

# LEARNERS to LEADERS

## ENVIRONMENTAL JUSTICE LITERACY CURRICULUM



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This curriculum introduces the concept of environmental justice through *Mayah's Lot*, a comic book produced at the [Center for Urban Environmental Reform](#) at the City University of New York (CUNY). The comic was developed as a partnership between Professor Rebecca Bratspies, artist Charlie LaGreca and middle-school students at PS-122Q in Astoria, Queens.

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Groundwork USA, the Urban  
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## Origin Story

The *Learners to Leaders Environmental Justice Literacy Curriculum* is the result of activities and workshops first put together by the students and staff of Groundwork Richmond, CA, who recognized a need for environmental justice education in their own program and beyond. Since then, the curriculum has been tested by over 50 Green Team students around the country. Groundwork USA staff provided editorial oversight, added activities and resources, and incorporated feedback from students, youth leaders, and instructors throughout the Groundwork network, as well as workshop attendees at the 2018 National Environmental Justice Conference (NEJC) and River Rally 2018.

The curriculum aims to improve environmental justice literacy by providing an overview of the history of environmental justice—looking at the intersection between environmental and civil rights movements in America—and helping students to connect this history with current events in their own communities. Students learn how to study specific environmental justice issues and actively address them. In addition, the curriculum supports development of research and critical thinking skills and can satisfy educational standards (relevant standards are highlighted throughout the text). It can be adapted to many kinds of programs for adults and middle- to high-school aged youth. Though it can be completed in a minimum of three two-hour sessions, it is packed with enough material and resources to expand into a semester-long course. The curriculum relies on a range of visual, discussion-based, physical and outdoor activities, taking an interactive and hands-on approach to learning.

This curriculum is a work in progress and is still undergoing revisions based on feedback. We would love to know how it works out for your adult staff team, after-school program, classroom, and more. If you would like to join the Beta Testing team, please email Maria Brodine directly at [maria@groundworkusa.org](mailto:maria@groundworkusa.org).

## GROUNDWORK USA MISSION

The mission of Groundwork USA is to bring about the sustained regeneration, improvement and management of the physical environment by developing community-based partnerships that empower people, businesses and organizations to promote environmental, economic and social well-being. Groundwork USA and our [network of Trusts](#) share this mission and a common community-centered approach. Groundwork Trusts tailor the approach to the unique needs of small- to medium-sized cities, neighborhoods, and rural communities across the US, working hand-in-hand with local residents, government officials, and business owners. Groundwork USA provides a national model, informed by best practices and research, as well as tools and resources to support and advance the efforts of individual Trusts.

## THE GREEN TEAM: YOUTH DEVELOPMENT AND JOB TRAINING

Groundwork USA and our network of Trusts offer quality environmental education, stewardship, employment, and leadership opportunities for young people, most of whom are low-income and/or youth of color. Through our youth development programming, we're investing in the future of individuals and their communities, providing platforms for young people to effect change in themselves, in the built and natural environments in which they live, and in our society as a whole. Through our flagship Green Team model, youths aged 14-18 gain exposure to environmental concepts, learn and grow on the

job, build employment readiness and skills, and gain access to professional networks, careers, and a competitive advantage in the conservation, environmental, and community development fields. The Green Team is made possible by a partnership between Groundwork USA and the National Park Service (NPS) Rivers, Trails, and Conservation Assistance (RTCA) Program, and the Environmental Protection Agency (EPA) Brownfields Program.



*Youth from Groundwork Lawrence (MA) Green Team learn carpentry and conservation skills by building a retaining wall at the Deer Jump Reservation in Andover, MA. Photo: Groundwork Lawrence*

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## Assessment Goals

Students should be able to:

- Define environmental justice (EJ) in their own words
- Describe historical and contemporary EJ events
- Demonstrate basic understanding of EJ risk factors in their home communities
- Acquire knowledge of government and community-based organizations and resources addressing those risk factors
- Identify and address a local issue through research, campaign, or other action
- Connect global with neighborhood-level issues

## Materials Needed for Part One: EJ Literacy and Timeline

### Required EJ Literacy Texts and Videos

- *Mayah's Lot* [graphic novel](#)
- *Mayah's Lot* (18 min film) or *Mayah's Lot* (7 min film)
- Balloon Wars: Limited Resources Game (see pages 5-6)
- NRDC, "[The Environmental Justice Movement](#)"
- US EPA, [Environmental Justice Timeline](#)
- William J. Clinton: "[Memorandum on Environmental Justice](#)," February 11, 1994. Online by Gerhard Peters and John T. Woolley, The American Presidency Project.
- "[The Road to Executive Order 12898 on Environmental Justice](#)" 3-min film.
- [Executive Order 12898](#) on February 11, 1994. The President: "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations"
- "[Principles of Environmental Justice](#)," Proceedings of the First National People of Color Leadership Summit

### Optional EJ Literacy Texts and Videos

- [Background on First National People of Color Leadership Summit](#)
- [The 20th Anniversary of President Clinton's Executive Order 12898 on Environmental Justice](#)
- [DC Youth Go Camping in Shenandoah National Park](#) short film
- Navajo Water Project, [Blessings for Baca](#) short film
- Timeline, [How We Killed Off the Giant Salmon](#) short film

### EJ Timeline Activity Materials

- Printed slides from [Groundwork EJ Timeline Activity](#) – Student version (print one full page for each slide)
- Poster board/ butcher paper
- Tape, glue, scissors, and markers
- Vice, "[An Acclaimed War Photographer Turns Her Lens on Canada's Tree Planters](#)" article and photos
- BBC Culture, "[How Photos of Grief Became Symbolic of the Anti-War Movement](#)" video
- [Photovoice](#)

### Preparing for the Lesson

- Students should read and/or watch *Mayah's Lot* before coming to class.
- Review materials and set up opening game. Set up Mini EJ Exhibit Stations in advance.

## EJ Literacy: Gaining a Common Background [70 mins]

### A. INTRODUCTION: DEMONSTRATING UNFAIRNESS [20 MIN]

1. Begin class with a physical activity or indoor interactive game, such as **Balloon Wars: Limited Resources Game** (see page 6) — this is an icebreaker and also demonstrates systemic inequality in society.

### B. GROUP DISCUSSION: MAYAH'S LOT [20 MIN]

1. Discuss *Mayah's Lot*. Watch and discuss the [Mayah's Lot](#) film as a review of the graphic novel (optional). Lead class discussion to assess reading comprehension and encourage critical thinking (see examples of guiding questions below).
2. Watch and discuss other videos, such as [Blessings for Baca](#) (optional).

### Suggested Guiding Questions About *Mayah's Lot*

#### Reading Comprehension Questions

How is the lot described in the graphic novel?  
What happens to the lot?

What was threatening the neighborhood?

What did Mayah do to resolve the problem?

#### Critical Thinking Questions

Why did the story emphasize using legal strategies to solve problems?

Find an example of "greenwashing" in the story (students will look up the term greenwashing).



*At River Rally 2018, adults testing the Balloon Wars: Limited Resources game (see page 6) became very involved in the process (left). While those who had Teams that were provided plenty of resources—including pre-inflated balloons—built towering structures, another table while other teams needed to improvise with found items, such as water bottles and paper (left). Photos: Maria Brodine, Groundwork USA*

### Relevant Common Core Standards for EJ Literacy Part One

[College and Career Readiness Anchor Standards for Reading](#)

[College and Career Readiness Anchor Standards for Speaking and Listening](#)

[College and Career Readiness Anchor Standards for Language](#)

Reading Informational Text, [Grades 9-10](#) and [11-12](#)

History/ Social Studies, [Grades 9-10](#) and [11-12](#)

[Range, Quality, and Complexity of Texts](#), Grades 6-12

## Balloon Wars: Limited Resources Game

### MATERIALS NEEDED

- Balloons, deflated\* (can substitute spaghetti noodles, or other fun building materials)
- A few inflated balloons from a previous game (optional)
- One or two balloon inflators
- Various kinds of tape (masking, duct, clear, etc.)
- Kids' scissors
- One volunteer (adult or instructor) to supervise each group
- Journals

### ROLES FOR VOLUNTEERS (BASED ON FIVE TABLES/GROUPS)

**The Enabler** – Gives group abundant resources (more than they need); finds ways to get even more resources for group; does not encourage the group to share, or actively discourages sharing; has positive attitude only with members of the group

**The Eager Administrator** – Hands out basic resources to each individual in his/her group; outlines a series of simple rules by which the group's members may request additional materials, such as borrowing an inflator, asking for more tape, etc.; may request justification for provision of resources; generally has a positive and encouraging attitude; may help with the process by getting involved or assigning tasks, etc.; may facilitate a sharing or borrowing relationship with another group

**The Tired Bureaucrat** – Hands out a few resources, but does not actively ensure that the group has enough; does not actively inform the group about how to procure more resources; requires justification for provision of resources, but offers instructions only upon request; may introduce arbitrary rules, or enforce them for some people and not others; seems bored with the whole process

**The Activist** – Has only a few resources to start with, but distributes them among the group's members and helps them to plan; is active in the process, has generally positive and encouraging attitude

**The Antagonist** – Provides only limited resources, and is reluctant to provide more; may even engage in destructive activities, such as popping balloons, breaking spaghetti strands, or giving the group's scissors to a group that already has a pair

**The Enforcer** – "Arrests" any member of a group that tries to steal resources from another group; generally arbitrates disputes between groups, provides "time outs" to individuals that violate any group's rules; may be a neutral party, or favor the group with many resources; may issue "citations" or "permits"

### ACTIVITY

1. Beforehand, assign roles to your volunteers and consult with each of them about the expectations of the role (encourage them to have fun and improvise!). Distribute the most resources (tape, balloon inflators, scissors, etc.) to the Enabler. Give an equal number of resources to the Eager Administrator and the Tired Bureaucrat, and reserve the smallest number for the Activist and Antagonist. Everyone should have balloons, of course.
2. Each volunteer will guide a different table and hand out resources to the group participants. Volunteers will distribute resources differently according to their roles. (Note that not all roles are mandatory, and you can mix and match, but we recommend at least having an Enabler, an Administrator or Bureaucrat, and an Antagonist).

3. Separate students into groups of three or more. Each group will be assigned to a different table. Inform groups that they have a supervisor at each table but don't tell them the supervisor's role.
4. Let the games begin. Who can build the *biggest*\*\* structure in the time given?
5. Observe how the participants at each table interact, how they work together to plan and to build, and how they go about getting additional resources.

## REFLECTION AND ANALYSIS

1. Bring the class together and popcorn out for initial comments from the groups. Make sure each group describes their experience so that everyone understands the exercise as a demonstration of systemic and social inequalities. Relate the exercise to a specific EJ issue, such as the health and quality of a local water body.
2. Set aside five minutes of quiet time and allow people to journal about the experience. Ask them to write and reflect on which group they were in and what their role was in the group. What actions did they take? What could they have done differently?
3. Encourage participants to share their written reflections.
4. Record the reflections so that you can build on them later.

### Example Reflections

While testing this activity, we noticed that participants' insights and feedback became more complex and in-depth when we set aside time for journaling. For example, the following observations were made after personal reflection through journaling:

"As a member of the group with the most resources, I felt proud of our accomplishments even though we didn't have to deal with any obstacles."

"We had more resources than we needed, and I wanted to give some of them to another group — but my priority was competing with the other privileged group and finishing our project."

"We had very little to work with, so we started looking around our little corner of the room for other things we could use to build. I discovered that as members of the disenfranchised group we had a strong desire to make it on our own, with our own materials, without help."

"I wondered if having more materials to choose from actually limited the creativity of the affluent groups."

\* Balloons are super fun for this activity, so we kept the description balloon-centric. However, we encourage you to be environmentally conscious. Consider ways to re-use the balloons or make sure they are recyclable in your area. Filled balloons can also be re-used again and again if you plan to play the game with other groups: they make the activity even more fun. If you choose to use biodegradable items instead, please tell us what you did!

\*\* Consider what may happen if you change *biggest* to *most stable* or *most creative* or something else. This could be a fun experiment for future games.

## Concepts to Explore

### Executive Order 12898

- The significance of Executive Order 12898 is that for the first time, environmental justice was encoded into federal law. This paved the way for many subsequent successes.
- Community movements can be transformed into legal regulations all the way up to the federal level.

## Vocabulary to Explore

- Civil Rights movement
- Environmental justice
- Environmental Protection Agency
- Equality and equity
- Executive Order 12898
- Greenwashing
- Primary and secondary sources
- Systemic inequality

## C. MINI EJ EXHIBIT STATIONS [30 MIN]

1. Set up five main “stations,” two with computers. At each of four stations, place one of the required EJ Literacy Texts: NRDC’s “[The Environmental Justice Movement](#),” “[Memorandum on Environmental Justice](#),” [Executive Order 12898](#) (with computer access to the film [The Road to Executive Order 12898 on Environmental Justice](#)), and “[Principles of Environmental Justice](#)”. On one computer station, open a webpage to access EPA’s “[Environmental Justice Timeline](#).”
2. Create more stations by drawing from the **Optional EJ Literacy Texts and Videos**. Begin class with a physical activity or indoor interactive game, such as **Balloon Wars: Limited Resources Game**. Try to mix up videos and text materials to encourage movement and engagement.
3. Assign students to each station in pairs or groups. Depending on size of class and student aptitudes, allow three to five minutes per station, then have students rotate, gaining exposure to as many stations as possible.
4. Visit each station and help students understand what they are reading as needed.
5. Host a brief discussion to allow students to summarize the resource(s) they encountered. Facilitate the conversation to establish the importance of each resource and how it fits with the others (see Suggested Guiding Questions below).
6. As a class, work toward a **collective definition of environmental justice**. Take suggestions from the students and synthesize a definition on the board. Have students write down the definition in their journals or place it within view in the students’ office or classroom.

## Suggested Guiding Questions About Environmental Justice

- How do the “Principles of Environmental Justice” formed by the First National People of Color Leadership Summit differ from the official EPA or other legal definitions of EJ?
- Why are they different?
- Which definition(s) do you prefer for yourself and your community, and why?
- How did introducing the term “environmental justice” change the environmental and conservation movements?
- What does environmental justice mean to you?

## Preparing for the Activity

- Access [Groundwork EJ Timeline Activity](#). Print Student version to use in class.
- Separate text from images, mix up the slides, and scatter them across a center table (or tables, if you have several groups).
- Print one copy for yourself as a KEY.
- Consider awarding prizes for successful Timeline completion (see Section A).

# Environmental Justice Timeline Activity [50 mins]

## A. GROUP ACTIVITY: ASSOCIATE IMAGE WITH TEXT [15 MINS]

1. The events represented in the provided Timeline Activity are all examples of instances where people organized in order to address an EJ issue. To begin, mix up the events by separating the texts from the images.
2. Have students work as a group, or create several groups. Each group will work to associate images with text descriptions.
3. Using clues from the photographs and working together, each student group should place the events in order, forming a timeline according to estimated dates/ order.
4. Check for accuracy with the KEY, making sure that all images are with the correct text description and that events are in order.
5. This can be a fun competition; consider awarding prizes for successful completion.

## B. DISCUSSION: HONORING EXPERIENCES [15 MINS]

1. The goal of the discussion is to honor the events represented in the Timeline Activity, and the people who experienced them. It is important to note that while the Timeline Activity is by no means exhaustive—and represents only a handful of people who have fought for EJ in their home communities—it is a starting point for understanding the concept of EJ and building a more comprehensive Timeline.
2. You can lead the discussion using any of the following prompts. *This discussion can cause emotional distress among students who have been through EJ events that directly affected their families or neighborhoods. Please be mindful of this and create a safe space for them to express themselves.* Directly connect the activity with the fact that the students are learning about how to organize and have a direct impact, in order to prevent or remedy similar EJ events. Bring the discussion back to *Mayah's Lot* as an example of this.
  - a. Read the events aloud in a circle. Work with the students to discuss the “five W’s” (where, when, who, what, and why) of each event.
  - b. What are some of the themes in the slides? Possible themes include:
    - Labor and workers’ rights
    - Environmental disasters and aftermath
    - Pollution and toxins
    - Colonialism and indigenous rights
    - Particular groups organizing — women, youth, indigenous peoples
  - c. Discuss burdens, bypasses, and benefits:
    - Who is being burdened in each event?
    - Were there people or communities who were not affected?
    - Did anyone actually benefit or profit from the event?
  - d. Taking in all the events, what are the similarities and differences? Work with the students to identify missing events and discuss which events should be added to the Timeline (local, national, international, or by theme).



Groundwork Green Team in New Orleans, LA (top) and Richmond, CA (bottom) work together to build EJ Timelines.

e. Ask each group to identify the clues in the photos and texts. What's remarkable about the photographs? Why do they have an emotional impact? What's in an image? Read a story about photography, such as "[An Acclaimed War Photographer Turns Her Lens on Canada's Tree Planters](#)" and/or show "[How Photos of Grief Became Symbolic of the Anti-War Movement.](#)"

### C. FOCUS ON THE LOCAL [10 MINS]

- Lead a discussion on local EJ issues and current events using one or more of the following prompts:
  - Give examples from personal experience, local news, or by [EPA region](#).
  - How do national or international environmental issues impact our communities? Brainstorm and write out issues and local impacts on board or easel.
  - Identify how some issues affect some neighborhoods more than others, such as industrial pollution, worker experiences, or natural disasters.
- As a class, identify **one neighborhood** and **one main local EJ issue** to tackle. This can be a neighborhood that you want to engage more, or where the majority of students live, etc. This neighborhood and issue will become the focus of the next section, **Taking Action**.
- Note: the neighborhood of choice should be accessible to students for a site survey during the next session.**

### D. BUILDING THE TIMELINE [10 MINS]

- Use the poster board/rolled piece of butcher paper to make a class timeline and paste each event on the timeline. Post the timeline on the wall. This can become a "living document" that students add to throughout the year or come back to during other lessons.
- Discuss how the events on the timeline relate to current events. Add local events to the timeline and build it during subsequent sessions as needed.

## Optional Supplemental Activities

### Fine Art for Justice

Students will analyze the photographs and identify what makes them compelling, considering factors such as framing, angle, coloring, content, etc. In an outdoor/physical activity, students will leave the classroom to take compelling photographs of their own in the school or neighborhood where they are working.

### Storytelling

Students may visit other photography and storytelling websites, such as [Photovoice](#). Brainstorm with the class to identify similar projects. Students will develop a long-term storytelling project using a media of their choice (rap, poem, video, etc).

### Connecting Local, National, and International History

Working in groups, students may brainstorm about historical events that have affected their neighborhoods. Groups will find and print relevant photographs, use the where-when-who-what-why assessment to write descriptive text, and add identified events to the EJ Timeline.

Students may also identify international EJ events and add them to the Timeline.

# Materials Needed for Part Two: Taking Action

## Research/Assessment Tools

- Taking Action Worksheet (one for each student)
- [Census Data](#)
- EPA, [EJScreen Tool](#)
- EPA, [Surf Your Watershed](#)
- USGS, [Science in Your Watershed](#)
- CDC, [National Environmental Public Health Tracking Network](#)
- [National County Health Rankings](#)
- Environmental Working Group, [Tap Water Database](#)
- California Office of Environmental Health Hazard Assessment, [CalEnviro Screen](#)
- Georgetown University, "[Evaluating Internet Resources](#)"

## Climate Change Sources

- Yale Program on Climate Change Communications, [Climate Impacts](#)
- NOAA, [U.S. Climate Resilience Toolkit](#)
- NASA, [Global Climate Change](#) and [Climate Kids](#)
- EPA, [Environmental Justice 2020 Action Agenda](#)
- I See Change, [Community Climate and Weather Journal](#)

## International Environmental Justice

- [United Nations Conference on the Human Environment](#)
- *Wired*, "[Legal Rights of Nature in Bolivia](#)"
- Bolivia's "[Mother Earth Law](#)"
- Al Jazeera English, "[Mother Earth Law to Protect Bolivia's Forests](#)" film
- I See Change [stories](#)

## Inspirational Resources

- Children and Nature Network, "[Why I Wear Jordans in the Great Outdoors](#)"

## Optional Community Engagement Tools

- Groundwork USA, [Deconstructing Technical Jargon and Acronyms Tip Sheet and Glossary](#)
- Groundwork USA, [Best Practices for Meaningful Community Engagement Tip Sheet](#)
- Groundwork USA, [Asset Mapping resources](#)
- [Public Laboratory maps](#)
- Public Laboratory, [Stormwater Studies in New Orleans](#)
- Groundwork USA, [Neighborhood Voices Curriculum: Guidance, Lessons, & Resources for Managing and Implementing Your Youth-Driven Project](#)

## Student Learning and Program Evaluation

- **Evaluations for Students** (one printed for each student)
- **Evaluation(s) for Instructor**

## Taking Action Worksheet

- 1. What local neighborhood are we focusing on and what does it look like?** (In other words, what kind of people live there? What are conditions like? Answers might include population and census data, watershed and other environmental data, geography, health and safety conditions, etc.)
  
- 2. What are the environmental justice issues/risk factors affecting this neighborhood?** (In other words, what are the environmental justice issues/risk factors—things that affect me, my family, my neighbors, or the people in another neighborhood? Do these things seem to be true of other neighborhoods in my city?)
  
- 3. What is the local EJ issue we are going to work on?** (This may include physical conditions, such as trash, condition of streets and sidewalks, street lighting, trees, storefronts, industrial area, condition of housing, etc.)
  
- 4. Use bullet points or write a paragraph to summarize our plan for approaching this problem.** (This question can be answered by using the Idea Map exercise.)
  
- 5. What is my local Groundwork already doing about this issue?** (Work with the students to evaluate current Groundwork programs. Is Groundwork working in some neighborhoods more than others? Is Groundwork currently engaged in the neighborhood of focus? Are we starting a relationship from scratch or growing an existing relationship?)

## Preparing for Action

- Tailor the **Taking Action Worksheet** to your organization's programs as desired.
- Print out one worksheet per student. As you work through the material together, students will fill out the worksheets in class.

# Taking Action [60 mins]

## A. TRIVIA GAME [5 MINS]

1. Separate the students into pairs. Run a competitive trivia game using vocabulary and concepts from **Part One** (EJ Literacy and the Timeline Activity).
2. End by reviewing the **one neighborhood** and **one main local EJ issue** the students chose. Ask: what do we need to know about this neighborhood, and how do we find out?

## B. LEARN ABOUT THE NEIGHBORHOOD [10 MINS]

1. As a class, go through the **Research/Assessment Tools** together. Explore best practices for answering the first question on the **Taking Action Worksheet**: *what local neighborhood are we focusing on and what does it look like?*

*Guide the students on how to better understand their neighborhood and watershed by researching demographics, scientific data, and more. Use the suggested tools to research demographics by zip code or geographic location, and explore why these kinds of data are useful (for example, lead into how to look for relationships between high contamination zones and the average income level of neighborhoods).*

- [Census data](#)
  - Map population data, watershed information, and more using EPA's [EJscreen tool](#).
  - Understanding your watershed using EPA "[Surf Your Watershed](#)" and USGS "[Science in Your Watershed](#)."
  - Add any local demographic or research sources
2. Work together to discover the demographics of the neighborhood. Who lives there and who may be most affected by the chosen EJ issue?
  3. Ask: what's important about its geography and history? What else distinguishes this neighborhood? Work with the students to come up with a list of questions about the neighborhood and uses the **Research/ Assessment Tools** (and/or other tools) to find them.
  4. Have students fill out their answers to **Question 1** on the **Taking Action Worksheet**.
  5. Briefly explore best practices for answering the second question on the **Taking Action Worksheet**: *what are the environmental justice issues/ risk factors affecting this neighborhood?*

*Use the following resources to guide students on how to study the public health effects of environmental justice issues and risk factors, including how to find public health information, effects on safety and crime levels, toxicity information, etc.*

    - CDC's [National Environmental Public Health Tracking Network](#)
    - [National County Health Rankings](#)
    - EWG's "[Tap Water Database](#)"
    - Add any state or local demographic or research sources, e.g., [CalEnviro Screen](#).
    - Add any local demographic or research sources
  6. Make a list of hazards and concerns students should look out for during the site visit.

## C. SITE VISIT AND SURVEY [20 MINS]

1. Lead the students on a site visit of the focus neighborhood. Each student should bring a method of documentation (e.g., a camera or journal).
2. Document hazards related to the EJ issue of focus. Document other EJ concerns as well.

### Additional Guidance

#### The Scientific Method

- This portion of the curriculum aims to enable students to 1) understand the risk factors affecting their communities; 2) acquire knowledge of government and community-based organizations and resources addressing those risk factors; 3) understand how to do research, filter and analyze information, and compile findings; and 4) connect global and neighborhood-level issues.
- The steps outlined in the **Taking Action** section follow the scientific method. Students 1) identify a problem, 2) study existing literature, 3) choose methods for further study, 3) gather and analyze data, and 4) share results and/or generate solutions.
- Students can use this exercise to learn how to verify and filter sources of information. As students look for information, encourage them to identify 1) who wrote the material and why, 2) when the material was published, 3) whether the author cites sources, 4) whether the sources themselves are reputable. Students may read "[Evaluating Internet Resources](#)" as a guide.
- Use "[Deconstructing Technical Jargon and Acronyms](#)" and "[Best Practices for Meaningful Community Engagement](#)" tip sheets to discuss effective strategies for community engagement with the students. Discuss methods for translating science and data in fun and accessible ways.
- Explain primary and secondary sources. Go over examples.

## D. IDEA MAP AND PLAN OF ACTION [10 MINS]

1. Once back in class, compile students' original data and briefly discuss what they found.
2. Draw an idea map together. In the center circle, write the EJ problem of focus. Work together to create an Idea Map/Plan of Action for addressing the problem.
3. Students should fill out **Questions 2-4** on the **Taking Action Worksheet**.

### Additional Guidance

#### Idea and Mind Maps

- Drawing idea or mind maps together organizes complex information, introduces interactivity into the lesson, and helps visual and tactile learners. Below are some excellent examples and resources for exploring Idea/ Mind Maps.
- Reading Rockets [Concept Maps](#): explanation, lessons, and templates
- Tony Buzan's [Mind Map Gallery](#)
- Do a Google Image search of Idea Maps or Mind Maps.

## E. ASSESSMENT AND TIMELINE (15 MINS)

1. What is my local Groundwork Trust, school, or organization already doing about this issue? Discuss projects being undertaken by your Groundwork Trust, school/ organization, or city/region. If possible, share a news media story about your trust.
2. Students should fill out Question 5 on the **Taking Action Worksheet**.
3. Discuss how the Idea Map/Plan of Action into your trust's programming. Come up with a timeline and assign roles.

### Relevant Common Core Standards

- [College and Career Readiness Anchor Standards for Writing](#)

### Relevant Next Generation Science Standards

- [HS-LS2-7](#) Ecosystems: Interactions, Energy, and Dynamics. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity. [Clarification Statement: Examples of human activities can include urbanization, building dams, and dissemination of invasive species.]
- [HS-ESS3-1](#) Earth and Human Activity. 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-ESS3-5](#) Earth and Human Activity. Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth's systems.

## Optional Supplemental Activities

### Relationships Between Neighborhoods

- Encourage students to consider the relationship between their neighborhood and the environmental justice issues of nearby neighborhoods. For example, if a student lives on high ground in a flood zone, how does runoff from streets and roofs affect the nearby "downstream" neighborhood? Students will examine how the health of other neighborhoods affects their own and write personal reflection papers.

### Climate Change: Global and Local Problem

- Focus on list of Climate Change Sources provided on page 10. Use climate change as an example of an EJ issue that affects everyone down to their personal lives and the neighborhoods they live in, and also affects everyone on a global scale. Discuss with the students how to evaluate sources of information, where to find reliable sources, etc. Students should go through the steps of researching a local neighborhood, with climate change and its effects as the EJ problem of focus.
- Have students create their own accounts on **I See Change** so that they begin reporting on climate change observations in their own neighborhoods. Once they have an account, they will sign in, go to [I See Change Investigations](#), choose a topic, and add to that topic.

## Optional Supplemental Activities

### Community Mapping

- Explore the benefits of community mapping with the students using the Optional Community Engagement Tools (see page 10). Start by exploring the Asset Mapping section of Groundwork USA's [Neighborhood Voices Curriculum](#). Map existing community resources using the [Groundwork USA Asset Mapping tools](#).
- Explore the tools and nationwide DIY balloon and kite aerial mapping projects at [Public Lab](#). Use the [Stormwater Workshop Reports 1-6](#) published by Public Lab New Orleans from their summer 2017 collaboration with Groundwork New Orleans to view an example of an extended community mapping project. Work with the students to brainstorm what local problems could be studied through community mapping. Research available community mapping tools, then design and implement a project over several class sessions.

### Further Reading

- Find your local [Groundwork Trust](#)
- [Groundwork USA Focus Area: Equity & Inclusion](#)
- [Groundwork USA Equitable Development Tools: Inclusive Community Engagement](#)
- [Groundwork USA Equitable Development Tools: Restorative Community Development](#)



*April 2017, New Orleans, LA - Groundwork New Orleans partnered with Public Lab to do a low-cost community mapping project and stormwater study with Green Team students and members of the community. Students inflated a weather balloon and learned how to attach a camera to the balloon. They then used this DIY rig to take aerial photographs throughout the neighborhood, documenting drainage problems and related issues, like standing water and subsidence. Photo: Stevie Lewis, Public Lab*

# International Environmental Justice Issues [40-60 mins]

## A. UNITED NATIONS [10 MINS]

1. Introduce the first international conference on environmental issues — the [UN Conference on the Human Environment](#). Compare with what the students learned about the environmental movement in the United States.

## B. CASE STUDY: BOLIVIA'S "MOTHER EARTH" LAW [10-20 MINS]

1. As a class, read the [Wired article](#) on the legal rights of nature in Bolivia.
2. Read the Bolivian government's "[Mother Earth Law](#)." Watch the short film "[Mother Earth law to protect Bolivia forests](#)" by Al Jazeera English.

## C. FINAL NOTES [20-30 MINS]

1. Compare climate change stories around the world using [I See Change Stories](#).
2. Have students explore how climate change may affect one particular phenomenon, such as flooding. Students will compare flood events from around the world.
3. Ask the students what other issues they would like to discuss.
4. Hand out the **Evaluation Questions for Students** form and allow time for the students to fill them out in class. Collect them and send them to [Groundwork USA](#) for evaluation.

## Optional Supplemental Activities

### Create Your Own "Mother Earth" Law

- Have students get further into the weeds around whether nature has rights, and the relationships between nature rights, human rights, and sustainable development. You may choose to lead a "Create Your Own Law" activity where students work together to create their own "Nature Rights" law that would work for their neighborhood, region, state, tribe, etc. Students will work in groups to outline a "Mother Earth" law for their Groundwork Green Team, school, or organization (and give it a title fitting with their Groundwork/school/organizational identity).

### Comparative Study

- Have students work individually or in groups to study environmental justice issues in their country of choice. Students will write a paper, blog post, or other product—at the instructor's discretion—exploring one international environmental justice topic using the scientific method. Schedule a discussion or presentation session for students to share their projects and learn from each other about how environmental justice issues are experienced and addressed around the world.

### Inspirational Resources

- Have each student bring in an inspiring resource, story, or YouTube video, personal favorite poem or phrase to read or share.
- Follow individual sharing with one chosen by the instructor, such as "[Why I Wear Jordans in the Great Outdoors](#)."

# Student Learning and Program Evaluation

## A. ASSESSMENT GOALS

1. The **Evaluation Questions for Students** helps to evaluate whether students are meeting the Assessment Goals.
2. The **Evaluation Questions for Instructors** will be used to further develop and improve this curriculum.

## B. SHORT-TERM STUDENT PRODUCTS

1. Student performance will be measured in part by the assignments they complete during the lesson, including:
  - A class definition of environmental justice
  - The completed **Environmental Justice Timeline**
  - The completed **Taking Action Worksheet**
  - Research, writing, photographs, and other materials produced during the lesson
  - Responses to the **Evaluation Questions for Students**

## C. LONG-TERM STUDENT PRODUCTS

1. Organizational and school staff are encouraged to develop long-term projects with students as a result of this curriculum. Long-term student products should aim to 1) improve retention, 2) integrate with job training and Groundwork Trust, school, or organizational work, and 3) tie to assessment goals. Such products could entail doing the following:
  - Bringing in local experts as guest speakers on EJ-related topics
  - Writing letters to government officials
  - Developing educational visual media, such as brochures or comics, describing risk factors and solutions to help educate broader community; determine audience and distribution
  - Using other media (performance/song/rap/theater/film) to share individual learning, share personal stories, and/or use as public presentations
  - Writing blog entries for your Groundwork Trust, school, or organization
  - Revisiting the **EJ Timeline** or adding to it as a “living document” as students learn more about EJ issues throughout the year

**This curriculum also aligns with standards outlined in the [21st Century Skills Framework for Learning](#).**

- Key Subjects (Language Arts, History, Civics and Government)
- 21st Century Themes (Global Awareness, Civic Literacy, Health Literacy, and Environmental Literacy)
- Learning and Innovation Skills (Critical Thinking and Problem Solving, Communication and Collaboration, and Creativity)
- Information, Media, and Technology Skills
- Life and Career Skills

See [21st Century Skills Implementation Guide](#) for more information.

## EVALUATION QUESTIONS FOR STUDENTS

1. How much did you know about environmental justice before this lesson (circle one)?

Nothing      A little      Some      Quite a bit      A lot

2. How much do you think your knowledge about environmental justice has improved?

Not at all      A little      Some      Quite a bit      A lot

3. Define “environmental justice” in your own words.

Environmental justice is:

4. What is the primary message ofayah’s Lot?

5. In your opinion, is your local Groundwork Trust/school/organization addressing environmental justice issues in your neighborhood? Why or why not?

6. Describe an environmental justice issue in your neighborhood and how you would address it.

7. Which part of this lesson did you enjoy the most?

8. Which activity or resource did you learn from the most?

9. How would you improve this lesson?

## EVALUATION QUESTIONS FOR INSTRUCTORS

1. How many students participated in this lesson?
2. How many Groundwork/school/organization staff participated in this lesson?
3. Define “environmental justice” in your own words.

**Environmental justice is:**

4. How much time did each section of the lesson take?

EJ Literacy: Gaining a Common Background \_\_\_\_\_

EJ Timeline Activity \_\_\_\_\_

Taking Action \_\_\_\_\_

International Environmental Justice Issues \_\_\_\_\_

Other (please describe) \_\_\_\_\_

5. Did you explore any of the optional supplemental activities? If yes, please describe. If no, please tell us why not.

6. Did you incorporate this curriculum with other trust programs, such as job training? If yes, please describe.

7. Do you feel your trust is adequately addressing the environmental justice issues your students identified?

YES                      NO                      (circle one)

8. Do you plan to develop any new programs for your Groundwork Trust/school/organizations as result of the EJ Literacy Curriculum?

9. Did your students engage in any long-term projects as a result of this curriculum — such as blog writing, designing a campaign, designing a performance, etc.? If yes, please describe.

10. Were the students engaged during the lesson? Please describe why or why not.

11. How would you improve this lesson?

# MORE EJ RESOURCES FOR FURTHER READING

## ARTICLES AND BOOKS

- Alexander W. Watts, "[Why Does John Get the STEM Job Rather than Jennifer? Corinne Moss-Racusin works to understand and uproot the biases of scientists](#)" (The Clayman Institute for Gender Research, Stanford University, June 2, 2014)
- Brentin Mock, "[Why Race Matters in Planning Public Parks: a major overhaul of a huge Houston park reveals disparities in what white, black, and Latino residents want—and need](#)" (Citylab website, March 23, 2016)
- Caitrin Blake, "[Teaching Social Justice in Theory and Practice](#)" (Room 241 blog, Concordia-Portland University, May 13, 2015)
- Carolyn Finney, [Black Faces, White Spaces: Reimagining the Relationship of African Americans to the Great Outdoors](#) (The University of North Carolina Press, 2014)
- Dr. Dorceta E. Taylor, [The Rise of the American Conservation Movement: Power, Privilege and Environmental Conservation](#) (Duke University Press, 2016)
- Kate O'Brien, "[New Groundwork White Paper Offers Restorative Trauma-Informed Approach to Building Community Resilience and Prosperity](#)" (Groundwork USA website, November 14, 2017)
- Mahzarin Banaji & Tony Greenwald, [Blindspot: The Hidden Bias of Good People](#) (Delacorte Press, 2013)
- Sarah Kaplan, "[Scientists show how we start stereotyping the second we see a face](#)" (Washington Post, May 2, 2016)

## AUDIO AND VISUAL MEDIA

- On Being podcast, "[Mahzarin Banaji: The Mind Is a Difference-Seeking Machine](#)"
- PBS, [Black Folk Don't series](#)

## GAMES AND CLASSROOM ACTIVITIES

- American Psychological Association, [Classroom Exercises: Inclusion of Socioeconomic Status in Psychology Curricula](#)
- Bill Bigelow, [The Color Line](#) (Zinn Education Project website)
- Richard Harvey, [Intergroup Monopoly: a Lesson on the Enduring Effects of Inequality](#) (Action Teaching website)

## WEB RESOURCES AND NETWORKS

- Dorceta E. Taylor, "[Green 2.0 report](#)" (formally "The State of Diversity in Environmental Organizations: Mainstream NGOs, Foundations & Government Agencies" report)
- Green 2.0, [NGO Diversity Scorecard](#)
- Groundwork USA, [Find your local Groundwork Trust](#)
- Groundwork USA, [Focus Area: Equity & Inclusion](#)
- Groundwork USA, [Inclusive Community Engagement tools](#)
- Groundwork USA, [Restorative Community Development tools](#)
- [PolicyLink](#) website
- The Avarna Group, [Toolkit to Mitigate Bias in Recruitment and Hiring](#)
- [Urban Waters Learning Network](#) website
- U.S. Water Alliance, [Water Equity online resources](#)