Lesson Plan: Are Endangered Species Worth Saving?

Opening Quick-Write Prompt
What does it mean for a species to be endangered? How concerned are you about protecting endangered species?

A quick write allows students to write down their thoughts before discussing the opening question in order to increase participation and make the discussion more accessible to English Language Learners.

Objective

- Students will analyze information about how the reduction in numbers of an individual species can affect an entire ecosystem.

- Students will evaluate arguments for and against efforts to save endangered species and write a response to the question of how important it is to protect species from extinction.

Essential Question and Lesson Context

Why should we care if a species goes extinct?

Scientists estimate that we are now in the middle of the sixth mass extinction event, where species are dying out at 1,000 to 10,000 times baseline extinction rates. There are moral and ethical arguments for protecting species from extinction, but there are biological and economical reasons as well. The collective benefits we get from ecosystems, such as water, other natural resources, and the organisms they contain, like insects that pollinate our crops and decomposers that get rid of our waste, for example, are called ecosystem services. Each species plays a role in its ecosystem--and its services. And if one species dies out, that can affect the entire ecosystem. Ecosystems are healthiest when they are the most biodiverse. And while ecosystem services have a huge economic value, protecting a species and its habitat is expensive and could stand in the way of other economic opportunities, like land development for new businesses. While some people believe every species is worth saving, others think that some species are worth saving more than others.

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**Key Vocabulary**

Find vocabulary for this topic in the Glossary, located under the video. Pre-teach key vocabulary before students do the activity, especially if you have English Language Learners. After going over the simple definition, consider providing a visual aid or having students draw one. See more strategies for pre-teaching vocabulary.

**Investigate**

- Discuss the quick-write prompt as a class to gauge what issues students know about endangered species.
- Review the definition of an “endangered species” (found in the Glossary).
- Ask students if they know of any endangered or extinct species. Discuss as a class what some reasons could be for why those species are endangered or went extinct. Make a list of reasons the students come up with.
- Ask students if they think it matters if one species goes extinct: Why would it matter (or not)? Or does it depend on the species?
- Have students watch the Above the Noise episode as a class to learn more about endangered species and the effects of species extinction.
  - **Stop the video at 2:24:** Review the list students made earlier about why species become extinct. Were there any new reasons from the video to add to the list?
  - **Stop at 4:20 and ask:** How did the hunting of sea otters affect the kelp forest ecosystem? How would it affect the food web?
  - **Stop at 5:01:** Review what the term ecosystem services means. What are some ecosystem services provided by the kelp forest ecosystem?
- **Check for understanding after the video:** How important is an individual species to an ecosystem? Think about the example of the kelp forest ecosystem presented in the video. What if urchins were over-collected instead of otters? Would it have the same impacts on the kelp forests’ ecosystem services?
- Optional: Have students read the article Is the Endangered Species Act at Risk of Extinction? for information about the Endangered Species Act (ESA), focusing on the definitions of endangered and threatened species, and how the ESA protects species classified as such. Based on information in the article, has the ESA been effective? Why do students think it has or hasn’t? (Note: You will need to scaffold the reading of the article for younger or lower level readers.)
  - As a class, in pairs or individually, have students explore the interactive at the bottom of the article, which provides information on the health of thousands of

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species of mammals, reptiles, amphibians and birds. Then, as a class, discuss what stood out to the students about the data. What did they notice? What surprised them?

- Have students read the article again, this time focusing on arguments critics have against the ESA.

**Transition to the Make & Share:** Tell students they will share their response to the following Discussion questions on KQED Learn: **How important is it to you to protect species from extinction? Why? How far would you be willing to go to protect an endangered species?**

- Are you doing this for the first time? Ask your students to analyze what makes an excellent response. Find example responses, sentence frames and a rubric for assessing responses in KQED Learn’s Teacher Resources.
- Please refer to our Code of Conduct as well as your own school’s behavioral expectations before asking students to post a response or comment on another response.

### Make & Share

- Students click on the “Join the Discussion” button to respond to the Discussion question.
- Responses should be supported by evidence from the Above the Noise video, the article, or other research on the topic.
  - **Encourage students to comment on other responses after posting their own.** Remind them to use evidence to support their claims and respectful language when replying to others.

### Assessment/Reflection

- Students reflect on what they have learned through a class discussion or in writing:
  - What is your biggest takeaway from the video (and article)?
  - What was it like to post your responses publically and reply to other posts? What did you learn from other students? What do you hope they learned from you? What will you do the next time you post a comment on KQED Learn?

*Circle chats, small-group discussions and think-pair-share provide a safer space for students to practice speaking and listening, and also boost participation during whole-class discussions.*
**Extension/Homework**

**Write/speak locally:** Students turn their response to this issue into a letter, short speech or presentation, then research ways to make their voice heard in their community. (Example: Speaking during the public comment section of a city council meeting, posting in an online forum, etc.) For a list of how to contact local officials in your area, check out [KQED Education’s Local Election Toolkit](learn.kqed.org).

**Common Core Standards and NGSS**

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<tr>
<th>Standard</th>
<th>Description</th>
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<tr>
<td><strong>CCSS.ELA-Literacy.CCR A.R.1</strong></td>
<td>Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.</td>
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<td><strong>CCSS.ELA-Literacy.CCR A.R.7</strong></td>
<td>Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.</td>
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<td><strong>CCSS.ELA-Literacy.W1</strong></td>
<td>Write arguments to support claims with clear reasons and relevant evidence.</td>
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<td><strong>D2.His.1.9-12</strong></td>
<td>Evaluate how historical events and developments were shaped by unique circumstances of time and place as well as broader historical contexts.</td>
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<tr>
<td><strong>NGSS.SEP.7</strong></td>
<td>Engaging in argument from evidence</td>
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<td><strong>NGSS.SEP.8</strong></td>
<td>Obtaining, evaluating and communicating information</td>
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<td><strong>NGSS.DCI.LS2.C</strong></td>
<td>Ecosystem dynamics, functioning and resilience</td>
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<td><strong>NGSS.DCI.ESS3.C</strong></td>
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