

Using “Science as a Human Endeavor” to Foster Diversity, Equity and Inclusion in Secondary Science (e.g. Biology) Classrooms

A Technology and Media Session at the 2023 NSTA Conference

A free online resource titled “*Science as a Human Endeavor*” provides one tool to help you highlight diversity in STEM, foster inclusion in your class, and invite all your 7th–12th grade students to participate in science.

URL: <https://tinyurl.com/science-human-endeavor>

This free online resource leverages the NGSS’s *Connections to Nature of Science* (Appendix H) concept “*Science is a Human Endeavor*” and highlights:

A. Stories of Scientists and Engineers

This section highlights the personal stories, experiences, and work of a diverse group of people who are scientists and engineers. Use it to address the NGSS focus on “Individuals and teams from many nations and cultures have contributed to science and to advances in engineering.”

B. Science in Communities

Participation by a wide variety of people in science and engineering can lead to a better understanding of how the natural world works and toward solving the problems facing individuals, communities, and the environment. Use this section to find stories that highlight how people are working together to address local and global challenges. Use it to address the NGSS focus on “Individuals and teams from many nations and cultures have contributed to science and to advances in engineering.”

C. Community (or Citizen) Science

Young people all around the world have made significant contributions to scientific projects. Investigate opportunities to engage in science and engineering with different projects while connecting to NGSS focus on “Technological advances have influenced the progress of science and science has influenced advances in technology.”

Explore practical ways to use this resource, such as:

- An **introduction** to a new unit or science topic
Use a scientist’s profile to introduce a science topic by telling their story aloud.
Find and share local connections of science being done in communities near your area.
- An **extension** to a completed activity or unit
Do additional research and connect to science in communities near your area.
Contribute to community/citizen science projects by gathering additional data.

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Link to presentation slides: <https://tinyurl.com/SEPUP-NSTA-2023>

A Letter to Students to accompany the Science As A Human Endeavor Webpage

If someone asked you the question, “What is science?,” how would you answer? You might reply that it is knowledge of subjects such as biology, earth science, or chemical engineering. Although science is certainly related to the accumulation and advancement of knowledge, it is much more than that. Science is a way of exploring and understanding the natural world. Observations are made and data are collected to discover the patterns that exist in the universe. Eventually, theories are developed to explain observations and patterns. Like science, engineering involves knowledge and a set of common practices to design solutions to all kinds of engineering problems.

Science and engineering are human activities. People from all over the world engage in science and engineering and use scientific information and technological solutions. The types of questions a scientist asks and the types of problems an engineer tries to solve are influenced by what they think is important. And what they think is important to investigate often depends on their background, experiences, and perspective. This is why it is essential for all types of people to become scientists and engineers—to be sure that science and engineering respond to their interests and needs. Diverse ideas enrich explanations and arguments. Visit the Science as a Human Endeavor webpage at: <https://tinyurl.com/science-human-endeavor> to learn more about the stories, interests, and accomplishments of scientists and engineers.

Science and engineering can be done by people of all ages and backgrounds, including people like you. When you gather data or help design a solution to a problem, you are doing science and engineering. Young people have made significant contributions to scientific projects all around the world. Members of communities like yours are doing bird counts to determine the health of local bird populations; testing and monitoring pollutants in their neighborhoods to determine the health of their environment; preserving seeds from traditional cultures for future planting; restoring habitats to maintain local plant species; developing awareness campaigns to prevent infectious disease; or constructing apps to address community concerns, such as mental health. Participation by a wide variety of people in science and engineering will lead to greater and swifter progress toward understanding how the natural world works and solving problems facing individuals, communities, and the environment.

To learn more about opportunities to engage in science and engineering in your community and across the world, visit the Science as a Human Endeavor webpage at:
<https://tinyurl.com/science-human-endeavor>