

## Emperor Penguin Lesson Plan

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### Summary

In this episode, Blade sketched an emperor penguin while discussing their history, biology, and cultural significance. The transcript highlights when birds first diverged from reptiles, the slow evolution of penguins, and the relatively recent emergence of emperor penguins. It also covers human interaction with penguins, the extinction of the great auk, and the borrowed name “penguin” now used for Antarctic birds. Additional discussion touched on the threats emperors face today, including melting sea ice and overfishing, as well as how films like Happy Feet and March of the Penguins boosted awareness and conservation. Population numbers were compared between the late 20th century and today, showing growth due to protective measures.

<https://www.youtube.com/live/Lc5u94toJ1E?si=9CYpDV42Yf3rHSx->

### Objective

Students will learn about the evolutionary history, biology, human interaction, and conservation status of emperor penguins. They will understand how cultural media can influence conservation efforts and compare population estimates across decades.

### Materials

- Printed 9 Fun Facts list (provided)
- Worksheet (provided)
- Optional: Images of emperor penguins, video clips from March of the Penguins or Happy Feet

### Introduction

Begin by asking students what they know about penguins. Clarify that emperor penguins are the largest species, living exclusively in Antarctica. Explain that despite their familiar name, they are not related to the extinct “true penguins,” the great auks. Introduce the idea that humans have influenced penguin populations both negatively, through hunting, and positively, through conservation awareness.

### Activity

1. Review the 9 Fun Facts together as a class.
2. Have students complete the worksheet questions to reinforce understanding.
3. Discuss the role of media in shaping conservation, using Happy Feet as a case study.
4. Ask students to compare past and present emperor penguin population numbers and think about what factors may have influenced these changes.

### Assessment

- Completion of the worksheet.
- Class discussion participation.
- Short written reflection on how cultural media can impact scientific conservation.

### Rubric

| Criteria                              | Excellent (5)                                               | Good (3)                         | Needs Improvement (1)         |
|---------------------------------------|-------------------------------------------------------------|----------------------------------|-------------------------------|
| Understanding of Evolutionary History | Can clearly explain the timeline from dinosaurs to emperors | Partial recall of major events   | Limited or inaccurate recall  |
| Human Interaction                     | Explains both exploitation and conservation roles           | Mentions one side but not both   | Unable to connect human roles |
| Conservation Awareness                | Cites media and real protections                            | Cites only one type of influence | No awareness of impact        |
| Worksheet Completion                  | All questions answered accurately                           | Most questions answered          | Few or no questions answered  |

## 9 Fun Facts

**1. Around 160 million years ago, birds separated from their dinosaur ancestors.** This was the birth of true avians, and from that branch, the line that would one day yield penguins split off roughly 65 million years ago, right on the heels of the great extinction that cleared out the dinosaurs.

<https://www.nhm.ac.uk/discover/what-were-the-first-birds-like.html>

**2. By about 15 million years ago, modern penguin species began to diverge.** These were no longer just seabirds experimenting with swimming, but the familiar flightless divers, each adapting to different climates and oceans. Fossil and DNA evidence show that during the Miocene, distinct lineages such as emperor, king, Adélie, and gentoo penguins split apart.

<https://www.nhm.ac.uk/discover/news/2022/july/penguins-some-of-slowest-evolving-birds-world.html>

**3. Roughly 150,000 years ago, the emperor penguin entered the scene.** A relative newcomer in evolutionary terms, this bird was shaped by the brutal cycles of glaciation, becoming the specialized Antarctic giant we know today. Genetic studies show their populations remained relatively stable through multiple ice ages, suggesting emperors had already perfected their survival strategies.

<https://news.griffith.edu.au/2014/12/15/the-march-of-the-antarctic-penguin-genomes/>

**4. Penguins and people have crossed paths for centuries.** From early sailors who saw them as an easy food source, to cultures who spun them into stories, penguins have always been a strange mix of comedy and curiosity. Explorers once relied on them as walking rations long before we began to view them as wildlife worth protecting.

[https://ocean.si.edu/ocean-life/seabirds/penguins#section\\_479](https://ocean.si.edu/ocean-life/seabirds/penguins#section_479)

**5. Modern penguins are under increasing pressure.** Climate change, collapsing fish stocks, and unstable sea ice are tightening the vise on many species. The emperor penguin is no exception, its breeding cycle balanced entirely on dependable ice. Without it, whole colonies can fail in a single season.

<https://www.axios.com/2022/10/25/emperor-penguin-endangered-species-act-protections>

**6. Emperor penguins are not true penguins, and neither is any living species we call a penguin.** The name originally belonged to the now extinct great auk of the Northern Hemisphere, a bird wiped out for oil, meat, and pillow stuffing. The Antarctic birds we know today only inherited the title, not the ancestry. Genetically, modern penguins are most closely related to other seabirds like albatrosses and petrels, not the vanished auk whose name they bear.

<https://www.bas.ac.uk/media-post/study-reveals-60-million-years-of-penguin-evolution/>

**7. Penguins have become stars of modern media.** From March of the Penguins bringing their real struggles to theaters, to Happy Feet turning their courtship dances into pop musicals, to the Penguins of Madagascar plotting slapstick world domination, these birds have slid from icy colonies into global pop culture.

[https://ocean.si.edu/ocean-life/seabirds/penguins#section\\_493](https://ocean.si.edu/ocean-life/seabirds/penguins#section_493)

**8. Those movies sparked a renewed love for penguins in zoos and aquariums.** Attendance rose where penguins were on exhibit, and kids who grew up with the films still greet them with lines like “Smile and wave, boys.” Penguins became not just animals behind glass, but characters that children already felt they knew.

<https://www.ox.ac.uk/news/science-blog/world-penguin-day-2017-%E2%80%98people-power%E2%80%99-and-robotics#:~:text=With%20one%20of%20the%20biggest,research%20to%20the%20next%20level.>

**9. Conservation efforts are giving penguins a fighting chance.** International protections now limit hunting and trade, and many nations have declared emperor penguins a species of concern, granting them legal safeguards. Marine protected areas, regulated fisheries, and global awareness campaigns have helped stabilize some populations. While the challenges of climate change remain daunting, these efforts show that coordinated action can keep penguins, emperors included, on the ice for generations to come.

<https://www.fws.gov/press-release/2022-10/emperor-penguin-gets-endangered-species-act-protections>

## Worksheet

Name \_\_\_\_\_ Date \_\_\_\_\_

### Review

1. When did birds split from reptiles?
2. About how many years ago did emperor penguins emerge?
3. What happened to the original “true penguins”?

### Discussion

4. Why do emperor penguins evolve slowly compared to other animals?
5. How have humans both harmed and helped penguin populations?
6. How do films and media change public opinion about animals?

### Data Analysis

7. In the 1980s and 1990s, there were about 150,000 breeding pairs of emperor penguins. Today there are about 275,000 pairs. By what percentage did the population increase?
8. Why is comparing historical and modern data important when studying animal populations?

### Reflection

9. Which fact about emperor penguins surprised you the most and why?
10. How do you think climate change will affect emperor penguins over the next 50 years?