Lesson Plan: Floppy Eared Bunny

Summary

In this lesson, students learn about the evolutionary history of rabbits and hares, with a focus on how they differ in their young and habitats. The transcript explains that rabbits are born helpless while hares are born furred and ready to run, and that rabbits burrow while hares make nests. It also highlights how lagomorphs branched off from other mammals, how rabbits emerged much later, and how selective breeding created floppy-eared show rabbits. The lesson notes the rise of pet rabbits in the 1800s and their eventual place in popular culture.
Full episode link: https://www.youtube.com/live/_vyZNbl2JvU?si=iu3sRRNnelldtUiY

Objective

Students will be able to describe the evolutionary origins of rabbits, explain the biological differences between rabbits and hares, and discuss how domestication and culture shaped modern perceptions of rabbits.

Standards

- NGSS MS-LS4-2: Apply scientific ideas to construct explanations for the anatomical similarities and differences among modern organisms and between modern and fossil organisms.
- CCSS.ELA-LITERACY.RI.6.2: Determine a central idea of a text and how it is conveyed through particular details.
- C3 Framework D2.His.2.6-8: Classify series of historical events and developments as examples of change and/or continuity.

Materials

- 9 Fun Facts: Floppy Eared Bunny
- Worksheet: Floppy Eared Bunny
- Optional: whiteboard, projector, internet access for images of rabbits and hares

Activity

1. Provide students with the 9 Fun Facts.
2. Read through the Fun Facts as a class, clarifying vocabulary such as “lagomorph” and “domestication.”
3. Break students into small groups to discuss the transition from wild rabbits to domestic pets and cultural symbols.
4. Have each group share one example of how human influence shaped rabbits over time.

Introduction

Introduce the topic by asking students what comes to mind when they picture a rabbit. Guide discussion toward the differences between rabbits and hares, emphasizing how offspring development and lifestyle set them apart.

Assessment

- Participation in group discussion.
- Completion of worksheet questions.
- Short written response explaining one major difference between rabbits and hares and why it matters biologically.

Rubric

Criteria	Excellent (4)	Good (3)	Fair (2)	Poor (1)
Content Understanding	Demonstrates strong grasp of rabbit evolution, domestication, and differences from hares	Demonstrates good grasp with minor errors	Demonstrates partial grasp with several errors	Demonstrates little to no understanding
Discussion Participation	Actively contributes with accurate and thoughtful input	Contributes with generally accurate input	Contributes minimally with limited accuracy	Does not contribute
Worksheet Completion	All questions answered thoroughly and accurately	Most questions answered accurately	Some questions answered, accuracy lacking	Few or no questions answered
Reflection	Provides detailed and thoughtful reflection	Provides adequate reflection	Provides limited reflection	No reflection provided

9 Fun Facts

1. **Lagomorphs branched off from other placental mammals about 65 million years ago.** Rabbits, hares, and pikas belong to the order Lagomorpha, which literally means "hare-shaped." Their lineage split from other placental mammals near the end of the Cretaceous period, around 65 million years ago. This makes their evolutionary path ancient and distinct.
Source: Science and Culture "Fossil Friday: The Abrupt Origins of Lagomorphs and Rodents" https://scienceandculture.com/2023/02/fossil-friday-the-abrupt-origins-of-lagomorphs-and-rodents/

2. **The rabbit and hare family Leporidae first appeared during the Miocene, about 12 to 16 million years ago.** Fossil evidence places the rise of Leporidae in the Miocene epoch. This marks the evolutionary appearance of true rabbits and hares as a distinct group within the lagomorph order.
Source: Animal Diversity Web "Leporidae" https://animaldiversity.org/accounts/Leporidae/

3. **Modern rabbits emerged around 200,000 years ago.** Genetic studies show that European rabbits (*Oryctolagus cuniculus*) diverged into two main lineages in France and Spain about 200,000 years ago. These lineages form the basis of today's wild and domestic rabbits.
Source: Nature "Two evolutionary histories in the mitochondrial DNA of rabbits" https://www.nature.com/articles/6887560

4. **Rabbit ears serve heat control, communication, and directional hearing.** The large ears of rabbits act like radiators, releasing heat through their many blood vessels. Rabbits can also swivel their ears independently to detect sounds from different directions, and ear posture is used to signal alertness or emotion to other rabbits.
Source: Bunny Lady "All About Rabbit Ears" https://bunnylady.com/rabbit-ears/

5. **Rabbit domestication was relatively recent and gradual in western Europe.** Genetic and historical evidence shows domestic rabbits arose from wild European rabbits in Iberia and southern France over the last one to two millennia. The process unfolded across centuries of human keeping and selective breeding, not a single event.
Source: Smithsonian Magazine "The Odd, Tidy Story of Rabbit Domestication That Is Also Completely False" https://www.smithsonianmag.com/science-nature/strange-tidy-story-rabbit-domestication-also-completely-false-180968168/

6. **Pet rabbits rose in popularity from the 1600s onward.** Fancy breeds of rabbits began appearing in Europe in the 1600s, and by the 1700s rabbits were being shown and kept as pets. By the 1800s, rabbits were firmly established as domestic companions, which later inspired many of the famous rabbit characters in literature and media.
Source: Hoppscotch Bun "The Long and Hoppy History of Domestic Rabbits" https://www.hoppscotchbun.com/post/the-long-and-hoppy-history-of-domestic-rabbits

7. **Rabbits have become iconic figures in media and storytelling.** From Bugs Bunny to Peter Rabbit, rabbits are some of the most recognizable animal characters in books, cartoons, and film. Their playful, clever, or mischievous portrayals have shaped how generations of people imagine rabbits.
Source: Petplan UK "7 Famous Rabbits" https://www.petplan.co.uk/rabbit-insurance/rabbit-care-and-advice/7-famous-rabbits.html

8. **Modern show-rabbit traits like floppy ears are a result of selective breeding for novelty.** Breeders have chosen traits like ear shape or length purely for aesthetic or show value rather than natural function. Over time these traits become amplified in certain rabbit breeds.
Source: Hepper "When Were Rabbits Domesticated?" https://articles.hepper.com/when-were-rabbits-domesticated/

9. **The global market for domestic rabbits is valued at about 1.7 billion dollars.** Rabbit farming supports both meat production and pet ownership, making rabbits part of a significant worldwide industry. In the United States, this includes spending on rabbit meat, show rabbits, and the pet trade, all of which contribute to the global market value. The demand is driven by cultural traditions, food supply, and the popularity of rabbits as companion animals.
Source: Metatech Insights "Rabbit Farming Market" https://www.metatechinsights.com/industry-insights/rabbit-farming-market-2463

Worksheet

Name: _____ Date: _____

Review

1. When did lagomorphs branch off from other placental mammals?

2. During which epoch did Leporidae first appear?

3. How long ago did modern rabbits emerge?

4. What functions do rabbit ears serve?

Discussion

5. What are the key differences between rabbit and hare offspring?

6. Why might humans have bred rabbits for floppy ears?

Data Analysis

7. Examine the global market value for rabbits. What does this tell us about the importance of rabbits in both farming and pet industries?

8. How did the popularity of rabbits as pets influence their role in media and storytelling?

Reflection

9. Which fact about rabbits surprised you the most, and why?

10. Do you think cultural influence on animals like rabbits is positive, negative, or both? Explain your reasoning.