Preparations for the new Science Standards during 2020-21

Updated Oct. 19, 2020

Current Status and Implementation of the 2019 Science Standards

MDE Science Website: The science page was recently updated with information and documents that are referred to in this document and several other additions. Some documents are listed at the bottom of the webpage.

Rulemaking: The Commissioner of Education approved the draft of the Science Standards prepared by the standards review committee in May with the recommendation that schools and districts use these in planning for full implementation by 2023-24. The standards become legally binding through Minnesota's rulemaking process, which involves making the case to an Administrative Law Judge that the standards are necessary and reasonable. We are working on the documentation for that process. The process could take until the end of the school year. You can learn more and keep up with progress at the MDE Science Rulemaking webpage.

Timeline for implementation: In consultation with many district leaders we developed a potential implementation timeline that lays out a schedule of professional development, curriculum planning, and beginning to teach the new standards over the schools years leading up to full implementation in 2023-24. This document is in the MDE Science webpage. According to that plan, schools might start teaching the new standards at some grades starting in 2021-22 and add grades over the following two years.

With the demands of the pandemic, some people suggested that implementation of the new standards be delayed. However, that would cause conflicts with the scheduled implementation of new English Language Arts standards also in 2024-25. Districts and charter schools may set their own implementation timeline for the new science standards. We have prepared a document of alternative implementation timelines, which compare the phasing-in of teaching the new standards over three years, over two years, or all at once. That document is in the MDE Science webpage.

We encourage districts and schools to support their teachers in learning more about the pedagogy associated with the new standards and incorporating the Science and Engineering Practices and phenomena-based instruction in their current teaching of the 2009 standards in both in-person and distance learning environments.

Licensure: MDE and PELSB (Professional Education and Licensing Board) have prepared a joint statement on the current science licenses, the methods to add license area, and the opportunity for out-of-field permissions. This is posted on the MDE Science webpage. PELSB will consider changes in licensure rules after the science standards complete rulemaking.

MCA: The Science MCA-IV, based on the 2019 Minnesota Academic Standards, will first be administered in 2023–24. In order to prepare for this administration, field testing of new test formats and item types will begin in spring 2021. New features will include: 1) the presentation of information on multiple tabs on the same page, and 2) the inclusion of constructed-response items where students are required to write a response. Resources will be provided this winter to familiarize students with these new formats and item type. Note: Field test items do not count towards a student's score.

Additionally, the Science MCA-IV test specifications are now available on the MDE website. Test specifications describe how the revised 2019 Minnesota Academic Standards will be assessed on the Science MCA-IV.

Resources for Science Distance and In-school Instruction

The MDE Guidance for Minnesota Public Schools: 2020-21 School Year Planning and the Minnesota Department of Health 2020-21 Planning Guide for Schools are the primary documents for safety, health, and instructional practices. They supersede any advice from other sources. MDE has posted instruction guidance for distance learning, include science guidance at the Student Instruction COVID – 19 Resources page (click on the Academic Standards Support expansion bar).

The Council of State Science Supervisors (CS^3) developed support documents for science learning during distance learning and return to school, including advice for science leaders, teachers, families and students. Most recently, they published back-to-school guidance briefs on instruction, assessment, curriculum, well-being and safety. They also produced a very helpful and practical recorded lab safety webinar by NSTA science safety consultant Ken Roy.

The National Science Teaching Association (NSTA) has a Safety Resources landing page with laboratory and investigation safety practices for both in-school and at-home. They also have up-coming and archived web seminars on many instructional topics including one on Lab Safety.

The Minnesota Science Teachers Assn. (MnSTA) has a site where teachers can upload lesson plans to share and can access those that are posted. To view the lessons and to contribute go to the MnSTA Resources for Teaching Remotely webpage. You will also find other resources posted there, including suggestions for elementary teachers and links for remote learning resources.

Professional Development

The MnSTA Conference on Science Education is going online November 12 – 17. There will be evening sessions on Thursday, Friday, Monday, and Tuesday, plus unconference sessions on Saturday Morning. Strands include Three-dimensional Learning, Distance Learning, Elementary Science Education, and each of the content areas. Check the MnSTA Conference website for details, including the calls for presenters and exhibitors.

MnSTA began a series of webinars on **Science Teaching and Social Justice** in July. The series began with conversations among teachers and students working toward equity practices in science classes. The slides and resources are in the MnSTA Equity in Science Education website. Watch for future events.

The **Science and Engineering Practices in Action** (SEPA) is a set of online modules to support professional learning communities. These are great resources to learn instructional strategies to incorporate the practices of

the new standards into current instruction and prepare for teaching the new standards. Instructions for accessing the MDE Online Science Courses are on the MDE Science page.

District Science Leader Network: District-level staff who have responsibility for science education across their district are invited to participate in this network. Some examples are district curriculum coordinators, science coaches, TOSAs, and charter school/private school lead teachers. Meetings will be scheduled throughout the year, starting virtually. Persons in those roles who would like to receive invitations should contact john.c.olson@state.mn.us.

Workshop: "Engaging Students in Investigation using GRC" will be available to district and professional development leaders Nov. 19 – 20. Join us for two days of professional learning that will model effective science instruction that is consistent with research about how students learn. These sessions will model effective ways to engage students and teachers in doing science Investigations in person and virtually, which leads to deeper science knowledge using instructional strategies consistent with the new Minnesota Science Education Standards.

Brett Moulding and Peter McLaren will lead this workshop, live online. Participants will receive a copy of the book *Engaging Students in Science Investigation Using GRC* and the materials to do the investigations during the PD. The book describes how to engage students in doing three-dimensional science investigations aligned to standards. The book and professional development provide insights and recommendations for how to effectively use a set of over 360 investigations to teach to the new standards. The investigations were developed by teachers working in collaboration with Brett Moulding and presented in a useful lesson plan format. You will also learn how to conduct your own professional development and work with your district teachers on lesson design and instruction.

Nov. 19 – 20, 8:30 AM – 3 PM each day. Live online
Fee: $250 includes workshop investigation materials and a book mailed to you.
Registration: https://grc-pd-mn.eventbrite.com (limited capacity)
Deadline: November 1 to receive the materials on time

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