Workshop Overview

This **FREE** four-day workshop will provide participants with deep professional learning paired with materials aligned to Next Generation Science Standards (NGSS). As a result of this workshop, participants will be better equipped to navigate the shifts in practice laid out in NGSS. Each session will be an opportunity to collaboratively explore 3D instruction, reflect on instructional shifts, and deepen understanding of 3D assessment with the support of instructional units steeped in real-world context.

This workshop was designed by Dr. Sara Cooper and Dr. Kirsten Smith and is adapted from the OpenSciEd professional development model. Dr. Cooper is an experienced education specialist with a demonstrated history of educational leadership. Dr. Smith is a practicing middle school science teacher leader with over 20 years of experience. Both have extensive experience related to storylines as a model for phenomenon-based teaching and learning.

Supporting Materials

Under the guidance of Northwestern University’s NextGen Storylines team, the American Farm Bureau Foundation for Agriculture (AFBFA) has developed two units of instruction that use phenomena found within food production agriculture as context for student exploration. **These materials are currently under review by Achieve to be considered for an NGSS Design Badge.**

Each unit was developed by highly-trained professional practicing educators led by top science education specialists.

**To develop such high-quality, real-world materials, writers engaged in the following:**
- Immersive field experiences
- EQuIP Rubric training
- NextGen Storyline training
- 3-D Assessment training provided by Achieve

Workshop Highlights

- **Cost:** Free
- **What:** Four-day science education workshop
- **Who:** Middle and high school science educators and curriculum coordinators
- **Where:** We’ll come to you!
- **When:** Scheduling now for summer 2020
- **College Credit:** Potential to earn up to three credits from the University of Florida
- **Registration:** onthefarmstem.com/pd

Day to Day

- **Day 1:** Exploring storyline routines and anchoring phenomena
- **Day 2:** Figuring out how to support student sensemaking
- **Day 3:** Supporting equitable discussions with Talk Moves
- **Day 4:** Assessing three-dimensional learning

The following professional groups provided support in the development of these units:
- Northwestern University’s NextGen Storyline Team
- University of Nebraska–Lincoln IANR faculty
- Agricultural Research Service (ARS)
- Achieve
Unit Descriptions

How can we design cattle to better meet human needs?
In this high school Storyline unit on genetics and heredity, students are introduced to “SuperCows”. As students explore the vast variety of cattle breeds, they discover that cattle are specialized for different purposes. While similar, SuperCows are clearly unique. Students are encouraged to wonder what causes this diversity and specificity, which leads to investigations about the role of inheritance, DNA, and proteins.

Why do prairie chickens need cows to dance?
This middle school Storyline unit covers ecosystems, animal behavior, and symbiosis. Students are challenged to figure out why prairie chickens have a very unique dance, and understand the role cows play to help ensure the dance takes place. Using this approach, students engage in science concepts to help ensure the survival of the prairie chicken.

Teacher Testimonials

Here’s what other teachers are saying:

This training has been invaluable. It has challenged my teaching and allowed me growth in areas that I did not know I needed to grow. It has allowed me to understand and use questioning strategies that encourage my students to be in charge of their own learning.
Shell Wagers, Middle School Science Teacher, Salem-Keizer Public Schools, Oregon

When I look back this training, the key thing that comes to my mind is a new way to look at teaching that is more inquiry-based and causes the students to focus on what they have learned in the past to help broaden their education.
Reta Yanik, FFA Advisor and High School AgriScience Teacher, Mesa Public Schools, Arizona

This method of teaching genetics gave me snapshots of how my students’ thoughts changed from lesson to lesson. Their conceptions became increasingly complex from one lesson to another. I am thankful that I had the materials and support to help me be a better teacher!
Patti Howell, High School Science Teacher, Baconton Community Charter School, Georgia

In my opinion, this is NGSS at its best – integrated, hands-on, fun, and relevant. I’ve had the pleasure of visiting our teachers piloting this unit, and they are doing amazing work with it. The lessons really make the students think deeply about the material, analyze their data and work, and revise their models regularly.
Mark J. Madland, Secondary Science/STEM Program Associate, Salem-Keizer Public Schools, Oregon

The training provided to the participating educators in Milwaukee was the turning point in finding a creative and successful way to re-engage my students, and I am forever thankful to have been a part of this process.
Justen Ollendick, Agricultural Education Instructor & FFA Advisor, Globe Unified School District, Arizona

Contact Information
If you would like more information about scheduling a workshop for your school, district, state, or region, please contact Brian Beierle at educationdirector@fb.org.