

I've been developing a year-long conceptual narrative around social studies and science topics in order to contextualize the big ideas we explore through the year: opportunity cost, Colorado history, energy, and ecology around the phenomena of water availability, consumption, and conservation. I really believe it will become recognized as the most valuable resource in Colorado and the students I work with will need to have a comprehensive understanding of the issues involved.

For fourth graders, simplified, graphic presentations of accompanying data are best for effective analysis, especially when looking into very large numbers and unfamiliar unit representations.

ENGAGEMENT: One of the great shortcomings which cripple our current water distribution in the West is the inaccurate estimations of water availability. The studies conducted in the early to mid 20th century, which distribution models are currently based on, suggested higher than currently available water totals to the Colorado River. When allotments were finalized in the Colorado River Compact of 1922, the upper basin states and the lower basin states (Wyoming, Utah, New Mexico, and Colorado) and the lower basin states (Arizona, Nevada and California) each were be entitled to utilize 7.5 million acre feet in year, which according to data allowed for 2 to 3 million acre feet to flow through to Mexico and the Sea of Cortez (Owen, 20).

These graphs, graphics and accompanying data are engaging when developing a sense of the scope of the problem of water application in the West, especially in Colorado:

U.S. Department of the Interior presents several interactive graphics to illustrate the River's path and basin distribution, the flow in the past century, the drought severity over time in the basin states, the visual effects of the drought, etc.

<https://www.doi.gov/water/owdi.cr.drought/en/>

Colorado Snowpack Totals by River Basin (Mean, Median, Four Year Track) presents the current state of snowpack totals in relation to the median, the average, and the totals for the past three years, by river basin in Colorado.

https://www.nrcs.usda.gov/wps/portal/nrcs/detail/co/snow/products/?cid=nrcs144p2_063323

The Colorado Historical Average Annual Stream Flows graphic allows for a comparative analysis of the flows of outgoing rivers. This graphic map, paired with a population distribution overlay will facilitate conversations around the distribution of water and of population in the state, which

could be directed toward water REallocation through transmountain water diversions.

<http://mountaintownnews.net/2014/05/07/tilting-table-colorados-water-geography/>

I created a GoogleSlides for the presentation as I would like to present the graphic data in a whole group setting to promote community conversation around the initiation of exploring the engaging concepts and developing a social context to elevate the importance of constructing solutions to the apparent problems.

https://docs.google.com/presentation/d/1sxf92_9C2ryy47F-aoKxicj6bk7LuXFj529GYhjo6ck/edit?usp=sharing

We only have a short time for data analysis from our math resource, so having this time to look at graphs and begin to synthesize conclusions based on the data would be a tremendous opportunity for this task. Also, we are leading students to use this as background toward understanding the issues which encompass hydrology and economics. Along with some other background, this analysis will culminate in an inquiry discussion and debate about the practical distribution of the water in Colorado and the West, using data from these data presentations as evidence.

REFERENCE

Owen, D. (2017). *Where the Water Goes: Life and Death Along the Colorado River*. New York: Riverhead Books.