Ecosystem Worksheet

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Part 1: Building a Foundation

What is an ecosystem?

Hint: Think about the definition that includes living organisms and their environment.

- ◯ A) A community of living organisms interacting with each other and their environment
- ◯ B) A single species living in isolation
- ◯ C) A non-living environment without organisms
- ◯ D) A group of planets in the solar system

Which of the following are biotic components of an ecosystem? (Select all that apply)

Hint: Consider the living parts of an ecosystem.

- ☐ A) Plants
- ☐ B) Water
- ☐ C) Animals
- ☐ D) Sunlight

Define biodiversity and explain its importance in an ecosystem.

Hint: Think about the variety of life and its significance.

List two types of terrestrial ecosystems and two types of aquatic ecosystems.

Hint: Think about different environments on land and in water.

1. Terrestrial Ecosystem 1

2. Terrestrial Ecosystem 2

3. Aquatic Ecosystem 1

4. Aquatic Ecosystem 2

Which of the following is a primary producer in an ecosystem?

Hint: Consider which organisms produce energy from sunlight.

- ◯ A) Herbivore
- ◯ B) Carnivore
- ◯ C) Plant
- ◯ D) Decomposer

Part 2: Understanding and Interpretation

How do decomposers contribute to an ecosystem?

Hint: Think about their role in nutrient cycling.

- ◯ A) By producing energy from sunlight
- ◯ B) By breaking down dead organisms and recycling nutrients
- ◯ C) By competing for resources with other organisms
- ◯ D) By hunting and killing prey

Which interactions are examples of symbiosis? (Select all that apply)

Hint: Consider the types of relationships between species.

- ☐ A) Mutualism
- ☐ B) Predation
- ☐ C) Commensalism

- [ ] D) Parasitism

Explain the role of energy flow in maintaining ecosystem balance.

Hint: Think about how energy moves through an ecosystem.

Part 3: Application and Analysis

If a forest ecosystem experiences a significant decrease in sunlight, which component is likely to be affected first?

Hint: Consider which organisms rely directly on sunlight.

- ◯ A) Herbivores
- ◯ B) Primary producers
- ◯ C) Carnivores
- ◯ D) Decomposters

How might urbanization impact a local aquatic ecosystem? (Select all that apply)

Hint: Think about the effects of human development on water bodies.

- [ ] A) Increase in pollution levels
- [ ] B) Decrease in biodiversity
- [ ] C) Improvement in water quality
- [ ] D) Expansion of habitat for aquatic species

Describe a real-world scenario where human activity has led to a change in an ecosystem, and discuss the consequences.

Hint: Think about specific examples of human impact on nature.

Which of the following best describes the relationship between predators and prey in an ecosystem?

Hint: Consider the dynamics of hunting and survival.

- ◯ A) Symbiotic
- ◯ B) Competitive
- ◯ C) Predatory
- ◯ D) Commensal

Analyze the potential effects of removing a top predator from an ecosystem. (Select all that apply)

Hint: Think about the balance of species in an ecosystem.

- ☐ A) Increase in prey population
- ☐ B) Decrease in biodiversity
- ☐ C) Stabilization of the ecosystem
- ☐ D) Overpopulation of certain species

Compare and contrast the roles of producers and consumers in an ecosystem's energy flow.

Hint: Think about how energy is transferred between different types of organisms.

Part 4: Evaluation and Creation

Which conservation strategy is most effective for preserving biodiversity in a threatened ecosystem?

Hint: Consider strategies that support native species and habitats.

- ◯ A) Introducing non-native species
- ◯ B) Habitat restoration
- ◯ C) Increasing urban development
- ◯ D) Reducing natural predators

Evaluate the impact of climate change on global ecosystems. (Select all that apply)

Hint: Think about the broad effects of climate change on habitats and species.

- ☐ A) Alteration of habitat ranges
- ☐ B) Increase in species extinction rates
- ☐ C) Stabilization of weather patterns
- ☐ D) Enhanced ecosystem resilience

Propose a conservation plan to protect a specific ecosystem from human impact, detailing the steps and expected outcomes.

Hint: Think about practical steps that can be taken to conserve an ecosystem.