

# NOW PRESENTING ECO-INVESTIGATION!

## LESSON PLAN

### LEVELED FOR GRADES 3–5, 6–8, AND 9–12

**OBJECTIVE** Students will conduct research on at-risk ecosystems and create an informative, persuasive multimedia presentation using Adobe Spark.

**MATERIALS** Species cards; paper and markers; class set of leveled Presentation Planner sheets for grades 3–5, 6–8, or 9–12; Adobe Spark (create a free account at [spark.adobe.com/edu](https://spark.adobe.com/edu))

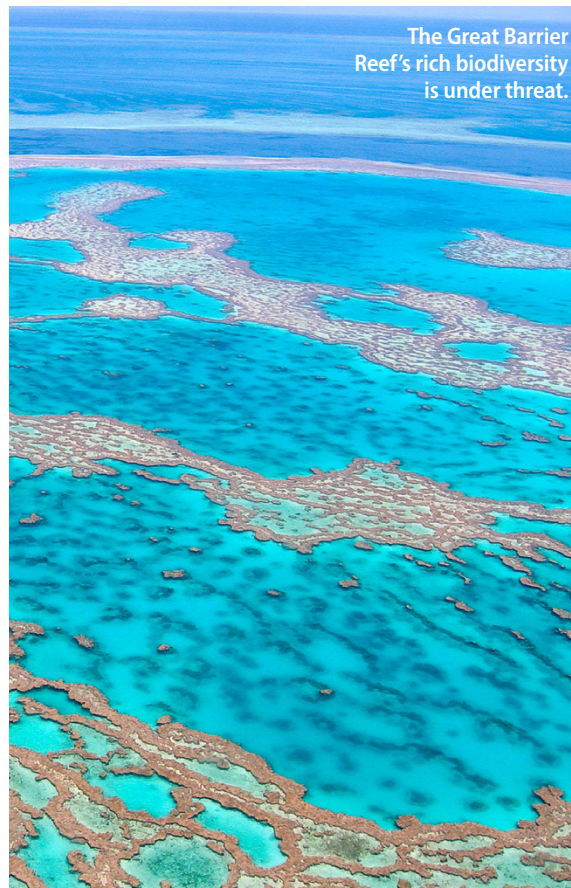
**TIME** Two or more 45-minute periods, depending on desired depth of student research

1. Do an online image search for pictures of extinct animals like the Moa, Tasmanian Tiger, Dodo, and Quagga. Share these pictures with your class. Can they guess what these animals have in common?
2. Discuss that these animals are all extinct, with human causes for their extinction. Use the list below to facilitate a conversation about why the animals may have become extinct. Conclude by examining the idea that species extinction and the disruption of different ecosystems that it causes are complex issues, and are frequently the result of the choices humans make.

Animal	Extinction Theories
Moa	Overhunting for food; habitat loss
Tasmanian Tiger	Government bounty; seen as threat to livestock; competition with Dingo; an introduced species
Dodo	Overhunting for food; plagued by rats; an introduced species
Quagga	Planned extermination; seen as competition for livestock; hunted for food and hide

### CLASS ACTIVITY Eco-Simulation

3. Print, cut, and distribute the Great Barrier Reef species cards on the Resource Sheet, giving one to each student. (In cases of larger or smaller classes, duplicate cards or set some aside, ensuring a good representation of producer, consumer, and habitat species cards.)
4. Have students copy the name of their species in large text on a single sheet of paper and keep their species card handy for reference. Students should sit in a circle or across from each other so they can see each other's species names facing outward. Read each of the below



The Great Barrier Reef's rich biodiversity is under threat.

statements aloud and ask students to raise their species name if they believe their species has been impacted (either positively or negatively), and to explain how (see modifications by grade band, upper right). After each statement, discuss the impacts and ripple effects of interdependence.

### Environmental Impact Statements

- A mangrove forest is cleared to make space for a harbor and waterfront homes.
- Warmer ocean temperatures reduce krill populations.
- Agricultural pollution causes an overgrowth of algae, depriving coral of the oxygen it needs to live.
- Whale, tiger and reef sharks are overfished by people.
- Conservationists strategically restore mangrove forests on certain priority coastlines.
- Governments establish ocean partnerships preventing pollution and overfishing.
- Warmer ocean temperatures cause coral to die.
- Biologists cull an overpopulation of crown-of-thorns starfish that feed on coral.
- Pollution and warmer ocean temperatures cause kelp forests and seagrass beds to diminish.

## MODIFICATIONS

- **Grades 3–5**  
Check for understanding and instances of new vocabulary. Help to make impact connections where necessary.
- **Grades 6–8**  
Challenge students to look out for impacts that flow “backward,” e.g., overfishing of whale sharks may result in an overgrowth of krill, a main source of food.
- **Grades 9–12**  
Challenge students to create their own statements to test on the ecosystem.

- Biologists use new research-based trial methods to “heal” coral reefs that have been damaged by pollution and climate change.
- Humans become more reliant on green energy, reversing the warming effects of greenhouse gases.

5. Conclude with discussion questions, such as, *Why are all members of an ecosystem important? What is the impact when one or more organisms are threatened? What are some of the ways humans can positively and negatively impact an ecosystem?*

### STUDENT-CENTERED ACTIVITY Adobe Spark Presentation

6. Tell students they will be using Adobe Spark to create a multimedia species/ecosystem presentation on a topic of their choice. Consider setting up grades 3–8 to work in pairs or small groups, and grades 9–12 to work individually or in pairs. Project (or write) the relevant species/ecosystem choices on the board:
- **Grades 3–5** Threatened Species and Their Ecosystems ([scholastic.com/sparkchoices3-5](https://scholastic.com/sparkchoices3-5))
  - **Grades 6–8** Endangered Species Success Stories ([scholastic.com/sparkchoices6-8](https://scholastic.com/sparkchoices6-8))
  - **Grades 9–12** Ecosystems Under Threat ([scholastic.com/sparkchoices9-12](https://scholastic.com/sparkchoices9-12))



7. Tell students to craft a presentation with these goals in mind:
- **All Grades** Teach their classmates about their chosen species and its ecosystem, including various threats faced by both
  - **All Grades** Convince their classmates that human action can and should be taken to protect their species and its ecosystem
  - **Grades 6–8, 9–12** Include possible actions people can take to protect the ecosystem
  - **Grades 6–8** Explain what measures have already been taken to protect their species and its ecosystem, and describe how it was removed from the endangered species list
  - **Grades 9–12** Introduce new scientific or technical developments that are helping solve problems in the ecosystem. This can include new, recently implemented practices whose results have not yet been determined.
  - **Grades 9–12** Explore sociopolitical factors that contribute positively or negatively to the problems the species’ ecosystem faces
8. Distribute the appropriately leveled Presentation Planner to each student. Help them frame objectives and expectations for their presentations. Review finding and crediting reliable sources as needed.
9. Have students share their presentations with the class. Encourage audience members to listen actively, ask questions, and give constructive feedback.

### DEBRIEF

10. After the presentations, ask students what ideas they have for making a difference in endangered species’ ecosystems. Build a list together, encouraging ideas that are practical as well as those that may seem zany or improbable. All ideas are welcome and have the potential to spark change.

### TIPS FOR CREATING A GREAT ADOBE SPARK PRESENTATION

► Prompt students to use these Adobe Spark features to catch their audience’s attention:

- Click on “Video” after logging into [spark.adobe.com](https://spark.adobe.com)
- Choose a title that is clear, informative, and persuasive
- Apply different layouts to each slide to add variety
- Add text and icons to support your message
- Add photos of animals and habitats from the free photo library provided by Spark