



# Connecting Social Issues and Human Health Inequities, Lesson 5

## Environmental Racism in America



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<b>Grade Level</b>	9th – 12th Grade
<b>Subject</b>	Science
<b>Course</b>	Biology I, Environmental Science

### Essential Question

How do inequitable environmental factors affect human health?

### Summary

During this fifth and final lesson in the Connecting Social Issues and Health Inequalities unit, students will analyze Marvin Gaye's song, "Mercy, Mercy Me," discuss the history of environmental racism in America, and complete and present their project proposals.

### Snapshot

#### Engage

Students listen to Marvin Gaye's "Mercy, Mercy Me (The Ecology)" and discuss what was happening historically during this time period.

#### Explore

Students read an article and discuss what they read.

#### Explain

Students debrief an article in a whole group discussion.

#### Extend

Students listen to an NPR story about a metal shredding company in Chicago.

#### Evaluate

Students complete and present their proposals.

## Standards

*Next Generation Science Standards (Grades 9, 10, 11, 12)*

**HS-LS2-2:** Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.

**HS-LS2-6:** Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

**HS-LS2-7:** Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

**HS-LS4-6:** Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.

*Oklahoma Academic Standards (Biology)*

**B.LS2.2 :** Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.

**B.LS2.2.1:** Ecosystems have carrying capacities, which are limits to the numbers of organisms and populations they can support. These limits result from such factors as the availability of living and nonliving resources and from such challenges such as predation, competition, and disease.

**B.LS2.2.2:** Organisms would have the capacity to produce populations of great size were it not for the fact that environments and resources are finite. This fundamental tension affects the abundance (number of individuals) of species in any given ecosystem.

**B.LS2.2.3:** A complex set of interactions within an ecosystem can keep its number and types of organisms relatively constant over long periods of time under stable conditions.

**B.LS2.2.4:** If a modest biological or physical disturbance to an ecosystem occurs, it may return to its more or less original status (i.e., the ecosystem is resilient) as opposed to becoming a very different ecosystem.

**B.LS2.2.5:** Extreme fluctuations in conditions or the size of any populations, however, can challenge the functions of ecosystems in terms of resources and habitat availability.

**B.LS2.6 :** Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

**B.LS2.6.1:** A complex set of interactions within an ecosystem can keep its number and types of organisms relatively constant over long periods of time under stable conditions.

**B.LS2.6.2:** If a modest biological or physical disturbance to an ecosystem occurs, it may return to its more or less original status (i.e., the ecosystem is resilient) as opposed to becoming a very different ecosystem.

**B.LS2.6.3:** Extreme fluctuations in conditions or the size of any populations, however, can challenge the functions of ecosystems in terms of resources and habitat availability.

## Attachments

- [Article-Metal-Shredding-Company-Move-Sparks-Protests - Spanish.docx](#)
- [Article-Metal-Shredding-Company-Move-Sparks-Protests - Spanish.pdf](#)
- [Article-Metal-Shredding-Company-Move-Sparks-Protests.docx](#)
- [Article-Metal-Shredding-Company-Move-Sparks-Protests.pdf](#)
- [Driving-Question-Board - Spanish.docx](#)
- [Driving-Question-Board - Spanish.pdf](#)
- [Driving-Question-Board.docx](#)
- [Driving-Question-Board.pdf](#)
- [Lesson-Slides-Environmental-Racism-in-America.pptx](#)
- [Mercy-Mercy-Me-Song-Lyrics - Spanish.docx](#)
- [Mercy-Mercy-Me-Song-Lyrics - Spanish.pdf](#)
- [Mercy-Mercy-Me-Song-Lyrics.docx](#)
- [Mercy-Mercy-Me-Song-Lyrics.pdf](#)
- [Proposal-Rubric-Environmental-Racism-in-America - Spanish.docx](#)
- [Proposal-Rubric-Environmental-Racism-in-America - Spanish.pdf](#)
- [Proposal-Rubric-Environmental-Racism-in-America.docx](#)
- [Proposal-Rubric-Environmental-Racism-in-America.pdf](#)

## Materials

- Lesson Slides (attached)
- "Mercy, Mercy Me" Song Lyrics (attached; one per student)
- ["Trump's EPA Concludes Environmental Racism is Real"](#) (article linked; one per student)
- Proposal Rubric- Environmental Racism in America (attached; one per student)
- Computer or individual devices
- Access to internet or Wi-Fi

## Engage

Begin the lesson by projecting the unit's essential question on **slide 3** of the attached **Lesson Slides**.

Display **slide 4**. Share the lesson's learning objectives.

Display **slide 5**. Pass out the attached "**Mercy, Mercy Me**" **Song Lyrics** handout and play Marvin Gaye's song "Mercy, Mercy Me (The Ecology)." Instruct students to take note of any connections they see to the unit theme as they listen to the song.

### Embedded video

<https://youtube.com/watch?v=efiDnHS3fzk>

Tell students that the Marvin Gaye album came out in 1971. Ask them to think back to their history class and identify what was going on during this time. Show **slides 6-7**, which provide some photos of the historical period to help students contextualize the song.

## Explore

Display **slide 8**. Pass out a copy of the article titled "[Trump's EPA Concludes Environmental Racism is Real](#)" to each student. Introduce the strategy [CUS and Discuss](#). Have students read the article and annotate as described below:

- **C** - Circle any words that they don't know.
- **U** - Underline any information that helps them better understand environmental racism.
- **S** - Star any information that is significant to them.

### Teacher's Note: Formative Assessment

As students are reading, walk around looking at any words students may be unfamiliar with. Write the words and their definitions on the board so that students can increase their vocabularies.

Pay close attention to what students circle, star, and underline. Since this is the final lesson of the storyline, students should be able to make strong connections between race, poverty, and health.

## Explain

After students have finished reading, facilitate a discussion of the information that they underlined and starred. Ask students to share the connections that they are making as they progress through the article. Invite them to share the things that they underlined and starred while also explaining their reasoning for annotating.

### **Teacher's Note: Formative Assessment**

Ensure that students see a pattern of environmental racism.

## Extend

Display **slide 9**. Share the handout of the NPR story with students: **Metal Shredding Company Move Sparks Protests**. You may also have students listen to the audio recording of the story [directly on NPR's website](#).

After reading and listening to the story, have the class debrief by addressing the prompts displayed on **slide 10**:

- How is this story similar or different to the stories that we have been reading?
- What information is provided in this story that would support our overall message in our proposals?

Since this is the final activity before students finish their proposals, ideally, all questions that were on the cumulative [Driving Question Board](#) should have been addressed. If there are questions that haven't been addressed, display **slide 11**. Use this time to discuss them. Ensure that all students are confident that they have the information that they need to complete a successful proposal.

It is not necessary to formatively assess students at this point since they are close to the end of the lesson series. However, if students are struggling to make connections or cannot think of ideas for their proposals, work one-on-one with the group to help them.

## Evaluate

### Teacher's Note

If possible, arrange for students to present to community members, city council members, family, and peers. Invite other teachers or administrators and staff to sit in on the presentations.

Display **slide 12**. Remind students that their proposals should address community-level changes that will improve air quality and raise awareness of environmental racism. Ask students to reflect on what they have learned over the previous lessons and begin by addressing the problem, providing evidence for what they are claiming, and providing a possible solution.

Instruct students to finish their proposals and prepare to present them to community members, city council members, family, and peers. Encourage them to use the attached **Proposal Rubric** to self-evaluate as they are preparing their proposals.

Once students have completed their proposals, display **slide 13** and share the instructional strategy [Two Stars and a Wish](#) as a means to provide feedback to one another as they are presenting. Have each group present their proposal to the class. While their classmates are presenting, ask students to write down **two** things that the presenters do well and **one** thing that they can work on improving. Ask students to share their feedback anonymously to allow each group to make adjustments to their presentations.

Use the Proposal Rubric as the summative evaluation tool for the cumulative project.

## Resources

- AZlyrics. (n.d.). Mercy, Mercy Me (The Ecology) [Song lyrics]. Marvin P. Gaye. <https://www.azlyrics.com/lyrics/marvingaye/mercymercymetheecology.html>
- Florida Memory. (2013). Tallahassee Civil Rights March [Digital image]. [https://commons.wikimedia.org/wiki/File:Tallahassee\\_Civil\\_Rights\\_March\\_\(6795031142\).jpg](https://commons.wikimedia.org/wiki/File:Tallahassee_Civil_Rights_March_(6795031142).jpg)
- Gaye, M. (2013). Mercy, Mercy Me (The Ecology) [Video]. YouTube. <https://www.youtube.com/watch?v=efiDnHS3fzk>
- K20 Center. (2020). CUS and Discuss. Strategies. <https://learn.k20center.ou.edu/strategy/162>
- K20 Center. (2021). Driving Question Board. Strategies. <https://learn.k20center.ou.edu/strategy/1511>
- K20 Center. (2020). Two Stars and A Wish. Strategies. <https://learn.k20center.ou.edu/strategy/83>
- Lutton, L. (2021, Mar. 20). Metal shredding company move sparks protests [Transcript]. NPR Radio. <https://www.npr.org/2021/03/26/981486704/metal-shredding-company-move-sparks-protests>
- Martin, R. (2021, March 26). Metal shredding company moves sparks protests [Radio broadcast]. <https://drive.google.com/file/d/16Gk-Uy1abnLjPjsKWUuQmwULpf3oSsH/view>
- Nasjonal Digital Laeringsarena. (1960). African-Americans rallying for civil rights in 1960 [Digital image]. <https://ndla.no/subject:1:a81148de-fb95-4e41-b000-57b268337e2d/topic:1:b957369b-955d-4ee7-a2f2-7fb7ac70c6ac/topic:1:e4acb153-ba2b-4e8e-8b41-209d6823fdf8/resource:bebf68da-942f-4b48-8dde-4b9abef0d18b>
- Newkirk, V. R. (2018, February 28). Environmental Racism is Real, According to Trump's EPA. The Atlantic. <https://www.theatlantic.com/politics/archive/2018/02/the-trump-administration-finds-that-environmental-racism-is-real/554315>
- Phillips Academy Archives. (1970). Earth day [Image]. Flickr. <https://www.flickr.com/photos/paarchives/33731084274/in/photostream/>
- Scherman, R. (1963). Young woman holds a banner at the civil rights march. [Image]. Wikimedia Commons. [https://commons.wikimedia.org/wiki/File:A\\_Young\\_Woman\\_Holds\\_a\\_Banner\\_at\\_the\\_Civil\\_Rights\\_March\\_on\\_Washington,\\_D.C.,\\_on\\_August\\_28,\\_1963.jpg](https://commons.wikimedia.org/wiki/File:A_Young_Woman_Holds_a_Banner_at_the_Civil_Rights_March_on_Washington,_D.C.,_on_August_28,_1963.jpg)
- U.S. Embassy The Hague. (2013). The U.S. Civil Rights Movement. [Image]. Flickr. <https://www.flickr.com/photos/usembassythehague/8443765417>
- University of Michigan History Department. (1970). Give Earth a chance: Environmental activism in Michigan [Image]. Michigan in the World. [http://michiganintheworld.history.lsa.umich.edu/environmentalism/exhibits/show/main\\_exhibit/pollution\\_politics/Michigan-water-and-rivers](http://michiganintheworld.history.lsa.umich.edu/environmentalism/exhibits/show/main_exhibit/pollution_politics/Michigan-water-and-rivers)
- University of Michigan School for Environment and Sustainability. (1970). Earth day. [Image]. Michigan in the World. [http://michiganintheworld.history.lsa.umich.edu/environmentalism/exhibits/show/main\\_exhibit/pollution\\_politics/michigan-water-and-rivers](http://michiganintheworld.history.lsa.umich.edu/environmentalism/exhibits/show/main_exhibit/pollution_politics/michigan-water-and-rivers)
- University of Michigan School for Environment and Sustainability. (2017). Earth day / enact 1970 [Image]. Flickr. <https://www.flickr.com/photos/snre/3460514576145761>