



Fall 2018 Newsletter

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Letter from the Executive Director

I hope you are enjoying the fall colors, cooler temperatures, and the excitement of the new school year. In this newsletter you'll find us looking both forward with the new science standard review process and backwards to the best day of the summer, STEM Day at the State Fair.

At SciMathMN we pride ourselves on being a reliable, non-partisan source of information and insight on STEM education for policy makers. With the election coming up next Tuesday that responsibility comes into sharper focus. Recently SciMathMN sent a letter to all Minnesota legislative candidates outlining five policy areas that we think are important for best preparing Minnesota's students today for the opportunities of tomorrow. Those five priority areas are:

1. High quality science and mathematics standards
2. Early and ongoing STEM opportunities for all students
3. Teacher recruitment, induction, and retention
4. Equitable access to computer science education
5. Increased support for Career and Technical Education opportunities

Certainly any one of us might come up with a different list. That's the nature of priorities. We focused on those five areas because we know that strong standards build a base for all students, early access is key to building equity in STEM education, that teachers are vital across all grade levels, computer science is increasingly important for Minnesota students to finding their place in an innovation economy, and that career and technical education opens doors and creates prospects for good-paying jobs in a wide variety of industries.

In these closing days of the election and after I hope that you will reach out to any of the candidates on your ballot and speak to them of your priorities in building and deepening STEM education opportunities for all Minnesota students. All the candidates want to hear from you and all are key to moving good policy forward. STEM is a non-partisan priority. And don't forget to vote Tuesday, November 6!

Jim Davnie
Executive Director, SciMathMN

Science Standards Revision

Minnesota is reviewing its academic standards in science for the first time since 2009. The standards, required in all public schools and commonly used by many private schools, form the basis for what topics students learn in school. Robust and comprehensive standards are key for assuring that all students in the state receive access to rigorous and engaging preparation for citizenship, career, and college.

This fall the Minnesota Department of Education (MDE) convened a group of over 30 educators, administrators and others from the K12, higher education, and nonprofit worlds to review the current science standards and draft a revised set. More on the process and timeline can be found on the [MDE Science page](#).

The standards committee met for a sixth time on November 1st. The committee focused its efforts on reviewing the first draft of the proposed revised standards written by a smaller team. The draft will be released to the public for comment on November 8. Following the release the Department will hold a series of public feedback sessions across the state. The Minnesota Science Teachers Association will also hold a review meeting at its annual conference in St. Cloud immediately after the release.

The standards draft was developed in grade bands of K-2, 3-5, 6-8, and 9-12. The draft is organized around the [Framework for K12 Science Education](#), using Next Generation Science Standards performance expectations within the benchmarks with an emphasis from the writing team on the progression of science and engineering practices across grade levels. The draft is built around a set of anchor standards, then by grade level, and then moving out to the associated frameworks.

Minnesota Department of Education staff pointed out that the draft requires more work especially with the desire to get equity issues done with the voices of those communities involved. State law requires that the contributions of Minnesota American Indian communities and bands be represented in all standards. MDE staff identified that as an area that needs more deliberation at this time. The next draft of standards will likely also include more chemistry and physics content and general greater specificity across the document.

The committee reviewed the proposed draft with an eye towards developing standards that are clear, jargon free and understandable, grade appropriate, and assessable in the classroom. In addition they looked to evaluate if the proposed standards were of appropriate and consistent "grain size" across the K12 experience. They also looked at the standards in grade level groupings to review the draft for appropriate articulation within grades and in subject matter groups for articulation across grades.

MDE staff will host a series of public events throughout November presenting the draft and soliciting feedback. The list of dates and locations can be found on the [SciMathMN website](#).

Cognitively Guided Instruction National Biennial Conference

June 24-26, 2019

www.cgiconference.com

2019



CGI MINNESOTA

SciMathMN is one of the co-sponsors for the Cognitively Guided Instruction National Biennial Conference being held June 24-26, 2019 in the Twin Cities. Cognitively Guided Instruction (CGI) is grounded in 30 years of research on how children develop their mathematical understandings and how teachers use that knowledge to shape instruction. The CGI

conference brings together classroom teachers, administrators, researchers, and professional developers from across the country. Educators develop and extend their understanding of CGI, learn about the latest research advances, and share about the impact CGI has on mathematics learning in PreK-6 classrooms.

"Navigating the Journey" is the conference theme. An educator's journey takes time to develop and requires nurturing along that path. The conference will create a supportive environment to network with a community of fellow learners, and engage with speakers offering insights into various facets of children's mathematical thinking.

A pre-conference on Monday, June 24 is the "Research and Policy Forum". This forum is intended for school district administrators, principals, instructional coaches, non-profit education community leaders, and legislators to meet directly with CGI researchers to discuss specific research data and the implications for professional development support for classroom teachers. Registration for the pre-conference is independent of the main conference.

To follow the program development and registration details of both the full conference and the pre-conference forum, go to the conference website at cgiconference.com. Join us for the next steps of your journey with new and familiar faces from around the country.



STEM Day at the Fair 2018

The 9th annual STEM Day at the Fair hosted by SciMathMN was held on Thursday August 23 in Dan Patch Park at the Minnesota State Fair Grounds. STEM Day remains popular with fair-goers, exhibitors, and the corporate sponsors who make it possible. Over 13,000 people attended and got to see the exhibits and stage performances! We call that a HUGE success. A record crowd for the first day of the fair, along with perfect weather, helped us to reach so many Minnesota families. There were a variety of exhibitors from industry, museums, professional societies, and organizations that provide school enrichment curriculum and after school and extracurricular STEM programming. The event included a stage presentation, by the MN Department of Education, of Minnesota's Presidential Award in Math and Science Teaching finalists. Governor Dayton again declared the day as STEM Day at the Fair in Minnesota, and the certificate was formally presented on stage.

Our exhibitors and their delightful exhibits demonstrate the breadth of STEM opportunities in Minnesota and the extent of corporations and organizations interested in connecting with youth and their families. Engineering opportunities seem to dominate the exhibits, while extracurricular providers are the largest single type of exhibitor.

STEM Day is a hit at the fair! Random surveys of fair-goers show that a significant number of families plan ahead to attend the Fair for STEM Day. 37% of those surveyed had come to the event previously while another 37% were inspired to come into the event when they saw the activity at Dan Patch park.

Exhibitors feel their impact during STEM Day. They are enthusiastic about their participation in the event: 86% of exhibitors are returning to the event, with 50% of them having participated for at least four years. Many exhibitors commented on the value they see in both outreach to the broader community possible at the Fair, and the value of being with STEM education colleagues and partners for the day. The Girls Zone, created with exhibitors who specifically target their programs towards girls and women, was appreciated as an opportunity to have gender specific programming highlighted. A number of providers also mentioned the value they place on being able to interact with fairgoers of various ages, especially parents. Importantly 69% said that their organization's goals were met for the day at an excellent level, and the remaining 31% said their goals were well met.

Our sponsors make it all possible. The event would not happen without the financial support of Boston Scientific, Smiths Medical, the Minnesota Department of Transportation, MTS Systems, Seagate Technologies, Northrop Grumman, and St. Thomas University.

We couldn't do this without the support of so many of you. Thank you for creating another successful celebration of all things STEM. Let's continue to work together to highlight the opportunities for Minnesota children to explore their interests and curiosity.

Minnesota STEM Teacher Center

SciMathMN has recently refurbished the [STEM Teachers Center](#). The Teachers Center is Minnesota's resource for teachers on the state's math and science standards, frameworks, and resources for teaching to special populations including special education students and English Language Learners. The site was upgraded to a more mobile friendly platform to better respond to the way educators access the site. Additionally the site is now ADA compliant and more secure.

STEM Events and Announcements

SciMathMN Annual STEM Conference

Save the Date: Wednesday, June 12. SciMathMN is partnering with [The Works](#) to plan an early summer STEM Conference that combines business and academic interests.

MN Naturalists Assoc. Conference

The [Minnesota Naturalists Association](#) is going Back to Basics at their annual conference, November 9-11, 2018 at Eagle Bluff Environmental Learning Center in Lanesboro, Minnesota. The conference includes an optional pre-conference field trip to the Ironwood Springs Christian Ranch in Stewartville, MN. Registration closes soon!

STEM Forward Fall Educator Forum

Southeast Minnesota teachers are invited to "Together Toward Tomorrow" on Wednesday, November 7, 4:30-8:00 p.m. at 210 Wood Lake Drive, in Rochester. The keynote speaker for the event is Dr. Julie Evans, CEO of [Project Tomorrow](#), providing a big picture view of trends in STEM education through the voices of teachers, students on trends, drivers, and digital learning.

Environmental Studies

> Looking for an environmental field trip without leaving your classroom? [How](#)

about traveling the length of the [Mighty Mississippi River](#) in an hour? WYES, the PBS affiliate in New Orleans, in collaboration with the [Center for Global Environmental Education](#) at Hamline University in St. Paul, Minnesota is offering a free one hour field trip Wednesday, November 14 at either 9:00 a.m. or again at 1:00 p.m.

> Looking for funding for student-led hands-on environmental projects that embrace STEM learning and empower students? The [Captain Planet Foundation](#) has a variety of funding streams available to teachers and informal educators.

Math Mixer
[Minnesota Council of Teachers of Math](#) invites pre-service and early career math teachers to a [Math Mixer](#) on Thursday, November 29, 4:30-7:00 at La Casita, 5085 Central Ave NE, Columbia Heights.



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