

## Lesson Plan: Hippopotamus

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### Summary

In this episode, Blade discusses the hippopotamus drawn from the Random Object Randomizer. The conversation covers its origins from Pakicetus about 55 million years ago, its evolutionary link to whales, and its development as a freshwater species. He explains the hippo's territorial behavior, surprising speed, and strength, while noting its popularity in zoos and modern culture. The talk balances humor and science, ending with references to Mars, the pygmy hippo born at Tanganyika Wildlife Park in Kansas.

<https://www.youtube.com/live/BgX20BV1Hig?si=mw1sHc5g0gieG4Mz>

### Objective

Students will describe the evolutionary relationship between hippos and whales, analyze hippo adaptations to freshwater environments, and discuss how human perception of animals can shift between fear and fascination.

### Standards

- NGSS MS-LS4-1: Analyze and interpret data from the fossil record to identify patterns of evolution.
- CCSS.ELA-LITERACY.RST.6-8.1: Cite specific textual evidence to support analysis of science and technical texts.
- C3 D2.Geo.5.6-8: Explain how environmental and human factors influence the distribution and behavior of organisms.

### Materials

- 9 Fun Facts (provided below)
- Worksheet
- Paper and pencils for notes or sketching (optional)
- Images of hippos and whales (optional)

## Introduction

Start by asking students what animals they believe are related to whales. After several guesses, reveal that the hippopotamus is the whale's closest living relative. Discuss how physical traits such as skin texture, nostril placement, and bone density provide evolutionary clues.

## Activity

Divide the class into small groups. Assign each group three of the 9 Fun Facts to analyze. Have them summarize the facts in their own words, then create a short presentation or poster illustrating how each fact connects to evolution, adaptation, or human interaction with the species.

## Assessment

Students will complete the worksheet and participate in group discussions, demonstrating understanding of hippo adaptations, evolutionary history, and the role of observation in science.

### Rubric

Criteria	Excellent (4)	Good (3)	Fair (2)	Poor (1)
Content Understanding	Clearly explains hippo-whale connection and adaptation evidence	Explains concepts with minor gaps	Shows partial understanding	Minimal or incorrect understanding
Discussion Participation	Works cooperatively, communicates clearly	Participates and contributes adequately	Uneven participation	Minimal participation
Worksheet Completion	All sections complete with thoughtful answers	Mostly complete and accurate	Some missing or unclear responses	Incomplete or inaccurate responses
Technology Connections	Uses facts or visuals accurately	Uses most information correctly	Some inaccuracies	Incorrect or missing use of visuals or info

## 9 Fun Facts

**1. Ancient Origins** The hippo's story begins about 55 million years ago with Pakicetus, a small, semi-aquatic mammal that lived along warm coastal shallows. It had hooves instead of flippers, but its bones and teeth already hinted at life both in and out of the water.

<https://scienceandculture.com/2024/03/notes-on-the-mysterious-origin-of-hippos/>

**2. Divergence from Whales** Hippos and whales share a common ancestor from the early Eocene. While some descendants dove into the oceans to become modern whales, others stayed near rivers and swamps, leading to the lineage that became hippos. They are the closest living relatives of whales today.

<https://www.amnh.org/explore/news-blogs/whale-hippo-skin-evolution>

**3. Life on the Rivers** Modern hippos are masters of freshwater life. They spend most of their days submerged to keep cool, with eyes, ears, and nostrils placed high on the head so they can stay alert while almost fully underwater.

[https://animaldiversity.org/accounts/Hippopotamus\\_amphibius/](https://animaldiversity.org/accounts/Hippopotamus_amphibius/)

**4. Territorial Temper** Despite their rotund appearance, hippos are highly territorial. Males mark and guard sections of river, using their massive jaws to warn off rivals and intruders, including crocodiles and boats.

<https://www.britannica.com/science/Why-Are-Hippos-Dangerous>

### 5. More Deadly than Sharks

Hippos kill an estimated 500 people per year in Africa, far exceeding shark fatalities. They can run up to 30 kilometers per hour on land and charge unpredictably both in water and on shore.

<https://outdoors-international.com/how-dangerous-are-hippos/>

**6. Zoo Popularity** Even with their fearsome reputation, hippos are beloved zoo attractions. Their size, expressiveness, and seemingly playful behavior make them audience favorites, especially during feeding or pool time.

<https://animaliafacts.com/what-zoos-have-hippos/>

**7. Colombia's Wild Hippos** A small group of introduced hippos established a breeding population in Colombia's Magdalena River. With few natural checks, they've become a living case study in how large animals adapt to new ecosystems, raising conservation and management questions.

<https://www.psychologytoday.com/us/blog/animal-emotions/202504/bioxenophobia-the-uncertain-fate-of-colombias-alien-hippos>

**8. Christmas Hippos** The novelty song I Want a Hippopotamus for Christmas became a hit in 1953, performed by ten-year-old Gayla Peevey from Oklahoma. The Oklahoma City Zoo later received a real hippo, Matilda, as a promotional gift inspired by the song.

<https://www.saturdayeveningpost.com/2023/12/christmas-classic-i-want-a-hippopotamus-turns-70-this-year/>

**9. Baby Mars the Pygmy Hippo** Mars, a pygmy hippo calf born at Tanganyika Wildlife Park near Wichita, Kansas, captured national attention for his joyful pool play and conservation importance. His story aired nationally on ABC World News Tonight with David Muir as a rare bright spot for an endangered species.

<https://abcnews.go.com/amp/US/david-muir-shares-heartwarming-story-mars-baby-hippo/story?id=124661091>

## Worksheet

**Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

### Review

1. What ancient animal is believed to be the ancestor of both hippos and whales?
2. How do hippos' physical traits show their adaptation to a semi-aquatic lifestyle?
3. Why are hippos considered more dangerous than sharks?
4. What behaviors show that male hippos are territorial?

### Discussion

5. How can studying modern hippos help scientists understand ancient evolution?
6. Why do people continue to find hippos appealing despite their danger?

### Data Analysis

7. Compare the adaptations of whales and hippos. What environmental pressures might have caused their divergence?
8. Use the Fun Facts to identify two examples of how hippos interact with human culture.

### Reflection

9. What surprised you most about hippos, and how does learning about them change your view of "dangerous" animals?