

Name:

Date:

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## **Biology: Biome Critter Project**

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*Background:* For this project, you will create your own fictional animal – one that could live in spite of limiting factors in its natural environment. Limiting factors are things that make living in the region challenging. This is an opportunity for you to display your creativity and to demonstrate your understanding of ecology and evolution. There are 3 parts to the project, which include a poster, a 3-Dimensional model of your critter, and a story of how you discovered the species.

### **Part 1: Research and Design your Organism**

- Explore the biotic and abiotic factors within the biome environment you have been assigned.
- List at least 6 adaptations that your critter would need to survive in this environment.
- Describe it's life cycle and niche in the biome:
  - a. What does it eat?
  - b. What eats it?
  - c. How does it reproduce?

### **Part 2: Create a Model**

- The model must be three dimensional and easily suspended in the air
- Avoid using materials that decompose or break down (like food or hair gel)
- All 6 adaptations must be present

### **Part 3: Poster**

- Include a map of where in the world your biome exists.
- An existing food chain with at least 3 layers needs to be displayed with an indication of where your critter would fall.
- Show the impact of climate change on your biome.
- Provide another example of human impact on your biome.

### **Part 4: Discovery Story**

Create the story of how your critter has evaded discovery until you came along. Be sure to include the following ecology concepts: niche, adaptations, ecosystem, and energy/resource requirements.

**Biome Critter Project**

<b>Criteria</b>	<b>Excellent</b>	<b>Proficient</b>	<b>Needs Improvement</b>	<b>Needs Substantial Improvement</b>
<b>Model (15 pts)</b>	<p>The critter has at least 6 visible unique and specific adaptations that help it survive in its biome.</p> <p>The model is well constructed of materials that will not decompose and can be suspended easily.</p>	<p>6 adaptations are easily identifiable that help it survive in its biome.</p> <p>The model is mostly well constructed of materials that will not decompose and can be suspended in the air.</p>	<p>The critter is generally adapted to its environment and has at least 4 specific adaptations.</p> <p>The model is constructed mostly of materials that will not decompose but cannot be suspended in the air.</p>	<p>The does not seems to fit into the biome in a way that would allow it to survive and reproduce.</p> <p>The model is constructed mostly of materials that will decompose and it cannot be suspended in the air.</p>
<b>Story (10 pts)</b>	<p>Demonstrates skillful sentence fluency (varies length, good flow rhythm, and varied structure).</p> <p>The essay portion is typed and includes a title that relates to the content.</p> <p>No grammatical or spelling errors.</p> <p>More than three biotic/abiotic factors in the critter's habitat are described accurately and relate directly to the critter's unique adaptations.</p> <p>At least 10 critter adaptations are explained thoroughly as to how they help the organism survive in its environment.</p>	<p>Demonstrates reasonable sentence fluency.</p> <p>The essay is typed and has a title.</p> <p>There are a few grammatical and/or spelling errors.</p> <p>Three biotic/abiotic factors in the critter's habitat are described that generally relate to the critter's adaptations.</p> <p>At least 10 adaptations explained generally as to how they help the critter survive.</p>	<p>Demonstrates minimal sentence fluency.</p> <p>The essay is typed but is missing a title and important details.</p> <p>There are a significant amount of grammatical and spelling errors.</p> <p>Three biotic/abiotic factors are described generally but don't seem to relate to the critter's adaptations.</p> <p>At least 7 adaptations are explained as helpful to the critter for survival.</p>	<p>Sentences are choppy and/or disconnected.</p> <p>The essay not typed or lacks a title or is too short.</p> <p>Grammatical and spelling errors distract reader.</p> <p>Biotic/abiotic factors are not described.</p> <p>Less than 7 adaptations are identified.</p>
<b>Poster (15 pts)</b>	<p>Artwork is exceptional and good use of space is made.</p> <p>The display of climate change and other human impact is depicted accurately and thoroughly. Credible bibliographic info is available.</p> <p>90-100% of labels/features can be read easily.</p>	<p>Artwork was done with care and time was obviously spent on it.</p> <p>The climate change and other human impact display is depicted accurately and includes bibliographic info.</p> <p>80-89% of labels/features can be read easily.</p>	<p>The drawings were obviously done quickly and do not make adaptations clear.</p> <p>The climate change and other human impact display is mostly accurate and includes bibliographic info.</p> <p>70-79% of labels/features can be read easily.</p>	<p>The drawings were obviously done quickly and adaptations are not labeled.</p> <p>The climate change and other human impact is incomplete or lacks bibliographic info.</p> <p>Less than 70% of labels/features can be read easily.</p>
<b>Creativity (5 pts)</b>	<p>The critter is original and creative.</p>	<p>The critter has strong resemblances with other fictional creations.</p>	<p>The critter has strong resemblances to other known organisms.</p>	<p>The critter is a copy of another cartoon or fictitious creature that's been created by another person.</p>
<b>Collaboration (5 pts)</b>	<p>All members of the biome team must participate in each part of the project. Please indicate your specific contribution to each part and have a team member sign for verification.</p> <p>Model: _____ Signature: _____</p> <p>Story: _____ Signature: _____</p> <p>Poster: _____ Signature: _____</p>			
<b>Total</b>	50 pts			

