

# KarstintheOzarks.org Lesson Repository

## “Hands-on Watersheds and Karst in the Ozarks Workshop” Show Case Activities

Karst Watershed Simulation	Grades 8-12	Students are introduced to how various land uses and land management practices in a karst watershed can impact water quality above and below the ground.
Wonder Water Walk	Grades 4-12	This lesson will provide guidelines and techniques for taking a class walk on a school campus and/or adjoining area in order to observe interactions between the water cycle, Earth’s surface and human activities.
Online Map Tools	Grades 5-12	Four guide sheets provide directions on how to access different online map tools. These tools provide a wide assortment of hydrological, geological, and water quality information for any Missouri location.

### Hydrology: Water Models and Activities

Water Category Activities	Grades 4-8	Students are exposed to the extensive ways humans use water beyond daily personal use. Students sort cards with these diverse uses and categorize them.
Water Cycle Model	Grades 4-12	The water cycle model demonstrates evaporation, condensation, precipitation, and run off. A light bulb and ice bag are used to facilitate heat exchanges inside a plastic container to make evaporation and condensation. Then condensation droplets fall and run off into the container.
Groundwater Models	Grades 4-12	The groundwater models demonstrate the relationships between the zone of aeration, zone of saturation, and the water table as well as porosity and permeability variables.
Point and Nonpoint Water Pollution Card Sorting Activity	Grades 5-8	Students are introduced to and provided information about types water pollution sources. They then categorize examples of water pollution according to their types.
EnviroScape Demo 1 and 2	Grades 4-8	This document is a condensed version of the EnviroScape model manual. This quick reference provides a table of discussions, demonstrations, and supplies needed to show how water is polluted and how to prevent water pollution.

### Geology: Karst Vocabulary Definitions, Rock and Karst Activities

Karst Vocabulary	Grades 4-12	A glossary of terms describing karst features and related groundwater terminology.
Rocking Through the Rock Cycle	Grades 4-8	The students participate as if they are matter traveling through the rock cycle. They draw cards that direct them to one of four stations to demonstrate the process. Rocks are provided for examination at stations.
Settling Sediments	Grades 4-8	Students get a glimpse of the long slow process of how sediments settled long ago before becoming sedimentary rocks. Students put various sediments in jars of water and discover how settling rates can vary.
Calcite and Vinegar	Grades 4-12	This activity demonstrates how calcite, Missouri’s most common mineral in limestone, gets dissolved by slightly acidic rainwater. This is how karst features were created.

## Hydrology and Geology Connection: Karst Lessons and Activities

Deep Feet Footprints	Grades 9-12	This lesson provides a home inventory (checklist) for students to conduct at home with their families. The inventory is designed to examine their own “deep feet water footprint” on groundwater and surface water in the karst topography of the Missouri Ozarks.
Karst King or Karst Klutz?	Grades 5-12	After watching the online video “Karst in the Ozarks,” students sort cards depicting actions by fictitious people. This way students demonstrate their understanding of karst.
Cave Diorama	Grades 5-12	Students design and construct a cave diorama from a box. They demonstrate how human activities on the surface can affect cave water quality below. They are able to learn about speleothems and get creative in the process.
Sugar Karst Caves	Grades 4-8	Using sugar cubes, clay, and warm water, students create a model that demonstrates how solution caves form. They see an accelerated simulation of a slow processes that happened long ago and is still slowly occurring.

## Tree Fun and Heat Measuring Gun

Tree FUN Functions	Grades 4-8	Trees play an important part in a watershed to protect water both above and below the ground. Common objects are used to demonstrate the FUN functions of trees and their importance to the quality of our hydrosphere, atmosphere, and biosphere.
Laser Gun Thermometer: An Untapped Educational Tool	Grades 4-12	This background sheet provides real world uses of this tool as well as the untapped education application in physical, Earth and environmental science classrooms. Safety guidelines for classroom use are included.

## Water Pollution Reference Lists for Teachers and Students

Point Source Water Pollution Reference List	This document categorizes point sources of water pollution. Background information is included.
Nonpoint Source Water Pollution Reference List	This document categorizes nonpoint sources of water pollution which in most cases in not regulated. Background information is included.
Best Management Practices for Nonpoint Source Water Pollution	This document categorizes methods that land owners and others can use to prevent and reduce nonpoint water source pollution from various land uses. Links are included for more information.