

# SUPPORTING THREE-DIMENSIONAL INSTRUCTION



**N**STA aims to increase teacher, school, and district capacity to implement three-dimensional programs, as described in *A Framework for K-12 Science Education*, with innovative instructional strategies that model the student learning experience. Participants have opportunities to engage in and observe three-dimensional activities—then reflect on and discuss what they experienced and saw.

NSTA professional learning is customizable, and each workshop can be tailored by grade and discipline.

NSTA Professional Learning aligns to the “Science Professional Learning Standards,” a set of guidelines released by the Council of State Science Supervisors in 2017 to ensure high-quality teacher experiences.

# Making Sense of Three-Dimensional Teaching and Learning Workshop

**T**his workshop develops deep understanding of the three-dimensions of science and engineering practices, disciplinary core ideas, and crosscutting concepts. Participants engage in professional learning using high-quality instructional materials paired with a



powerful toolkit of resources to implement the three-dimensional learning centered on phenomena and design solutions in the classroom. Facilitators model instructional strategies and use of curricular materials consistent with the innovations in *A Framework for K–12 Science Education*.

**BEST FOR:** Educators implementing or working to implement three-dimensional learning in the classroom

## At the end of this workshop, participants will

- Make sense of three-dimensional teaching and learning in the classroom
- Begin to implement instructional strategies that engage students in three-dimensional learning that integrates the science and engineering practices, crosscutting concepts, and disciplinary core ideas
- Understand the role of phenomena in organizing three-dimensional instruction

## FOR BOTH WORKSHOPS

**WORKSHOP TIME:** Two full days (*These hours may be spread out over multiple days to meet individual school or district needs.*)

### RECOMMENDED MATERIALS:

- *The NSTA Quick-Reference guide to the NGSS, K–12*, edited by Ted Willard
- *Discover the NGSS: Primer and Unit Planner* (e-book)

# Designing Three-Dimensional Lessons and Units Train-the-Trainer Workshop

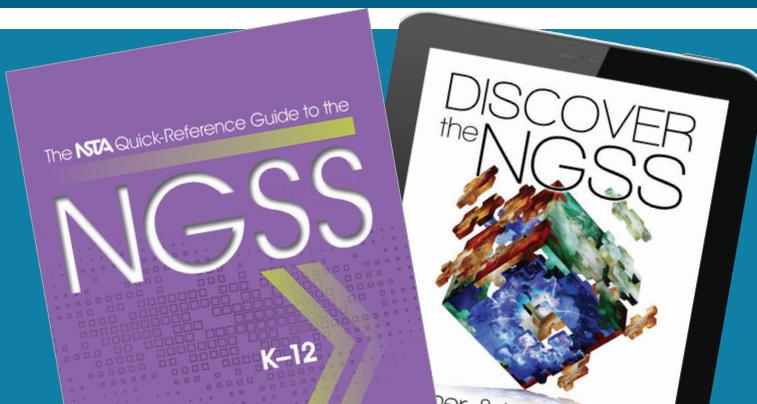
**T**his workshop supports the design and implementation of three-dimensional units of instruction that focus on students explaining phenomena or designing solutions to problems. The workshop also prepares participants to facilitate professional learning around the new science standards and implement three-dimensional units of instruction. The learning activities center on using the elements of the dimensions to inform instructional design and assessment of classroom learning, integrating the three dimensions to plan a unit of instruction, and choosing phenomena that drive teaching and learning.

**Prerequisite:** This workshop requires a solid foundation in understanding three-dimensional learning and the organization of storylines. Potential participants who lack these understandings should consider attending “Making Sense of Three-Dimensional Teaching and Learning” (p.2) prior to this professional learning.

**BEST FOR:** Educators designing or supporting others in developing three-dimensional units of instruction and educators supporting three-dimensional professional development.

## At the end of this workshop, participants will

- Understand the design of three-dimensional units of instruction
- Begin to design instructional units that engage students in learning that integrates the three dimensions
- Identify relevant and interesting phenomena to drive instructional planning



## EQuIP Rubric Workshop

**T**he EQuIP Rubric is a tool for examining the alignment and overall quality of lessons and units with respect to three-dimensional standards such as the NGSS. This workshop deepens educators' understanding of the NGSS while also increasing their proficiency in applying the EQuIP Rubric for Science, version



3.0. Educators will gain the knowledge and experience needed to review science lessons and units, provide effective feedback and suggestions for improvement of instructional materials, identify model lessons and units, and inform the development of new instructional materials. In addition, this professional learning also helps educators understand the NGSS, identify shifts in instruction that may be needed to better target the NGSS, and transition science teaching and learning.

**BEST FOR:** Educators charged with selecting or designing instructional materials.

**WORKSHOP TIME:** Two full days (*These hours may be spread out over multiple days to meet individual school or district needs.*)

### At the end of this workshop, participants will

- Make sense of three-dimensional teaching and learning in the classroom
- Participate in a collegial process that centers on the use of a criteria-based rubric for evaluating lessons and units
- Understand the shifts embodied in the NGSS and how to identify them in instructional materials
- Evaluate instructional materials for their alignment to the NGSS and provide criterion-based feedback

# Administrators Institute

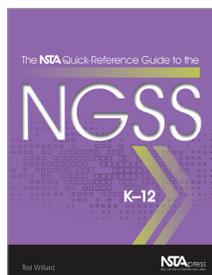
This institute focuses on developing an understanding of three-dimensional teaching and learning and offers guidance on how to support teachers' professional learning as part of district implementation of standards based on *A Framework for K–12 Science Education*, such as NGSS.

**BEST FOR:** Administrators (such as principals, assistant principals, science department chairs, district science supervisors, curriculum coordinators, or professional learning coaches) charged with supporting teachers' implementation of three-dimensional standards.

**WORKSHOP TIME:** One Day

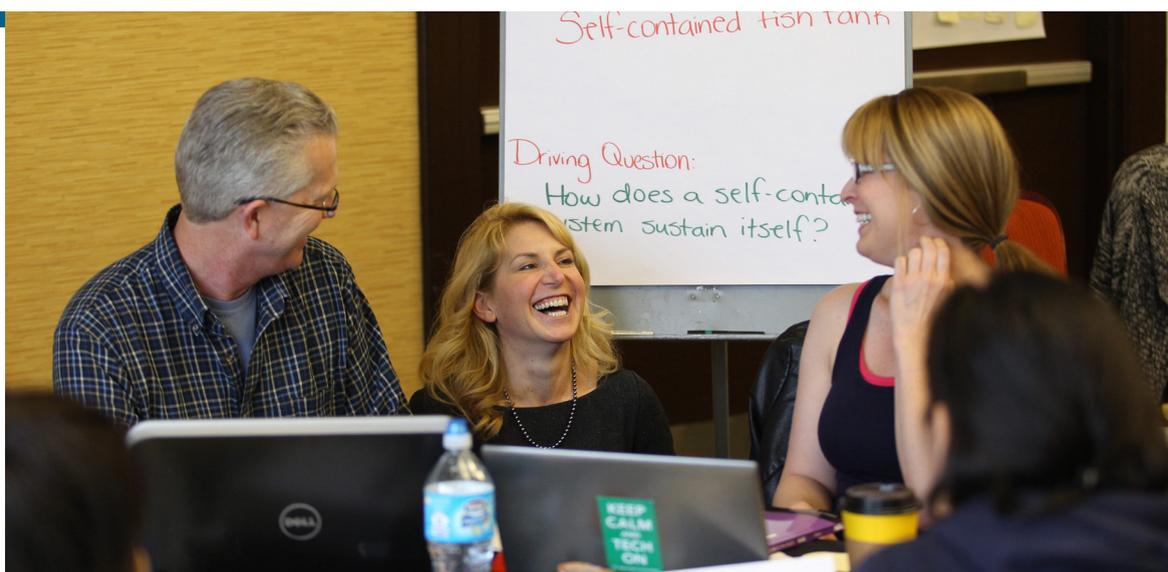
**RECOMMENDED MATERIALS:**

- *The NSTA Quick-Reference guide to the NGSS, K–12*, edited by Ted Willard



**At the end of this workshop, participants will**

- Make sense of three-dimensional teaching and learning in the classroom
- Explain what factors lead to successful professional learning for teachers who are implementing three-dimensional standards
- Assess their districts' needs for professional learning



# Learning Modules

**C**ustomize your professional learning experience by adding an additional learning module to another workshop or institute. Is there another topic you'd like to explore? Contact us to talk about how we could best meet your school or district goals.

## Three-Dimensional Lesson Objectives and Learning Performances

Participants examine the need for lesson-level goals that are more targeted than performance expectations but are still three-dimensional in nature. They then learn how to construct such goals from the elements of the three dimensions based on unit storylines. Participants also explore the differences between instruction and assessment.

**BEST FOR:** Educators who want to construct goals to guide instruction and assessment.

**WORKSHOP TIME:** Two hours.

## Exploring the Science and Engineering Practices

Participants receive an overview of three-dimensional standards with specific emphasis on the science and engineering practices. They then break into small groups and take a deep dive into one of the practices by reading excerpts of *A Framework for K–12 Science Education* and studying K–12 progressions of the practice while using a set of guiding questions. Finally, the groups come together and share what they learned about each of the practices.

**BEST FOR:** Educators who want a better understanding of the science and engineering practices.

**WORKSHOP TIME:** Two hours.

**RECOMMENDED MATERIALS:** *The NSTA Quick-Reference guide to the NGSS, K–12*, edited by Ted Willard

## Instructionally Productive Phenomena Module

Participants focus on the questions “What are phenomena?” and “How are phenomena related to three-dimensional teaching and learning?” Participants explore various phenomena as purposeful means of driving instruction in the classroom, and determine what makes a particular phenomenon effective.

**BEST FOR:** Educators who want to deepen their understanding of the role of phenomena in three-dimensional teaching and learning, and how to choose phenomena that drive instruction.

**WORKSHOP TIME:** Three hours.

# FAQ

**Q: How do we partner with NSTA to develop a professional learning package that is right for our school district?**

**A:** We discuss your needs and go into detail about the content that we can provide in a series of communications involving e-mail, phone, and face-to-face contact, so that we can better understand your goals and how we can help.

**Q: In addition to onsite professional learning, do you also offer online courses?**

**A:** Yes! Our online courses offer additional opportunities to explore three-dimensional teaching and learning. These courses can enhance a face-to-face training or provide a standalone professional learning experience.

**Q: Are these packages customizable in any way?**

**A:** Our professional learning can be tailored by grade and discipline.

**Q: Who are the professional learning facilitators?**

**A:** All NSTA professional learning has been developed by nationally recognized experts Ted Willard and Tricia Shelton, and influenced by notable national partners. Our NGSS facilitators are competitively selected, high-quality educator-presenters who receive ongoing training from NSTA to continually deepen their own understanding of three-dimensional instruction and adult learning strategies.

**Q: How is pricing determined?**

**A:** Pricing for face-to-face professional learning varies based on the number of participants and facilitators, as well as the number of training days. Typical pricing begins at \$6,000 and includes all needed materials, books, and travel.

**Q: Do you come to me, or do I bring my teachers to you?**

**A:** Our authors and expert trainers can come to you to offer training tailored to your needs, but other face-to-face workshops, as well as online courses and webinars, are available as well.

**Q: What grade levels are these appropriate for?**

**A:** We have professional learning packages available for teachers of all grade levels—as well as administrators.

## TESTIMONIALS FROM PAST PARTICIPANTS

*"I left the workshop having a deeper understanding and confidence in using the practices and cross-cutting concepts. I am excited to further dive into the NGSS."*

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*"My teacher facilitators now have a much deeper understanding of what to look for when evaluating materials. I also have a much clearer vision for leading this work. Having this training before the curriculum review process is such a perfect sequence! I believe that this training will lead to continuing work in our region, and I hope to provide a structure to continue the work/ learning. Thank you so much for working with me to bring this training to the region."*

*"I feel more comfortable now with the idea of storylines and how they work."*

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*"We really dug into how NGSS works, and I also have come away with a clarity of purpose."*

## Contact Info

To discuss your standards implementation goals, and how NSTA can support your professional learning needs, contact **Jennifer Horak** at [ngss@nsta.org](mailto:ngss@nsta.org), or **your local NSTA sales rep**.

For more information on any of our programs, visit [www.nsta.org/district/ngss.aspx](http://www.nsta.org/district/ngss.aspx).