

Keystone Species

Learning Objectives

By the end of this lesson, students will be able to:

- Define what a keystone species is and explain why they are important.
- Describe the ecological impact of removing and reintroducing keystone species.
- Compare and contrast modern and ancient keystone species.
- Explain why conservation efforts often focus on animals like elephants, rhinos and wolves.

Key Takeaways

- Keystone species have a disproportionately large impact on their ecosystems.
 - Removing a keystone species can disrupt food webs, habitats and entire ecosystems.
 - The reintroduction of wolves to Yellowstone is a real-world example of ecological restoration.
 - Ancient ecosystems, like the mammoth steppe, were shaped by extinct keystone species.
 - Technologies used for de-extinction also support living keystone species, like elephants.
-

Preteaching

Colossal Viewing Guide

- a. Pass out the viewing guide and have students complete question 1 before starting the video.
 - b. This question is meant to activate prior knowledge regarding the subject of Keystone Species.
-

Preteaching

Colossal Video

- a. Students should complete questions 2-9 on the viewing guide as the video plays.
 - i. All questions are in order
- b. After the completion of the video, students should complete problems 10-14 on their own.
- c. Optional: After the completion of the viewing guide you can have tables / partners discuss their opinion on question 13 and 14. This is a topic full of active debate.

Activity A: Guided Reading

This guided reading introduces the original concept of an architectural “Keystone” in an attempt to reinforce the importance of a keystone species.

Yellowstone’s wolves were a big focus in the video, so in the guided reading we expand out and discuss the effects that wolf extermination has had on the continental United States as a whole.

Deer, wolves, coyotes and ticks are all part of an ongoing environmental emergency and this acts as the perfect way to show students that losing keystone species can lead to real impacts... not just on the environment, but humans, too.

Links

[Viewing Guide](#)

[Guided Reading: Return of the Deer](#)

[\(KEY\) Guided Reading: Return of the Deer](#)