The Culturally Responsive Classroom

As a teacher, you encounter students who are ethnically, culturally, linguistically, and gender diverse, with a range in skills, physical abilities, and living circumstances that impact their learning. It is important to keep in mind that these factors of diversity are intersectional. This rich diversity is both a great opportunity and a challenge.

At Savvas Learning Company, formerly Pearson K12 Learning, we believe culturally responsive learning is critical to ensure all learners succeed. It increases engagement and improves achievement by giving students a voice and allowing them to see themselves reflected in what they learn. Savvas High School Science programs support your efforts to make sure everyone is part of the conversation and to honor students’ unique identities and voices in meaningful encounters.

Ensure Students Can See Themselves in What They Learn

Savvas High School Science programs intentionally represent people who are ethnically and culturally diverse as well as people of different genders, ages, physical abilities, and living circumstances engaged in scientific and engineering roles.
Emphasize Diversity in Science

The Miller & Levine Biology and Experience Chemistry™ programs include a rich assortment of biographies of scientists with diverse backgrounds so that every student knows they too can make great contributions in the fields of Science and Engineering.

John Dabiri  Biophysicist, Engineer

Dr. John Dabiri’s interest in science and engineering was fostered by his parents, both Nigerian immigrants, who worked in technology and engineering fields. Today, Dabiri is a biophysicist and Professor of Civil & Environmental Engineering at Stanford University. His work joins nature and technology. Dr. Dabiri has been named one of Popular Science magazine’s “Brilliant 10” scientists, and was named as one of “35 innovators under 35” by MIT Technology Review magazine. He has also been honored for his work by receiving a MacArthur Fellowship, an Office of Naval Research Young Investigator Award, and a Presidential Early Career Award for Scientists and Engineers.

Shinya Yamanaka  Stem Cell Researcher

Shinya Yamanaka was born in Japan in 1962. From a young age, he was interested in math, physics, and sports, and wanted to become a physician. He earned his medical degree before pursuing a Ph.D. He decided he would rather be a scientist who researches how to cure diseases, instead of a doctor who treats diseases. Yamanaka spent time researching at The University of California San Francisco and the Nara Institute of Science and Technology (NAIST) in Japan in 1999. It was there that he would begin his research on stem cells, which would eventually lead to a Nobel Prize.

Juliet T. Johnston  Ph.D. Student, Environmental Engineering

As a scientist, Juliet Johnston uses molecular techniques to study microbes in wastewater throughout the seasons. Johnston’s specialty is metatranscriptomics, or microbial activity. Using reverse transcription methods, she can quantify mRNA transcripts, or how much these microbes salivate just by seeing food in front of them. When she isn’t consumed by microbes, Johnston serves as an outreach organizer and mentor as a transgender woman in STEM inspire future LGBTQ high school students to enter STEM fields.

Pao Baylon  Air Pollution Scientist

Pao Baylon is an air pollution scientist originally from the Philippines. He moved to America in 2011 to start his doctorate. Pao’s research investigates the quality of air that we breathe. He examines wildfires and studies how they affect local air quality. In 2017, Pao received his doctorate and joined a team that designs inexpensive sensors which will be used to measure air quality in India.
Research-Driven Practices

Curriculum alone is not culturally responsive. Below are some research-driven practices that will help make culturally responsive instruction a reality.

Student Choice in Independent Reading

Students should be able to make individual choices about the materials they read. This can be achieved as they conduct research while completing the Problem-Based Learning Experiences and Case Studies featured in Miller & Levine Biology, Experience Chemistry, Experience Physics™, and Environmental Science.
Interactive, Teacher-Led Discussions

Savvas Science programs provide strategies to moderate class discussions so that students are able to offer their opinions and insights, listen to each other, and interact in a productive and collaborative way. This allows them to learn from each other. Opportunities for discourse can be found in Miller & Levine Biology on the Savvas Realize™ platform in the “Lead a Discussion” features. Here, students can see themselves as experts in their subjects.

More opportunities for class discussion can be found in Experience Chemistry and Experience Physics during the “Elaborate” stage of each learning experience. Here, students discuss the “Claim–Evidence–Reasoning” exercises they have developed to explain their inquiry labs. In Environmental Science student discourse can be found in the “Everyday Phenomenon” activity.
Polyvocal Classrooms

Encourage students to share their voices, whether in whole class or small group discussions, formal presentations, or electronic communications. Students gain confidence when they share ideas, questions, and understandings with each other as they gather information, develop solutions, and prepare a class presentation. In the Performance-Based Assessment from *Miller & Levine Biology*, students have a class discussion during “Assess on the Spot.” In each learning experience, students communicate through models, or develop arguments to explain phenomena, or prepare written lab reports as in *Experience Chemistry*. In *Environmental Science*, discourse occurs when they defend their position in the “Defend Your Case.”

**ASSESS ON THE SPOT**
Challenge students to write a 12-word summary of their claim and the evidence for it. Pair students and tell them to share their summaries. Invite students to share their summaries with the class.

## Chapter Assessment

**Defend Your Case**
The Central Case in this chapter focused on the causes of the golden toad extinction. Most people view national parks as an excellent way to protect species and ecosystems. The golden toad, however, lived in a protected reserve and yet still became extinct. Use evidence from the Central Case and throughout the chapter to explain why the golden toad became extinct despite living on a reserve. Suggest other approaches that should be considered when trying to protect organisms.

### Independent Research Projects

Projects can be customized to make them more relevant to students’ lives. In the Problem-Based Learning projects in *Miller & Levine Biology* and the Anchoring Phenomenon projects in *Environmental Science*, a goal is to enable students to make changes to an issue that is important to them.

**PROBLEM**: How can you reduce the impact of an invasive species on your local ecosystem?

*TO SOLVE THIS PROBLEM, perform these activities as they come up in the unit and record your findings in your Explorer’s Journal.*
Writing for Authentic Audiences

Encourage students to think about their audience in their writing. While it is important for them to master scientific writing, they should also have opportunities to write to address various audiences, including peers. This can be achieved using the “Write About Science” feature of Miller & Levine Biology and the “Write About It” feature in Environmental Science. Both opportunities provide a variety of prompts for students to experience writing different types of prose for various audiences.

Inquiry-Based Instruction

Enable students to drive instruction by contributing questions and answers around curriculum topics. This discourse occurs naturally as students perform the quick labs and chapter labs, and also in the completion of the Case Study/Make Your Case activity, the Performance-Based Assessment task, and finally through the Problem-Based Learning project in Miller & Levine Biology.

Experience Chemistry and Experience Physics encourage students to share what they know and notice about anchoring phenomena as well as to generate their own questions to investigate further.
For more information, visit:
Savvas.com/
CulturallyResponsiveLearning

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