

# Compounded Environmental Injustice requires Compounded Solutions

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## Abstract

This is a unit designed for a 12th grade Social Science class. Students will learn about environmental overburden in vulnerable communities, investigate why these communities get stuck with the burden. Throughout this course I have learned specifics that clarify more of the extent of the problem with abuse of the environment and lack of protection particularly for communities of color and communities with economic burden. The course has also offered hope in the form of successful leverage, through democratic processes, by communities against these unfair pressures. After we investigate some of the problems, we will focus on empowering solutions by framing out what a citizen can expect from government to address issues like these as well as how a citizen can leverage their voice through collective will to extract change.

## *Narrative*

The essential questions I came up with for this unit were: What is environmental justice? What obligation does government have to insure it? What factors need to be assessed to answer those questions? What tools do citizens have to insure it? (Landrigan et.al,2010)

I intend to begin with “What is environmental justice?” by using the non-examples and group thought. Students will research the term for 2 minutes on the internet because that is a habit of theirs that proves helpful in framing anything unfamiliar. Then they will share their

learning both by speaking to partners to further clarify their conception of “environmental justice” and allow for processing time to make connections in their minds. Finally, students will share their learning collectively on the jamboard so that we come up with a group thought on what EJ is. I will teach about inequity through the use of examples of environmental overburden leading to environmental health problems with the hope that it will raise awareness while giving context to the urgency needed for students to understand how they can participate in the governance process to improve public policy. Slide 2 of my deck provides an example of local environmental racism with specific data and factors that add to its compounded unfairness. I will ask students to predict why economically disadvantaged communities have historically had inadequate access to decision making processes that compound environmental hazards they have to live with. Next, we will look at 2 examples of what the government has done about it so far. Then, students will have to decide if the government has met its responsibility to protect the general welfare, if the answer is no, they will begin deciding what standards their government is responsible for. Slide 5 contains some of the effects of unfair burden on local communities of Philadelphia and Chester. This course has awakened my interest in environmental racism, as communities of color have more hazards in the form of more industry and waste facilities, less amenities like parks and open space, less access to the decision making process, epistemic burdens as their educational systems more often focus on standardized tests and without adequate resources, do not adequately teach how to advocate within local government. The threshold that most organisms have to repair or adapt to hazards imposed by pollution cannot withstand these pressures, and the results of these burdens turn into high asthma rates, elevated blood lead, higher cancer rates, and higher death rates for heart attacks and strokes (Landrigan et al., 2010, Rumph et al., 2022). I learned that hospitalization for Asthma in Philly is twice as high

as the next county and there is a strong correlation to lung cancer and economic depression. Asthma rates in children are 21% for Philadelphia and 5.8% in the US (Bryant-Stephens, 2012). Children are particularly effected as they are still developing. For example, they breathe more air in proportion to their bodies (American Academy of Pediatrics) and the blood brain barrier does not close until 2-3 years old (American Academy of Pediatrics). In short, they are overburdened and there is no formula to mitigate over burden by the EPA in air regulation through the Clean Air Act. In some ways, as we know better, the government has done better. The EPA has created a tool to filter complaints and be transparent about facilities it monitors (<https://www.epa.gov/ejscreen>). Students will use Jamboard to collectively accumulate data points that allow the class to begin investigating and deciding their assessments on the extent of environmental racism in Philadelphia. Students will also list factors that lead to compounded health problems so that, if they choose to attack such a comprehensive issue, they may approach it through more manageable lenses, such as those listed in slide 8 of my slide deck. Slide 9 asks students to use another tool funded by the Department of Environmental Protection, that creates a data filter over a map that allows users to easily collect location specific data on health hazards. Students will use it to group think and evaluate the pressures on localities, asking themselves “which places in PA seem to be in the most need of protection? How often are these racially segregated or economically depressed areas” while seeing the real time accumulation of evidence in the jamboard. This tool will be revisited when we cover the 8 characteristics of good government, and one of them is transparency. All of these class activities will culminate in individual submissions of a report card for our local government, measuring its performance of “environmental justice”. Students must decide what 5 criteria the government is responsible for, and then grade them in those categories based on the data they’ve collected.

Our next investigation will ask: What is environmental racism's cost on communities of color? I will give examples drawn from this course illustrating how racism contributed to the lack of attention to health concerns that were being reported by the public health community. Students will be in groups of 7, each asking one of the following questions and adding their data in a publicly shared live google doc: 1. How does political engagement protect against environmental overburden? Or lack of engagement lead to overburden? 2. What are the physical effects of overburden? 3. How does racism cause overburden? Evidence? 4. How will overburden affect the Philadelphia education system? 5. How does access to the decision making process affect overburden? 6. How are overburdened communities activating around the issue? 7. What is a reasonable amount of pollution for the average citizen to endure? Students will have one member responsible for adding the Ideas for Sources of Evidence Bank: What evidence should we look for? Where?, so that our groups do not have to individually struggle with looking for sources or asking the most effective questions on the internet, they can help one another refine their searches. I have also given each group one lead to get started, and I can help with more given the wealth of information I've learned in this course. Slide 12 summarizes key understandings we want to be able to apply to the next step, which is action.

We will next begin to look at how well Philadelphia local government specifically, is addressing their responsibility in this area. There were successes to give hope to activism in these examples as the role of the public in pushing for more testing and better enforcement was what helped the community protect itself as shown in the Rosner and Markowitz reading where it states "Pre-civil rights era, no active political constituency capable of making it a pressing concern..by late 1960s a few Senators and Reps began responding..1969-70 - authorized \$30 million in federal grants to combat lead poisoning"..early 1970s and 80s, eliminated lead paint

and gas and (oct 4 slides) blood levels have gone down from .20g/l in 1970s to .01 by 1986 ..high costs have prevented abatement”. Also, advocacy groups in Philly have made strides and the media has as well. We will try to make the students feel their power in these next few classes.

First, students will stay in their evidence groups but they will get the new task of defining one of the 8 characteristics of good government. They will have to define it, then look for evidence that Philly has that characteristic and for evidence that it does not. These pieces of evidence are put into a public collective space for the class to see. I will do Effective and Efficient as an example before I ask them to do their work. I will use the 2021 Health of the City Findings as my evidence. Students will help me analyze my source by going through the doc with me and identifying trends from each graph. I will ask students: What are your impressions on the city’s accountability, effectiveness and transparency after analyzing this report? Give three specific reasons why. I will then add their findings to my section of the collective notetaking doc. The summative assessment will be to give the city of Philadelphia a report card again based on these 8 categories. They decide how many points each category is worth to add up to 100, and give the city a fair grade in each with at least one specific reason why. The point of this is to see how they are evaluating their local government within this hopefully now reasonably informed context.

The next phase of this will be to examine the systems of advocacy for citizens such as joining groups, the media, organizing an informed voter bloc, or directly communicating with authorities in government. Slides 15-19 illustrate that process. Students will discuss the pros and cons of engaging each of these and giving an example or evidence of how each affects change. We will look at the example of the Mayor’s Task Force on Lead Poisoning to ground our

understanding. The point of this exercise is to give them a menu of evaluated options for setting their own goal in terms of addressing an environmental issue in Philadelphia.

Students will look at each method in slide 19 and discuss the pros and cons of each in a Think-Pair-Share activity, filling in more of their own chart as needed. They will then decide which they are going to do and fill in their own document. I laid out a pathway of questions based off of Nov 8th slides from Dr. Howarth and her experience in direct action. They will have to decide what they want to see happen with the method they choose, then ask themselves: Do I have enough info about it already? If not, investigate some more. Next, research what has been done about it already and assemble resources and other organizations that are working towards the goal too. Next, ID problems or opponents and try to come up with ways all parties can “win”. Finally, they hone in on their method to address the problem and build a policy they would like to see put in place. They will be asked to show why it is the best/better method and policy.

As stated in the beginning, the hope is that I can transfer some of what I’d learned about why Children’s Environmental Justice is an issue, but also what solutions are available, especially to a reflective citizen who knows what they deserve and how to engage the system to get it.

#### Keywords

Pollution, asthma, environmental justice, advocacy, civic action, action learning, environmental racism, civics, local government

#### SOCIAL SCIENCE

Content Objectives

1. Students will evaluate the extent of inequity in environmental health costs through examples of overburden on particular Philadelphia area communities.
2. Students will evaluate the cost of overburden on communities of color in particular.
3. Students will identify the 8 characteristics of good government and assess local, state, and federal government responses to the issues presented in objectives 1 and 2.
4. Students will decide which tools or solutions are worth utilizing when pushing government to act; such as media, protest, lobbying, and getting out the vote.

### **Teaching Strategies**

Lecture with Guided Notes: Students will need direct instruction on some concepts due to the time constraints. Lectures will be limited to 7 min intervals with breaks in delivery for questions and notetaking.

Think Pair Share - In order to quickly hear evidence of thinking, foster community, and allow students the opportunity to process thoughts into memory, the strategy of turning and talking, also known as Think Pair Share will be employed after every prompt on the notetaking doc.

Jamboard - Collaborative, real time, tech option for brainstorming/group think notetaking

Jigsaw is used during the lecture slides as we have a lot of material to cover in a short amount of time. Students teaching each other the material is efficient, fosters accountability, and teaching is one of the best ways to learn material. It is also another way for me to quickly hear evidence of thinking.

Graphic Organizers: Used to compare data and effectiveness of different case studies side by side as well as to help students scaffold the content knowledge needed. These give students a concrete

guide and help those that have trouble focusing on what ideas to capture. It is also a way for me to assess learning and hold students accountable.

Guided Notes: Used to help students keep themselves accountable for covered content through the lectures and webquests. Points of the guided notes also ask students to reflect on concepts by having them write things in their own words or apply content to specific questions. Reflections and feedback given from students have been asking more recently to have concrete questions to answer, these notes are a way to allow for open/creative responses while still giving students a framework to feel they are on the right track.

Socratic Seminar: This is a structured dialogue between students about important ideas or moral and ethical issues found in a text and/or connected to the background knowledge or content already covered in the unit. This exercise does this and ignites critical thinking. As a result the students can construct new knowledge with the asking and answering of questions, the need for evidence to substantiate claims, and the ability to look at an issue from multiple perspectives.

Action Learning: This is a process that involves a small group working on real problems, taking action, and learning as individuals, as a team, and as an organization. It helps organizations develop creative, flexible and successful strategies to pressing problems.

Self Assessment: Used to shift ownership of learning to students while getting a snapshot of their emotional comfortability with absorbing this material. They need to reflect on learning to absorb it and the exercise of checking in with oneself and communicating that to a teacher can be a powerful exercise. After each lesson, students are identifying their comfortability using a scale. Asking “What is standing out to you so far?” “What have you learned?” “What are you most



proud of yourself for doing in this unit?” in the middle of the unit and the end help keep them motivated and will give me key insight into how this experience is going for them.

WebQuest Research: A Webquest allows students to work at their own pace and learn more detailed information about a specific topic being studied and creates a greater sense of importance for that topic.. They will also identify what each side wanted out of the conflict and apply their worldview to the situation in order to theorize how the worldview affects the outcome. This exercise will provide the researched evidence to support a thesis statement. In both exercises, students will be given one reputable website in order to begin their search as well as specific questions to answer in their notetaking doc.

Thesis Writing: Students need to learn how to write a thesis for college. They will be asked to practice making an argument relevant to a prompt that has at least two categories of analysis.

#### Classroom Activities

### LESSON ONE

#### **Day One:**

Materials: [Powerpoint Slides](#) and [Appendix C](#)

Timeline: 2 days

Objectives: Students will evaluate the extent of inequity in environmental health costs through examples of overburden on particular Philadelphia area communities.

Students will evaluate the cost of overburden on communities of color in particular.

Standards:

- District “Standards Addressed” in the appendix
- State: CC.8.5.11-12.C, CC.8.5.11-12.D, CC.8.6.11-12.B, 5.2.12 C, 5.2.12 D
- National: see “Standards Addressed” in the appendix

Evaluation: Create a list of at least 5 criteria to measure “environmental justice” and assign percentage points like teacher’s do for students. Decide what government is responsible for and give our local governments a grade based on your “report card”.

Step-by-Step:

### **Day One**

1. Explain that today’s job in the process is to answer: What is environmental justice and environmental racism?
2. Present slides 1 and discuss anticipation of the essential questions
  - What is environmental justice? What obligation does government have to insure it? What tools do citizens have to insure it?
3. For: What is environmental justice? Have students do 2 minutes of research on the internet
4. Students record answers on the jamboard
5. Give the a definition of Environmental Racism, data to back up the extent of the issue, and ask students to predict why there has been inadequate access to decision making process
6. Make a prediction on which places in PA would be in the most need of environmental protection?
7. For 2 minute Think Pair Share as they see results on jamboard record answer here as a pair.

8. Present stats on environmental racism and discuss what to add to jamboard
9. Have students go on the emap tool
  - a. Zoom in on Philadelphia and decide how local you want to go
  - b. Play with the filters and decide on one filter to focus on
  - c. Pick one location to google further
  - d. Collect 5 data points that would contribute to answer a question of:
  - e. *Add to: Which places in PA seem to be in the most need of environmental protection? How often are there overlaps to racially segregated or economically depressed areas?*
  - f. Record your data on the Jamboard
10. Exit Ticket: What is environmental justice in your own words?
11. HW: Create a list of at least 5 criteria to measure “environmental justice” and assign percentage points like teacher’s do for students. Give our local governments a grade based on your “report card”.

## **Day Two**

1. (5 min) review answers to 8 and 9 from yesterday to ask ourselves the extent of environmental justice locally.
2. Explain that today we will look at: What is environmental racism’s cost on communities of color?
3. [Jigsaw](#) the pieces of text in the slides and have students find evidence of either cost or what was done about the wrong by the community.
  4. What were some pieces of evidence for this that we touched on yesterday?

## LESSON TWO

### **Day One:**

Materials: Slides and Appendix B: Characteristics of Good Government Guided [Notes](#)

Timeline:

Objectives: Students will identify the 8 characteristics of good government and assess local, state, and federal government responses to the issues presented in objectives 1 and 2.

Standards:

- See “Standards Addressed” in the appendix
- State: 5.1.12. A, 5.1.12. B,
- National: see “Standards Addressed” in the appendix

Evaluation: Guided Notes

Step-by-Step:

### **Day One**

12. Define the 8 terms so that all students know what they are looking for in the 8 characteristics.
13. Ask students to brainstorm some evidence we could look for to grade whether the government is doing a good job with these 8 areas.
14. Use the Health of the City report to apply the test to: Go through the doc and ID trends

from each graph. What are your impressions on the city's effectiveness and transparency after analyzing this report? Give three specific reasons

15. Keep the jigsaw groups and assign them now a characteristic of good government to assess the city of Philadelphia with

### **Day Two**

5. (5 min) Review what we found from yesterday
6. Websquest divided by the 7 groups we picked with one as example from me. Groups can be the same as they used to jigsaw.
7. Report out findings using collective doc

## LESSON THREE

### **Day One:**

Materials: slides and handout see appendix B

Timeline: 2 days

Objectives: Students will decide which tools or solutions are worth utilizing when pushing government to act; such as media, protest, lobbying, and getting out the vote.

Standards:

- District "Standards Addressed" in the appendix

- State: CC.8.5.11-12.G, CC.8.5.11-12.I, CC.8.5.11-12.J, 5.2.12 A, 5.2.12 B, 5.2.12 E, 5.2.12 F, 5.2.12 G
- National: see “Standards Addressed” in the appendix

Evaluation: The Action Plan

Step-by-Step:

### **Day One**

16. Now let's look at civil society: What can we do?
17. Look at each method in the previous slide and weigh the pros and cons of each in a Think-Pair-Share activity, fill in your own chart
18. Decide which you are going to do:
  - a. What would you like to achieve?
  - b. Do you have enough info about it already? If not, investigate some more.
  - c. Research what has been done about it already and assemble resources and other organizations that are working towards the goal too
  - d. ID problems or opponents and try to come up with ways all parties can “win”
  - e. Select a method to address the problem and build a policy you would like to see put in place, be able to show why it is the best/better method

### **Day Two**

8. (5 min) Review Progress from yesterday
9. Finish action steps

What is being done about it already?	
What do you need to get it done?	
Who can help you?	
What are some strategies you all can employ?	
What obstacles will you face?	
Is there a strategy that will create a win-win for all parties?	
Select your process, ID the system that will get you to your goal	
Fill in: I will do ____, at this time ____, on this day ____. For each action step as you hit your marks.	

### Resources

#### Appendix A - Standards Addressed

District Standard - The SD of Philadelphia, while adhering to PA Standards for Reading and Writing in History, also cites “social studies is meant to enhance students’ understanding of their society and their world, with that enhanced understanding comes the seeking out of solutions to our society’s issues.”

PA Standard - CC.8.5.11-12.C - Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.

PA Standard - CC.8.5.11-12.D - Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines faction in Federalist No. 10).

PA Standard - CC.8.5.11-12.G - Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.

PA Standard - CC.8.5.11-12.I - Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.

PA Standard - CC.8.5.11-12.J - By the end of grade 12, read and comprehend history/social studies texts in the grades 11–CCR text complexity band independently and proficiently.

PA Standard - CC.8.6.11-12.B - Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

PA Standard 5.1.12. A. Evaluate the major arguments advanced for the necessity of government.

PA Standard 5.1.12. B. Analyze the sources, purposes and functions of law.

PA Standard 5.1.12 J. Analyze how the law promotes the common good and protects individual rights.

PA Standard 5.2.12 A. Evaluate an individual's civic rights, responsibilities and duties in various governments.



PA Standard 5.2.12 B. Evaluate citizens' participation in government and civic life.

PA Standard 5.2.12 C. Interpret the causes of conflict in society and analyze techniques to resolve those conflicts.

PA Standard 5.2.12 D. Evaluate political leadership and public service in a republican form of government.

PA Standard 5.2.12 E. Analyze how participation in civic and political life leads to the attainment of individual and public goals.

PA Standard 5.2.12 F. Evaluate how individual rights may conflict with or support the common good.

PA Standard 5.2.12 G. Evaluate what makes a competent and responsible citizen.

## Appendix B - 8 CHARACTERISTICS WEBQUEST AND SOLUTIONS

### 8 CHARACTERISTICS DEFINITION

ACCOUNTABLE	
TRANSPARENT	
RESPONSIVE	
EQUITABLE AND INCLUSIVE	
CONSENSUS	

ORIENTED	
FOLLOWS RULES	
EFFECTIVE AND EFFICIENT	
PARTICIPATORY	

SOURCES WE COULD LOOK INTO FOR THE 8 CHARACTERISTICS

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EXAMPLE: EFFECTIVE AND EFFICIENT

Evidence that Philly IS	Evidence that Philly IS NOT

GROUP 1: ACCOUNTABLE

Evidence that Philly IS	Evidence that Philly IS NOT

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GROUP 2:

TRANSPARENT

Evidence that Philly IS	Evidence that Philly IS NOT

GROUP 3:

RESPONSIVE

Evidence that Philly IS	Evidence that Philly IS NOT

GROUP 4:

EQUITABLE AND INCLUSIVE

Evidence that Philly IS	Evidence that Philly IS NOT

GROUP 5:

FOLLOWS THE RULES

Evidence that Philly IS	Evidence that Philly IS NOT

GROUP 6: PARTICIPATORY

Evidence that Philly IS	Evidence that Philly IS NOT

GROUP 7: CONSENSUS ORIENTED

Evidence that Philly IS	Evidence that Philly IS NOT

SOLUTIONS THINK TANK

<b>Method Can Do</b>	<b>Pros and Cons</b>	<b>Example/Evidence</b>
<p><b>Media</b> can escalate issue and make it a digestible story, make politicians have to respond</p>		

<p><b>Joining advocacy groups</b></p>		<p>Clean Air Council and Children first</p>
<p><b>Communicating to public officials directly -</b></p> <p>Who you are, where you live, why everyone should be listening to YOU</p>		
<p><b>Voting and helping get out the vote</b></p>		

GOAL SETTING

GOAL:

<p>What is being done about it already?</p>	
<p>What do you need to get it done?</p>	
<p>Who can help you?</p>	
<p>What are some strategies you all can employ?</p>	

What obstacles will you face?	
Is there a strategy that will create a win-win for all parties?	
Select your process, ID the system that will get you to your goal	
Fill in: I will do ____, at this time ____, on this day ____. For each action step as you hit your marks.	

### Appendix C

Group 1:

How does political engagement protect against environmental overburden? Or lack of engagement lead to overburden?

Rosner and Markowitz reading states “Pre-civil rights era, no active political constituency capable of making it a pressing concern..by late 1960s a few Senators and Reps began responding..1969-70 - authorized \$30 million in federal grants to combat lead poisoning”..early 1970s and 80s, eliminated lead paint and gas and (oct 4 slides) blood levels have gone down from .20gl in 1970s to .01 by 1986 ..high costs have prevented abatement”.

Group 2:

What are the physical effects of overburden?

These issues effect our education and social service systems as evidenced by our Oct 11th slides showing that at 5 units of lead in the bloodstream, you have decreased IQ and behavioral issues present themselves according to a Milwaukee study correlating suspension and lead exposure. At 10 units there are effects on hearing, at 20 you have decreased nerve velocity and delayed puberty.

Group 3:

How does racism cause overburden? Evidence?

Rosner and Markowitz, "Up to 70% of a can of paint in the first half of the century was composed of lead pigments..by the mid-1950s, newspapers and public health began to report systematically on cases of lead poisoning." "Most of the cases are in Negro and Puerto Rican communities..racism was an intrinsic part of the argument for ignoring huge number of children whose lives were being destroyed by lead in their homes"

Group 4:

How will overburden effect Philadelphia education system?

Oct 11th slides show that at 5 you have decreased IQ and behavioral issues as shown in Milwaukee study correlating suspension and lead exposure and effects on hearing at 10, at 20 you have decreased nerve velocity, delayed puberty, “Philadelphia, the number identified rose from two in 1952 to 163 in 1965”

Group 5:

How does access to the decision making process effect?

Flint, Oct 11 (Campbell,2016) - Gov Rick Snyder’s emails did not talk of race but focused on costs, questioned data and the duty of state officials to do something about it. Investigative journalism played a role in keeping this an issue. “Environmental racism is real..so real that even having the facts, having the documntaion and having the information has never been enough to provide equal protection for people of color and poor people.” Dr Robert Bullard. He claims communities left out of decision making processes need a seat during. “EJ or injustice does not have to be about intent. Rather, it is about process and results having the effect of being inequitable or unjust. Study cites financial reasons for not doing things.

Group 6:

How are overburdened communities activating around the issue?



“Young Lords in New York..began agitating for more testing to children, better enforcement of existing housing laws, surveillance and prevention programs and new laws to hold landlords accountable for lead standards..seized mobile testing vans and began door to door screening for lead poisoning”

Group 7:

What is a reasonable amount of pollution for the average citizen to endure?

threshold that most organisms have to repair or adapt to hazards imposed by pollution cannot withstand these pressures, and the results of these burdens turn into high asthma rates, elevated blood lead, higher cancer rates, and higher death rates for heart attacks and strokes (Sept 27 slides). I learned that hospitalization for Asthma in Philly is twice as high as the next county and there is a strong correlation to lung cancer and economic depression. Asthma rates in children are 21% for Philadelphia and 5.8% in the US (Sept 27th slides).

EVIDENCE IDEA BANK: What evidence should we look for? Where?

Appendix D

Slide Deck - [Eck - TIP - Health 2023](#)

# Environmental Overburden on Communities of Color and Economic Inequality

Essential Question:  
What is environmental justice?  
What factors need to be assessed?  
What obligation does government have to insure it?  
What tools do citizens have to insure it?

1

# What is environmental justice?

1. Do a 2 min research of the term on the internet
2. 2 minute Think Pair Share
3. Record answer here as a pair: [Jamboard](#)

2

## Environmental Racism

Over 9 million people live within a commercial waste facility in the US

- 56% of the residents are people of color when they made up 10% of the population
- Af Amer 1.8x greater and Latinx 2.3x greater likelihood to live near CWF

Further **exacerbating** the issue

- Hazards have historically been there and compounded
- Less amenities like parks and open space
- Inadequate access to decision making process (WHY?)

3

## What has government done about it so far?

**Environmental Protection Agency and the Clean Air Act both created in 1970** est

standards that the states enforce, monitor air, conduct research and provide assistance to states with tech, diesel particulate standards have req that engines get much cleaner

**Limitations:** the DEP regulatory framework does not look at environmental hazards holistically, nor is there a requirement for regional or cumulative approaches, which is a factor in Environmental Racism

**Clinton acknowledges Env. Racism:** In 1994, President Clinton signed an executive order telling federal agencies to "address...effects...on minority populations"

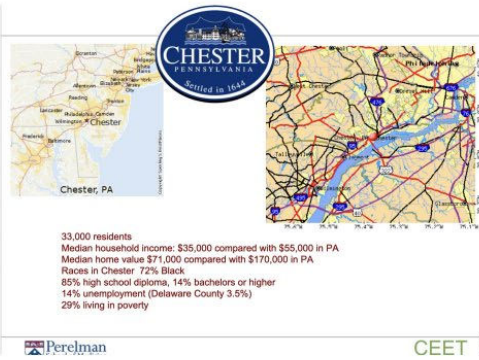
**Limitations:** without measurable standards for success or failure, without consequences for failing these markers, or resources to enforce standards or avenues for redress, these communities were left just with an acknowledgement to their plight.

4

8.3% is average U.S. asthma rate

Philly children are at 21%

Chester children at 38.5%



### Some evidence of effects

Chester babies 2x as likely to have low birth weight than citizens in neighboring county

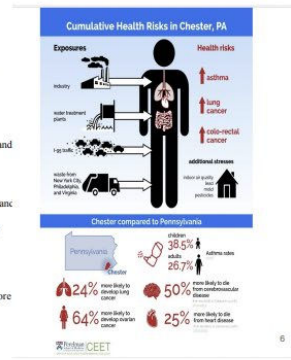
#### Higher asthma rates and attacks

What is an asthma attack? Bronchial tubes thicken, constrict, fill w mucus and its harder for air to move. Using a spacer when using an inhaler

Are populations equally at risk? In the US, asthma slightly higher in adults and females, 7% of white pop is afflicted compared to 11% of Af American pop

PA has one of highest concentrations of populations

Attacks are going down and so are hospitalizations but black children 6x more likely to have to be hospitalized for an attack



### Further Evidence of Inequality

What inferences can we make based on this data?

How does this help us answer:

What is environmental justice?  
What factors need to be assessed?



### What are some environmental/social/economic factors that lead to compounded health problems?

lack of access to healthcare	recent immigrant's language barriers	housing discrimination
weak tax base	poor credit	inadequate public services
unemployment and underemployment	relative lack of political power/organization or institutional knowledge	stress
smoking habits/substance use	Use of pest control/chemical cleaners/	Traffic

Let's widen or narrow our scope to PA using the [eMap](#) tool

1. Zoom in on Philadelphia and decide how local you want to go
2. Play with the filters and decide on one filter to focus on
3. Pick one location to google further
4. Collect 5 data points that would contribute to answer a question of:
  - a. *Which places in PA seem to be in the most need of environmental protection? How often are there overlaps to racially segregated or economically depressed areas?*
5. Record your data on the Jamboard

9

Wrapping Up Lesson One..

1. Exit Ticket: What is environmental justice in your own words?
2. HW: Create a list of at least 5 criteria to measure "environmental justice" and assign percentage points like teacher's do for students. Decide what government is responsible for and give our local governments a grade based on your "report card".

10

## LESSON TWO:

What is environmental racism costing communities of color?

Go back to what we gathered yesterday for 5 min and Think Pair

Share to get ourselves re-oriented.

**How well is Philly addressing its responsibility?**

11

### Key Understandings:

1. More industry and waste facilities, less amenities like parks and open space in economically depressed neighborhoods
2. Less access to decision making processes in EDN
3. Epistemic burdens as their educational systems more often focus on standardized tests and are underfunded in EDN
4. The human body reaches a threshold before it can't withstand environmental stressors

**What were some pieces of evidence for this that we touched on yesterday?**

12

Eight Characteristics of Good Governance – United Nations

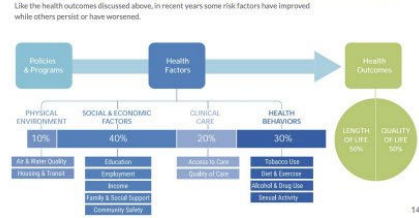


**EXAMPLE: EFFICIENT & EFFECTIVE**  
**GROUP 1:** ACCOUNTABLE  
**GROUP 2:** TRANSPARENT  
**GROUP 3:** RESPONSIVE  
**GROUP 4:** EQUITABLE AND INCLUSIVE  
**GROUP 5:** FOLLOWS THE RULES  
**GROUP 6:** PARTICIPATORY  
**GROUP 7:** CONSENSUS ORIENTED  
**GROUP 8:** EFFECTIVE AND EFFICIENT

2021 Health of the City Findings

Go through the doc and ID trends from each graph. What are your impressions on the city's accountability, effectiveness and transparency after analyzing this report? Give three specific reasons

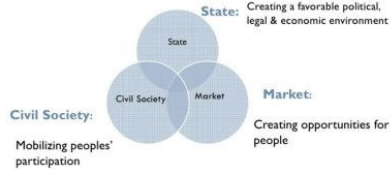
Determinants of Health



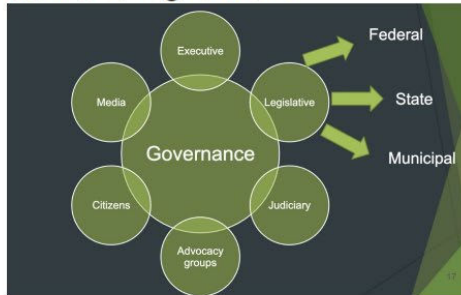
Many Hands Make Light Work: Advocacy Groups also Gather Data  
 Philadelphia Lead Advisory Group Findings - 580,000 housing units in Philly, 53% owner occupied leaving 273,000 rentals. 95% have potential for lead based paint and 56,000 of these units house kids under 6..who are more likely to ingest the paint. Nationally, only 1.2% of kids screened have over 10 and Philly is .9% though higher rates of blood lead elevations are in North and West Philly.  
 Government funding has been cut for prevention.

Many Hands Make Light Work: These systems should work together..

Governance: Goes beyond the Government



## Many Hands Make Light Work



e  
x  
a  
m  
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## Solution Options

Method Can Do	Pros and Cons	Example/Evidence
Media can escalate issue and make it a digestible story, make politicians have to respond		
Joining advocacy groups		Clean Air Council and Children first
Communicating to public officials directly - Who you are, where you live, why everyone should be listening to me,		
Voting and helping get out the vote, influencing 3 branches		

- Now let's look at civil society: What can we do?
- Look at each method in the previous slide and weigh the pros and cons of each in a Think-Pair-Share activity, fill in your own chart.
- Decide which you are going to do:
  - What would you like to achieve?
  - Do you have enough info about it already? If not, investigate some more.
  - Research what has been done about it already and assemble resources and other organizations that are working towards the goal too
  - ID problems or opponents and try to come up with ways all parties can "win"
  - Select a method to address the problem and build a policy you would like to see put in place, be able to show why it is the best/better method

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