Kaleidoscope team members, and staff from the innovative assessment project.

We made the decision to engage teachers regularly throughout the test development process to ensure teacher voice shaped the innovative tasks. We established a committee of 10 expert science teachers for each grade level (grades 5 and 8) and held bi-weekly meetings to get their input on the test questions, task storylines and simulations. We also established a bias and sensitivity committee with an additional ten teachers, engaging them at the start of the process to help select tasks for development and again at the end of development to review the final tasks for possible issues of bias or sensitivity.

For both grade levels, we have created three innovative performance tasks covering a range of science and technology/engineering content and practices. Additionally, we created a demonstration task for each test and provided it to pilot schools ahead of time to enable students and teachers to become familiar with the format and controls of the simulations. Early versions of the tasks were given as a “tryout” to students in January-March 2021, to help us gather feedback on the tasks. The demographic mix of students in the tryouts was similar to that of the state overall, including representation of students with disabilities and English learners.

The final prototypes were administered in early June to a group of pilot schools, comprising roughly 1000-1500 students in each of the two grades. DESE selected schools for the pilot in February 2020, based on their demographics and expressed interest in deeper learning.

**Professional Development**

We plan to support schools taking part in the assessment pilot with professional development and tools in partnership with the state’s science curriculum team and the Kaleidoscope Collective for Learning. Professional development will focus on three areas: grade-level use of science and technology/engineering practices, culturally responsive science teaching, and use of authentic classroom assessments.

**Future Work**

In the months ahead, we will review the results from the 2021 pilot test to evaluate the test relative to our goals. In addition to careful analysis to ensure that the test meets federal requirements and assessment best practices, we will also include:

* Review of student performance, including comparisons of results across student groups
* Review with teacher committees of the results for each task
* Analysis of student survey results about their perceptions of the innovative test
* Focus groups with teachers, students, administrators, and families

These important sources of input will shape the decisions we make about refining the tasks from this year and developing new tasks next year. Heading into FY22, we plan to expand our pilot group to roughly 5,000 students in both grades to ensure we have more complete representation of each student group. We will refine the design of the assessment, expand the availability of student accommodations, and establish a repeatable, annual development process for the assessment.

Sam Ribnick (Special Advisor for Innovative Assessments) will present at the June 22 meeting.

**List of 2021 Pilot Schools**

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|  | **District/Charter** | **School** |
| 1 | Academy of the Pacific Rim Charter | Academy of the Pacific Rim Charter Public School |
| 2 | Berkshire Hills | W.E.B. Du Bois Regional Middle School |
| 3 | Boston | Eliot Elementary |
| 4 | Boston | Oliver Hazard Perry |
| 5 | Boston | TechBoston Academy |
| 6 | Boston Collegiate Charter | Boston Collegiate Charter School |
| 7 | Cambridge | Graham and Parks |
| 8 | East Longmeadow | Birchland Park |
| 9 | Lincoln | Lincoln School |
| 10 | Longmeadow | Glenbrook Middle |
| 11 | Malden | Ferryway |
| 12 | Medfield | Thomas Blake Middle |
| 13 | Mendon-Upton | Miscoe Hill School |
| 14 | Milford | Stacy Middle |
| 15 | Milford | Woodland |
| 16 | Springfield Empowerment Zone | Chestnut Accelerated Middle School (Talented and Gifted) |
| 17 | Woburn | Clyde Reeves |