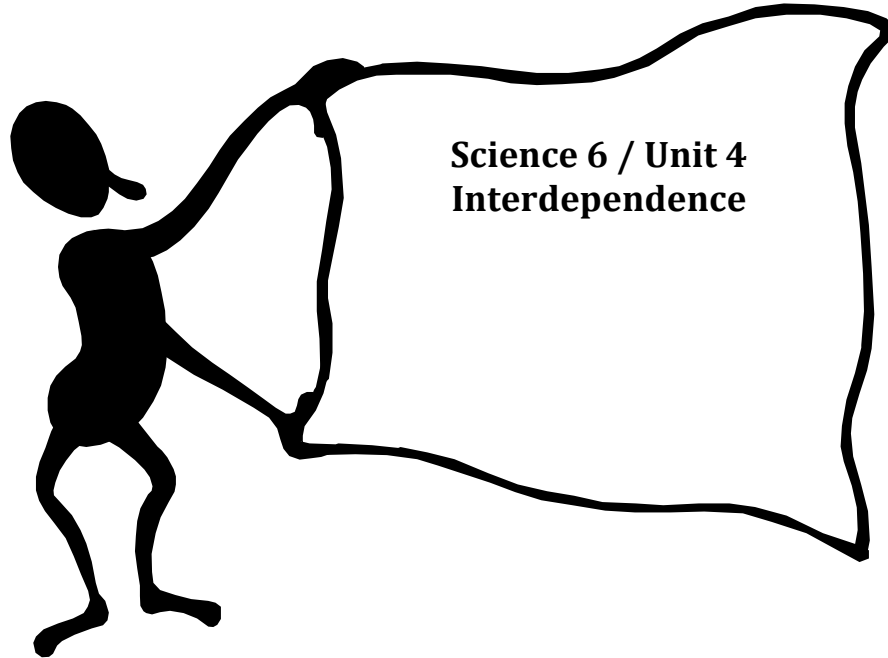


# Backwards Design Unit Planning

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

School Name IS 237



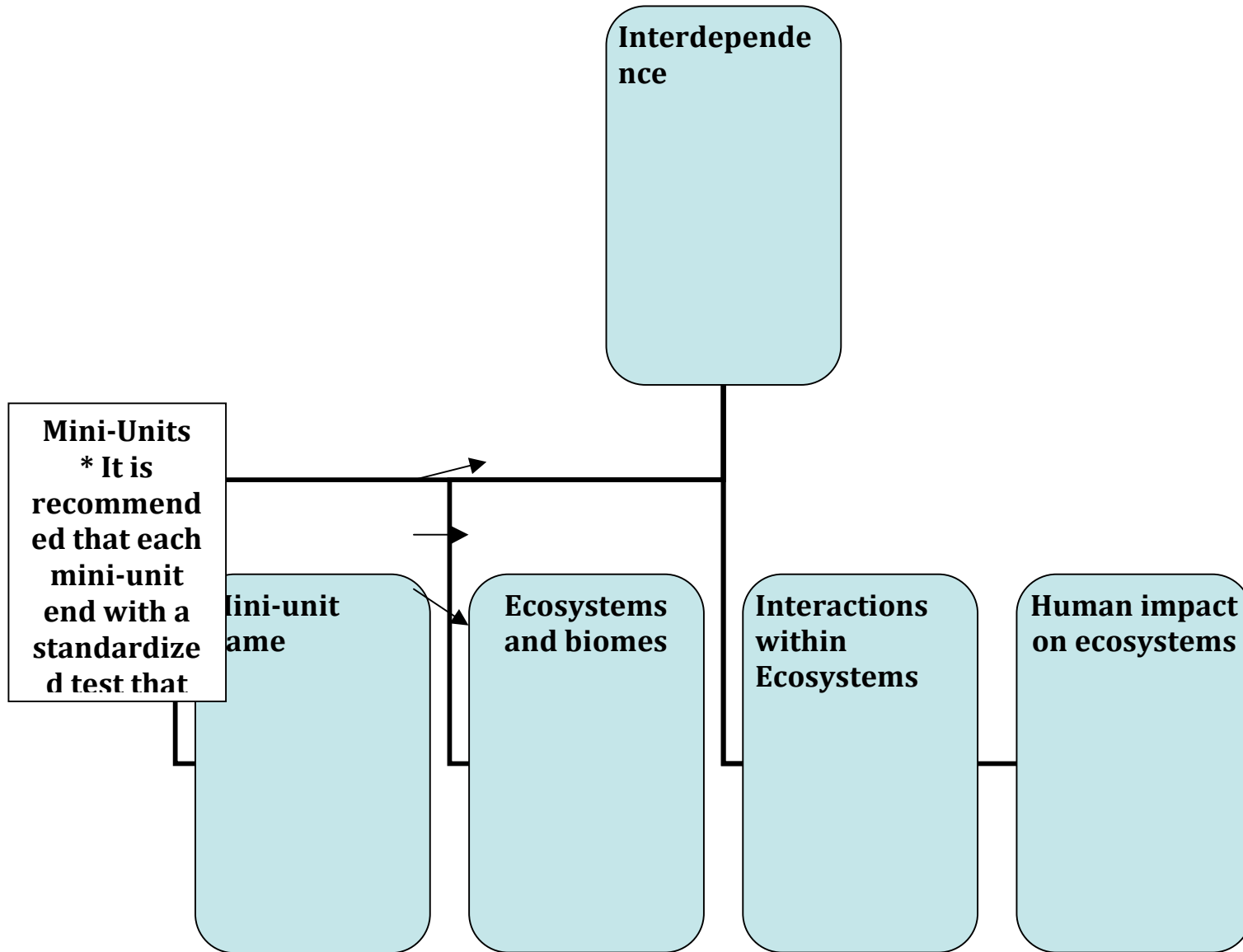
**Essential Question: Can imbalance be beneficial?**

**Suggested Time Frame: Three weeks**  
**Theme: Arts**

## **Backwards Design Unit Planning**

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# Backwards Design Unit Planning



## **Backwards Design Unit Planning**

**Unit's Culminating Project: (briefly explain in 2-3 sentences): The students will be collecting real life pictures of places that are affected by man-made and natural disasters. They have to create a documentary explaining what they have found out about the benefits and drawbacks of the disaster.**

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### Stage 1- Desired Results

#### Standards-Based Learning Goals:

PS2.2j, LE7.1a, PS1.1i, PS2.1b, LE7.2d, PS2.1bLE7.2d, PS2.2r,LE1.1h,  
LE7.1a, LE7.2a,b, LE7.1b, LE3.2a, LE7.1c,d, LE7.1c, LE7.1e, LE1.2e

### Concepts

#### Big Ideas for this Unit

**Interaction  
Balance**

**There is a constant tug-of-war  
between the elements  
(components) of systems in  
order to achieve  
balance/equilibrium/symmetry.**

#### Magnet School Theme: Arts

**How does the Big Idea in your  
unit connect to your theme?**

**Balance or symmetry is a  
universal principle that is found  
in art and in nature. Imbalance  
or asymmetry can result in  
innovation, diversity, and  
progress.**

#### Enduring Understandings

- **Matter and energy**

**Overarching Essential Question:  
(this question should connect to**

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<p><b>together support life within an environment.</b></p> <ul style="list-style-type: none"><li>• <b>Living things within an ecosystem interact with each other and the environment.</b></li><li>• <b>Humans and human population growth affect the environment.</b></li><li>• <b>Balance is needed between the needs of human and their environment.</b></li><li>• <b>Natural disasters bring advantages and disadvantages.</b></li></ul>	<p><b>your school the</b></p> <p><b>Can imbalance be beneficial?</b> <b>What good can come out of this?</b> <b>Example are:</b> <b>Forest fire</b> <b>Floods</b> <b>Earthquakes</b> <b>Volcanoes</b></p>
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<b>Content and Skills</b>	
<b>Content</b> Students will know Climate, biomes, variations, natural cycles, populations, communities, ecosystems, abiotic factors, biotic factor, ecology, producer, consumer, decomposer, food chain/web, energy pyramid, species, habitat, niche, predator, cooperation, symbiotic, limiting factor, succession, carrying capacity, pioneer species, natural recourses, population density, pollution, biodiversity, conservation, sustainable.	<b>Skills</b> Students will be able to... <ul style="list-style-type: none"><li>• Recognize, analyze patterns and trends.</li><li>• Sequence of events</li><li>• Identify and discuss cause and effect relationships.</li><li>• Classify living things</li><li>• Identify structure and function relationships in organisms.</li></ul>

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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:**

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**Please note: The Essential Question and the Grasp are interconnected. The GRASP is a way for students to demonstrate their knowledge and understanding unit by answer of the Essential Question. Or you can say, they are answering the essential question through their GRASP.**

**G- (goal) The students create a documentary about whether man-made and natural disasters are beneficial or detrimental to both man and nature.**

**R- (role) : Journalists**

**A- (audience) students**

**S- (situation): You are a journalist. You have to create a documentary that shows incidences of man-made and natural disasters.**

**P- (purpose and product): To create a documentary of a variety of photographs that shows man-made and natural disasters. Each student has to bring two or three photographs of a disaster.**

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**S- (standards for performance): The photographs need to be real life incidences of disaster. The documentary report must be completed using PowerPoint or some other type of technology. The documentary should be concise, no more than 5 minutes. The documentary needs to include:**

- how and why did the disaster happen**
- where and when did the disaster happen**
- describe what were the immediate impact on the local people living near the disaster**
- explain what was /will be the long term effects**
- are the long term effects productive or nonproductive**
- did the natural disaster disturb the balance in the ecosystem/environment.**

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### **Student Task**

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

**You should give this to them on the first day of the unit. This way they know where they are going.**

**You are a journalist. You have to get two or three photographs that show real incidences of man-made or natural disasters. You have to investigate the short term and the long term impact on the living and nonliving things in the disaster area. With the information you have collected, including pictures, create a documentary using technology explaining what you have found out about the benefits and drawbacks of disasters.**

**Your documentary report may be completed using PowerPoint, Movie Maker, video cameras or any other technology that your teacher approves. The documentary needs to be concise and should be no longer than 5 minutes. It must tell the who, what, where, when, and how of the disaster and must thoroughly explain the short-term and long-term impacts of the event.**

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### Rubric For Culminating Project

<b>Understanding (60%)</b>	<b>Product (20%)</b>	<b>Presentation (20%)</b>
<b>4=High level of understanding is demonstrated through evidence of subtle connection, 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. There is evidence of independent research.</b>	<b>4= 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.</b>
<b>3=Adequate level of understanding is demonstrated through original insight and sections that are well developed.</b>	<b>3= Documentary is clearly organized with some sections fully developed but some sections need supporting details and elaboration.</b>	<b>3= Culminating presentation is characterized by straight forward and underdeveloped approach with some visual aids and generally a clear understanding and responsive to audience needs.</b>
<b>2=Incomplete level of understanding is demonstrated through the evidence.</b>	<b>2= Documentary is somewhat superficial in its approach with little supporting details or relevant evidence. The coherence of organization is weak.</b>	<b>2= Culminating presentation is brief and lacks overall attention to the needs of the audience. There is very little use of visual aids to lead to coherence in the presentation's organization and there is a consistent need for further explanation and elaboration through supportive evidence.</b>
<b>1=Little evidence of deep</b>	<b>1= Documentary is extremely</b>	<b>1= Culminating presentation is</b>

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<b>understanding, many aspects of argument are undeveloped with little or no reliable evidence to support claims and assertions.</b>	<b>superficial in its approach with very little supporting details, relevant evidence. The overall presentation is poorly organized.</b>	<b>inadequate, lacking any attention to the needs and background of the audience. No evidence is present of the need to organize information and claims visually.</b>
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### Unit's Essential Question:

<b>Mini-Unit Title (each mini-unit is approx 1 week long)</b>	<b>Big ideas of the mini-unit / concept statement (macro) What is the big idea of this mini-unit?</b>	<b>Key Content /Knowledge (Important Content to Know about, vocabulary, the specifics) (Micro)</b>	<b>Skills What should the students be able to do? (rule of thumb - skills are verbs - knowledge is a noun)</b>	<b>List of Topical / Content Based Questions (make sure to amend the essential question so that it becomes topical for this mini-unit)</b>	<b>Mini-Unit Assessment (must be aligned to the NYS / NYC exams. It can be a test or a quiz - i.e.: DBQ Essay; 10 multiple choice questions; or 3 constructed response questions)</b>	<b>Scaffolding towards the culminating project (what can be done during this mini-unit to develop the stage 2 culminating assessment (grasp)</b>
<b>Ecosystems and biomes</b>	<b>Interaction, balance</b>	<b>Ecology, ecosystem, biotic and abiotic factors,</b>	<b>Recognize, analyze, Sequence, identify</b>	<b>How matter is exchanged between organisms and their</b>	<b>Quiz-10 question. Lab-report should be written in</b>	<b>Write an article, after doing a research about how matter</b>

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		cycle, consumer, food web/chain, biome		environment?  How does the amount of energy change as it flows through an ecosystem?	scientific method format. Demonstration.	and energy together support life within an environment.  The Student Task, GRASPs, and rubric have been presented.
Interactions within ecosystem	Interaction, balance	Species, population, Habitat, population, Habitat, niche, com munity, symbiotic, succession	Identify, Pattern, trend, analyze	How do organisms interact with each other?  How is interaction harmful to some species?	Multiple choice -10 questions. Lab- lab report should be written in the scientific method format. Demonstration.	Write an article, after doing research about how living things within an ecosystem interact with each other and the Environment. Listing natural and man-made disasters.
Human impact on	Interaction, balance	Natural resources,	Analyze, identify	How does growing	One test Lab -lab report	Write an article, after

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<p><b>ecosystem</b></p>		<p><b>Population density, Pollution, biodiversity, conservation, sustainable</b></p>		<p><b>population put pressure on the ecosystem?</b></p> <p><b>How does loss of diversities affect the environment?</b></p>	<p><b>should be written in the scientific method format. Debate Demonstration.</b></p>	<p><b>doing a research about humans and human population growth can affect the Environment. Get some photographs that show area affected by man-made and natural disasters.</b></p> <p><b>The students have produced their documentaries and presented them.</b></p>

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### A Week at a Glance – Copy as Necessary

#### Week 1 -

<b>WHERE</b> is the student going and what is expected <b>HOOK</b> with needed skills to experience and explore Opportunity to <b>REVISE</b> and <b>RETHINK</b> their understanding		<b>Allow students to EVALUATE work and implications</b> <b>TAILOR work to student needs</b> <b>Be ORGANIZED to maximize engagement</b>		
Monday	Tuesday	Wednesday	Thursday	Friday
<b>Content Focus:</b> <b>What factors determine climate?</b>  <b>Hook:</b> <b>What is climate?</b>  <b>Daily Assessment:</b> <b>Identify and describe the conditions that determine climate</b>	<b>Content Focus:</b> <b>What are climate zones?</b>  <b>Hook: How do oceans' currents affect temperature?</b>  <b>Daily Assessment:</b> <b>Why are regions closer to the equator warmer</b>	<b>Content Focus:</b> <b>What are local climates?</b>  <b>Hook: What creates smaller climate zones within the larger ones?</b>  <b>Daily Assessment:</b> <b>Describe some factors that affect local climates.</b>	<b>Content Focus:</b> <b>How does climate affect living organisms?</b>  <b>Hook:</b> <b>What are three factors that can affect local climates?</b>  <b>Daily Assessment:</b> <b>Explain two ways animals are</b>	<b>Content Focus:</b> <b>How are organisms adapted to changes to seasons?</b>  <b>Hook:</b> <b>Identify the different climates found in North America.</b>  <b>Daily</b>

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	<b>than those far from the equator?</b>		<b>affected by climate.</b>	<b>Assessment: Compare and contrast hibernation and migration.</b>
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**Weekly Assessment (must be aligned to the NYS / NYC exams):**

**Write an article, after doing research about how matter and energy together support life within an environment.**

**What have the students produced that scaffolds towards the units culminating assessment?  
(for example if the unit's culminating assessment is a newspaper - perhaps the students have written an article)**

**The culminating project has been explained to the students, and the GRASPs and rubric have been reviewed as well.**

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**: A Week at a Glance – Copy as Necessary**

**Week 2:**

<p><b>WHERE</b> is the student going and what is expected  <b>HOOK</b> with needed skills to experience and explore          Opportunity to <b>REVISE</b> and <b>RETHINK</b> their understanding</p>		<p>Allow students to <b>EVALUATE</b> work and implications  <b>TAILOR</b> work to student needs          Be <b>ORGANIZED</b> to maximize engagement</p>		
Monday	Tuesday	Wednesday	Thursday	Friday
<p><b>Content Focus:</b>  <b>What are biomes?</b></p> <p><b>Hook:</b>  <b>Why do animals hibernate in closed areas?</b></p> <p><b>Daily Assessment:</b>  <b>Explain why do more kinds of Animals live in the deciduous forest than in the</b></p>	<p><b>Content Focus:</b>  <b>What is ecology?</b></p> <p><b>Hook:</b>  <b>Why would vegetation affect the types of animals that can live in a biome?</b></p> <p><b>Daily Assessment:</b>  <b>Suppose a green plant was placed</b></p>	<p><b>Content Focus:</b>  <b>What is an ecosystem?</b></p> <p><b>Hook:</b>  <b>What would happen to the number of snails if the number of birds decreases? Explain.</b></p> <p><b>Daily Assessment:</b>  <b>Explain the</b></p>	<p><b>Content Focus:</b>  <b>What are habitats and niches?</b></p> <p><b>Hook:</b>  <b>List the four processes that make an ecosystem self supporting.</b></p> <p><b>Daily Assessment:</b>  <b>Explain how organism may</b></p>	<p><b>Content Focus:</b>  <b>How do living things interact?</b></p> <p><b>Hook:</b>  <b>Can a seal and a fish share the same habitat? The same niche? Why?</b></p> <p><b>Daily Assessment:</b>  <b>Explain how</b></p>

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<b>tundra.</b>	<b>in a Dark basement. How Would this environment affect the plant?</b>	<b>difference Between a population And a community.</b>	<b>have the same habitat and the same niches.</b>	<b>interaction between living things help maintain balance in an ecosystem.</b>
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**Weekly Assessment (must be aligned to the NYS / NYC exams):**

**How do volcanic eruptions affect ecosystem?**

**What have the students produced that scaffolds towards the units culminating assessment?  
(for example if the unit's culminating assessment is a newspaper - perhaps the students have written an article)**

**Write an article, after doing a research about how living things within an ecosystem interact with each other and the Environment**

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### A Week at a Glance – Copy as Necessary

#### Week 3:

<p><b>WHERE</b> is the student going and what is expected  <b>HOOK</b> with needed skills to experience and explore          Opportunity to <b>REVISE</b> and <b>RETHINK</b> their understanding</p>		<p>Allow students to <b>EVALUATE</b> work and implications  <b>TAILOR</b> work to student needs          Be <b>ORGANIZED</b> to maximize engagement</p>		
Monday	Tuesday	Wednesday	Thursday	Friday
<p><b>Content Focus:</b>            How are populations limited?</p> <p><b>Hook:</b>            A wolf and a bear share a habitat. Analyze what might they compete for.</p> <p><b>Daily Assessment:</b>            Explain the factors that limit the size of population.</p>	<p><b>Content Focus:</b>            What is succession?</p> <p><b>Hook:</b>            Why are humans able to live in a variety of places on the Earth.</p> <p><b>Daily Assessment:</b>            Describe how communities of</p>	<p><b>Content Focus:</b>            What are symbiotic?</p> <p><b>Hook:</b>            What is climax community?</p> <p><b>Daily Assessment:</b>            Describe the three types of symbiotic relationships.</p>	<p><b>Content Focus:</b>            What is balance in an ecosystem?</p> <p><b>Hook:</b>            How is mutualism different from commensalism?</p> <p><b>Daily Assessment:</b>            Infer how humans are affected by disturbances in the ecosystem.</p>	<p><b>Content Focus:</b>            How do human activities affect the balance of ecosystem?</p> <p><b>Hook:</b>            What is balance of nature?</p> <p><b>Daily Assessment:</b>            Explain ways humans harm the</p>

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	<b>organisms develop.</b>			<b>air, land and water. Describe some steps human take to preserve ecosystem.</b>
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**Weekly Assessment: (must be aligned to the NYS / NYC exams):**

**How does Earth support life?**

**What have the students produced that scaffolds towards the units culminating assessment?  
(for example if the unit's culminating assessment is a newspaper - perhaps the students have written an article)**

**Write an article , after doing research about humans and human population growth can affect the Environment.**

**Get some photographs that show area affected by man-made and natural disasters**

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### **Unit Resources**

**Books: Life science (McDougal Littell)  
Concept and challenges (New York edition)**

**Websites: Sheskey.com  
Google.doc**

**Teacher Materials:  
Books  
PowerPoint  
Flip camera**

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**Other:**