

March 2024

Dear Principal/Administrator:

The North Carolina Science Teachers Association (NCSTA) will be hosting our annual Professional Development Institute (PDI) November 7-8, 2024. NCSTA was formed in 1969 with the mission of promoting excellence in science teaching and learning in North Carolina.

As the need for students to become stronger in science increases, so does the need for well-qualified science teachers and administrators who know how to develop relevant and high-quality science and STEM programs. Our PDI strives to help with this development.

The theme of this year's PDI will continue to highlight the new Science Standards. The theme is **Rocking out the new standards in an ever-changing world!!** and features the following strands:

**1. As the world turns: bringing the spheres together**

Educators are invited to share groundbreaking lessons that rock the classroom. Participants will explore activities that help students connect Earth and Environmental Science to other disciplines including Chemistry, Physical Science, and Biology. Educators will demonstrate how to use scientific inquiry to model the effect of forces, structures, and processes on the lithosphere, hydrosphere, atmosphere, and biosphere while honing skills in collecting evidence, evaluating, and communicating the impact of human behaviors on Earth's resources.

**2. Strategies for engaging learners to meet the new science standards**

Educators are encouraged to share inquiry-based lessons that align with the latest science standards. These lessons should cultivate reasoning and problem-solving abilities, allowing students to acquire hands-on experiences that make sense of phenomena in science. The curricular resource(s) should provide opportunities for students to engage in the science and engineering practices through:

- questioning.
- developing and using models.
- planning and carrying out investigations.
- analyzing and interpreting data.
- using mathematics and computational thinking.
- constructing explanations.
- engaging in argument from evidence.
- employing effective scientific communication skills.

Lessons would ideally surface a cross-cutting concept (CCC) to help students make sense of the phenomena or topic. Patterns; cause and effect; scale, proportion, and quantity; systems; energy and matter; or structure and function relationships may provide a framework for enduring understandings. The purpose of the strand is to share lessons that allow students to experience content by engaging in active science practices as outlined by the new standards, while using an accompanying sense-making lens (CCC).

**3. Meeting the needs of our diverse learners**

Educators are encouraged to contribute to an exploration of inclusive science education, where we aim to empower teachers with the culturally relevant pedagogical tools needed to create classrooms to ensure equitable access to high-quality science education for every learner. Participants will gain practical insights into creating inclusive science classrooms that address the unique needs of students including students with disabilities and multilingual

learners. Sessions will illustrate approaches to differentiate by process, product, or content in order to reach all learners.

Our sessions offer a variety of science and STEM concepts centered around our strands. This highly specialized professional learning event will enable educators to help students stay globally competitive in terms of innovations and invention.

We are confident the sessions at the 2024 Professional Development Institute will help to ensure successful implementation of science education into our schools and communities. For more information, please visit the NCSTA website [www.ncsta.org](http://www.ncsta.org) and follow the PDI links.

We hope you and your colleagues will take advantage of this exceptional opportunity.

Sincerely,

NCSTA Board of Directors