

# EDUCATION PROGRAMS

## PREK-5TH GRADE

- 2023 / 2024 -



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# ABOUT US

Lucas Soil & Water Conservation District is a political subdivision of the State of Ohio and receives voluntary funding from the Lucas County Commissioners, Local Cities/Townships, and the State of Ohio. Our mission is to provide leadership for conservation of our soil, water, and other resources through education, information, and technical assistance.



## Introduction to Lucas SWCD Education Programs

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.

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 4-6 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 Tuesday through Friday. Scheduling is done on a first come, first serve basis.**

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.

**- PATRICK TROYER -**

# TABLE OF CONTENTS



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.....	7
Animal Hibernation.....	7
A Farmer’s Life for Me!.....	7
The Worm Farm.....	7
Wonder of Thunder.....	8
Are You Awake?.....	8
Are You Talking to Me?.....	8

## First Grade:

The Incredible Journey.....	9
Don't Croak.....	9
Tremendous Trees.....	9
Are You Me? : How Living Things Change..	10
What's Wild.....	10

## Second Grade:

Wally The Walleye.....	10
Ohio Wildlife.....	11
Adventures in Vermicomposting.....	11
Amazing Weather.....	11
Pollinator Power.....	11

## Third Grade:

Healthy Soils Are Full of Life.....	12
Awesome Adaptations.....	12
Rockin Rocks.....	12
Renewable or Not.....	13
Mealworm Mayhem.....	13

## Fourth Grade:

Super Sinkholes.....	14
Streamulator: Power of Water.....	14
Fun with Fossils.....	14
Macroinvertebrates: Indicators of Change..	15
Wildlife CSI.....	15
Wetland Wonders.....	15

## Fifth Grade:

Owl Pellets.....	16
All In This Together.....	16
Sum of the Parts.....	16
Invaders!.....	17
Farm to Table.....	17
Adventures in Vermicomposting.....	17

### **Programs for All Ages: PAGE 4-6**

Incredible Journey, Edible Insects, Nonpoint Source Envirocape, Drinking Water Envirocape, Wetlands Envirocape, 4R Lake, Just Passing Through, Dig Those Chips

\*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\*

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# FEATURED PROGRAMS FOR ALL GRADE LEVELS

4

Below are programs that fit in with standards from multiple grade levels and that are adjusted accordingly to your age group.



## THE INCREDIBLE JOURNEY



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 water 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 at each of the above stations and follow the directions on the cube on where to go next on their water cycle journey. Critical thinking skills will be used to understand where and how they traveled through the water cycle.

**Estimated Time: 30 Minutes**

## 4R LAKE: DOING YOUR PART

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 waste, and soap/car chemicals make their way to the lake and see how these pollutants along with wind and sunlight affect the quality of our water. 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.



**Estimated Time: 30 Minutes**

## DIG THOSE CHIPS



This program combines Social Studies and Science concepts into one presentation. Emphasis will be put on the fact that soil forms the very foundation of our economy as many industries such as agriculture, forestry, and clothing are heavily dependent on a healthy soil to have resources to bring their products to the market. This program also covers the basics of how a market works and other terms such as supply/demand, competition, advertising, producer, consumer, and market. The students will learn about how potatoes are grown from planting to harvesting to consuming potato chips. They will conduct their own taste test of potato chips and think like a consumer deciding which chip to buy based on price, product quality, brand, and advertising

**Estimated Time: 35 Minutes**

\*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\*

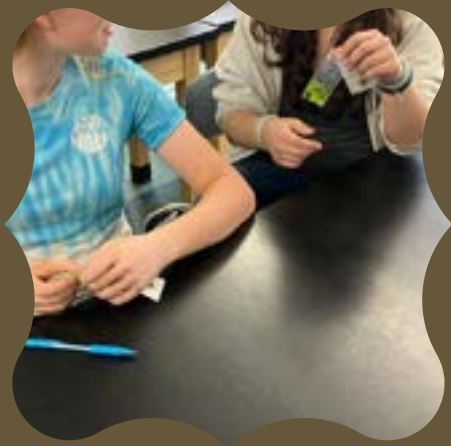
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# FEATURED PROGRAMS FOR ALL GRADE LEVELS

5

Below are programs that fit in with standards from multiple grade levels and that are adjusted accordingly to your age group.



## **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**

## **ENVIROSCAPE MODEL: WATER TREATMENT WONDERS**

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: 30 Minutes**

## **ENVIROSCAPE MODEL: HAZARDOUS WASTE DISPOSAL & CLEANUP**



When thinking about hazardous waste, what comes to mind? What are hazardous wastes and why do we use them? We use them everyday including: fuels, solvents, fertilizer, and pesticides. Thanks to funds from an Ohio EPA Grant, Lucas SWCD has a Hazardous Prevention and Cleanup EnviroScape that will help answer these and many additional questions by helping to visualize this very important issue. This demonstration model will help illustrate issues arising from improper discharge/disposal or accidental spills along with methods to clean up and prevent spillage of hazardous waste. Sources that are discussed include underground storage tanks, illegal dumping, and household/commercial practices.

**Estimated Time: 40 Minutes**

# FEATURED PROGRAMS FOR ALL GRADE LEVELS

Below are programs that fit in with standards from multiple grade levels and that are adjusted accordingly to your age group.



## WETLAND WONDERS (ENVIROSCOPE 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 Enviroscope 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!

**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 with 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: 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!



**Estimated Time: 30 Minutes**

# PRESCHOOL & KINDERGARTEN PROGRAMS

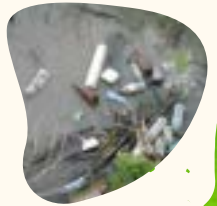
7



Below are programs that are suggested for preschool and kindergarten age students. PreK & K Programs typically involve a story followed by an activity or craft to go along with the topic. Activities can be adjusted accordingly to your grade level.

## WATER WONDERS

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, What's It Like To Be A Fish, to learn about all the creatures that live in the water. Students will play with an inflatable beach ball globe to show where they see water and compare amounts of both land and water to see which is greater, land or water. Lastly, students will enjoy a game of "Aquatic Simon Says" and conduct a sorting activity of natural and man-made items to see what does and does not belong in the water.



*Academic Standard: Observe, explore, describe living things in Ohio. Objects can be sorted and described by their properties. Living things have specific characteristics/traits/behaviors, which influence survival.*

**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 Time to Sleep a story where we learn about how animals prepare for winter and general facts about the animals. Then students will get to touch fur samples of some of the wildlife mentioned in the story. At the end of the program, we will make their own simple hibernating black bear craft (pictured at left)!

*Academic Standard: Observe, explore, describe living things in Ohio. Objects can be sorted and described by their properties. Living things have specific characteristics/traits/behaviors, which influence survival.*

**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, see 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 The Day The Farmers Quit 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"!



*Academic Standard: Observe, explore, describe living things in Ohio. Objects can be sorted and described by their properties. Living things have specific characteristics/traits/behaviors, which influence survival.*

**Estimated Time: 30 Minutes**

## WORM FARM WONDERS



Learn about the different features and characteristics of red worms in addition to the benefits provided by these organisms. We will read Save the Scraps and 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!

*Academic Standard: Observe, explore, describe living things in Ohio. Objects can be sorted and described by their properties. Living things have specific characteristics/traits/behaviors, which influence survival.*

**Estimated Time: 30 Minutes**

# PRESCHOOL & KINDERGARTEN PROGRAMS



Below are programs that are suggested for preschool and kindergarten age students. PreK & K Programs typically involve a story followed by an activity or craft to go along with the topic. Activities can be adjusted accordingly to your grade level.

## THE WONDER OF THUNDER

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 with the story The Wonder of Thunder, and then by acting out how a thunderstorm works. Students will conduct an easy activity where they will make their very own Thunderstorm in a Cup 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!

*Academic Standard: Observe, explore, describe weather changes, patterns in sky, seasons. Weather changes that are long and short term.*

**Estimated Time: 30 Minutes**



## ARE YOU AWAKE?



What does it mean to be a nocturnal animal? Who are some nocturnal animals? Get these questions and more answered as we read Out of Sight Till Tonight. In this story, we take a journey with the famous Cat in the Hat to learn the difference between a nocturnal and diurnal animal discussing examples and characteristics of each. We will work through a sorting activity where we decide whether the animal on the card nocturnal or diurnal animal and play a game called "Bat and Moth" to learn how nocturnal animals locate their prey at night.

*Academic Standard: Observe, explore, describe living things in Ohio. Objects can be sorted and described by their properties. Living things have specific characteristics/traits/behaviors, which influence survival.*

**Estimated Time: 30 Minutes**

## ARE YOU TALKING TO ME?

Observation is the cornerstone to understanding any scientific concept, especially in nature. In this program, we put those observation skills to specifically look at how animals communicate and interact with each other. Together, we will read Thump Goes The Rabbit: How Animals Communicate to help identify examples of how animals use their ears, tails, feet, sense of smell, and body language to help them communicate with one another well beyond just using their voices. For the first activity, we learn how animals communicate with each other using their sense of smell to identify friends or enemies by following our nose to find the person with the same scent (such as peppermint, garlic, etc.). Lastly, students will play a game where they will act out different communication methods used by different animals.

*Academic Standard: Observe, explore, describe living things in Ohio. Objects can be sorted and described by their properties. Living things have specific characteristics/traits/behaviors, which influence survival.*

**Estimated Time: 30 Minutes**



\*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\*

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# FIRST GRADE PROGRAMS

9

Below are programs that are suggested for first grade students. Most programs typically involve a story followed by an activity or craft to go along with the topic. Activities can be adjusted accordingly to your grade level.



## THE INCREDIBLE JOURNEY



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 water 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 at each of the above stations and follow the directions on the cube on where to go next on their water cycle journey. Critical thinking skills will be used to understand where and how they traveled through the water cycle.

*Academic Standard: The sun is the principle source of energy. Water on Earth is present in many forms.*

**Estimated Time: 30 Minutes**

## DON'T CROAK

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!

*Academic Standard: Living things have basic needs which are met by obtaining materials from their environment and can only survive in these environments that meet their needs.*



**Estimated Time: 40 Minutes**

## TREEMENDOUS TREES



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. We also examine some of the many products that we get from trees.. 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, each student in your classroom can reserve a tree seedling donated by the Lucas Soil & Water Conservation District! Information will be provided when this is available.

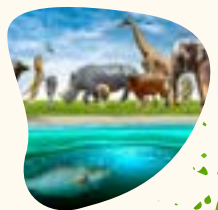
*Academic Standard: Living things have basic needs which are met by obtaining materials from their environment and can only survive in these environments that meet their needs.*

**Estimated Time: 40 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.

*Academic Standard: Living things have basic needs which are met by obtaining materials from their environment and can only survive in these environments that meet their needs.*



**Estimated Time: 40 Minutes**

# FIRST GRADE PROGRAMS

10

Below are programs that are suggested for first grade students. Most programs typically involve a story followed by an activity or craft to go along with the topic. Activities can be adjusted accordingly to your grade level.



## **ARE YOU ME? : HOW LIVING THINGS CHANGE**



Many animals will show significant differences in their appearance at different stages of their life cycle. Insects in particular show a truly apparent difference as they move through metamorphosis, either complete or incomplete. This program will use the butterfly as a case study of how living things change by reading the story, From Caterpillar to Butterfly and modeling all the changes a butterfly undergoes using pasta noodles. We will then wrap up by looking at how other animals change from young to adults by doing a matching activity where students will receive a young animal or an adult animal with the task of find the classmate with the matching young or adult version of that animal.

*Academic Standard: Living things have basic needs which are met by obtaining materials from their environment and can only survive in these environments that meet their needs.*

**Estimated Time: 30 Minutes**

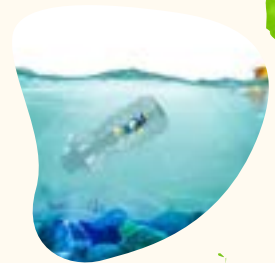
# SECOND GRADE PROGRAMS

Below are programs that are suggested for second grade students. Most programs typically involve a story followed by an activity or craft to go along with the topic. Activities can be adjusted accordingly to your grade level.

## **WALLY THE WALLEYE**

Many of us are familiar with the walleye as an important Toledo hockey staple but do we know the little things we do that can affect the quality of the water that Wally The Walleye is living in? We all use water in many ways from drinking to cleaner and everything in between. Each time we use water, we are changing it, sometimes by ways of pollution. Fish live in our waterways and are reliant on the water for their habitat, food, and oxygen supply. Join us on our interactive journey with Wally as we read the story The Tale of the Whale to see how human activities can pollute the water and impact Wally.

*Academic Standard: 2.LS.1: Living things cause changes on Earth.*



**Estimated Time: 30 Minutes**

# SECOND GRADE PROGRAMS

Below are programs that are suggested for second grade students. Most programs typically involve a story followed by an activity or craft to go along with the topic. Activities can be adjusted accordingly to your grade level.



11

## OHIO WILDLIFE



Do you know what animals are native to Ohio? Students learn about the physical characteristics of a variety of 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 hands-on learning through the visual identification and the ability to feel and touch the furs and pelts of the different wildlife creatures.

*Academic Standard: 2.LS.1: Living things cause changes on Earth.*

**Estimated Time: 40 Minutes**

## ADVENTURES IN VERMICOMPOSTING

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 write a short biography about their worm to share with the class. \*This program has variations for higher or lower grade levels\*

*Academic Standard: 2.LS.1: Living things cause changes on Earth.*



**Estimated Time: 40 Minutes**

## AMAZING WEATHER



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 in the form of clouds, steam, fog, rain, ice, snow, sleet or hail and view demonstrations such as Twister in a Jar and Why No Flood about weather events that we experience in our area such as tornadoes and thunderstorms and the various factors leading to the formation of these weather events. We will also do a fun activity to show the water cycle and its connection to weather by making a weather cup!

*Academic Standard: 2.ESS.1: The atmosphere is primarily made up of air.*

*2.ESS.2: Water is present in the atmosphere.*

*2.ESS.3: Long- and short-term weather changes occur due to changes in energy.*

**Estimated Time: 40 Minutes**

## POLLINATOR POWER

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 simple ways to create habitat at home or school to help these important creatures survive. We will cover the foods that are reliant on pollinators such as peppers or tomatoes. Lastly, we will focus on the bee as an important pollinator and make a Pipe Cleaner Bee!

*Academic Standard: 2.LS.1: Living things cause changes on Earth.*



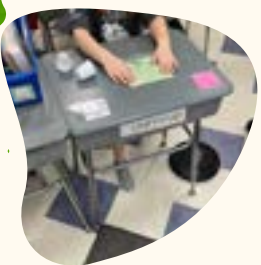
**Estimated Time: 40 Minutes**

# THIRD GRADE PROGRAMS



Below are programs that are suggested for third grade students. Most programs typically involve a story followed by an activity or craft to go along with the topic. Activities can be adjusted accordingly to your grade level.

Option A  
Soil Model



## **HEALTHY SOILS ARE FULL OF LIFE**

Students will learn about how soil develops through a continuous process of weathering and erosion ending with the smallest particle of rock possible, soil! Discussion will be held on the characteristics (particle size, texture, ability to retain water/nutrients) of the three main soil types, sand, silt, and clay. We will also cover that 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.

**\*Please indicate which activity option you would like when booking this program\***

Option B  
Ribbon Test



**Option A:** Students will be able to create their own model soil using flour, cornstarch, salt, water, and vegetable oil. They will learn 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!

**Option B:** Students will determine the texture of a provided soil sample by conducting a soil ribbon test. Instruction will be provided on how to properly conduct a ribbon test to determine whether a soil is sand, silt, clay, or a loam. We will also discuss other methods that are used in the determination of soil texture and why knowing soil texture is important to know.

*Academic Standard: 3.ESS.1: Earth's nonliving resources have specific properties.*

**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. 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!



*Academic Standard: 3.LS.3: Plants and animals have life cycles that are part of their adaptations for survival in their natural environments.*

**Estimated Time: 30 Minutes**

## **ROCKIN ROCKS**

Students will explore the rock cycle and investigate properties associated with various rocks and their formation processes. This program will cover the fact that rocks are formed through many different processes and are made up of various minerals giving them unique characteristics that allow them to be classified. This program will include a demonstration using a candle and coat hanger to demonstrate how heat and pressure within the earth melts and changes rocks. 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 be tasked with identifying unknown Ohio rock samples through a hands-on activity where examining the samples looking at properties such as texture, particle shape/size, and color to learn basics of rock identification. This activity will also experiment with basics of hardness using various tools to test each sample. Information will be provided about each sample to help with sample identification.

*Academic Standard: 3.ESS.1: Earth's nonliving resources have specific properties.*

**Estimated Time: 30 Minutes**

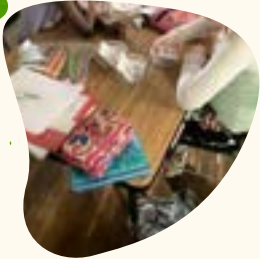
# THIRD GRADE PROGRAMS

13



Below are programs that are suggested for third grade students. Most programs typically involve a story followed by an activity or craft to go along with the topic. Activities can be adjusted accordingly to your grade level.

## 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? 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/countries on how and what energy resources are utilized. Students will partake in an activity where they will be given examples of various common everyday items to distinguish the difference between the resource types and ways to reduce or limit the use and/or waste of resources through methods such as composting, donation, recycling, reuse, etc.

*Academic Standard: 3.ESS.1: Earth's nonliving resources have specific properties..*

*Academic Standard: 3.ESS.2: Earth's resources can be used for energy.*

*Academic Standard: 3.ESS.3: Some of Earth's resources are limited.*

**Estimated Time: 30 Minutes**

## MEALWORM MAYHEM

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. This program will discuss 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. Discover the secret lives of these important and often under-rated animals. Our focus will be on the life cycle of the darkling beetle (mealworm). Students will study an actual mealworm as well as a darkling beetle to observe its physical features.

As an additional activity to wrap up this program in addition to the mealworm observation, students and staff will have the opportunity to taste test an actual mealworm with their choice of BBQ, spice, cheese, or ranch that is cooked right in front of them!

*Academic Standard: 3.LS.3: Plants and animals have life cycles that are part of their adaptations for survival in their natural environments.*



**Estimated Time: 30 Minutes**

**\*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\***

**Email: [ptroyer@co.lucas.oh.us](mailto:ptroyer@co.lucas.oh.us)**

**Phone: 419-893-1966 Ext. 2#**

# FOURTH GRADE PROGRAMS



Below are programs that are suggested for fourth grade students. Most programs typically involve a story followed by an activity or craft to go along with the topic. Activities can be adjusted accordingly to your grade level.

## **SUPER SINKHOLES**

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. A demonstration will be conducted using chalk and white vinegar to simulate how limestone rock is easily dissolved by slightly acidic rainwater. 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!



*Academic Standard: 4.ESS.1: Earth's surface has specific characteristics and landforms that can be identified.  
4.ESS.2: The surface of Earth changes due to weathering.  
4.ESS.3: The surface of Earth changes due to erosion and deposition.*

**Estimated Time: 35 Minutes**

## **STREAMULATOR: THE POWER OF WATER**

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!



*Academic Standard: 4.ESS.1: Earth's surface has specific characteristics and landforms that can be identified.  
4.ESS.2: The surface of Earth changes due to weathering.  
4.ESS.3: The surface of Earth changes due to erosion and deposition.*

**Estimated Time: 35 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/contrasting unknown fossil samples focusing on features such as size, shape, texture, and modern relative.

*Academic Standard: 4.LS.1: Changes in an organism's environment are sometimes beneficial to its survival and sometimes harmful.*

*Academic Standard: 4.LS.2: Fossils can be compared to one another and to present-day organisms according to their similarities and differences.*



**Estimated Time: 35 Minutes**

# FOURTH GRADE PROGRAMS



15

Below are programs that are suggested for fourth grade students. Most programs typically involve a story followed by an activity or craft to go along with the topic. Activities can be adjusted accordingly to your grade level.

## MACROINVERTEBRATES: INDICATORS OF CHANGE



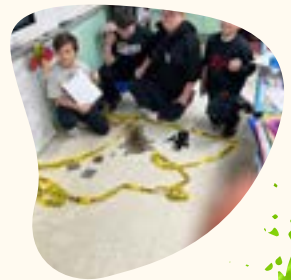
Macroinvertebrates are organisms that lack a spine and are large enough to be seen with the naked eye. Students will learn about their life cycle, how they are classified, and the importance they serve when determining water quality. This program will discuss how macroinvertebrates are classified by 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.

*Academic Standard: 4.LS.1: Changes in an organism's environment are sometimes beneficial to its survival and sometimes harmful.*

**Estimated Time: 35 Minutes**

## 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!



*Academic Standard: 4.LS.1: Changes in an organism's environment are sometimes beneficial to its survival and sometimes harmful.*

*Nature of Science: Observe and ask questions about the world that can be answered through scientific investigations.*

**Estimated Time: 35 Minutes**

## WETLAND WONDERS



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!

*Academic Standard: 4.LS.1: Changes in an organism's environment are sometimes beneficial to its survival and sometimes harmful.*

*Nature of Science: Observe and ask questions about the world that can be answered through scientific investigations.*

**Estimated Time: 35 Minutes**

\*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\*

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# FIFTH GRADE PROGRAMS

16



Below are programs that are suggested for fifth grade students. Most programs typically involve a story followed by an activity or craft to go along with the topic. Activities can be adjusted accordingly to your grade level.

## OWL PELLETS

Students learn about what owl pellets are and how they are used in the scientific study of owls. 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), tweezers/toothpicks, magnifying glass, and a chart displaying the bones of common animals consumed by owls. Students examine the owl pellets, reconstruct prey skeletons, and hypothesize the prey of their particular owl.



*Academic Standard: 5.LS.1 Organisms perform a variety of roles in an ecosystem.*

*Academic Standard: 5.LS.2 All of the processes that take place within organisms require energy.*

**Estimated Time: 45 Minutes**

## ALL IN THIS TOGETHER

In this program, 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.

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 human food chain and food web! How many food chains can we build? Book this program to find out!



*Academic Standard: 5.LS.1 Organisms perform a variety of roles in an ecosystem.*

*Academic Standard: 5.LS.2 All of the processes that take place within organisms require energy.*

**Estimated Time: 35 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 watersheds, 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 Nonpoint Source Enviro scape 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



*Academic Standard: 5.LS.1 Organisms perform a variety of roles in an ecosystem.*

*Academic Standard: Geography Strand-Human Systems #7: The variety of physical environments within the Western Hemisphere influences human activities. Likewise, human activities modify the physical environments.*

**Estimated Time: 35 Minutes**



# FIFTH GRADE PROGRAMS

17

Below are programs that are suggested for fifth grade students. Most programs typically involve a story followed by an activity or craft to go along with the topic. Activities can be adjusted accordingly to your grade level.



## **INVADERS!**

What would your reaction be if someone came to your house, took over, and didn't want to leave? This program will introduce invasive species (both plants and animals) looking at what they are, how they are transported between ecosystems, and the damage they can present to the native species that have been in that ecosystem all their lives. We will examine how introduction of invasive species can often be accidental but there are instances where it is intentional such as the Ohio Department of Natural Resources (ODNR) stocking a lake with fish to create better fishing opportunities. In this activity, students will participate in a full-body movement "musical chairs-style" game where they will simulate competition for habitat and resources.

*Academic Standard: 5.LS.1 Organisms perform a variety of roles in an ecosystem.*

*Academic Standard: 5.LS.2 All of the processes that take place within organisms require energy.*

*Academic Standard: Geography Strand-Human Systems #7: The variety of physical environments within the Western Hemisphere influences human activities. Likewise, human activities modify the physical environments.*



**Estimated Time: 35 Minutes**

## **FROM 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, competition, and advertising. Then, using common food items, students will do activity where they will learn where resources for their favorite foods (incorporating the economics of how the products get from producer to consumer), clothes, cars, and much more come from (factory, store, natural resource, farm). While examining crop and product samples, connections will be discovered between food, land, and people.

*Academic Standard: 5.LS.1 Organisms perform a variety of roles in an ecosystem.*

*Academic Standard: 5.LS.2 All of the processes that take place within organisms require energy.*

*Academic Standard: Geography Strand-Human Systems #7: The variety of physical environments within the Western Hemisphere influences human activities. Likewise, human activities modify the physical environments.*

**Estimated Time: 35 Minutes**

## **ADVENTURES IN VERMICOMPOSTING**

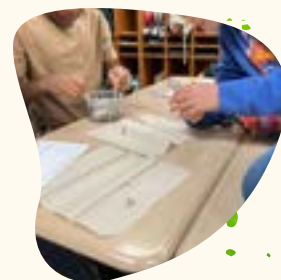
Living things function and interact with their physical environments while causing changes in the environments where they live. Vermicomposting is one way that red worms contribute to change in their environment and is the process of using worms ("vermin" is Latin for worm") to recycle organic food waste into a nutrient-rich soil. Students will put their observation skills to use looking at a bin of worms that are actively consuming food waste and creating compost. Students document what they see going on (what foods can they find, where is the compost, any other animals in the bin beside worms?). We will then see the reaction of the worms to different stimuli (dry surface, being picked up, etc.) 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.

\*This program has variations for higher or lower grade levels\*

*Academic Standard: 5.LS.1 Organisms perform a variety of roles in an ecosystem.*

*Academic Standard: 5.LS.2 All of the processes that take place within organisms require energy.*

**Estimated Time: 35 Minutes**



# ADDITIONAL PROGRAMS & SERVICES

Take a look at some of the additional services that Lucas SWCD can offer to your classroom or group!



18

## 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; savannahs, wetlands, and prairies; 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 can be customized. BCCA is open to scheduled groups only. BCCA is a partnership of 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 ext. 2# or email [ptroyer@co.lucas.oh.us](mailto:ptroyer@co.lucas.oh.us).

## Teacher Workshops

SWCD Staff are available for workshops, seminars, and training for you and your staff. We can offer workshops at your school/site as part of your in-service trainings or we will offer workshops at a specific location during the summer. Teacher workshops are offered throughout the year for many of the curriculums listed below and much more!

### National Curriculum Offered:

- 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)
- Growing Up WILD/PLT (Pre-K)



# ADDITIONAL PROGRAMS & SERVICES

Take a look at some of the additional services that Lucas SWCD can offer to your classroom or group!



19

## Grant Assistance

Are you unsure of what funding sources are out there to make your projects a reality? Not sure how to get started with a proposal? Let us help you! Lucas SWCD is happy to provide any assistance with finding grant sources, writing a winning proposal, and grant management. Lucas SWCD can also provide workshops/trainings on these topics.

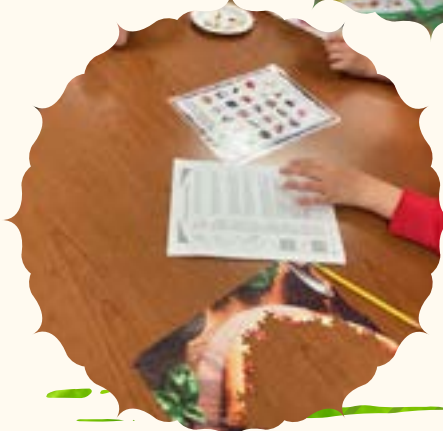


Our office is also happy to be a collaborator or partner on your grant project and provide assistance with carrying out the grant objectives and activities. Reach out to Patrick Troyer ([ptroyer@co.lucas.oh.us](mailto:ptroyer@co.lucas.oh.us)) to learn more!

## Loan Materials

We have an extensive loan library of videos, CD/DVDs, curricula, and reference books available for loan. The following supplies may be loaned out at no charge:

- Enviroscape Models
  - Drinking Water Treatment
  - Nonpoint Source
  - Wetlands
  - Hazardous Waste
- Groundwater Model
- Streamulator
- Rock Samples
- Fossil Samples
- Water Sample Kits
- Septic System Model
- Library materials





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### Lucas County Commissioners

*Tina Skeldon Wozniak*  
*Pete Gerken*  
*Lisa Sobecki*

The Lucas SWCD wishes to thank the following entities, whose financial support at the local level draws matching funds from the State of Ohio and/or in-kind support that enables the District to provide services to Lucas County:

- Lucas County Commissioners
- Cities of: Oregon, Toledo, and Sylvania
- Townships of: Harding, Jerusalem, Monclova, Richfield, Spencer, Springfield, and Sylvania
- Villages of: Holland; Ottawa Hills
- Lucas County Farm Bureau
- Lucas County Engineer's Office
- In-kind services from the USDA-NRCS, Ohio Dept. of Agriculture, and OFSWCD
- Grants from Ohio EPA and ODA