NATIONAL GEOGRAPHIC

RESOURCE LIBRARY I ACTIVITY : 50 MINS

Helping the Sumatran Rhino

Students consider the criteria they would use to decide how limited funds should be distributed to projects conserving endangered species. They learn about the concept of a grant proposal and critique two sample proposals for the Sumatran rhino. Students will use the same rubric that will be used to evaluate their grant proposal and presentation for their final project.

GRADES

6, 7, 8

SUBJECTS

Biology, Ecology, Conservation

OVERVIEW

Students consider the criteria they would use to decide how limited funds should be distributed to projects conserving endangered species. They learn about the concept of a grant proposal and critique two sample proposals for the Sumatran rhino. Students will use the same rubric that will be used to evaluate their grant proposal and presentation for their final project.

For the complete activity with media resources, visit:
http://www.nationalgeographic.org/activity/helping-sumatran-rhino/

In collaboration with

educurious
learning that connects

DIRECTIONS

This activity is part of the Extinction Stinks! unit.

1. Introduce the concept of a grant proposal.

- Tell students to imagine they are part of an organization that has funds to support projects trying to help conserve the Sumatran rhino. Ask: *How might you identify what to do next?*
    - Ideas might include asking local experts, having a competition, running an experiment, looking at other similar species' successes/failures.
- Explain to students that when organizations or governments set aside funds to fix an issue, they request grant proposals from groups or individuals who think they have solutions to the problem.
- Student groups will be writing their own grant proposals and sharing them with the class to advocate for their solution to the threats faced by their target species.
    - Distribute the *Grant Proposal* handout that students will use to draft their group's grant proposal.
    - Review each section of the proposal together, explaining each piece and answering any questions students have about what is required.

2. Have students collaborate to evaluate two sample proposals using a provided rubric.

- Explain that as experts in Sumatran rhino conservation, students are now authorized to review two proposals for conservation measures trying to protect the species.
- Distribute hard copies of *Sample Grant Proposals* and the *Proposal and Pitch Rubric*. Inform them that this is the same rubric that will be used to evaluate their final projects.
- Direct students to work in their project groups to track their ratings on both the rubric and the grant proposals by annotating where they found each piece of information required, if present, and then determine whether to fund each project.

3. Lead a class discussion to debrief the evaluation process of the sample grant proposals.

- After each group has completed their evaluation, lead a class discussion comparing the strengths and weaknesses of each proposal.
    - When considering the second proposal, highlight some of the alternative conceptions listed; for example, the act of making something illegal does not mean it will not occur.

- Then have students consider an authentic constraint faced by those funding scientific grants:

    - *If you could fund only one proposal, which would you choose?*
    - *What would you add or change about the existing grant proposals?*

Tip

Steps 2-3: The second sample grant proposal was intentionally written to include common alternative conceptions about endangered species and conservation. See "Other Notes" for details; be sure to review these with students.

Informal Assessment

Collect and use students' rubric responses to the sample proposals to evaluate how well they understand each component of the grant proposal, which connects to each prior portion of the unit's lessons: biodiversity, food webs, and ecosystem services. The second proposal also has common alternative conceptions about the concepts taught in the unit so far. These help to spark conversations with students who need guidance to better understand the concepts before diving into their final assessment. See "Other Notes" for more information about things to look for in student responses.

Extending the Learning

Have students explore real grant proposals used by projects that received funding. Explore web resources like these *Field Conservation* grants or ask a local scientist or conservation agency if they would be willing to share past grant proposals with your class for educational use. Seeing the amount of work and detail that goes into a successful grant proposal can be daunting, but it's how conservation gets done!

OBJECTIVES

Subjects & Disciplines

Biology

- Ecology
- Conservation

Learning Objectives

Students will:

- Explain why grant proposals are an important part of funding conservation projects.
- Take on the authentic role of expert funders to evaluate the validity of competing grant proposals using a rubric.

Teaching Approach

- Project-based learning

Teaching Methods

- Modeling
- Reading
- Reflection

Skills Summary

This activity targets the following skills:

- 21st Century Themes
  - Environmental Literacy
  - Global Awareness
- Critical Thinking Skills
  - Analyzing
  - Applying
  - Evaluating
  - Remembering
  - Understanding
- Science and Engineering Practices
  - Obtaining, evaluating, and communicating information

National Standards, Principles, and Practices

COMMON CORE STATE STANDARDS FOR ENGLISH LANGUAGE ARTS & LITERACY

• **CCSS.ELA-LITERACY.RST.6-8.5:**
Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.

NEXT GENERATION SCIENCE STANDARDS

• **Crosscutting Concept 2:**
Cause and Effect
• **ETS1.B: Developing Possible Solutions:**
There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem.
• **MS. Interdependent Relationships in Ecosystems:**
MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.
• **Science and Engineering Practice 8:**
Obtaining, evaluating, and communicating information

Preparation

What You'll Need

PHYSICAL SPACE

- Classroom

GROUPING

- Large-group instruction

OTHER NOTES

Here are three alternative conceptions put into the second grant proposal to review with students:

- Just because something is illegal doesn't mean it won't happen. Poaching is defined as illegal hunting or harvesting of wildlife. Poachers continue to hunt endangered species in

many parts of the world despite fear of punishment under the law and potentially dangerous conditions because they can earn a significant amount of money from the practice or because their local community doesn't have many economic opportunities.
- Laws require enforcement, which can be expensive—and dangerous. Anti-poaching professionals spend many hours trying to capture those illegally hunting endangered species in remote places, sometimes putting their lives in real danger. Hiring anti-poaching rangers costs money and is not a low-cost solution to poaching as a conservation issue.
- Banning hunting and deforestation may seem easy from a distance, but the up-close reality is more complex. For those who need wood to heat their homes or money to support their families, using local timber may feel more urgent than protecting an endangered species. Recognizing that a diversity of perspectives exists means that new laws may be controversial.

BACKGROUND & VOCABULARY

Background Information

Grant proposals are a common way that nonprofit organizations secure funding for important projects that support causes like protecting endangered species. The first sample grant proposal in this lesson outlines the major strategies designed by Sumatran Rhino Rescue to address the unique challenges faced by the Sumatran rhino. The second sample describes several common alternative conceptions about conservation that should be addressed before students begin their work identifying their top choice for conservation strategies for their final project.

Prior Knowledge

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Recommended Prior Activities

- The Power of Story

Vocabulary

Term	Part of Speech	Definition

Term	Part of Speech	Definition
conservation	*noun*	management of a natural resource to prevent exploitation, destruction, or neglect.
endangered species	*noun*	organism threatened with extinction.
extinction	*noun*	process of complete disappearance of a species from Earth.
grant	*noun*	money given to a person or group of people to carry out a specific project or program.
grant writing	*noun*	process of applying to a person, business, or other organization for money or other funding.

For Further Exploration

Articles & Profiles

- Medium: 10 Wildlife Grants Your Nonprofit Should Be Applying For This Summer
- University of Wisconsin—Madison: Planning and Writing a Grant Proposal: The Basics

Websites

- National Geographic: Sumatran Rhino Rescue