

RESOURCE LIBRARY | ACTIVITY : 2 HRS 30 MINS

Communicating Human Impact on Water Security

As the culmination of the *Peak Water: Mount Everest and Global Water Supply* unit, students draw from their ideas and reflections in their Project Journals to create and present the unit final product: collaborate on a public education outreach campaign proposal to inform their community about human impacts on water security.

GRADES

6, 7, 8

SUBJECTS

Biology, Ecology, Conservation, Earth Science, Climatology, Geography, Physical Geography

CONTENTS

1 PDF

OVERVIEW

As the culmination of the *Peak Water: Mount Everest and Global Water Supply* unit, students draw from their ideas and reflections in their Project Journals to create and present the unit final product: collaborate on a public education outreach campaign proposal to inform their community about human impacts on water security.

For the complete activity with media resources, visit:

<http://www.nationalgeographic.org/activity/communicating-human-impact-water-security/>

In collaboration with



DIRECTIONS

This activity is part of the *Peak Water: Mount Everest and Global Water Supply* unit.

1. Assist students as they refer to the Project Journals they completed throughout the *Peak Water: Mount Everest and Global Water Supply* unit and the scientific argument they previously drafted in the *How We Impact the Water Supply* activity to create their public education outreach campaign proposal.

- Remind students of the required components of their outreach campaign using the checklist from the *Human Impact on Water Security Campaign: Project Rubric*:
 - Objectives: The long-term outcomes and short-term outcomes you wish to achieve.
 - Target audience: the relevant individuals or groups you want to target with your message.
 - Message: the main message you want to share to raise awareness and inspire action.
 - Methods: a description of how you will raise awareness.
 - Features the Himalaya or a local watershed.
 - Represents a cause and effect relationship between humans and water security.
- Revisit the *Modeling Human Impact on Water Security Project Rubric* to ensure students understand how their final products will be assessed.
- Allow students at least 60 minutes in class to work on their public outreach campaigns using the available materials.

2. Facilitate as students present their public outreach campaign plans and scientific arguments to an audience of peers, experts, and community members.

- Decide in advance if you will have students share their projects one at a time or if you will have a *Gallery Walk* style presentation.
 - Have students brainstorm two to three focus questions to elicit feedback from their classmates/audience and record these in a visible place.
- Distribute the *Modeling Human Impact on Water Security Project Rubric* and the focus questions that students brainstormed; students and other audience members will use them to evaluate the campaign plans and the students' accompanying scientific argumentation.

3. Prompt students to engage in a reflection on the project.

- Lead students in a discussion in which they reflect on the project. Physically move students' chairs in a circle. Use the following prompts as guides for the discussion:

1. *What are some key ideas that you'll probably always remember from the project?*
2. *What part was the most challenging?*
3. *What part did you enjoy most?*
4. *If you could do something different, what would it be?*
5. *If you could change one thing about this project, what would it be?*
6. *What is one thing you'll do differently related to water to ensure water security?*

4. Assess students' understanding of the [A Ripple Effect](#) lesson of the [Peak Water: Mount Everest and Global Water Supply](#) unit through an exit ticket.

- Use the prompt below to assess students' understanding of the main concepts covered in the *A Ripple Effect* lesson. Have students respond individually to this prompt on an exit ticket:

- *Using evidence from this lesson's activities, explain:*

1. *How droughts occur*
2. *How climate change and human activities can make droughts worse and make them last longer.*

Tip

Step 1: Provide additional examples of artistic public outreach campaigns and educational materials that are grounded in science:

- [Hound Studio: Water Facts](#)
- [NASA: Show Me the Water](#)
- [Walk for Water](#)
- [Walk for Water: Promo Video 2020](#)
- [Walk for Water: Join us!](#)
- [Techshu: Water Conservation Campaigns that Inspire us to Save Water](#)
- [Water Footprint Network: Waterfootprint.org](#)

Modification

You may decide to have students use the *Human Impact on Water Security Project Rubric* to engage in peer review of their final products before the presentations.

Rubric

Use the [Modeling Human Impact on Water Security Project Rubric](#) to assess students' understanding of the key concepts of the unit via their campaign plans and scientific arguments. Additionally, the audience feedback, student responses to the final reflection questions, and/or the peer evaluations can all be used to inform your final assessment of each student's individual understanding and contribution to the project. Use the exit ticket in Step 4 to assess students' understanding of the [A Ripple Effect](#) lesson.

Extending the Learning

Share students' work in a public location, such as a library, watershed center, science museum, or other relevant location.

OBJECTIVES

Subjects & Disciplines

Biology

- [Ecology](#)
- Conservation

Earth Science

- Climatology

Geography

- [Physical Geography](#)

Learning Objectives

Students will:

- Produce a public education outreach campaign with a detailed and annotated sketch of their proposal.
- Share their proposal and scientific argument with an audience.
- Provide feedback on other students' projects.
- Reflect on the project.

Teaching Approach

- Project-based learning

Teaching Methods

- Hands-on learning
- Self-directed learning

Skills Summary

This activity targets the following skills:

- 21st Century Student Outcomes
 - Learning and Innovation Skills
 - Communication and Collaboration
 - Creativity and Innovation
- 21st Century Themes
 - Environmental Literacy
 - Global Awareness
- Critical Thinking Skills
 - Applying
 - Creating
 - Evaluating
- Science and Engineering Practices
 - Developing and using models
 - Engaging in argument from evidence
 - Obtaining, evaluating, and communicating information

National Standards, Principles, and Practices

**COMMON CORE STATE STANDARDS FOR ENGLISH LANGUAGE ARTS
& LITERACY**

- CCSS.ELA-LITERACY.SL.3:

Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence. SL.6.3 / SL.7.3 / SL.8.3

- **CCSS.ELA-LITERACY.SL.7.4:**

Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

- **CCSS.ELA-LITERACY.SL.7.5:**

Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.

- **CCSS.ELA-LITERACY.SL.7.6:**

Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 7 Language standards 1 and 3 here for specific expectations.)

NEXT GENERATION SCIENCE STANDARDS

- **MS. Earth and Human Activity:**

MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

- **MS-ESS3-4:**

Construct an argument supported by evidence for how increases in human and natural resources impact Earth's systems.

- **Science and Engineering Practice 1:**

Asking questions and defining problems

- **Science and Engineering Practice 8:**

Obtaining, evaluating, and communicating information

Preparation

What You'll Need

REQUIRED TECHNOLOGY

- Internet Access: Optional
- Tech Setup: 1 computer per pair

PHYSICAL SPACE

- Classroom

SETUP

Prior to the activity:

- Identify and invite guests to engage with students' campaign plans and arguments.
- Let students know what materials are available for them to use for their visual components of their projects.

You may decide to showcase students' work in a place other than the classroom, such as the gymnasium, media center, library, performance space, theater, or auditorium.

GROUPING

- Heterogeneous grouping
- Large-group learning
- Small-group work

RESOURCES PROVIDED: HANDOUTS & WORKSHEETS

- [Human Impact on Water Security Campaign: Project Rubric](#)

BACKGROUND & VOCABULARY

Background Information

The production of a scientific argument and engaging in feedback or review of one's work are authentic to the work of scientists. Students are taking the roles of artists, public educators, scientific communicators, and audience members in this activity, which are all authentic roles that can be found in the world outside the classroom. These roles are relevant to the student because they will be invested in the campaign proposals they create. They will find presenting their products relevant if the audience is authentic, and students will find their role as audience members relevant if they are able to provide meaningful feedback to their peers.

Prior Knowledge

☐ Recommended Prior Activities

- [A Day Without Water](#)
- [Avoiding “Day Zero”](#)
- [Endless Dry Spells](#)
- [How We Impact the Water Supply](#)
- [How We Use Water](#)
- [Precious Freshwater](#)
- [Watersheds](#)
- [Water Towers and Shrinking Glaciers](#)

Vocabulary

Term	Part of Speech	Definition
Mount Everest	<i>noun</i>	highest spot on Earth, approximately 8,850 meters (29,035 feet). Mount Everest is part of the Himalaya and straddles the border of Nepal and China.
upcycle	<i>verb</i>	to recycle one or more items to create an object that is worth more than the original product.



© 1996–2020 National Geographic Society. All rights reserved.