

Drought Unit

Because Arizona is such a dry state, Arizonans have probably thought more about water use than many other states. Besides being scarce, water supplies have also been unpredictable. Even droughts that span years are sometimes punctuated with rainstorms that are as much a threat as relief.

Archaeological evidence shows that humans have been living in the desert for thousands of years and have developed technologies to help them get through variations in climate and water supplies. Humans have tried to maintain a reliable water supply where and when they wanted it. Settlers, like the Hohokam Indians, dug and maintained canal systems for irrigation.

A prolonged drought at the end of the 19th Century, accelerated Arizona's urban growth. Roosevelt Dam, completed in 1911 on the Salt River, was designed to provide a constant flow of irrigation for Phoenix area farmers and electricity for the town. Phoenix is now the country's fifth largest city.

With the population nearing 6 million, Arizona is now experiencing another prolonged drought that is straining water supplies. We will need to continue to develop technologies especially in the area of water conservation.

Project WET Curriculum & Activity Guide suggested activities:

Piece it Together (p. 174)

Summary: Students analyze and plot global temperature and precipitation distributions to determine climate patterns and how they influence human lifestyles.

Objectives: Students will:

- Locate global climates based on their interpretation of data (Annual temperature and precipitation)
- Provide reasons for the locations of climates
- Identify how humans adjust to a diversity of climates

House of Seasons (p. 155)

Summary: By constructing a "House of Seasons" collage, students observe the role of water in each of the seasons.

Objectives: Students will: Recognize the presence of water within each season

Dust Bowls and Failed Levees (p. 303)

Summary: Through literature study, research and writing, students gain a greater understanding of the effects of drought, flood and other water-related events on people.

Objectives: Students will:

- Appreciate that literature reflects people's feelings about water-related events
- Illustrate the effects of drought, flood and other water-related disasters on human lives, through creative writing

Nature Rules (p. 262)

Summary: Students use visual evidence of water-related natural disasters to inspire newspaper reports.

Objectives: Students will:

- Compose news stories
- Describe ways in which "Nature Rules!"
- Critique newspaper reports generated by their peers

Back to the Future (p. 293)

Summary: Students analyze streamflow monitoring data to determine the safest location for a future community.

Objectives: Students will:

- Analyze and interpret streamflow data
- Identify the risks and benefits of development in a floodplain

A drought-focused unit could follow the above order.

Notes: Make sure that in the activity *A House of Seasons* that students envision the seasons where they live! For older students the activity could be a writing activity.

The *Dust Bowls and Failed Levees* activity is based on John Steinbeck's, *Grapes of Wrath*. Students don't necessarily have to read the whole thing but excerpts from this book paint vivid pictures about drought! The other thing that could be incorporated here is migrant workers because that's what happened in the Dust Bowl ... all those farming families moved west along route 66 to work in the farm fields in California. There was not enough work.

The *Nature Rules* activity is about writing as a reporter about a natural disaster. Drought is one form of natural disaster. They have to learn what makes a good interesting newspaper article. This could be a very exciting writing assignment for them. Also the activity *Water Read all About It* might fit in well here - students develop a special edition on water ... maybe again focusing on drought.

The *Back to the Future* activity gets in to water management in terms of both flood and drought.

Suggested web sites for drought:

http://www.ngdc.noaa.gov/paleo/drought/drght_home.html - Very interesting web site that provides info about the Dust Bowl (Great Depression) drought as well as definitions about what we mean when we call something a drought (e.g. an annual precipitation of 12 inches may be a drought in Oregon but not in Arizona)

<http://www.ispe.arizona.edu/climas/>

<http://www.drought.unl.edu/dm/monitor.html> - up-to-date maps of drought levels in Arizona

<http://aq.arizona.edu/extension/drought/>

<http://www.sahra.arizona.edu/newswatch/index.html> - web site where you can put in a topic, e.g. drought and it will give you all of the articles on that topic for whatever period of time you want to search for! (Translates articles from many different languages)