

LUCAS SOIL & WATER CONSERVATION DISTRICT CONSERVATION EDUCATION PROGRAMS



Preschool through 5th Grade

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The Lucas SWCD prohibits discrimination in its programs on the basis of race, color, national origin, religion, sex, age, political beliefs, sexual orientation, and marital or familial status.

2022-2023 School Year

Dear Educator,

The Lucas Soil & Water Conservation District (SWCD) has a variety of educational presentations and activities available to be presented in your classroom, **free of charge**, which align with State Board of Education Standards. These are generally science related, however, we do offer programs that incorporate math, social studies/civics, and language arts standards. Take note of some of the new programs that are available for this year and a return of many of your favorites!

Please note page 3 is a list of all presentations offered at the time this book is put together. **NOTE: This booklet contains programs for Preschool through 5th grade. Please see our 6th-12 grade booklet also posted on our website.** Program descriptions along with estimated time of presentations, can be found throughout this booklet. Presentations are categorized by grade level, however, these are suggestions based on standards for the specific grade level. Pages 4-5 contain a highlight of programs for this year that can fit with multiple grade levels. All presentations can be adapted to your specific grade level and meet the needs of your students.

To schedule a classroom program, please contact Patrick Troyer, Education Specialist at Lucas SWCD, via phone or email. Mondays will be my office days with programs being offered the rest of the week. If there is a specific topic area that you wish to have presented that is not listed in this book, please contact Patrick to see if and how we can develop a program or activity to fit your needs.

The Lucas SWCD wants to focus its efforts on presenting and reinforcing the conservation message through educational programming and outreach about the great outdoors and our natural resources! I look forward to working with each one of you and your students this year!

Sincerely,

Patrick Troyer
Education Specialist
Lucas SWCD

*If there is a topic you would like covered that is not listed, let me know and we can see where it fits! *

Programs are available for any grade level and are adjusted accordingly to your standards

The Lucas Soil and Water Conservation District is supported primarily by state, county, municipality, and township funds.

The mission of the Lucas Soil & Water Conservation District is to provide leadership for conservation of our soil, water, and other resources through education, information, and technical assistance.



Below is a brief snapshot of programs that will be offered to your classrooms. Grade level designations are simply a suggestion based on grade level standards from ODE. Refer to the page number beside each program for detailed program descriptions.

Pre-K & Kindergarten:

- Water Wonders (Page 6)
- Animal Hibernation (Page 6)
- Owls (Page 6)
- Thunderstorm in a Cup (Page 7)
- The Worm Farm (Page 7)
- A Farmer's Life for Me! (Page 7)

First Grade:

- The Incredible Journey (Page 4)
- Every Tree for Itself! (Page 8)
- Don't Croak! (Page 8)
- What's Wild? (Page 8)
- Terrific Turkeys (Page 8)

Second Grade:

- Ohio Wildlife (Page 9)
- Wonders of Worms (Page 9)
- Weather & Climate (Page 9)
- Power to the Pollinators! (Page 9)

Third Grade:

- Healthy Soils are Full of Life (Page 10)
- Awesome Adaptations (Page 10)
- Renewable or Not? (Page 10)
- Rockin Rocks! (Page 11)

Fourth Grade:

- Super Sinkholes (Page 12)
- Macroinvertebrate Mayhem (Page 12)
- Fun with Fossils (Page 12)
- Streamulator- Weathering & Erosion (Page 12)
- Wildlife CSI (Page 13)
- Wetland Wonders (Page 13)

Fifth Grade:

- Owl Pellets (Page 14)
- Sum of the Parts (Page 14)
- All in This Together (Page 14)
- Adventures in Vermicomposting (Page 15)
- Farm to Table (Page 15)

Programs for Multiple Grades (Pg. 4-5):

The Incredible Journey, Edible Insects, Nonpoint Source Pollution Enviroscape, Drinking Water Enviroscape, 4R Lake, Just Passing Through

THE INCREDIBLE JOURNEY

Where is all the water found in the world? How do we observe water in the outdoors and how does it move through the environment? Students learn there is a limited amount of freshwater available and how the water cycle is a continuous process as well as be introduced to the states of matter. The students will go on an incredible journey through the water cycle as a water droplet. Students will be given a pipe cleaner that they will use to make a bracelet, which they will add beads to during their journey. The students will start with a yellow bead to represent the sun and collect different colored beads as they move throughout the cycle. Each station represents the places a water droplet could travel to in the environment such as: groundwater, ocean, lake, river, animal, plant, cloud, soil and glaciers. The students will roll a cube with each of the above stations and follow the directions on where to go next on their water cycle journey. Critical thinking skills will be used to understand how they traveled through the water cycle.



Estimated Time: 40 Minutes

4R LAKE: A GLIMPSE AT WATER QUALITY (STEM PROGRAM)

We all enjoy fresh, clean water, not only for nourishment, but also for recreation and many other uses in our daily lives. This program will help remind us of the simple things that we can do to help keep our waterways clean and healthy for the safe enjoyment of humans and animals. Students will start out with a small baggie with gel to represent a “clean lake” that will not stay clean for long! Over the course of the program, we will see grass clippings, fertilizer, pet wastes, and soap/car chemicals make their way to the lake and see how these pollutants affect the quality of our water, but we are not done! Also affecting the water quality of our lake will be factors such as sunshine and wind which help to heat the water and mix up all the pollutants. How is the water quality now? Students will be able to take their “lake” home and wear it as a necklace with a card that has some reminders on how we all can work together to keep our waterways clean and healthy.



Photo Source: Ohio Dept. of Natural Resources

Estimated Time: 30 Minutes

Edible Insects

Do you eat bugs with every meal? More than likely you will say NO WAY, but we encounter bugs in more ways than we realize every day. Discover the secret lives of these important and often under-rated animals. In this program, explore how people all around the world use bugs in their daily lives, including you! We will focus on how to many cultures around the world, insects are an important source of protein in their diet while also talking about food quality standards here in the United States. Participants will have the opportunity to taste their own insect pan fried with some seasoning to taste!



Photo Source: Indiana University

Estimated Time: 30 Minutes

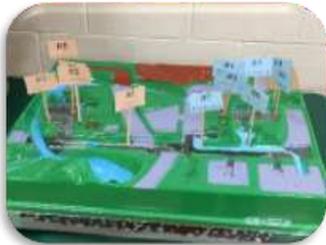
ENVIROSCAPE MODEL: NON-POINT SOURCE POLLUTION

Students see first-hand how everyone plays their individual part in the health of our waterways through the Non-Point Source Enviroscape Model. Different pollutants such as manure, soil, fertilizer, pesticides, motor oil, and many more are introduced to the environment. Students see how this pollution spreads when a big rainstorm comes and pollutes the rivers and streams to become runoff. *See detailed program description under 5th Grade, although this program fits any grade level.*



Estimated Time: 40 minutes

WATER TREATMENT WONDERS (ENVIROSCAPE MODEL)



In the United States, we are very fortunate to have water that is safe and clean for us to use in our daily lives as not everyone around the world enjoys the same benefits. If you live in town, do you know where your water comes from and the processes involved with treating it? Follow along as we highlight the process of how the water we use on a daily basis is drawn from its source such as a lake or river to the water treatment plant where it is treated and then stored in either a reservoir or water tower with the final step being distribution of clean water to our homes.

Do those who live in the country have their water cleaned in the same way? Not necessarily! If you live in the country, your water is obtained and cleaned in a different manner. This program will feature our Drinking Water Enviroscape Model that will highlight the processes involved with water treatment before it reaches our homes and how the wastewater is cleaned at the Wastewater Treatment Plant before it is released back into the environment. Book this program today to get another glimpse at how humans play a role in the quality of our water!

Estimated Time: 40 minutes

JUST PASSING THROUGH

Students will learn about erosion and water movement in a completely new way through this activity! They will get an overview of what erosion is, why it is bad, and how plants can help prevent it. Students will have the opportunity to investigate how vegetation influences the movement of water over land surfaces and learn how to determine the best practices that can be used to prevent it.

Students will demonstrate the path of water flowing through a site with students broken up into two groups, “raindrops” or “plants”. The “raindrops” will meander towards the stream picking up sediment (poker chips) along the way. When the “raindrops” run into a “plant” they will circle the plant five times and drop one piece of sediment each turn. The goal is to see how much sediment (poker chips) the water droplets collect once they reach the stream as well as how plants help prevent pollution, nutrients, and sediment from reaching streams.



Estimated Time: 40 Minutes

PRESCHOOL/KINDERGARTEN:

WATER WONDERS



Photo Source: Natural History Museum

Did you know that water covers 71% of the Earth's surface? Is this water all available for us to drink? Where is it all located? What should and should not be in the water? Students will learn about how they use water every day as well as simple ways we can all save water and keep it clean. Enjoy a reading of the award winning book, *In the Small, Small, Pond*, to learn about all the creatures that live in the water while searching for the frog on each page. Following the story, students will enjoy a game of "Aquatic Simon Says" where they will act out the various ways that aquatic animals move throughout the water.

Then, students will take part in a sorting activity of natural and man-made items to see what does and does not belong in the water. An additional optional activity (in addition to or in place of one of the above activities) includes hands-on demonstration where students drop sponges into a bowl of water describing how they have used water recently in their daily routine. We will then remove the sponges, but will the water level be the same or will it be different?

Estimated Time: 30 Minutes

HIBERNATION STATION

What do animals do in the winter? How do they survive and stay warm? What is hibernation? Do they all hibernate through the winter? How do they prepare for hibernation? These questions and more are answered in an interactive program on ways wildlife prepare for and survive the winter. We will read a story about how animals prepare for winter while also learning some general facts about the animals, and then get to touch fur samples of some of the wildlife mentioned in the story. At the end of the program, students will make their own simple hibernating black bear craft (pictured at right) to take home with them!



Estimated Time: 30 Minutes

WHOOOOO KNOWS ABOUT OWLS?



Did you know that there are over 12 species of owls that can be found right here in Ohio and that they are great at catching mice and rats? Students will learn these facts and so much more when they explore the world of owls through this interactive program. Some focus points of this program will be the animals that the owl eats (prey) as well as how the owl is a predator, its habitat needs, and benefits of owls to the environment. As part of this program, students will be able to make and decorate their very own owl!

Estimated Time: 30 Minutes

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PRESCHOOL/KINDERGARTEN:

THUNDERSTORM IN A CUP

Students will build a foundation on important concepts relating to weather and climate. This program touches on a wide variety of topics such as seasons, weather/climate, ways we observe/measure weather, who tells us about the weather, and most importantly, safety during severe weather events such as thunderstorms or tornadoes. Students will learn the basics of thunderstorms and will act out how a thunderstorm works, then they will conduct an easy activity where they will make their very own Thunderstorm in a Cup (as shown in the picture) using water, food coloring, paper clips, and shaving cream to understand the parts of a thunderstorm and then watch it rain right in front of them!



Estimated Time: 30 Minutes

WORM FARM

Students learn about the different features and characteristics of red worms in addition to the benefits provided by these organisms. We will bring in a worm-composting bin where students will get to view live red worms as they will learn about composting along with the benefits it provides to our environment. Students will then partake in a relay game utilizing their *fine motor skills* where they become birds and transfer worms (pipe cleaners) to their nests using their beaks (clothespin) to feed their hungry baby birds.



Estimated Time: 30 Minutes

A FARMER'S LIFE FOR ME!

What is a farmer and what is it that they do? Discussion is held about farmers, the equipment they use to farm, the animals they have on their farm, the plants they grow, and how these things are important to producing the food that graces our dinner tables. Students will receive basic understanding of how a healthy soil is important to provide us with food and how farmers serve as stewards of the land. We will read a book called *Farms Feed the World* and *Barnyard Banter* where students will learn all that it takes to be a farmer and what they do. Students will then get to play a version of the pin the tail on the donkey, but with a tractor twist, "Pin the Wheels on the Tractor"!



Estimated Time: 30 Minutes

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FIRST GRADE

EVERY TREE FOR ITSELF

Trees play a very important role in the functions of our environment by providing us with clean air, shade, food, and shelter. Each year in April, we celebrate Arbor Day to celebrate the important role that trees serve in our daily lives as well as to promote tree planting and care. In this program, students will learn about the parts of the tree, what they need to grow, products we get from trees, benefits trees provide, in addition to Arbor Day. Students will also learn about growth rings that help us to tell about the age, life history, and health of a tree. Next, each student will get a paper plate and draw their growth rings to represent their age (ex. 7 rings for a 7-year-old). Students will now become trees in an activity called “Every Tree for Itself”. This activity will allow students to learn the difficulty that comes when trees are attempting to get the sunlight, nutrients, and water they need to grow. During the spring, your classroom can reserve a tree seedling donated by the Lucas Soil & Water Conservation District! Information will be provided when this is available.



Photo Source:
Census Bureau

Estimated Time: 30 Minutes

DON'T CROAK! (FROGS)



Photo Source:
Encyclopedia Britannica

What do all living things need to survive and how easy is it to obtain those requirements? We will discuss the four characteristics of a habitat that all living things need. They will learn about the physical characteristics of a frog with explanation of the frog's tongue, their feet, how they breathe, and shed their skin. Each student is transformed into a frog and is given a party blowout with a Velcro end to represent the frog's tongue in an activity called “Don't Croak”. Students are instructed that frogs do not use their legs to capture food, so students cannot use their hands

only their tongue (party blowout) to capture their prey. Will the frogs get all the requirements they need to survive or will they “croak”? Book this program and find out!

Estimated Time: 30 Minutes

WHAT'S WILD?

What is the difference between a wild animal and a domesticated animal? How do each get the requirements they need to survive? In this program, students engage in stories comparing the lives of a wild and a tame animal and then sort animals into categories based on the characteristics. This program is designed to help students distinguish between animals that are wild and those that are not. A wild animal is one that can take care of itself and survive on its own without relying on humans. Animals that are not wild are called domesticated animals. All animals need food, water, shelter and protection. The importance of habitat for wild animals is emphasized. Students will learn about and view examples of both domesticated and wild animals that are found throughout Ohio.



Photo Source: Maryland Zoo

Estimated Time: 30 Minutes

TERRIFIC TURKEYS



Photo Source: Ohio
Dept. Natural Resources

Turkeys are familiar to most people as a food that we eat, particularly around Thanksgiving. Turkeys sold at the grocery store and raised by farmers are domesticated turkeys while those found in nature are called wild turkeys. Wild turkeys differ in a wide variety of ways compared to the domesticated turkey. The essential habitat requirements for organisms to survive as well as predator/prey will be introduced through this program. As an activity, students will play a game in which they pretend to be either a tom (male) or hen (female) turkey and try to get one food and one water piece scattered on the ground and make it back to their nest in order to survive the day. Students will be asked what eats wild turkeys and a predator will be introduced into the activity. Will the turkeys survive the day and get the food and water they need with predators around? Do the predators make it easier or harder for

the turkeys to survive?

Estimated Time: 30 Minutes

SECOND GRADE

OHIO WILDLIFE



Do you know what animals are native to Ohio? Students learn about the physical characteristics of over 20 different wildlife animals found in Ohio through an interactive presentation. Throughout the program, students get the opportunity to view many different furs, pelts, feathers, and shells of Ohio animals. This includes the hand-on learning through the visual identification and the ability to feel and touch the furs and pelts of the different wildlife creatures.

Estimated Time: 40 Minutes

THE WONDERS OF VERIMOCOMPOSTING (WORMS)

Living things function and interact with their physical environments while causing changes in the environments where they live. These changes can be very noticeable or slightly noticeable, fast or slow. Vermicomposting is one way that red worms contribute to change in their environment and is the process of using worms (“vermin” is Latin for worm”) to recycle organic food waste into a nutrient-rich soil. Students get to see a bin of red worms that are actively consuming food waste and creating compost. They will learn about habitat needs of the worms, what worms like to eat, in addition to, how they are able to eat food and recycle it into a natural fertilizer for plants. Students will get to hold their own red worm and then build their own mini worm habitat complete with live worms! **This program has variations for higher or lower grade levels**



Estimated Time: 30 Minutes

WEATHER & CLIMATE



Photo Source:
Encyclopedia Britannica

Weather is a result of energy change. Heating and cooling of water, air and land via sunlight are directly related to wind, evaporation, condensation, freezing, thawing, and precipitation. Weather patterns (long-term) and fronts (short-term) can be documented through consistent measuring of temperature, air pressure, wind speed and direction, along with precipitation. In this program, students will learn the difference between weather & climate, tools used to measure weather conditions, how the seasons occur, who studies the weather, and much more. They will learn that water is present in the air through the water cycle as clouds, steam, fog, rain, ice, snow, sleet or hail and view demonstrations about weather events that we experience in our area such as tornadoes and thunderstorms. We will also do a fun activity to show the water cycle and its connection to weather!

Estimated Time: 30 Minutes

POWER TO THE POLLINATORS!

Did you know that three out of every four bites of food you enjoy daily are reliant upon pollinators such as the monarch butterfly, in order to grow? Through this program, students will understand how human interaction with the environment influences the health of other living things as well as how living things rely on one another in order to survive. Students will learn why pollinators are important, how the process of pollination works, examples of pollinators and who they are, as well as simple ways to create habitat at home or school to help these important creatures survive. To help build on concepts, students will take part in activity called “Pollinator Pizza” where they will build their own pizza with their favorite toppings. They will learn the foods that are reliant on pollinators such as peppers or tomatoes. Students will see that when pollinators disappear, many of their favorite toppings will also disappear! We will also do an activity where we will highlight the monarch butterfly and model its life cycle using pasta noodles!



Photo Source: Kid's
National Geographic

Estimated Time: 30 Minutes

THIRD GRADE

HEALTHY SOILS ARE FULL OF LIFE! (SOILS MODEL)

Did you know that it takes between 500-1,000 years for one inch of topsoil to form? Through this program, students will learn about how soil develops through a continuous process of weathering and erosion ending with the smallest particle of rock possible, soil! Students will be given characteristics of the three main soil types, which are sand, silt, and clay. More than just providing somewhere for plants to grow, soil is full of life and contains different organisms such as earthworms or bacteria that enhance the properties of soil like nutrient availability. Students will be able to create their own model soil learning, about the properties of each of the three soil particles and how they come together with water, organic matter, and the microorganisms to mix everything up. They will be able to take home with them a finished product that will become science clay! An alternative activity option is a “non-edible” soil where we will examine the various plants/animals found in a soil by sorting through a bag of model soil material.



Estimated Time: 40 Minutes

AWESOME ADAPTATIONS

An adaptation is a change or the process of change by which an organism or species becomes better suited to its environment. Some animals, such as the camel, adapt their bodies to dry conditions or cold conditions such as bears who go through hibernation. In this program, students will learn about an animal that has a wide range of adaptations to help it become better suited to its environment. This program covers the beaver and its many adaptations such as its tail, waterproof fur, clear eyelids, webbed feet for swimming, and large front teeth for chopping trees; just to name a few. Not only will students learn about the amazing adaptations of the beaver, they will get the opportunity to experience them first-hand! A volunteer will be asked to come up and dress up like a beaver and wear/hold a representation of each adaptation such as goggles for the clear eyelids, a fur coat, swimming fins for webbed feet; and so much more!



Photo Source: Ohio
Dept. Natural Resources

Estimated Time: 30 Minutes

RENEWABLE OR NOT?

Many of Earth’s resources can be used for the energy they contain. What are these resources and how are they used? Renewable energy is an energy resource such as wind, water, or solar energy that is replenished within a short amount of time by natural processes. Nonrenewable energy is an energy resource such as coal or oil, that is limited and cannot be replenished in a short amount of time. This program will emphasize the difference between a renewable and nonrenewable resource and why our natural resources need to be conserved as well as how we can work to conserve them. Ohio will be compared to other states and countries on how and what energy resources are utilized. Students will partake in an activity where they learn how to distinguish the difference between the resource types and what happens when resources are no longer available.



Photo Source: Encyclopedia
Britannica Kids

Estimated Time: 30 Minutes

THIRD GRADE

ROCKIN ROCKS!

What is the difference between igneous, metamorphic, and sedimentary rocks? In this program, students will explore the rock cycle and investigate properties associated with various rocks and the processes behind how they formed. Rocks have unique characteristics that allow them to be sorted as well as classified and they form in different ways. This program will include a demonstration on how sedimentary rock, which is predominant in the types of rocks found in Ohio, is formed. Minerals are introduced as building blocks of rocks with differences examined between rocks and minerals. Students will gain a basic understanding of how rocks are identified based on properties such as texture and hardness, but also based on the minerals found within them.



Students will view samples of rocks that can be found around the area and investigate their properties through a hands-on activity where they will become “Junior Geologists” and examine the samples looking at properties such as texture, particle shape/size, and color to learn basics of how rocks are classified. This activity will also experiment with basics of hardness using various tools to test each sample. Students will learn that geologists closely examine their rock samples to identify the type of rock being discovered.

Estimated Time: 30 Minutes

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LUCAS SOIL & WATER
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FOURTH GRADE

SUPER SINKHOLES

Sinkholes are natural depressions in the landscape caused by solution and subsidence of earth materials. They are formed by the removal of underlying material (subsurface rock and soil) through the karst hydrologic system. Through this program, students obtain a basic understanding of where & how sinkholes form, the various types of sinkholes, effects of sinkholes, and stories of people impacted by sinkholes. Weathering and erosion are also discussed as they relate to sinkholes. Students will get a hands-on experience of learning how sinkholes form by creating their own sinkholes using a cup, sugar, sand, and water to see a sinkhole from right in front of them! Will it form quickly or slowly? Book this program to find out!



Estimated Time: 40 Minutes

MACROINVERTEBRATE MAYHEM: WATER QUALITY



Macroinvertebrates are organisms that lack a spine and are large enough to be seen with the naked eye. Students will learn about their life cycle, how they are classified, and the importance they serve when determining water quality. This program will discuss how macroinvertebrates are classified by how they eat their food and their tolerance to water pollution. Identification skills will be put to the test, as students will work together in groups to examine a mock stream along with real samples of macroinvertebrates that are living in our water. They will use their observations to predict water quality based on the population of species found. Students will also view a demonstration of the tools used to sample for macroinvertebrates.

Estimated Time: 30 Minutes

FUN WITH FOSSILS

What are fossils and how are they made? Fossils provide evidence that many plant and animal species that are now extinct once existed and how they changed over the course of their life. The types of fossils that are present provide evidence about the nature of the environment at a specific point in time and possibly the environmental conditions that caused the animal or plant to go extinct. As the environment changed, so did the types of organisms that could survive in that environment. Students will explore the world of fossils by comparing fossil samples with one another along with identifying them and their modern relative.



Photo Source: Fort Collins
Museum of Discovery

Estimated Time: 30 Minutes

STREAMULATOR: HOW DOES MY STREAM ERODE THE LANDSCAPE?

The earth's surface is exposed to a variety of forces daily that work to either build up or tear down the surface. These processes include erosion, deposition, volcanic activity, earthquakes, glacial movement, and weathering. Students will learn about how these forces can cause changes in landscapes and landforms via an interactive program with our Streamulator table. This table allows us to simulate the changes that occur in natural streams via erosion/weathering as well as how streams form. The use of sand and flowing water allows the students to visually see the effects of flowing water through sediment transport, delta formation, erosion, and deposition. Students will have the opportunity to work together to build their own stream and community to see if it can survive when a large flood comes into their community!



Note* This model is also available for classroom loan

Estimated Time: 40 Minutes

FOURTH GRADE

WILDLIFE CSI

Who ate the Eastern Cottontail Rabbit? During this program, students will work in groups try to troubleshoot this mystery while taking on the role of various animals learning about their life histories, visiting the scene of the crime, and questioning one another to discover who they believe is guilty of killing the rabbit. Once questioning is complete, everyone will come together, and each animal will have a chance to declare their innocence and who they believe is guilty along with a reason why they believe said animal is guilty. This program will highlight predator/prey relationships, citing evidence, using problem solving skills, and learning about various wildlife and their lifestyles. So, who ate the rabbit? Book this program and find out!



Photo Source: Ohio
Dept. Natural Resources

Estimated Time: 40 Minutes

WETLAND WONDERS (ENVIROSCAPE MODEL)

Students will gain an understanding on the characteristics of wetlands as well as learn about and appreciate the vital functions wetlands serve to the environment for both humans and animals. To illustrate the services wetlands provide, students will take part in an activity called “Wetland Metaphors”. This program involves a demonstration of the Enviroscape Wetlands Model where students will learn about the services wetlands provide, the various types of wetlands that exist, and how we can restore a wetland. By the end of this program, students will be able to describe major changes in Ohio’s environments over time and the organisms supported in each, such as wetlands, and learn about many of the wetlands near them!



Photo Source: The
Nature Conservancy

Estimated Time: 40 Minutes

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FIFTH GRADE

OWL PELLETS



Photo Source:
Acorn Naturalist

Students learn about what owl pellets are and how they are used in the scientific study of small mammals. This program will cover general information about owls including their behavior, diet, habitat, formation of pellets, along with the role that owls serve as apex predators in a forest ecosystem. Discussion will also include food webs and food chains. Students will pair up into groups and will be given an owl pellet (sanitized), a pair of gloves, tweezers, and a chart displaying the common animals consumed by owls. Students examine the owl pellets, reconstruct prey skeletons, and hypothesize the prey of their particular owl.

Estimated Time: 45 Minutes

SUM OF THE PARTS: ENVIROSCAPE MODEL

Students will learn about one way that organisms change their environment, pollution. They will learn how everyone contributes in some way to water pollution as it makes its way through the watershed and how everyone can do their part to prevent pollution from reaching the river or stream. A brief presentation will explain the concepts of point source pollution, nonpoint source pollution, best management practices, runoff, and erosion. Students see first-hand how everyone plays their individual part in the health of our waterways through the Non-Point Source Enviroscape Model. Different pollutants such as manure, soil, fertilizer, pesticides, motor oil, and many more are introduced to the environment. Students see how this pollution spreads when a big rainstorm comes and pollutes the rivers and streams to become runoff.



Estimated Time: 30-40 Minutes

ALL IN THIS TOGETHER (Food Webs & Ecosystem Interactions)

Each animal has a role in the community that is called a niche. The niche involves things such as where and how an animal gathers its food, its role in the food chain/web, what it does for the community, its behavioral habits, and so much more. Students will learn what an ecosystem is and how energy is transferred in an ecosystem through food webs and food chains. Discussion will be held on how organisms serve their ecosystem as a producer, consumer, scavenger, or decomposer. Within any biological community, there are numerous relationships and interdependences between plants and animals known as symbiotic relationships.



Photo Source: USDA
Natural Resource
Conservation Service

Just as important as these relationships is a suitable habitat in order to survive. These relationships are important to maintain for an ecosystem, and students will get to see how important such relationships are through an interactive activity where they will take on the role of an animal and learn about how organisms are dependent upon one another as they build a food chain and food web using a ball of yarn! How many food chains can we build? Book this program to find out!

Estimated Time: 40 Minutes

FIFTH GRADE

ADVENTURES IN VERMICOMPOSTING

Living things function and interact with their physical environments while causing changes in the environments where they live. Vermicomposting is one way that red worms contribute to change in their environment and is the process of using worms (“vermin” is Latin for worm”) to recycle organic food waste into a nutrient-rich soil. Students will put their observation skills to use looking bin of worms that are actively consuming food waste and creating compost. This first activity has the students look at an active worm compost bin and document what they see going on (what foods can they find, where is the compost, any other animals in the bin beside worms?). This program will focus on the role of the worm as decomposers as well as an in-depth look at how items are evaluated to decide if they are able to be composted through a group sorting and classification activity. To conclude, we will discuss how to build a mini worm habitat and students can receive their own miniature bin complete with live worms!



This program has variations for higher or lower grade levels

Estimated Time: 40 Minutes

FARM TO TABLE

This program weaves Science and Social Studies concepts together by emphasizing how soils form the very foundation of our economy as many industries beyond agriculture such as forestry and textiles, rely on a healthy soil to have the resources to bring their products to the market. First, we explore seed germination, plant adaptations, and how humans use plants. We will investigate the various parts of a plant and play “Grocery Bag Botany”. Next, we will look at how countries specialize in the products they produce while trading with other countries to increase the amount and variety of goods available to the consumer as well as the basic structures of the market a farmer and others work through looking at supply/demand, completion, and advertising. Then, using common food items, students will learn what local cash crops end up at their dinner table (incorporating the economics of how the products get from producer to consumer), on their clothes, cars, and much more. While examining crop and product samples, connections will be discovered between food, land, and people.



Photo Source: Foundation for Economic Education

Estimated Time: 40 Minutes

*If there is a topic you would like covered that is not listed, let me know and I can set something up for you! *

Programs are available for any grade level and are adjusted accordingly to your standards

Email: ptroyer@co.lucas.oh.us Phone: 419-893-1966 Ext. 2#

Additional Programs and Services

Field Trip Programs

Located near Whitehouse, Ohio, the Blue Creek Conservation Area (BCCA) is a 500+ acre working farm and conservation/land lab area. Students will explore environmental and agricultural processes occurring in the soils, gardens, and fields with the Lucas SWCD; savannahs, wetlands, and prairies with the Metroparks Toledo; and a live animal presentation from Nature's Nursery Wildlife Rehabilitation Center.

School and community groups may schedule field trips during April -October (or weather permitting). Field trips typically last from 10:00AM—1:00PM but may be adjusted to your needs and topics customized. BCCA is open to scheduled groups only. BCCA is a partnership of the Metroparks Toledo, Lucas Soil & Water Conservation District, & Nature's Nursery.



A day's program is only \$4.00 per students that are in Lucas County, \$6.00 for out of county (funds go to Nature's Nursery & Metroparks). Teachers and parents are free! Some groups may be eligible for assistance with field trip transportation costs. Please call Lucas SWCD for further information at 419-893-1966 or email ptroyer@co.lucas.oh.us.

Teacher Workshops & E-Letter

SWCD Staff is available for workshops, seminars, and training for you and your staff. Teacher workshops are offered throughout the year for many of the curriculums listed below and much more! Join the Lucas SWCD Educator's E-Letter list serve to keep updated on workshops, grants, free resources, and more by emailing ptroyer@co.lucas.oh.us.

Loan Materials

We have an extensive loan library of videos, CD/DVDs, curricula, and reference books available for loan. The Enviroscape Model, Groundwater Model, Stream Table, Septic System Model, and library materials may also be borrowed at no charge. The Water Test Kit is available for loan at \$5/group.

Grant Assistance:

Our office is willing to assist you in writing grants. We are also available for assistance with projects after grants are accepted.

National Curriculum Offered:

Just some of the offerings:

Project Learning Tree (PreK - 12th)

Project WILD/Flying WILD (PreK - 8th)

Science and Civics (9th - 12th)

Project WET (K through 12th)

Healthy Water/Healthy People (6th - 12th)

Leopold Education Project (5th - 12th)

Project Food, Land & People (PreK-12th)

Lessons in Economics (4th - 6th)

WWF – Biodiversity Basics/Smart Consumers Project Seasons (PreK - 6th)

Growing Up WILD/PLT (Pre-K)

Celebrating the Harvest (Primary grades)

Windows on Waste (Primary - Middle) Habitats for Learning - Land Labs