

March 2022

Dear Principal/Administrator:

The North Carolina Science Teachers Association (NCSTA) will be hosting our annual Professional Development Institute (PDI) November 3-4, 2022. 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 is **Science and the Natural World: Celebrating North Carolina's Resilient Educators** and features the following strands:

**1. Meeting the Needs of our Diverse Learners**

Resilient science educators know preparing scientifically literate citizens is challenging. They must address the diversity and cultural sensitivity needs of the students and be prepared to teach students with a variety of cognitive levels in an inclusive classroom. They must also address their student's social and emotional learning needs and include English language learners in their science lessons. Inquiry-based, hands-on learning lessons that create a culturally responsive, inclusive classroom significantly enhance student performance. Students who use the tools of science and see representation of someone like themselves in various science and technology careers have an expanded view of their science ability and science identity.

Science can be taught using a variety of instructional strategies that incorporate differentiation as students' science skills are enhanced. Educators are invited to share lessons addressing the forementioned strategies that meet the variety of students' needs in today's classrooms.

**2. Taking Science Learning Beyond the Classroom**

Resilient educators engage students beyond the classroom in school yard labs, outdoor learning spaces, forests, parks, neighborhoods, and walking field trips as they create exciting science lessons that allow students to experience authentic research and develop critical thinking skills. Through citizen science projects, problem-based learning, observations, and the use of scientific databases, educators can take a research and inquiry approach in showing not only how the natural world functions but also the impact of humans on the environment. Students can examine phenomena such as climate change, natural selection, coastal changes, environmental stewardship, adapting to the environment, evolution and more. They can be introduced to both traditional and nontraditional fields in science, technology, and engineering. These activities can also include current societal problems such as the Covid-19 pandemic. With these active learning strategies, students derive positive mental health benefits, better behavior, improve social interactions, intensify positive environmental attitudes, increase scientific content knowledge, and enhance academic performance. Educators are invited to share their strategies and lessons that take students beyond the classroom's four walls.

**3. Digital Teaching Tools, Technology, Inquiry/Hands-on Learning and Assessment**

Resilient educators use a variety of lessons that incorporate digital tools, inquiry, technology, and hands-on activities whether in the life, earth, environmental or physical sciences. These lessons require alternative ways to assess knowledge and process skills. Assessment is a more accurate indicator of the student's comprehension when the principles that link the concepts are measured.

Of course, there is formative and summative assessment, but the educator must determine the best form of authentic assessment for any specific lesson whether for the individual or whole class. This may include portfolios or performance-based assessments, such as doing investigations, designing investigations, and interpreting and using data. Educators are invited to share their digital, technology, and/or inquiry/hands-on lessons in their subject area with the accompanying assessment.

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 2022 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