

Gender-Inclusive Biology Instruction for Middle and High School Educators

These resources are specific to supporting middle and high school educators to be more inclusive and accurate in their teaching of gender, sex, and sexuality.

- Be aware of the way students' identities are developing and shifting around gender, sex, and sexuality, including feelings that may arise related to [puberty, bodies, and relationships](#).
- Teach with the assumption that someone in the room could be intersex or transgender, even if you are not aware.
- In a Genetics/Inheritance unit, attend to [intersex identities](#) and encourage curiosity about [chromosomal variations](#) but do not jeopardize your students' privacy by doing a [Barr body staining exercise](#). For Mendelian genetics, consider a model that foregoes human gender role stereotypes like the [Pigeonetics game](#). In an Evolution unit, provide a more complete picture of sexual and natural selection. Avoid anthropomorphizing or projecting human values or human gender stereotypes onto animal behavior. Expose students to species exhibiting [same-sex sexual behavior](#), [sex-changing](#), and [transgender-like expression](#). *Evolution's Rainbow* by [Joan Roughgarden](#) provides hundreds of unique examples of gender and sexual diversity, easily referenced in a [spreadsheet database by River Suh](#).
- In a Human Body Systems unit, be sensitive to the highly personal subject matter. Emphasize that any diagram is oversimplified and does not represent any individual's exact body configuration. Expose students to chromosomal, genetic, and hormonal aspects of biological sex which impact the reproductive system as well as all other organ systems. Teach about the spectrum of variations observed for any physiological trait, rather than a singular "normal" or "healthy" body. For example, students can [develop and evaluate models for predicting standing height from human skeletons](#). The [HHMI Sex Verification Testing of Athletes interactive](#) explores variations in urogenital development without pathologization. [Current research on lymph node asymmetry](#) can also highlight this variation.
- For advanced biology classes including AP and IB, [Project Biodiversify](#) provides detailed guidance for teaching about sexual reproduction, sex determination and dimorphism, and sexual selection in college-level content.
- Use [resources created by Ace Schwarz \(Teaching Outside the Binary\)](#) to help young people research scientists with diverse identities.

Visit [this document for recommendations for elementary school educators](#) and [stemteachingtools.org/brief/76](#) for the associated STEM Teaching Tool practice brief.