Environmental Justice in Your Environment

Lesson series created by Claudia Rosen and Dr. Monica Miles

Introduction: This lesson series is intended to provide educators with activities that promote student learning surrounding environmental justice concerns within their environment and the United States at large. The activities explore inequality in the Western New York Community related to pollution and green space. The lessons can be used as a series that build upon learning or as stand-alone activities.

Contents of Lesson Series

I. **Introduction to the Lesson Series…… 2**

II. **Teacher Notes…… 4**

a. Series Instructions
b. Learning Outcomes
c. New York State P-12 Science Learning Standards (HS):
d. Materials Needed

III. **Lesson 1: Introduction to Environmental Justice…… 5**

a. Critical Thinking Activity - Introduction to Environmental Justice Passage and Video Response

IV. **Lesson 2: Assessing Pollution in Your Environment……10**

a. Critical Thinking Activity - "Love Canal in Niagara Falls, NY" …… 10
b. Get Outside Activity – Assessing Pollution in Your Environment ……...12
c. Virtual Mapping Activity with EJSCREEN …… 14

V. **Lesson 3: Assessing Green Space in Your Environment……..20**

a. Critical Thinking Activity – "Urban Nature for Human Health and Well-being" …… 20
b. Get Outside Activity – Assessing Green Space in Your Environment……... 23
c. Virtual Mapping Activity with EJSCREEN……24

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The United States Environmental Protection Agency (USEPA) (https://www.epa.gov/environmentaljustice) [1] defines environmental justice 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. This goal 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."

Dr. Robert Bullard (https://drrobertbullard.com/) [2], one of the Black leaders at the forefront of environmental justice scholarship is dubbed the *Father of Environmental Justice.* He once said,

> "The United States of America is segregated, and so is pollution."

Environmental justice focuses on the fair distribution of environmental benefits and burdens. An ***environmental justice issue or concern*** arises when the distribution of environmental benefits or burdens is unfair.

Environmental racism is a term that describes actions or decisions that result in the disproportionate exposure of black, Indigenous, and people of color to environmental hazards. ***Environmental classism*** is a term that describes environmental justice issues that occur unfairly to poor and working-class people. Unfortunately, most environmental justice concerns are examples of environmental racism or environmental classism.

Environmental justice issues have been strongly linked with ***disproportionate impacts*** on communities of color and communities in poverty and less with affluent or white communities. To disproportionately impact means that one group is impacted at a rate that is out of proportion in size when compared to other groups. Even though laws, policies, or practices claim to be race and class neutral that is not the case. There is an unfair, disproportionate impact on populations based on their race and class. Exploring environmental justice issues is the first step in responding to the unfair distribution environmental benefits or burdens in a community.

[1] United States Environmental Protection Agency website https://www.epa.gov/environmentaljustice
[2] Dr. Robert Bullard website https://drrobertbullard.com/

Please watch the 38-minute long video by The Stream where a panel discussion explores environmental justice. The panel includes Rebecca Newberry, the executive director from Clean Air Coalition in Buffalo, and she provides connections from local issues to this national concern.[3]

Before you watch the video, consider this: Buffalo is an old industrial rust belt city that has a long-standing history of environmental justice concerns. Can you think of any?

The Stream - Color of Pollution: Environmental Racism (https://youtu.be/nV4MCL-yBFM) [4]

[3] Clean Air Coalition of Western New York webpage https://www.cacwny.org/
[4] The Stream "Color of Pollution: Environmental Racism video https://youtu.be/nV4MCL-yBFM

Teacher Notes

Environmental Justice in Your Environment- Lesson Series Instructions

- Lessons are presented as student worksheets. The student worksheets can be completed by students independently or adapted to be used in a classroom group setting.

- Lessons include three types of activities - Critical Thinking, Get Outside, and Virtual Mapping Activities. As time and accessibility allows, these activities can be done individually or as a series. If students do not have access to a computer, they can complete the reading comprehension portions of the critical thinking activity and the outdoor activity.

    - **Critical Thinking Activities** include passages for students to read and links to videos to watch. Questions engage students in thinking about their community as it relates to the reading and video content.

    - **Get Outside Activities** can be completed by a student on their own in their neighborhood or adapted for students working in a group at their school.

    - **Virtual Mapping Activities** with the USEPA's EJSCREEN guide student through using the web-based virtual mapping tool.

- Lessons include hyperlinks and footnotes. Students can click on the hyperlinks or copy them from the footnotes and paste them into a web browser. The links provide additional resources and information.

Learning Outcomes

- Students will learn key terminology related to environmental justice
- Students will practice critical thinking, scientific literacy, and reading comprehension skills
- Students will make connections to their environment and environmental injustices in their community

New York State P-12 Science Learning Standards (HS):

- HS- ESS3 – Human Sustainability
- HS – ETS1 – Engineering Design
- HS – LS2 – Interdependent Relationships in Ecosystems

Materials Needed

- Student activity worksheets
- Writing utensil, chalk, tape measure
- An electronic device (smart phone, tablet, and/or computer) with internet access to visit the EJ Screen website: https://www.epa.gov/ejscreen. and watch videos to complete critical thinking activities Please note that computers are best with navigating the EJ Screen website.

Lesson #1: Introduction to Environmental Justice

Student Worksheet - Introduction to Environmental Justice

Name _____ Date_____

Instructions: Gather the materials listed below and follow the instructions. Complete the worksheet by reading the passage, watching the video, and responding to the questions. Websites linked in the footnotes at the bottom of each page provide more information. If you are struggling to understand a concept or a question, click the link to read more about a topic. In this activity we will explore basic terminology that helps us think about what our environment is, how it benefits us, and how we impact it.

Materials Needed

- This student worksheet
- Writing utensil
- An electronic device (smart phone, tablet, and/or computer) with internet access to watch a video online

Read the passage below, **Introduction to Environmental Justice**

> Our ***environment*** encompasses where we live, work, play, and go to school, as well as the physical and natural world. When we talk about the environment we often focus only on the natural components- the land, air, water, and living things. These parts of the environment do provide us with many benefits. The land is space for animals to live, for humans to grow crops to eat, and for trees and forests. We depend on air to breathe. We need clean water to drink, fish, and for a place to swim.
>
> The other components of the environment are human, or human made. Just like the natural components, they provide us with many important benefits. A building is a safe place to live, work, or go to school. Roads help us get to where we need to go. Our educational system (the school you go to, sports you play, clubs you are a part of) provides us with functional space for learning and physical activities. The human components of the environment include families, individuals, and ***communities.***
>
> Figure 1 on the next page highlights the various components that make up an environment. Are there any components of your environment missing that you would add? Mark them on the diagram.

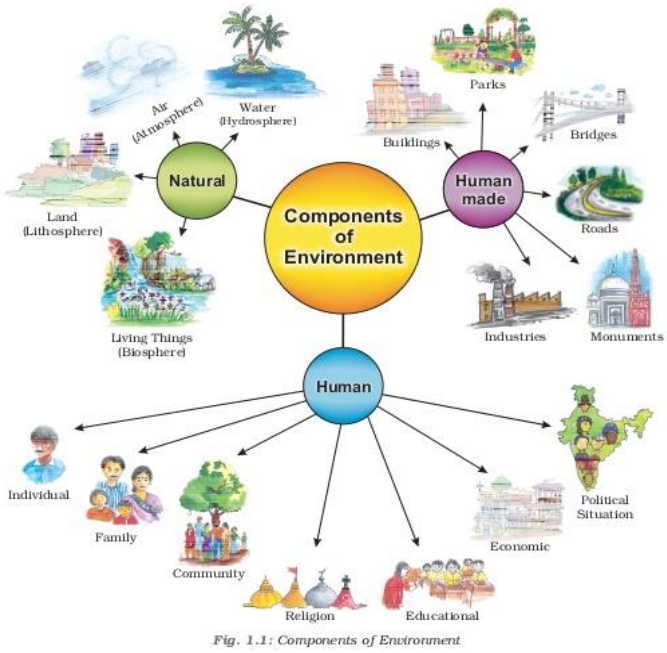


Figure 1: *Components of an Environment [5] This figure shows the natural, human-made, and human parts of the environment.*

Environments can be healthy, unhealthy, or somewhere in between. A ***healthy environment*** supports healthy communities of people, plants, and animals. An ***unhealthy environment*** can cause health problems in people and does not support healthy ***ecosystems*** or biodiversity. An ***ecosystem*** is the biological community of interacting organisms and their physical environment. A human ***community*** is a lot like an ecosystem because it is made up of people interacting with each other and the natural and human-made components of their physical environment.

Humans create ***pollution*** that spreads throughout the environment. Industries produce chemicals and toxins like PCBs, mirex, dioxin, pesticides, heavy metals, and plastic that pollute waterways and harm the fish that live in our streams, rivers, and lakes.[6] Landfills or hazardous waste sites can put chemicals into the soil, air, or water. Power plants put chemicals like mercury into the air. [7]

[5] From Human-Environment Interaction to Environmental Informatics (III): the Social-Ecological Systems dynamics in Knowledge-based Society, Coman, Mirela and Cioruța, Bogdan
[6] New York State publication – Health Advice on Eating Sportfish provides information on the types of pollution that impacts fish and people who eat fish https://www.health.ny.gov/publications/2800.pdf
[7] US EPAs webpage about pollution in the air and power plants https://www.epa.gov/mats/cleaner-power-plants

Pollution in the water, soil, or air causes human health problems such as cancer, asthma, and a wide-array of other devastating health issues.[8] In the United States, people of color and people in low income communities are ***disproportionately*** impacted by this pollution.[9] To disproportionately impact means that one group is impacted at a rate that is higher than that of another group when the size of the two groups is the same.

People of color and people in low-income communities are more likely to live near polluting facilities like industries, hazardous waste sites, and landfills, and therefore more likely to live in an area with poor air and water quality. These communities of people are disproportionately at risk of certain health problems because their homes are closest to the most polluted places. Specifically, in New York State, people of color suffer disproportionately from numerous health problems compared to other racial and ethnic groups.[10]

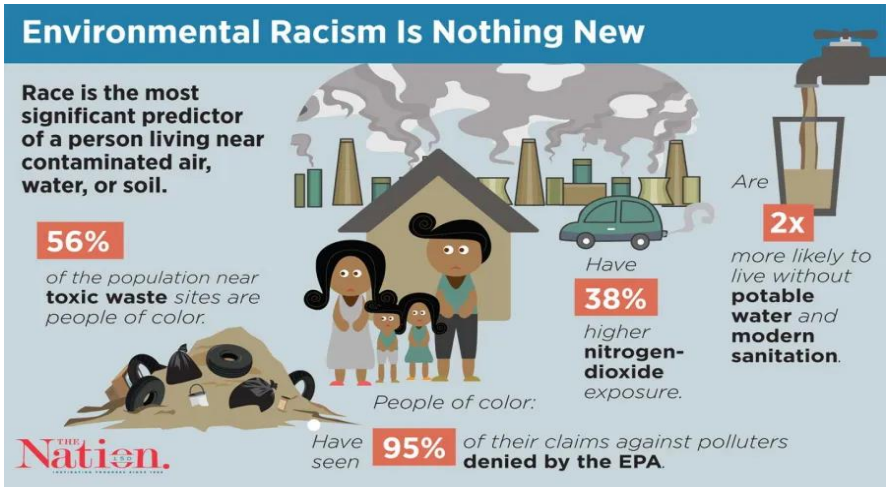


Figure 2: *The diagram above shows that race is the most significant predictor of a person living near contaminated air, water, or soil. Class or income is the second most significant predictor. These groups of people experience health disparities due to their higher likelihood of exposure to environmental risks like pollution.* [11]

[8] USEPA EnviroAtlas Tool webpage explores the public health connections to environment and ecosystem services
https://enviroatlas.epa.gov/enviroatlas/Tools/EcoHealth_RelationshipBrowser/index.html
[9] Environmental Justice Atlas webpage provides information on environmental justice concerns in the United States and around the world https://ejatlas.org/
[10] New York State Health Equity Report from April 2019
https://health.ny.gov/community/minority/docs/health_equity_report_2019.pdf
[11] "Race Best Predicts Whether You Live Near Pollution" by Bryce Covert
https://www.thenation.com/article/archive/race-best-predicts-whether-you-live-near-pollution/

While an unhealthy environment can lead to human health issues, a healthy environment can improve human health in a community. Forests and other green spaces reduce concentrations of pollutants in the air, such as carbon monoxide, sulfur dioxide, nitrogen dioxide, and ozone. Public parks, trails, and waterways provide a space for people to exercise, which improves health. People of color and low communities have less access to green spaces, public parks, and trails and are less likely to have access to their benefits.

Environmental justice focuses on the fair distribution of environmental benefits and burdens. An ***environmental justice issue or concern*** arises when the distribution of environmental benefits or burdens is unfair.

Environmental justice means that everyone should have fair treatment regardless of race, color, national origin, or income, when it comes to environmental policies and regulations. Exploring environmental justice issues is the first step in responding to the unfair distribution environmental benefits or burdens in a community. The goal of environmental justice is to have a society where everyone has 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.

Please respond to the following questions

1. In your own words, using context clues from the passage above, please define the vocabulary terms:

Environment:_____
_____
_____

Community:_____
_____
_____

Pollution:_____
_____
_____

Disproportionate:_____
_____
_____

Environmental Justice:_____
_____
_____

2. Look back at **Figure 1***: Components of an Environment*. What components would you add and why? If you do not have any to add then describe which component of your environment that you use the most.

_____
_____
_____
_____

Please watch this video called "Environmental Injustice Explained" (https://www.youtube.com/watch?v=dREtXUij6_c) [12] and answer the questions below:

3. What community do you live in? _____

4. Do you believe your environment and your community is healthy? Please explain why or why not.

_____
_____
_____
_____
_____

5. Have you ever visited an environment or community that you thought was healthy? Where was that environment? What led you to believe that it was healthy?

_____
_____
_____
_____
_____
_____

[12] "Environmental Justice Explained" video produced by Grist https://www.youtube.com/watch?v=dREtXUij6_c

Lesson #2: Assessing Pollution in Your Environment

Student Worksheet - Assessing Pollution in Your Environment [13]

Name _____ Date_____

Instructions: Gather the materials listed below and follow the instructions. Complete the worksheet by following the directions, reading the passage, watching the video, and responding to the questions throughout the worksheet. Websites linked in the footnotes at the bottom of each page provide more information. If you are struggling to understand a concept or a question, click the link to read more about a topic. In this activity we will assess pollution in your environment.

Materials Needed

- This student worksheet
- Writing utensil
- An electronic device (smart phone, tablet, and/or computer) with internet access to visit the EJ Screen website: https://www.epa.gov/ejscreen. and watch videos to complete the activity
    - *Please note: Computers are best with navigating the EJ Screen website.*

Critical Thinking Activity - Assessing Pollution in Your Environment

1. In your own words, define pollution. Do you see pollution impacting your community?

   _____
   _____
   _____

2. List two causes of pollution. List two effects of pollution.

   _____
   _____
   _____

3. Who does pollution impact? How does it impact them? Does it impact some types of people more than others?

   _____
   _____
   _____
   _____

[13] This activity is adapted from Teaching Tolerance, Analyzing Environmental Justice https://www.tolerance.org/classroom-resources/tolerance-lessons/analyzing-environmental-justice

Read this excerpt from the Environmental Justice Atlas website (https://ejatlas.org/conflict/love-canal-niagara-falls-usa) about Love Canal in Niagara Falls, NY by Sara Orvis at the University of Michigan School of Natural Resources and Environment [14]

> **The Love Canal Dump Site at Niagara Falls, USA:** Back in the XIX century, Modeltown Development Corporation, under William T. Love, planned to construct a power canal that would connect the upper and lower levels of the Niagara River as well as open business opportunities. After securing funding support, the canal was started in 1884. Before the completion of the canal, the United States fell into an economic depression that halted funding sources. The loss of funding and the loss of potential business support led to the downfall of Love's Company leaving only a partially dug canal left. In the 1920's the canal was bought by Hooker Chemical Company and used as a site for chemical and municipal disposal for several chemical companies and the City of Niagara Falls. This site was used as a disposal site until 1953, when it was bought by the local community and completely covered with dirt. In the late 1950's this land became the new site of over 100 homes and an elementary school. In the late 1970s, after several years of high precipitation, the chemical waste began making its way to the surface causing terrible odors and oozing waste.
>
> On August 2, 1978, Lois Gibbs, a local mother who called an election to head the Love Canal Homeowners' Association, began to rally homeowners. There was severe pollution by dioxins, which lead to grave health effects especially the high percentages of birth defects in the Love Canal area. This required all residents to be vacated and the risks to be mitigated, however the health and environmental effects had already affected much of the community's residents.
>
> Clean-up was done by the EPA and the site was removed from the Superfund list in 2004 and determined to be usable land again. Homes near the previously evacuated area are now being bought and lived in.
>
> Though Love Canal was officially removed from the National Priorities List (NPL) in 2004, the site is still subject to maintenance and monitoring activities (e.g. landfill cap inspections, annual groundwater monitoring). However, new residents are dealing with the same chemicals that wreaked havoc decades ago. In lawsuits, residents claim they were swayed to purchase homes in the area with low property values and assurances that waste was contained. Moreover, many residents are unable to move out of the site due to financial constraints. Spokespeople for the US EPA, NYSDEC, and city of Niagara Falls continue to claim that monitoring and containment efforts are effective.

After reading the passage above, watch this video from the New York Times called " The Love Canal Disaster: Toxic Waste in the Neighborhood" (https://www.youtube.com/watch?v=Kjobz14i8kM) [15]

[14] Environmental Justice Atlas webpage article "The Love Canal Dump Site at Niagara Falls, USA" by Sara Orvis https://ejatlas.org/conflict/love-canal-niagara-falls-usa

[15] https://www.youtube.com/watch?v=Kjobz14i8kM

After reading the passage and watching the video, answer the questions below:

4. Had you heard of Love Canal before reading the passage and watching the video? If you had, what did you know about it?

   _____
   _____
   _____
   _____
   _____

5. How do you think Lois Gibbs and the people who lived near Love Canal felt when they discovered the pollution in Love Canal? Do you think that the situation was fair or unfair?

   _____
   _____
   _____

Get Outside Activity - Assessing Pollution in Your Environment

For this activity - you will need to walk in your community. Remember to follow pedestrian safety rules (https://www.nhtsa.gov/road-safety/pedestrian-safety) [16]

Litter, including plastic, is a type of pollution that can harm ecosystems and human communities. Follow the instructions below to evaluate the amount and type of litter pollution in your environment.

1. Do you think that plastic pollution or litter is a problem in your neighborhood? Explain why or why not.

   _____
   _____
   _____
   _____

2. Follow the "Solo Sweep" safety guidelines (https://bnwaterkeeper.org/solo-sweep/) [17]. Use gloves and a trash bag and head outside. Pick up all of the litter that you can find in two blocks around your house and dispose of it in your trash bin. Keep track of what you collect and complete the questions below.

[16] Pedestrian Safety tips from the United States National Highway Traffic Safety Administration https://www.nhtsa.gov/road-safety/pedestrian-safety

[17] Buffalo Niagara Waterkeeper webpage with guidelines for completing a safe litter cleanup https://bnwaterkeeper.org/solo-sweep/

Write the amount (#) of each item that you find below:

Plastic bags _____
Plastic straws _____
Cigarette butts _____
Plastic bottles _____
Single-use food packages (wrappers, plastic containers, bottles, cans, etc.)
_____

3. What was the most common item that you found? _____

4. List the top 3 most common brands (companies) of items that you found.
_____
_____
_____

5. Was the amount of litter that you found surprising?
_____
_____

6. Do you think you would find more, less, or the same amount of litter in other neighborhoods? Explain your answer.
_____
_____
_____

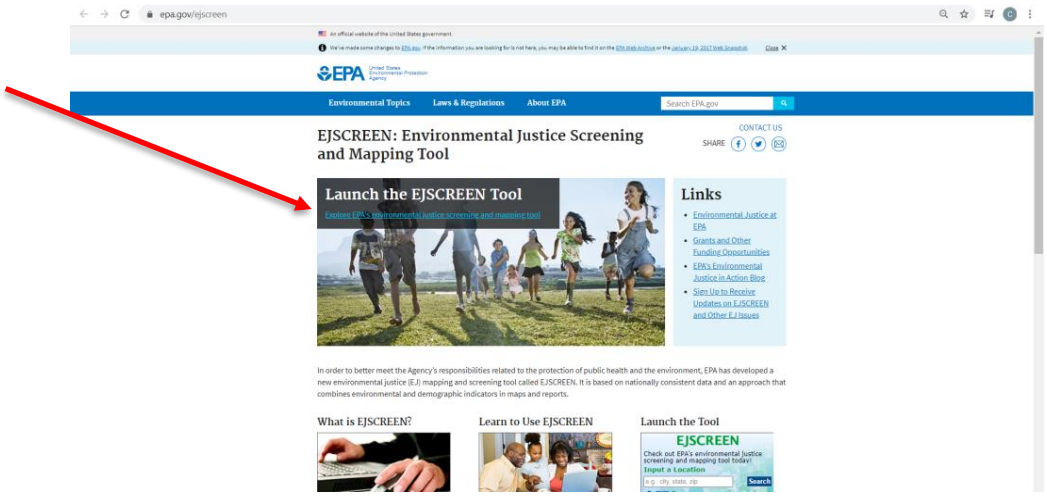
7. What do you think you can do to help prevent litter and plastic pollution in your community?
_____
_____
_____
_____
_____
_____

Virtual Mapping Activity - Assessing Pollution in Your Environment

Follow the steps to use the USEPAs online mapping tool called EJ Screen. Answer the questions as you work.

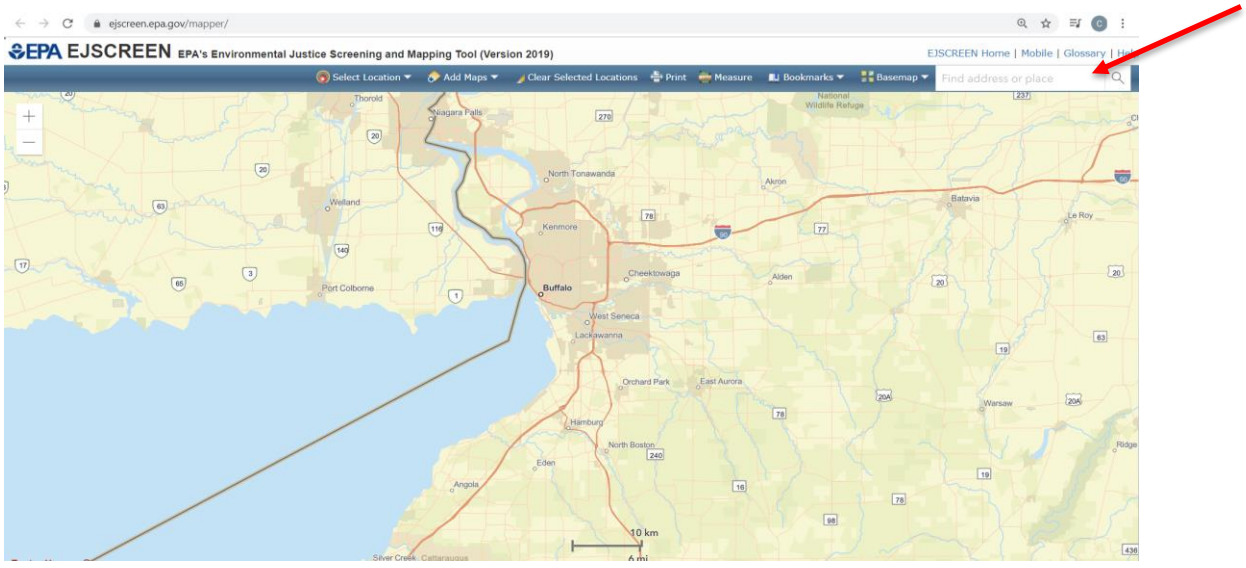
1. Open your web browser and type in the website: https://www.epa.gov/ejscreen

2. Click the blue link that says “Explore EPA’s environmental justice screening and mapping tool”

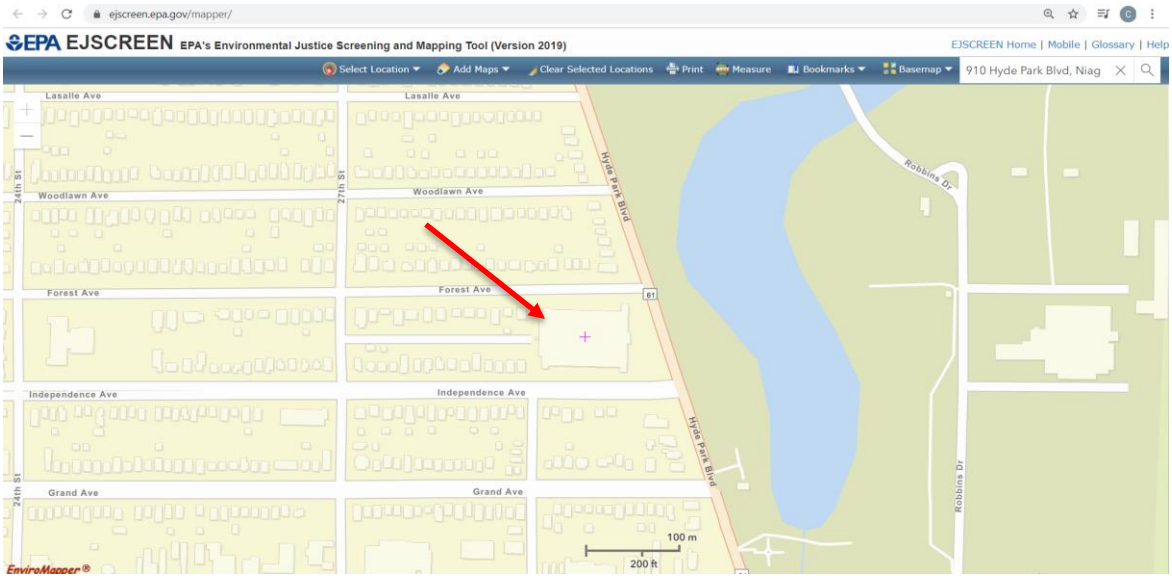


3. After you click the link a new window will open. Wait a moment as the mapping tool loads.

4. Once the mapping tool is loaded, type in your address in the upper right-hand corner box that says, “find address or place.” Click the enter key.



5. The mapping tool will take you to the address you typed into the box. A small, purple cross is placed on the location. Notice Gaskill Prep Middle School in Niagara Falls, NY is used as an example location in this activity.



A ***hazardous waste site*** is a site that holds chemicals or other wastes that can be harmful to human health, wildlife, and the environment.

6. Make a prediction: do you think there are any hazardous waste sites in your community? Explain why or why not.

_____

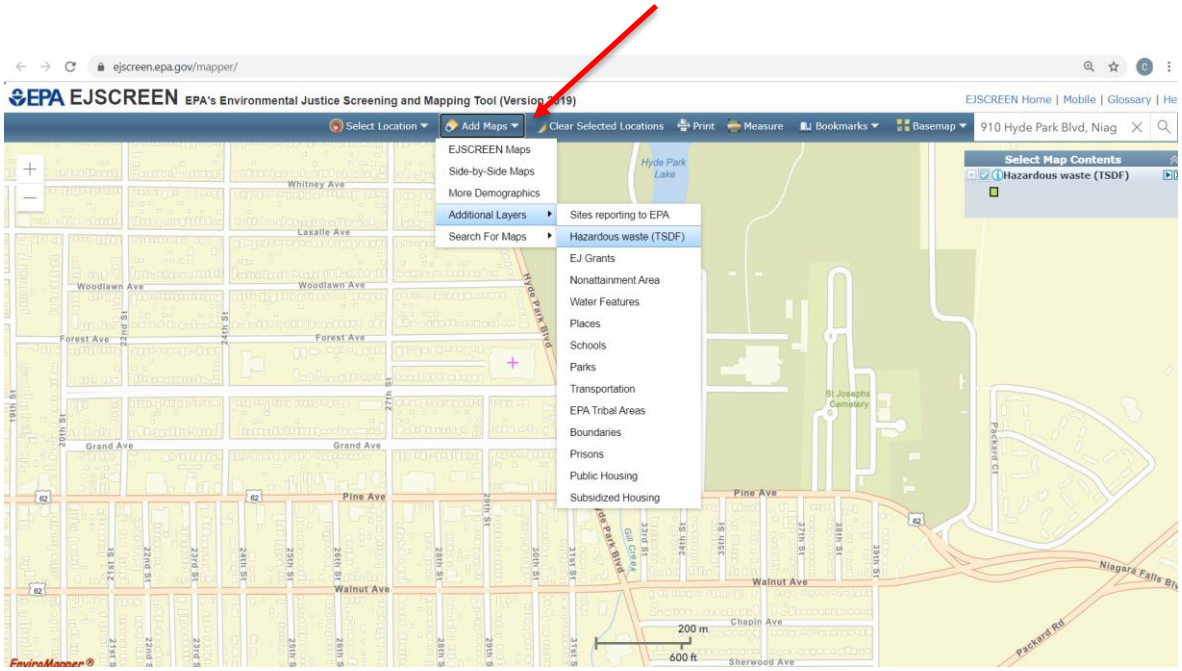
_____

_____

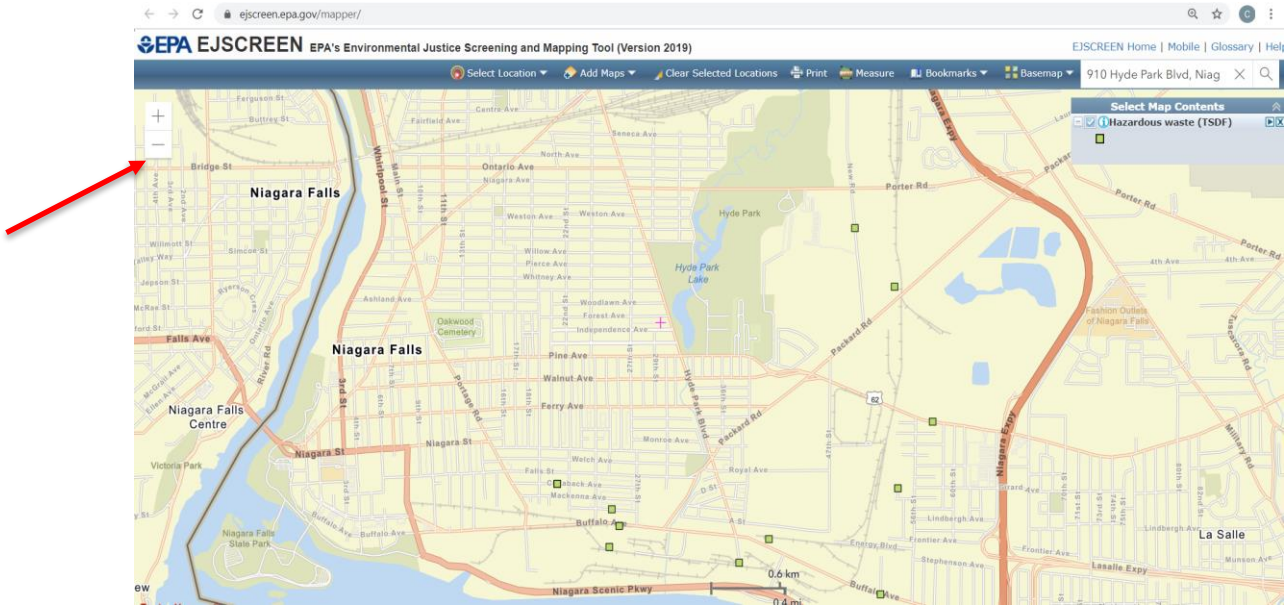
_____

_____

7. At the top of your screen click on the small plus sign symbol that says, “add maps.” This will open a drop-down menu. Hover over the additional layers button and click on “Hazardous Waste TSDF.” This will add hazardous waste treatment, storage, and disposal facility locations to your map.

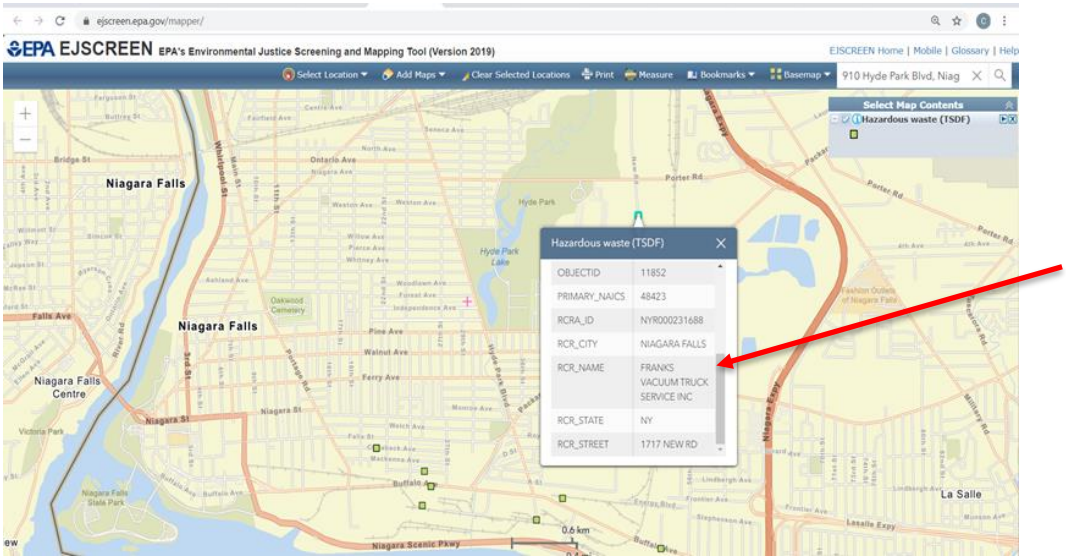


8. Using the minus sign located in the upper left-hand corner of your map, scroll out until you can see a hazardous waste site labeled on the map. The sites will be marked with a small, bright, green square.



9. Click on one of the hazardous waste sites labeled on your map near your home. A small box will open with information about the site. Scroll down until you see a section that says “RCR_Name”. This is the name of the hazardous waste site.

   Write the name of the hazardous waste site: _____



In this example, the name of the hazardous waste site is “Frank's Vacuum Truck Service Inc.”

10. Have you ever been to the hazardous waste site that is located near your home? Did you know that it was a hazardous waste site?

_____

_____

_____

_____

Exit the EJ Screen website. Look at the two maps below and read the descriptions to answer the last two questions in this activity.

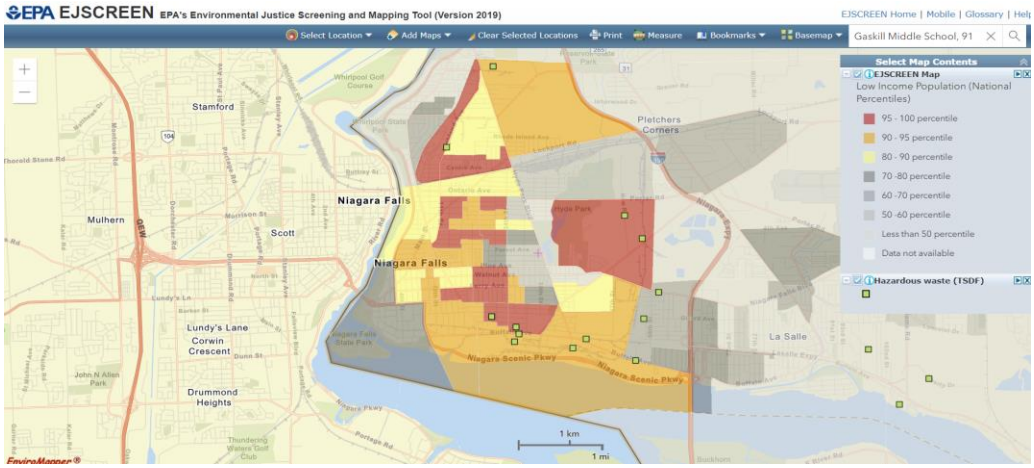


Figure 3: *Low Income Populations and Hazardous Waste Sites in Niagara Falls, NY*

The map above was made using EJ Screen and shows low-income communities and hazardous waste sites in Niagara Falls, NY. The red, orange, and yellow colors show the people who have the lowest income, compared to the rest of the United States. The green squares, like we just mapped in the activity, are hazardous waste sites.

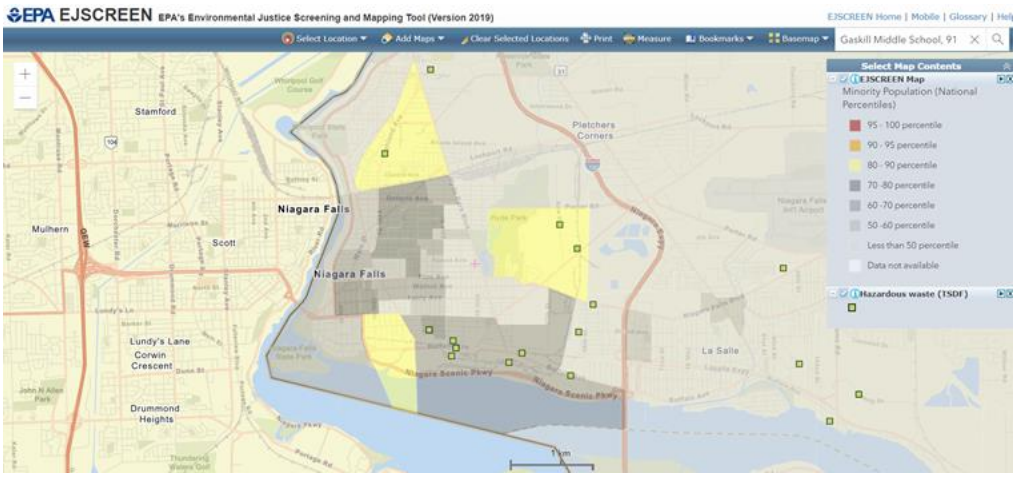


Figure 4: *Minority Populations and Hazardous Waste Sites in Niagara Falls, NY*

The map above was made using EJ Screen and shows minority or people of color communities and hazardous waste sites in Niagara Falls. The red, orange, and yellow colors show the communities with the highest percentage of people of color, compared to the rest of the United States. The green squares, like we just mapped in the activity, are hazardous waste sites.

11. What is unfair about the situation these two maps show? Why might it be difficult for the people in the areas with hazardous waste sites to move somewhere with fewer hazardous waste sites?

_____
_____
_____
_____
_____
_____

12. What would a more environmentally just and fair situation look like in Niagara Falls? Explain in a complete sentence and then draw a picture or a map to show the situation below.

_____
_____
_____
_____
_____

Lesson #3: Assessing Green Space in Your Environment

Student Worksheet - Assessing Green Space in Your Environment

Name _____ Date_____

Instructions: Gather the materials listed below and follow the instructions. Complete the worksheet by following the directions, reading the passage, watching the video, and responding to the questions throughout the worksheet. Websites linked in the footnotes at the bottom of each page provide more information. If you are struggling to understand a concept or a question, click the link to read more about a topic. In this activity we will assess green space in your environment.

Materials Needed

- This student worksheet
- Writing utensil
- Tape measure or chalk for the "Get Outside Activity"
- An electronic device (smart phone, tablet, and/or computer) with internet access to visit the EJ Screen website: https://www.epa.gov/ejscreen.
    - *Please note: Computers are best with navigating the EJ Screen website.*

Critical Thinking Activity - Assessing Green Space in Your Environment

Read the excerpt below from a United States Department of Agriculture article - "Urban Nature for Human Health and Well-Being" (https://www.fs.usda.gov/sites/default/files/fs_media/fs_document/urbannatureforhumanhealthandwellbeing_508_01_30_18.pdf) [18]

> "Writers, philosophers, and naturalists have praised the benefits of nature for human health, happiness, and well-being for centuries, but only relatively recently have researchers begun studying and quantifying the complex relationship between human health and nature.
>
> In 1984, Roger Ulrich, professor and director of the Center for Health Systems and Design at Texas A&M University, published the results of a pioneering study that looked at the recovery rates of gallbladder surgery patients in relation to the views from their rooms in a Texas hospital. Some of the patients looked out over a garden and grove of trees, while others had a view of a brick wall. Ulrich found that patients with a

[18] U.S. Department of Agriculture, Forest Service article "Urban nature for human health and well-being" https://www.fs.usda.gov/sites/default/files/fs_media/fs_document/urbannatureforhumanhealthandwellbeing_508_01_30_18.pdf

natural view spent fewer days in the hospital and used fewer pain medications (Ulrich 1984).

Ulrich's study helped open the door to a new field of inquiry focused on illuminating the ways that nature influences our physical, mental, and social lives. More than three decades later, a broad and diverse body of scientific literature describes the human health value of nature, confirming that trees, parks, gardens, and other natural settings are as essential to livable and sustainable cities as the other critical systems that keep their residents moving and working. Findings from the current literature indicate the wide range of effects. For instance, studies show that:

- People living near parks and green space have less mental distress, are more physically active, and have extended life spans.
- Exposure to nature may impact human mortality from chronic disease.
- When people exercise outdoors in natural environments, they do so for longer periods of time and at greater intensities.
- Positive health effects are enhanced when green space includes the presence of water, or blue space.

There is also strong evidence that time spent in nature can improve the attention capacity of children with attention deficit disorders. Similarly, some research shows that inner-city children who grow up in public housing buildings with a view of nature have greater impulse control and are able to concentrate better and delay gratification longer.

Air Quality

Particulate matter, sulfur dioxide, ground-level ozone, nitrogen dioxide, and carbon monoxide are common air pollutants. Excess air pollution can lead to airway inflammation and reduced lung function. Pollution can also worsen health problems such as asthma, chronic obstructive pulmonary disease, and cardiovascular disease (Shah and Balkhair 2011).

Trees and vegetation in parks can help reduce air pollution directly by removing pollutants and reducing air temperature, both of which contribute to smog, and indirectly by reducing energy needs for cooling in surrounding buildings and associated pollutant emissions from power plants (Nowak and Heisler 2010).

Read the map below from the Trust for Public Land (https://www.tpl.org/city/niagara-falls-new-york) and then answer the questions. The map shows the City of Niagara Falls, existing parks, and areas with a high, moderate to high, and moderate need for a park.

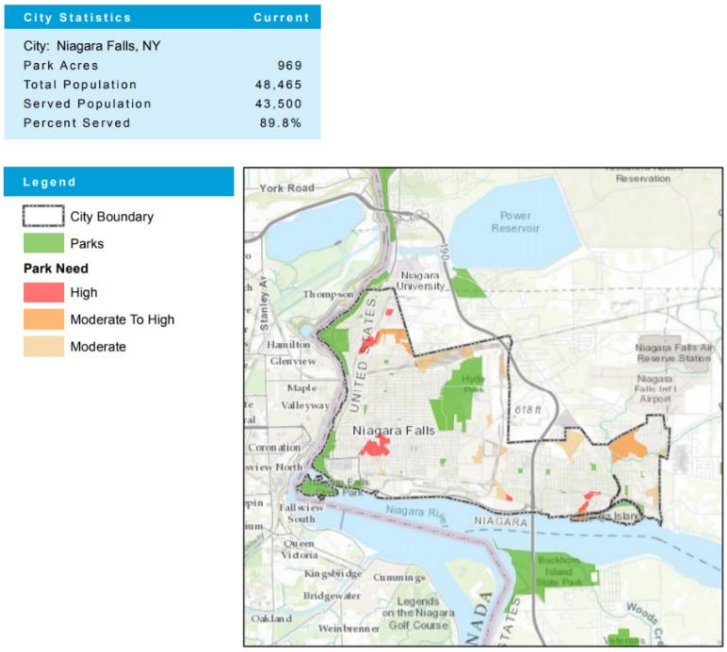


Figure 5: *Parks in the City of Niagara Falls, NY*

1. In Niagara Falls, 90% of people live within a ten-minute walk from a park.[19] This means that approximately 4,965 Niagara Falls residents live farther than a ten-minute walk from a park or green space. Do you think this might impact the health of those people? If so, how?

_____
_____
_____
_____
_____

2. Is there a green space or a park in your community? If there is, do you visit? What do you do when you visit?

_____
_____
_____
_____
_____

[19] The Trust for Public Land website Niagara Falls, NY https://www.tpl.org/city/niagara-falls-new-york

3. How do you feel when you visit green spaces or parks? Do you feel like they have a positive or negative impact on you?

   _____
   _____
   _____
   _____

Get Outside Activity - Assessing Green Space in Your Environment

For this activity - you will need to walk in your community. Remember to follow pedestrian safety rules (https://www.nhtsa.gov/road-safety/pedestrian-safety) !

1. Using a tape measure and some chalk, measure how many feet it takes you to walk 10 steps. _____

2. Divide the distance it took you to walk those 10 steps by 10. This is your average stride length. _____

3. There are 5,280 feet in a mile. Use this number to find the amount of steps you would take when walking one mile. _____

Space to do the calculations:

4. Walk in any direction starting from your home. Count your steps until you reach 1000 steps. What is located 1000 steps from your home (a store, a park, a road, other houses, etc.)?

   _____

5. Try walking 1000 steps in a different direction. What is located there?

   _____

6. Count the trees that you see as you take 1000 steps in any direction from your house. How many trees did you count? _____

7. Would you like to see more trees in your neighborhood? Explain why or why not.

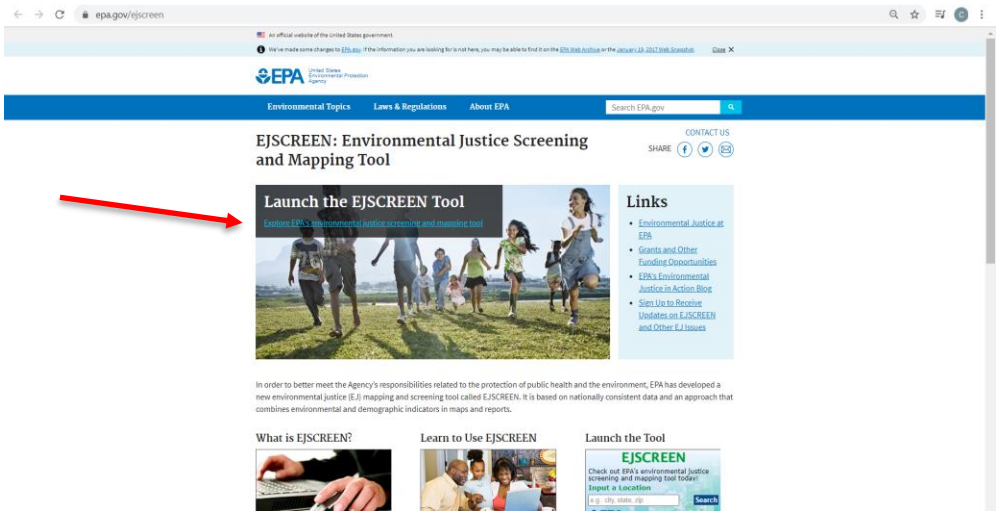
   _____
   _____
   _____

Virtual Mapping Activity - Assessing Green Space in Your Environment

Follow the steps to use the EJ Screen mapping tool. Answer the questions as you work.

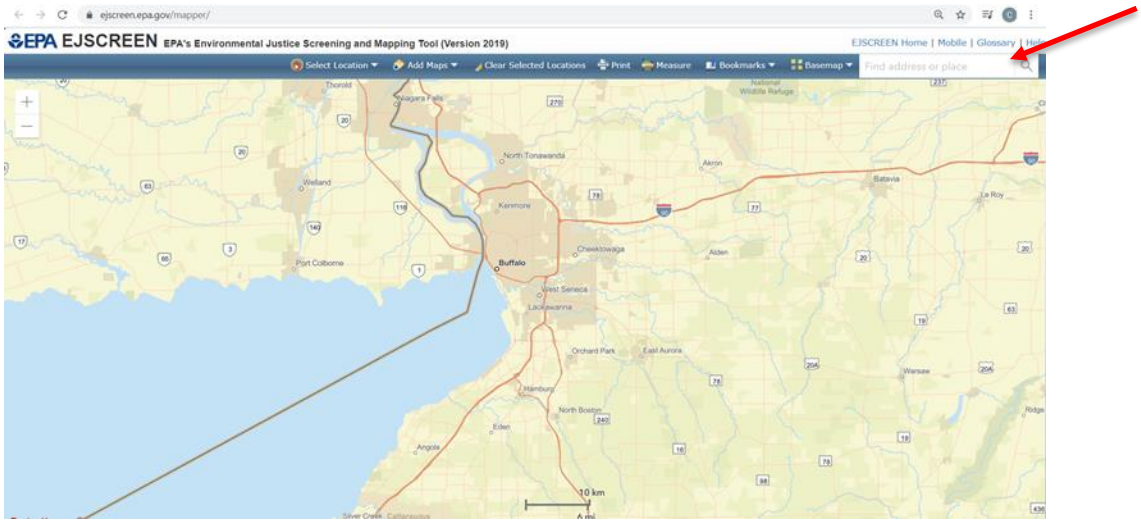
1. Open your web browser and type in the website: https://www.epa.gov/ejscreen

2. Click the blue link that says “Explore EPA’s environmental justice screening and mapping tool”

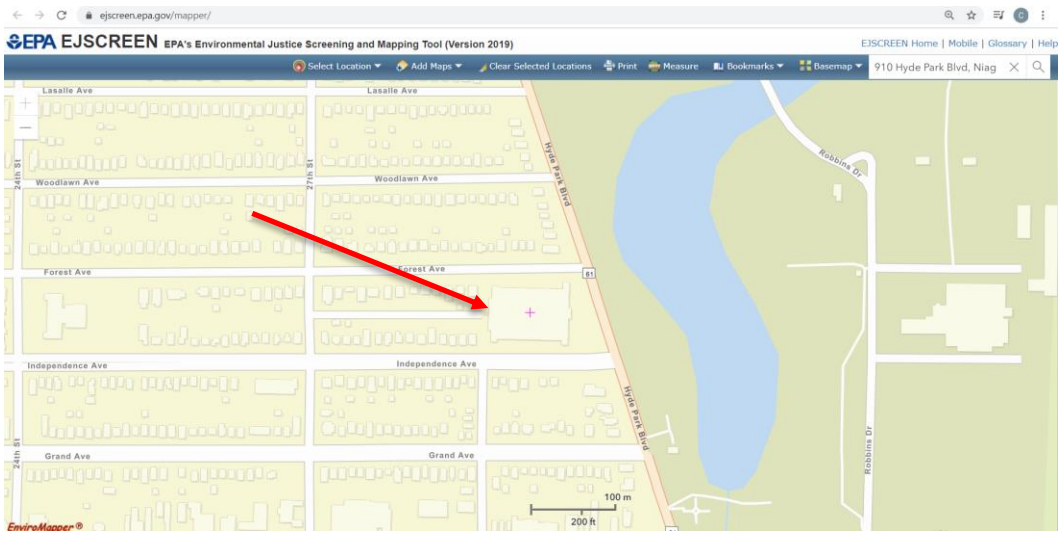


3. After you click the link a new window will open. Wait a moment as the mapping tool loads.

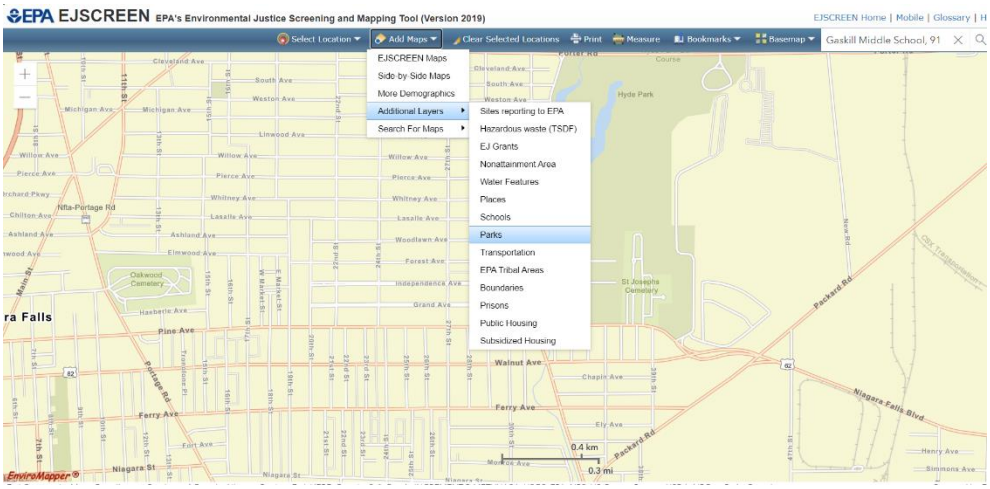
4. Once the mapping tool is loaded, type in your address in the upper right-hand corner box that says, “find address or place.” Click the enter key.



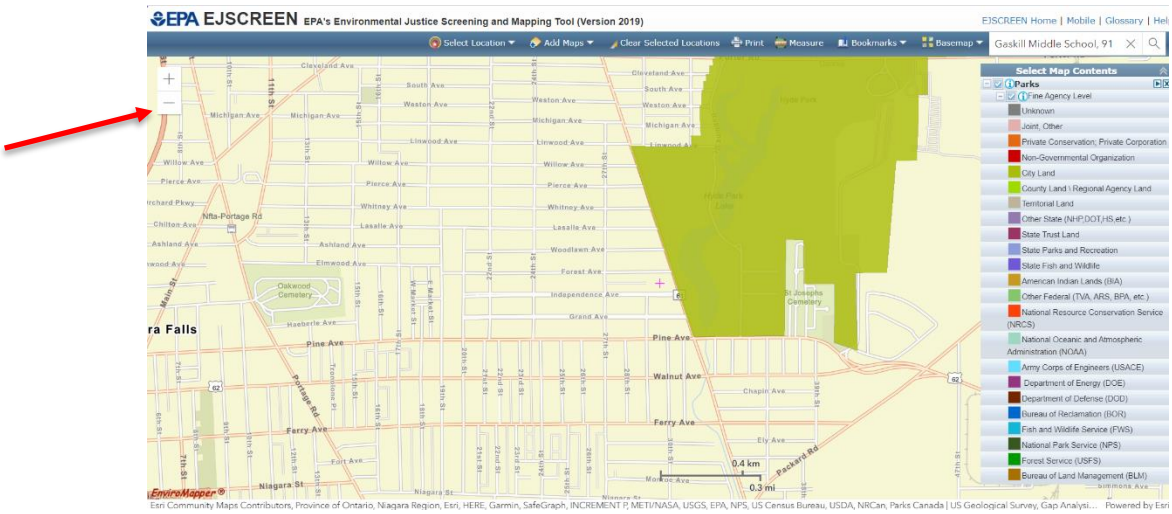
5. The mapping tool will take you to the address you typed into the box. A small, purple cross is placed on the location. Notice Gaskill Prep Middle School in Niagara Falls, NY is used as an example location in this activity.



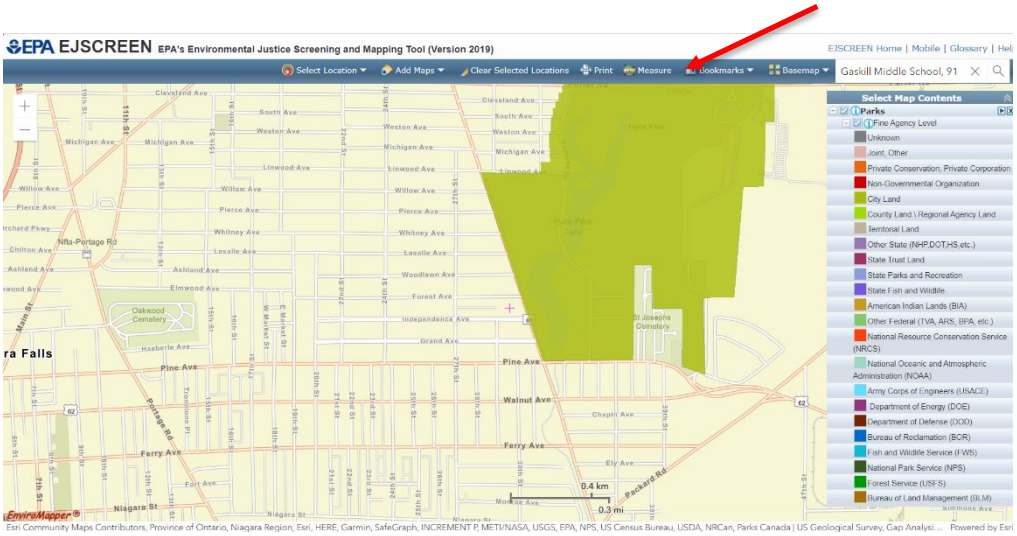
6. At the top of your screen click on the small plus sign symbol that says, “add maps.” This will open a drop-down menu. Hover over the additional layers button and click on “parks.” Parks will be added to your map.



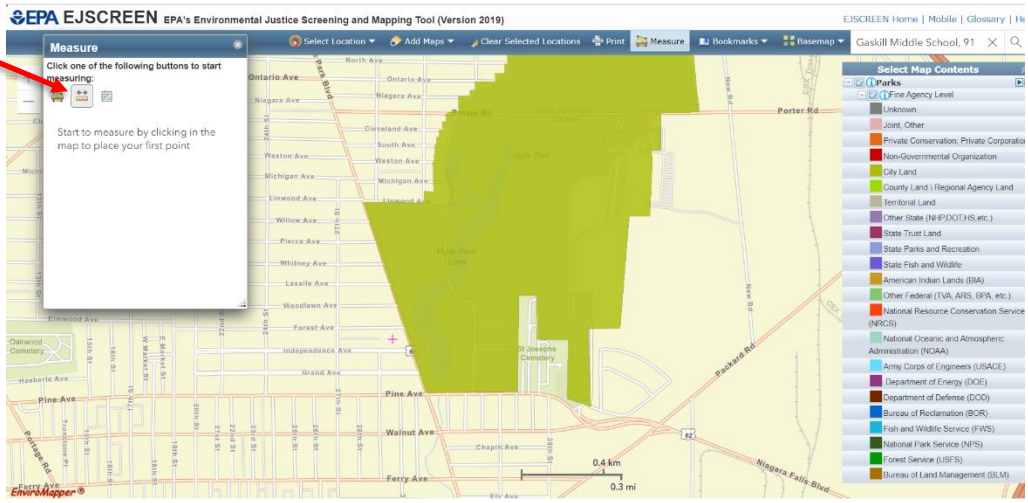
7. Using the minus sign located in the upper left-hand corner of your map, scroll out until you can see a park labeled on the map.



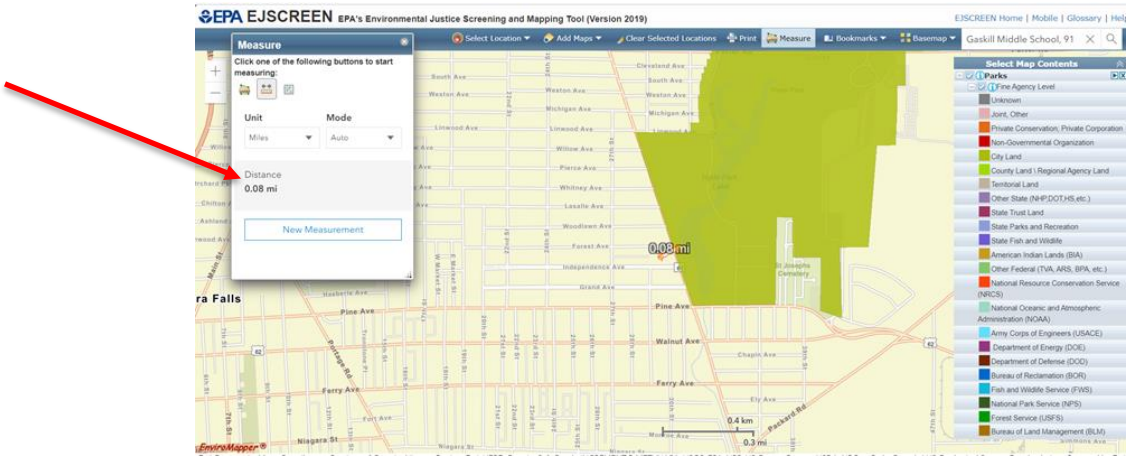
8. At the top of your screen, click on the button that says “Measure” and has a ruler icon.



9. When the measure toolbox pops open - hover your mouse of the middle symbol that is a ruler. It will say “Calculate the distance”. Click this button.



10. Use this tool to measure the distance from your home to the nearest park. Click first on your home and then move your mouse over and double click on the park. In the example you can see below - Hyde Park is only .8 miles away from Gaskill Middle School!



11. How many miles away is the closest park to your house?

_____

12. Using your answer to question #3 of the “Get Outside Activity” - calculate how many steps it would take you to walk to this park.

_____

Space to do the calculation:

13. Scroll out and see if you can find the next closest park. How many miles away from your home is it? You can make a new measurement by clicking the “new measurement” button in the “measure” box.

_____