



CHICAGO BOTANIC GARDEN

Connecting Youth to Local Environmental Issues:
Environmental Justice Curriculum
Science Career Continuum
Spring 2021

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This Environmental Justice (EJ) Curriculum is designed to address EPA Environmental and Educational priorities. This curriculum was used in two phases with the Science First and College First participants at the Chicago Botanic Garden. The curriculum focuses on 4 major Environmental Justice issues (1) land-use and land contamination, (2) air quality and environmental health (3) water quality and environmental health, and (4) meaningful community engagement in decision making. Participants explore the aforementioned complex Environmental Justice issues through an Interdisciplinary approach weaving STEAM (Science, Technology, Engineering, Arts and Math), Environmental Education and Social Justice workshops.

This curriculum explores Environmental Justice issues through partnerships with local community organizations, STEAM concepts, and by integrating Environmental Education and Social Justice lessons that emphasize the connection between social justice and ecology. Best practices from each framework facilitate the participants' comprehension of the complex issues faced by the Community Partners. Participants will gain and sharpen their problem solving skills throughout the program as they research and conduct short field studies in our Partner's Communities.

The following STEAM concepts will be explored by participants in Science First and College First:

- Diversity
- Correlation
- Migration
- Differentiation
- Statistical Analysis
- Decision Making
- Problem Solving

They will also be engaged through the whole environmental education continuum.

[According to the EPA](#), *“Environmental education is a process that allows individuals to explore environmental issues, engage in problem solving, and take action to improve the environment. As a result, individuals develop a deeper understanding of environmental issues and have the skills to make informed and responsible decisions.*

The components of environmental education are:

- **Awareness and sensitivity** to the environment and environmental challenges
- **Knowledge and understanding** of the environment and environmental challenges
- **Attitudes** of concern for the environment and motivation to improve or maintain environmental quality
- **Skills** to identify and help resolve environmental challenges
- **Participation** in activities that lead to the resolution of environmental challenges

Environmental education does not advocate a particular viewpoint or course of action. Rather, environmental education teaches individuals how to weigh various sides of an issue through critical thinking and it enhances their own problem-solving and decision-making skills.

The [National Environmental Education Act of 1990](#) requires EPA to provide national leadership to increase environmental literacy. EPA established the Office of Environmental Education to implement this program.”

EPA Environmental Education is more than Environmental Information

Environmental Education

Environmental Information

Increases public awareness and knowledge of environmental issues

Provides facts or opinions about environmental issues

Does teach individuals critical-thinking

Does not necessarily teach individuals critical-thinking

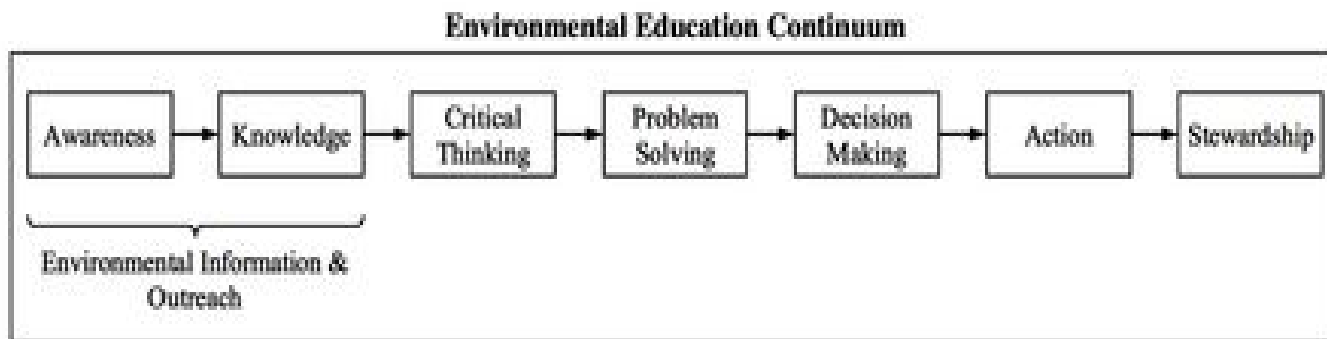
Does enhance individuals' problem-solving and decision-making skills

Does not necessarily enhance individuals' problem-solving and decision-making skills

Does not advocate a particular viewpoint

May advocate a particular viewpoint

Continuum of Environmental Education:



According to the EPA, Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

Field Days with [Community Partners](#):

Each of the field days is formatted to follow the Problem, Solution, Action (PSA) Model. During the first year students learn about the Environmental Justice framework, they will observe the problems/challenges faced by each community partner, the solution they have outlined as the recourse, and take action to support the solutions of the community partners. In the second year, students focus on land-use policies and the role they've played in how environmental burdens are sited. The students will return to collect water and soil samples from the community partners' sites. They will use the data to deepen their understanding of land use and decision making.

Assessment Goals:

Students will be able to

- Define Environmental Justice in their own words.
- Describe historical and contemporary EJ Events.
- Demonstrate basic understanding of EJ risk factors in the community partners' community and their own home communities.

- Acquire knowledge of government and community-based organizations and resources addressing those risk factors.
 - Identify and address those risk factors.
 - Identify and address a local issue through research, developing a campaign or other actions connect global with neighborhood level social justice issues.
-

Phase 1 Lesson Plan 1: What Makes a Community Healthy?

Goal: Participants will learn about what is and isn't healthy in their community and develop some ideas about what they could do to fix the unhealthy problem/s.

Learning Objectives

By the end of this lesson plan, participants will be able to:

- Explore how indicators measure health at different levels
- Identify healthy and unhealthy locations in your community
- List some ideas on how to improve the unhealthy areas

Materials

- Colored pencils/pens (green and red) or markers
- Tape for hanging maps

Time Required: 60 minutes

Background

The mapping exercise is useful because it assists the youth in:

1. Identifying community problems
2. Identifying where the problems are occurring on a map that others can see
3. Prioritizing where she/he can see her/himself taking action.

It probably comes as no surprise that youth's perspective of a healthy environment focuses on different places than adults. For example, youth want safe, clean places to "chill" and often prioritize parks when considering what constitutes a healthy environment.

Word Wall

Indicator: "a sign that shows the condition or existence of something" (<http://www.merriam-webster.com/dictionary/indicator>). For example, blood pressure is used as an indicator for individual health.

Activity Instructions

- 1) What makes something healthy and how do you measure it?
- 2) (10 minutes) Facilitated discussion with a progression of the following questions:
On the board list these ideas in a table with three columns (see below).

Prompts:

- a) What do you do to make yourself healthy/unhealthy? How do you measure it? From this discussion, the group will say things like diet, exercise, don't do drugs....).

The second question (third column) will identify individual-level health indicators such as body weight, blood pressure, heart rate, etc. These are called indicators.

b) What is healthy or unhealthy about your school? How do you measure it? From this discussion, participants will identify indicators such as facility quality, good or bad teachers, graduation rates, amount of graffiti, amount of bullying, etc.

c) What is healthy or unhealthy about your neighborhood? How do you measure it? From this discussion, participants will identify indicators such as the amount of trash, pollution, gangs, places to “chill,” etc.

Note:

Indicators to measure your individual health versus school health versus neighborhood health are different, although some indicators in the school and community may overlap.

Mapping the health of your community **(30 minutes)** Provide regular, green and red pencils/markers

	Healthy/unhealthy?	How do you know? (indicators)
Individual		
School		
Neighborhood		

Community map:

Each student will be given **10min** to draw a picture/sketch of their community and then proceed as described below.

What makes your community healthy/unhealthy?

Ask:

What makes your community HEALTHY?

- Using a green pencil, draw a picture and/or write on the map the activities, actions, physical spaces that make your community healthy and a happy place to live.

What makes your community UNHEALTHY?

- iv) Using a red pencil, draw a picture and/or write on the map the activities, actions, physical spaces that makes your community unhealthy and damages/hurts the community.

Present your community: Students present healthy and unhealthy aspects of their community/ies.

Action (20 minutes)

You are the community's youth ambassadors, and you are going to take action to improve some of the unhealthy problems in your community. Using your maps, make a list of the issues that concern you in column 1, what are possible solutions in column 2, and then rank how easy they would be to fix in Column 3. Star or highlight one or two that you are most interested in working on.

What are some similarities and differences?

Unhealthy Issue (from maps)	Action What could you do to fix the problem? (there may be several solutions)	Action (easy, medium, hard)

Phase 1 Field Day 1: Eco House Field Day

EPA Educational Priorities

- Increasing public understanding of the benefits of and participation in environmental and conservation stewardship through community collaboration on:
 - Water and soil quality issues
 - Management of ecosystem health

EPA Environmental Priorities

- (1) addressing climate change and improving air quality
 - Local closed loop sustainable economy vs global extractive economy
 - Carbon neutral system
- (3) making a visible difference in communities across the country
 - Creating sustainable entrepreneurial opportunities
- (4) protecting water: a precious limited resource.
 - Rainwater catchment system to irrigate plants

Goals

1. Students will have a hands-on experience of participating in sustainable entrepreneurship. They will help plant flowers, learn about water conservation, sustainable agriculture and learn the connections and impacts between localized economies and globalized economies.
2. Students will get a tour of EcoHouse and learn about Sustainable Entrepreneurship
3. Students will explore the concept of ecosystems.

Research Project to be completed:

- Market analysis on local flower market potential

Workshop Outline:

Time	Activity	Materials/Notes
9:00am-9:30am	Welcome and grounding	Location: Englewood (6439 S Peoria Street) Break into two groups and do quick introductions
9:30am-11:00am	PSA Workshop: Problem: <ul style="list-style-type: none">● Local Conditions in Englewood<ul style="list-style-type: none">○ Tour around the area.○ Identify abandoned lots● Scarcity in local employment opportunities.● Context on Flower Industry and its global impacts<ul style="list-style-type: none">-Land intensive-Water intensive-Carbon Intensive	

	Solution: <ul style="list-style-type: none"> ● Create viable local economic opportunities ● Reclaim vacant lots ● Sustainable Entrepreneurship 	
11:00am-11:30am	Travel to Woodlawn site (6027 S Vernon Ave)	
11:30am-12:30pm	Lunch Break	Seating area
12:30pm-2:30pm	Action: <ul style="list-style-type: none"> ● Planting flowers ● Flower planting ● Woodchips 	<ul style="list-style-type: none"> ● Flowers to plant (this comes out of the budget each organization was granted, there are some flowers that can come from BG will need to coordinate with Beatriz). Also, students will help with moving wood chips to help beautify the flower farm.
2:30pm-3:00pm	Research Project overview	Quilen shares what Ecohouse needs to grow its scale and impact.

Phase 1 Lesson Plan 2: Cutting the Strands of the Web of Life

Goal: A visual, interactive activity to illustrate the global threats to the web of life.

Learning Objectives:

- To explain what the web of life is (the support systems for all life on earth), and how we are all dependent on the health of the web of life.
- To demonstrate the role of living beings (the spider) to maintain and repair the web of life.
- To experience the impact of the ecological crisis on the web of life in a visual and visceral way.

Materials needed:

- Ball of yarn or other inexpensive string
- 1 or 2 pairs of scissors

Time: 45 minutes

Directions:

1. Have participants form a standing circle.
 2. Choose a volunteer, and ask that volunteer to stand outside of the circle for the beginning part.
 3. Ask participants:
 - a. *Have you ever heard of the term “web of life”?*
 4. Read: *The web of life is all of the support systems that allow life on earth to survive. This includes the elements of the natural world – the sun, the water, the air. It can also be the soil, the land. Some also believe that Spirit, or spiritual beings / gods / energies, are also an important part of the web of life that makes life on earth possible.*
 5. *We are going to illustrate that web of life.*
 6. Have one person start with the beginning of the ball of yarn or string. Instruct them to pass the yarn or string to another person in the circle, that is not to their immediate left or right, calling out their name first. Whoever they pass to should hold on to the part of the yarn that reaches them, then pass the ball on to someone else while holding on to their piece of the yarn. Create a web of yarn by continuing to have participants pass the string around, until everyone has gotten the ball of yarn.
-
1. Explain: *This web we’ve created will represent that web of life that keeps life on earth alive. And like any other real life spider web, our web will have a spider. And [Name of Volunteer] will be our spider.*
 2. *In an actual spider web, the spider not only benefits from and depends on the web to eat and live, but the web also depends on the spider. The spider upkeep and maintains the health of the web. In the web of life, the ‘spider’ is life itself. Living beings – from humans to plants to microorganisms – are the very things that help upkeep and maintain earth and its support systems. Without the spider taking care of its web, the web would be destroyed. Similarly, Without living beings and the things they do to tend to the earth, the earth’s systems would no longer function in its current balanced state.*
 3. Ask everyone to lift the web up to just above their heads. And ask the volunteer to head under the web to the middle of the circle.
 4. Have participants cheer or snap fingers to welcome the spider to the web.

5. Pick up your scissors and explain:
6. The web of life overtime has found its balance. But today, there are significant threats to the web. For example, the Amazon rainforest in South America is being clear cut everyday in order to access the minerals in the land and the timber from the trees. Slashing at the rainforest – which are like the lungs of the earth – is like cutting at the strands of the web of life.
7. Make a cut in a random place inside the web.
8. Ask participants: *In a spider's web, what happens when a strand is broken? (answer: the spider feels the break, moves along the web, and repairs the break)*
9. Have the 'spider' (the volunteer in the middle) go to the broken piece in the yarn, and repair (tie back together) the yarn.
10. Explain: *This is what living beings do when there are threats to the web of life – we use natural processes to repair the damage done.*
11. *But what happens if those threats come at a faster rate?*
12. Next, using the scissors, move around the circle, continuously cutting various parts of the web created by the yarn. Start at a pace slow enough that the spider is able to keep up for the first couple of cuts. Get increasingly faster to a point where the spider can't keep up any longer. With each cut, name a different threat to the web of life. See appendix below for some examples of threats you can name. Try to mix it up between global threats and local threats. This has been most effective when the local threats are examples that are very familiar to the participants of the group. Have the 'spider' try their best to move and repair the cuts as you go.
13. It helps to have the other participants cheering for the spider.
14. If you have a co-facilitator, you can both do the cutting of the strands, taking turns to cut and name a threat.
15. Once the web is clearly destroyed, and the spider is clearly having a hard time keeping up, stop cutting.
16. Process with participants:
17. *What just happened?*
18. If it would draw more out from the participants, ask:
19. *How did you feel in your body as you saw the strands getting cut, and the spider trying to repair the web?*
20. Ask the 'spider':
21. *How was your experience trying to repair the web of life?*
22. Explain:
23. *Right now, we are slashing at the web of life with all of these threats that you heard, and more. Our current economy, driven by profit and not by care for people or the planet, is literally destroying our ability to keep life on earth alive. Just like our spider, earth and its living beings are not able to respond to all of the threats fast enough to maintain the web of life.*
24. *Before suggesting what should happen have a discussion to get students thinking about what the solution should be.*
 - a. *Ultimately, we would like to arrive to the conclusion that we have to transition out of the current economy, and put a stop to these threats. We have to take the scissors away. We must support the spider and the web of life by transitioning into an economy that regenerates the balance of systems on earth, and that protects our people and the planet.*

b. APPENDIX: SAMPLE THREATS

<i>GLOBAL THREATS</i>	<i>LOCAL THREATS</i>
Rising global temperatures causing rising sea levels and unpredictable weather patterns	Polluting facility in an urban center, blocks from where people live (can specifically name: incinerator, oil refinery, landfill, power plant, etc)
Alberta Tar Sands development – destroying native land and livelihoods for dirty oil	Polluting and not caring for local water resources (e.g. paving over local streams, dirty dumping in rivers, fracking pollution in farm water)
Mining development in third world countries (can name specific mining operations)	Mining in local regions (name specific places and companies)
Catastrophic forest fires caused by severe drought and erosion.	Extreme freezing temperatures during the Winter, or extreme heat during the Summer.
Industrial agriculture depleting massive amounts of soil nutrients and displacing people from their land.	Gentrification of a neighborhood or city (name specific places or development projects)
Extinction of whole species and languages.	Paving over public parks or farms

Phase 1 Field Day 2: American Indian Center

EPA Educational Priorities:

- Increasing public understanding of the benefits of and participation in environmental and conservation stewardship through community collaboration on:
 - Water and soil quality issues
 - Food waste management
 - Increase of locally sourced food in farm to table systems
 - Management of ecosystem health

EPA Environmental Priorities:

- (1) addressing climate and improving air quality
 - Prairie land restoration
- (3) making a visible difference in communities across the country
 - Using art to identify and reclaim Native Territories
- (4) protecting water: a precious limited resource.
 - Northwest Portage Walking Museum

Goals

1. Students will explore the concept of Ecosystems through an Indigenous lens.
2. They will learn about Indigenous Sovereignty and how it relates to land use.
 - a. Indigenous Sovereignty, Land Sovereignty-
 - Native Ecosystems
 - Native food
 - Native medicine
 - Native animals
 - Language
3. Students will learn about the local Indigenous communities from the Chicagoland region and about native plant species.

Research Project to be completed:

- Traditional ecological knowledge is undervalued by western science. Look at the Native Hawaiian plant, as a case study to explore whether taking measures to put the plant in a controlled environment helped?

Workshop Outline:

Time	Activity	Materials/Notes
9:00am-9:30am	Welcome and grounding	Icebreaker: Weaving Our Own Stories Participants are tasked with creating a story from a set of pictures. The pictures are randomly ordered and handed out. Each person has a picture but cannot show it to others. Participants will split into equal groups

		<p>and line up facing the other team.</p> <p>The line leader from group 1 will flip their picture and begin to tell the story the next participant will add to the story by flipping their picture and incorporating it to the story's ongoing narrative. This action will repeat until everyone in the group has flipped their picture. The next group will repeat the process.</p> <p>Once every group has created a story everyone will circle up and hang onto the end of the string and toss the ball to someone else in the group. The participant throwing the yarn will State how their picture is connected to someone else's picture in the circle. This will continue until all the stories are connected.</p>
9:30am-11:00am	<p>PSA Workshop:</p> <p>Problem:</p> <ul style="list-style-type: none"> ● Colonization <p>Solution:</p> <ul style="list-style-type: none"> ● Indigenizing land-use practices ● Indigenizing Science <p>Action:</p> <ul style="list-style-type: none"> ● Indigenizing Land-use ● Indigenizing Science 	Powerpoint slides (Fawn), projector, computer, screen (Held in AIC Gym)
11:00am-12:00pm	<ul style="list-style-type: none"> ● Groups split in half <ul style="list-style-type: none"> ○ Gallery Tour & Questionnaire <ul style="list-style-type: none"> ■ Using art to identify and reclaim Native identities by promoting a vast range of truly differing perceptions, felt ideas, and knowledge ○ Tour medicinal garden 	<ul style="list-style-type: none"> ● Questionnaire

	<ul style="list-style-type: none"> ■ Identifying native medicinal plants and how to relate to the plants 	
12:00pm-1:00pm	Lunch Break	
1:00pm-2:00pm	<ul style="list-style-type: none"> ● Walking Tour of Albany Park <ul style="list-style-type: none"> ○ understanding the environmental degradation of Chicago's Indigenous Landscape ○ Engage participants in understanding the benefits of and participation in environmental and conservation stewardship 	
2:00pm-3:00pm	<p>Learn how the American Indian Center is working in solidarity with multiple partners to develop collaborative efforts focused on activating public lands</p> <ul style="list-style-type: none"> ● Using art and green infrastructure to identify and reclaim Native Territories ● addressing climate and improving air quality <ul style="list-style-type: none"> ○ Prairie land restoration ○ Increasing Food literacy and reducing food waste 	Fawn and Heather share how young people from the Garden can help prepare a project that supports AIC in.

Phase 1 Lesson Plan 3: Equality and Equity

Lesson Plan: How are Equality and Equity Different?

Goal: Participants will be able to distinguish between equality and equity

Learning Objectives:

By the end of this lesson plan, participants will be able to:

- Explain equality and give at least one example
- Explain equity and give at least one example
- Discuss the benefits of equitable solutions for diverse communities

Materials:

Pen, pencil, colored pencils Paper

Time Required: 40 minutes

Background:

Think back to the first day when we explored the concept of Environmental Justice and we saw an example of how equity is different than equality. Equity and equality are related terms and often used as synonyms, but since the word equity is appearing more and more in the news and in policies, it is important to distinguish between the two. Whether one is listening to the radio, reading the newspaper, or attending a conference, we are hearing “calls to action” such as “we need gender equity;” “embrace racial equity” or “we demand education equity.”

“Equity is the process and equality is an outcome.” In other words, “equity is essential to achieve true equality” (<http://edglossary.org/equity/>). The Race Matters Institute says, “The route to achieving equity will not be accomplished through treating everyone equally. It will be achieved by treating everyone equitably, or justly according to their circumstances (<http://racemattersinstitute.org/blog/Racial-Equality-Racial-Equity-Whats-the-Difference-What-Difference-Does-It-Make>).

Note: Environmental justice and environmental equity are not interchangeable and a nuance that is not parsed out in this curriculum. The Principles of Environmental Justice, as they were written by the Delegates to the First National People of Color Environmental Leadership Summit in October, 1991 (<http://www.ejnet.org/ej/principles.html>), is a rights-based declaration for ALL peoples. It covers many important issues related to the environment including but not limited to: the sacredness of Mother Earth; the protection of Native Americans; the opposition to land exploitation; the experimental medical testing on people of color; etc. (the document is extraordinarily inspiring and could be a wonderful lesson plan all by itself). On the other hand, achieving environmental equity is a smaller piece that aims for actions that can remedy disproportionate impacts and establish inclusive, collaborative decision-making.

Word Wall

Note: it is hard to find a good definition for equity versus equality without a preceding descriptor (e.g., education, gender, racial). We would like to recommend that posting equality and equity examples (sentences and pictures) on the word wall may be very helpful.

Equality: “the quality or state of being equal: the quality or state of having the same rights, social status, etc.” (<http://www.merriam-webster.com/dictionary/equality>)

Equity: “fairness or justice in the way people are treated” (<http://www.merriam-webster.com/dictionary/equity>).

“Everyone has an equal opportunity to attain their full potential. It implies a need for fairness in the distribution of benefits and burdens, and the entitlement of everyone to an acceptable quality and standard of living”(<http://www.kingcounty.gov/elected/executive/equity-social-justice/tools-resources.aspx>).

Teacher/facilitator preparation

Kids at a baseball game example: The graphic shown below is quite well known and commonly used when teaching equity concepts. On the left, three kids are watching a baseball game from behind a fence: all three are given the same size box (equality) to stand on but only two can see the game over the fence. Equality only works if all three children are the same height. In the picture on the right, equity (fairness) is promoted because the shortest child is given a second box to stand on so he can also see the game.

Activity Instructions

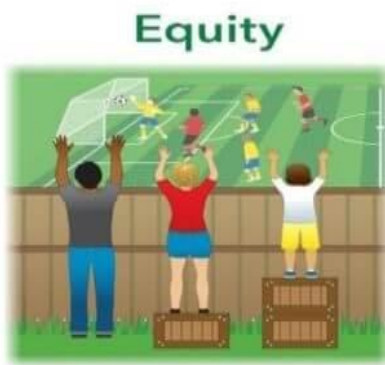
1) Equality versus equity(15 minutes)

Prompt:

- a) When I show the picture below, what do you see? (all three children have the same box despite the differences in their height - equality.
- b) Does it seem fair? What is unjust about it? (An equal distribution of resources does not necessarily achieve an equal outcome)
- c) If the picture doesn't seem just, how could you fix it so it would be more fair?(Give the shorter child the tall child's box so that he can see the game too - equity)
- d) Why do you think the fence is there? Who do you think built it? Does it have to be that tall? Does it have to be there at all?
- e) Imagine that the fence is a metaphor for the shorter child's life experiences. What are some examples of resources that some kids have that others lack? (education, parks, wilderness, cell phone)



The assumption is that **everyone benefits from the same supports**. This is equal treatment.



Everyone gets the **supports they need** (this is the concept of "affirmative action"), thus producing equity.



All 3 can see the game without supports or accommodations because **the cause(s) of the inequity was addressed**. The systemic barrier has been removed.

2. (In)Equality versus (In)Equity examples

Prompt:

Now we are going to do some real life examples that are a little bit harder (*see worksheet below, there is a teacher worksheet with sets of examples at the end*)

3) (In)Equality vs (In)Equity Exercise (20 minutes)

Instructions: Review the examples below. Does the situation described seem fair? How is it unjust? If it doesn't seem fair, what are some things that could be done to make it more just (equitable?). Note: there might be different solutions to reach an equitable solution.

Example	Fair? If not, what could be done to make it more just (equitable)?
A city has three times more park space per resident on the north side than on the south side.	
Access to computers and to the internet is not the same in all schools in the city.	
A city is having financial problems and has made a decision to cut its budget for its 25 community centers. It cuts the budget by having the same reduction in closing hours for	

all centers.	
A community with lower income and a higher percentage of people of color compared to the rest of the city has the highest air pollution levels and the highest asthma hospitalization rates in the city.	
A meeting has been planned to discuss the cleanup of a contaminated site in a community; it will be held in English. However, approximately 25% of people in the community do not speak English as a first language.	
One community has less access to healthy and affordable food than the rest of the city and has requested funding and assistance to build a community garden. The City has recognized that there is an issue of historically unequal treatment in this neighborhood and has agreed to the request.	
Develop your own example	

Teachers guide: Participants may have multiple ideas on how to respond

Example	Fair? If not, what could be done to make it more just (equitable)?
A city has three times more park space per resident on the north side than in its south side	No. Develop more park space in the southern part of the city

Access to computers and to the internet is not the same in all schools in the city.

No.

Give more money to schools where there are less computers or less access to the internet
Make sure that computer labs stay open for kids who may not have computers at home.

A city is having financial problems and has made a decision to cut its budget for its 25 community centers. It cuts the budget by having the same reduction in closing hours for all centers.

No.

This is equal treatment but it assumes that all community centers need the same hours.
Determine which communities might need more hours due to other concerns

<p>A community with lower income and a higher percentage of people of color compared to the rest of the city has the highest air pollution levels and the highest asthma hospitalization rates in the city.</p>	<p>No.</p> <p>Government agencies work to reduce pollution in that area by tightening regulations Support the affected community to address pollution concerns</p>
<p>A meeting has been planned to discuss the cleanup of a contaminated site in a community; it will be held in English. However, approximately 25% of people in the community do not speak English as a first language</p>	<p>No.</p> <p>Hire translators Have one meeting in another language</p>
<p>One community has less access to healthy and affordable food than the rest of the city and has requested funding and assistance to build a community garden. The City has done some research and found that this area has a history of unequal treatment and agreed to the request.</p>	<p>Yes.</p> <p>The City is responding to fairness concerns. But this does not absolve them from solving other issues of inequity in the community</p>
<p>Develop your own example</p>	

3. Make up your example of (in)equality and (in)equity (20-30 minutes)

Note: This is great on index cards. The best ones can be attached to the Word Wall. Hand out two index cards per person.

Prompts:

- a) Put together your own examples either real or idealistic. On one index card, write one sentence that describes (in)equality; and on another index card, write a sentence that describes (in)equity.
- b) Share (read out loud) with a partner to review your examples. Make sure they make sense and revise, if necessary.
- c) Share one of the sentences with a group of 4-5 people and vote on the group favorite to share with the larger group.
- d) Pick someone from your small group to read your favorite out loud to everyone.
- e) Attach class favorites to the Word Wall

Phase 1 Field Day 3: Eden Place

EPA Environmental Priorities:

- (1) addressing climate change and improving air quality,
- (3) making a visible difference in communities across the country,
- (4) protecting water: a precious limited resource.

Goals:

1. Students will see how community driven land use improves the material conditions of the community members.
2. Students will learn the history of the Fuller Park area and Eden Place's role in improving the community.
3. Students will participate in a butterfly scavenger hunt that will help them understand the concept of life cycles and migration.

Research Project to be completed:

- Video- to use on social media?

Time	Activity	Materials/Notes
9:00am-9:30am	Welcome and grounding	Start at 4417 S. Stewart. Icebreaker - Have a conversation around community assets in the area and how this positively affects the community: what are some places where people feel safe and welcomed in the community?
9:30-11:00	PSA Workshop: Problem: <ul style="list-style-type: none">• Local Conditions in Fuller Park Other abandoned lots• Lack of job opportunities Solution: <ul style="list-style-type: none">• Create community ownership over a process and outcome.• Stronger unified Fuller Park	Watch Video Tour of Eden Place
11:00-12:00	Action: Urban Agriculture to Scale with job opportunities Nature Conservation Center in Fuller Park	Tour of Greenhouse and plots *take bus to 4911 S. Shields
12:00-1:00pm	Lunch Break	Bus brings students back to 4417 S. Stewart to eat lunch on the benches outside
1:00-2:00pm	Butter-Fly Scavenger Hunt	Exploring life cycles and migration
2:00pm-3:00pm	Mr. Howard	Share how young people from the Garden can help prepare a project that supports Eden Place.

Phase 1 Lesson Plan 4: Lesson Plan: Whose Backyard? Toxic Waste Management Meeting and Environmental Injustice

Goal: This interactive “role-play” exercise helps participants examine how the benefits and burdens of society are distributed. It explores the social, political, and economic systems that create inequality based on race and class, and how this can lead to disparate burdens of pollution in communities.

Learning Objectives:

By the end of this lesson plan, participants will be able to:

- List three reasons why people may not participate in decision-making
- List three ways to encourage communities to participate in decision-making
- List three ways communities can make their voices heard

Materials:

- Waste basket (as the metaphor for toxic waste)
- Two to three copies of the worksheets for each of five groups
- Chalk/White board to record the vote

Time required: 120 minutes

Suggested Preparation for the Facilitator Recommended reading:

- Bullard, R. D., (2014, April 21). Poverty, pollution, and environmental racism: Strategies for building healthy and sustainable communities. <http://archive.today/LHBko>.
- Basel Action Network: <http://www.ban.org/> (for country contamination).
Environmental Justice Resource Center Atlanta University website: <http://www.ejrc.cau.edu/>.
- EPA Environmental Justice website: <http://www.epa.gov/environmentaljustice/>.
- Protests in Warren County, North Carolina in 1982 against a landfill contaminated with PCB soils. <https://www.youtube.com/watch?v=1iCxxh0BYjgI>

Word Wall:

Environmental racism: “refers to environmental policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race or color. Environmental racism is reinforced by government, legal, economic, political, and military institutions.” (From: Bullard, R. D., Poverty, Pollution, and Environmental Racism: Strategies for Building Healthy and Sustainable Communities. <http://archive.today/LHBko>).

Environmental Justice (EJ): EPA defines EJ as, “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect

to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation. It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.”(<http://www.epa.gov/environmentaljustice/>).

Suggested Preparation for the Facilitator

- 1) Divide the room into groups of five. (We usually have them count 1, 2, 3, 4, 5 around the room so that participants are not with their friends). Send groups 1-4 to the four corners of the room. Group 5 is the toxic waste management team, who makes the final decision about where the toxic waste will go. Note: if your group is small, the teacher/facilitator can act as Group 5.
- 2) Tell the whole group that they represent specific communities. You are the owner of a waste management company and you are holding a public meeting to help decide where toxic (contaminated) waste should go.
- 3) Place the toxic waste basket in a prominent place and tell them it’s full of contaminated waste that can cause cancer, chronic diseases, and get into the environment through the soils, air, water, etc.
- 4) Hand out community descriptions to each group (below).
- 5) Community 2 is secretly designated as the “vulnerable” community that has not been given the opportunity to vote. You will need to talk with them and make sure they understand their instructions and that they should not speak until given a sign that is it okay to talk (e.g., touching your earlobe).
- 6) Be sure to wander around to each group and answer questions, etc.
- 7) Use a chalk/white board to record responses and votes.

Toxic Waste Placement Meeting

Instructions to class (either print these out or put them up on a projector or board)

Prompt:

- 1) I am the Manager of Waste Management Development Company and we would like to truck a container of extremely toxic waste to one of the communities in the room (meant to represent a city/county/state).
- 2) The toxic waste must go to ONE of the communities in this room. It cannot go anywhere else. It cannot be split up.
- 3) By the end of the discussion, you will have to cast ONE vote per community deciding where the toxic waste will go. Our toxic waste managers (Group 5) will make the final decision.
- 4) This exercise occurs in six parts:

Section 1: Community descriptions. (10 min)

You have five minutes to discuss your community and make up what you want about it. (I have given you a little bit of information about your community in your community sheets that I have passed out). Then be prepared to tell the other communities in the room the following:

- 1) Given the data in your tables is this community high, middle, or low in terms of:
 - a) Income
 - b) Race/ethnicity
 - c) Speaking other languages than English Levels of pollution
 - d) Green space
 - e) Health
 - f) Levels of pollution

If you reviewed the indicator to show how to rank the indicator as low, medium or high. working with a group that may not be familiar with indicators, they can be at the board at the beginning. In addition, you can draw a line of an example

No college degree – city range is between 24-72%

24% (low)	48% (medium)	72% (high)
-----------	--------------	------------

If your community is 24% without a college degree, what does that mean?

No college degree – city range is between 24-72% 24% (low) 48% (medium) 72% (high)

If your community is 24% without a college degree, what does that mean?

- 2) Given the information above, pick a name for your community.
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

Section 2: Tell the room who you are (5 minutes each)

Pick one or two people from your group to describe your community. Do not just read off the information that I have given you, be more descriptive/creative.

Section 3: Who gets the toxic waste? (5 minutes)

You have just heard about the other communities in the room. It is now time to come to a consensus about where you want the toxic waste to go. Your community gets ONE vote.

Section 4: Come back and cast your vote (20 minutes)

Pick someone in your community to explain:

Cast your vote on which community should get the toxic waste

Give your reasoning.

Section 5: Waste managers (Group 5): final decision

What is your final decision based on what you read and heard?

Section 6: Discussion (30 minutes)

Facilitator asks participants some of the questions below.

1) To communities 1, 3, 4

- a) What do you think happened?
- b) Why did it happen?
- c) Why did the vote go the way it went?
- d) IF Groups 1, 3, and 4 did NOT vote for the “vulnerable” community, do you think this is what would happen in real life? Why or why not?

2)Waste Managers

- a) Why did you make this decision?

3) “Vulnerable” Community (Community 2):

- a) Tell us who you are. Describe your community.
- b) How did you feel when you were not able to talk?
- c) What were you experiencing (mentally, physically)?
- d) How do you think it affected you to not be able to speak up (individually and your community)?
- e) Was it fair?
- f) What are situations in real life where people might not be able to speak up?

Environmental justice/racism

- 1) Was the meeting fair? Why or why not?
- 2) What was wrong with this meeting?
- 3) What might you do to change the meeting (e.g., interpreters; set up meeting at an appropriate time and place that all constituents can attend; have an “expert” in attendance to explain the contamination problem, etc.)?
- 4) How might you address the problem that communities with EJ concerns are currently living in contaminated areas with more environmental burdens than environmental goods? Think back to Lesson Plan 1: What makes a community healthy?
- 5) Review the Environmental Justice definition. Does it make sense? What are the main criteria of the definition? Note: It is worth spending a few minutes working through this definition and how it relates to this example.

6) Think about some (current and past) events where some people are able to vote or not and how it affects what they are able to do with the rest of their lives (having been in prison, identity cards, voting, etc.).

COMMUNITY 1

INDICATOR	YOUR COMMUNITY	CITY RANGE	RANK Does this seem high, middle or low to you in comparison to the rest of the city?
Percent non-white population	14%	13-71%	
Below 200% poverty level (percent living on an income two times the federal poverty level, or in 2014 approximately \$48,000/year)	12%	12-40%	
No college degree (percent of adults 25 years old and older)	32%	32-72%	
Percent foreign born	11.6%	8-42%	
Exposure to air pollution (diesel particulate matter ug/m ³)	1.03	1.03-2.3	
Risk ranking for confirmed and suspected contaminated sites	22	3-142	

Amount of park area per resident (ft ² /resident)	1634	61-1634	
Amount of tree canopy (percent)	27%	4-27%	
Heart disease death rate per 100,000	127	104-188	
Child (0-17 yr) asthma hospitalization rate per 100,000	161	129-299	

Questions

- 1) What is the name of your community? (Make up a name)
- 2) Is this community high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

You have about five minutes to come up with some thoughts about this and then pick one or two people to come back and share some characteristics of your community.

COMMUNITY 2

INDICATOR	YOUR COMMUNITY	CITY RANGE	RANK Does this seem high, middle or low to you in comparison to the rest of the city?
Percent non-white population	71%	13-71%	
Below 200% poverty level (percent living on an income two times the federal poverty level, or in 2014 approximately \$48,000/year)	32%	12-40%	
No college degree (percent adults 25 years old and older)	72%	32-72%	
Percent foreign born	42%	8-42%	
Exposure to air pollution (diesel particulate matter ug/m ³)	2.3	1.03-2.3	
Risk ranking for confirmed and suspected contaminated sites	142	3-142	

Amount of park area per resident (ft ² /resident)	454	61-1634	
Amount of tree canopy (percent)	6%	4-27%	
Heart disease death rate per 100,000	123	104-188	
Child (0-17 yr) asthma hospitalization rate per 100,000	299	129-299	

Questions

- 1) What is the name of your community? (Make up a name)
- 2) Is this community high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

You have about five minutes to come up with some thoughts about this and then pick one or two people to come back and share some characteristics of your community.

You are NOT permitted to speak to the rest of the class during this entire exercise. Even when I prod you to speak, do NOT respond. You are NOT allowed to vote in Part 2 of this exercise.

COMMUNITY 3

INDICATOR	YOUR COMMUNITY	CITY RANGE	RANK Does this seem high, middle or low to you in comparison to the rest of the city?
Percent non-white population	29%	13-71%	
Below 200% poverty level (percent living on an income two times the federal poverty level, or in 2014 approximately \$48,000/year)	40%	12-40%	
No college degree (percent adults 25 years old and older)	24%	24-72%	
Percent foreign born	15%	8-42%	
Exposure to air pollution (diesel particulate matter ug/m ³)	1.3	1.03-2.3	
Risk ranking for confirmed and suspected contaminated sites	22	3-142	
Amount of park area per resident (ft ² /resident)	125	61-1634	

Amount of tree canopy (percent)	19%	4-27%	
Heart disease death rate per 100,000	104	104-188	
Child (0-17 yr) asthma hospitalization rate per 100,000	273	129-299	

Questions

- 1) What is the name of your community? (Make up a name)
- 2) Is this community high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

You have about five minutes to come up with some thoughts about this and then pick one or two people to come back and share some characteristics of your community.

COMMUNITY 4

INDICATOR	YOUR COMMUNITY	CITY RANGE	RANK Does this seem high, middle or low to you in comparison to the rest of the city?
Percent non-white population	18%	13-71%	

Below 200% poverty level (percent living on an income two times the federal poverty level, or in 2014 approximately \$48,000/year)	22.5%	12-40%	
No college education (percent adults 25 years old and older)	32%	24-72%	
Percent foreign born	11	8-42%	
Exposure to air pollution (diesel particulate matter ug/m ³)	2.2	1.03-2.3	
Risk ranking for confirmed and suspected contaminated sites	18	3-142	
Amount of park area per resident (ft ² /resident)	175	61-1634	
Amount of tree canopy (percent)	8	4-27%	
Heart disease death rate per 100,000	111	104-188	
Child (0-17 yr) asthma hospitalization rate per 100,000	182	129-299	

Questions

- 1) What is the name of your community? (Make up a name)
- 2) Is this community high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

You have about five minutes to come up with some thoughts about this and then pick one or two people to come back and share some characteristics of your community.

Toxic Waste Managers Data

INDICATOR	Community #1	Community #2	Community #3	Community #4	City Range
Percent non-white population	14%	71%	29%	18%	13-71%
Below 200% poverty level (percent living on an income two times the federal poverty level, or in 2014 approximately \$48,000/year)	12%	32%	40%	22.5%	12-40%
No college degree (percent adults 25 years old and older)	32%	72%	24%	32%	24-72%

Percent foreign born	11.6%	42%	15%	11	8-42%
Exposure to air pollution (diesel particulate matter ug/m ₃)	1.03	2.3	1.3	2.2	1.03-2.3
Risk ranking for confirmed and suspected contaminated sites	22	142	22	18	3-142
Amount of park area per resident (ft ² /resident)	1634	454	125	175	61-1634
Amount of tree canopy (percent)	27%	6%	19%	8	4-27%
Heart disease death rate per 100,000	127	123	104	111	104-188
Child (0-17 yr) asthma hospitalization rate per 100,000	161	299	273	182	129-273

Questions

- 1) Which community is high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?

- 2) You will be listening to what the other communities say about themselves to help inform your decision. Where do you think it will be easiest to put the toxic waste with the least amount of opposition?
- 3) Why do you think this community will complain less than the others?

Phase 2 Lesson Plan 1: Whose Backyard? Toxic Waste Management Meeting and Environmental Injustice

Goal: This interactive “role-play” exercise helps participants examine how the benefits and burdens of society are distributed. It explores the social, political, and economic systems that create inequality based on race and class, and how this can lead to disparate burdens of pollution in communities.

Learning Objectives:

By the end of this lesson plan, participants will be able to:

- List three reasons why people may not participate in decision-making
- List three ways to encourage communities to participate in decision-making
- List three ways communities can make their voices heard

Materials:

- Waste basket (as the metaphor for toxic waste)
- Two to three copies of the worksheets for each of five groups
- Chalk/White board to record the vote

Time required: 120 minutes

Suggested Preparation for the Facilitator Recommended reading:

- Bullard, R. D., (2014, April 21). Poverty, pollution, and environmental racism: Strategies for building healthy and sustainable communities. <http://archive.today/LHBko>.
- Basel Action Network: <http://www.ban.org/> (for country contamination).
Environmental Justice Resource Center Atlanta University website: <http://www.ejrc.cau.edu/>.
- EPA Environmental Justice website: <http://www.epa.gov/environmentaljustice/>.
- Protests in Warren County, North Carolina in 1982 against a landfill contaminated with PCB soils. <https://www.youtube.com/watch?v=1iCxxh0BYjgl>

Word Wall:

Environmental racism: “refers to environmental policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race or color. Environmental racism is reinforced by

government, legal, economic, political, and military institutions.” (From: Bullard, R. D, Poverty, Pollution, and Environmental Racism: Strategies for Building Healthy and Sustainable Communities. <http://archive.today/LHBko>).

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Suggested Preparation for the Facilitator:

- 1) Divide the room into groups of five. (We usually have them count 1, 2, 3, 4, 5 around the room so that participants are not with their friends). Send groups 1-4 to the four corners of the room. Group 5 is the toxic waste management team, who makes the final decision about where the toxic waste will go. Note: if your group is small, the teacher/facilitator can act as Group 5.
- 2) Tell the whole group that they represent specific communities. You are the owner of a waste management company and you are holding a public meeting to help decide where toxic (contaminated) waste should go.
- 3) Place the toxic waste basket in a prominent place and tell them it’s full of contaminated waste that can cause cancer, chronic diseases, and get into the environment through the soils, air, water, etc.
- 4) Hand out community descriptions to each group (below).
- 5) Community 2 is secretly designated as the “vulnerable” community that has not been given the opportunity to vote. You will need to talk with them and make sure they understand their instructions and that they should not speak until given a sign that it is okay to talk (e.g., touching your earlobe).
- 6) Be sure to wander around to each group and answer questions, etc.
- 7) Use a chalk/white board to record responses and votes.

Toxic Waste Placement Meeting

Instructions to class (either print these out or put them up on a projector or board)

Prompt:

- 1) I am the Manager of Waste Management Development Company and we would like to truck a container of extremely toxic waste to one of the communities in the room (meant to represent a city/county/state).
- 2) The toxic waste must go to ONE of the communities in this room. It cannot go anywhere else. It cannot be split up.
- 3) By the end of the discussion, you will have to cast ONE vote per community

deciding where the toxic waste will go. Our toxic waste managers (Group 5) will make the final decision.

4) This exercise occurs in six parts:

Section 1: Community descriptions. (10 min)

You have five minutes to discuss your community and make up what you want about it. (I have given you a little bit of information about your community in your community sheets that I have passed out). Then be prepared to tell the other communities in the room the following:

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 - c) Speaking other languages than English Levels of pollution
 - d) Green space
 - e) Health
 - f) Levels of pollution

If you reviewed the indicator to show how to rank the indicator as low, medium or high. working with a group that may not be familiar with indicators, they can be at the board at the beginning. In addition, you can draw a line of an example

No college degree – city range is between 24-72%

24% (low)	48% (medium)	72% (high)
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If your community is 24% without a college degree, what does that mean?

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If your community is 24% without a college degree, what does that mean?

2) Given the information above, pick a name for your community.

3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

Section 2: Tell the room who you are (5 minutes each)

Pick one or two people from your group to describe your community. Do not just read off the information that I have given you, be more descriptive/creative.

Section 3: Who gets the toxic waste? (5 minutes)

You have just heard about the other communities in the room. It is now time to come to a consensus about where you want the toxic waste to go. Your community gets ONE vote.

Section 4: Come back and cast your vote (20 minutes)

Pick someone in your community to explain:

Cast your vote on which community should get the toxic waste

Give your reasoning.

Section 5: Waste managers (Group 5): final decision

What is your final decision based on what you read and heard?

Section 6: Discussion (30 minutes)

Facilitator asks participants some of the questions below.

1) To communities 1, 3, 4

a) What do you think happened?

b) Why did it happen?

c) Why did the vote go the way it went?

d) IF Groups 1, 3, and 4 did NOT vote for the “vulnerable” community, do you think this is what would happen in real life? Why or why not?

2)Waste Managers

a) Why did you make this decision?

3) “Vulnerable” Community (Community 2):

a) Tell us who you are. Describe your community.

b) How did you feel when you were not able to talk?

c) What were you experiencing (mentally, physically)?

d) How do you think it affected you to not be able to speak up (individually and your community)?

e) Was it fair?

f) What are situations in real life where people might not be able to speak up?

Environmental justice/racism

1) Was the meeting fair? Why or why not?

2) What was wrong with this meeting?

3) What might you do to change the meeting (e.g., interpreters; set up meeting at an appropriate time and place that all constituents can attend; have an “expert” in attendance to explain the contamination problem, etc.)?

4) How might you address the problem that communities with EJ concerns are currently living in contaminated areas with more environmental burdens than environmental goods? Think back to Lesson Plan 1: What makes a community healthy?

5) Review the Environmental Justice definition. Does it make sense? What are the main criteria of the definition?

Note: It is worth spending a few minutes working through this definition and how it relates to this example.

6) Think about some (current and past) events where some people are able to vote or not and how it affects what they are able to do with the rest of their lives (having been in prison, identity cards, voting, etc.).

COMMUNITY 1

INDICATOR	YOUR COMMUNITY	CITY RANGE	RANK Does this seem high, middle or low to you in comparison to the rest of the city?
Percent non-white population	14%	13-71%	
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No college degree (percent of adults 25 years old and older)	32%	32-72%	
Percent foreign born	11.6%	8-42%	

Exposure to air pollution (diesel particulate matter ug/m ₃)	1.03	1.03-2.3	
Risk ranking for confirmed and suspected contaminated sites	22	3-142	
Amount of park area per resident (ft ² /resident)	1634	61-1634	
Amount of tree canopy (percent)	27%	4-27%	
Heart disease death rate per 100,000	127	104-188	
Child (0-17 yr) asthma hospitalization rate per 100,000	161	129-299	

Questions

- 1) What is the name of your community? (Make up a name)
- 2) Is this community high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

You have about five minutes to come up with some thoughts about this and then pick one or two people to come back and share some characteristics of your community.

COMMUNITY 2

INDICATOR	YOUR COMMUNITY	CITY RANGE	RANK Does this seem high, middle or low to you in comparison to the rest of the city?
Percent non-white population	71%	13-71%	
Below 200% poverty level (percent living on an income two times the federal poverty level, or in 2014 approximately \$48,000/year)	32%	12-40%	
No college degree (percent adults 25 years old and older)	72%	32-72%	
Percent foreign born	42%	8-42%	
Exposure to air pollution (diesel particulate matter ug/m ³)	2.3	1.03-2.3	
Risk ranking for confirmed and suspected contaminated sites	142	3-142	

Amount of park area per resident (ft ² /resident)	454	61-1634	
Amount of tree canopy (percent)	6%	4-27%	
Heart disease death rate per 100,000	123	104-188	
Child (0-17 yr) asthma hospitalization rate per 100,000	299	129-299	

Questions

- 1) What is the name of your community? (Make up a name)
- 2) Is this community high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

You have about five minutes to come up with some thoughts about this and then pick one or two people to come back and share some characteristics of your community.

You are NOT permitted to speak to the rest of the class during this entire exercise. Even when I prod you to speak, do NOT respond. You are NOT allowed to vote in Part 2 of this exercise.

COMMUNITY 3

INDICATOR	YOUR COMMUNITY	CITY RANGE	RANK Does this seem high, middle or low to you in comparison to the rest of the city?
Percent non-white population	29%	13-71%	
Below 200% poverty level (percent living on an income two times the federal poverty level, or in 2014 approximately \$48,000/year)	40%	12-40%	
No college degree (percent adults 25 years old and older)	24%	24-72%	
Percent foreign born	15%	8-42%	
Exposure to air pollution (diesel particulate matter ug/m ³)	1.3	1.03-2.3	
Risk ranking for confirmed and suspected contaminated sites	22	3-142	
Amount of park area per resident (ft ² /resident)	125	61-1634	

Amount of tree canopy (percent)	19%	4-27%	
Heart disease death rate per 100,000	104	104-188	
Child (0-17 yr) asthma hospitalization rate per 100,000	273	129-299	

Questions

- 1) What is the name of your community? (Make up a name)
- 2) Is this community high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

You have about five minutes to come up with some thoughts about this and then pick one or two people to come back and share some characteristics of your community.

COMMUNITY 4

INDICATOR	YOUR COMMUNITY	CITY RANGE	RANK Does this seem high, middle or low to you in comparison to the rest of the city?
Percent non-white population	18%	13-71%	

Below 200% poverty level (percent living on an income two times the federal poverty level, or in 2014 approximately \$48,000/year)	22.5%	12-40%	
No college education (percent adults 25 years old and older)	32%	24-72%	
Percent foreign born	11	8-42%	
Exposure to air pollution (diesel particulate matter ug/m ³)	2.2	1.03-2.3	
Risk ranking for confirmed and suspected contaminated sites	18	3-142	
Amount of park area per resident (ft ² /resident)	175	61-1634	
Amount of tree canopy (percent)	8	4-27%	
Heart disease death rate per 100,000	111	104-188	
Child (0-17 yr) asthma hospitalization rate per 100,000	182	129-299	

Questions

- 1) What is the name of your community? (Make up a name)
- 2) Is this community high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

You have about five minutes to come up with some thoughts about this and then pick one or two people to come back and share some characteristics of your community.

Toxic Waste Managers Data

INDICATOR	Community #1	Community #2	Community #3	Community #4	City Range
Percent non-white population	14%	71%	29%	18%	13-71%
Below 200% poverty level (percent living on an income two times the federal poverty level, or in 2014 approximately \$48,000/year)	12%	32%	40%	22.5%	12-40%
No college degree (percent adults 25 years old and older)	32%	72%	24%	32%	24-72%

Percent foreign born	11.6%	42%	15%	11	8-42%
Exposure to air pollution (diesel particulate matter ug/m ₃)	1.03	2.3	1.3	2.2	1.03-2.3
Risk ranking for confirmed and suspected contaminated sites	22	142	22	18	3-142
Amount of park area per resident (ft ² /resident)	1634	454	125	175	61-1634
Amount of tree canopy (percent)	27%	6%	19%	8	4-27%
Heart disease death rate per 100,000	127	123	104	111	104-188
Child (0-17 yr) asthma hospitalization rate per 100,000	161	299	273	182	129-273

Questions

- 1) Which community is high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?

- 2) You will be listening to what the other communities say about themselves to help inform your decision. Where do you think it will be easiest to put the toxic waste with the least amount of opposition?
- 3) Why do you think this community will complain less than the others?

Phase 2 Field Day 4: Friends of the Park

EPA Environmental Priorities:

- 1) addressing climate change and improving air quality
- (2) taking action on toxics and chemical safety
- (3) making a visible difference in communities across the country
- (4) protecting water: a precious limited resource

Goals:

1. Students will explore the concepts of how industry, economic open space and green space can coexist by going on a tour of the Calumet Industrial Corridor.
2. Students will participate in civic engagement by meeting with the Alderperson Susan Garza from the 10th Ward.

Time	Activity	Materials/Notes
9:00am-9:30am	Welcome and grounding FOTP Offices 17 N. State 14th Floor	Icebreaker Have a conversation around community assets in the area and how this positively affects the community: what are some places where people feel safe and welcomed in the community?
10:00 AM-12:30 PM Park Tour (3 Parks)	PSA Workshop: Problem: <ul style="list-style-type: none"> ● Local Conditions in Calumet Area <ul style="list-style-type: none"> ○ Tour around area. ○ Identify Industry Solution: <ul style="list-style-type: none"> ● Create thriving communities by advocating for the clean-up 	<i>*the Chicago Botanic Garden will provide the transportation for the tour.</i>
12:30 PM-1:30 PM	Working Lunch Break	Alderwoman Garza Lunch
1:30 PM-2:15 PM	Action: <ul style="list-style-type: none"> ● If you were a community member what questions would you want answered? 	Alderwoman Office
2:30 PM-3:00 PM	Board Buses	

Phase 2 Lesson Plan 1: Whose Backyard? Toxic Waste Management Meeting and Environmental Injustice

Goal: This interactive “role-play” exercise helps participants examine how the benefits and burdens of society are distributed. It explores the social, political, and economic systems that create inequality based on race and class, and how this can lead to disparate burdens of pollution in communities.

Learning Objectives:

By the end of this lesson plan, participants will be able to:

- List three reasons why people may not participate in decision-making
- List three ways to encourage communities to participate in decision-making
- List three ways communities can make their voices heard

Materials:

- Waste basket (as the metaphor for toxic waste)
- Two to three copies of the worksheets for each of five groups
- Chalk/White board to record the vote

Time required: 120 minutes

Suggested Preparation for the Facilitator Recommended reading:

- Bullard, R. D., (2014, April 21). Poverty, pollution, and environmental racism: Strategies for building healthy and sustainable communities. <http://archive.today/LHBko>.
- Basel Action Network: <http://www.ban.org/> (for country contamination).
Environmental Justice Resource Center Atlanta University website: <http://www.ejrc.cau.edu/>.
- EPA Environmental Justice website: <http://www.epa.gov/environmentaljustice/>.
- Protests in Warren County, North Carolina in 1982 against a landfill contaminated with PCB soils. <https://www.youtube.com/watch?v=1iCxx0BYjgl>

Word Wall:

Environmental racism: “refers to environmental policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race or color. Environmental racism is reinforced by government, legal, economic, political, and military institutions.” (From: Bullard, R. D., Poverty, Pollution, and Environmental Racism: Strategies for Building Healthy and Sustainable Communities. <http://archive.today/LHBko>).

Environmental Justice (EJ): EPA defines EJ as, “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations,

and policies. EPA has this goal for all communities and persons across this Nation. It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.”(<http://www.epa.gov/environmentaljustice/>).

Suggested Preparation for the Facilitator:

- 1) Divide the room into groups of five. (We usually have them count 1, 2, 3, 4, 5 around the room so that participants are not with their friends). Send groups 1-4 to the four corners of the room. Group 5 is the toxic waste management team, who makes the final decision about where the toxic waste will go. Note: if your group is small, the teacher/facilitator can act as Group 5.
- 2) Tell the whole group that they represent specific communities. You are the owner of a waste management company and you are holding a public meeting to help decide where toxic (contaminated) waste should go.
- 3) Place the toxic waste basket in a prominent place and tell them it’s full of contaminated waste that can cause cancer, chronic diseases, and get into the environment through the soils, air, water, etc.
- 4) Hand out community descriptions to each group (below).
- 5) Community 2 is secretly designated as the “vulnerable” community that has not been given the opportunity to vote. You will need to talk with them and make sure they understand their instructions and that they should not speak until given a sign that is it okay to talk (e.g., touching your earlobe).
- 6) Be sure to wander around to each group and answer questions, etc.
- 7) Use a chalk/white board to record responses and votes.

Toxic Waste Placement Meeting

Instructions to class (either print these out or put them up on a projector or board)

Prompt:

- 1) I am the Manager of Waste Management Development Company and we would like to truck a container of extremely toxic waste to one of the communities in the room (meant to represent a city/county/state).
- 2) The toxic waste must go to ONE of the communities in this room. It cannot go anywhere else. It cannot be split up.
- 3) By the end of the discussion, you will have to cast ONE vote per community deciding where the toxic waste will go. Our toxic waste managers (Group 5) will make the final decision.
- 4) This exercise occurs in six parts:

Section 1: Community descriptions. (10 min)

You have five minutes to discuss your community and make up what you want about it. (I have given you a little bit of information about your community in your community sheets that I have passed out). Then be prepared to tell the other communities in the room the following:

1) Given the data in your tables is this community high, middle, or low in terms of:

- a) Income
- b) Race/ethnicity
- c) Speaking other languages than English Levels of pollution
- d) Green space
- e) Health
- f) Levels of pollution

If you reviewed the indicator to show how to rank the indicator as low, medium or high. working with a group that may not be familiar with indicators, they can be at the board at the beginning. In addition, you can draw a line of an example

No college degree – city range is between 24-72%

24% (low) 48% (medium) 72% (high)

If your community is 24% without a college degree, what does that mean?

No college degree – city range is between 24-72% 24% (low) 48% (medium) 72% (high)

If your community is 24% without a college degree, what does that mean?

- 2) Given the information above, pick a name for your community.
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

Section 2: Tell the room who you are (5 minutes each)

Pick one or two people from your group to describe your community. Do not just read off the information that I have given you, be more descriptive/creative.

Section 3: Who gets the toxic waste? (5 minutes)

You have just heard about the other communities in the room. It is now time to come to a consensus about where you want the toxic waste to go. Your community gets ONE vote.

Section 4: Come back and cast your vote (20 minutes)

Pick someone in your community to explain:

Cast your vote on which community should get the toxic waste

Give your reasoning.

Section 5: Waste managers (Group 5): final decision

What is your final decision based on what you read and heard?

Section 6: Discussion (30 minutes)

Facilitator asks participants some of the questions below.

1) To communities 1, 3, 4

- a) What do you think happened?
- b) Why did it happen?
- c) Why did the vote go the way it went?
- d) IF Groups 1, 3, and 4 did NOT vote for the “vulnerable” community, do you think this is what would happen in real life? Why or why not?

2)Waste Managers

- a) Why did you make this decision?

3) “Vulnerable” Community (Community 2):

- a) Tell us who you are. Describe your community.
- b) How did you feel when you were not able to talk?
- c) What were you experiencing (mentally, physically)?
- d) How do you think it affected you to not be able to speak up (individually and your community)?
- e) Was it fair?
- f) What are situations in real life where people might not be able to speak up?

Environmental justice/racism

- 1) Was the meeting fair? Why or why not?
- 2) What was wrong with this meeting?

- 3) What might you do to change the meeting (e.g., interpreters; set up meeting at an appropriate time and place that all constituents can attend; have an “expert” in attendance to explain the contamination problem, etc.)?

- 4) How might you address the problem that communities with EJ concerns are currently living in contaminated areas with more environmental burdens than environmental goods? Think back to Lesson Plan 1: What makes a community healthy?

5) Review the Environmental Justice definition. Does it make sense? What are the main criteria of the definition?

Note: It is worth spending a few minutes working through this definition and how it relates to this example.

6) Think about some (current and past) events where some people are able to vote or not and how it affects what they are able to do with the rest of their lives (having been in prison, identity cards, voting, etc.).

COMMUNITY 1

INDICATOR	YOUR COMMUNITY	CITY RANGE	RANK Does this seem high, middle or low to you in comparison to the rest of the city?
Percent non-white population	14%	13-71%	
Below 200% poverty level (percent living on an income two times the federal poverty level, or in 2014 approximately \$48,000/year)	12%	12-40%	
No college degree (percent of adults 25 years old and older)	32%	32-72%	
Percent foreign born	11.6%	8-42%	

Exposure to air pollution (diesel particulate matter ug/m ₃)	1.03	1.03-2.3	
Risk ranking for confirmed and suspected contaminated sites	22	3-142	
Amount of park area per resident (ft ² /resident)	1634	61-1634	
Amount of tree canopy (percent)	27%	4-27%	
Heart disease death rate per 100,000	127	104-188	
Child (0-17 yr) asthma hospitalization rate per 100,000	161	129-299	

Questions

- 1) What is the name of your community? (Make up a name)
- 2) Is this community high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

You have about five minutes to come up with some thoughts about this and then pick one or two people to come back and share some characteristics of your community.

COMMUNITY 2

INDICATOR	YOUR COMMUNITY	CITY RANGE	RANK Does this seem high, middle or low to you in comparison to the rest of the city?
Percent non-white population	71%	13-71%	
Below 200% poverty level (percent living on an income two times the federal poverty level, or in 2014 approximately \$48,000/year)	32%	12-40%	
No college degree (percent adults 25 years old and older)	72%	32-72%	
Percent foreign born	42%	8-42%	
Exposure to air pollution (diesel particulate matter ug/m ³)	2.3	1.03-2.3	
Risk ranking for confirmed and suspected contaminated sites	142	3-142	

Amount of park area per resident (ft ² /resident)	454	61-1634	
Amount of tree canopy (percent)	6%	4-27%	
Heart disease death rate per 100,000	123	104-188	
Child (0-17 yr) asthma hospitalization rate per 100,000	299	129-299	

Questions

- 1) What is the name of your community? (Make up a name)
- 2) Is this community high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

You have about five minutes to come up with some thoughts about this and then pick one or two people to come back and share some characteristics of your community.

You are NOT permitted to speak to the rest of the class during this entire exercise. Even when I prod you to speak, do NOT respond. You are NOT allowed to vote in Part 2 of this exercise.

COMMUNITY 3

INDICATOR	YOUR COMMUNITY	CITY RANGE	RANK Does this seem high, middle or low to you in comparison to the rest of the city?
Percent non-white population	29%	13-71%	
Below 200% poverty level (percent living on an income two times the federal poverty level, or in 2014 approximately \$48,000/year)	40%	12-40%	
No college degree (percent adults 25 years old and older)	24%	24-72%	
Percent foreign born	15%	8-42%	
Exposure to air pollution (diesel particulate matter ug/m ³)	1.3	1.03-2.3	
Risk ranking for confirmed and suspected contaminated sites	22	3-142	
Amount of park area per resident (ft ² /resident)	125	61-1634	

Amount of tree canopy (percent)	19%	4-27%	
Heart disease death rate per 100,000	104	104-188	
Child (0-17 yr) asthma hospitalization rate per 100,000	273	129-299	

Questions

- 1) What is the name of your community? (Make up a name)
- 2) Is this community high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

You have about five minutes to come up with some thoughts about this and then pick one or two people to come back and share some characteristics of your community.

COMMUNITY 4

INDICATOR	YOUR COMMUNITY	CITY RANGE	RANK Does this seem high, middle or low to you in comparison to the rest of the city?
Percent non-white population	18%	13-71%	

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No college education (percent adults 25 years old and older)	32%	24-72%	
Percent foreign born	11	8-42%	
Exposure to air pollution (diesel particulate matter ug/m ³)	2.2	1.03-2.3	
Risk ranking for confirmed and suspected contaminated sites	18	3-142	
Amount of park area per resident (ft ² /resident)	175	61-1634	
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Heart disease death rate per 100,000	111	104-188	
Child (0-17 yr) asthma hospitalization rate per 100,000	182	129-299	

Questions

- 1) What is the name of your community? (Make up a name)
- 2) Is this community high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?
- 3) Where do you think this community fits in terms of how much decision-making power it has (high, medium, low)?

You have about five minutes to come up with some thoughts about this and then pick one or two people to come back and share some characteristics of your community.

Toxic Waste Managers Data

INDICATOR	Community #1	Community #2	Community #3	Community #4	City Range
Percent non-white population	14%	71%	29%	18%	13-71%
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Child (0-17 yr) asthma hospitalization rate per 100,000	161	299	273	182	129-273

Questions

- 1) Which community is high, middle, or low in terms of:
 - a) Income?
 - b) Race/ethnicity?
 - c) Speaking languages other than English?
 - d) Levels of pollution?
 - e) Green space?
 - f) Health?

11:00-12:00		Tour of Greenhouse and plots
12:00-1:00pm	Lunch Break	
1:00-3:00pm	Action: Planning Charrettes: Urban Agriculture to Scale with job opportunities Nature Conservation Center in Fuller Park	

Phase 2 Lesson Plan 2: Causes of the Causes: What Are the Root Causes of This Problem?

Goal: Participants learn to identify the root causes of a problem and see the connection between proximate and ultimate factors.

Learning Objectives:

By the end of this lesson plan, participants will be able to:

- Diagram the root causes of a problem

- Differentiate between proximate and ultimate causes of a problem

- List three root causes for a problem

Materials:

- Paper (blank)

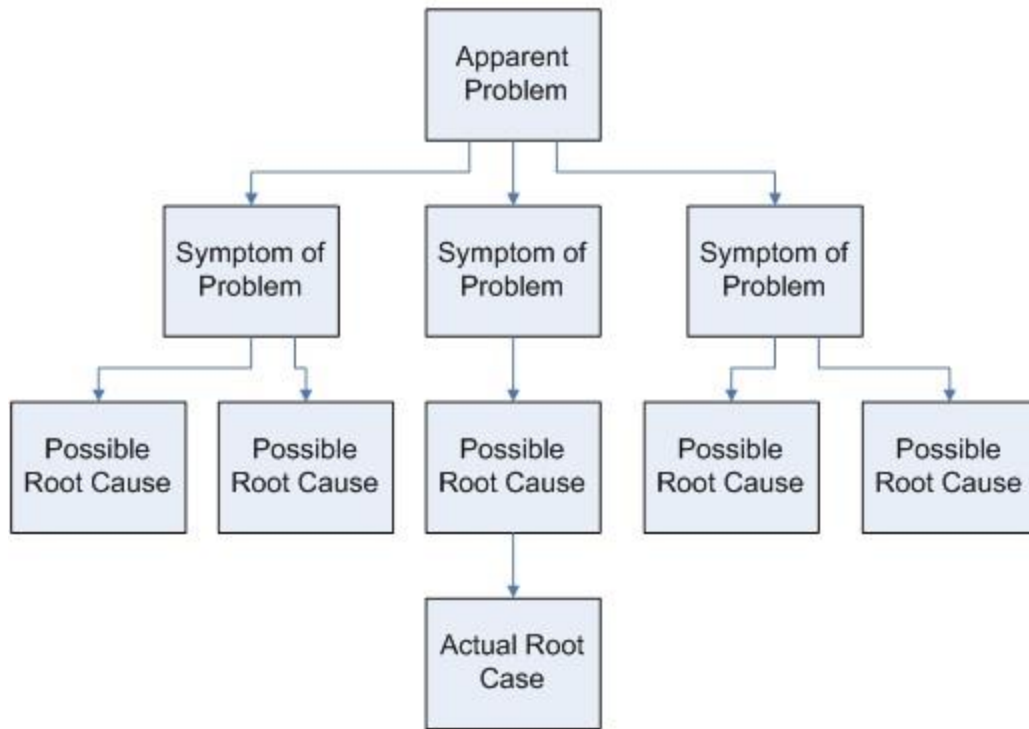
- colored pens, pencils or markers

Time Required: 60min

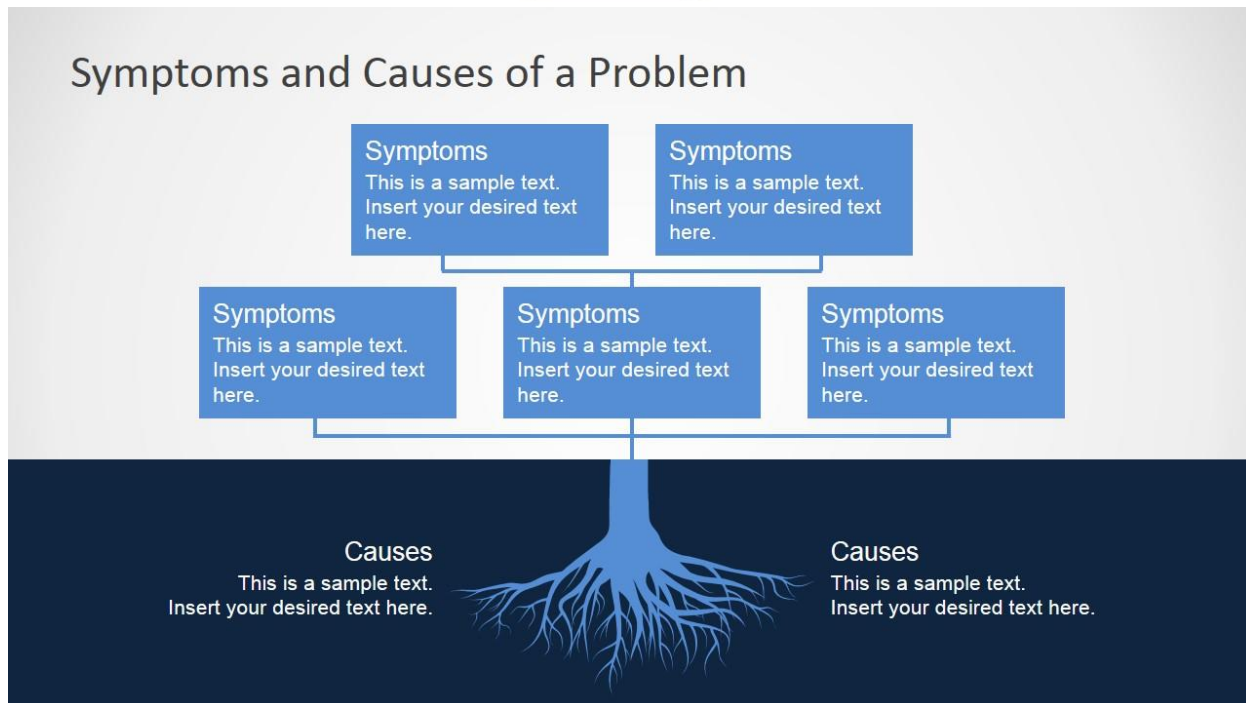
Background: How can you identify the root causes of a problem?

“Causes of the Causes” diagramming is an analysis tool that can be used to parse out the “upstream” contributing factors in any problem. Causal diagramming aids in critical thinking by helping people analyze issues beyond their most obvious, immediate causes. Causal diagramming also assists in discussing controversial or highly charged issues because through diagramming, people readily identify causes that extend beyond individual behaviors. This makes it an effective tool for discussing social issues without resorting to over-simplified victim blaming.

Root Cause Analysis Tree Diagram



Symptoms and Causes of a Problem



Suggested Preparation for Facilitator:

Marmot, Michael, Social Determinants of Health Inequalities, Lancet 2005, 365:1099-104.

Rakku's story, from Questioning the Solution by David Werner.

http://www.healthwrights.org/hw/content/books/QTS/qts_ch01.pdf

Activity Instructions:

1) Class/group exercise:

- a) Start with an example, using a simple poem called "Why is Juan in the Hospital?," which is read out loud to the participants.

Why is Juan in the hospital?²

"Why is Juan in the hospital?

Because he has a bad infection in his leg.

But why does he have an infection?

Because he has a cut on his leg and it got infected.

But why does he have a cut on his leg?

Because he was playing in the junkyard next to his apartment building and there was some sharp, jagged steel there that he fell on.

But why was he playing in a junk yard?

Because his neighbourhood is kind of run down. A lot of kids play there and there is no one to supervise them.

But why does he live in that neighbourhood?

Because his parents can't afford a nicer place to live.

But why can't his parents afford a nicer place to live?

Because his Dad is unemployed and his Mom is sick.

But why is his Dad unemployed?

Because he doesn't have much education and he can't find a job. But why ...?"

Diagram Juan's situation.

i) The facilitator draws the causal diagram for Jason's infection on the board in stepwise fashion. Start with "Juan in the hospital" at the bottom of the board and then begin to ask a series of "why" questions to generate the next level of causality.

ii) Prompt: Why is Juan in the hospital? Participants yell out: Because he has an infection in his leg.

iii) Prompt: Why does he have an infection in his leg?

iv) In the case of the Juan poem, all of the answers are contained in the poem. Once you get to the end of the poem, you can lead the group in asking more questions, such as “what might be some reasons that Jason’s dad doesn’t have a job?”

v) Causal diagramming can continue until the participants run out of answers to the next series of “why” questions. Oftentimes, there might be many answers to a “why” question. The idea is to write all of them down and then continue down one “branch” until the “whys” are exhausted. Then go back to another branch, and so on.

2) Individual specific cause diagramming exercise:

a) Prompt: We are now going to draw our own causal diagrams for Problem _____. There is no “correct” format for diagramming – you can invent your own way to draw the causal chains. The most important part of the exercise is that you try and go as far upstream as you can in asking “why” questions.

b) Individual problem:

- What is an issue you are working on or that you are passionate about? What are the determinants (root causes) of the problem you are working on? Diagram it on a blank piece of paper.

c) Group problem:

- In your Project Crew look at your Community Partner

3) Sharing diagrams and concluding thoughts:

Prompts:

- a) Are there a few common root causes that are common over all or most of the diagrams that we have reviewed?
- b) Are there some causes that seem more important to address than others? If so, you could make those lines heavier on your diagram.
- c) Do you know if there is evidence that some root causes have more impact than others?
- d) Now that you think about these root causes, how has this diagramming changed your perspective on the problem you drew? (e.g., victim blaming)
- e) If you want to take action on a root cause in your community, which one would you pick and what are some things that you and your community could do? What about taking action on root causes farther upstream? What do you need to do? (e.g., collaborate with others)

Phase 2: Field Day: American Indian Center

Supplies:

- Sunflower planting bio-remediation

EPA Educational Priorities:

- Increasing public understanding of the benefits of and participation in environmental and conservation stewardship through community collaboration on:
 - Land Use
 - Water and soil quality issues
 - Food waste management
 - Increase of locally sourced food in farm to table systems
 - Management of ecosystem health through soil remediation

EPA Environmental Priorities:

- (1) addressing climate and improving air quality
 - Prairie land restoration
- (3) making a visible difference in communities across the country
 - Using art to identify and reclaim Native Territories
- (4) protecting water: a precious limited resource.
 - Northwest Portage Walking Museum

Goals:

1. Students will explore the concept of Ecosystems through an Indigenous lens.
2. They will learn about Indigenous Sovereignty and how it relates to land use.
 - a. Indigenous Sovereignty, Land Sovereignty-
 - Native Ecosystems:
 - Native food:
 - Native medicine:
 - Native animals:
 - Language:
3. Students will learn about the local Indigenous communities from the Chicagoland region and about native plant species.

Research Project to be completed:

- Traditional ecological knowledge undervalued why western ways of science is valued Look at the Native Hawaiian plant, as a case study to explore whether taking measures to put the plant in a controlled environment helped?

Workshop Outline:

Time	Activity	Materials/Notes
9:00am-10:00am	Welcome and grounding	<p>Icebreaker: Weaving Our Own Stories</p> <p>Students will be divided into teams by birth month. (Ideally students will be divided into groups of 5-8)</p> <p>Participants are tasked with creating a story from a set of pictures. The pictures are randomly ordered and handed out. Each person has a picture but cannot show it to others. Participants will split into equal groups and line up facing another other team. The line leader from group 1 will flip their picture and begin to tell the story the next participant will add to the story by flipping their picture and incorporating it to the story's ongoing narrative this action will repeat until everyone in the group has flipped their picture. The next group will repeat the process.</p> <p>This activity will help students understand how narratives are shaped by perception instead of reality.</p>
10:00 am-11:00am	<p>PSA Workshop:</p> <p>Problem:</p> <ul style="list-style-type: none"> ● Colonization <p>Solution:</p> <ul style="list-style-type: none"> ● Indigenizing land-use practices ● Indigenizing Science <p>Action:</p> <ul style="list-style-type: none"> ● Indigenizing Land-use ● Indigenizing Science 	<p>Students will explore their own identity and history by being the first person narrators of how they are connected to Chicago (the land they live on). Through conversational practices participants will engage in a deeper understanding of place making and belonging.</p> <p>-Expected Themes</p> <ul style="list-style-type: none"> ● Land Use ● Migration ● Immgration ● Force removal/gentrification ● Capitalism/Economic Status/Urbanization/Industrialization ● Racial/Ethnic/Cultural Ways of Knowing

11:00am-12:00pm	<p>Tour First Nations Garden</p> <ul style="list-style-type: none"> ● understanding the environmental degradation of Chicago's Indigenous Landscape ● Engage participants in understanding the benefits of and participation in environmental and conservation stewardship ● Identifying native medicinal plants and how to relate to the plants. ● Identifying invasive species and how they disrupt healthy native ecosystems 	<ul style="list-style-type: none"> ● Grounding exercise students will be asked to sit in different areas of the garden and answer some questions about what experiences they had during the breakout session
12:00pm-1:00pm	Lunch Break	Lunch will be in the Wigwam students may feel free to bring blankets and/or towel to sit on as seating is limited in the space
1:00pm-2:00pm	<ul style="list-style-type: none"> ● Conversation around the impact of lead in our environment ● Phytoremediation <ul style="list-style-type: none"> ○ Sunflower planting to help reduce the amount of heavy metals in the soil 	Sunflower seeds Hand Tools Gloves
2:00pm-3:00pm	<p>Learn how the American Indian Center is working in solidarity with multiple partners to develop collaborative efforts focused on activating public lands</p> <ul style="list-style-type: none"> ● Using art and green infrastructure to identify and reclaim Native Territories ● addressing climate and improving air quality <ul style="list-style-type: none"> ○ Prairie land restoration ○ Increasing Food literacy and reducing food waste 	Fawn share how young people from the Garden can help prepare a project that supports AIC.

Phase 2 Lesson Plan 3: What Makes a Community Healthy?

Goal: Participants will learn about what is and isn't healthy in their community and develop some ideas about what they could do to fix the unhealthy problem/s.

Learning Objectives: By the end of this lesson plan, participants will be able to:

- Explore how indicators measure health at different levels
- Identify healthy and unhealthy locations in your community
- List some ideas on how to improve the unhealthy areas

Materials:

- Colored pencils/pens (green and red) or markers
- Tape for hanging maps

Time Required: 90 minutes

Background:

The mapping exercise is useful because it assists the students in:

1. Identifying community problems
2. Identifying where the problems are occurring on a map that others can see.
3. Prioritizing where she/he can see her/himself taking action.

It probably comes as no surprise that youth's perspective of a healthy environment focuses on different places than adults. For example, youth want safe, clean places to "chill" and often prioritize parks when considering what constitutes a healthy environment.

Word Wall:

Indicator: "a sign that shows the condition or existence of something" (<http://www.merriam-webster.com/dictionary/indicator>). For example, blood pressure is used as an indicator for individual health.

Poverty level: A minimum level of income deemed adequate to live. In year, for a family of four the federal poverty level was approximately \$X/year.

Built environment: The human-made space in which people live, work, and recreate on a day-to-day basis. (http://en.wikipedia.org/wiki/Built_environment).

Toxic Release Inventory site: Facilities in certain industry sectors that manufacture, process, or use chemicals in amounts above an established level must report how they are managed

(<http://www.epa.gov/enviro/facts/tri/>).

Cumulative: Increasing or becoming better or worse over time through a series of additions; including or adding together all of the things that came before (<http://www.merriam-webster.com/dictionary/cumulative>).

Disproportionate: A difference that is not fair.

Activity Instructions:

- 1) What makes something healthy and how do you measure it?
- 2) (10 minutes) Facilitated discussion with a progression of the following questions:
On the board list these ideas in a table with three columns (see below).

Prompts:

- a) What do you do to make yourself healthy/unhealthy? How do you measure it? From this discussion, the group will say things like diet, exercise, don't do drugs....). The second question (third column) will identify individual-level health indicators such as body weight, blood pressure, heart rate, pulse, etc. These are called indicators.
- b) What is healthy or unhealthy about your school? How do you measure it? From this discussion, participants will identify indicators such as facility quality, good or bad teachers, graduation rates, amount of graffiti, amount of bullying, etc.
- c) What is healthy or unhealthy about your neighborhood? How do you measure it? From this discussion, participants will identify indicators such as amount of trash, pollution, gangs, places to "chill," etc.

Note:

Indicators to measure your individual health versus school health versus neighborhood health are different, although some indicators in the school and community may overlap.

Mapping the health of your community (**30 minutes**) Provide regular, green and red pencils/markers

	Healthy/unhealthy?	How do you know? (indicators)
Individual		

School		
Neighborhood		

Community map:

Each student will be given **10min** to draw a picture/sketch of their community and then proceed as described below.

What makes your community healthy/unhealthy?

Ask:

What makes your community HEALTHY?

- Using a green pencil, draw a picture and/or write on the map the activities, actions, physical spaces that makes your community healthy and a happy place to live.

What makes your community UNHEALTHY?

- iv) Using a red pencil, draw a picture and/or write on the map the activities, actions, physical spaces that makes your community unhealthy and damages/hurts the community.

Present your community: Students present healthy and unhealthy aspects of their community/ies.

Action (20 minutes)

You are the community's youth ambassadors, and you are going to take action to improve some of the unhealthy problems in your community. Using your maps, make a list of the issues that concern you in column 1, what are possible solutions in column 2, and then rank how easy they would be to fix in Column 3. Star or highlight one or two that you are most interested in working on.

What are some similarities and differences?

Unhealthy Issue (from maps)	Action What could you do to fix the problem? (there may be several solutions)	Action (easy, medium, hard)

Phase 2: Field Day: Eco-House

EPA Educational Priorities:

- Increasing public understanding of the benefits of and participation in environmental and conservation stewardship through community collaboration on:
 - Water and soil quality issues
 - Management of ecosystem health

EPA Environmental Priorities:

- (1) addressing climate change and improving air quality
 - Local closed loop sustainable economy vs global extractive economy
 - Carbon neutral system
- (2) Land use
- (3) making a visible difference in communities across the country
 - Creating sustainable entrepreneurial opportunities
- (4) protecting water: a precious limited resource.
 - Rainwater catchment system to irrigate plants

Goals:

1. Students will have a hands-on experience of participating in sustainable entrepreneurship. They will help plant flowers, learn about water conservation, sustainable agriculture and learn the connections and impacts between localized economies and globalized economies.
2. Students will get a tour of EcoHouse and learn about Sustainable Entrepreneurship
3. The students will explore the concept of ecosystems and how it relates to land-use.
4. Students will take a soil sample to and that will be sent to a testing lab

Workshop Outline:

Time	Activity	Materials/Notes
9:00am-9:30am	Welcome and grounding	Location: Englewood (6439 S Peoria Street) Break into two groups and do quick introductions
9:30am-11:00am	PSA Workshop: Problem: <ul style="list-style-type: none">● Local Conditions in Englewood<ul style="list-style-type: none">○ Tour around area.○ Identify abandoned lots● Scarcity in local employment opportunities.● Context on Flower Industry and its global impacts<ul style="list-style-type: none">-Land intensive-Water intensive	

	<p style="text-align: center;">-Carbon Intensive</p> <p>Solution:</p> <ul style="list-style-type: none"> ● Create viable local economic opportunities ● Reclaim vacant lots ● Sustainable Entrepreneurship 	
11:00am-11:30am	Travel to Woodlawn site (6027 S Vernon Ave)	
11:30am-12:30pm	Lunch Break	Seating area
12:30 PM-1:30 PM	<p>Action:</p> <ul style="list-style-type: none"> ● Painting Fence 	<ul style="list-style-type: none"> ● Flowers to plant (this comes out of the budget each organization was granted, there are some flowers that can come from BG will need to coordinate with Beatriz). Also, students will help with moving wood chips to help beautify the flower farm.
2:00pm-2:30pm	Research Project overview	Students take water and soil samples to take back to get tested

Phase 2: Lesson Plan 4

Lesson Plan: How are Equality and Equity Different?

Goal: Participants will be able to distinguish between equality and equity

Learning Objectives:

By the end of this lesson plan, participants will be able to:

- Explain equality and give at least one example
- Explain equity and give at least one example
- Discuss the benefits of equitable solutions for diverse communities

Materials:

Pen, pencil, colored pencils Paper

Time Required: 40 minutes

Background:

Think back to the first day when we explored the concept of Environmental Justice and we saw an example of how equity is different than equality. Equity and equality are related terms and often used as synonyms, but since the word equity is appearing more and more in the news and in policies, it is important to distinguish between the two. Whether one is listening to the radio, reading the newspaper, or attending a conference, we are hearing “calls to action” such as “we need gender equity,” “embrace racial equity” or “we demand education equity.”

“Equity is the process and equality is an outcome.” In other words, “equity is essential to achieve true equality” (<http://edglossary.org/equity/>). The Race Matters Institute says, “The route to achieving equity will not be accomplished through treating everyone equally. It will be achieved by treating everyone equitably, or justly according to their circumstances (<http://racemattersinstitute.org/blog/Racial-Equality-Racial-Equity-Whats-the-Difference-What-Difference-Does-It-Make>).

Note: Environmental justice and environmental equity are not interchangeable and a nuance that is not parsed out in this curriculum. The Principles of Environmental Justice, as they were written by the Delegates to the First National People of Color Environmental Leadership Summit in October, 1991 (<http://www.ejnet.org/ej/principles.html>), is a rights-based declaration for ALL peoples. It covers many important issues related to the environment including but not limited to: the sacredness of Mother Earth; the protection of Native Americans; the opposition to land exploitation; the experimental medical testing on people of color; etc. (the document is

extraordinarily inspiring and could be a wonderful lesson plan all by itself). On the other hand, achieving environmental equity is a smaller piece that aims for actions that can remedy disproportionate impacts and establish inclusive, collaborative decision-making.

Word Wall:

Note: it is hard to find a good definition for equity versus equality without a preceding descriptor (e.g., education, gender, racial). We would like to recommend that posting equality and equity examples (sentences and pictures) on the word wall may be very helpful.

Equality: “the quality or state of being equal: the quality or state of having the same rights, social status, etc.” (<http://www.merriam-webster.com/dictionary/equality>)

Equity: “fairness or justice in the way people are treated” (<http://www.merriam-webster.com/dictionary/equity>).

“Everyone has an equal opportunity to attain their full potential. It implies a need for fairness in the distribution of benefits and burdens, and the entitlement of everyone to an acceptable quality and standard of living”(<http://www.kingcounty.gov/elected/executive/equity-social-justice/tools-resources.aspx>).

Teacher/facilitator preparation:

Kids at a baseball game example: The graphic shown below is quite well known and commonly used when teaching equity concepts. On the left, three kids are watching a baseball game from behind a fence: all three are given the same size box (equality) to stand on but only two can see the game over the fence. Equality only works if all three children are the same height. In the picture on the right, equity (fairness) is promoted because the shortest child is given a second box to stand on so he can also see the game.

Activity Instructions:

1) Equality versus equity(15 minutes)

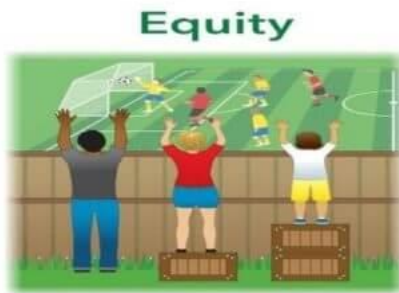
Prompt:

- a) When I show the picture below, what do you see? (all three children have the same box despite the differences in their height - equality.
- b) Does it seem fair? What is unjust about it? (An equal distribution of resources does not necessarily achieve an equal outcome)
- c) If the picture doesn't seem just, how could you fix it so it would be more fair?(Give the shorter child the tall child's box so that he can see the game too - equity)

- d) Why do you think the fence is there? Who do you think built it? Does it have to be that tall? Does it have to be there at all?
- e) Imagine that the fence is a metaphor for the shorter child's life experiences. What are some examples of resources that some kids have that others lack? (education, parks, wilderness, cell phone)



Equality
The assumption is that everyone benefits from the same supports. This is equal treatment.



Equity
Everyone gets the supports they need (this is the concept of "affirmative action"), thus producing equity.



Justice
All 3 can see the game without supports or accommodations because the cause(s) of the inequity was addressed. The systemic barrier has been removed.

2. (In)Equality versus (In)Equity examples

Prompt:

Now we are going to do some real life examples that are a little bit harder (see worksheet below, there is a teacher worksheet with sets of examples at the end)

3) (In)Equality vs (In)Equity Exercise (20 minutes)

Instructions: Review the examples below. Does the situation described seem fair? How is it unjust? If it doesn't seem fair, what are some things that could be done to make it more just (equitable?). Note: there might be different solutions to reach an equitable solution.

Example	Fair? If not, what could be done to make it more just (equitable)?
A city has three times more park space per resident on the north side than on the south side.	

Access to computers and to the internet is not the same in all schools in the city.	
A city is having financial problems and has made a decision to cut its budget for its 25 community centers. It cuts the budget by having the same reduction in closing hours for all centers.	
A community with lower income and a higher percentage of people of color compared to the rest of the city has the highest air pollution levels and the highest asthma hospitalization rates in the city.	
A meeting has been planned to discuss the cleanup of a contaminated site in a community; it will be held in English. However, approximately 25% of people in the community do not speak English as a first language.	
One community has less access to healthy and affordable food than the rest of the city and has requested funding and assistance to build a community garden. The City has recognized that there is an issue of historically unequal treatment in this neighborhood and has agreed to the request.	
Develop your own example	

Teachers guide: Participants may have multiple ideas on how to respond

Example	Fair? If not, what could be done to make it more just (equitable)?
A city has three times more park space per resident on the north side than in its south side	No. Develop more park space in the southern part of the city

Access to computers and to the internet is not the same in all schools in the city.

No.

Give more money to schools where there are less computers or less access to the internet
Make sure that computer labs stay open for kids who may not have computers at home.

A city is having financial problems and has made a decision to cut its budget for its 25 community centers. It cuts the budget by having the same reduction in closing hours for all centers.

No.

This is equal treatment but it assumes that all community centers need the same hours.
Determine which communities might need more hours due to other concerns

<p>A community with lower income and a higher percentage of people of color compared to the rest of the city has the highest air pollution levels and the highest asthma hospitalization rates in the city.</p>	<p>No.</p> <p>Government agencies work to reduce pollution in that area by tightening regulations Support the affected community to address pollution concerns</p>
<p>A meeting has been planned to discuss the cleanup of a contaminated site in a community; it will be held in English. However, approximately 25% of people in the community do not speak English as a first language</p>	<p>No.</p> <p>Hire translators Have one meeting in another language</p>
<p>One community has less access to healthy and affordable food than the rest of the city and has requested funding and assistance to build a community garden. The City has done some research and found that this area has a history of unequal treatment and agreed to the request.</p>	<p>Yes.</p> <p>The City is responding to fairness concerns. But this does not absolve them from solving other issues of inequity in the community</p>
<p>Develop your own example</p>	

3. Make up your example of (in)equality and (in)equity (20-30 minutes)

Note: This is great on index cards. The best ones can be attached to the Word Wall. Hand out two index cards per person.

Prompts:

- a) Put together your own examples. On one index card, write one sentence that describes (in)equality; and on another index card, write a sentence that describes (in)equity.
- b) Share (read out loud) with a partner to review your examples. Make sure they make sense and revise, if necessary.
- c) Share one of the sentences with a group of 4-5 people and vote on the group favorite to share with the larger group.
- d) Pick someone from your small group to read your favorite out loud to everyone.
- e) Attach class favorites to the Word Wall

Phase 2 Field Day 4: Friends of the Park

EPA Environmental Priorities:

- (1) addressing climate change and improving air quality
- (2) taking action on toxics and chemical safety
- (3) making a visible difference in communities across the country
- (4) protecting water: a precious limited resource

Goals:

1. Student will explore the concept of land-use by observing how industry, economic open space and green space can coexist by going on a tour of the Calumet Industrial Corridor.
 2. Students will participate in civic engagement by meeting with the Alderperson Susan Garza from the 10th Ward.
- Parcel used for park use adjacent to water.
 - FOIA data
 - Parks connected to Lakefront and how
 - Sampling of water quality what is being found?
 - Sampling of soil, in Cal Park, areas that are right by combined disposal facility.
 - Rainbow Beach- tour, not always and integrated beach, take them along lakefront, different parcels, steel workers,
 - Water sample and soil sample at Calumet Beach

Research Project to be completed:

Time	Activity	Materials/Notes
9:00am-9:30am	Welcome and grounding	Icebreaker <i>*does Friends of the Park have a signature or favorite icebreaker/opening you all do? If not, please let me know so I can make sure to include one.</i>
10:00 AM-12:30 PM Park Tour (3 Parks)	PSA Workshop: Problem: <ul style="list-style-type: none"> ● Local Conditions in Calumet Area <ul style="list-style-type: none"> ○ Tour around area. ○ Identify Industry Solution: <ul style="list-style-type: none"> ● Create thriving communities by 	<i>*the Chicago Botanic Garden will provide the transportation for the tour.</i>

	advocating for the clean-up	
12:30 PM-1:30 PM	Working Lunch Break	Alderwoman Garza Lunch
1:30 PM-2:15 PM	Action: <ul style="list-style-type: none"> • If you were a community member what questions would you want answered? 	Alderwoman Office
2:30 PM-3:00 PM	Board Buses	

Phase 2: Lesson Plan 5:

Lesson Plan: Environmental Justice Matters: Mapping Environmental Justice Impacts

Goal: Using maps and a variety of indicators, participants will evaluate whether different parts of Chicago have disproportionate environmental burdens and benefits in some geographic areas relative to others in order to make an environmental justice determination.

Learning Objectives:

By the end of this lesson plan, participants will be able to:

- Compare Chicago neighborhoods (ZIP code) using a variety of indicators
- Discuss whether environmental benefits and burdens in Chicago are equally and/or equitably distributed.
- Explain why ZIP code 60623 identifies as an EJ community

Materials:

Laptops, Phones, iPads the [EJ Screen Tool](#)

Time Required: 120 minutes

Background: This mapping exercise gives participants the opportunity to qualitatively distinguish a variety of environmental benefits and burdens in the city of Chicago by comparing multiple indicators (e.g., toxic waste, asthma) using a ranking method.

Note: There may be participants who come from areas of Chicago (ZIP codes) that are disproportionately burdened compared to other parts of the city, and they may feel uncomfortable. It is recommended to open the exercise by explaining that some of the facts that will be reviewed today may be startling and may make some people feel uncomfortable or sad. In addition, it is recommended that the purpose of the exercise be explained clearly. The purpose is to examine unfair differences in Chicago and explore ways to remedy these inequities. In addition, this case study provides the evidence for taking action.

Word Wall:

Review from earlier lesson plans:

- Indicator
- Equality/equity

New terms:

Poverty level: A minimum level of income deemed adequate to live. In year, for a family of four the federal poverty level was approximately \$X/year.

Built environment: The human-made space in which people live, work, and recreate on a day-to-day basis. (http://en.wikipedia.org/wiki/Built_environment).

Toxic Release Inventory site: Facilities in certain industry sectors that manufacture, process, or use chemicals in amounts above an established level must report how they are managed (<http://www.epa.gov/enviro/facts/tri/>).

Cumulative: Increasing or becoming better or worse over time through a series of additions; including or adding together all of the things that came before (<http://www.merriam-webster.com/dictionary/cumulative>).

Disproportionate: A difference that is not fair.

Activity Instructions: Mapping Chicago neighborhoods (60 minutes)

1) Prompts:

2) Opening: How do you think that your ZIP code can affect the quality of your life?

- a) What do we remember about the word indicator (from Lesson Plan 2). What were some indicators (measurements) that we used to describe what is and isn't healthy in our neighborhood?
- b) What do we remember from our toxic waste management meeting (Lesson Plan X)?
- c) What examples do we remember about [equality versus equity](#) lesson
- d) What would you think if you found out some of these indicators are different (not equal) in some neighborhoods (ZIP codes) in your city compared to others?

Indicator map exercise

Prompt:

Using indicators, we are going to investigate whether some neighborhoods (ZIP codes) are different in the City of Chicago compared to others (we can decide later whether these differences are unequal or inequitable). Each category has three indicators (or measurements) that you are going to color in on a map.

Example projected:

What patterns do you observe on the maps?

Where do people with low versus high ranking live?

Is there anything on these maps that surprise or concern you? Why or why not?

4) Cumulative effects

Prompt: If you added up all of the indicators (cumulative effects) that you are observing, what do you think that means in terms of overall health? Do you think that people live longer in a ZIP code where there are more benefits? Why or why not?

5) Environmental Justice

Prompts:

- a) Recall the Environmental Justice definition
- b) What is the difference between ZIP codes in terms of income? Race?
- c) What are the demographics of the communities with more pollution?
- d) Could you make an argument that the community with the most environmental burdens is disproportionately burdened compared to the rest of the Chicago? Why or why not?

6) Equality versus equity

Prompts: When you think about what you have seen today on the maps, do you think it is fair that some ZIP codes are better places to live than others? Why or why not? What can be done?.

7) Closing

We are going to review these maps in more detail in our next session and we will also talk about how communities are taking action to change these conditions.

Phase 2 Field Day: Alliance of the Southeast

Phase 2: Lesson Plan 6: Mapping Cumulative Impacts

Goal: In order to make an environmental justice determination, participants will use a cumulative impacts method to quantify and confirm whether different parts of Chicago have disproportionate environmental burdens and benefits in some geographic areas relative to others.

Learning Objectives:

By the end of this lesson plan, participants will be able to:

- Explain a method for calculating cumulative impacts in Chicago
- Describe why ZIP code X where your community partner is could be identified as a community with EJ concerns
- Discuss the root causes of environmental injustice
- Discuss ways to take action to collaborate with burdened communities to improve health

Materials:

Laptops or phones to use the EJ Screen Tool. Each group (five groups) will be working on their assigned community partner.

Time Required: 180 minutes

Background: This lesson plan gives participants the opportunity to use a quantitative method to assess whether the ZIP codes of their community partners can be considered a community with EJ concerns. Use an EPA impacts method with the EJ Screen Tool to provide more concrete evidence that these areas merit attention from decision-makers regarding health protective and proactive environmental regulations, policies, practices, and actions. Although it is well known that the City of Chicago has some areas that are disproportionately burdened by several environmental factors compared to others, having some quantitative evidence alone does not appear to be sufficient proof for action without more quantitative evidence.

Word Wall: (**many of these have already been covered in other lessons*)

Indicator

Environmental Justice

Toxic

Equality/equity

Poverty level

Built environment

Toxic Release Inventory site

Cumulative

Disproportionate

Activity Instructions:

1. Revisit EJ Screen tool and vocabulary:

Environmental Justice, cumulative, equity (see above) Cumulative Impacts

Proving it Prompt: Last time we looked at the EJ Screen tool, it appeared that some neighborhoods (ZIP codes) are worse than others for many indicators. How would the community raise awareness about this inequity? What if a person, for instance, a City of Chicago council member who has influence to make change said something like: "These results don't seem very measurable. If you use more science to prove that this is a problem, I will do something about it." How would you propose to do this?

Cumulative Health Impact Analysis Prompt: To give us a more concrete way of comparing these neighborhoods, we have a formula for finding the cumulative impact of these different factors. Write the formula on the board

Cumulative impact = social vulnerability x environmental vulnerability

In this equation: Social vulnerability = socioeconomic factors + sensitive populations
Environmental vulnerability = environmental exposures + environmental effects + public health effects

1. Discussion

- a) What does it mean to have qualitative (descriptive) versus quantitative (measurable) information about a subject?
- b) Why are these neighborhoods different?
- c) Burden of proof: Why does a community who has been disproportionately impacted have to prove they have more environmental burdens in order for a city, county or state to take action?

2. Action- How could action be taken at several levels to make things more equitable?

- a) What power does the community have to eliminate disparate environmental problems?
- b) What power does the city have to address these problems?
- c) What power does the county have to address these problems?
- d) What power does the state have to address these problems?

Phase 2 Field Day: Alliance of the Southeast

1. Introductions (3 min)

2. Goals: (2 min)

- a. Update on developments
- b. How to move an issue
- c. Brainstorm

3. Updates on developments from last time (10 min)

- a. General Iron
- b. Invest South/West

4. How to move an issue (Use General Iron as example) (30 min?)

- a. Defining the issue & what you want
 - i. Problems vs. issues
 - 1. ASK: What are problems? What are issues?
 - ii. SMART
 - iii. 3 questions
 - 1. Check in
 - b. Understanding our power (we can't do it alone)
 - i. ASK: How many people -do something on your own? What happened?
 - c. Moving your issue
 - i. Build your base- Community Outreach, Work with allies
 - ii. Meeting with decision-makers
 - iii. Moving your issue- Make it public, get a wider audience, understand who your decision-maker is (power analysis)
5. Brainstorming (20 min?)
- a. What's an issue in your community or in Chicago that you'd like to work on?
 - b. Ways that youth can be involved in issues

Conclusion:

Youth voice should always be part of environmental decision making in their communities. Through this curriculum, the Science Career Continuum hopes to shed light on the ongoing environmental justice efforts in Chicago. Specifically honoring the many community leaders of all ages and backgrounds who have dedicated their lives to these efforts. Thank you to the community partners, program instructors, youth participants, Garden staff and curriculum writer who contributed to and shaped this curriculum.

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