

## Activity 12: Modeling the Introduction of a New Species

Guiding Question: How does a new species affect the flow of energy and cycling of matter through an ecosystem?

Key Words: *consumer, food web, producer*

**Get Started:**

1. What are the interactions and components in a food web? How do you think the introduction of a new species affects a food web?

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2. Read the introduction and Guiding Question to Activity 12, “Modeling the Introduction of a New Species,” in your Student Book.

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**Do the Activity:**

**Procedure Part A: Constructing your food web**

1. Cut out and examine all nine of the Food Web cards (do not cut out the *wild flowers card*) attached to this packet.

2. Choose at least four cards and construct a simple food chain. Record your food chain in the space provided.

*Data: Food chain*

Name \_\_\_\_\_

Date \_\_\_\_\_

3. Identify the producers and consumers, and show how energy flows and matter cycles through the ecosystem.
4. Create a food web using all of the cards in your set, identifying what happens to energy and matter for each interaction. Record your food web in the space provided.

*Data: Food web*

Name \_\_\_\_\_

Date \_\_\_\_\_

Procedure Part B: Introducing a species to your food web

7. Cut out and examine the *Introduced species: wild flowers* card attached to this packet. Look at its role in the ecosystem.

8. Use your model to explore how this new species affects the flow of energy and cycling of matter through your ecosystem, and record your revised food web in the space provided.

*Data: Revised food web*

**Analysis**

1. Explain how the introduction of your new species affected your ecosystem. Be sure to address which interactions were affected.

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2. What would happen if

a. the top predators disappeared from your ecosystem? This might happen if the predators were overhunted. How does this affect the flow of energy through your ecosystem?

b. the producers disappeared from your ecosystem? This might happen if a disease caused the producers to die off. How does this affect the flow of energy through your ecosystem?

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3. **Introduced Species Research Project:** Explain how the introduction of the species you are investigating impacts the flow of energy and cycling of matter in the ecosystem.

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**Food Web Cards**

SET A

**wild grass**

*makes own food*



MIKE VOURI/NPS 1

SET A

**rabbit**

*grass*



LEWIS GORMAN/USFWS 2

SET A

**chipmunk**

*seeds, grass*



GILLES GONTHIER/CREATIVE COMMONS/WIKIMEDIA 3

**Food web cards continued:**

SET A

fox

*small mammals*



RONALD LAUBENSTINE/USFWS

4

SET A

deer

*leaves, nuts*



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SET A

oak tree

*makes own food*



NOAH ELHARDT/WIKIMEDIA

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**Food web cards continued:**

SET A

owl

*small mammals*



BILL RADKE, USFWS

8

SET A

bobcat

*small mammals, birds*



DAVE MENKE/USFWS

9

SET A

wood rat

*leaves, seeds*



PETERSON B. MOOSE/USFWS


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**Introduced Species Card:** Used for Procedure Part B

SET A

wild  
flowers

*makes own food*



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