

# Grow Our Community



## Brief Description

Our city seeks to grow all of the time. But in order for it to grow, certain things have to change. For example, if we are building a new school or housing development, the land must be made suitable for building which means taking down trees and leveling the ground. These all have effects on the ecosystem that existed there previously.

## Product

Students will choose something they wish to add to our city that will help it to grow. They must:

- Must decide what the city needs in order to grow and how it will do so.
- Must decide where you are going to put this new addition.
- Must do an environmental assessment for how the ecosystem will be affected by this increased human activity.
- Must create a plan for making sure human activity works in concert with the ecosystem.
- Must develop a commercial that will be used to make the community aware of the plan and what they can do to minimize their impact.

## Digging Deeper

Create a 3-D model of your addition to our city that would show how it would benefit the community but also how it would work in harmony with the ecosystem.

## Connection to Next Generation Standards

### Primary

- Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

### Secondary

- Evaluate evidence for the role of group behavior on individual and species' chances to survive and reproduce.
- Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.
- Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.
- Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.

### Digging Deeper Standard

- Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

Suggested Timeline

<p><b>DAY ONE</b> Introduce project to students by having a discussion on how a new</p>	<p><b>DAY TWO</b> Brainstorm ideas for what they want to add to the city</p>	<p><b>DAY THREE</b> Make a decision for what they want to add to the city</p>	<p><b>DAY FOUR</b> Determine where they would like to put this addition</p>	<p><b>DAY FIVE</b> Assess the ecosystem currently there and determine possible impact</p>
<p><b>DAY SIX</b> Research other projects and the impact human activity had</p>	<p><b>DAY SEVEN</b> Research other projects and the impact human activity had</p>	<p><b>DAY EIGHT</b> Develop a plan for how new addition and existing ecosystem can work together</p>	<p><b>DAY NINE</b> Develop a plan for how new addition and existing ecosystem can work together</p>	<p><b>DAY TEN</b> Develop a plan for how new addition and existing ecosystem can work together</p>
<p><b>DAY ELEVEN</b> Plan their commercial</p>	<p><b>DAY TWELVE</b> Film their commercial</p>	<p><b>DAY THIRTEEN</b> Film their commercial</p>	<p><b>DAY FOURTEEN</b> Edit their commercials</p>	<p><b>DAY FIFTEEN</b> Present commercial that lays out their plan</p>
<p><b>DAY SIXTEEN</b> Begin to work on their model for their proposed addition to the city</p>	<p><b>DAY SEVENTEEN</b> Continue to work on their model for their proposed addition to the city</p>	<p><b>DAY EIGHTEEN</b> Continue to work on their model for their proposed addition to the city</p>	<p><b>DAY NINETEEN</b> Complete their model for their proposed addition to the city</p>	<p><b>DAY TWENTY</b> Gallery walk for models</p>

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Overall	Evaluation	Plan	Commercial	Model
<b>Excellent</b>	<ul style="list-style-type: none"> <li>Evaluates in depth evidence for the role of group behavior on individual and species' chances to survive and reproduce.</li> <li>Evaluates in depth the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, determining whether the changing conditions may result in a new ecosystem.</li> <li>Evaluates and refines a clear and realistic solution for reducing the impacts of human activities on the environment and biodiversity.</li> </ul>	<ul style="list-style-type: none"> <li>Plan designs a logical and realistic solution for reducing the impacts of human activities on the environment and biodiversity.</li> <li>Plan use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.</li> <li>Evidence is used consistently to support all decisions and strengthen claims.</li> </ul>	<ul style="list-style-type: none"> <li>Commercial uses mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.</li> <li>Commercial uses persuasive techniques including logical, scientific, and emotional appeals to make its case.</li> <li>Commercial is 4-6 minutes in length.</li> </ul>	<ul style="list-style-type: none"> <li>Model evaluates a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.</li> <li>Model gives a clear idea of what the plan will be and what it will look like for the community.</li> <li>Model shows with detail how the community and the ecosystem will be able to work in harmony.</li> </ul>
<b>Good</b>	<ul style="list-style-type: none"> <li>Evaluates evidence for the role of group behavior on individual and species' chances to survive and reproduce but could be more detailed or in-depth.</li> <li>Evaluates the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but does not clearly determine whether the changing conditions may result in a new ecosystem.</li> <li>Evaluates and refines a realistic solution for reducing the impacts of human activities on the environment and biodiversity but not all aspects are clear.</li> </ul>	<ul style="list-style-type: none"> <li>Plan designs a solution for reducing the impacts of human activities on the environment and biodiversity but not always logical and/or realistic.</li> <li>Plan use mathematical representations but does not always support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.</li> <li>Evidence is used to support decisions and strengthen claims but not consistently.</li> </ul>	<ul style="list-style-type: none"> <li>Commercial uses mathematical and/or computational representations but does not always support explanations of factors that affect carrying capacity of ecosystems at different scales.</li> <li>Commercial uses persuasive techniques including logical, scientific, and emotional appeals to make its case but not all three.</li> <li>Commercial is a minute under or over in length.</li> </ul>	<ul style="list-style-type: none"> <li>Model evaluates a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts, but not all are addressed.</li> <li>Model gives a basic idea of what the plan will be and what it will look like for the community but some aspects not developed.</li> <li>Model shows generally how the community and the ecosystem will be able to work in harmony but lacks detail in places.</li> </ul>
<b>Needs Improvement</b>	<ul style="list-style-type: none"> <li>Does not do a good job of evaluating evidence for the role of group behavior on individual and species' chances to survive and reproduce, causing confusion.</li> <li>Does not evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, determining whether the changing conditions may result in a new ecosystem.</li> <li>Evaluates and refines a clear and realistic solution for reducing the impacts of human activities on the environment and biodiversity.</li> </ul>	<ul style="list-style-type: none"> <li>Plan does not design a realistic nor logical solution for reducing the impacts of human activities on the environment and biodiversity.</li> <li>Plan does not use mathematical representations throughout to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.</li> <li>Evidence is used sparingly to support decisions and claims, more needed.</li> </ul>	<ul style="list-style-type: none"> <li>Commercial does not use mathematical and/or computational representations in order to support explanations of factors that affect carrying capacity of ecosystems at different scales.</li> <li>Commercial uses a persuasive technique, either logical, scientific, or emotional appeals to make its case but only one of them.</li> <li>Commercial is a two minutes or more under or over in length.</li> </ul>	<ul style="list-style-type: none"> <li>Model evaluates a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for just a few of range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts but a few not addressed.</li> <li>Model does not give a very clear idea of what the plan will be and what it will look like for the community.</li> <li>Model does not shows how the community and the ecosystem will be able to work in harmony.</li> </ul>