Coastal Bend Bays & Estuaries Program

Watershed Warriors Program Catalog
Duration: 45–60 minutes
Grade Level: Elementary–High School
Location: Your Classroom

Cost: Free

The Coastal Bend Bays & Estuaries Program (CBBEP) invites teachers and students to dive into an engaging, hands-on exploration of our local watersheds! Through this interactive program, students will discover how water connects our communities, landscapes, and coastal environments. Using one of CBBEP's large-scale watershed models, brought directly to your classroom, students will see firsthand how runoff, pollution, and conservation practices affect the health of our bays and estuaries. Tailored to the watershed specific to your area, each presentation encourages curiosity, problem-solving, and stewardship. By the end of the experience, students will take action as "Watershed Warriors," pledging to protect and care for the natural resources that make the Coastal Bend such a special place.

PROGRAM CATALOG — Pre-K

Program	Description	Pre-Kindergarten Guidelines
Watersheds: We Are the Watershed	Young learners gain an understanding that everyone lives in a watershed and that water connects land, people, animals, and bays. Through movement, stories, hands-on activities, and simple examples of pollution, students discover how their everyday actions can affect water quality and wildlife.	**PK4.VI.C.4** Child demonstrates an understanding of the importance of caring for our environment and our planet. **PK4.VI.C.3** Child observes and describes what happens during changes in the earth and sky

PROGRAM CATALOG — Lower Elementary School

Program	Description	Grade Level/TEKS		
		ProcessTEKS **1(A)** ask questions and define problems based on observations or information from text, phenomena, models, or investigations **1(G)** develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem **3(A)** develop explanations and propose solutions supported by data and models		
		K	**1st**	**2nd**
Watershed Filters: *Aw Shucks*	Learn how oysters help keep our waters clean by exploring the connection between watersheds and estuaries. Through a story, hands-on filter-building activity, and discussion, students will investigate how pollution travels through a watershed and discover ways they can help protect local water resources.	**K.11(A)** observe and generate examples of practical uses for rocks, soil, and water	**1.11(A)** identify and describe how plants, animals, and humans use rocks, soil, and water **1.11(B)** explain why water conservation is important	**2.11(A)** distinguish between natural and manmade resources **2.11(B)** describe how human impact can be limited by making choices to conserve and properly dispose of materials such as reducing use of, reusing, or recycling paper, plastic, and metal
Watershed Detectives: *What's in Our Watershed?*	Become a Watershed Detective and investigate clues from everyday life to discover what makes up a watershed and how water connects our neighborhoods, schools, rivers, and bays. Through interactive games and a hands-on watershed model, students learn how pollution travels, why clean water matters, and how their everyday choices can help protect local ecosystems.	**K.5(G)** describe how factors or conditions can cause objects, organisms, and systems to either change or stay the same	**1.11(B)** explain why water conservation is important **1.11(C)** describe ways to conserve water such as turning off the faucet when brushing teeth and protect natural sources of water such as keeping trash out of bodies of water	**2.11(B)** describe how human impact can be limited by making choices to conserve and properly dispose of materials such as reducing use of, reusing, or recycling paper, plastic, and metal

PROGRAM CATALOG — Upper Elementary School

Program	Description	Grade Level/TEKS		
		ProcessTEKS **1(A)** ask questions and define problems based on observations or information from text, phenomena, models, or investigations **1(G)** develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem **3(A)** develop explanations and propose solutions supported by data and models		
		3rd	**4th**	**5th**
Watershed Basics: *Watershed in Action*	Explore how water moves across land and connects people, ecosystems, and water bodies using hands-on models. Students see how landforms, rainfall, and human land use affect water flow, quality, and pollutant movement.	**3.11(B)** explain why the conservation of natural resources is important; **3.11(C)** identify ways to conserve natural resources through reducing, reusing, or recycling	**4.11(B)** explain the critical role of energy resources to modern life and how conservation, disposal, and recycling of natural resources impact the environment	**5.11(A)** design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources
Water Cycle: *Follow the Flow*	Become a water droplet traveling through rivers, soil, wetlands, and urban areas to explore the water cycle and the effects of landforms and human activities on water movement and quality.	———	**4.10(A)** 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	**5.10(A)** explain how the Sun and the ocean interact in the water cycle and affect weather
Weathering, Erosion & Deposition: *From Rock to Bay*	Explore how water shapes the land through weathering, erosion, and deposition, and connect these processes to watershed health using interactive models.	———	**4.10(B)** model and describe slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice	**5.10(C)** model and identify how changes to Earth's surface by wind, water, or ice result in the formation of landforms, including deltas, canyons, and sand dunes
Ecosystems & Habitats: *How Our Watershed Shapes Our Habitats*	Compare models of muddy-bottom and reef habitats to see how sediment, nutrients, and pollution affect water clarity, habitat health, and organism survival.	**3.12(B)** identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem	**4.12(B)** describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers	**5.12(A)** observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem **5.12(B)** predict how changes in the ecosystem affect the cycling of matter and flow of energy in a food web **5.12(C)** describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem

PROGRAM CATALOG

Middle School 6th grade

Program	Description	TEKS
		Process TEKS **6.1A** ask questions and define problems based on observations or information from text, phenomena, models, or investigations **6.1G** develop and use models to represent phenomena, systems, processes, or solutions to engineering problems
Watershed Basics: *Watershed in Action*	Explore how water moves across land and connects people, ecosystems, and water bodies using hands-on models. Students see how landforms, rainfall, and human land use affect water flow, quality, and pollutant movement.	**6.11(A)** research and describe why resource management is important in reducing global energy poverty, malnutrition, and air and water pollution **6.11(B)** explain how conservation, increased efficiency, and technology can help manage air, water, soil, and energy resources
Water Quality & Pollution: *Human Impact & Solutions in the Watershed*	Investigate how runoff, pollution, and land use affect water quality and ecosystem stability in a local watershed. Analyze the impacts on plants, animals, and aquatic habitats, then propose practical solutions to protect and improve local ecosystems.	**6.11(A)** research and describe why resource management is important in reducing global energy poverty, malnutrition, and air and water pollution **6.11(B)** explain how conservation, increased efficiency, and technology can help manage air, water, soil, and energy resources
Ecosystems & Habitats: *How Our Watershed Shapes Our Habitats*	Compare models of muddy-bottom and reef habitats to see how sediment, nutrients, and pollution affect water clarity, habitat health, and organism survival.	**6.12(A)** Investigate how organisms and populations in an ecosystem depend on and may compete for biotic factors such as food and abiotic factors such as availability of light and water, range of temperatures, or soil composition

PROGRAM CATALOG

Middle School 7th grade

Program	Description	TEKS
		Process TEKS **7.1A** ask questions and define problems based on observations or information from text, phenomena, models, or investigations **7.1G** develop and use models to represent phenomena, systems, processes, or solutions to engineering problems
Watershed Basics: *Watershed in Action*	Explore how water moves across land and connects people, ecosystems, and water bodies using hands-on models. Students see how landforms, rainfall, and human land use affect water flow, quality, and pollutant movement.	**7.11A** analyze the beneficial and harmful influences of human activity on groundwater and surface water in a watershed. **7.11B** describe human dependence and influence on ocean systems and explain how human activities impact these systems
Water Quality & Pollution: *Human Impact & Solutions in the Watershed*	Investigate how runoff, pollution, and land use affect water quality and ecosystem stability in a local watershed. Analyze the impacts on plants, animals, and aquatic habitats, then propose practical solutions to protect and improve local ecosystems.	**7.11A** analyze the beneficial and harmful influences of human activity on groundwater and surface water in a watershed. **7.11B** describe human dependence and influence on ocean systems and explain how human activities impact these systems

PROGRAM CATALOG

Middle School 8th grade

Program	Description	TEKS
		Process TEKS **8.1A** ask questions and define problems based on observations or information from text, phenomena, models, or investigations **8.1G** develop and use models to represent phenomena, systems, processes, or solutions to engineering problems
Watershed Basics: *Watershed in Action*	Explore how water moves across land and connects people, ecosystems, and water bodies using hands-on models. Students see how landforms, rainfall, and human land use affect water flow, quality, and pollutant movement.	**Supporting standards:** **7.11A** analyze the beneficial and harmful influences of human activity on groundwater and surface water in a watershed **7.11B** describe human dependence and influence on ocean systems and explain how human activities impact these systems **For:** **8.12B** describe how primary and secondary ecological succession affect populations and species diversity after ecosystems are disrupted by natural events or human activity
Water Quality & Pollution: *Human Impact & Solutions in the Watershed*	Investigate how runoff, pollution, and land use affect water quality and ecosystem stability in a local watershed. Analyze the impacts on plants, animals, and aquatic habitats, then propose practical solutions to protect and improve local ecosystems.	**Supporting standards:** **7.11A** analyze the beneficial and harmful influences of human activity on groundwater and surface water in a watershed **7.11B** describe human dependence and influence on ocean systems and explain how human activities impact these systems **For:** **8.12B** describe how primary and secondary ecological succession affect populations and species diversity after ecosystems are disrupted by natural events or human activity

PROGRAM CATALOG Aquatic Science

Program	Description	TEKS
		Process TEKS **AQU.1A** ask questions and define problems based on observations or information from text, phenomena, models, or investigations **AQU.1G** develop and use models to represent phenomena, systems, processes, or solutions to engineering problems **AQU.3A** develop explanations and propose solutions supported by data and models consistent with scientific ideas, principles, and theories;
Watersheds: Connecting Land, Water and Life	Explore how freshwater inflow, land use, and human activities affect water quality and aquatic ecosystems. The lesson emphasizes cause-and-effect relationships and engages students with real-world data to investigate actions that support healthy watersheds and water quality.	**AQU.7C** identify variables that affect the solubility of carbon dioxide and oxygen in water; **AQU.8B** analyze pH, salinity, temperature, mineral content, nitrogen compounds, dissolved oxygen, and turbidity data periodically, starting with baseline measurements; and **AQU.10ABC** identify sources of water in a watershed, including rainfall, groundwater, and surface water; identify factors that contribute to how water flows through a watershed; analyze water quantity and quality in a local watershed or aquifer; and **AQU.14BC** Predict effects of chemical, organic, physical, and thermal changes due to humans on the living and nonliving components of an aquatic ecosystem; investigate the role of humans in unbalanced systems involving phenomena such as invasive species, fish farming, cultural eutrophication, or red tides;