


Student Exploration: Forest Ecosystem

***Vocabulary:** consumer, decomposer, inorganic, organic, organism, population, producer

Please locate and read the Vocabulary Sheet under LESSON INFO to understand the necessary vocabulary for this lesson.

Activity A: Trees	<u>Get the Gizmo ready:</u> <ul style="list-style-type: none">• Click Reset.• Select the FOREST tab.	
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Question: What role do trees play in the forest?

1. Form hypothesis: Where do you think trees get the nutrients they need to grow? _____

2. Predict: Based on your hypothesis, how will the tree population change if ALL other organisms (deer, bears, and mushrooms) are removed from the forest?

3. Analyze: Remove ALL organisms except trees. Click **Advance year** a few times and select the **DATA** tab. Was your prediction correct? Explain what you found.

4. Draw conclusions:


Substances that contain carbon and are produced by living things are called **organic**. Examples of organic materials are sugar, blood, protein, and fat. Other materials, like water, carbon dioxide, oxygen, and ammonia, are called **inorganic**.

Some living things, called **producers**, can produce the organic materials they need (like food) from inorganic matter. All other organisms are **consumers**; they consume organic matter since they cannot make it themselves.

Do your results show you that trees are producers or consumers? Explain. _____

5. Analyze: Click the **FOREST** tab. Click the plus (+) button for **mushrooms** several times. Click **Advance year** a few times. Select the **DATA** tab.

How did adding mushrooms affect trees? _____

Activity B: Bears	<u>Get the Gizmo ready:</u> <ul style="list-style-type: none"> ● Click Reset. ● Select the FOREST tab. 	
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Question: How do bears get the nutrients they need to live?

1. Explore & Form Hypothesis: Using the Gizmo, try to figure out what bears depend on for nutrition.


How do bears get the energy and nutrients they need? _____

2. Predict: Based on your hypothesis, which population(s) would be hurt if bears were added?

3. Test: Click **Reset**. Click **Advance year** a couple times. Add as many bears to the forest as possible. Then go forward a couple more years. Select the DATA tab.

Which populations were hurt by adding bears? _____

4. Classify: Are bears producers or consumers? Explain your reasoning. _____

Activity C: Mushrooms	<u>Get the Gizmo ready:</u> <ul style="list-style-type: none"> ● Click Reset. ● Select the FOREST tab (if necessary). 	
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Question: How do mushrooms get the nutrients they need to grow?

1. Explore & Form Hypothesis: Use the Gizmo to test and explore mushrooms.

How do mushrooms get their food? _____

2. Predict: Based on your hypothesis, how will the mushroom population change when other organisms are added to the forest? Fill in the chart below with your predictions. Then use the Gizmo to check the actual effect.

Change	Predicted effect on mushroom population	Actual effect on mushroom population
Trees added		
Deer added		
Bears added		

