

Backwards Design Unit Planning

Teacher/School: Jorge Echeverria/MS 217Q

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

Middle School 217Q

# Humans in their Environment

**Essential Question:** Does human consumption of resources have an effect on the environment and our health?

**Suggested Time Frame:** 10 weeks

**Theme:** Green Magnet School for Career Exploration

## **Graphic Overview of Unit**

**Suggested Time Frame:**

**Essential Question: How does human consumption of resources affect the environment and our health?**

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“Humans in their Environment”

Conserving Resources

Conserving Life

Immunity and Disease

Mini-unit name

Mini-Units

\* It is recommended that each mini-unit end with a standardized test that reflects the state / city assessment

**Unit’s Culminating Project: (briefly explain in 2-3 sentences): Students will create a documentary focusing on the impact that the Exxon Valdez oil spill had on the communities surrounding Prince William Sound, in Alaska.**

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<b>Stage 1- Desired Results</b>	
<b><u>Standards-Based Learning Goals:</u></b>	
<b>Concepts</b>	
<p><b>Big Ideas for this Unit</b></p> <p><b>Environment</b></p> <p><b>Relationship</b></p> <p><b>Conflict</b></p>	<p><b>Magnet School Theme: Green Magnet for Career Exploration</b></p> <p><b>Relevant/Connected Big Idea: Our lifestyle is causing harm to the environment</b></p>
<p><b>Enduring Understandings</b></p> <p><b>The student will understand that</b></p> <ol style="list-style-type: none"> <li><b>1. Since the Industrial Revolution, human activities have resulted in major pollution of air, water and soil.</b></li> <li><b>2. The survival of living things on our planet depends on the conservation and protection of Earth's resources</b></li> </ol>	<p><b>Overarching Essential Question(s):</b></p> <p><b>How does human consumption of resources affect the environment and our health?</b></p> <p><b>Other inquiries:</b></p> <ol style="list-style-type: none"> <li><b>1. Has the search for new (or to improve existing) technology affected the balance of our ecosystem?</b></li> <li><b>2. Is technology most likely to improve/limit (or both) the ability (chances) of living things to survive?</b></li> <li><b>3. Can we reintroduce endangered species to their original habitat?</b></li> </ol>
<b>Content and Skills</b>	
<p><b>Content</b></p> <p><b>Students will know...</b></p> <p><b>Importance and need for fossil fuels</b></p> <p><b>The difference between renewable and nonrenewable resources</b></p> <p><b>How fossil fuels are used</b></p>	<p><b>Skills</b></p> <p><b>Students will be able to...</b></p> <p><b>Identify, manipulate variable, constants and controls</b></p> <p><b>Understand that the sun is the major source of energy o Earth</b></p>

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<b>Alternatives to using fossil fuels</b>	<b>Explain the differences between renewable and nonrenewable resources</b>
<b>Acquisition and depletion of resources</b>	<b>Identify cause and effect relationships</b>
<b>Waste disposal</b>	<b>Define the types of air pollution</b>
<b>Land use and urban growth</b>	<b>Describe water pollution</b>
<b>Overpopulation</b>	<b>Conduct an investigation to find the effects of overpopulation</b>
<b>Global warming Ozone depletion</b>	<b>List the causes and effects of global warming</b>
<b>Acid rain</b>	<b>Define the role played by the ozone layer and review consequences of its depletion</b>
<b>Air pollution</b>	<b>Describe how acid rain forms</b>
<b>Causes of water pollution</b>	<b>Define the types of air pollution</b>
<b>How erosion can be prevented</b>	<b>Describe water pollution</b>
<b>Energy conservation</b>	<b>Devise methods to prevent erosion</b>
	<b>Recognize ways to save natural resources</b>
<b>Environmental Toxins</b>	<b>Establish the importance of conservation Investigate how we can recycle a variety of the materials that we use daily</b>
<b>Endangered species</b>	<b>Investigate their impact on the environment</b>
<b>Habitat destruction</b>	<b>Recommend strategies to prevent extinction of species</b>
<b>Packaging and Solid Waste</b>	<b>Explain how endangered species can be reintroduced to its original habitat</b>
<b>Creating a video documentary</b>	<b>Gather evidence on the amount of waste collected in NYC and discuss the problems that it poses for the</b>

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	<b>environment</b> Learn/review skills necessary to operate video/photo equipment to create a video documentary
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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): To create a documentary about the Exxon Valdez oil spill in the Prince William Sound, Alaska.

R- (role): You are an Investigative Reporter

A- (audience): Members of the United States Senate, members of the press (classmates, PTA)

S- (situation): You are a college student studying Environmental Science, and spend the summer working as an intern for Senator Judith Council, Chairperson on the Committee for Environmental Oversight.

P- (purpose and product): You will create a documentary that shows the impact of this catastrophe on the ecosystem of the area.

S- (standards for performance): Your work should compare and contrast life before and after the oil spill, contain interviews with local people (businessmen, fishermen, doctors), as well as factual

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data outlining any damages to the economy and patterns in health related issues.

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### **Student Task**

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

**After completing your second year in college, you are working as an intern in the office of Senator Judith Council. Your mentor, Ms. Cardenas, a former reporter for the New York Gossip, knowing that your area of expertise is Environmental Science asks for your help in creating a video documentary that is to be presented to the Senate Environmental Subcommittee in four weeks.**

**Your task is to travel to Prince William Sound in Alaska and find evidence of the impact that the Exxon Valdez oil spill has had on the area's ecosystem. Your documentary is expected to contain evidence to support your findings, including interviews with inhabitants of the area, as well as any data that show trends/patterns in health related issues before and after the spill.**

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### Rubric For Culminating Project

<b>Understanding (60%)</b>	<b>Product (30%)</b>	<b>Presentation (10%)</b>
<b>4 = High level of understanding through evidence of independent application, subtle connections, and extensive and valid evidence to support all major claims and assertions.</b>	<b>4 = Documentary is extremely well organized and fully developed, with extensive evidence of original ideas and assertions supported by consistent evidence of independent research and facts.</b>	<b>4 = Culminating presentation is characterized by highly effective attention to the needs of the audience as well as creative use of pictures and graphs to reinforce coherence, development and persuasiveness.</b>
<b>3 = Adequate level of understanding is demonstrated through some original insights and sections that are well developed; other sections need additional evidence to support fully with evidence all major claims and assertions.</b>	<b>3 = Documentary is generally clearly organized, with some sections fully developed through original analysis, but other sections would benefit from greater attention to supporting details and elaboration.</b>	<b>3 = Culminating presentation is characterized by a straightforward but underdeveloped approach, with some use of visual aids and generally a clear understanding and responsiveness to audience needs.</b>
<b>2 = Incomplete level of understanding is demonstrated through an account that contains some sections with original insights supported with adequate evidence; many aspects need much more development and evidence to make a convincing, complete, and insightful argument.</b>	<b>2 = Documentary is somewhat superficial in its approach, with a tendency toward summary and highlights and with little attention to original analysis; much greater attention to supporting details, relevant evidence, and coherence of organization are required.</b>	<b>2 = Culminating presentation is brief and lack 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.</b>

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<p><b>1 = Little evidence of deep understanding is demonstrated as a result of a generally superficial account that tends to summarize rather than analyze key ideas; many aspects of the argument are sketchy or underdeveloped, with little, if any, attention to balanced and reliable evidence to support claims and assertions.</b></p>	<p><b>1 = Documentary is extremely superficial in its approach to presenting and supporting an original thesis and related supporting evidence and claims; there is little evidence of original analysis or insight; sequence of events is poorly organized, with little, if any, supporting details, relevant evidence, and coherence of organization.</b></p>	<p><b>1 = Culminating presentation is inadequate, lacking any attention to the needs and background of the audience. Ideas are consistently summarized with no attention 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.</b></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>	
<b>Assessment Formats on the State Test</b>	<b>Weekly Formative Assessments</b>
	<b>For Content...</b>  <b>Multiple choice tests, Foldables, Entry Tickets</b>
	<b>For Skills...</b>  <b>Labs, Science Journal</b>
	<b>For Understandings...</b>  <b>Short response/open-ended questions tests, Exit Tickets</b>

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