

River Pollution in India (<http://tinyurl.com/j6mj9cs>)

I had a hard time finding a lesson that was specifically focused on math. I kept looking around, and remember hearing good things about Primary Source. I came across this lesson on River Pollution in India. I checked out the documents/handouts and realized this lesson could be turned into a global/math lesson.

We set this lesson up by giving students a few assignments the night before to be prepared for this activity. Students will read a review on Indian River Pollution, watch the National Geographic's [Ganges: Endangered Source](#) and make sure they know what a tannery is.

The first day of the activity we pin the Ganges River Images on the classroom walls. We ask students about how people in their community, state, or country use rivers. Students will need to know the people in India use rivers for many purposes, and the Ganges River is the most important river in India (millions of people use it each day) plus it's very polluted.

After students have completed the Ganges River Gallery Walk, we'll go over the handout and discuss the images. They will have a chance to add to and edit their pollution cause/effect charts later. We will discuss one of the many causes of pollution—industrial waste—and its effects on humans in the second part of this activity.

We need to be sure that students understand that, in addition to using the Ganges River as a fresh water supply and location for the performance of religious rites, Indians also use it for cleaning and disposing of waste (natural, industrial, biological, chemical, etc.). *Based on examples from the Gallery Walk and discussion.*

We will watch a short video (<http://tinyurl.com/jntptvn>) about a city called Kanpur ([where Kanpur is on a map of India](#)) on the Ganges River. We will record any questions on the board about the video.

Discuss with students how the background information helps inform their understanding of the video and of the images from the earlier Gallery Walk. Students will be prompted to think about how the images and video help them to better understand and visualize what was described in the background information. Then, we will lead students in a discussion of the questions that Primary Source added.

As a final reflection, students will use facts and details from the images, video, background information, and class discussions to complete one of the writing reflections below. Students need to cite specific evidence in their paragraphs.

- a) A paragraph explaining the biggest challenge that industrialization presents for the Ganges River and people who depend on it.
- b) A persuasive paragraph in support of or against the closing of Kanpur's tanneries.

Using my personal experiences in India and my student's interest in water pollution, I think this lesson will present the opportunity to understand what causes, what people are doing about the issue, local reality and effects of water pollution. I think the Gallery Walk is an excellent idea. Images are important and useful to understand a true reality. Students will be able to investigate the world and recognize their own and others perspectives on River Pollution in India. Students will also formulate questions and construct coherent responses to the globally significant topic of water pollution.

A critique of the lesson is the lack of math that can be added. I will insert an extension activity comparing poverty against the pollution levels of rivers around the world.

- *Economists talk about the North–South divide when referring to the economic growth and development of nations. When it comes to pollution and environmental preservation, the North and South have different priorities that seem to put them at odds with each other. The most pressing priority for the southern hemisphere nations is economic growth: the poverty rate in the developing countries can reach 90 percent (by comparison, the North has a poverty rate, on average, of 15 percent). Environmental conservation and pollution control are far less a priority in the South. The priority in the North is sustainable development—the ability to continue on the course of consumption and energy use while ensuring a healthy environment. Pollution Issues (2015) available from: <http://www.pollutionissues.com/Pl-Re/Poverty.html>”*