Helping Connecticut Educators Make Sense of Next Generation Science Standards
Welcome to the Mandell Academy!

The Mandell Academy is proud to offer a variety of robust professional learning experiences, including comprehensive follow-up with educators as they implement new practices in their classroom. Our approach is to increase the knowledge, skills, confidence, and excitement of educators in inquiry and three-dimensional teaching and learning, especially towards implementing the Next Generation Science Standards (NGSS). Participants rethink not only what content they present, but also how they engage students in learning science as well as other subjects. Our goal is to increase student interest and understanding for better outcomes in school and beyond.
Ways We Support Educators

**Workshops** – Our offerings range from partial day introductions to multi-day intensive experiences to customized, in-district support. All of our programs are immersive experiences designed to give educators and administrators tools and skills that they can tailor to their classrooms and schools. Regardless of time or experience level, we have an option designed to meet the needs of all educators.

**Classroom Coaching** – Coaching provides educators with the opportunity to experience in-action professional learning. We have a variety of models designed to support school districts where they are, as well as provide in-the-moment feedback to not only support classroom teachers but also to facilitate student success. Our coaching models can be completed one on one, in small groups, or in a mix of formats. They can be aimed at building capacity of coaches or at working directly with teachers.
Workshop Offerings

Elements of NGSS – (0.5 day) This in-district offering provides educators who are new to NGSS the opportunity to develop a familiarity with the three dimensions: Science and Engineering Practices, Crosscutting Concepts, and Disciplinary Core Ideas.

Making Sense of NGSS – (1 day) This workshop provides an introduction to the NGSS and the three-dimensional learning called for by the standards and A Framework for K-12 Science Education. This covers much of the material offered in our half-day Elements workshop while also incorporating immersive learning experiences to allow participants to deepen their grasp of the fundamentals of the NGSS.

Practices of NGSS – (3 days with up to one additional day of follow up in a community of practice) Focused on either K-5 or 6-12 educators, the Practice of NGSS is designed to provide a pedagogical foundation for three-dimensional learning by engaging educators in immersive activities that provide exposure to how the three dimensions of the NGSS -- Science and Engineering Practices, Crosscutting Concepts, and Disciplinary Core Ideas -- can work together in an instructional cycle. Educators engage with these dimensions as learners, deconstruct their learning as teachers, and receive on-going support to apply their new understanding to shifting lessons for their students towards more NGSS alignment.

Providing Evidence Based Feedback – (0.5 day) Designed for administrators and instructional leaders, this workshop provides an opportunity to think about NGSS and the three-dimensional learning called for by the standards. Leaders can then enhance and develop effective science teaching and learning practices with actionable, supportive feedback.

NGSS Assessment Workshop – (1 day) This workshop is designed for educators with a firm understanding of NGSS and who are currently engaging in instructional practices that support three-dimensional learning in their classrooms. Participants learn a reproducible, scaffolded process and create three-dimensional, performance-based assessments of NGSS understanding for use in their own classrooms.

NGSX Introduction to Three-Dimensional Learning, Part 1 – (4.5 days) NGSX Part 1 is a workshop for K-12 educators who are looking for a deep dive into the Next Generation Science Standards (NGSS). The focus is integrating three-dimensional learning into science classrooms, in which teachers support students using science and engineering practices to develop, apply, and refine disciplinary and crosscutting ideas. Teachers engage in these practices and investigate classroom cases to explore how to bring these approaches into their own classrooms.

Browse all upcoming workshops at CTScienceCenter.org/PD
For more information, contact us at MandellAcademy@CTScienceCenter.org or call 860.520.2193
**About Our Workshop Design**

Workshops are designed to allow educators and district stakeholders to experience topics that illustrate three-dimensional teaching and learning through common experiences, both from an informational and experiential standpoint. We offer multi-district sessions at the Connecticut Science Center or at partner locations throughout the state. Alternatively, for group sizes of at least 12, we can provide a workshop in your district or school. We will work with district and school leaders to plan a progression that makes sense for where they are in their implementation of the Next Generation Science Standards (NGSS).

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**NGSX Three-Dimensional Learning, Part 2** – (3 days) Participants of NGSX Part 2 explore making students partners in the classroom. Participants learn to use storylines to create a classroom that is a place where we figure out the science together.

**Principals Learning About Networking and Supporting 3D Science Learning (PLANS)** – (1.5 days) This workshop utilizes the NGSX platform and is designed for district and building leaders as well as teacher leaders who support K-12 science instruction. Through interactive, face-to-face experiences, participants build their understanding of three-dimensional learning and strategies to support science educators in the classroom through classroom visits.

**Engineering is Elementary® (EiE®)** – (1 day) is an award-winning, classroom-tested curriculum that integrates engineering and technology with science, language arts, social studies, and math via storybooks and hands-on design activities for 1st – 5th graders. The curriculum offers teachers a choice of 20 units with engaging engineering challenges that allow students to apply their earth science, physical science, and life science knowledge.
Coaching Structures

We are able to provide schools with various forms of coaching support. Our typical coaching models are outlined below.

**In-action coaching**

Collaborative, in-action support designed to provide the educator with timely feedback for the purpose of positively impacting subsequent instruction. A Professional Learning Specialist supports an educator with classroom observation and feedback, classroom assistance, lesson planning, or curriculum writing as preferred by the educator. The focus of the Specialist is to provide information that the educator can apply to improve future work.

**Lesson study**

Collaborative, in-action support designed to capitalize on specific lesson outcomes. This lesson study process can be organized in a one-on-one or small group format. With support from Professional Learning Specialists, educators will explore curricular goals, establish and confirm lesson goals, and plan for ways to measure student success in alignment with the NGSS. During a classroom visit, the student success measures will be documented by the Specialist and used by the Specialist and educator to determine the impact of the planning time. Specialists and educators then work together to develop a plan to reproduce strengths and identify areas for growth.

**Collaborative coaching**

Working in collaboration with our Professional Learning Specialists, educators will work to develop “look-fors” that will then become prime areas of focus during the observation of the traveling program taught by a Connecticut Science Center STEM Educator. Specialists facilitate pre-observation planning, provide support perspective through the observation, and complete the experience by facilitating a post-observation debrief. As needed, the pre-observation will incorporate pedagogical foundations while the post observation debrief will take a deeper dive into lesson level coaching.

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“The specialist helped me to make sense of how three dimensional lessons are designed.”

~ Fifth Grade Teacher

“This work has a positive impact on student learning by deepening teachers understanding with the 3D teaching model to guide instruction.”

~ Elementary School Teacher

“I think students will be more engaged in learning, I also believe it will be easy to relate lessons/labs that often felt disconnected from one another. Our work created a clear focus.”

~ Kindergarten Teacher
About the Mandell Academy

The Connecticut Science Center has a long history of supporting educators with effective professional learning. Even before ground was broken for the building, the Center was providing Connecticut educators with opportunities to learn innovative science practices.

In 2013, the Connecticut Science Center formalized its professional learning mission, and officially created the Joyce D. and Andrew J. Mandell Academy for Teachers.

As Connecticut adopted new science standards, the Mandell Academy, in collaboration with the State Department of Education, designed workshops and leveraged partnerships to help Connecticut educators and continues to evolve its offerings to move this work forward. By providing immersive, three-dimensional learning experiences, the goal is to assist educators with their understanding of the new science standards and practices.

For more information or a custom quote, please call 860.520.2193 or email MandellAcademy@ctsciencecenter.org

CTScienceCenter.org/PD

The Purpose of the Mandell Academy

The purpose of the Mandell Academy is to inspire educators through professional learning. As a result of our efforts, teachers will increase and deepen their understanding of Next Generation Science Standards and be empowered to create learning experiences that promote a passion for Science, Technology, Engineering, and Mathematics allowing students to explore, construct, and apply their knowledge in real-world contexts.