



Ecology & the Environment

7th & 8th Grade Science

Quick Links:

Part 1: Basics

Part 2: Carrying Capacity

Part 3: Population Dynamics

Part 4: Biodiversity

Part 5: Symbiosis

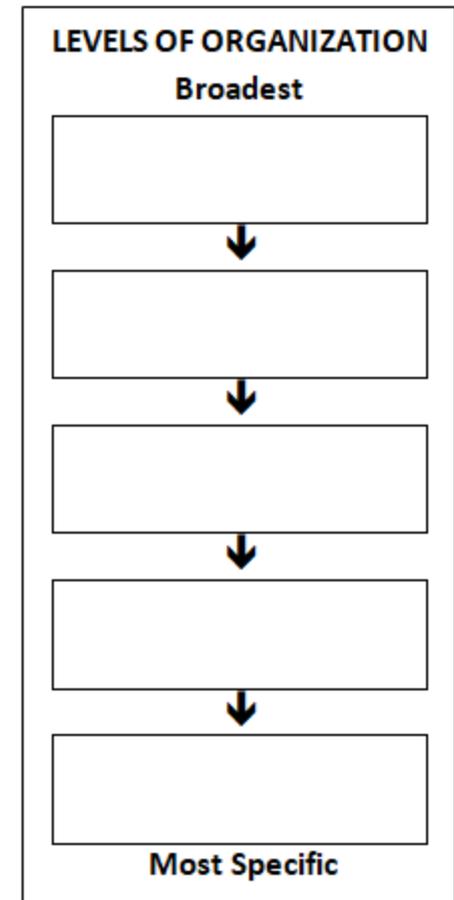
Intro to Ecology

1. Ecology is the study of the relations of **ORGANISMS** to one another and to their physical **ENVIRONMENT**.
2. The survival of species is dependent on other living organisms and nonliving components, which is known as **INTERDEPENDENCE**. Humans need plants to produce **OXYGEN** and plants need the **CARBON DIOXIDE** we produce.
3. An **ECOLOGIST** is a scientist who studies ecosystems.
4. The **BIOSPHERE** includes all the living things on earth.

5. An **ECOSYSTEM** includes all the organisms and nonliving environment found in a particular place.
6. The **COMMUNITY** includes only the living things in an area, while a **POPULATION** refers to all the members of one species in the area.

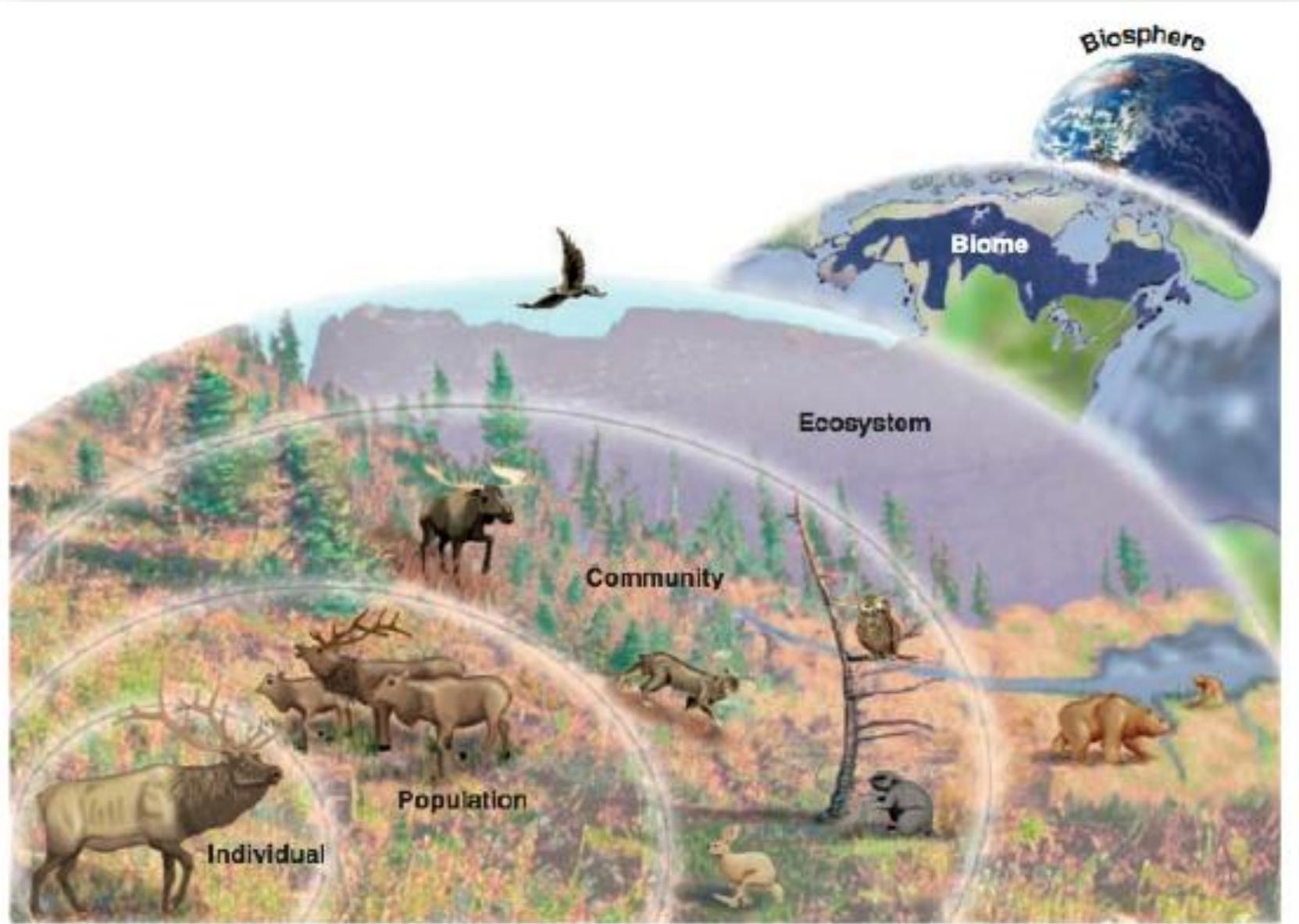
7. List the levels of organization from broadest to the most specific in the chart. →

8. The place where an organism lives is called its **HABITAT**. The living parts are called **BIOTIC** factors, while the nonliving parts are called **ABIOTIC** factors.



Levels of Organization

How is this different from the video?



9. The job or role of an organism within its environment is called its **NICHE**.

10. What is the difference between a generalists and a specialist? Give an example of each.

Pigs would be generalist species since they eat a lot of different things. Generalist species can survive in a variety of habitats.

A panda would be a specialist species since it eats only bamboo. Specialist species are very sensitive to changes in their habitats and would have a harder time surviving.



Think About It: Use the graph to answer these questions.

1 – In what year was the rabbit population the largest?

YEAR 4

2 – In what year was the rabbit population the smallest?

YEAR 0

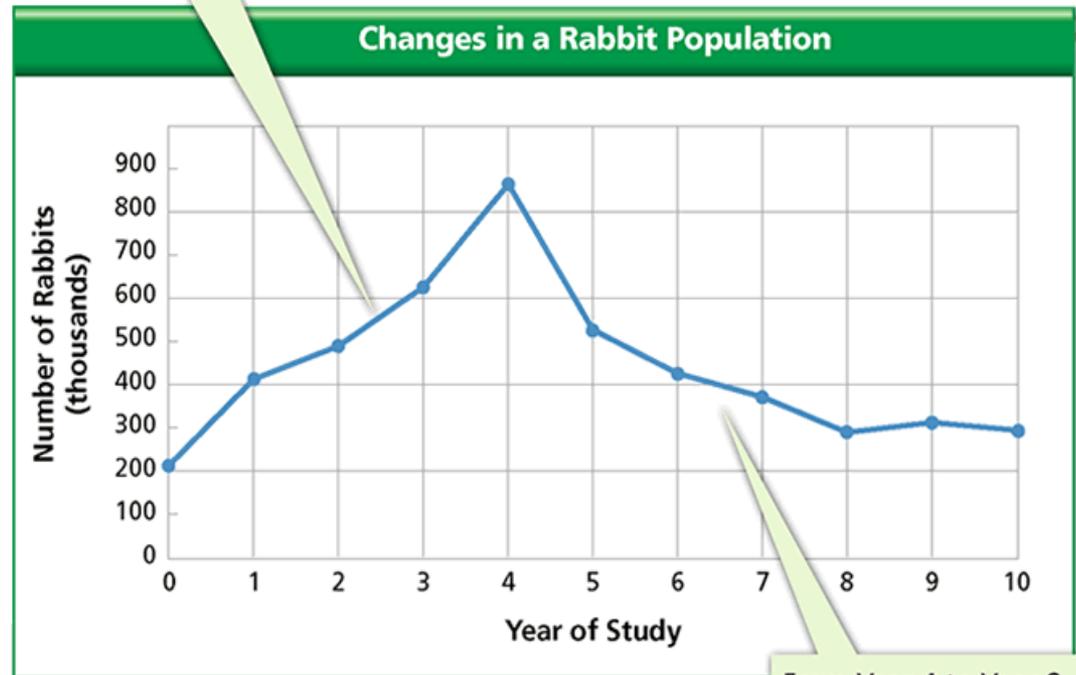
3 – From year 6 to year 9, did the population increase or decrease?

**DECREASED
OVERALL**

4 – Biologists noted a large increase in the size of the fox population. During which year did this happen?

Year 4

From Year 0 to Year 4, more rabbits joined the population than left it, so the population increased.



From Year 4 to Year 8, more rabbits left the population than joined it, so the population decreased.

★ Abiotic	Food Web
Adaptations	Generalist Species ★
Biodiversity	Habitat ★
★ Biosphere	Immigration
★ Biotic	Limiting Factor
Birth Rate	Mutualism
Carrying Capacity	Niche ★
Climatogram	Parasitism
Commensalism	Population ★
★ Community	Population Density
Consumer	Predation
Death Rate	Producer
Decomposer	Specialist Species ★
★ Ecology	Succession
★ Ecosystem	Symbiosis
Emigration	

Which ones do we know?

Write a definition and add examples (words or drawings) for all the ones with stars.

Term	Definition

Weekly Assignments

Class Notes/Tutorials
Eyes on Eclipse Notes/Summary

Week of 8/28


Review & Reinforce
Quizlet Eco Vocab

**Need help? Go to mrstomm.com → Assignments
→ Look for the Quizlet Eco Vocab link!**

Your Assignment:

1st - Glue the Serious Science: Biological Carrying Capacity notes on page 7 (sideways under the Part 1 Notes).

2nd – Fill in the #1-4 on the FRONT of the note page as you watch the video on EDPuzzle and complete the quiz.

Below 75%? Ask me to reset the quiz!

See a ★? These questions we will do together in class!

3rd – Work on writing definitions for the words we discussed today.

Done? Work on homework from another class or read a book!

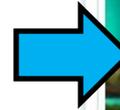
Assignment



Intro to Ecology
Watch as a student | Allow Skipping | De



Serious Science: Biological Carrying
Watch as a student | Allow Skipping | De



Serious Science: Biological Carrying Capacity

- 1) An **ECOSYSTEM** can only support a limited number of species before problems can begin happening.

- 2) Biological carrying capacity is the capacity of an ecosystem to **CARRY** or support a certain **NUMBER** of animals and plants.

- 3) Variables:
 1. **ABUNDANCE** of foods
 2. **SUSTAINABLE** foods
 3. **COMPETITION** for food

TRUE OR FALSE?

Lake fly larva provide an abundant and sustainable food source for sturgeons.

4) Monarch Butterflies - What factors might affect the garden's carrying capacity? Explain.

What factors did you list?

- 1.
- 2.
- 3.

How would these affect Monarch populations?

Habitat destruction

Bad weather

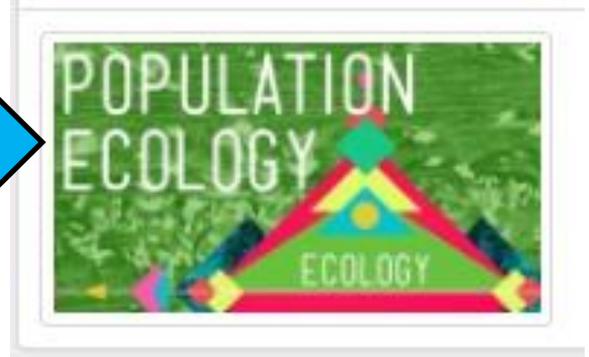
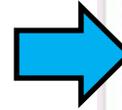
Increase in predators

Invasive species



Your Assignment:

1st - Watch the POPULATION ECOLOGY video on EDPuzzle.



Below 75%? Ask me to reset the quiz!

2nd – Complete # 5 & 6 on the Part 2 notes

Add other important information from the video on page 7
(under the 2 note worksheets.)

3rd – Work on writing definitions for the words in Sets 1 & 2.

ALL WORK DUE ON FRIDAY BY THE START OF CLASS!

Wednesday

- Discuss Part 2 notes on carrying capacity
- Watch Population Ecology video on EDPuzzle - Write important information and definitions to page 7 (under your note pages)
- Add definitions to your vocab page for Part 2 - [Click here for the Set 2 list](#)

Done? Work on homework from another class or read a book!

★ Abiotic	Emigration ★
Adaptations	Food Web ★
Biodiversity	Generalist Species ★
★ Biosphere	Habitat ★
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Commensalism	Parasitism
★ Community	Population ★
Consumer	Population Density ★
Death Rate	Predation
Decomposer	Producer
★ Ecology	Specialist Species ★
★ Ecosystem	Succession
	Symbiosis

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★ Set 1

★ Set 2

★ Abiotic	Emigration ★
Adaptations	Food Web ★
Biodiversity	Generalist Species ★
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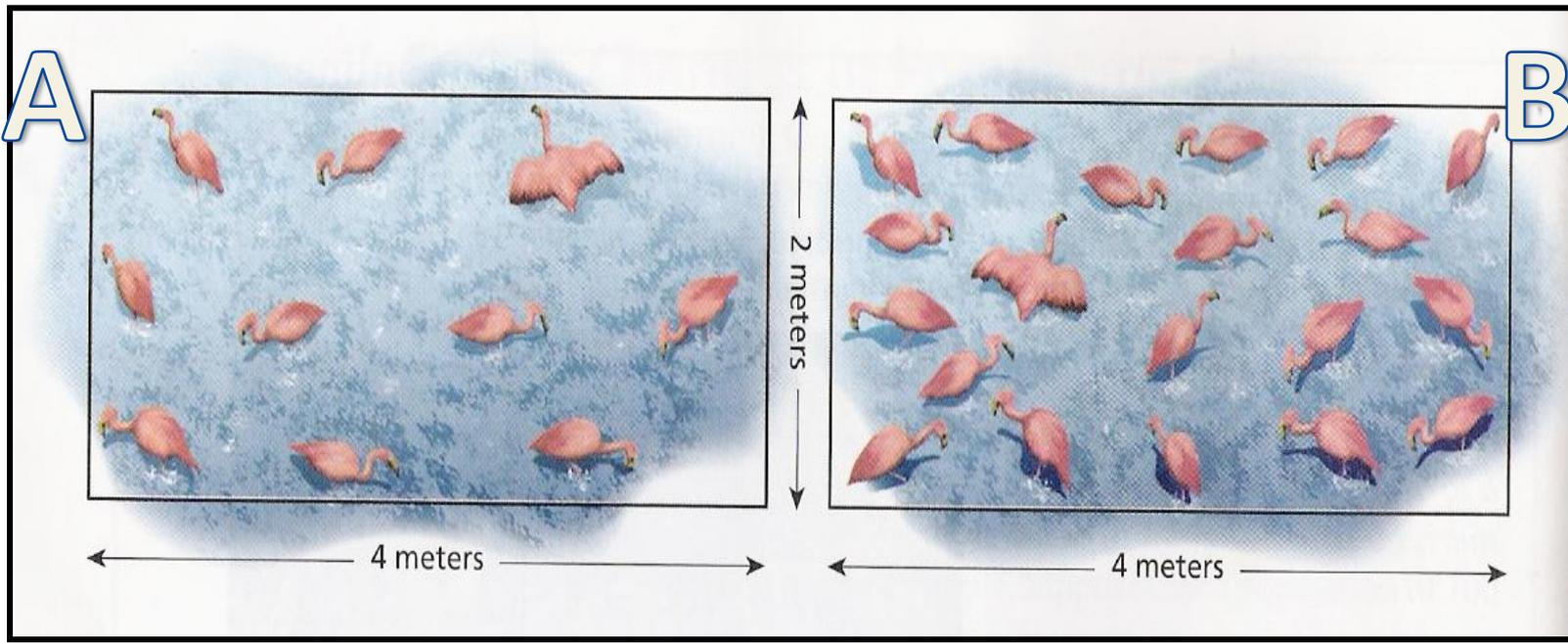
★ Set 1

★ Set 2

★5) Population Density = The **NUMBER** of individuals in an **AREA** of specific size

★6) How is it calculated? **# of Individuals** ÷ Unit **AREA**

★7) What is the population density of the flamingoes in each section?



$10/8 = 1.25 \text{ flamingoes/m}^2$

$20/8 = 2.5 \text{ flamingoes/m}^2$