Post Oak Savannah Groundwater Conservation District

Educational Opportunities

"Education is not the filling of a pail, but the lighting of a fire."

William Butler Yeats

Educational Focus

Our educational focus is to bring the Texas Essential Knowledge & Skills (TEKS) alive with hands-on activities that will spark interest in groundwater conservation in conjunction with the functions of the water cycle. Students will be able to dive into each lesson with the assistance of a bird's eye view into the surface and underground water system. Each lesson incorporates insightful information about the importance of conservation, recycling, and natural resources. Students will be able to apply the knowledge & skills learned to their everyday lives as well as difficult scientific topics in relation to the water cycle.

STAAR in Mind

I understand that time is limited especially in preparation for the STAAR test. Post Oak Savannah Groundwater Conservation District strives to ensure that each classroom presentation and resource will be a beneficial asset to your students test prep. Every minute counts!

Free Curriculum Resources Available!

We have FREE TEKS based curriculum available for grade 4-5, 7, and adult.

Each curriculum set has multiple cross-curricular lessons focused on student hands-on engagement and critical thinking.

Post Oak Savannah Groundwater Conservation District

Education Coordinator

Doug Box

I love creative education! Before I became the education coordinator for Post Oak Savannah GCD, I had the privilege of teaching all aspects of photography around the world and to all age groups – children, teens and adults. For twenty years I owned and operated a daycare center licensed for 150 children in Brenham, TX. I have also written six books on photography that teaches hands-on skills.

Aside from teaching students, I love to help teachers by developing creative lessons that will in turn, inspire students to dive dig deep into a concept by providing hands-on experiences. My goal for every lesson is to trigger new thinking that will help students understand the "magical" water world.

I ensure that all activities and lessons are aligned with the Texas Essential Knowledge Standards and promote critical thinking skills through STEM like investigations.

For more information regarding our educational resources:

512-455-9900 office

979-219-3300 cell

dbox@posgcd.org

www.posgcd.org

How do I book a presentation?

First	Second	Last
Contact Doug Box 512-455-9900 o 979-219-3300 c dbox@posgcd.org www.posgcd.org	Check available dates! Make any special requests for presentation adjustments.	Presentation Day!

4th or 5th

Watershed Model which also covers Non-point source pollution

I have a variety of water cycle related presentations that are based on children's literature books to help bring the water cycle to life for younger audiences.

Lesson Overview

Main Focus

The main focus for the Watershed Model lesson is to dive deep into the intricate process and components of the water cycle. The Model provides the students with a bird's eye view of what actually takes place from the sky to the ground.

Watershed Model

Hands-on, interactive demonstration of the sources and effects of water pollution. Easily demonstrate how storm water runoff carries pollutants through the watershed to a pond, lake, river, bay, or ocean – and the best management practices to prevent this type of pollution from occurring. The overall watershed/stormwater concept is effectively communicated to all ages .

Is this STAAR related?

Yes!

All lessons revolve around the assigned TEKS for each grade level and can be tweaked to meet those standards. The connections made during the lesson will aid students in their critical thinking process of STAAR diagrams/questions related to the water cycle and conservation concepts.

Texas Essential Knowledge & Skills

4th Grade

ability to support the growth of plants

4.7(B) Observe and identify slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice

4.7(C) Identify and classify Earth's renewable resources, including air, plants, water, and animals; and nonrenewable resources, including coal, oil, and natural gas; and the importance of conservation

4.8(B) Describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process

5th Grade

5.7(A) Explore the processes that led to the formation of sedimentary rocks and fossil fuels

5.7(B) Recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, and ice

5.8(B) Explain how the Sun and the ocean interact in the water cycle

Enviroscape Model

Essential Questions

- How important is weathering, erosion, & deposition?

Vocabulary Focus

- Groundwater
- Water Cycle
- Condensation
- Percolation
- Accumulation
- Weathering
- Run-off
- Surface Water
- Evaporation
- Precipitation
- Aquifer
- Erosion
- Deposition

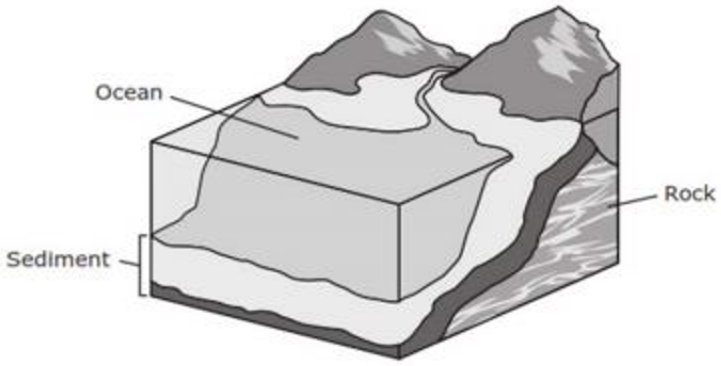
Additional Vocabulary - Infiltration, Recharge, Particle, Pore Space, Saturated, Conservation

STAAR Connections

5.7(A) explore the processes that led to the formation of sedimentary rocks and fossil fuels

2014 – Q32

32 The model below shows layers of sediment on the floor of an ocean.



Which of the following best explains how these layers can become rock over many years?

F Sand in the sediment melts and turns into rock.

G The weight of the water compacts the sediment into rock.

H Changing water temperatures turn sand in the sediment into rock.

J Pollution caused by humans turns the sediment into rock.

*** Correct answer (G)**

Analysis of Assessed Standards

Dual Coding	Content	Readiness
	Process	5.3(C)

Stimulus

Data Analysis

Item	State	Local
F	14	
G*	70	
H	13	
J	4	

Error Analysis
- ☐ Guessing
- ☐ Careless Error
- ☐ Stopped too Early
- ☐ Mixed Up Concepts

Learning from Mistakes Instructional Implications

5.7(B) recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, and ice

2015 – Q22

22 The photograph below shows a canyon in northern Arizona.

Canyon walls

Which of these describes how this canyon was most likely formed?

F Floods eroded the sandstone away from the canyon walls.

G Glaciers eroded the canyon rock as they melted and moved.

H Ice wedged into cracks in the rock and weathered the canyon walls.

J Wind blew large rocks that smashed against the canyon walls.

*** Correct answer (F)**

Analysis of Assessed Standards

Dual Coding	Content	Readiness
	Process	5.2(D)

Stimulus

Data Analysis

Item	State	Local
F*	53	
G	14	
H	19	
J	13	

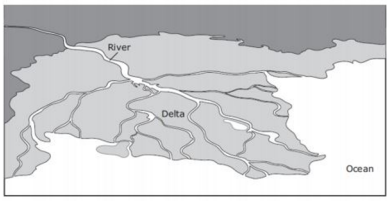
Error Analysis
- ☐ Guessing
- ☐ Careless Error
- ☐ Stopped too Early
- ☐ Mixed Up Concepts

Learning from Mistakes Instructional Implications

5.7(B) recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, and ice

2017 – Q20

20 The size and shape of a delta can change over time.



The size and shape of this delta over time are NOT likely to be changed by —

F the number and height of tides along the shore

G the amount and size of sediments carried by the river and streams

H the amount of hunting and fishing in the delta

J the number and size of waves from the ocean that reach the shore

*** Correct answer (H)**

Analysis of Assessed Standards

Dual Coding	Content	Readiness
	Process	

Stimulus

Data Analysis

Item	State	Local
F	8	
G	17	
H*	65	
J	10	

Error Analysis
- ☐ Guessing
- ☐ Careless Error
- ☐ Stopped too Early
- ☐ Mixed Up Concepts

Learning from Mistakes Instructional Implications

Enviroscape Model

▷ Essential Questions

- How important is weathering, erosion, & deposition?

▷ Vocabulary Focus

- Groundwater
- Surface Water
- Water Cycle
- Evaporation
- Condensation
- Precipitation
- Percolation
- Aquifer
- Accumulation
- Erosion
- Weathering
- Deposition
- Run-off
- **Additional Vocabulary**
  - Infiltration, Recharge, Particle, Pore Space, Saturated, Conservation

Other Available Educational Opportunities

Contact Doug Box for more details!

Major Rivers Curriculum

POSGCD offers FREE TEKS based water curriculum.

Grades 4-5

Raising Your Water IQ

Free TEKS based water curriculum geared for grades 7-8.

Water Day

We offer the opportunity to put on a “Water Day” for your school or surrounding schools in your area. Presenters from different water and ag related entities join together for a fun-filled educational experience for a chosen grade level.