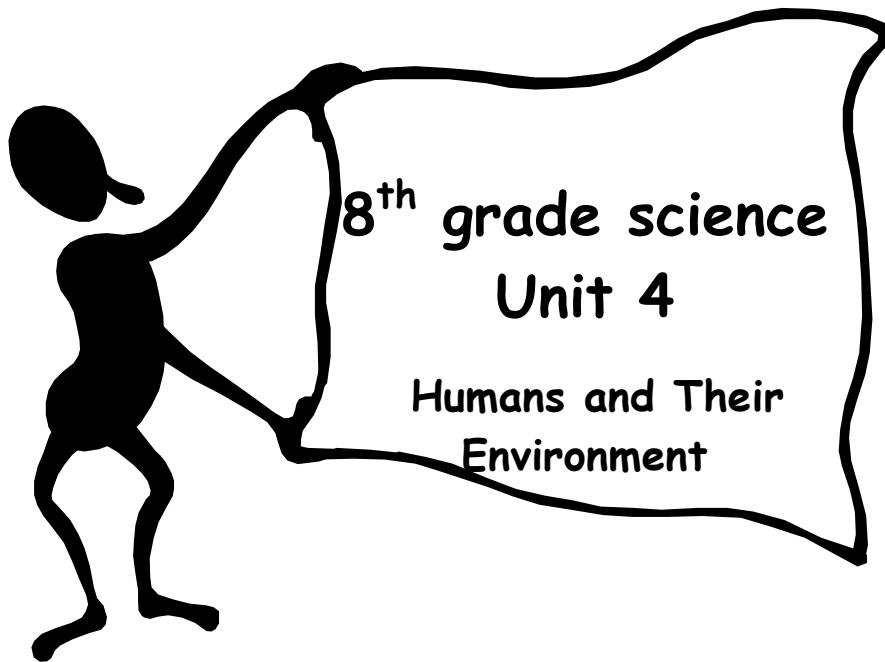


# New York City Department of Education Magnet Program District 25 & 28

185 - ASPIRES



**Essential Question:** How does the way we live impact the environment?

**Suggested Time Frame:** four to six weeks

**Theme:** Social Justice

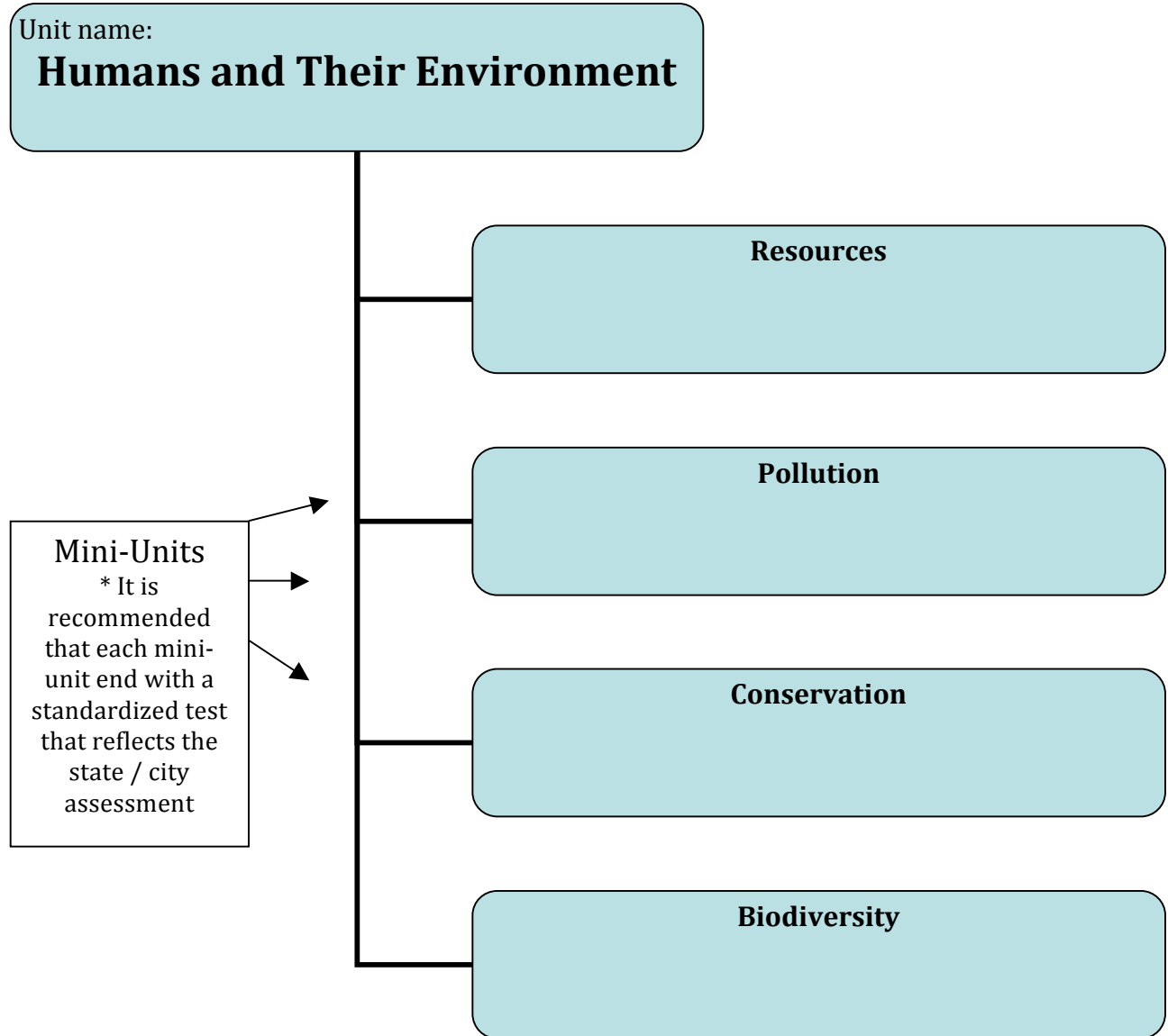
## **Graphic Overview of Unit**

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**Suggested Time Frame: 4-6 weeks**

**Essential Question:**

**How does the way we live impact the environment?**



**Unit's Culminating Project: (briefly explain in 2-3 sentences):**  
Complete a research project explaining how human consumption of resources and production of pollutants impact the environment and our health. (Alternate - Students create a media campaign on behalf of the Environmental Protection Agency to protect the environment.)

**Stage 1- Desired Results**  
**Standards-Based Learning Goals:**

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7.1e Determine through research, how the good health of environments and individuals requires the monitoring of soil, air, and water, and taking steps to keep them safe.

7.2d Demonstrate how, since the Industrial Revolution, human activities have resulted in major pollution of air, water, and soil. Pollution has cumulative ecological effects such as acid rain, global warming, or ozone depletion. The survival of living things on our planet depends on the conservation and protection of Earth's resources.

**Concepts**

**Big Ideas for this Unit**

Environment  
 Balance  
 Conflict  
 Change  
 Relationship  
 Community  
 Harmony

**Magnet School Theme:**

**ASPIRES**  
**Social Justice**

**Relevant/Connected Big Idea:**

In order to maintain social justice, there should be universal laws of environmental protection.

**Enduring Understandings**

**Students will understand that:**

Humans impact on the environment in different ways.  
 It's important to preserve natural resources.  
 Irresponsible actions by one community might affect the harmony of others.  
 Humans need to take action to reduce pollution.  
 Altering the harmony of natural forces will impact on all forms of life on our planet.

**Overarching Essential Question(s):**

- Can we change our living standards so that we do not pollute?
- Are there alternate sources of energy to power our planet without depleting our resources?
- Can our way of life be sustained indefinitely?
- Is there need for more effective laws to help protect the environment in our and other communities?

**Content and Skills**

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<b>Content</b>	<b>Skills</b>
<p><b>Students will know...</b></p> <p>Geyser            Natural resources            Renewable resources            Nonrenewable resources            Petroleum            Fossil fuel            Hydroelectric power            Nuclear energy            Geothermal energy            Pollutant            Smog            Acid precipitation            Greenhouse effect            Ozone depletion            Erosion            Hazardous waste            Recycling            Species            Endangered species            Global warming            Overpopulation            Environmental toxins            Pesticides and Herbicides            Fertilizers            Immune system            Antibody            Vaccination            Virus            Infectious disease            Allergies            Cancer</p>	<p><b>Students will be able to:</b></p> <p>Compare renewable and nonrenewable resources.            List uses of fossil fuels.            Identify alternatives to fossil fuel use.            Determine how wise use of natural resources is important for the health of all life on earth.            Describe types of air pollution.            Identify causes of water pollution.            Identify ways in which pollution problems can be solved.            Identify problems that can result from the accumulation of hazardous waste in a specific area.            Research how communities get affected by waste disposal.            Recognize the danger of ozone layer loss and formulate ways to prevent its loss.            Recognize ways in which use of natural resources can be reduced.            Describe how many materials can be recycled and what the importance of recycling is.            Explain why biodiversity is important in an ecosystem.            Determine the importance of creating strategies for preventing the loss of species.            Enunciate the consequences of oil spills in bodies of water.            Identify several goals of conservation biology.            Recommend strategies to prevent extinction of species.            Explain how endangered species can be reintroduced into its original habitat.            Determine the importance of preserving our rain forests.            Determine the importance of vaccination to prevent diseases.            Determine how diseases are spread.            Identify how HIV affects humanity.</p>

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**Stage 2- Summative Assessment Evidence**

**If students understand, know and are able to do the items in Stage 1, they should be able to show their understanding by completing an authentic task found in the world beyond the classroom.**

➤ Design the Culminating/Summative Task:

**G- (goal)**

Complete a research project explaining how human consumption of resources and production of pollutants impact the environment and our health. This project will be published by students and presented in a science conference.

**R- (role)**

Researcher

**A- (audience)**

Conference attendees.

**S- (situation)**

Students will research situations in which the community has been impacted by pollution. Then, they will present their findings to members of the audience.

**P- (purpose and product)**

To show effects of pollution on a community.

Publication and presentation of the findings. Use of audio/visual aids is recommended.

**S- (standards for performance)**

Your project should include (but not be limited to) the following:

- Research from a non-fiction font of information (e.g. News papers, internet articles, magazines, news)
- Clearly identify the problem, causes and effects on a particular community.
- Institutions involved in causing and solving the problem.
- Your opinion about the repercussion of this and similar incidents in the environment.
- Audio-visual support to your findings. (e.g. Pictures, video, audio)

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**Student Task**

**In the space below, write the task exactly as students will see it.**

1. You will work with other two classmates. In groups of three students you will finish a research project. The project will be presented to an audience in a science conference.
2. In order to prepare for this project, you must search for news or articles indicating that a particular incident (Result of a human action) has impacted a particular community in a negative way.
3. Then you will choose one of those incidents and will fully research the different events that took place for it to happen. You must research, at least, the following:
  - Broad description of the incident.
  - Causes of the situation.
  - People responsible for the incident.
  - Ways in which a community was (Or is being) affected by this incident.
  - What is being (or was) done to solve the problem caused by this incident and to remediate the damage caused to the area involved.
  - Laws that protect people in similar situations.
4. You will create a complete and detailed report with the gathered information. Make sure to utilize the elements of a report learned in you ELA classes.
5. You need to find, or create; audio/visual aids (Pictures, video, graphs, audio files) that will help you illustrate and show the effects of this particular event on an area or community.
6. You must express your own opinion about this situation and its effects on a particular community/area. You can also include possible solutions to similar situations to avoid this type of damage in a future.
7. You will prepare a presentation about this incident. You must defend your position and findings about this type of incidents in front of an audience in a science conference.

(Alternate activities: To connect this to social justice – students create a media campaign on behalf of the EPA showing how human consumption of resources has adversely effected the environment. The media campaign would include an advertisement for print media, a commercial for TV and a radio spot. The students could also develop an idea for a news worthy event to advertise, such as Earth Day.

Role – Advertising Executive

Situation – hired by EPA to create media campaign.)

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**Rubric for Culminating Project**

2: Incomplete level of understanding	2: Research shows few aspects of the problem from few fonts of information.	2: Culminating presentation is brief and lacks overall evidence of attention to the needs of the audience; there is little use of visual aids to lend coherence to the presentation's organization, and there is a consistent need for further explanation and elaboration through supporting evidence
<p><b>4:</b> High level of understanding is demonstrated through an account that contains some sections with original insights supported with application, subtle connections, and many aspects need much more evidence to support development and evidence to make a convincing, complete, and insightful argument.</p>	<p><b>4:</b> Research is thorough. Shows different aspects of the problem from different fonts of information. Information is stated using some ELA rules. Information is barely supported by data and, shows information gathered by different sources. Small amount of data is used to; somehow, complement the information about the incident. The information in the project is supported by few forms of audio visual aid. Found data is analyzed to help support information about the incident. The information in the project is supported by pictures, video, charts, audio files. The A/V aids complement the information gathered by you.</p>	<p><b>4:</b> Culminating presentation is characterized by highly effective attention to the needs of the audience as well as creative use of visual aids to reinforce coherence, development, and persuasiveness</p>
<p><b>3:</b> Adequate level of understanding is demonstrated through some original insights and sections that are well developed, superficial account that tends to summarize rather than analyze key ideas; many aspects of the argument are sketchy or</p>	<p><b>3:</b> Research shows some aspects of the problem from few fonts of information. Information is stated using ELA rules. Information is supported by some forms of data and, shows information gathered by primary sources. ELA rules. Information is not supported by data and, shows information gathered by limited sources. No data is used to; somehow, support the information about the incident. The information in the project is supported by some form of audio visual aid. No data is used to complement the information about the incident. The information in the project is not supported by audio visual aids.</p>	<p><b>3:</b> Culminating presentation is characterized by a straightforward but inadequate, lacking any under developed approach, with some use of visual aids and generally a clear understanding and responsiveness to the need to support and express them with power of conviction. No evidence is present of the need to organize information and claims visually.</p>
<p><b>2:</b> Incomplete level of understanding is little, if any, demonstrated through an account that contains some reliable evidence to support claims and original insights supported with adequate evidence; many aspects need much more development and evidence to make a convincing,</p>	<p><b>2:</b> Research shows few aspects of the problem from few fonts of information. Information is stated using some ELA rules. Information is barely supported by data and, shows information gathered by different sources. Small amount of data is used to; somehow, complement the information about the incident. The information in the project is supported by few forms of audio visual aid.</p>	<p><b>2:</b> Culminating presentation is brief and lacks overall evidence of attention to the needs of the audience; there is little use of visual aids to lend coherence to the presentation's organization, and there is a consistent need for further explanation and elaboration through supporting evidence</p>

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<b>Stage 2- Formative Assessment Evidence</b>	
<b>Throughout the unit how will you check to make sure students are mastering the knowledge, skills, and understandings they need to be successful at the summative/culminating task?</b>	
<p style="text-align: center;"><b>Assessment Formats on the State Test</b></p> <ul style="list-style-type: none"> <li>• To assess concept grasp, students will answer a series of multiple choice questions.</li> <li>• Given diagrams, students will identify different components and relationships in it. They will also complete short answer response questions based on the diagrams.</li> <li>• Given graphs and maps students will analyze the information on them. Then will answer questions based on that information.</li> <li>• Given data, students will create charts and tables to illustrate the information given.</li> <li>• Given different scenarios, students will identify problems and possible solutions.</li> </ul>	<p style="text-align: center;"><b>Weekly Formative Assessments</b></p> <p><b>For Content...</b>  <b>Multiple choice questions on:</b></p> <ul style="list-style-type: none"> <li>• Concepts and vocabulary</li> </ul> <p>Analyze diagrams/graphs/maps related to:</p> <ul style="list-style-type: none"> <li>• Natural resources</li> <li>• Recycling</li> <li>• Air pollution</li> <li>• Endangered species/habitat loss</li> <li>• Diseases</li> </ul> <p>Use textbook activities and labs to reinforce concepts learned in class.</p> <hr/> <p><b>For Skills...</b>            Compare different data information.            Identify elements in a diagram.            Analyze problem situations and state possible solutions.            Explain how systems work in harmony and how they affect other systems            Research information about particular topics related to the unit.            Do the labs and answer the different skill activities proposed on the textbook.</p> <hr/> <p><b>For Understandings...</b>            Analyze the way in which humans impact other living creatures and their environments in our planet.            Discuss the importance of recycling; tell their experience in recycling in daily life.            Determine importance of preserving habitats.            Analyze effects of pollution on the environment.            Enunciate possible solutions to pollution problems.            Discuss laws about environment protection.</p>