

# The Meadows Center for Water and the Environment



## TEKS CURRICULUM GUIDE Third Grade



THE MEADOWS CENTER  
FOR WATER AND THE ENVIRONMENT  
TEXAS STATE UNIVERSITY

## The Meadows Center

The Meadows Center Educational Tours mission is to provide people of all ages with the ability to recognize Spring Lake as a unique freshwater ecosystem through interpretative interactive experiences that engages the audience in an exploration of interconnections between all living things and water.

All tours require a two-week advanced reservation. Tour dates are not guaranteed until your confirmation notice from The Meadows Center Education Office has been processed. The listed group rates apply to any group of 15 people or more. Prices subject to change without notice. Listed prices are for school groups and non-profit organizations.



# Activities for Third Grade

## **1. Glass-Bottom Boat Ride**

Length: 30 minutes

As students glide across Spring Lake in glass-bottom boats, they have a rare opportunity to see underwater life from a different perspective. View over 1,000 springs that bubble up 150 million gallons a day of clear water from the Edwards Aquifer to form Spring Lake, the headwaters of the San Marcos River. Declared a critical Habitat by the Federal Government in 1980, Spring Lake is the home of several endangered species.

## **2. Wetlands Boardwalk**

Length: 30 minutes

Journey over a 1/10 mile floating boardwalk through our wetlands habitat. Students will learn about what wetlands are and what species live in them. Stroll by "Turtle Island" where turtles often sunbathe and birds migrate through.

\* Corresponds with Texas Aquatic Science lesson 10.5 Field Trip to a Wetland

<http://texasaquaticscience.org/>

## **3. Aquarium and Discovery Hall Exhibit**

Length: 15 minutes

Explore the different species that live in Spring Lake. They have unique qualities (or adaptations) that help them survive in this aquatic habitat in a multitude of ways. Students will explore the Discovery Hall and compare different creatures.

\*Corresponds with Texas Aquatic Science lesson 4.5 Aquatic Organisms Comparison

<http://texasaquaticscience.org/>

## **4. Bug Picking**

Length: 30 minutes

Participants will conduct an experiment in order to test the quality of the water at Meadows Center based on the bugs they find in their water samples.

\* Corresponds with Texas Aquatic Science lesson 8.5 Invertebrate Sampling

<http://texasaquaticscience.org/>

## **5. Wetlands Bug Bingo**

Length: 15 minutes

This activity goes hand in hand with Bug Picking. Students will learn what different aquatic bugs look like and how to identify them while playing a fun game of "Wetlands Bug Bingo."

## **6. All the Water in the World**

Length: 15 minutes

During this interactive activity, students learn how little fresh water is available for use by all living things.

### **7. Frog Food Chain Tag**

Length: 15 minutes

During this interactive game, students pretend to be frogs competing with each other for prey while avoiding the predator herons in our wetlands food chain. What our frogs don't know is that there is a twist to this game... this wetland habitat has been polluted! How will the frogs survive?

### **8. Water Conservation Game**

Length: 15 minutes

This trivia game explores the theme of conserving water. Teams compete to see who can successfully save the most water.

### **9. Journey of a Water Drop**

Length: 15 minutes

Students pretend to be a water drop on a journey through the water cycle.

### **10. Enviroscope 3D Watershed Model Presentation**

Length: 30 minutes

Students learn about watersheds, and point and non-point source pollution that affects water quality. Students participate in an activity where they put different types of pollution on the ground of the 3D watershed and see how rainfall creates runoff that carries that pollution into rivers and lakes. (Available for schools with 4 or less classes total).

\*Corresponds with Texas Aquatic Science lesson 14.3 What's the Pollution

<http://texasaquaticscience.org/>

### **11. Water Quality Presentation**

Length: 30 minutes

Water quality is important for human, wildlife, and ecosystem health. Students will explore a basic water quality testing kit and examine what the results of the test mean for the health of the Spring Lake ecosystem. (Available for schools with 4 or less classes total).

\*Corresponds with Texas Aquatic Science lesson 1.9 Student Investigation in Water Quality

<http://texasaquaticscience.org/>

### **12. Mapping The Meadows Center**

Length: 30 minutes

Students will delve into mapmaking during this hands-on activity to learn about the importance of maps and map-making, understand the importance of different elements of a map, and build upon foundational spatial thinking skills. Spatial ability is important for success in many fields of study, including mathematics, natural sciences, engineering, economic forecasting, meteorology, and architecture. Mapping at Meadows is part of a study we are conducting to learn about how students understand nature and maps. Teachers have the option to receive a copy of the participating students' maps by email. Parents who do not want their child's map to be involved in the study can sign the opt-out form. **Geography TEKS: Grade 3: (b) 5D, 17E**

### **13. Land Use in our Watershed**

Length: This is an add on activity that will take place throughout your tour Hunt for evidence of water. This scavenger hunt activity leads students around the site looking for signs of runoff, erosion, accumulation, or infiltration. This ties into discussions of watersheds, surface water, and aquifer recharge.

\*Corresponds with Texas Aquatic Science lesson 3.3 Land Use in Our Watershed

<http://texasaquaticscience.org/>

### **14. Competition within Spring Lake**

Length: 15 minutes

Your environment is crowded! What happens to your resources? Competition for basic survival needs is a part of living in an aquatic habitat. Many factors influence the amount of resources available for species. This engrossing game demonstrates how different limiting factors affect survival rates.

\*Corresponds with Texas Aquatic Science lesson 5.2 Competition within Spring Lake

<http://texasaquaticscience.org/>

### **15. Food Web Wonders**

Length: 15 minutes

Participate in a giant string-web to explore how energy moves in an ecosystem. Species interact through food webs, which require a healthy ecosystem to function. Starting with the sun, energy moves through the natural system from plant to carnivore to decomposer.

\*Corresponds with Texas Aquatic Science lesson 8.3 Where do I Live? What do I Eat?

<http://texasaquaticscience.org/>



## Activity Connections with Texas Essential Knowledge Standards (TEKS)

<b>3<sup>rd</sup> Grade Science TEKS</b>	<b>Applicable Activities</b>
<b>(3.1) Scientific Investigation and reasoning.</b> The students conduct classroom and outdoor investigation following school and home safety procedures and environmentally appropriate practices. The student is expected to:	
(A) demonstrate safe practices as described in the Texas Safety standards during classroom and outdoor investigations, including observing a schoolyard habitat; and	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14
(B) make informed choices in the use and conservation of natural resources by recycling or reusing materials such as paper, aluminum cans, and plastics.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14
<b>(3.2) Scientific investigation and reasoning.</b> The student uses scientific inquiry methods during laboratory and outdoor investigations. The student is expected to:	
(A) plan and implement descriptive investigations, including asking and answering question, making inferences, and selecting and using equipment or technology needed, to solve a specific problem in the natural world;	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13
(B) collect data by observing and measuring using the metric system and recognize differences between observed and measured data;	2, 10, 11, 13
(C) construct maps, graphic organizers, simple tables, charts, and bar graphs using tools and current technology to organize, examine, and evaluate measured data;	2, 3
(D) analyze and interpret patterns in data to construct reasonable explanations based on evidence from investigations;	2, 4, 10, 11, 13, 14, 15
(F) communicate valid conclusions supported by data in writing, by drawing pictures, and through verbal discussion.	1, 2, 3, 4, 5, 6, 7, 8, 9, 13
<b>(3.3) Scientific investigation and reasoning.</b> The student knows that information, critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:	
(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the students;	10, 15
(C) represent the natural world using models such as volcanoes or Sun, Earth, and Moon system and identify their limitations, including size, properties, and materials; and,	10
(D) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.	2, 3, 4, 10, 11, 13, 14
<b>(3.4) Scientific investigation and reasoning.</b> The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:	

(A) collect, record, and analyze information using tools, including microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, wind vanes, rain gauges, pan balances, graduated cylinders, beakers, spring scales, hot plates, meter sticks, compasses, magnets, collecting nets, notebooks, sound recorders, and Sun, Earth, and Moon system models; timing devices, including clocks and stopwatches; and materials to support observation of habitats of organisms such as terrariums and aquariums; and	2, 3, 4, 10, 11
(B) use safety equipment as appropriate including safety goggles and gloves.	2, 4, 11
<b>(3.9) Organisms and environments.</b> The student knows that organism have characteristics that help them survive and can describe patterns, cycles, systems, and relationships within the environments. The student is expected to:	
(A) observe and describe the physical characteristics of environments and how they support populations and communities within an ecosystem;	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15
(B) identify and describe the flow of energy in a food chain and predict how changes in a food chain affect the ecosystem such as removal of frogs from a pond or bees from a field; and	1, 2, 3, 4, 5, 6, 7, 8, 9, 15
(C) describe environmental chances such as floods and droughts where some organisms thrive and others perish or move to new locations.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15
<b>(3.10) Organisms and environments.</b> The student knows that organisms undergo similar life processes and have structures that help them survive within their environments. The student is expected to:	
(A) explore how structures and functions of plants and animals allow them to survive in a particular environment;	1, 2, 3, 4, 5, 7
(B) explore that some characteristics of organisms are inherited such as the number of limbs on an animal or flower color and recognize that some behaviors are learned in response to living in a certain environment such as animals using tools to get food; and	1, 2, 3, 4, 5, 7
(C) investigate and compare how animals and plants undergo a series of orderly changes in their diverse life cycles such as tomato plants, frogs, and lady bugs.	1, 2, 3, 4, 5, 7

## Additional Materials

Additional information on water education can be found on the Texas Aquatic Science website at <http://texasaquaticscience.org/>. This website provides additional learning opportunities and materials for a variety of subjects concerning water, including “Water is Life”, “Water for the people and the Environment”, “Bays and Estuaries”, and many others.



## Frequently Asked Questions

### How do I book a group tour?

You may book a tour online at <http://www.aquarena.txstate.edu/Educational-Tours/Tour-Reservation-Form.html>. If you have questions please call 512-245-7540. Our office hours will vary depending on park traffic, so please leave a message and we will call you back.

### How far in advance should I book my tour?

We require two weeks advance notice for group tours. Please remember the days during March through August can fill up several months in advance, so please book your tour as soon as possible.

### Do you have a maximum number of students that can attend the field trip?

There is not a set maximum number of students per field trip. Your tour-booking agent will discuss the best activities for your group's size when you book your tour. We recommend booking your tour early for best choice of dates.

### Do you have a minimum number of chaperones required?

One teacher per class is sufficient for our tours. The one required adult should never leave the group alone with the tour guide. You may choose to bring additional teachers and parents if you wish (please check your tour confirmation for fee information). The boats will comfortably seat 25 people each, so additional adults may need to ride on a separate boat than the rest of the group.



What age groups are your programs appropriate for?  
All ages. We customize our programs for your group.

I would like to do something different than listed on your website, can you accommodate my group?  
We try our best to accommodate special requests.

Do I need to book a specific time for my tour?  
Yes, you will book a specific date and time for your tour. Please arrive 15 minutes prior to the start time of your tour. We apologize that we are unable to push back the start times of tours. If your group is late we may need to cut a portion of your tour time. Please call 512-245-7570 and push 0 to notify us that you will be late.

What if it rains?  
If it rains on your tour date you will have the option to reschedule. Please call 512-245-7570 and push 0 on the day of your tour and let a staff member know that your group will not be coming. The boats are enclosed and will still run unless there is lightning. We have limited indoor space so please dress for the weather if it is raining on your tour date.

## Booking a Tour

**Web:** <http://www.meadowscenter.txstate.edu/Education/EducationalTours.html>

**Phone:** (512) 245-7540