

PNW BOCES CENTER FOR ENVIRONMENTAL EDUCATION PROGRAM OFFERINGS FOR GRADE 3

PROGRAM	SCI 21 CORRELATIONS	SOCIAL STUDIES ENGLISH LANGUAGE ARTS CORRELATIONS
<i>A, Bee, C's of the Honey Bee</i>		
<i>Amazing Journey of Water</i>		
<i>Bat & Moth</i>	GR 3 UNIT 4	
<i>Birds & Raptors</i>	GR 3 UNIT 4	
<i>Butterflies</i>	GR 3 UNIT 4	
<i>Classroom Pond Study</i>	GR 3 UNIT 4	
<i>Cooperative Kindness: Team Building for Grades 3 & 4</i>		
<i>Compass Skill Building Game</i>		
<i>Composting: Nature's Recyclers and Decomposers</i>	GR 3 UNIT 1, 4	
<i>Coral Reefs</i>		
<i>Earth Portable Classroom (FEE)</i>		Unit 1 Lesson 1, 4
<i>Examining Invasive & Native Competition</i>	GR 3 UNIT 1, 4	
<i>Fearsome Predator: Carrying Capacity of an Ecosystem</i>	GR 3 UNIT 4	
<i>Food Webs: Who Eats Whom?</i>	GR 3 UNIT 4	
<i>Forest Ecology</i>	GR 3 UNIT 1, 4	
<i>Geology: Rockin the Valley/Earth Science: Rocks & Minerals</i>	GR 3 UNIT 3	
<i>Hibernation/Winter Adaptations</i>	GR 3 UNIT 4	
<i>How Beavers Built the Hudson Valley</i>	GR 3 UNIT 4	
<i>Hudson River</i>	GR 3 UNIT 3	
<i>Insects: Incredible Creatures</i>	GR 3 UNIT 4	
<i>Introduction to Sustainability</i>		Unit 6 Lesson 3
<i>Map Making Adventure</i>		Unit 1 Lesson 2
<i>Mapping Your School's Ecological Resources</i>		
<i>Marine Ecosystems</i>	GR 3 UNIT 1, 3, 4	
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PROGRAM	SCI 21 CORRELATIONS	SOCIAL STUDIES ENGLISH LANGUAGE ARTS CORRELATIONS
<i>Monster Storms with Jim Witt (FEE)</i>		
<i>Native American Study</i>		
<i>Nature Activities to Reconnect with Our Natural World</i>	GR 3 UNIT 4	
<i>Nature Scavenger Hunt</i>		
<i>Nature Story Telling</i>		
<i>Nocturnal World of New York</i>	GR 3 UNIT 4	
<i>No-Trash Lunch</i>		Unit 6 Lesson 3
<i>Owl Pellet Study</i>	GR 3 UNIT 4	
<i>Pollinator Partnerships</i>	GR 3 UNIT 1, 4	
<i>Pond Ecology (Spring Only)</i>	GR 3 UNIT 4	
<i>Seed Study</i>	GR 3 UNIT 1	
<i>Skull Study</i>	GR 3 UNIT 4	
<i>Snowshoeing Adventure</i>		
<i>Soil - The Basis of Life</i>		
<i>Supermarket Botany</i>		
<i>Teambuilding: see Cooperative Kindness</i>		
<i>Tree Life Cycles</i>		
<i>Tropical Rainforests</i>		Unit 3
<i>Turtles, Frogs, Toads, Snakes, What's the Difference?</i>		
<i>Understanding the Commons</i>		Unit 6 Lesson 3
<i>We All Live in a Watershed</i>		
<i>Weather</i>		
<i>Where Does Your Food Come From?</i>		
<i>Wildlife</i>		
<i>Wildlife CSI</i>		

A, BEE, C'S OF THE HONEY BEE SCI 21 ALIVE

Location: School **Presentation Style:** Assembly followed by individual class visits or individual class visits

Instructional Resources: PP Presentation, animal artifacts

Did you know? Only female honey bee's sting, honey bees visit at least 2 million flowers to make just one pound of honey and honey bees are responsible for over a third of the food we eat. These are just a few amazing facts this program will present that will have students looking at bees in a whole new way. In addition, this program covers pollination, anatomy, the honey bee's role in the ecosystem, and how important the honey bees are to humans. The current honey bee issues will be addressed and students will have a chance to see all of the equipment beekeepers use as they learn how we get honey from the hive to the jar.

AMAZING JOURNEY OF WATER SCI 21 ALIVE

Location: School **Presentation Style:** Assembly followed by individual class visits **Instructional Resources:** PP Presentation, a highly interactive "water molecule" simulation involving dice rolling and a representation of water moving around the world

Students will be introduced to watersheds and how water moves through and is stored in its various forms through the water cycle as well as the natural services water provides in an ecosystem. Building on this information, students will participate in an interactive activity where they will be viewing the water cycle from the point of view of a water molecule. They will be given different scenarios within a watershed to create their very own "Amazing Journey" as a water molecule.

BAT & MOTH

Location: School **Presentation Style:** Assembly followed by Individual Class Visits

Instructional Resources: PP presentation, bat and moth specimens and game

Students will play the role of bats and moths to get an idea of what it would be like to use a sense other than sight to catch prey. In addition to being a sensory game, students will learn about bats and their use of echolocation.

BIRDS & RAPTORS SCI 21 ALIVE

Location: School **Presentation Style:** Assembly followed by individual class visits or individual class visits

Instructional Resources: PP presentation, animal artifacts, animal ambassador

This program introduces students to the sights and sounds of birds, with a focus on their unique characteristics! Through our interactive presentation, students will explore bird adaptations such as feathers, beaks, and talons by examining our artifacts that include a variety of feathers, preserved bird specimens, and bird guides. Students will also have the opportunity to observe these adaptations on a live ambassador bird of prey.

BUTTERFLIES

Location: School/Madden **Presentation Style:** Assembly followed by individual class visits or individual class visits

Instructional Resources: PP presentation, butterfly specimens, coloring sheet

Students will learn about the function of camouflage, warning coloration, and other butterflies adaptations. After an introduction to metamorphosis, students will compare and contrast the butterfly and moth, and learn how to distinguish one from the other. Then, using their newfound knowledge they will color a butterfly cut-out before heading outside to play butterfly hide and seek. After playing the game, they will discuss which butterflies were easiest to find and how animals use coloration for protection.

CLASSROOM POND STUDY (spring only) SCI 21 ALIVE

Location: School

Presentation Style: Individual Class Visits

Instructional Resources: PP Presentation, live animals from a pond, preserved animals and specimens, ID Charts

This program is designed for groups that are unable to travel to Madden. Students will learn what makes a pond different from a lake and the amazing process of complete and incomplete metamorphosis. Through the use of organisms from Madden's pond, students will have a chance to get a close look at the creatures and learn about their role in the ecosystem, how these animals depend on one another and their habitat, their place in the food web and the conditions needed for a healthy pond.

COOPERATIVE KINDNESS (TEAMBUILDING FOR GRADES 3 & 4)

Location: School/Madden

Presentation Style: Individual Class Visits

Instructional Resources: best done outdoors in an open indoor space

This program is designed specifically for children who are not yet developmentally ready for our regular team building programs. During the activities, our staff will take a more directive approach with the group in order to develop skills such as: cooperation, planning, inclusiveness, kindness and handling frustration in a positive manner while having fun together. **This program can be used by schools to support their Dignity Act Initiatives.**

COMPASS SKILL BUILDING GAME

Location: School

Presentation Style: Individual Class Visits

Instructional Resources: Compasses, Orienteering trail

Learning to use a compass is a valuable and exciting experience for students! Students will learn the parts of a compass and how to use it. They will then go outside to practice their newfound skills by navigating through a compass circle game set up by the instructor. For this game they will need a flat open area.

COMPOSTING: NATURE'S RECYCLERS AND DECOMPOSERS SCI 21 ALIVE

Location: School/Madden

Presentation Style: Assembly/Individual Class Visits

Instructional Resources: PP Presentation, live animal ambassadors, hands-on activities

Recycling of paper, bottles, and cans has become part of our culture. Now it is time to take the next step in recycling: school composting. Food leftovers are the single-largest component of the waste stream by weight, in the United States. Americans throw away more than 25% of the food we prepare, about 96 billion pounds of food waste each year. We spend about 1 billion dollars a year to dispose of food waste. This program will introduce students to the value of composting, the three different types of composting, and get up close and personal with some of the creatures that turn our food scraps into rich nourishing soil. This can be an informational program to teach students about composting or an introduction to creating a compost program for your school. The program can be presented to one class that would like to start a classroom compost program, or for the whole school to set up a school-wide program. For whole schools, our staff can work with your faculty to design a program tailored to your school's needs. This option is available for a special fee.

Grade 3 Programs

PNW BOCES Center for Environmental Education

TO BOOK A PROGRAM: <http://portal.pnwboces.org/cee/>



CORAL REEFS

Location: School

Presentation Style: Individual class visits

Instructional Resources: PP presentation, animal artifacts

Coral Reefs are one of the most diverse ecosystems on the planet and are often compared to the tropical rainforests! This program is taught by Dorna Schroeter, CEE Program Coordinator, who has spent the past 30 years diving, exploring, and studying the coral reefs of the Florida Keys. Through a multimedia presentation, the group will descend to a coral reef to examine its abundance and beauty. Students will explore where reefs are located and why, who lives there, the health of today's reefs, humankind's impact on this incredible ecosystem, the coral polyp and how it functions, its role, adaptations, and interactions among the reef creatures. Incorporated throughout the program will be stories from Dorna's 500 dives that will engage, excite, and motivate students!

Assembly Model Not Available - 1-2 classes/1 hour

EARTH PORTABLE CLASSROOM (SPECIAL FEE)

Location: School

Presentation Style: Individual Class Visits to predetermined location at school

Instructional Resources: Introduction and 20'x22' Inflatable Scale Model of the Earth

Available in late May to early June, this unique program brings a 20' high x 22' diameter hand-painted representation of our earth into your school. Your class will enter the globe through a zipper along the International Dateline in the Pacific Ocean. Once inside, students can participate in activities covering: continents, oceans, mountains, rivers, cities, geographic terms and places in the news. They may also discuss environmental issues such as rainforests, coral reefs, ozone, pollution, and growing deserts. Program length is 40 minutes for 3rd grade. The globe can accommodate no more than 25 students. NO MORE THAN six programs can be done in one day.

EXAMINING INVASIVE & NATIVE COMPETITION SCI 21 ALIVE

Location: School/Madden

Presentation Style: Individual class presentation

Instructor Resources: PowerPoint presentation, animal and natural artifacts

The health of our planet depends on a delicate balance of species. Humans are part of this balance but unfortunately our actions sometimes tip the scale. When we move plants to different regions, either intentionally or unintentionally, we introduce the native plants to a new competition. This program will begin in the classroom with an examination of plant competition. Then we will head out to your school grounds where we will identify native and invasive species and conduct population counts. Finally, we will chart and graph the data we collected and discuss possible future ramifications, trends and remediation techniques.

FEARSOME PREDATOR: CARRYING CAPACITY OF AN ECOSYSTEM SCI 21 ALIVE

Location: School

Presentation Style: Individual Class Visits

Instructional Resources: PP presentation, animal artifacts, animal ambassador

Lions, and tigers, and bears, oh my! Students will delve into the world of predators to learn what it takes to be on top. After examining the adaptations of successful predators, students will explore the unique relationship between predator and prey, learn about the value of keystone species, and how humans can live alongside the most fearsome of predators. Students will be given the opportunity to examine a live animal ambassador and asked to identify its' distinctive adaptations, and determine what part it plays in the ecosystem.

Grade 3 Programs

PNW BOCES Center for Environmental Education

TO BOOK A PROGRAM: <http://portal.pnwboces.org/cee/>



FOOD WEBS: WHO EATS WHOM? SCI 21 ALIVE

Location: School/Madden **Presentation Style:** Assembly/Individual Class Visits

Instructional Resources: Animal artifacts, hands-on simulation, live animal ambassador

This interactive program focuses on the daily flow of energy from the sun to producers and consumers, and why the producers are at the base of the food pyramid. Students will then participate in a hands-on simulation designed to help them understand how the balance of trophic levels and populations are crucial to a healthy ecosystem. During the presentation, students will meet a live animal ambassador and learn about its role in the ecosystem.

FOREST ECOLOGY SCI 21 ALIVE

Location: School/Madden **Presentation Style:** Individual Class Visits

Instructional Resources: Introduction using Live Animal Ambassadors, Animal Artifacts with interpretive hike to follow

The focus of this program is a guided hike either at Madden property or a local nature trail. Using interpretive stops, games, and 'hands-on' activities, the students will be introduced to the temperate forest and the relationships between the habitat and its inhabitants. This program can be adapted to any grade level and many focus areas including: food webs, human impact, sustainable management, problem solving, living and non-living things, and wildlife. A forest ecology program can also include a plot study, forest measurements, and tree identification.

GEOLOGY: ROCKIN' THE VALLEY/EARTH SCIENCE: ROCKS & MINERALS SCI 21 ALIVE

Location: School **Presentation Style:** Assembly/Individual Class Visits

Instructional Resources: PP Presentation, Geological artifacts, hands-on student experiments at stations

Is a rock really just a rock? During this program we will examine the three types of rocks: sedimentary, igneous and metamorphic to understand the differences between them. Using geological history and close examination we will determine why rocks are like puzzles, how fossils form, whether water is actually stronger than rock, where we get those amazing stones to polish our feet and delve into what truly makes a rock crumble!

HIBERNATION/WINTER ADAPTATIONS SCI 21 ALIVE

Location: School **Presentation Style:** Assembly followed by individual class visits or individual class presentations

Instructional Resources: PP presentation, animal artifacts, blubber experiment, live animal ambassadors

This program introduces students to the different adaptations and habits of both large and small organisms in the colder winter months. Students will identify the differences in organisms that go dormant, hibernate, migrate, and stay active to determine the role blubber and other physical adaptations play in the struggle to survive. This program also includes interactive stations where students will explore a variety of animal artifacts including animal pelts, preserved animal specimens, feathers, and skulls. The presentation concludes with a live animal ambassador that goes dormant or hibernates in the wild.

HOW BEAVERS BUILT THE HUDSON VALLEY SCI 21 ALIVE

Location: School **Program Style:** Assembly followed by individual class visits

Instructor Resources: PP Presentation, animal ambassador, animal artifacts, and Native American Artifacts

The ingenious beaver played an important role in the economic, cultural and ecological development of the Hudson Valley that can still be seen today. This program will use furs and skulls to introduce students to the beaver and what made its pelt so valuable. We will examine chew patterns to understand the beaver's unique ability to alter its environment. Then through a detailed and hands-on presentation, we will examine the beaver's place in the Hudson River's ecology; how the beaver trade influenced the relationship between the colonists and the Native Americans; the impact of the beaver trade on local tribes, why the beaver is on the official seal of New York City; the impact of their decline on the 18th century economy as well as the environment of the Valley, and how their return has had both positive and negative impacts for residents of the Hudson Valley.

HUDSON RIVER SCI 21 ALIVE

Location: School **Program Style:** Assembly followed by Individual Class Visits

Instructor Resources: PP Presentation, animal ambassador, animal artifacts, hands-on water activity

The Hudson River has played a dominant role in the history of New York State. Through discussion and an engaging presentation, this program will explore the history and ecology of the Hudson River. Special emphasis is placed on the river's ecological problems, the condition of the river today, current events, and the future of the Hudson. Through a hands-on activity using water and pollution simulations, students will actualize their role as caretakers of the Hudson River Watershed to understand the effects of pollution on the aquatic and terrestrial life in and around the Hudson.

INSECTS: INCREDIBLE CREATURES SCI 21 ALIVE

Location: School **Presentation Style:** Assembly/Individual Class Visits

Instructional Resources: PP Presentation, Madagascar Hissing Cockroaches, Animal Artifacts and other live specimens

Did you know that there are more than a million different kinds of insects on our planet? Through a presentation and hands-on activities, students will learn the specific characteristics that entomologists use to identify insects and compare them to their relative, the spider. Every student will become an "amateur entomologist" as they learn about simple and complete metamorphosis, the difference between pests and helpful insects and what role these insects play in our ecosystems. This program includes a live animal ambassador.

INTRODUCTION TO SUSTAINABILITY

Location: School **Program Style:** Individual Class Visits **Instructor Resources:** PP Presentation and materials relating to sustainability

Sustainability is a word that has become a part of our daily lexicon. This program is designed to help students better understand what it means and how it applies to our daily lives. We will begin by learning about the mental models we as a society have been operating under for the past one hundred years and how these attitudes have formed our behaviors. Using a systems model, we will then examine a set of daily behaviors and choices we all make and track the resources used and pollutants produced using marbles. Then we will learn about the natural laws that guide our planet and go back to reexamine the behaviors and choices through these laws to determine if the resources and pollution produced has changed. After comparing the usage results, we will learn about how to create behavior change and new habits. **Assembly Model Not Available - 1-2 classes/1 hour**

MAP MAKING ADVENTURE *SCI 21 ALIVE*

Location: School/Madden Presentation Style: Assembly/Individual Class Visits

Instructional Resources: PP presentation, Mapping boards and supplies, various map examples

Students will become junior cartographers in this marvelous mapping program! After learning about parts of a map and the many different types of maps, they will be broken up into small groups and challenged to map an area using the plane table mapping technique. This program includes options such as simple games, interactive presentations, and hands-on demonstrations. This program can be done either at Madden or on your school grounds.

MAPPING YOUR SCHOOL'S ECOLOGICAL RESOURCES *SCI 21 ALIVE*

Location: School Presentation Style: Individual Class Visits Instructor Resources: Introduction, biological field study and animal artifacts

After a brief introduction about how scientists calculate animal and plant populations, we will go outside and do a field study of the animals and plants found on your school grounds. The outdoor activity will include mapping, how to calculate estimates and the natural services provided by the flora and fauna found.

MARINE ECOSYSTEMS

Location: School Presentation Style: Individual Class Visits Instructional Resources: PP presentation, specimens, models

75% of the earth's surface is covered in water! This program introduces students to the different marine ecosystems and the life that inhabits our oceans. From the beach, down to the deep hydrothermal vent communities, using shells, plants and preserved specimens, models, colorful slides and real-life stories, participants will learn about the animals and plants that live there, why the ocean is important to us, how humans are impacting the ocean and some of the ways humans are using what they are learning from ocean animals to solve human problems.

MONSTER STORMS *SCI 21 ALIVE (SPECIAL FEE)*

This program can take place at Madden or your school. In this unique and engaging program, students will rotate between three activities:

- **WEATHER PROGRAM** with meteorologist and radio personality, Jim Witt
- **CLASS:** Animals as Meteorologists OR Climate Change. Both feature live animals.
- **HANDS-ON, INTERACTIVE ACTIVITY** focused on either: animal adaptations, sustainability or watersheds.

Program Length: 3 hours per block of 50 students

If taking place at your school:

- Number of Rooms Needed: 3
- Technology Needed: smart boards and Skype available on the computer in the room where Jim Witt is presenting

FMI: <http://www.pnwboces.org/pdf/Environmental/MonsterStormsFlier-Registration.aspx>

NATIVE AMERICAN STUDY

Location: School/Madden

Presentation Style: Individual Class Visits

Instructional Resources: PP Presentation, Native American Artifacts, Animal Artifacts, Live Animal Ambassador

This program takes a close look at the indigenous tribes of the Hudson Valley and their fascinating culture. Students will learn about their pre-European lifestyles and philosophies, meet a live animal ambassador, and take part in hands-on activities such as examining fur pelts, playing native games and looking at their toys, exploring native artifacts, and playing a matching game between Native American and present-day items. In longer programs, Native American games and storytelling activities can be included if requested. **Assembly Model Not Available - 1 classes/45 minutes - 1 hour**

ON TRIPS TO MADDEN, STUDENTS WILL VISIT A Native American WIGWAM.

NATURE ACTIVITIES TO RECONNECT WITH OUR NATURAL WORLD SCI 21 ALIVE

Location: School/Madden

Presentation Style: Individual Class Visits

Instructional Resources: Animal artifacts, and nature-based activities

Nature Deficit Disorder? Not here! We will take your students outside to learn and connect with our natural world through a series of fun and educational nature games! This program can complement almost any area of focus from predator/prey relationships, to camouflage, trees, or animals. Just let us know what you are studying! **Assembly Model Not Available - 1 classes/1 hour**

NATURE SCAVENGER HUNT

Location: School

Presentation Style: Individual Class Visit

Instructional Resources: Scavenger hunts, collection buckets, animal artifacts

Students will become detectives by using four of their five senses to search for a number of items in the outdoors such as a leaf, something round, water, or a live animal. Following the search, a discussion will focus on what they found and the role of those objects in our ecosystem.

NATURE STORY TELLING

Location: School

Presentation Style: Individual Class Visits

Instructional Resources: animal artifacts, props, books

This program gives your students the opportunity to experience story telling in its purest form. Using animated voices, gestures, expressions and in some cases, songs, our story tellers will present a story with a nature or Native American theme that will engage and enthrall your students. This program can be tailored for specific items, shapes, smells, and numbers for primary students and may be adapted to include local history and folklore for older students. Specific preferences can be made.

NOCTURNAL WORLD OF NEW YORK SCI 21 ALIVE

Location: School/Madden

Presentation Style: Assembly/Class Visits

Instructional Resources: PP presentation, listening to animal calls, animal artifacts, live animal ambassador

Using pictures of nocturnal and diurnal animals, students will be asked to create a list of differences between them and explore their special adaptations. Through the use of animal sounds, artifacts, and a live ambassador animal, students will learn about why some animals are active at night and how their specialized senses enable them to survive in the dark.

NO-TRASH LUNCH

Location: School

Presentation Style: Individual Class Visits

Instructional Resources: PP presentation, examples of different lunch packaging and recycling material

The average elementary school produces 324 pounds of lunch trash every day. That adds up to 58,329 pounds a year! Not only is that a lot of trash to deal with, but a lot of the packaging gets used once and thrown away. What a waste of natural resources! This program helps young people understand the consequences of throw-away lunches and how to pack a no-trash lunch.

OWL PELLET STUDY (MATERIAL FEE) SCI 21 ALIVE

Location: School

Presentation Style: Assembly followed by Individual Class Visits

Instructor Resources: PP Presentation, Live owl ambassador, animal artifacts

Owls are very unique birds that have fascinated humans throughout history. In this program, students will learn about their hunting and survival adaptations. They will be introduced to the sights and sounds of the owls native to New York State, and meet one of our resident ambassador owls! Following a discussion about the owl's unique digestive system, students will have the opportunity to dissect an owl pellet to determine what that owl had for dinner to help them understand the owl's role in the ecosystem! **Your district will be billed a material fee of \$2.00 per student.**

POLLINATOR PARTNERSHIPS SCI 21 ALIVE

Location: School/Madden

Presentation Style: Individual Class Visits

Instructional Resources: PP presentation, animal artifacts, game supplies

In this program, students will be introduced to the important interactions between plants and pollinators. Through our interactive presentation, students will investigate butterflies, hummingbirds, bees, and bats to learn how they are specially adapted to pollinate certain flowers and how flowers are dependent on pollinators. After exploring the various pollinator adaptations, we can either head outside to explore your school garden or woods to look for signs of pollination or play an exciting pollination tag game on your school's field.

POND ECOLOGY (SPRING ONLY) SCI 21 ALIVE

Location: Madden

Presentation Style: Individual Classes

Instructional Resources: Introduction, student driven collection of live specimens from Madden Pond, ID Charts

Students will determine the differences between a pond and a lake, before going outside to visit the Madden pond! There they will use scoop nets to catch samples of the animals and insects living in the pond. Following the collection period, the group will observe and identify their catch, using identification keys, learn about metamorphosis, interdependence, food webs, some of the organisms' fascinating adaptations as well as the conditions necessary for a healthy pond. If you can't come to Madden, we can bring the pond to you!! See our *Classroom Pond Study* program.

SEED STUDY SCI 21 ALIVE

Location: School/Madden

Presentation Style: Individual Class Visits

Instructional Resources: PP presentation, seed sorting activity, seed game

Through seed sorting and critical thinking, students will learn the differences between a seed and a non-seed in this fun, interactive program! The lesson will also include the parts of a seed and all of the different ways seeds travel. After investigating many different types of seeds, students will play a game where they find out how hard it is for seeds to sprout, and why they are so valuable to the natural world.

SKULL STUDY SCI 21 ALIVE

Location: School/Madden **Presentation Style:** Individual Class Visits

Instructional Resources: PP Presentation, animal artifacts, live animal ambassador

This program uses hands-on activities that emphasize critical thinking skills. It begins with a presentation which focuses on animal survival adaptations. Then, using skulls of endangered species and local animals, students will be asked to make observations of eye location, nasal passageways, and teeth configuration to draw conclusions and identify facts about each animal. In the last part of the program, students will be divided into groups to identify/create their own animal based on the skull assigned to them for study. This program includes a live animal.

SNOWSHOEING ADVENTURE (WINTER MONTHS/SNOW ONLY)

Location: School/Madden **Presentation Style:** Individual Classes **Instructional Resources:** Introduction, snowshoes, live animal ambassador

Before going outside to try out our snowshoes, students will learn about the history and physics of snowshoes. Animals that are adapted to the winter months and what makes them so good at moving from place to place in the snowy months will be examined. Students will also learn about animals that utilize snowshoeing technology. Then it's outside for a snowshoe adventure!

SOIL - THE BASIS OF LIFE SCI 21 ALIVE

Location: School/Madden **Presentation Style:** Assembly followed by individual class visits or individual class visits

Instructional Resources: PP presentation, live specimens, a soil making experiment

This program includes live specimens, a PowerPoint as well as a soil making experiment.

From the food we eat, to the clothes we wear, to the air we breathe, humanity depends upon the soil beneath our feet. Although it is only a thin layer of our planet, it nurtures life, supports cities, forests and oceans and feeds all terrestrial life on Earth. Soil could arguably be called Earth's most critical resource. Part biology, part chemistry and part CSI, students will learn the "dirt" on soil as we examine its remarkable properties, its crucial role in the carbon cycle, how it is made and its ecological importance.

SUPERMARKET BOTANY SCI 21 ALIVE SEE: WHERE DOES YOUR FOOD COME FROM?

TEAMBUILDING: SEE COOPERATIVE KINDNESS

TREE LIFECYCLE SCI 21 ALIVE

Location: School/Madden **Presentation Style:** Individual Class Visits **Instructional Resources:** PP presentation, leaf and twig presses, tree "cookies"

In this program, students will learn about the two fascinating cycles of a tree, how trees communicate their needs, and how they transfer their nutrients to neighboring plants before they die. After an interactive presentation, students will explore all parts of a tree from leaves to the trunk using our many leaf, twig, and trunk specimens. Using the information from the presentation, students will have the opportunity to count the annual rings in a tree "cookie" and deduce the life history of the tree.

TROPICAL RAINFORESTS *SCI 21 ALIVE*

Location: school **Presentation Style:** *Assembly followed by Individual Class Visits*

Instructional Resources: *PP presentation, animal artifacts, rainforest artifacts, live animal ambassador*

Tropical rainforests are home to more than half of the plant and animal species on Earth and are the oldest and most diverse ecosystems on our planet today! Yet deforestation of these amazing ecosystems is occurring at a rate of over 20 million acres of forests each year. Students will learn about the locations of rainforests around the world, the layers of a rainforest, and the unique plants and animals that inhabit them. Interactive stations with colorful and rare artifacts will give students a hands-on opportunity to discover more of the animals, products, and cultures found in these rainforests. This program will include a live animal ambassador during the stations.

TURTLES, FROGS, TOADS, SNAKES, WHAT'S THE DIFFERENCE *SCI 21 ALIVE*

Location: School **Presentation Style:** *Individual Class Visits* **Instructional Resources:** *PP presentation, Live animal ambassador, animal artifacts*

Turtles, frogs, toads, snakes... what's the difference? This program examines the characteristics and adaptations of amphibians and reptiles, and the differences among species within in each class. Students will then rotate through hands-on stations including amphibian and reptile artifacts and preserved specimens. Students will also meet a living reptile, to dispel some of common misconceptions about them.

UNDERSTANDING THE COMMONS

Location: School **Presentation Style:** *Individual Class Visits* **Instructional Resources:** *PP Presentation, hands on student activity, animal artifacts*

Healthy Commons such as air, biodiversity, climate regulation, our collective future, water, libraries, public health, heritage sites and top soil are what we all depend on, and for which we are all responsible. Through a series of activities, this program will introduce students to the concept of the commons, their value and importance in our lives and for our future. Together the group will establish a list of responsibilities, behaviors and actions to care for our Commons.

WE ALL LIVE IN A WATERSHED *SCI 21 ALIVE*

Location: School **Presentation Style:** *Individual Class Visits* **Instructional Resources:** *PP Presentation, hands-on water activity*

What's a watershed? Using hands on models students will explore watersheds and groundwater, point and non-point source pollution, and learn how this natural resource connects us all. The class will then learn about local water sources and issues that the Lower Hudson River Watershed is facing, and how they can reduce their impact on their watershed.

WEATHER SCI 21 ALIVE

Location: School **Presentation Style:** *Assembly followed by individual class visits or individual class visits*

Instructional Resources: *PP presentation, meteorological tools, data collection pages*

Rain, sleet, snow, humidity, muggy, what does it all mean!? This program will introduce the concepts and tools necessary to understand the weather. Students will learn about weather forecasting through the use of simple meteorology tools, how the water cycle affects our daily weather, and what different cloud types tell us about the coming weather. They will leave the program with an understanding of the importance of weather prediction and how to collect weather data. After a presentation indoors, we will head outside to use meteorology tools to collect data and then analyze and discuss the data collected to make a short-term forecast.

WHERE DOES YOUR FOOD COME FROM? (FORMALLY SUPERMARKET BOTANY)

Location: School/Madden **Presentation Style:** *Individual Class Visits* **Instructional Resources:** *PP Presentation, food samples and games*

What seeds do we find in the produce section of the supermarket? Exploring food typically found in the produce section, we will determine what parts are edible and if a new plant can be grown from a seed from one of those plants. Through games and activities, students will learn all about how food arrives at the supermarket and will never look at the produce aisle the same way again!

WILDLIFE SCI 21 ALIVE

Location: School **Presentation Style:** *Assembly/Individual Class Visits*

Instructional Resources: *PP Presentation, live animal ambassadors, animal artifacts*

This wildlife program is designed to give students an understanding of the classification system of animals, animal habitats, animal adaptations and consumers' crucial role within an ecosystem. Among the topics that will be discussed are camouflage, natural services such as how fox and possums keep ticks away, and threatened and endangered species. Through demonstrations and activities using pelts, skulls, and many of our rare animal artifacts, students will gain an up close and personal understanding of wildlife and their role in the ecosystem and our lives. The program includes several animal ambassadors.

WILDLIFE CSI SCI 21 ALIVE

Location: School/Madden **Presentation Style:** *Individual Class Visits*

Instructional Resources: *PP Presentation, Live animal ambassadors, animal artifacts, hand-on CSI activity*

Coyotes, raccoons, owls, bobcats, and thousands of other wild animals are impressive creatures to see in the natural world. Unfortunately for the curious observer, some of these animals are also among the most reclusive, their presence only evident through the clues they leave behind. Students will investigate several wildlife "crime" scenes to find evidence that can include tracks, scat, food remains, feathers or fur, to draw conclusions about who was there and what happened. The program will conclude with a discussion to help students better understand predator and prey relationships and the food chain, and will include a live animal ambassador.