

Unit 2 - Stereotype Threat

How stereotypes can unconsciously manifest in a person's own work.

NGSS connections: **Practices:** Asking Questions and Defining Problems; Analyzing and Interpreting Data; Engaging in Argument from Evidence; Constructing Explanations and Designing Solutions; **CCCs:** Patterns; Cause and Effect; Systems and Systems Models.

Starting point for instructors

- Do [Unit 0 - Setting the Stage](#) before this, and review norms if needed
- At this point most facilitators will have talked about underrepresentation in science ([Unit 1 - Data Analysis and Underrepresentation](#)) and how external factors can influence individual outcomes ([Unit 2 - Meritocracy](#)). **Stereotype threat** is one explanation of the confluence of these ideas.

Pre-Lesson Student Exploration / Bell-Ringer

Before coming to class/at the start of class, students need to:

- Think of a stereotype people might hold about an aspect of your identity which you don't think applies to you. What is it? How do you feel when people express that stereotype?
Optional: ask students to write a paragraph outlining their thoughts.

In-Class Investigations

[Write, Pair, Share](#) Personal Reflection [10-20 minutes]

For last night's homework, students should have reflected about the ways that others might stereotype them.

- *Write (may have already happened as homework):* Think of a stereotype people might hold about an aspect of your identity which you don't think applies to you. What is it? How do you feel when people express that stereotype?
- *Pair:* What stereotypes did you and your partner come up with? How are they similar or different?
- *Share:* Would anyone like to share how this topic made you feel? Were there some similarities to your reactions in your small groups? Is there anything else you would like to share with the whole class? Remember to share from your own experiences.



Introduction to Stereotype Threat [20-30 minutes]

1. Define [stereotype threat](#): the threat of being viewed through the lens of a negative stereotype or the fear of doing something that would inadvertently confirm that stereotype (Steele, 1999).
 - a. Stereotype threat affects all groups.
 - b. People affected by stereotype threat are not necessarily aware that it is affecting them. [Clever research](#) shows that their awareness of the stereotype is heightened, even if their conscious awareness is not.
 - c. Stereotype threat can [boost improvement as well as harming it](#).
 - d. Stereotype threat can [affect physical performance in addition to mental tasks](#).
 - e. Stereotype threat [affects more invested students more](#).
2. Split the class up into small groups and assign each group a different vignette to explore. Ask each group to identify the stereotype involved. Here are the vignettes:
 - a. High achieving Black students did worse on a test when told it measured their ability, but just as well when told it measured problem-solving. (The stereotype, in this case, is that Black students are less able than white students.) ([A Threat in the Air - Steele](#))
 - b. A math test was administered to the highest achieving white students at Stanford. The group told that they were being compared to Asian students scored [one standard deviation below the control group](#). (The stereotype is that white students are less capable than Asian students.)
 - c. [This study](#) “primed Asian American women with either their Asian identity (stereotyped with high math ability) or female identity (stereotyped with low math ability) or no priming before administering a math test. Of the three groups, Asian-primed participants performed best on the math test, female-primed participants performed worst.”
 - d. “40 black and 40 white Princeton undergraduates volunteered to play mini-golf... This is a test of ‘natural ability,’ Jeff Stone and his colleagues informed some of the kids. This is a test of ‘the ability to think strategically,’ they told others. Then the students --nongolfers all--played the course, one at a time. Among those told the test measured natural ability, black students scored, on average, more than four strokes better than whites. In the group told the test gauged strategic savvy, the white kids scored four strokes better.” ([Newsweek article](#))
3. Have students share out the vignette with the whole class.

Instructor Notes:

We find stereotype threat is sometimes utterly fascinating to students (“why didn’t anyone tell me about this before?!”) and other times utterly boring. We suggest giving this some thought to match the way you introduce the topic to what each particular group responds well to (example, graphs, podcast, etc.).



Relevance [15-20 minutes]

- a. Pair/share: How does this connect back to your experiences with stereotypes?
- b. New pair/share: How does this connect to your experience *with science*?



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- c. Class Discussion: How might stereotype threat relate to [Unit 1-Data Analysis and Underrepresentation](#)?
- i. Note: most survey respondents believe that identity doesn't impact performance on standardized tests

What could be done? What has been done? [20-30 minutes]

Ask students to brainstorm ideas for countering stereotype threat effects in small groups. Then, consider sharing some of the research and interventions that have been developed by education researchers below:

- a. The [AP Calc test now asks for gender months in advance](#), rather than on the pre-test.
- b. [Explicitly teaching students about stereotype threat](#) reduces stereotype threat.
- c. Instructors can use [strategies to reduce stereotype threat](#).

Note: There have been mixed results about the following particular intervention AND this kind of replication and revision is an [example of a bigger trend in science](#)!

- d. A [simple reflection exercise can defend students against stereotype threat](#)
 - This has been [replicated at other sites](#) and [in college science](#)
 - However, other replications have found a [smaller effect](#) and [none at all](#)
 - The [same journalist who cheered](#) is now [more skeptical](#).

Post-Lesson Homework

Written Reflection

- Students can write a reflection about the discussions they had in class. Students: answer the following questions:
 - What thoughts do you have about today's discussion?
 - What questions remain about stereotype threat?

Resources

- [Lesson Plan Resources](#)

Notes from the Instructors

1. With this lesson and several others in the unit, it feels particularly important to find the right balance between the Hard Truth (stereotype threat is real) and Silver Linings (there are fixes). Too much Hard Truth and students feel needlessly discouraged; too much Silver Lining and they don't understand how pervasive and impactful these issues are for science, our culture in general, and even their lives.
2. Don't forget that stereotype threat isn't just "out there": it's "in here", in our classrooms, too. Reading the [Lesson Plan Resources](#) and educating yourself and your students can reduce its effect in your classroom as well.



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