Day One

Keynote • 9:00 - 9:30 am

“The NGSS: Capturing the Vision in Class and Online”
– Liz Mirra

The vision for the Next Generation Science Standards is ambitious whether you are teaching in person or online. All students should develop a foundational understanding of science through the practices and make connections to the crosscutting concepts. Instruction should be focused on figuring out phenomena and solving problems. Achieving this vision is challenging – yet doable even online! Join nationally recognized science educator Liz Mirra as she shares her reflections and tips for success based on her work with thousands of science educators across the country.

MORNING SESSIONS • 9:40 AM - 12:10 PM

Choose ONE Full Morning Session OR TWO 70-Minute Sessions
One mid-morning break

Full Morning Session • 9:40 am – 12:10 pm

A-1: Integrating Technology into NGSS Lessons – In Person and Online – Brad Fulton
Technology can simplify the analysis of scientific work while preparing students for their place in technology-rich career fields. We’ll explore Google Slides and Desmos graphing software in an engaging physics lab and then learn how to use a simple video editing platform to enhance your distance learning instruction.

First 70–Minute Morning Sessions
9:40 – 10:50 am

CHOOSE ONE: A-2 or A-3

A-2: Crosscutting Concepts–Unlocking the Potential
– Liz Mirra
The crosscutting concepts are the dimension of the NGSS most teachers are least sure how to explicitly implement in the classroom. Learn what the crosscutting concepts are, why they are such a powerful tool for improving student learning, and, most complementing the NGSS.

A-3: Anchoring Units with Puzzling Phenomena: Proven Examples and Practical Strategies – Marge Porter
In this lively session we will dispel the myth that anchor phenomena are just “hooks” that “wow” your students. Beginning with a variety of solid examples we’ll explore what phenomena really are, how to select appropriate ones for unit storylines and strategies for how they can best be utilized to engage learners in the process of knowledge construction.

Second 70–Minute Morning Sessions
11:00 am – 12:10 pm

CHOOSE ONE: A-4 or A-5

A-4: The NGSS in the Physical Science, Chemistry and Physics Classrooms – Liz Mirra
Learn the content shifts found in the Disciplinary Core Ideas that impact physical science, chemistry and physics classroom. Get subject-specific resources and examples specifically aligned to the standards that work in the classroom and for online or distance learning.

Come to this session with a unit (or unit standards) in hand! You’ll learn and practice innovative ways to tweak classroom-ready prompts for both the crosscutting concepts and the science and engineering practices. There will also be an opportunity to zero in on a favorite unit and select prompts that can be utilized as formative assessments. Come prepared to collaborate and share!

Lunch break • 12:10 – 1:10 pm

“Lots of hands-on, practical ways to implement new science practices”
ABOUT BER LIVE ONLINE CONFERENCES

With the current health challenges, all BER in-person PD events are currently being presented in a Live Online format:

Outstanding Instructors
All programs are led by outstanding BER national trainers

Extensive Digital Resource Handbooks
You’ll have access to an extensive digital resource handbook before, during and after your conference

Highly Interactive
You’ll be able to ask questions in real time and interact with the instructor and other participants

Program Guarantee
As we have for 43 years, we guarantee the high quality of our programs. If you are not satisfied, we’ll give you a 100% refund.

Can’t Attend?
Online Professional Development Options:

Related Online Courses
A related On Demand Video-Based Online Learning course, Help Your Students Master the Next Generation Science Standards: Practical Strategies and the Best, New Tools, for Grades 6-12 is available for immediate registration. To enroll, visit www.ber.org/online

Day One

AFTERNOON SESSIONS • 1:10 - 3:40 PM

Choose ONE Full Afternoon Session OR TWO 70-Minute Sessions
One mid-afternoon break

Full Afternoon Session • 1:10 – 3:40 pm

B-1: Using Explanatory Modeling to Help Your Students “Figure it Out”
– Marge Porter
Learn to use phenomenon-driven explanatory modeling as a mechanism to construct science learning. Identify practical ways to more effectively take on the role of facilitator as your students work collaboratively throughout a unit to model how a phenomenon works. Discover proven strategies for helping students to support arguments with evidence and to reach group consensus through productive talk.

First 70–Minute Afternoon Sessions 1:10 – 2:20 pm

CHOOSE ONE: B-2 or B-3

B-2: Planning Engaging Units Aligned to the NGSS for any Learning Environment – Liz Mirra
So you have an anchoring phenomenon to start your unit with. What do you do with it? What do you do next? What does the unit look like? How do you keep coming back to the anchoring phenomenon in an authentic way? In this session, go step-by-step through what an NGSS-aligned unit will look like and how to adapt units for hybrid or online learning.

B-3: Teaching the Scientific Practices through STEM Instruction – Brad Fulton
We will see how it’s possible for students to experience nearly all of the eight scientific practices in one fun and captivating engineering challenge. Teamwork, engineering, math, technology, design, testing, and evaluation will all be addressed in this creative STEM activity.

Second 70–Minute Afternoon Sessions 2:30 – 3:40 pm

CHOOSE ONE: B-4 or B-5

B-4: Using Anchoring Phenomena for In-Person, Hybrid, or Online Instruction – Liz Mirra
Designing instruction around anchoring phenomena is one of the key shifts in the new standards. But where do you find anchoring phenomena, how do you make sure the ones you choose don’t “flop” when used with students, and what do you do with them? Learn how to successfully integrate anchoring phenomena into any learning environment!

B-5: Developing Growth Mindset in Your Science Student – Brad Fulton
Do your students suffer from Fear of Failure-itis? Are they plagued by Risk Aversion Syndrome? Are they victims of Frustration Paralysis? Help is on the way! Learn how to turn failure from a negative to a positive in this intriguing engineering challenge that will teach your students to persevere. This activity can be adapted for distance learning.

“So many strategies I can use tomorrow”
Day Two

MORNING SESSIONS • 9:00 – 11:40 AM

Choose ONE Full Morning Session OR TWO 75-Minute Sessions

One mid-morning break

C-1: Developing an NGSS-Aligned Curriculum – Liz Mirra
Aligning a curriculum to the NGSS is a challenging undertaking for any school or district. Learn about the resources that are available to help you through this process and work through a proven step-by-step process that will guide you and your teachers to a science curriculum that is truly three-dimensional.

First 75-Minute Morning Sessions
9:00 – 10:15 am

CHOOSE ONE: C-2 or C-3

Teaching the content areas is straightforward, but how do we teach scientific practices and cross-cutting concepts? In this simple and engaging exploration involving heat and temperature, we will address many of the scientific practices and cross-cutting concepts simultaneously. This session can be adapted for distance learning.

C-3: Powerful Online Engagement Strategies for NGSS Distance Learning Lessons – Marge Porter
Looking for some great ways to stretch your students beyond the ordinary virtual classroom experience? If so, this session is for you! Learn about online applications that can assist you and your students in producing high quality, engaging, & interactive products. These tools are guaranteed to reinforce the practices of science.

Second 75-Minute Morning Sessions
10:25 – 11:40 am

CHOOSE ONE: C-4 or C-5

C-4: NGSS in Life Science: Resources and Lesson Ideas – Marge Porter
Explore a large collection of lessons, projects, and curricular materials for Life Science (LS) grades 6-12. You will walk away with a collection of high quality supplemental resources for these key topic areas:
• structure and function
• matter and energy in organisms and ecosystems
• dynamics of interdependent relationships in ecosystems
• heredity, variation, natural selection, and evolution

C-5: Next Gen + State Math Standards = STEM! – Brad Fulton
The NGSS suggest that we integrate math with our science. By combining the Next Gen Science Standards with state math standards, we get a powerful model for STEM instruction. Learn ways you can integrate the two for a more powerful teaching model that engages students and maximizes learning in both content areas.

11:40 am – 12:40 pm • Lunch Break

On-Site Training

Conferences like this one along with many other topics can be brought to your school or district in-person or online. Please view all of our On-Site PD options at www.ber.org/onsite or call 877-857-8964 to speak with an On-Site Training PD Consultant.

“Very informative, knowledgeable and applicable”
Day Two

AFTERNOON SESSIONS • 12:40 - 3:20 PM

Choose TWO 75-Minute Afternoon Sessions • One mid-afternoon break

First 75–Minute Afternoon Sessions
12:40 -1:55 pm

CHOOSE ONE: D‑1, D‑2 or D‑3

D‑1: Enhancing Distance Learning In Your NGSS Classroom: Making and Creating QR Codes That Will Take Students “Virtually” Anywhere!
– Marge Porter
Provide students with a quick and efficient way to access information about any science topic using Quick Response (QR) codes. Discover how easily QR codes can be produced and incorporated into your virtual NGSS Classroom.

D‑2: Online and Paper-Based Assessments Aligned to the NGSS
– Liz Mirra
Explore the critical components of three-dimensional assessments and get quality examples of assessments aligned to the NGSS-including examples of assessments for online platforms. Learn where to find the newest and best resources to help you and your teachers develop assessments aligned to the new standards.

– Brad Fulton
Step one of teaching the Next Gen Science Standards is getting students engaged in the phenomena. This engaging activity is perfect for classroom or distance learning. Students will distinguish between observations and conclusions while learning how to attend to detail in their scientific work. This fun activity sets the foundation for all their future explorations in Next Gen labs.

Second 75–Minute Afternoon Sessions
2:05 – 3:20 pm

CHOOSE ONE: D‑4, D‑5 or D‑6

D‑4: NGSS in Earth and Space Sciences: Resources and Lesson Ideas
– Marge Porter
This session will provide an opportunity to examine some favorite Earth and Space Sciences (ESS) lessons, project ideas, and curricular resources for grades 6-12. After the session you’ll be given access to a folder filled with specific NGSS-aligned materials in these key topic areas:
• space systems & Earth’s place in the universe
• history of earth
• earth’s systems
• weather & climate
• human activity, impacts & sustainability

D‑5: What an NGSS Classroom Looks Like: Coaching and Observing Science Teaching
– Liz Mirra
A classroom that is truly aligned to the NGSS looks very different from the traditional science classroom. Discover the hallmarks to look for when observing a classroom that is transitioning to the NGSS and learn how to coach teachers to continue to improve their practice.

D‑6: What an NGSS Breaking Down the NGSS: A Model for Easy Classroom Implementation
– Brad Fulton
This activity lends itself to both classroom and distance learning. In this STEM workshop, we will incorporate NGSS physics standards, technology, engineering, and math. In the process, we will use a simple model for NGSS instructional alignment.

Who is BER?

The Bureau of Education & Research is North America’s leading presenter of training for professional educators. Our goal is to provide high-quality PD programs, based on sound research, with an emphasis on practical strategies and techniques that can be immediately implemented.

“This was very helpful in gaining perspective on new science standards.”
– Sandra Fischer, Science Teacher

BER offers educators a wide range of online courses that are affordable, fun, fast, and convenient. BER is now offering On Demand Video-Based courses. You may earn optional graduate-level credits for most courses. See the catalog of available courses at www.ber.org/online.

BER offers educators a wide range of online courses that are affordable, fun, fast, and convenient. BER is now offering On Demand Video-Based courses. You may earn optional graduate-level credits for most courses. See the catalog of available courses at www.ber.org/online.

BER offers educators a wide range of online courses that are affordable, fun, fast, and convenient. BER is now offering On Demand Video-Based courses. You may earn optional graduate-level credits for most courses. See the catalog of available courses at www.ber.org/online.

BER offers educators a wide range of online courses that are affordable, fun, fast, and convenient. BER is now offering On Demand Video-Based courses. You may earn optional graduate-level credits for most courses. See the catalog of available courses at www.ber.org/online.