

Environmental Case Study Project: Challenges to the World's Freshwater



Subject: Science, Writing

Classroom-to-Classroom Collaborative Project

Description

The task of providing freshwater resources to all Earth's people is a complex and challenging problem. In this exchange, students collaboratively research the most prominent freshwater issues in their location. Then they share information between classrooms to identify common problems and propose possible solutions.

Objectives

Students will:

- Read closely to make logical inferences from multiple text and online resources.
- Record and analyze data about water use as an individual and group.
- Research to find key ideas and evidence about local water issues from multiple sources.
- Collaborate and support others by questioning, offering feedback, and integrating ideas and solutions.
- Reflect on research and collaboration process.
- Discuss similarities and differences to inform decision making process.

CCSS STANDARDS

CCSS.ELA-Literacy.CCRA.R.1 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.

CCSS.ELA-Literacy.CCRA.R.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

CCSS.ELA-Literacy.CCRA.R.9 Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

CCSS.ELA-Literacy.CCRA.W.7 Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

CCSS.ELA-Literacy.CCRA.W.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

HOW TO DO THIS PROJECT

1. **Join ePals Global Community:** Go to ePals Global Community (www.epals.com) and sign-up for an account. Update your profile and submit it for approval.
2. **Identify a Partner Teacher:** Identify a partner teacher on the Global Community using the Find Connections search tool. Use the filters on the left to narrow down your search results. Once you identify a teacher, click "connect" to connect with that teacher. Once the teacher accepts your invitation, you will be able to complete the next step.

3. **Define the Project through Messaging:** Message your connection to request that they participate in this Environmental Case Study exchange with you. You can craft a message your connections in two ways within the Find Connections tab. You may click on the “Message” button on their profile tile in My Connections, or you may go to My Messages to craft a new message. Cut and paste the Description above and the Procedures below into your message so they understand the details of the exchange.
4. **Complete the Project:** Once you have confirmation from another participating class, determine a schedule and conduct the exchanges below. Teachers will message each other on the Global Community to share information during each exchange.

ENGAGEMENT ACTIVITY

Several days before this project begins, help students estimate the water they use each day by keeping a log of their activities using the Water Resource: How Much Water Do You Use? Calculate the average for all students in your class to share with your partner class in exchange 1: Where We Live.

EXCHANGE 1: WHERE WE LIVE

1. Tell students that they will begin the Experience by introducing themselves to their partner class. Lead a class discussion to decide what information you will share. If students need help, suggest the following:
 - Where you live—be specific!
 - Two or three things about your community
 - A few details about your school and class
2. Gather information about your environment, especially as it pertains to the use of fresh water. Guide students to do some research and include facts that help the partner class understand
 - the size and location of your community
 - physical characteristics of the surrounding area
 - types of common vegetation
 - climate of your region-average temperature, seasons, typical precipitation patterns
 - daily water use (if completing the Engagement Activity)
3. Finally, decide on three questions to ask the partner class that you think will help you understand their environment and water needs.
4. As a class, compose an introduction to your partner class. Send the message using the teacher-to-teacher messaging feature in the global community.

EXCHANGE 2: OUR WATER

1. Display the questions you received from the partner class, and add any additional questions your class has about their own water supply. Divide students into groups, or work as a whole class, to find resources that contain information you can use to answer these questions. Search for facts and examples from your community waterworks, newspaper articles, and online sources.

Some of the topics your class might research include:

- Water use throughout the year
 - Water quality
 - Climate and weather conditions and their impact on the water supply
 - Water conservation
2. As a class, discuss the major challenges in providing freshwater resources to people living in your location. Make a list of these challenges to share with your partner class.
 3. Compose a second text exchange to answer your partner class's questions from Exchange 1 and share information gathered in steps 1 and 2 of this exchange. Ask for student input and model how to organize and edit writing for clear communication.
 4. *Optional In-Class Discussion:* How did utilizing multiple sources and sharing research with peers build your understanding of the topic? What are the big ideas everyone should know about your water issues?

EXCHANGE 3: WATER WORKS

1. Review the information sent by your partner class. Compare and contrast the challenges in providing freshwater resources in your and your partner class's locations, perhaps by using a Venn Diagram. Identify common challenges.
2. Conduct research to identify different solutions for challenges common to both locations. Use your library, newspaper articles, online resources, or other sources.
3. As a class, compose a message to your partner class that identifies common challenges in providing freshwater resources and offers solutions to those challenges.
4. As a class, review the information provided by your partner class. Compare your recommended solutions with your partner class's recommended solutions. Discuss similarities and differences between them.
5. Compose a final text exchange to thank your partner class for their participation!
6. *Optional In-Class Discussion:* Ask students if they'd like to make any changes to their solutions based on their partner class's recommendations, and if so, why.

Name _____



Water Use Diary

Directions:

1. Make a tally mark in the appropriate column each time you use water.
2. Calculate the total gallons or liters you used for each activity by multiplying the total number of times for each activity and the average amount of water use for that activity.
3. Calculate the total number of gallons or liters you actually used for the whole day by adding the water totals for each activity.

Activity	Number of Times (tally marks)	Total Number of Times	Average Amount of Water Used		Total Water Used
			Gallons	Liters	
Toilet Flush			3	11	
Hand Wash			1	4	
Bath			25	94	
Short Shower (under 5 min)			20	74	
Long Shower (5-10 min)			35	129	
Brushing teeth (tap on)			2	7	
Brushing teeth (tap off)			.25	1	
Washing Dishes By Hand (running water)			30	111	
Running Dishwasher			20	74	
Running Clothes Washing Machine			35	130	
Watering Lawn			300	1110	
Washing Car			50	185	

Average Daily Water Use = _____