

Environmental Justice in California and Beyond

Grades 9-12

In this unit, students learn about environmental justice in California, and elsewhere in the US, by studying communities struggling with environmental inequities, and learning about how those communities have fought for justice. There are five lessons within the unit, each taking about 1 hour:

- Lesson 1: What are the benefits and burdens of environmental decisions?
- Lesson 2: What is environmental justice?
- Lesson 3: What is environmental racism?
- Lesson 4: How do communities fight for environmental justice?
- Lesson 5: What does environmental justice look like?

Student handouts: For in-person learning. Includes activity worksheets, discussion questions, and exit tickets for each lesson. Download handouts as a [PDF](#) or a [Word document](#).

Teacher handouts: For remote or in-person learning. Includes anchor charts, model worksheets, and templates to record thoughts and ideas from discussions. Download handouts as a [PDF](#) or a [Word document](#).

Student response Google forms: For remote or in-person learning. Includes editable response questions and exit tickets for each lesson. Make a copy and edit as desired.

- [Lesson 1](#): What are the benefits and burdens of environmental decisions?
- [Lesson 2](#): What is environmental justice?
- [Lesson 3](#): What is environmental racism?
- [Lesson 4](#): How do communities fight for environmental justice?
- [Lesson 5](#): What does environmental justice look like?

Slides: For remote or in-person learning, to accompany each lesson. [View on Google Drive](#), make a copy, and edit as desired. Also downloadable in [PowerPoint format](#).

Lessons are aligned with California's History-Social Science, Common Core, and Next Generation Science Standards. They can be integrated into environmental science, social studies, government, and geography classes, among others. While these lessons are sequential and build upon each other, they can also be adapted to be stand-alone lessons. No prior knowledge is necessary.

These lessons follow the [5E model](#) of inquiry-based learning: Engage, Explore, Explain, Elaborate, and Evaluate. Each lesson has a guiding question that students will try to answer

throughout the lesson. These open-ended questions are intended to keep students engaged throughout each lesson, and students may have different answers.

Modify each lesson to best accommodate the learning needs of your students. For example, in lessons that require independent reading, videos can be substituted; see the videos on the [Environmental Justice for Students and Educators page](#). Consider concluding each lesson at the “explain” activity if students would benefit from focusing on core ideas. The “elaborate” and “evaluate” activities can be conducted as separate lessons, if at all. Optional extension activities are also included to enrich and deepen students’ learning of environmental justice issues.

Tips for using this curriculum with online learning:

- Breakout rooms during class video calls can be utilized for small-group discussions. During these sessions, assign a facilitator, timekeeper, and/or note taker to keep students on-task and accountable to their learning.
- To utilize multiple learning modalities, encourage students to respond to questions in drawing, writing, and/or aloud, as is comfortable to them.
- To maximize participation, allow time for individual reflection via drawing, writing, or an online platform before asking students to share with their group or class. If breakout rooms are an option, allow students to pair-share their thoughts before regrouping the class.
- If breakout rooms are not an option, the chat function can be used for students to share their thoughts and ideas during larger group discussions. Alternatively, an online conversation tool could be used where students can respond to prompts and react to and respond to each other’s comments.
- Use online learning platforms for students to share their ideas with each other and display their work with the class. Online learning platforms can also be used to display class anchor charts and model worksheets.

Environmental justice can be a complex and sensitive topic to learn and teach. Here are some resources and best practices to help create a brave learning and discussion space for students:

- Establish discussion agreements that foster listening, respect, courage, and accountability. Examples include:
 - **Use “I” Statements:** Think of the difference between “We all agree” versus “I agree”, and “No one agrees with you” versus “I disagree”. Using “I” statements helps avoid generalizations and creates a brave discussion space for students.
 - **Intent versus Impact:** Acknowledge your impact, even though it was not your intent. Think of someone accidentally stepping on your foot. While it was not their intent, it had an impact.
 - **Practice “both-and” thinking:** Be open to new ideas and perspectives. Avoid binary, “either-or” thinking.

- **Take space, make space:** Be aware of how much space you are taking in a discussion. If you are sharing a little or not at all, consider taking up more space. If you are sharing more than others, consider making space for other voices.
- **Expect and accept lack of closure:** In discussions about difficult topics, there may not always be concrete answers or conclusions.
- Offer sentence starters for students to frame their opinions during group discussions. These are especially helpful for English language learners. Examples include:
 - I think _____ because _____.
 - I agree/disagree with _____ because _____.
 - I see it differently because _____.

For more resources about healthy and effective discussions, including a sample list of class guidelines and sentence frames, check out these resources from [EduTopia](#). For strategies on facilitating discussions about race, check out these resources from [Teaching Tolerance](#), and the [National Museum of African American History](#).

| Supporting the following California History and Social Science Content Standards: | |
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| CHSS 11.2-2 | Describe the changing landscape, including the growth of cities linked by industry and trade, and the development of cities divided according to race, ethnicity, and class. |
| CHSS 11.11-5 | Trace the impact of, need for, and controversies associated with environmental conservation, expansion of the national park system, and the development of environmental protection laws, with particular attention to the interaction between environmental protection advocates and property rights advocates. |
| CHSS 11.11-6 | Analyze the persistence of poverty and how different analyses of this issue influence welfare reform, health insurance reform, and other social policies. |
| CHSS 11.11-7 | Explain how the federal, state, and local governments have responded to demographic and social changes such as population shifts to the suburbs, racial concentrations in the cities, Frostbelt-to-Sunbelt migration, international migration, decline of family farms, increases in out-of-wedlock births, and drug abuse. |
| CHSS 12.2-4 | Understand the obligations of civic-mindedness, including voting, being informed on civic issues, volunteering and performing public service, and serving in the military or alternative service. |
| CHSS 12.3-1 | Explain how civil society provides opportunities for individuals to associate for social, cultural, religious, economic, and political purposes. |
| CHSS 12.3-2 | Explain how civil society makes it possible for people, individually or in association with others, to bring their influence to bear on government in ways other than voting and elections. |

| Supporting the following CA NGSS Performance Expectations: | |
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| HS-ESS3-1 | Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity. |
| HS-LS2-7 | Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity. |
| HS-ETS1-1 | Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants. |
| HS-ETS1-3 | Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts. |

| Supporting the following Common Core State Standards: | |
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| CCSS.ELA-LITERACY.RH.9-10.2 | Determine the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text. |
| CCSS.ELA-LITERACY.RH.9-10.4 | Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social science. |
| CCSS.ELA-LITERACY.RH.11-12.1 | Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole. |
| CCSS.ELA-LITERACY.RH.11-12.2 | Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas. |
| CCSS.ELA-LITERACY.RH.11-12.7 | Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem. |

Lesson 1: What are benefits and burdens of environmental decisions?

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| Engage | Students brainstorm examples of environmental decisions. |
| Explore | Students read an article or watch a video about a real-life environmental decision and its impact on the surrounding community. |
| Explain | Students answer questions about their article or video. |
| Elaborate | Students share, analyze, and discuss findings from their article or video. |
| Evaluate | Students complete an exit ticket. |

Engage: (10 minutes) Introduce environmental justice unit and introduce or review discussion agreements. Instruct students to brainstorm examples of decisions that affect the environment (see student handouts page 1 or Google Form). Offer examples of individual, company, and government decisions if necessary: an individual’s decision to pick up trash in a neighborhood, a city government’s decision to create bike lanes, a company’s decision to use diesel-powered trucks to ship products, a company’s decision to build a power plant (and the government’s decision to allow them), etc. Gather examples on a class anchor chart (see teacher handouts page 1 or slides). Introduce guiding question: What are the benefits and burdens of environmental decisions? Introduce the term “benefit” and define it as an advantage or something that is helpful. Offer a relevant definition, e.g. sitting at the lunch table farthest away from the garbage can and free from garbage odors, while still being able to throw away garbage. Repeat for the word “burden”, defining it as something that is placed upon someone, or something that is carried. Offer a relevant example, like sitting at the table next to the garbage can at lunch, when all of the other tables are full; students need a place to throw away their garbage, but only some bear the burden of smelling the garbage.

Explore: (15 minutes) Explain to students that they will be learning an example of a real-life environmental decision. Assign students to read one of the articles below. Or, assign articles to small groups. Use the most relevant and accessible examples for your students. You might choose to select another article about an environmental decision in your community.

- [Surf Beach, Lompoc](#)
- [McClymonds High School, Oakland](#)
- [Puente Power Plant, Oxnard](#)
- [Chevron Refinery, Richmond](#)
- [East Oakland Crematorium](#)
- [Tailpipe Pollution in California](#)
- [Hunters Point Power Plant, San Francisco](#)
- [Lead Contamination in Los Angeles](#)

- [Traffic in San Diego](#)
- [Oil in Arvin](#)
- [Video: Taking a Stand Against Environmental Injustice, Wilmington](#)

Explain: (15 minutes) Assign students to determine the burdens and benefits of the project with environmental impacts, as described in their article or video (see student handouts page 1-2 or Google Form). If necessary, model how to do this with an example. Instruct students to answer one or more of the following questions:

- How did the video/article make you feel? Why?
- What environmental decisions were made?
- Who benefits from the environmental decision? (companies, drivers, people who use electricity, etc.)
- Who is burdened by the environmental decision? (neighborhoods, communities, etc.)
- Who has the choice to benefit or be burdened by the environmental decision?
- Who doesn't have the choice?

Elaborate (20 minutes): Regroup as a class. Ask students to share their answers to each question, and invite students to respond and discuss. Refer to the discussion sentence starters. (see teacher handouts page 2)

Evaluate: (5 minutes) As an “exit ticket”, ask students to share one burden or one benefit of an environmental decision. (see student handouts page 2 or Google Form)

Lesson 2: What is environmental justice?

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| Engage | Students brainstorm synonyms and definitions of the words “environment” and “justice”, and brainstorm what is environmental justice. |
| Explore | Students review and answer questions about their article or video from the previous week, about environmental (in)justices in California. |
| Explain | Students share and discuss their answers with the class. |
| Elaborate | Students learn the State of California’s definition of environmental justice. |
| Evaluate | Students complete an exit ticket. |

Engage: (5 minutes) Instruct students to think of synonyms and/or definitions of the “environment”, “justice”, and where they overlap, either through drawing or writing (see student

handouts page 3 or Google Form. Collect students' answers on a class anchor chart (see teacher handouts page 3). Introduce guiding question: "What is environmental justice?"

Explore/explain: (15 minutes) Review article or video from the previous lesson. Assign students to answer the following questions about their articles and record their answers (see student handouts page 4 or Google Form).

- What event or problem caused people to start taking action? (groundwater contamination, air pollution from a power plant was causing cancer, air pollution from cars was causing asthma, etc.)
- Who took action? (community members, parents, activist group, etc.)
- What was the solution, if any? Who decided on the solution? (the city cleaned up the contamination, the city opened the beach, no solution, etc.)
- How is the article related to the environment? How is it related to justice?
- What is environmental justice?

Explain: (15 minutes) Regroup as a class. Ask students to share their answers to each question. Invite students to respond to their classmates' answers; refer to the discussion sentence starters.

Elaborate: (15 minutes) Show students the State of California's definition of environmental justice (see teacher handouts page 4): *"the fair treatment and meaningful involvement of people of all races, cultures, and incomes, and national origins with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies."*

Evaluate: (10 minutes) For students' exit ticket (see student handouts page 4 or Google Form), ask them to answer either of the questions:

- Do you agree with this definition of environmental justice? Why or why not? OR
- What would you add to or change this definition?

Lesson 3: What is environmental racism?

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| Engage | Students examine a graphic and answer questions about a Los Angeles pollution study by the United Church of Christ. |
| Explore | Students learn about systemic racism and watch a video about redlining. |
| Explain | Students reflect on the video by answering discussion questions |
| Elaborate | Students discuss the video as a class. |

Evaluate

Students complete an exit ticket.

Engage: (10 minutes) Show students [this picture](#) from the United Church of Christ's study of uncontrolled hazardous waste sites in Los Angeles County in 1987 ([see teacher handouts page 6 or slides](#)). Walk through the map and ask students to record their answers individually ([see student handouts page 5-6 or Google Form](#)), share with a partner, and/or discuss as a class. Introduce guiding question: What is environmental racism?

- How many uncontrolled toxic waste sites are in zip codes with a Hispanic population greater than 20 percent (gray and light gray areas)?
- How many uncontrolled toxic waste sites are in zip codes with a Hispanic population less than 20 percent (white areas)?
- Why do you think that the companies dumped more toxic waste in these areas instead of others?
- This map is from 1987. Do you think that there are still toxic waste sites in these neighborhoods? Why or why not?

Discuss and collect students' answers and refer back to your class discussion agreements as needed. If necessary, define race (and how it differs from ethnicity), prejudice, and [how it differs from] racism as a class. Definitions can be found in [this resource from Racial Equity Tools](#).

Explore: (20 minutes) Explain that just like individuals can take racist actions or have racist beliefs, so can groups of people, like governments, industries, and companies. Introduce students to the term institutional racism, a form of racism that is practiced by institutions ([see teacher handouts page 7](#)). It results in discrimination in criminal justice, employment, housing, health care, political power, education, and more. Show students a video about segregation and the racial wealth gap, either a 3-minute video from [NowThis News](#), or this 30-minute segment from the program [Race: The Power of an Illusion](#).

Explain: (10 minutes) Have students reflect individually on the video by answering one of the following questions, ([see student handouts page 6 or Google Form](#)):

- According to the video, why is there a wealth gap between white people and people of color?
- How was redlining a form of systemic racism?
- What is something in the video that surprised you? What questions do you still have?

Elaborate: (15 minutes): Discuss student answers as a class. Emphasize that as part of systemic racism, communities who are impacted by burdens and fight for environmental justice, often have limited resources (time, access to information, income, transportation, etc.) and less political power. If time, offer the following questions to students to discuss:

- Which neighborhoods do you think environmental injustices are more likely: in neighborhoods that were redlined or places that were not? Explain your thinking.
- Why do you think polluting companies and industries choose to put their pollution sites in low-income communities of color, and not white and wealthy neighborhoods?
- How is environmental racism related to environmental justice?
- In your opinion, who has the responsibility to fix the lasting negative effects of redlining and other forms of systemic racism?

Evaluate: (5 minutes) Revisit guiding question: what is environmental racism? Then, have students name an example of environmental racism (see student handouts page 6 or Google Form), for their exit ticket. Time permitted, ask students to volunteer to share with the class, and ask their classmates for feedback.

Lesson 4: How do communities fight for environmental justice?

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| Engage | Students review examples of environmental injustices from previous lessons. |
| Explore | Students watch a video about people fighting for environmental justice in their communities, and answer questions about the video. |
| Explain | Students list action steps that the people in the video used to identify environmental burdens in their communities and fight for justice. |
| Elaborate | Students determine if there was fair treatment and meaningful involvement of environmentally burdened communities. |
| Evaluate | Students complete an “exit ticket” by naming one way that communities have fought for environmental justice. |

Engage: (10 minutes) Review by asking students to share examples of environmental injustices (see student handouts page 7 or Google Form). Emphasize that communities burdened by environmental injustices (e.g. causing asthma, cancer, and other illnesses) have often been overlooked by government and institutions. Remind students that the burden of showing they were suffering from a disproportionate amount of pollution fell on those communities. These communities have had to fight for environmental justice, often with limited resources and less power. Introduce guiding question: How do communities fight for environmental justice?

Explore: (25 minutes) Explain that communities have used various tools to take action and get governments and other systems to evaluate environmental impacts in their community and stop companies who create environmental burdens from causing harm. Introduce students to a

2015 [video](#) by Al Jazeera, which includes three people whose communities faced or are facing environmental burdens: Gregory Mitchell, Samuel Corona, and Rebecca Newbury. Instruct them to select one of these people to focus on in the video. As a class, the Al Jazeera video (watch up to 25:00 for time purposes). As they watch, have student record their answer to the following questions: ([see student handouts pages 7 or Google Form](#)):

- What environmental burden did they face? (air pollution, living next to pet coke piles/factories, living next to a sewage treatment plant, etc.)
- What actions did they take? (community organizing, data collection, talked to governmental officials and companies, conducted air quality testing, rallied at a company, shared their story on TV or in the news, protested, learned about pollution in their neighborhoods etc.)
- What was the outcome? (the company shut down their factory, executive director was arrested and charged, ongoing fight, etc.)

Explain: (10 minutes): Ask students to share their findings. Gather students' answers on class anchor chart ([see teacher handouts page 8](#)). Afterwards, examine the “who took action?” column. Ask students to compare the actions that each of these organizations took to show environmental burdens in their community and fight for justice. Circle or highlight similar actions on the anchor chart or write them down separately.

Elaborate: (20 minutes): Review the definition of environmental justice, and how it requires fair treatment and meaningful involvement. Ask students to brainstorm examples, in drawing or writing, of fair treatment and meaningful involvement from their school and home lives, e.g. equal amounts of food in school lunches, equal time for lunch, student council elections, club involvement, etc. ([see student handouts page 8](#)). Discuss and create a class list, time permitting ([see teacher handouts page 9](#)). Return to the articles and have students discuss and/or reflect on one or more of the following questions. ([See student handouts page 8-9 or Google Form](#))

- Were communities treated fairly? If not, how could they have been treated fairly? (Having affordable housing far from polluters, trees and/or other green spaces in all neighborhoods, equitable access to health care, etc.)
- Were communities given the opportunity to be meaningfully involved in decisions? If not, how could they have been meaningfully involved? (City council meetings, having translation materials/services, access to understandable information, etc.)
- How could fair treatment and meaningful involvement change the outcome of environmental decisions? (Communities could be informed about an issue and asked their opinions before a decision is made, impacted communities' input could be weighed appropriately as compared to those who would benefit from a decision, communities could be involved in the decision-making, etc.)

Evaluate: (5 minutes) As an “exit ticket” ([see student handouts page 9](#)), instruct students to name one way that communities have fought for environmental justice.

Lesson 5: What does environmental justice look like?

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| Engage | Students brainstorm ideas to make their environmentally-just futures a reality. |
| Explore | Students brainstorm and draw a picture of an environmentally-just future. |
| Explain | Students share their pictures and collect ideas from each other’s work. |
| Elaborate | Students brainstorm ideas to make their environmentally-just futures a reality. |
| Evaluate | Students share their ideas and brainstorm how they can take action for environmental justice. |

Engage: (5 minutes) Explain that students have learned about who benefits and who is burdened by environmental decisions, environmental justice and the lack thereof in these decisions, the role of environmental racism, and how communities have fought for environmental justice. To review, ask students to name one way that communities have fought for environmental justice. Then introduce guiding question: What does environmental justice look like?

Explore (20 minutes): Ask students to imagine a future that is environmentally-just for everyone ([see student handouts pages 10-11 or Google Form](#)). Instruct students to create a drawing, poem, song, or write a paragraph on what environmental justice looks like. To get creativity flowing, here are questions for students to consider addressing in their vision:

- Where do people live, work, go to school, shop, and relax? What do these places look like? How do people get to these places?
- Are there environmental burdens or benefits? What are they? Where do they come from? Who receives them?
- Who is given the choice to benefit or be burdened by decisions? Who makes those choices?
- Are communities harmed by environmental burdens bearing the responsibility of fighting for environmental justice? Or is the responsibility given to others?
- How are communities treated fairly? How are they meaningfully involved? What does this look like?

Explain: (15 minutes) Have students share their work with each other and collect at least three ideas for an environmentally-just world from their classmates’ work ([see student handouts page 12 or Google Form](#)). Regroup class and gather students’ ideas for an

environmentally-just world (see teacher handouts page 10). If possible, draw a class vision by asking students to each contribute one idea to your shared vision.

Elaborate: (15 minutes) Have students brainstorm ways that they can make their visions of an environmentally-just future become reality, in a drawing or in writing (see student handouts page 13 or Google Form), e.g. voting, sustainable transportation, renewable energy, public transit, planting trees, etc. If possible, research environmental justice or other groups working on these things in your area. Share these groups where students can contribute their time and energy if they are interested.

Evaluate: (5 minutes) Collect students' action ideas in drawing or in writing. For an exit ticket, ask students to pick one of these action steps that they can commit to as an individual, towards an environmentally-just future. Or, ask students to decide on one action step that students can take together as a class. (see student handouts page 13 or Google Form)

Optional extension activities

The following activities can be completed between lessons in this unit, as stand-alone lessons, or as enrichment activities upon completion of this unit. For more activities, please go to <https://www.coastal.ca.gov/publiced/directory/ejed.html>

- **CalEnviroScreen:** an interactive mapping activity exploring pollution and population indicators in California, and how these factors intersect. See full activity on the Coastal Commission website
- **Emotion journal:** upon completing each lesson, instruct students to reflect on what they have learned and what emotions came up for them. This is especially recommended for lessons 2 and 3 about environmental justice and environmental racism. Questions to consider:
 - How are you feeling about what we learned about?
 - What emotions come up for you when you think about _____?
- **Idea journal:** Upon completing each lesson, have students brainstorm and write ideas for ways to take action for environmental justice. Have students add ideas to this list throughout the unit. In Lesson 5, students can use ideas from their lists when generating action steps to take for environmental justice.
- **Environmental advocate research project:** Have students find local organizations who advocate for environmental justice in communities experiencing environmental injustices.

Have individual students or groups of students pick one organization, go to their website, examine their social media pages, and read news articles involving these organizations.

Instruct students to report on their organization, addressing the following questions:

- Where does this organization work? Which communities does it organize?
 - Does this organization work with other groups? Which ones, and why do you think they work together?
 - What projects, facilities or infrastructures with environmental burdens has this organization fought against? What environmental burdens do these projects, facilities or infrastructures pose to communities?
 - What challenges has this group encountered while fighting for environmental justice?
 - Are there other groups who dislike the work that this group is doing? Why do you think this is?
 - What victories has this group achieved?
 - What defeats has this group experienced, and how did they learn from these experiences?
 - What actions or strategies has this group used to fight for environmental justice?
- **Climate Video Challenge:** Have students watch the [2021 winning videos](#) of the Coastal Commission's Climate Video Challenge about climate justice. If desired, have students create videos to enter the challenge (deadline at the end of March). See the challenge [webpage](#) for details.