# What is an ecosystem?

# Mental picture exercise

# Review of Notes From Yesterday

## Organism

Something that is alive

## Resources

Things needed to survive (food, water, shelter, etc.)

## Habitat

A place to allow an organism to live and grow

## Biotic vs Abiotic

Both are needed for an organism to survive

## Organization

Organisms - Populations - Communities - Ecosystem

## Limiting Factors

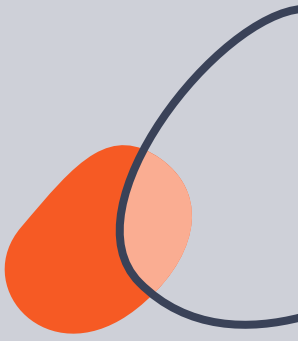
Stuff that controls the size of a population

# Video about Biotic vs Abiotic Factors

## While you watch:

1. What is a definition for biotic and abiotic factors?
2. What are some examples of biotic factors?
3. What are some examples of abiotic factors?
4. How can you create a system to know the difference?

# Let’s play a game!




# Biotic or Abiotic?

Click the **yes** button for Biotic

Click the **no** button for Abiotic

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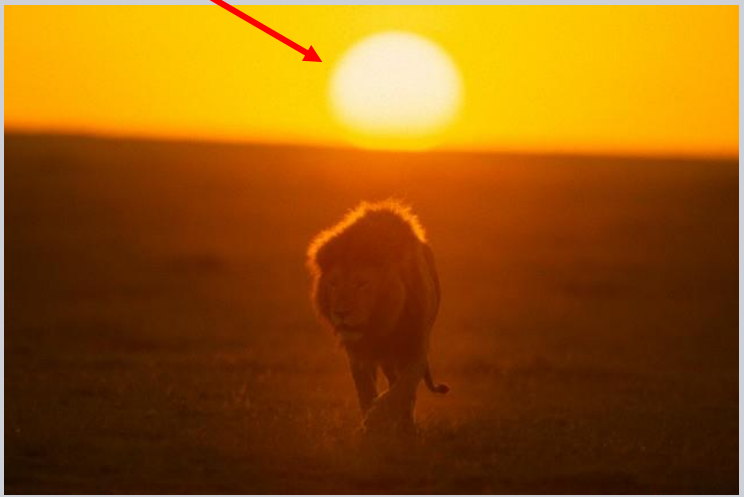

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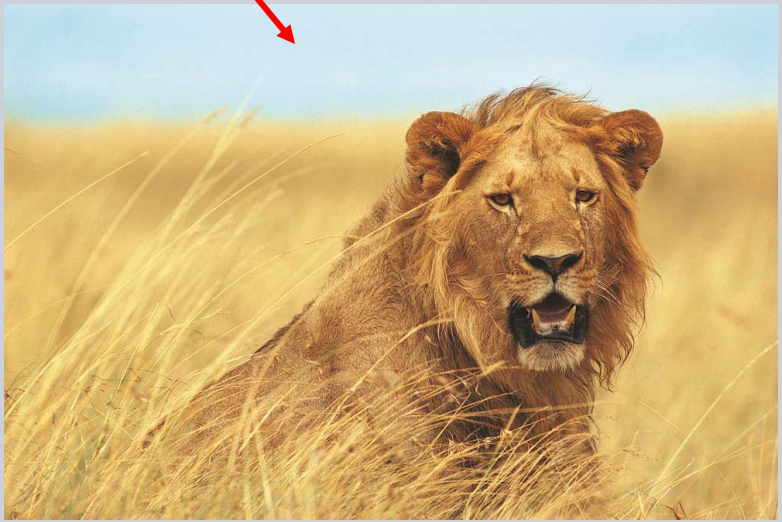


# Biotic or Abiotic?

Click the **yes** button for Biotic

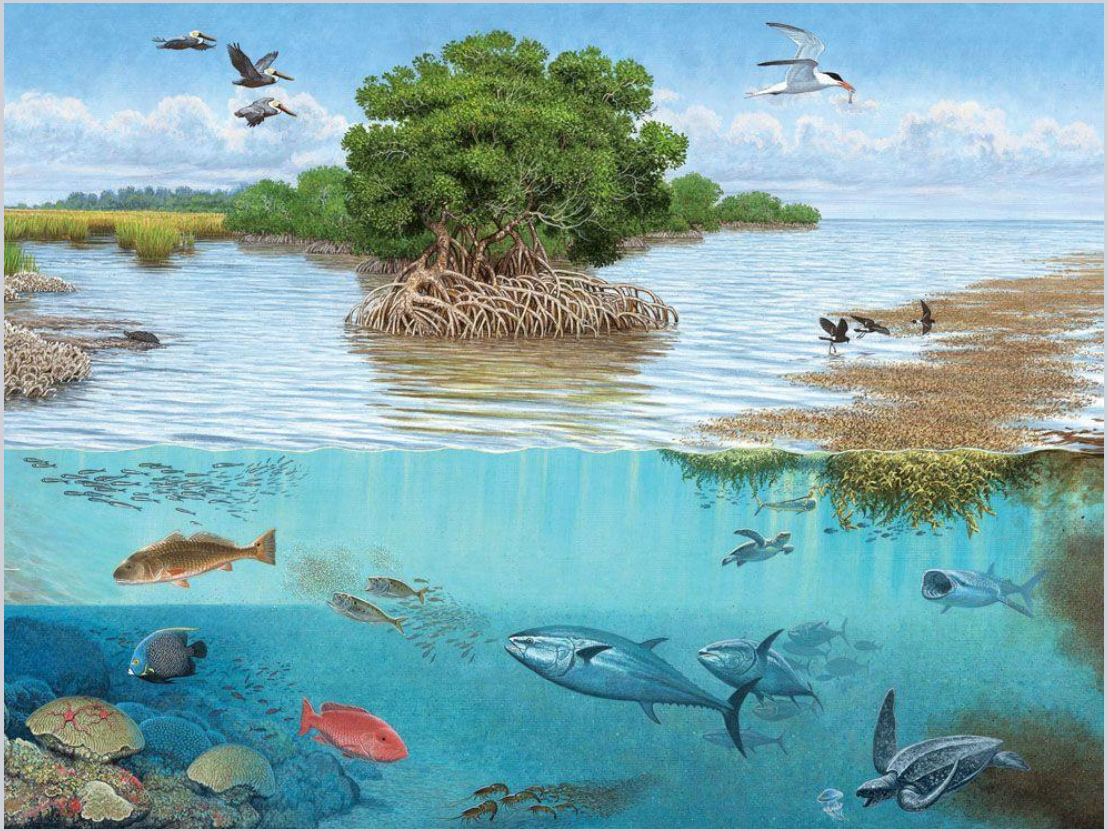
Click the **no** button for Abiotic

# How would you explain the difference?

# Go explore!

Go outside to find biotic and abiotic things in your habitat or use this time to finish your notes sheet.

# What biotic and abiotic things did you find in your ecosystem yesterday?



How would you organize everything in an ecosystem?

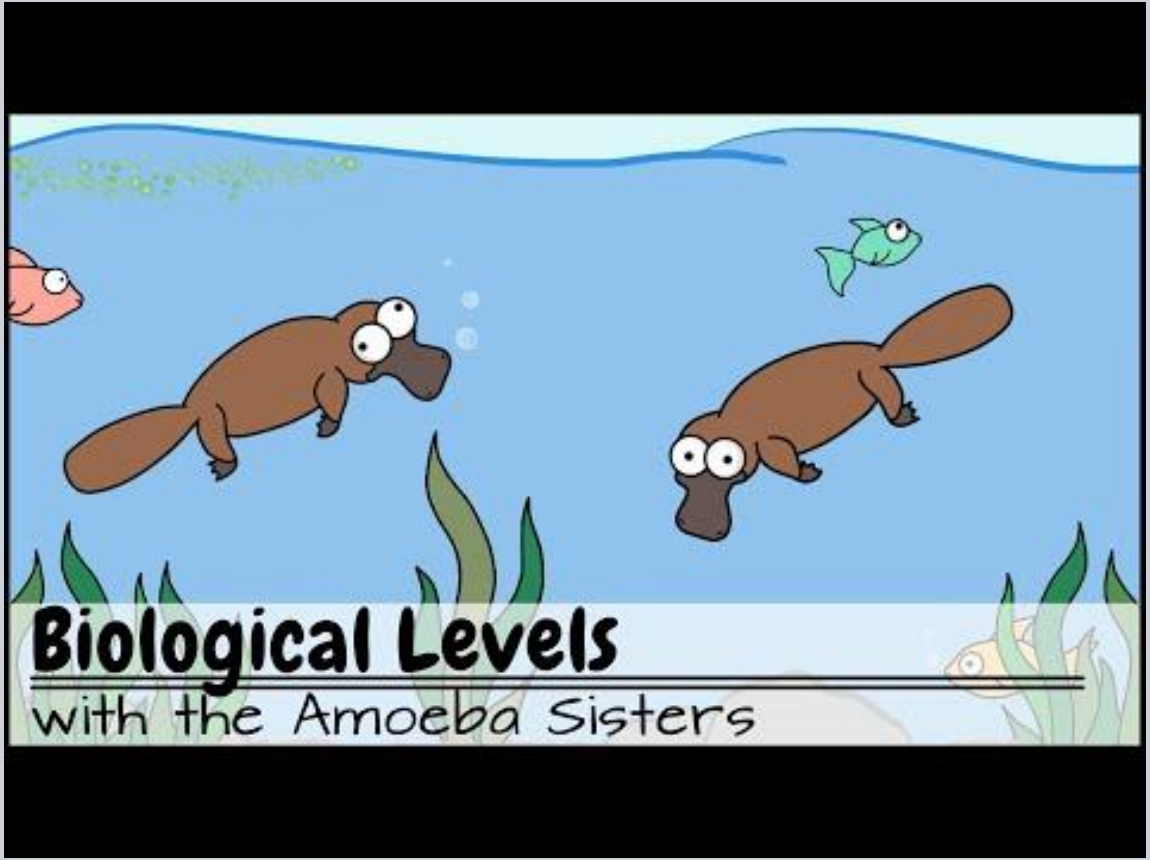
| | |
|---|---|
| Organism | Smaller |
| Population | |
| Community | |
| Ecosystem | Larger |

# Ecosystem Organization

What do each of these terms mean?

What is an example of each?

**But there are more levels!!**


Biological Levels
with the Amoeba Sisters

# Biology Organization

Biome

Ecosystem

Community

Population

Organism

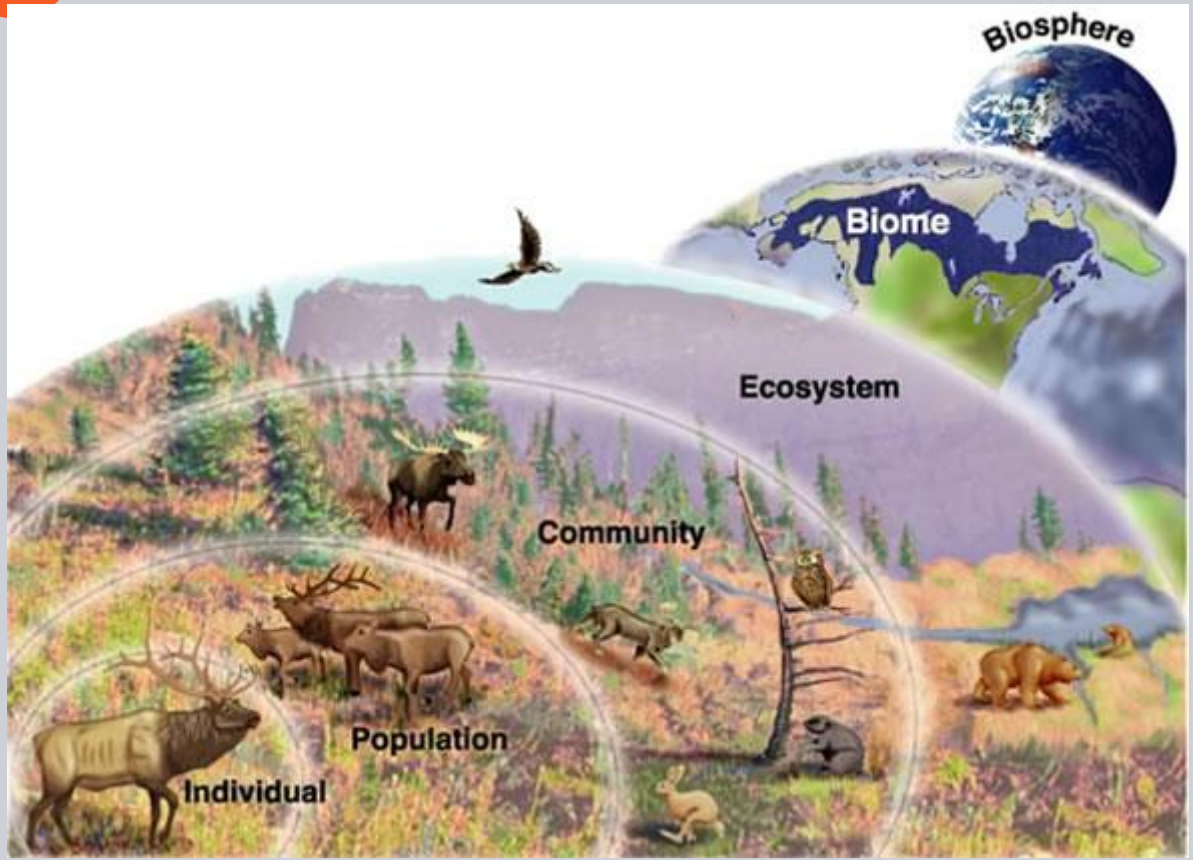
Organ System

Organ

Tissue

Cell

...


Biosphere
Biome
Ecosystem
Community
Population
Individual

# How can organization help us understand ecosystems better?

# Your Turn!

Your job is to pick an organism and then build the ecosystem organizational chart based on that organism.

- ❏ Go outside and pick an organism that you see. This could be a plant, fungi, animal, etc.

- ❏ Build an organizational chart based on that organism and add each level on the Padlet with a picture and a description.

Can’t go outside?  Then pick an organism and research it online!

# Done early

Done early?  Check out these resources about ecosystems!

- https://vetmed.tamu.edu/peer/wp-content/uploads/sites/72/2020/07/ecosystems_mind_mapping_filled.pdf
- Game and review activities about these concepts: https://www.texasgateway.org/resource/organisms-and-environments-competition-abiotic-and-biotic-factors
- https://az.pbslearningmedia.org/resource/plum14.sci.life.feeddingo/feed-the-dingo-an-ecosystem-game/

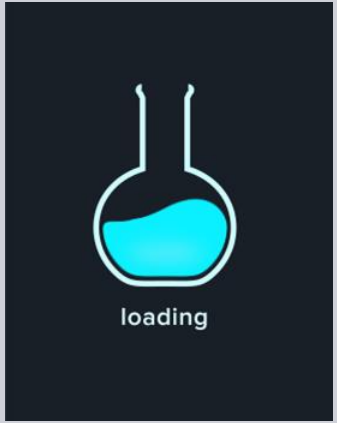
# What do you notice about our chart?

# Chart

How did you organize your ecosystem on the organizational chart from yesterday?

What could cause the population of seals to lower?

# What is a definition of a limiting factor?




Please wait while
Miss Johnson sets it up...

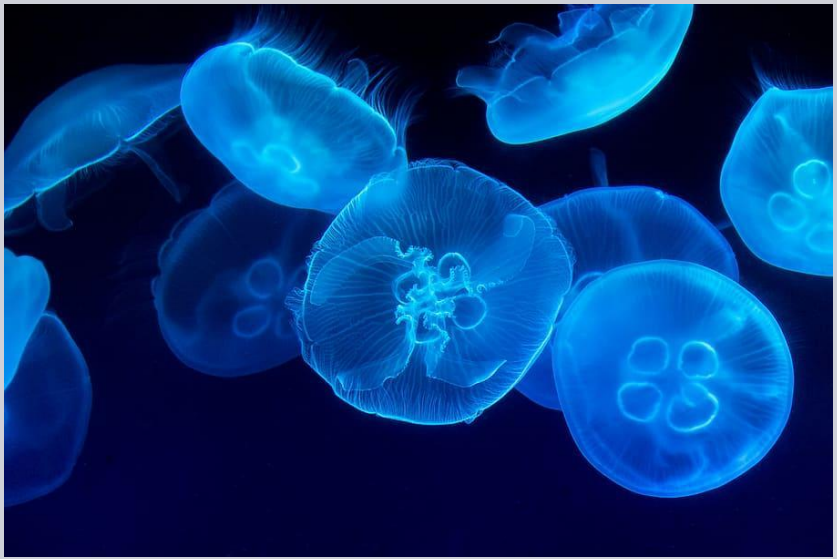
# Game Time!

Listen for directions on how to play the limiting factors game.

# Rabbit

You are a rabbit in a forest ecosystem.  What will you go searching for?

| | |
|---|---|
| Food | 5 |
| Water | 5 |
| Shelter | 5 |



# Jellyfish

You are a jellyfish in a marine ecosystem.  What will you go searching for?

| | |
|---|---|
| Food | 3 |
| Water | 50 |
| Shelter | 5 |

# Elm Tree

You are an elm tree in the desert ecosystem.  What are you searching for?

| | |
|---|---|
| Food | 50 |
| Water | 5 |
| Shelter | 7 |

# Elephant

You are an elephant in a grasslands ecosystem.  What will you go searching for?

| | |
|---|---|
| Food | 0 |
| Water | 5 |
| Shelter | 5 |

# Penguin

You are a penguin in an antarctic ecosystem.  What will you go searching for?

| | |
|---|---|
| Food | 5 |
| Water | 10 |
| Shelter | 1 |

# Simulation

And now a simulation showing limiting factors in action!

# Avril Gulf Tuna Population Simulation

1. Play through the tutorial - it's actually helpful.
2. There are four stages, play through each.
3. Think about how each factor in the simulation affects the fish population.  What is the carrying capacity of the tuna?
4. When you are done, go back and try to mess with each station.
    a. How can you get the population the highest?
    b. How can you get the population the lowest?
5. How could using this simulation in real life actually help fisheries?

https://labaids.s3.us-east-2.amazonaws.com/sgi-sims/fishery/index.html

# What limiting factors exist for humans?