



Ecosystem Equilibrium: Understanding Our Natural World

Part A: The Web of Life (15 minutes)

Explore the interconnections between different organisms in our ecosystem.

Interactive Web Building:

Draw lines between organisms that have a relationship. Use different colored lines to show:

- Red: Predator-prey relationships
- Green: Food sources
- Blue: Habitat sharing

Tree

Squirrel

Hawk

Earthworm

Grass

Rabbit

Analysis Questions:

1. Explain two connections you drew and why these organisms depend on each other:

2. What might happen if we removed the tree from this ecosystem?

3. Can you identify any indirect relationships between organisms?

Part B: Ecosystem Detective (20 minutes)

Study the forest ecosystem image and classify the organisms you observe.

Classification Challenge:

Producers	Consumers	Decomposers

Detective Questions:

1. Which group has the most organisms? Why do you think this is?

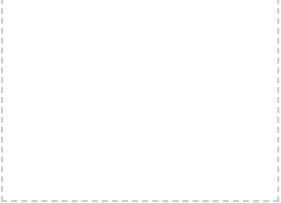
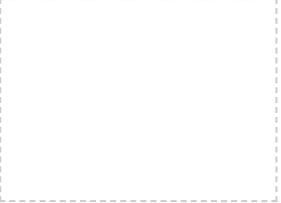

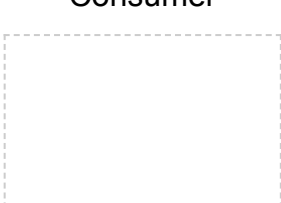
2. How do the producers help other organisms survive?

3. Why are decomposers important to this ecosystem?

Part C: Create Your Food Chain (25 minutes)

Design and illustrate your own food chain, starting with the sun!

Food Chain Creation:

Sun	Producer	Primary Consumer	Secondary Consumer
			

Food Chain Analysis:

1. Explain how energy flows through your food chain:

2. What would happen if one link in your chain disappeared?

3. Can you add another organism to make your chain longer?

Part D: Ecosystem Disruption Scenarios (30 minutes)

Analyze how different environmental changes affect ecosystem balance.

Scenario 1: Climate Change

The average temperature in your local forest has increased by 2°C over the past decade.

Predict the impacts on:

1. Plant life:

2. Animal populations:

3. Water resources:

Scenario 2: Invasive Species

A non-native plant species has begun growing rapidly throughout the ecosystem.

Consider these effects:

1. Native plant competition:

2. Food chain disruption:

3. Habitat changes:

Solution Planning

Environmental Challenge	Possible Solutions	Expected Outcomes

Part E: Biodiversity Investigation (40 minutes)

Explore the importance of biodiversity in maintaining ecosystem health.

Field Study Simulation

Record your observations in different ecosystem zones:

Zone	Plant Species	Animal Species	Environmental Factors
Forest Edge			
Forest Interior			
Water Source			

Biodiversity Analysis

1. Which zone shows the highest biodiversity? Explain why:
2. How do environmental factors influence species distribution?
3. What relationships exist between different species in each zone?

Part F: Ecosystem Services Project (45 minutes)

Investigate and document the various services that ecosystems provide to humans and other species.

Supporting Services

- Nutrient cycling
- Soil formation
- Primary production

Provide an example from your local ecosystem:

Regulating Services

- Climate regulation
- Water purification
- Disease control

Identify a regulating service in action:

Provisioning Services

- Food production
- Fresh water
- Raw materials

List local provisioning services:

Ecosystem Services Value Assessment

Service Type	Economic Value	Social Value	Environmental Value
Supporting			
Regulating			
Provisioning			

What We've Learned Today

- How different organisms are connected in an ecosystem
- The importance of each species in maintaining balance
- How energy flows through food chains
- The roles of producers, consumers, and decomposers

Final Thoughts:

Write three things you learned about ecosystems today:

1. _____

2. _____

3. _____

Extended Learning

Choose one of the following activities to complete at home:

1. Create a poster showing a local ecosystem in your area
2. Research and write about an endangered species
3. Design your own balanced ecosystem