**Unit Resources: Water Cycle and Water Conservation**

**Pre-Assessment:**

**Freshwater 101 quiz –** Paper version. (Take the interactive version at the end)

[**http://environment.nationalgeographic.com/environment/freshwater/freshwater-101-quiz/**](http://environment.nationalgeographic.com/environment/freshwater/freshwater-101-quiz/)

**Science**

**The Water Cycle: what is it?** – interactive water cycle demos and activities

<http://thewaterproject.org/resources/the_water_cycle_presentation.php>

<http://www.epa.gov/ogwdw/kids/flash/flash_watercycle.html>

<http://apps.southeastwater.com.au/games/se-water-cycle.swf>

<http://www.science-sparks.com/2012/07/30/make-a-mini-water-cycle/>

**A Drop in the bucket – lesson plan/water in a bucket demo**

<http://www.uen.org/Lessonplan/preview?LPid=31636>

**Why is it important to understand the water cycle?** –

<http://video.nationalgeographic.com/video/environment/freshwater/env-freshwater-whycare/>

optional video from ESA (a look at salt water, currents, weather patterns, career perspective)

<http://spaceinvideos.esa.int/Videos/2012/12/SMOS_-_ESA_s_water_mission>

**Water is a limited natural resource.**

Only a small percentage is drinkable freshwater.

Of the drinkable freshwater there is an unequal distribution, and pollution makes water non-potable.

**Freshwater and how it is used:** video interactive

<http://environment.nationalgeographic.com/environment/freshwater/freshwater-101-interactive/>

<http://environment.nationalgeographic.com/environment/freshwater/change-the-course/infographic/>

**Math and Writing**

**How much water do you use?** lesson with table of water use for math

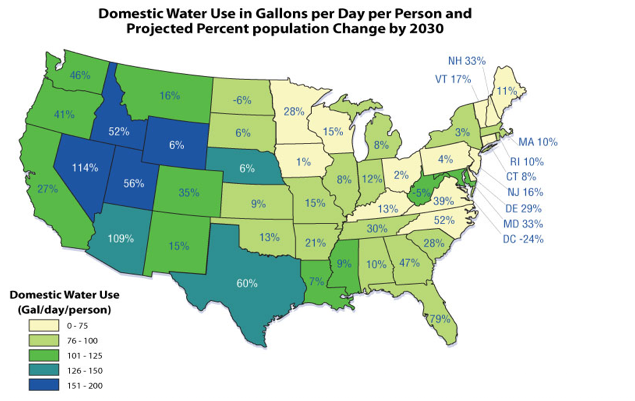
<http://www.get2knowh2o.org/instructor/teach4.pdf>

**Science**

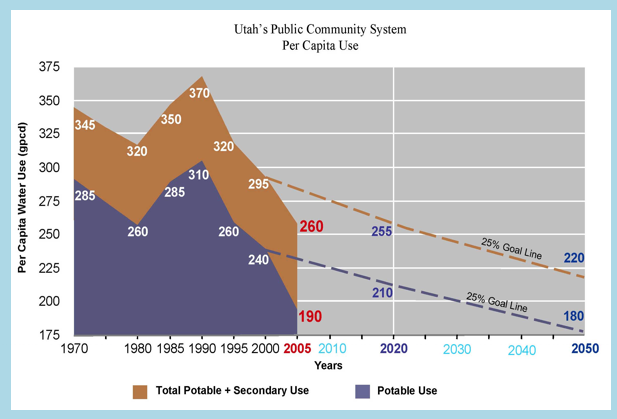
**The Human Water Cycle:** modify the lesson for 4th grade, but good information about gray water, black water, and water conservation.

<http://www.teachengineering.org/view_lesson.php?url=collection/cub_/lessons/cub_humanwatercycle/cub_humanwatercycle_lesson01.xml>

**What is the water outlook in Utah?**



<http://www.epa.gov/watersense/our_water/tomorrow_beyond.html>



from: <http://www.conservewater.utah.gov/Blog/Blog.html>

Photo of Lake Powell – 2000 lake levels vs 2006 lake levels

<http://earthobservatory.nasa.gov/IOTD/view.php?id=8132>

Elephant Butte in New Mexico

<http://climate.nasa.gov/state_of_flux#Elephant_Butte_930x607.jpg>

**Writing**

**What could be contributing to the lake levels?** (Possible writing component? Incorporate information about the water cycle.)

**Retake the Drinking Water and Sanitation Quiz**

<http://environment.nationalgeographic.com/environment/freshwater/drinking-water-and-sanitation-quiz/>

**Water Projects**

**Conserve water – water use**

**Preserve – keep it unpolluted**

**Harvest – store water, collect water, tap water in wells and aquifers, desalination of water**

**Dam Forces:**

[**http://www.teachengineering.org/view\_activity.php?url=collection/cub\_/activities/cub\_dams/cub\_dams\_lesson02\_activity1.xml**](http://www.teachengineering.org/view_activity.php?url=collection/cub_/activities/cub_dams/cub_dams_lesson02_activity1.xml)

**Hydroelectric Dam demonstration:**

[**http://www.ei.lehigh.edu/eli/energy/resources/handouts/labs/hydrodam\_demo\_teacher.pdf**](http://www.ei.lehigh.edu/eli/energy/resources/handouts/labs/hydrodam_demo_teacher.pdf)

**Water Cycle HD ipad app $1.99**

**Additional activities:**

**Engineer a dam lesson plan**

[**http://www.tryengineering.com/lessons/engineeradam.pdf**](http://www.tryengineering.com/lessons/engineeradam.pdf)

**Water and dams in today’s world**

[**http://www.teachengineering.org/view\_lesson.php?url=collection/cub\_/lessons/cub\_dams/cub\_dams\_lesson02.xml**](http://www.teachengineering.org/view_lesson.php?url=collection/cub_/lessons/cub_dams/cub_dams_lesson02.xml)

**Sand Dam video of a dam project in Africa**

[**http://thewaterproject.org/sand-dams.php**](http://thewaterproject.org/sand-dams.php)

**Saving Water Game**: P.E. or outdoor game (using ice cubes might be an alternative)

<http://www.get2knowh2o.org/instructor/exp_number.html>

**Drench** – save your community by 2050

<http://antenna.sciencemuseum.org.uk/waterwars/drench/>

**Leaky faucet** -- Experiment for water conservation

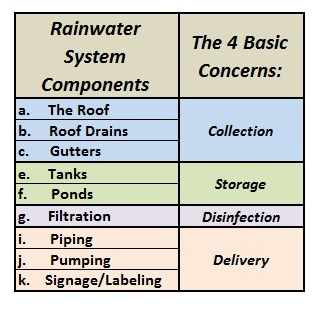
<http://www.uen.org/Lessonplan/preview.cgi?LPid=27247>

**The water cycle or crisis:**

[**http://thewaterproject.org/resources/download/water-cycle-water-crisis.pdf**](http://thewaterproject.org/resources/download/water-cycle-water-crisis.pdf)

**Harvesting Rainwater: Utah (First paragraph of the article, could be incorporated into the lesson plan – engineering project, create a system to harvest rainwater)**

[**http://www.conservewater.utah.gov/Rainwater%20Harvesting/RWHwebpage3A.pdf**](http://www.conservewater.utah.gov/Rainwater%20Harvesting/RWHwebpage3A.pdf)

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**Engineering Problem: Design a hand-washing unit that will allow individuals in developing companies to maintain sanitation stations and conserve water.**

<http://www.tippytap.org/videos>