

Adaptations of Animals



Submitted By:

Ryan Gaither, Marble Elementary

Overview

This lesson is an introduction to populations and how they change over time. Students will learn how humans can positively impact populations.

Grade Levels

4

Curriculum Correlation

NCES.4.L.1: Understand the effects of environmental changes, adaptations and behaviors that enable animals (including humans) to survive in changing habitats. NCES.4.L.1.1: Give examples of changes in an organism's environment that are beneficial to it and some that are harmful.

Duration

120 Minutes

Location

indoors

Materials

- Students will need access to computers for research and for creating a presentation. If computers are not available students will need posterboard and markers to make posters.

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Educators Information

- Teacher needs to know vocabulary terms prior to lesson. (ecosystem, population, endangered, threatened.)
- Teacher also needs to know information about these animals (Carolina Northern Flying Squirrel, Red Wolf, Indiana Bat, Loggerhead Turtle, Saint Francis Satyr Butterfly, Tar River Spiny Mussel.)



Procedure

1. At the start of the lesson introduce the vocabulary for the unit.
Vocabulary: ecosystem, population, endangered, threatened
2. Place students in groups that will be able to work together for the duration of the unit. This will enable them to jigsaw their learning with the rest of the class as they work through the lessons. These groups should be either 2 or 3 members (no more than 4) in order to be manageable when they get to the culminating task in Step 6.
3. Students will identify and research a population of organisms that has been impacted by changes in the environment. It may be a current endangered or threatened population or one that has adapted and survived without human intervention. Some examples of species are:
 - Carolina Northern Flying Squirrel
 - Red Wolf
 - Indiana Bat
 - Loggerhead Turtle
 - Saint Francis Satyr Butterfly
 - Tar River Spiny Mussel

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Other examples of threatened and endangered species in North Carolina can be found on the US Fish and Wildlife Service web site. Another resource is the NC Wildlife Resource Commission web site with information by species and pictures. Species are also labeled as threatened or endangered by state and/or federal guidelines.

4. Students will complete a graphic organizer with the name of the species (plant or animal), its region of habitat in North Carolina (or elsewhere at the teacher's discretion), the environmental factors that have impacted its survival, and any other information that will help the student develop ideas on how to help the species survive. Students will also include changes in the population over time, finding a baseline population and showing current population. Finally, students will need to include a prediction for the population.

5. Students will create a plan of how to help a population survive. Students will identify at least two things that humans can do to help an organism survive. The plan should include how to get people to support their ideas. For example, for the red wolf population, students could include the benefits of the red wolf reintroduction. Students could include a section to dispel myths about the red wolf. This would help people understand that red wolves are beneficial and not the detrimental species they were thought to be.

6. Students will create a presentation of their plan including data for changes in population. Students will create a line graph of the change in populations over time.

Note:

- Students will be given an opportunity to review their work and may even conduct peer reviews. Show students how to check their spelling and grammar in a digital application. Students could also work in small groups or with a partner to complete the research and presentation.
- Review the graphic organizers before students begin preparing their presentations. Students with developmental or physical limitations can be partnered with another student to complete the research and project.

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- As students research and prepare presentations, the teacher may need to adjust the timeline. Formatively assess the students' progress on research and interpretation of data. As students progress through the steps in the lesson, offer direction for the graphing tasks. Students should have previous knowledge of creating a line graph but may need some assistance identifying the axis names and period markings.



Extensions

Students who need extension activities will evaluate various programs already in place to protect species. Students could also prepare a poster, brochure or video designed to get community support for protecting a species.



Resources

- https://www.fws.gov/raleigh/es_tes.html
- <http://www.ncwildlife.org/>