

# Ecology Food Web Summative Assessment

## Priority Standards

Brunswick Junior High School Science Dept.	<i>Scoring Guide</i>		<b>Proficiency</b>	
<b>Standard</b>				
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Performance Indicators</b>	<b>1's are entry skills/lower taxonomy or needs assistance</b>	<b>2's mean one level below the taxonomy</b>	<b>Verb needs to match the verb stated in the PI</b>	<b>4's can mean one level above on the Taxonomy scale</b>

### **P.S. S-1 Demonstrate an understanding of energy and matter.**

B. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.

B. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. (6th grade) MS Matter and Energy in Organisms and Ecosystems MS-LS1-6	I can list the inputs and outputs of photosynthesis.	I can interpret a diagram that shows photosynthesis in the cycling of matter and flow of energy into and out of organisms.	I can choose an aspect of the cycling of matter or the flow of energy to explain how photosynthesis is involved.	I can construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.
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D. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

D. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem (6th grade) MS Matter and Energy in Organisms and Ecosystems MS-LS2-3.	I can label the parts of a cycle of matter or the flow of energy among living and nonliving parts of an ecosystem.	I can use a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.	I can develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.	I can evaluate the impact a change will have on a cycle of matter or flow of energy.
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**Task Description:**

You are a member of a research team, studying four different ecosystems in Brunswick, Maine: Forest, Field, Pond/Stream, and Ocean. You must identify one of these ecosystems for further study. Your job is to create a poster model that shows and explains the following components:

- Food Web of your chosen ecosystem
- Decomposers
- Producers
- Consumers
  - Herbivores
  - Carnivores
  - Omnivores
- Source of Energy (sun)
- Photosynthesis
- Cellular Respiration
- Arrows to show the flow of energy in the ecosystem

As an expert, be ready to share your findings with your team.

**Timeline of Activities:**

1. Introduce food chains, food webs, energy pyramids, and the flow of energy in an ecosystem (vocabulary and examples)
2. Introduce the task, timeline, and rubric
3. Select your ecosystem in your table groups (container of four choices at each table)
4. Meet with your ecosystem group to research, discuss, plan, and produce your own poster model (become an expert of your ecosystem to present your model to your table group)
5. Use the checklist to self-edit your model
6. Have an ecosystem group member edit your model
7. Practice presenting to your ecosystem group as an expert
8. Check in with your science teacher for a quick edit
9. Return to your table groups to share your ecosystem expertise
10. Listen to the three other ecosystem experts at your table and fill out your listening guide

## Project Checklist

Directions:

### **To “Meet the standards” on the rubric:**

**Self    Group    Teacher**

___	___	___	Food Web of your chosen ecosystem, showing the name of the Ecosystem and your heading
___	___	___	Decomposers, showing different organisms, such as bacteria and fungi, which must be included with captions
___	___	___	Producers, showing various plants found in the ecosystem which must be included with captions
___	___	___	Consumers, showing different organisms at different energy consumption levels; the following three types must be included with captions
___	___	___	Herbivores with captions
___	___	___	Carnivores with captions
___	___	___	Omnivores with captions
___	___	___	Source of Energy (sun) with captions
___	___	___	Photosynthesis with an explanation in a caption
___	___	___	Cellular Respiration with an explanation in a caption
___	___	___	Arrows to show the flow of energy in the ecosystem
___	___	___	Captions which include the common name of the organism, producer or consumer label, and consumer category
___	___	___	Follow the Universal Writing Expectations Guidelines

### **And to choose to “Exceed the standards” on the rubric:**

___	___	___	Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. (This should be a separate paragraph in final copy.)
___	___	___	Evaluate the impact a change will have on a cycle of matter or flow of Energy. (This should be a separate paragraph in final copy.)

Name:  
 Teacher:  
 Class:  
 Date:

## Food Web Summative Assessment Rubric

Performance Indicators – Students will be able to:	1 Does not meet standard	2 Partially meets standard	3 Meets the standard	4 Exceeds the standard
<p>“B. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. (6th grade) MS Matter and Energy in Organisms and Ecosystems MS-LS1-6.”</p>	<p>I can list the inputs and outputs of photosynthesis.</p>	<p>I can interpret a diagram that shows photosynthesis in the cycling of matter and flow of energy into and out of organisms.</p>	<p>I can choose an aspect of the cycling of matter or the flow of energy to explain how photosynthesis is involved.</p>	<p>I can construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.</p>
<p>“D. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem (6th grade) MS Matter and Energy in Organisms and Ecosystems MS-LS2-3.”</p>	<p>I can label the parts of a cycle of matter or the flow of energy among living and nonliving parts of an ecosystem.</p>	<p>I can use a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.</p>	<p>I can develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.</p>	<p>I can evaluate the impact a change will have on a cycle of matter or flow of energy.</p>
<p>Universal Writing Expectations</p>	<p>Eleven or More errors in Spelling, Capitalization, and Punctuation</p>	<p>Six to Ten errors in Spelling, Capitalization, and Punctuation</p>	<p>Two to Five errors in Spelling, Capitalization, and Punctuation</p>	<p>Zero to One error in Spelling, Capitalization, and Punctuation</p>

**NOTE:** “Not listing of outputs and inputs at all” cannot be scored.

**NOTE:** “No attempt to meet the standard” or “the material is too illegible to read” cannot be scored.

**COMMENTS:**

Name:  
 Teacher:  
 Class:

Date:

## Ecosystem Presentation Listening Guide

<b>Name of Ecosystem:</b>	<b>Expert:</b>
<b>Number of Producers:</b> <b>Name of a Producer:</b>	
<b>Number of Consumers:</b> <b>Name of an Herbivore:</b> <b>Name of a Carnivore:</b> <b>Name of an Omnivore:</b>	
<b>Energy Source:</b>	
<b>Photosynthesis Model:</b>	
<b>Cellular Respiration Model:</b>	
<b>Positive Comments:</b> A.  B.	
<b>Name of Ecosystem:</b>	<b>Expert:</b>
<b>Number of Producers:</b> <b>Name of a Producer:</b>	
<b>Number of Consumers:</b> <b>Name of an Herbivore:</b> <b>Name of a Carnivore:</b> <b>Name of an Omnivore:</b>	
<b>Energy Source:</b>	
<b>Photosynthesis Model:</b>	
<b>Cellular Respiration Model:</b>	
<b>Positive Comments:</b> A.  B.	
<b>Name of Ecosystem:</b>	<b>Expert:</b>
<b>Number of Producers:</b>	

**Name of a Producer:**

**Number of Consumers:**

**Name of an Herbivore:**

**Name of a Carnivore:**

**Name of an Omnivore:**

**Energy Source:**

**Photosynthesis Model:**

**Cellular Respiration Model:**

**Positive Comments:**

A.

B.

**Comparing and Contrasting Ecosystems**

	<b>Field</b>	<b>Forest</b>	<b>Pond/Stream</b>	<b>Ocean</b>
<b>Unique Features</b>				
<b>Similar Features</b>				
<b>Relationships</b>				