



Ecosystem Introduction and Ideas

{Ecosystems

What is an Ecosystem?

Like your home, an ecosystem is any community of living and non-living things that work together. The living things are biotic features, and the non-living things are abiotic features. While ecosystems do have boundaries, they are not always clear, and it may be difficult to see where one ecosystem ends and another begins.

What is an Ecosystem?

Each ecosystem is unique, but all ecosystems have three basic components:

- Autotrophs (producers of energy)
- Heterotrophs (consumers of energy)
- Non-living matter

ECOSYSTEM ECOLOGY



ECOLOGY

Introduction

197 million square miles of Earth's surface

57 million square miles of the surface is land

Only 12 million square miles (7.68 billion acres)
of useable land (not rugged mountains, deserts,
alpine, etc.)

Introduction

Today the human population is over 7 billion people and each person requires about 1-2 acres (only 0.50 for vegetarians) to produce enough food and water to sustain them. Therefore, Earth is rapidly reaching its maximum sustainability for the human population.

The big question is, what do we do with the growing population

Introduction

Earth will not be able to continue to sustain a growing human population. This has forced governmental officials and scientist to look for alternate sustainable habitats for larger human populations on space stations.

Introduction

Design a self contained biome based on the assigned biome, that will allow the organisms to exist interdependently and provide a habitat for humans sustaining them indefinitely.

BIG QUESTION: How can we sustain the growing human population?

You and your Team

- You will be working with the students at your table and create an artificial ecosystem.
- You will be making a terrarium in class.
- Each student team will set up a system with interacting abiotic and biotic factors.













You need to have....

- Land
- Water
- Decomposition
- Water life
- Terrestrial life
- Decomposers
- Producers
- Consumers
- Plants, plants and more plants

You and your Team

Every student will need to provide \$3 which will get you

- Tank
- Lid
- Soil
- Plant Seeds
- Vegetable Seeds
- Fish
- Water plants
- Pebbles/hydrobeads
- Worms
- Crickets
- Screen Mesh
- Cockroaches
- Springtails
- Moss
- Grass Seeds
- Activated Charcoal
- Ammonia Test Kit
- Nitrate Test Kit
- Temperature probe
- pH Probe
- CO₂ Probe
- O₂ Probe

You and your Team

- you have the option of getting a small reptile to live in your terrarium....but there are requirements
- you have to purchase your reptile
- you will need a heating light
- you will need to make sure you feed them every week
- your terrarium needs to be thriving for at least a week
- your teacher needs to approve your purchase and your home for your creature.

You and your Team

You have only 1 day to build your system, next block day!!!

You need to provide your teacher with \$3 no later than Tuesday so we can purchase the materials!

You and your Team

With the rest of the class period, you and your team need to sketch out your system and decide if you need to purchase anything else on your own (which is optional)