



Science Virtual Learning

LEP Science

Population Ecology

May 8, 2020



LEP Science
Lesson: May 8, 2020

Objective/Learning Target: I can explain how different ways in which population size and be estimated as well as explain factors that influence population growth.

Let's Get Started:

1. Define Carrying Capacity.
2. What are 4 factors that affect the size of a population?





Let's Get Started: Answer Key

1. The maximum number of individuals in a species that an environment can support for the long term.
2. 1. Food 2. Water 3. Shelter 4. Space



Lesson Activity:

Directions:

1. Use the notes handout page ([Population Ecology Fill In Notes](#)) ([Population Ecology Notes in Espanol](#)) to copy down key terms and information about ecological population growth or decay.

Link(s):

[Population Ecology Notes](#)

Lesson Activity:

Directions:

Watch this video and answer the following 12 questions on a sheet of paper:

1. What is population ecology?
2. What does immigrate mean?
3. What does emigrate mean?
4. What is dispersion?
5. What is fecundity?
6. What are limiting factors?





Lesson Questions Continued

7. Why was it easy for the mosquito population to grow in 2012?
8. What is the carrying capacity?
9. What are examples of density-dependent limiting factor?
10. What are examples of density-independent limiting factors?
11. Draw an example of an exponential growth graph.
12. Draw an example of a logistic growth graph and label the carrying capacity.

Links: [Population Ecology: The Texas Mosquito Mystery](#)

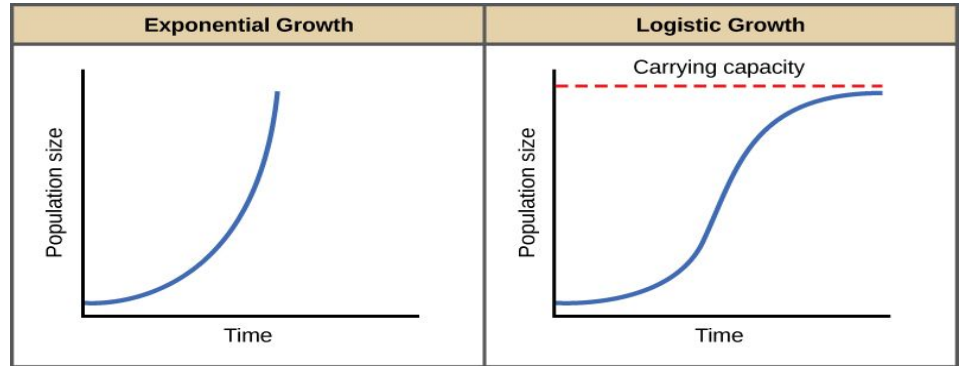


Lesson Questions Answers

1. It is the study of how groups within a species live together in one geographic area.
2. Refers to individuals moving in.
3. Refers to individuals moving out.
4. Dispersion refers to how the organisms are spaced.
5. Fecundity refers to how many offspring an individual could have in a lifetime.
6. Limiting factors keep a population in check.
7. It was easy for the mosquito population to grow in 2012 because it was hot and there were lots of egg laying locations.

Lesson Questions Answers Continued

8. Carrying capacity is the number of individuals a habitat can sustain with the resources that it has available.
9. Some examples of density-dependent factors include things like predation, competition, and disease.
10. Some examples of density-independent factors include things like volcanic eruptions and monsoons.
- 11-12.



(a)

(b)



Let's try calculating some population density. Use the attached worksheet to guide your practice. [US State population density](#)

Use this link, [US Census Bureau](#), to help with obtaining answers.

When done, answer this question:

Do you think these numbers have changed since the last census in 2010? Why-explain in terms of birth rate, death rate, immigration, emmigration, etc.



Answer to previous slide question:

Yes, because as medical care has gotten better, more people are living longer therefore our nation's birthrate exceeds its death rate. Also, more people have immigrated to the US than have left (emigrated) it.



Additional Practice and Resources

Extra information about population ecology: [Khan Academy](#)

Try this [Practice Quiz](#) to test you knowledge

Here is an additional video if you are still struggling with the material: [Bozeman Population Ecology](#)

Here is an online simulation for population growth. Read the instructions and try your best: [Population simulation](#)

More on Population Ecology from [Khan Academy](#)