Building an Anti-Racist Science Classroom

Science Teaching and Anti-Racism

From Trayvon Martin, to Ahmaud Arbery, to Breonna Taylor, our country is witnessing Black lives heinously taken from us. Our students are witnessing how society is responding to the loss of these lives, which is traumatizing for our Black students. What does this have to do with science education? These social injustices are also seen in our classrooms with respect to school discipline, tracking students by perceived ability, displaced family engagement, and access to high-quality science instruction, especially for BIPOC (Black, Indigenous, and People of Color) students. This ultimately creates systemic issues that contribute to student inequities in the science classroom.

As stated in A Framework for K–12 Science Education, “The first source of inequity links differences in achievement to differences in opportunities to learn because of inequities across schools, districts, and communities.” To provide equitable opportunities for students to learn science, we must recognize and dismantle the structural systems that have created the inequities in the first place. Then collectively as a science education community, we can rebuild learning spaces that are inclusive of our student populations and create anti-racist environments that embrace diversity and social justice. Achieving the goal of an anti-racist classroom requires the following actions:
1. **Create a culture of discourse on social justice.** As science teachers, we have a responsibility to practice the nature of science in our classrooms, which includes arguing from evidence on societal issues that directly impact our BIPOC students. Our students must feel heard and validated while participating in the science and engineering practices innovated by the *Framework*.

2. **Cultivate learning experiences that embrace each of your students.** Actively seek phenomena that speak to the cultures, communities, and lived identities of our students. We must advocate for increased diversity in our curriculum and instruction and amplify the voices of Black and indigenous scientists’ contributions to STEM.

3. **Dismantle structural and systemic inequities in science education.** Anti-racist teaching is not just for educators of color, it is also for our fellow white teachers. This creates an allyship in which students of all backgrounds see a united front against racism and structurally racist practices. This involves highlighting scientists of color and emphasizing historical science practices that celebrate the achievements of scientists from BIPOC backgrounds.

   Anti-racist teaching is more than simply telling students about scientists of color. We must truly cultivate the students’ experience in science. Take time to continue professional learning about anti-racist teaching practices that address racism, implicit bias, and microaggressions in the classroom. Identify and connect with other equity-driven teachers or staff members and form committees to consistently advocate for social justice, diversity, inclusion, and equitable access in all areas of curriculum and instruction. As author and University of Georgia professor Bettina Love states, “Schools must support the fullness of dark life as a way to justice...White folx [the more inclusive version of “folks”] embracing Black joy is loving seeing dark people win, thrive, honor their history, and be fully human.” (Love 2019, p. 114)

As educators, we have a responsibility to be actively anti-racist in the science classroom. The articles in this issue amplify critical Black voices in the science education community and aim to encourage our fellow white educators to stand with us as allies in creating anti-racist classrooms.

**Resources**

- STEM4Real Lesson Planning Tools. [https://stem4real.org/lesson-planning-tools/](https://stem4real.org/lesson-planning-tools/)
- Bakshi, L. 2019. *There’s Something in the Water*. STEM4Real. [https://books.google.com/books/about/There_s_Something_in_the_Water.html?id=y0H4wweEACAAJ](https://books.google.com/books/about/There_s_Something_in_the_Water.html?id=y0H4wweEACAAJ)

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**Dr. Leena Bakshi**  
*Next Gen Navigator Guest Editor*
**Dr. Leena Bakshi** is the founder of STEM 4 Real, a nonprofit professional learning organization committed to combining STEM content learning and leadership with principles of equity and social justice. In addition to quality professional learning, the company showcases real-life STEM stars who are breaking barriers and pioneering key breakthroughs in the STEM fields through children’s literature. She also serves as the board secretary for the California Association of Science Educators. She is a former county and state administrator, math and science teacher, and an advocate of social justice in STEM education.

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**Incorporating Anti-Racism in Elementary Science**

Elementary science specialist Brandon Davis and veteran public school educator Dr. Terra Tiller Smith share why anti-racist teaching must be part of students’ everyday experience in the classroom. “As educators, we need to create a framework to allow students to effectively understand the importance of asking questions, understand the impact of race in their community, and explore their identity,” they noted. [Read more.>>](#)

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**Anti-Racism in the Middle School Science Classroom**

Science educators Rosanna Ayer and Yasmine Shakoor-Asadi, and Dr. Cheryl Talley, professor of neuroscience at Virginia State University, discuss how the lack of curricula focused on the contributions of black and female scientists reinforces bias in the science classroom through exclusion. “We all have contributed and continue to contribute to systemic racism when we are not actively working against the exclusions of facts. Unearthing the contributions and stories of all who have contributed to science is one of the first steps to creating an anti-racist classroom,” they explained. [Read more.>>](#)

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**White Science Teachers, Here’s Why Anti-Racism Includes You!**

Veteran science educators Peter A'Hearn, Dr. Nancy Nasr, and Tara Sikorski discuss how a commitment to anti-racism is more important than ever, particularly for white teachers, as it is the moral duty of all educators to use their platforms to overcome racism. [Read more.>>](#)

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**CLASSROOM RESOURCES**

**NSTA’s Daily Do**

Check out four Daily Dos, featured below, from the NSTA collection. Share your photos of your class and/or students with their families completing these Daily Dos with us on Twitter @NSTA #DailyDo and explore our entire collection of Daily Do sensemaking tasks.

- Elementary: How Can Plants Break Rocks?
- Middle: How Can We Run Out of Water?
Quality Examples of Science Lessons and Units

Achieve’s EQuIP Peer Review Panel for Science (PRP) uses the EQuIP Rubric for Science to evaluate instructional materials and identify lessons and units that best illustrate the cognitive demands of the NGSS. Explore this featured resource for high school: How Can Science Be Used to Help Make Our Lives Better?

COVID-19 and Health Equity Units

The COVID-19 pandemic is a clear example of how science and society are connected, and these units explore how different communities are impacted by the virus through the lens of historical inequities in society. These multidisciplinary units include integrated social-emotional learning and supports for teachers and families in addressing these emotional topics. See the units here.

PROFESSIONAL LEARNING

NSTA Engage: Fall20

Join us online November 13–15 for NSTA Engage: Fall20 and explore distance learning strategies, equity and inclusion best practices, and three-dimensional teaching and learning in depth. Presentations, sessions, and workshops include

- Interactive Workshop: NGSS-Focused Summative Classroom Assessments of Three-Dimensional Learning
- Presentation: Designing 3-D Classroom Assessment That Promotes Equity Through Co-Designing
- Presentation: Equity in Science Education Roundtable
- Resource Gallery Session: Supporting Three-Dimensional Learning Through Model-Driven Inquiry Units and Resources
- Sunday Morning Coffee Chat: Making Learning Accessible, facilitated by Next Gen Navigator guest editor, Dr. Leena Bakshi
- Interactive Workshop: Distance-Learning Strategies: Providing All Students Opportunities to Access Science Learning, Parts 1 and 2

Learn more and register for this one-of-kind virtual conference.

GOOD READS

Argument-Driven Inquiry in Fifth-Grade Science: Three-Dimensional Investigations
Elementary school teachers can engage students in scientific practices while helping them learn more from classroom activities with *Argument-Driven Inquiry in Fifth-Grade Science: Three-Dimensional Investigations*. This book gives fifth-grade students the chance to practice reading, writing, speaking, and using mathematics in the context of science. Learn more [here](#).

## CALENDAR

- **November 12:** Book Beat Live!
- **November 13–15:** NSTA Engage: Fall20
- **November 18:** Transforming Science Learning: Distance-Learning Strategies for Sensemaking
- **November 19:** Science Update: The Cosmic Shooting Gallery

## NEWS & VIEWS

>> **Using Human-Centered Strategies to Adapt Science Lessons for Remote Learning** (*Edutopia*, October 13, 2020)

>> **Creating a New Understanding of Science Education** (*Learning First Alliance*, October 14, 2020)

>> **Bringing Equity to STEM Learning** (*eSchool News*, October 14, 2020)