Growing Nature Literacy in Libraries Resource Book
In today's world, there is a growing awareness of the need for children to have access to public places and outdoor learning opportunities that enhance their well-being, provide a variety of educationally appropriate formal and informal play activities, promote a direct experience with nature, and foster a sense of community and responsibility for the environment. Exposure to nature through play leads to exploration and discovery, engaging both the physical and mental abilities of the child and providing a holistic approach to learning and literacy. It is hoped that linking the concepts of early education and nature literacy will lead to an understanding and appreciation of the natural world.

Public libraries as local community institutions bring together early learning, family-centered practice, nature literacy, sustainable communities and, at the same time, stay true to their mission for sharing local resources. Outdoor learning spaces and programs for children, contiguous with the library, serve as another relevant learning path that takes advantage of the library's public accessibility, trained public service staff, and inclusive approach to serving all families in a recreational and educational space. By providing resources for families to connect with nature libraries offer a unique way to connect literacy, learning, and an appreciation for nature as a regular part of the library visit.

The "Growing Nature Literacy in Libraries Resource Book" is provided in partnership with National Grid Foundation, a supporter of nature literacy.
Sitting quietly in his garden, a little boy observes the eating habits of birds, bugs, butterflies, and other small animals. Includes instructions on how to make your own garden and a detailed illustration of plants typically found in a garden.

Identifies some of the things happening in nature while one goes about an ordinary day, such as a shark circling a reef while one brushes one's teeth or puffins eating fresh-caught fish while one eats dinner.

As Brother and Sister help Mama plant seeds in the garden, they discover the importance of seeds and how they become useful and important plants.

While her grandmother weaves a beautiful rug, Rose plays in a storm, and both find joy in the beauty that surrounds them.

Opposites abound in a colorful garden, including a closed bud, an open blossom, a short caterpillar, and a long snake.

A father and child grow vegetables and then make them into soup.

A mother and child plant a rainbow of flowers in the family garden.

When a mysterious vine appears in their carefully tended garden, a brother and sister patiently watch and wait to see what it becomes. Includes gardening activities and pumpkin recipes.

Examines some of the different animal babies at the pond, such as a duck, a turtle, and a loon. Includes note to parents on what to do at a pond.

Simple text reveals the anticipation of a boy who, having planted seeds while everything around is brown, fears that something has gone wrong until, at last, the world turns green.

A child describes the wonders observed during a family camping trip to the mountains in a story that introduces the reader to prepositions.


After helping her mother weed, water, and chase the rabbits from their garden, a young girl imagines her dream garden complete with jellybean bushes, chocolate rabbits, and tomatoes the size of beach balls.


A little girl hears the sounds of nature all around her when she follows a butterfly into a meadow.


A mother finds special ways to enjoy nature with her child all through the year.


Ten rabbits are hungry for supper but Mama Rabbit has nothing to put in her soup pot, so Papa sends the little ones to the garden where they discover increasing numbers of foods in many different colors.


City-girl Talia misunderstands her grandmother's request that she go to the garden for "root vegetables" but manages to find some she thinks are rude, as well as a good use for the rest she harvests. Includes a recipe for Rude Vegetable Stew.


Little Critter and his family work on growing a garden, and after planting seeds, watering each seedling, and waiting for the plants to grow, they have a green garden with lots of vegetables.


Invites the reader to count the inhabitants of a garden, from one to ten, such as four bunnies and nine inchworms.


Poses questions about nature, such as why birds sing and why leaves turn brown.


When Dora, Boots, and the twins find a magic watering can, they head to Isa’s flowery garden to try it out.


Photographs of vegetables and rhyming text celebrate vegetables in all their colorful and tasty variety.


Nature displays different colors to announce the seasons of the year.

Celebrates the shape of a spiral in nature, from rushing rivers to flower buds and even the shape of an ear.


A child explores the ordinary life of his extraordinary great-grandfather, as expressed in his topiary garden.


A young bunny goes to sleep and dreams of the soothing colors, shapes, sights, and sounds of nature.


During the four seasons of the year Buddy Bear and his mother go "leaf walking" and discover a lot of interesting things about leaves.


Increasing numbers of rabbits plant, tend, harvest, and eat produce from their garden.


One summer day, Buddy and his mother take a walk around a pond and observe the animals and insects that live there.


Little Mortimer Mouse, longing to see something green at winter's end, follows the lead of the big people and plants, waters, and weeds his last sunflower seed until, finally he harvests his crop.


Leaving the den as the weather warms, Baby Bear discovers blue birds, red strawberries, orange butterflies, and other colorful things in nature.


Throughout the day and into the night, a boy and his family observe the constantly changing sky.


Readers are invited to discover nature using their sense of smell, sight, hearing, touch, and taste.


Rosie's rival, Violet, outdoes her in everything until the class plants seeds for a unit on gardening.
**Easy Readers**

Biscuit and the little girl take care of the planet through small acts, from planting seeds to cleaning up, as they take part in a celebration of Earth Day.

Tucker Mouse decides to help a beetle band win the Battle of the Bug Bands, but when one of the beetles is injured, Tucker comes up with an idea to save the day.

A young boy becomes the "mother" to a goose, who becomes "mother" to a duck, as they learn about the rhythms of nature together.

When the beans that Lisa has planted are dug up by a dog, Corduroy reseeds the garden but he and Lisa are in for a surprise when the "beans" finally appear on the vines.

Zoe and Max visit the nature center where they see snakes, birds, and butterflies.

When the plants disappear from the community garden, Furlock and Muttson are called to the case. Can they follow the clues to solve the case of the community garden?

A group of students who call themselves "The Garden Crew" plant and tend a garden and finally have a big feast with all the food they have grown.

Fluffy the guinea pig learns all about growing vegetables when Ms. Day's class plants seeds.

Deciding to turn an old sandbox into a small vegetable garden, the students in Mrs. Connor's class have a challenging time convincing a reluctant Neil to participate in their gardening activities and taste the delicious treats that grow.

As the seasons change, a family shares both fun and chores in their yard.

Amelia Bedelia shows her niece Effie Lou how to follow instructions to the letter as they dust the potato bugs and sow seeds.

Annie and her bunny, Snowball, like to grow flowers in Annie’s backyard. Can Annie and Henry figure out a way to get more hummingbirds to come to Annie’s garden?


Olivia is planting a garden and she can’t wait to see what blooms from her mystery seeds. She knows she'll have the best plant in the entire class.


Floop invites his friend over for a snack but gets distracted when he goes into the garden to pick some flowers.


Friends Elephant and Piggie are playing outside when it starts to rain, and then they must decide what to do.


Mole is mad about magic until he takes his friend Mouse to a show that turns out to be all tricks, but then Mouse conjures up a special night program to show him the enchantment found in nature.


When Curious George sees Jumpy Squirrel burying an acorn, he tries to bury all his food, too. When he learns that not everything that is buried will grow, that he begins to understand about planting seeds.

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**Non-Fiction K - 2nd Grade**


Introduces the life cycle of plants, describing how a plant is grown from a seed, sprouts roots and leaves, and eventually forms a mature plant or flower which contains new seeds.


Simple text and photographs present the seeds of plants, how they grow and their uses.


When her grandmother, a devoted gardener, dies, a little girl inherits her gardening gloves and feels closer to her memory.


Offers a call to action for young readers to work together in order to change the direction of environmental crisis by taking steps to live in careful harmony with nature.
Expects what vegetables are, identifies varieties of vegetables, and details the health benefits of eating them.

An illustrated treasury of poems reflects the experiences of children as they encounter nature for the first time.

Illustrations and simple text describe the various vegetables people eat.

Simple text and pictures illustrate the importance of protecting nature.

Shares the ways wind, water, and birds disperse seeds to create the wild garden.

Describes how a compost heap operates, what it needs to work well, and what plants, insects, and bacteria help to break down the organic refuse found in one.

Describes and identifies nine birds, their eggs and nests.

Introduces children to the subject of agriculture, showing not only how plants germinate, grow and produce food, but also about the composition of soil and the creatures who live in it.

Discusses the life cycle of leaves, describes how they change color in the fall, and provides instructions for an autumn art project.

Provides instructions for indoor and outdoor gardening projects, as well as recipes and ideas for crafts using garden produce.

A fact-filled, colorful look at the amazing world of frogs including a call to action to protect these fascinating creatures.

Simple text and photographs describe birds and the nests in which they live.
Presents basic information about flowers, including colors, shapes, sizes, and parts.

Presents information about seeds, including where they come from, how they grow, and how they travel.

When Buddy Bear and his mother go to the Rock Ridge Nature Center, she teaches him all about rocks, including the different types, everyday uses, and the causes of erosion.

Features simple gardening projects from collecting seeds to growing a miniature desert garden.

### 3rd – 5th Grade Fiction

When her grandmother chains herself to the tree across from the school to save it from being cut down, fourth-grader Annie wants to die of humiliation but when she discovers the town's history, her attitude changes.

Budding naturalists Lucy and Benjamin are used to seeing fascinating animals and plants in the Florida Everglades where they live, but they can't imagine what they will find when they visit their cousin Gabe's New York City backyard.

In northern California, Julian Carter-Li and his friends, old and new, fight to save a grove of redwoods from an investment company that plans to cut them down.

Iris, a garden fairy, describes the duties of the garden fairies and the uses for the various plants in Pixie Hollow.

Just Grace uses her empathy superpower to figure out ways to make her best friend feel better, and she makes a difference for the environment too.

Two misfit children and other members of a Minneapolis, Minnesota, neighborhood are brought together by a woman creating a community garden.

Emma struggles with finding the perfect time to confess to her parents that she brought her pet ferret on vacation to Maine, and trying to save her favorite tree that a new neighbor wants to cut down.

In central Texas in 1899, eleven-year-old Callie Vee Tate is instructed to be a lady by her mother, learns about love from the older three of her six brothers, and studies the natural world with her grandfather, the latter of which leads to an important discovery.


Lanie Holland, loves science and nature, wants to go camping and explore the wilderness, while her family wants to stay home. Luckily Lanie finds someone else who loves the outdoors when her Aunt Hannah visits.


Eleven-year-old Jake Reynolds wants to save seal pups from the talons of bald eagles, protect his little sister Sierra and confront the wolf he is sure stalks Hidalgo Island. When Jake leads his best friend, Emily, into the woods in search of adventure, he discovers things about himself that he never knew existed.


Three little Swedish girls cultivate a big vegetable garden, sell their crops each Saturday at the market, and earn money for bicycles.


Amar is a happy-go-lucky little fairy. He knows that plants are powerful and have the amazing ability to heal. When he encounters Coron, a lost and injured little mole, can Amar use this power in order to help him?


When Alvin’s father takes him camping to instill a love of nature, like that of their home-town hero Henry David Thoreau, Alvin makes a new friend and learns that he can be brave despite his fear of everything.


After Maria Duartes’ father leaves the farm to find work, she must plant next year's crop. Her teacher instructs her on how to terrace the land and use compost to improve her garden so that her family can have enough food for the coming year.


Nine-and-a-half-year-old Maple and her older sister, Dawn, must work together to face treacherous terrain, wild animals, and poachers as they trek through Vermont's Green Mountains seeking a miracle for their prematurely-born sister.


Lucy looks everywhere for Lob, the magical man who helps her grandfather with the garden, even though no one else believes in him, and when her grandfather dies, she worries about what Lob will do without him.

Twelve-year-old orphan Roo Fanshaw, sent to live with an uncle she never knew in a largely uninhabited mansion on Cough Rock Island, discovers a wild river boy, an invalid cousin and the mysteries of a hidden garden.


The last remaining orange tree on a Southern California street brings together neighbors of all ages as they face their problems and anxieties, including the possibility that a mysterious stranger is a threat to their tree.


Ten-year-old Keisha and her family’s animal rescue center face more challenges involving a baby crow in a mailbox and a skunk found in the nearby community garden.


Helping Grandfather’s friend, Mr. Yee, who has broken his arm and cannot tend a beloved vegetable plot, the Alden children begin investigating when they discover that vegetables have gone missing and that someone is vandalizing the garden.


The Alden children are helping grow vegetables in a restaurant owner's garden, but when the tomato plants are moved from their original position the children begin to suspect that the move is connected to a robbery at the local bank.

Non-Fiction 3rd - 5th Grade


Presents a series of ideas for projects using materials such as stones, acorns, flowers, leaves, and sticks, from creating a greeting card, to pressing a flower, to making a rock insect.


An eleven-year-old artist shares her enthusiasm about birds through her own text and illustrations, and suggests ways in which young people can help with the preservation of bird life.


A photo-essay on the world of birds examines such topics as body construction, feathers and flight, the adaptation of beaks and feet, feeding habits, courtship, nests and eggs, and bird watching.


Explores the different types of animal eggs, from insects to reptiles, fish, and birds, and describes how different adult animals care for their eggs and the strange places they place them.

Presents alphabetically arranged entries, with information about various types of birds, describing such creatures as the hummingbird, duck, ibis, nighthawk, pelican, woodpecker and yellowleg.


An encyclopedia of the natural world covers the processes and life forms of the natural world, including ecology, cells, classification, and over one hundred individual species of plants and animals.


Introduces the environmental importance of "green" gardens that require less energy to maintain, and describes how to cultivate a "green" vegetable garden using rain water, compost, and Earth-friendly materials.


Provides step-by-step instructions on making crafts using natural and recycled materials, including plastic bottle bird feeders, CD mobiles, and pressed flower bookmarks.


Step-by-step instructions for crafts made from seeds, beans, and cones and information about reusing and recycling.


Step-by-step instructions for crafts made from flowers, leaves, and twigs and information about reusing and recycling.


Shows kids the dimensions of consumption, including diapers worn as a baby, bread eaten in a lifetime, and recycled cans, and explains how to create a sustainable way of living.


Poses questions based on observation of the natural world and then explores the answers, discussing such topics as types of frogs, why leaves change colors, and identifying animal tracks.


Youngsters looking to enrich their green thumbs while beautifying their homes will enjoy a comprehensive guide to indoor and outdoor gardening using nontoxic flowers, vegetables, trees, and houseplants to create herb gardens, rock gardens, and hanging plants.


An accessible reference for young gardening enthusiasts that shares 18 container gardening projects which include gift options, in an illustrated guide that also provides a glossary of terms and a resource list.

An interactive workbook chockfull of creative exercises for kids ages 8 to 13. Sure to engage the whole family in outdoor fun and year-round nature activities.


A biography of Rachel Carson interspersed with her own memorable quotes.


Describes the world of plants, including characteristics, life cycles and where they live.


Describes how flowers reproduce and grow, discussing the parts of a flower, pollen, carbon dioxide, photosynthesis, and the role of insects in pollination.


Explains why leaves change color in the fall, discussing photosynthesis, chlorophyll, leaf pigments, and which trees turn which colors.


As one season passes into the next, the backyard garden transforms and different family events are held there, in a colorfully illustrated collection of poems.


Describes the fascinating plant details that are too small for the unaided eye to see, and how these microscopic systems work to keep the plant alive and healthy.

**Books for Parents & Educators**


Designed to provide teachers and administrators with a range of practical suggestions for making the schoolyard a varied and viable learning resource. Provided is an outdoor activity sampler and information on incorporating technology into the outdoor learning experience.


Provides theories, practical suggestions, and activities to help encourage teachers to take advantage of the outdoors as an instructional tool.


Exciting spaces to play are vital to provide children with challenging, flexible, inclusive and stimulating opportunities to learn, develop and have fun together. This book provides readers with ideas for developing play environments that will meet the needs of the children in their care.

Focuses children's explorations to help deepen their understanding of water and its properties—including concepts related to water's flow, appearance and effect on objects.


Suggests family activities that require going outside every day of the year, from throwing a ball over the house and racing to see who reaches it first to mapping the changes in the night sky.


Extend your classroom outdoors, and you will quickly see how nature enhances the learning process in all academic areas, for all children. Filled with activities and tips, each chapter offers useful strategies and resources to bring out a child's inner nature lover.


A collaborative project of the National Arbor Day Foundation and Dimensions Educational Research Foundation reviewing Nature Explore classrooms.


Provides advice for parents and caregivers on encouraging children to engage in and enjoy healthy, safe outdoor activities, and suggests games, crafts, and other fun things to do in each season and after dark.


Make nature an integral part of the classroom! With rising childhood obesity rates and children's heavy use of electronics, the need for quality time in nature is greater than ever. Put away gadgets, turn off screens, and discover all that the natural world has to offer.


Introduces children ages three through kindergarten to the natural world in a special way. The accurate, scientific content is wrapped in age-appropriate exercises, experiments, and explorations that use children's imagination and natural curiosity.


Packed with basic gardening information that includes growing techniques, food safety, healthy eating tips, and nutritious snack food preparation.


Cultivates the powerful connection between gardening and ecology-themed literature. Chapters are built upon existing works of fiction.
This book is about a new movement in children's outdoor play areas, natural playscapes - where the entire space is filled with art, hills, pathways, trees, herbs, open areas, sand, water, music, and more.

Engaging stories and photographs illustrate ways to help infants, toddlers, preschoolers and elementary students discover the wonders of nature while strengthening foundational learning skills.

Whether you're a nature buff or nature-phobe, a literary genius or writing impaired, artistically talented or one who can't draw a straight line with a ruler and teaching gifted or challenged students in an urban, suburban, or rural school—you’ll wonder why you didn't think of this before.

Presents a study showing how a child's lack of connection to nature can cause obesity, distraction, and depression, and offers suggestions on how nature can be used to enhance problem-solving and critical thinking skills.

This magical book shows how to do 130 activities that connect grandmothers and grandchildren through nature, in the kitchen, the garden and the art room.

Presents over fifty lesson plans for using concepts from nature to teach topics in social studies, mathematics, science, creative arts, and language.

Presents twenty-seven concept walks that preschool and early elementary educators can use to help young learners expand their knowledge of the world around them, and to support their early literacy development. Includes planning and preparation materials, sample permission forms, and guidelines for conducting safe and educational walking trips.

Packed full of strategies and activities for enhancing outdoor play, this practical guide will enable practitioners to recognize the true value that outdoor spaces can have on a child's educational development.

The author combines anecdotal and theoretical insights with specific recommendations for education projects that address skills required in core subjects (math, science, language arts, etc.) while creating environmentally responsible young people.

Presents 52 open-ended activities to help you engage your child in the outdoors. No matter what your location, each activity is meant to promote exploration, stimulate imagination, and heighten a child's sense of wonder.


This engaging curriculum uses a mathematical lens to take children on an education-filled exploration of the garden. Dozens of hands-on activities hone math skills and promote inquiry, language arts, and nutrition.

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**Internet Resources**

Children & Nature Network  
[www.childrenandnature.org](http://www.childrenandnature.org)

Constructive Playthings  
[www.constructiveplaythings.com](http://www.constructiveplaythings.com)

Dimensions Educational Research Foundation  
[www.dimensionsfoundation.org/education/parenting/index.cfm](http://www.dimensionsfoundation.org/education/parenting/index.cfm)

The Early Years Institute  
[www.earlyyearsinstitute.org](http://www.earlyyearsinstitute.org)

Gardening with Kids  
[www.gardeningwithkids.org](http://www.gardeningwithkids.org)

Lakeshore Learning Materials  
[www.lakeshorelearning.com/home/home.jsp](http://www.lakeshorelearning.com/home/home.jsp)

NYS Department of Environmental Conservation  
[www.dec.ny.gov/education/2035.html](http://www.dec.ny.gov/education/2035.html)

Nature Explorium at Middle Country Public Library  
[www.natureexplorium.org](http://www.natureexplorium.org)

Nature Rocks  
[www.naturerocks.org](http://www.naturerocks.org)

Pick-a-Park  
[www.pickapark.org](http://www.pickapark.org)
Apple Festival

**Audience:** Kindergarten through 3rd grade with parent/caregiver. Older and younger siblings welcome.

**Description:** An afternoon festival featuring apples, including a wide array of activities such as:

- **Apple Stack:** Try to stack 5 apples on top of each other.
- **Apple Relay Races:** There are various races that can be done using apples such as, having the children balance the apples on spoons while trying to get from point A to point B without dropping them.
- **Apple Printing:** Cut apples in half and use a paint brush to paint on red, yellow or green tempera paint. Stamp the painted apple on paper.
- **Apple Seed Planting:** Have the children make small pots out of newspaper (use a wooden pot maker tool available from *Gardening with Children*) fill with dirt and plant an apple seed to take home.
- **Apple Taste Testing and Graphing:** Provide slices of four different types of apples and have participant place a paper apple representing the apple they like best on a large graph.
- **Storytelling:** A librarian can read books about apples and Johnny Appleseed or hire a storyteller to perform the story of Johnny Appleseed.
- **Caramel Apples:** Hire a programmer with a food handling license to provide this activity.

**Concept Connections**

**Audience:** Toddler and Preschool children with parent/caregiver.

**Description:** Parents/caregivers participate with their child in active exploration and learning activities in the Climb It! Build It! and Dig It! areas of the Nature Explorium. They learn how to encourage their child’s language development and understanding of early math and literacy concepts such as under, over, next to, on top of and up and down.

**Practical Tips:** It is important to model for parent/caregiver ways to encourage gross motor and language development with regard to spatial concepts.

**Materials:** blocks, tunnels, balance beams.
A Drop of Nature

**Audience:** Preschool through 5th grade with parent/caregiver.

**Description:** This drop-in program, held on various dates throughout the late fall, winter, and early spring invites patrons to stop in for nature activities the whole family can enjoy! If weather permits, these activities take place outdoors. The following are a sampling of the activities that have been offered:

**Ice Mobiles:** See the Appendix.

**Family Sign:** Twigs are glued onto cardboard in the shape of letters to spell the family’s name.

**Gelatin Babies:** Read a book about animals in winter and talk about what makes a good shelter. Have each child/family take a small paper cup with some liquid gelatin (their gelatin baby) outside and have them find/make a shelter for their gelatin baby. Leave the area and come back 20-30 minutes later and check to see if the gelatin babies are still liquid. If they are still liquid they provided their babies with a good shelter. If the gelatin has set they did not provide them with good shelter.

**Snow Dough:** White play dough is shaped into snowmen and decorated using white glitter and natural materials such as twigs and gravel.

**Winter Bird Feeder:** Spread shortening onto pinecones and roll in bird seed. Attach a string and hang from a tree.

Flashlight Scavenger Hunt

**Audience:** Preschool through 5th grade with parent/caregiver.

**Description:** Many people can walk around outside and never see or hear the nature around them. The Native Americans learned to see all that was around them and to them almost everything had a purpose or a use. Using the darkness and flashlights, families will focus on some of the pieces that make up nature during this nighttime program.

**Materials:** For a detailed list of activities and materials see the Appendix.

**Practical Tip:** You will need to adapt this Scavenger Hunt to your setting.

Float Your Boat

**Audience:** Kindergarten through 5th grade.

**Description/Purpose:** Children will explore the concepts of sink and float and then use what they have learned to design and construct a boat out of recycled materials.

**Materials:** A container with water (plastic under bed storage boxes work well), sink and float chart, experiment items (aluminum foil, modeling clay, paper clip, small sponge, toothpick, marble, plastic spoon, plastic straw, penny, and crayon). A supply of recycled materials large enough for the number of participants to build boats. Masking tape, paper clips, glue.
Go Outside!

**Audience:** Preschool through 3rd grade with parent/caregiver. Older and younger siblings welcome.

**Description:** These engaging outdoor activities will encourage family exploration of nature. Themes have included *Art and Color*, *Fall into Fall*, *Life Cycles*, *Life Underground*, *Rocks and Dirt*, *Seashore*, and *Water Exploration*. Each session starts with the children listening to a story or two on a particular theme followed by an explanation of the activities available for the families to participate in. The families are then free to participate in the activities presented in any order in which they choose.

**Materials:** For a detailed list of activities and materials see the Appendix.

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Haiku Hike

**Audience:** 4th through 6th grade.

**Description:** Participants will celebrate nature by taking a walk outside and writing a short Japanese haiku poem inspired by their surroundings. The phrase will be turned into a work of art by printing and illustrating it on a homemade haiku scroll.

**Materials:** Stationery/cardstock, plastic drinking straws, string, buttons, pen or marker, sample haiku poetry.

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Hammered Leaf and Flower Prints

**Audience:** 6th grade and up.

**Description:** Participants will learn about natural dyes and how to preserve the vibrant color of leaves and flowers by pounding them to release their natural dyes onto paper creating beautiful botanical cards or prints.

**Materials:** Plants such as ferns and pansies, paper towels, paper or card stock, scotch tape, hammers and wood boards.

**Practical Tip:** Set up a few pounding stations and have the teens come up a few at a time to hammer the plants. Provide an alternate activity to keep them busy as they wait, such as nature drawing or flower and leaf pressing.

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Happiness is Being Green

**Audience:** For families with children in Pre-K through 3rd grade and a group of teen volunteers.

**Description:** Families join teen volunteers in celebrating Earth Day by participating in a variety of activities. The program begins with a story time, and then teen volunteers help families and children with outdoor activities at each station. These activities include:

**Art Station:** Rock painting, Color-Me Quilt (from S & S Worldwide), Earth Day Photo Frames (from Oriental Trading).

**Game Station:** Learn to Recycle Activity Kit (from Lakeshore), Earth Day Matching Game and Recycled Relay Race created by Green Teen volunteers.

**Writing Station:** Colored paper and markers to create Earth Day storybook, “It’s All About Being Green” posters (from Oriental Trading).

**Planting Station:** Decorate seed pots with tissue paper and Earth Day shapes, then add potting soil and seeds.

**Story Time:** Suggested books, *It’s Earth Day!* by Mercer Mayer and *Biscuit’s Earth Day Celebration* by Alyssa Satin Capucilli.
Let’s Salsa!

Audience: Kindergarten through 5th grade and a group of teen volunteers.

Description: Children will read about the kinds of vegetables that are grown in the garden and learn how to make salsa with teen volunteers. Afterwards the teens will teach the children how to dance the salsa!

Materials: Book: Chicks and Salsa by Aaron Reynolds, CD: Salsa for Kittens and Puppies, maracas, salsa maker (purchased from Gardening With Kids), whole tomato, onion, bunch of cilantro, garlic, lime (to teach children about each vegetable/fruit), diced tomatoes, onions, cilantro, garlic, lime, salt (for Salsa recipe), Salsa recipe (for children to take home), tortilla chips, bowls, spoons, iced tea.


Practical Tip: Inquire with parents/caregivers regarding food allergies. Have teens who are helping with program make decorations.

Looking at Leaves

Audience: Preschool through 2nd grade.

Description: Through stories, games and art activities participants will take a closer look at leaves and find out more about them.

Materials: An assortment of books about leaves, a collection of many different types of leaves, paper, crayons, and pencils.


Outdoor Explore

Audience: Toddlers with Parent/Caregiver.

Description: Modeled after our traditional Toddlers Explore program but held outdoors with the addition of nature activities such as painting with pinecones and tree boughs, water exploration including boats and watering cans, sand play, digging in the dirt for plastic bugs, fruit and vegetable prints, experiencing textures in nature and more.

Nature Exploration: Patterns and Camouflage

Audience: 3rd through 5th grade.

Description: Children listen to stories and participate in fun activities while learning about how various animals’ colors and patterns help them to blend into their environment.

Materials: Various books on animals and camouflage, blue, yellow, red, and green toothpicks, brown pipe cleaners, peel and stick googly eyes, twigs, and printouts of various animals that use camouflage with descriptions.

Nature Sketch

Audience: 3rd through 6th grade.

Description: Multi-session class in which participants sketch, journal and share the beauty of nature in the Nature Explorium.

Materials: small journals, pencils, and colored pencils.
**Pizza Harvest**

**Audience:** Kindergarten through 5th grade.

**Description:** Children will listen to a story about pizza and the ingredients used, and then create their own personal pizza to take home using ingredients grown during the summer in our “Pizza Garden.”

**Materials:** Plastic gloves, paper plates, aluminum foil, flat pitas, tomato sauce, sliced tomatoes, shredded mozzarella cheese, basil, oregano, onions, and sliced peppers. Recommended books: Pizza at Sally’s by Monica Wellington, Pete’s a Pizza by William Steig, Hold the Anchovies!: A Book About Pizza by Shelly Rotner and Julia Pemberton.

**Practical Tip:** Inquire with parents/caregivers regarding food allergies.

**Rock Art**

**Audience:** Kindergarten through 5th grade.

**Description:** Children will create art pieces using small rocks, modeling clay and other natural materials such as small shells, leaves, and cones.

**Seedfolks**

**Audience:** 4th grade and up.

**Description:** Participants gather outdoors at the library to read and discuss, Seedfolks by Paul Fleischman, a book about an urban garden that brings a new sense of hope and community to a bleak Cleveland neighborhood. After reading the book, participants attend additional sessions helping out at Hobbs Farm, a local community garden.

**Practical Tip:** Offer community service hours for participants who attend all of the sessions.

**Sense It!**

**Audience:** Preschool through 2nd grade.

**Description:** Children learn about their five senses while exploring our sensory garden. Through hands-on activities they discover how our senses work together to help us understand the world around us.

**Materials:** Container garden(s) containing plants that stimulate each of the five senses.

**Practical Tip:** Inquire with parents regarding any food allergies.

**The Shape of Things**

**Audience:** Kindergarten through 2nd grade.

**Description:** Children participate in fun activities as they identify common shapes appearing in natural and built environments and draw pictures of natural objects that resemble particular shapes.

**Materials:** Construction paper shapes with holes punched in them, string or yarn, drawing paper, crayons or markers, and clip boards.

**Terrific Terrariums**

**Audience:** School Age and Teen students.

**Description:** This program can be adapted to suit a variety of age groups. Participants can either learn about the rain forest, water cycle, or plant lifecycle and then create a self-contained mini greenhouse.

**Materials:** Large plastic jars with a wide mouth, soil, sand, activated charcoal, gravel, Spanish moss, and small plants.

**Practical Tip:** Setting up a work station and having a few participants come up at a time to create their terrarium works well. You will need to provide another activity to do while they are waiting, such as using paint pens to decorate the lid or creating water cycle or plant lifecycle wheels.

**Under a Shady Tree**

**Audience:** Toddler and Preschool students.

**Description:** A nature-themed story time and songs held outdoors.

**Practical Tip:** Have families bring a blanket to sit on.

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**Programmers**

- **Bari Koral Family Band**  
  Musician/Yoga  
  [www.barikoral.com](http://www.barikoral.com)  
  lauri@treetopartists.com

- **Cold Spring Harbor Whaling Museum**  
  Art/Science/History Education  
  [www.csharborwhalingmuseum.org](http://www.csharborwhalingmuseum.org)  
  631-367-3418

- **Cornell Cooperative Extension Sport Fishing Education Center**  
  Marine Science/Environmental Education  
  [ccesuffolk.org/sportsfishing-education-center](http://ccesuffolk.org/sportsfishing-education-center)  
  631-587-2873

- **Cornell Cooperative Extension Suffolk County Farm**  
  Agricultural/Animal Science/Environmental Education  
  [ccesuffolk.org/Suffolk-County-Farm/](http://ccesuffolk.org/Suffolk-County-Farm/)  
  631-852-4603

- **Johnny Cuomo**  
  Musician/Nature/Storytelling  
  [www.johnncuomo.com](http://www.johnncuomo.com)  
  631-751-6633

- **Johnda Ferrari**  
  Science/Nature Educator  
  [www.johndaslane.com](http://www.johndaslane.com)  
  516-746-6153

- **Heather Forest**  
  Storyteller/Musician/Author  
  [www.storyarts.org](http://www.storyarts.org)  
  631-271-2511

- **Long Island Science Center**  
  Biology/Earth/Environmental Science  
  [www.lisciencecenter.org](http://www.lisciencecenter.org)  
  631-208-8000

- **Melissa Kurtz**  
  Environmental Education/Master Gardner  
  631-474-5091

- **Eric Powers – Your Connection to Nature**  
  Environmental Education  
  [www.YC2N.com](http://www.YC2N.com)  
  631-241-0088

- **Susan Sears**  
  Science Educator  
  susan.m.sears@gmail.com  
  631-331-5642

- **Sweetbriar Nature Center**  
  Natural Science Education  
  [www.sweetbriarnc.org](http://www.sweetbriarnc.org)  
  631-979-6344

- **Judy Wilson**  
  Nature/Environment, Visual Arts/Crafts  
  lktome79@optonline.net  
  631-473-9290
Outdoor Nature Areas to Explore on Long Island

**Avalon Park and Preserve**
200 Harbor Road
Stony Brook, NY 11790
631-689-0619
info@avalonparkandpreserve.org
Avalon Park and Preserve was created by the Paul Simons Foundation. This 8-acre park was once a residential site. The park and preserve provide habitat for numerous woodland animals, such as rabbits, squirrels, red fox, box turtles and many bird species.

**Bailey Arboretum**
194 Bayville Road
Lattingtown, NY 11560
516-571-8020
www.baileyarboretum.org
Bailey Arboretum’s gardens, woods and ponds cover 43 acres. Their Children’s Habitat includes areas for building, digging, performing (platforms and musical instruments), and exploring nature. They welcome picnickers, sponsor a variety of special events including guided woodland walks, and have well-marked trails complete with suggestions for family and school/scout activities. Classroom space and bathrooms are fully accessible and there is ample off-street parking.

**Brookhaven Ecology Site**
249 Buckley Road
Holtsville, NY 11742
631-758-9664
The Town of Brookhaven Ecology Site, Park & Animal Preserve is located on a reclaimed landfill. Some of the amenities at the Holtsville Park include a triple pool complex, exercise-trail fitness course, nature preserve and ecology center, and zoo featuring buffalo, bobcats, and eagles.

**Caleb Smith State Park Preserve**
581 West Jericho Turnpike
Smithtown, NY 11787
631-265-1054
Nestled in the heart of Smithtown, Caleb Smith State Park Preserve is one of only two state nature preserves on Long Island. Within its 543 acres are a variety of habitats offering guests picturesque views that change with the seasons.

**Caumsett State Historic Park**
25 Lloyd Harbor Road
Huntington, NY 11743
631-423-1770
Caumsett State Historic Park is situated on a scenic peninsula extending into Long Island Sound. The park offers miles of bridle paths, walking, jogging, hiking, biking, cross-country skiing and nature trails over acres of woodland, meadows, rock shoreline and salt marsh. Caumsett has beautiful gardens, excellent fishing and scuba diving by permit.
At the CSTL you will see baby alligators, fish, reptiles and amphibians. This is a good place to visit animals in indoor and outdoor environments. Most are rescued creatures that cannot be reintroduced into the wild. CSTL is located at Tanglewood, a beautiful 17-acre nature preserve. The campus is comprised of restored turn-of-the-century buildings including an exhibit hall, multi-purpose room, and barn which can accommodate large groups simultaneously. Throughout the preserve, Tanglewood has peaceful ponds, streams, and nature trails for visitors to enjoy.

Clark Botanic Garden
1931 I.U. Willets Road
Albertson, NY 11507
516-484-2208
clarkbotanic.org
Founded in 1969, Clark Botanic Garden is a 12-acre living museum and educational facility. It is dedicated to understanding and appreciating the world’s plant life through horticulture, education and research. Collections at the garden include native spring wildflowers, conifers, roses, perennials, daylilies, wetland plants, rock garden plants, herbs, butterfly plants, medicinal plants and over a dozen collections of particular plant families.

Cold Spring Harbor Fish Hatchery and Aquarium
1660 Route 25A
Cold Spring Harbor, NY 11724
516-692-6768
www.csfha.org
Cold Spring Harbor Fish Hatchery and Aquarium is the largest living collection of New York State freshwater reptiles, fishes and amphibians. Visitors can tour two aquarium buildings and eight outdoor ponds, feed the hungry trout, and try “Catch & Keep” fishing.

Garvies Point Museum and Preserve
50 Barry Drive
Glen Cove, NY 11542-1765
516-571-8010
www.garviespointmuseum.com/
With interactive exhibits and dioramas of the daily life of the Native Americans who once lived on the Long Island, Garvies Point Museum and Preserve shows visitors the cultural and natural history of this area. Museum maps and exhibits explain how Long Island was formed when glaciers deposited debris in the area. There are exhibits on plate tectonics and LI's geology, with samples of local rocks and minerals. The museum is also a research facility, and there is a large scale model of the archaeological excavations in the area.
Hoyt Farm Nature Preserve
200 New Highway
Commack, NY 11725
631-543-7804
www.smithtowninfo.com/HoytFarm/

The Hoyt Farm Nature Center is an exciting and educational place. They have many live animals, including snakes, frogs, salamanders, turtles, and fish. Educational displays describe life on Long Island from the beaches to the trees and features the Native American artifact collection.

Long Island Children’s Museum
11 Davis Avenue
Garden City, NY 11530
516-224-5800
www.licm.org

The Long Island Children's Museum Backyard is a 3,600 sq. ft. garden exhibit that invites children to investigate the environment using all of their senses. Children are encouraged to touch, smell, look, listen and sometimes even taste, as they develop a sense of wonder and appreciation for the natural world. During their exploration, they can discover how to tell time by the sun, measure rainfall, learn about herbs in the "Spa Garden" and make bird feeders or sun catchers. A water play area offers the chance to make sun showers "on demand," race boats down two rills in the current and play in natural streambeds crossed by bridge or stepping stones. The area offers ample opportunities to engage in gross motor play as children climb through and on a giant tire, move gravel and sand with rakes or wheelbarrows, and direct the flow of water by rope pump and pulleys, gutters and buckets.

Mashomack Preserve—Shelter Island
Route 114,
Shelter Island, NY 11964
631-749-1001
www.shelterisland.org

Mashomack Preserve is a natural area of nearly 2,100 acres which encompasses diverse habitats necessary for the survival of many species of plants and animals. Edged in white by 10 miles of coastline, Mashomack is an area of magnificent scenic beauty. Its combination of interlacing tidal creeks, woodlands, fields and coastline makes it a superb wildlife habitat. The extensive salt marshes of Mashomack are vitally significant ecologically, being the breeding ground and nursery for the smallest links in the marine chain of life.

Nassau County Department of Parks
516-572-0200
www.nassaucountyny.gov/agencies/Parks/WhereToGo/index.html

The Nassau County Department of Parks, Recreation and Museums manage over 60 parks, preserves, museums, and recreational facilities. These include “Active” parks, which are large, offer diverse activities, and “Passive” parks, which are far smaller and limited to local usage, in many cases consisting of a single athletic field or small “green” area. Museums provide a range of artistic and educational experiences for the public. The preserves offer examples of most of the ecosystems that can be found on Long Island, including Prairie-Hempstead Plains, which is an endangered habitat, and Upland Forest.
Sands Point Preserve Nature Trails and Habitats
127 Middle Neck Road
Port Washington, NY 11050
516-571-7900
www.sandspointpreserve.org
The 216-acre Sands Point Preserve is an interesting mixture of natural and landscaped areas. Forests, meadows, beach and cliffs, lawns, gardens and a freshwater pond provide habitats for a variety of plants and animals. The proximity of different habitats affords the visitor a varied outdoor experience within a relatively limited area. Nature Trails provide access to the preserve and highlight specific points of interest in self-guiding literature.

Seatuck Nature Center
P.O. Box 31
Located at Scully Estate
South Bay Avenue
Islip, NY 11751
631-581-6908
www.seatuck.org
The Suffolk County Environmental Center is a public nature center located on the Scully Estate in Islip, New York. The facility, which opened on Earth Day 2010, is operated by the Seatuck Environmental Center through a long-term custodial agreement with the Suffolk County Department of Parks, Recreation and Conservation.

Science Museum of Long Island
1526 North Plandome Road
Plandome, NY 11030
(516) 627-9400
www.sml.org/
The Science Museum of Long Island is a not-for-profit science activity center located on the Leeds Pond Preserve in Nassau County. The Science Museum offers enrichment workshops for children on weekdays and during school vacations. Teachers and community leaders are invited to learn about their field trips, as well as programs they can bring to your site.

Southaven Park
Victory Avenue,
Brookhaven, NY 11719
631- 854-1414
The Carmans River flows through this scenic, pine-oak forested park. Southaven is a popular picnicking site, containing group areas capable of accommodating up to 1,000 people. Southaven's 1,356 acres also offers a bicycle hostel. Boating and freshwater fishing are permitted. Camping is also available, with sites for tents and trailers.
Suffolk County Farm’s Nature Explore Classroom
350 Yaphank Avenue
Yaphank, NY 11980
631-852-4603
http://ccesuffolk.org/nature-explore-classroom/
Tucked away on a 250-acre working historic farm, you will find Suffolk County Farm’s Nature Explore classroom, lined with 50 feet tall arborvitaes on one side and flowering cherry trees on the other. The classroom will allow plenty of messy play, building, and interactive art exploration while maintaining a true farm feeling. The herb garden stands adjacent to the 138-year-old hay barn and the sounds of bleating sheep and a braying donkey are never too far off!

Suffolk County Department of Parks
631-854-4949
www.suffolkcountyny.gov/Departments/Parks.aspx
The Suffolk County Parks System manages over 46,000 acres of parkland from Montauk to Huntington. Popular activities within the Suffolk County Parks System include golfing, camping, horseback riding, swimming, hiking, fishing, outer beach (shoreline) activities, boating, or visiting one of Suffolk’s historic sites such as the Big Duck, an all-time favorite.

Sweetbriar Nature Center
62 Eckernkamp Drive
Smithtown, NY
631-979-6344
www.sweetbriarnc.org
Sweetbriar Nature Center is situated on 54 acres of varied garden, woodland, field and wetland habitats on the Nissequogue River. Visitors can observe hundreds of species of plants and animals.

Tackapausha Museum and Preserve
Washington Avenue, between Merrick Road and Sunrise Highway
Seaford, NY 11783
516-571-7443
Tackapausha Museum and Preserve is operated by the Nassau County Department of Recreation and Parks. An interesting selection of Long Island wildlife and their habitats are on display with special presentations focusing on various subjects. Accompanying the museum is a large preserve for nature walks.

Theodore Roosevelt Sanctuary and Audubon Center
134 Cove Road
Oyster Bay, NY 11771
516-922-3200
http://ny.audubon.org/CentersEdu_TRoosevelt.html
Theodore Roosevelt Sanctuary & Audubon Center, located in Oyster Bay, was established in 1923 as the first Audubon Songbird Sanctuary in the nation. Twelve acres were donated by W. Emlen and Christine Roosevelt in memory of their cousin, the late Theodore Roosevelt, the 26th President of the United States. The Sanctuary’s original purpose was to provide a protected environment for songbirds whose populations were declining due to habitat loss. Today, it is a vibrant resource offering a wide variety of activities, including environmental education, wildlife research, and conservation advocacy.
Wertheim National Wildlife Refuge
360 Smith Rd.
Shirley, NY 11967
631-286-0485
www.fws.gov/northeast/longislandrefuges/wertheim.html
Wertheim hosts a variety of habitats including oak-pine woodlands, grasslands, and fresh, brackish and salt water wetlands. These habitats attract and support many types of wildlife including white-tailed deer, osprey, muskrat, fox, turtles, frogs and fish. The refuge also serves as a haven for waterfowl, shorebirds, raptors, and songbirds.
Appendix
Flashlight Scavenger Hunt

So many people can walk around outside and never see or hear the nature around them. The Native Americans learned to see all that was around them and to them almost everything had a purpose or a use. Tonight we will use the darkness and our flashlights to focus on some of the pieces that make up nature.

Welcome to the “Flashlight Scavenger Hunt”. Now as in most scavenger hunts you will go out and attempt to collect items from a list. You’ll return with as many of these items as you can find. Now here’s where our hunt will be a little different from the standard scavenger hunt. Some of the items you will bring back others you will leave undisturbed as you found them. Some items you will use the supplies from your kit to produce rubbings or drawings of and you will return with these as your items. Some will be sounds you will listen for or items that you may touch and smell.

Now as in every game there are RULES. The rules for this are fairly simple but for the sake of safety they must be followed.

Absolutely no running is permitted! This is not a race and a lot can be found in a short amount of time.

Every group must stay together and with their parent /caregiver!

Tread lightly when you are off the road or path! Try to avoid stepping on plants, don’t break limbs from trees, if you find any wild life observe it but do not disturb it. In other words leave no trace!

If you find litter bring it back as each item will be worth 5 points.

Try to be as quiet as you can. Some of the things you are searching for you may miss if you are not listening.

Each participant will have a list of the items but the adult will have the official check off list. If you hear, see, or otherwise find an item on the list you need to bring it to the attention of the adult helper.
Flashlight Scavenger Hunt

Can you make tree bark rubbings from the following trunks?
  - Oak
  - Willow
  - Fruit tree

Bring back one piece of gravel or a small rock.

Pick up any leaf from the ground and bring it back.

Can you hear any bird calls?

How about an animal sound? What do you think it is?

Make a rubbing of a local animal from the Friend’s Bench.

Remember! If you find any litter and bring it back you get 5 bonus points.

Can you see a pinecone up in a tree or one on the ground? Draw it.

Find beach grass and draw it using your paper and crayons.

Is there any frost or snow this evening on the plants or ground?

Bring a piece of the “Dig It” area back with you.

Find the first letter of your name on the “ABC Trail.”

What plants can you identify in the “Grow It” planters? Smell and touch each one to identify them.
  - Tomato
  - Lamb’s ear
  - Basil
  - Oregano
  - Cilantro
  - Geranium

Make a nature collage on one square of the “Create It” table.

Bring your rubbings, drawings, and items found to the base. After your points are tallied, please return any found items to their “homes” and the litter to the garbage. Return your flashlight to the base!
Go Outside- Art and Color

Read one of the following books to the group:

**Look! Look! Look!** by Tana Hoban - If you have a group that will sit and listen.

**Take a Walk on a Rainbow: A First Look at Color** by Miriam Moss - If you have a group that needs a quick read.

**A World of Colors: Seeing Colors in a New Way** by Marie Houblon - Skip the parts about looking for the colors because it will probably take too long. Instead, at the end of the book let them know that they can look for all these colors in the Nature Explorium and that one of the activities they will be doing involves looking for different colors.

Explain activities to the group.

- **Bubble Play:** Trays, bubbles, wands.

- **Painting with Water on Slate or Blue Stone:** Trays/buckets with water, paint brushes, slate.

- **Sidewalk Art:** Colored chalk, slate.

- **Nature Photography Scavenger Hunt:** Give each family a few different laminated photo sheets (please point out to the families that each one is two-sided). All of these photos were taken in the garden and they can search for the match.

- **Nature Art Table:** Objects from nature, for example: shells, pinecones, rocks, etc.

- **Nature Sketching:** Clipboards, pencils, colored pencils.

- **Paint Chip Search:** Have the children choose two paint chip colors, one they think they will find in nature and one they think they will not find in nature. Then have them search the garden/outside area for both.

- **Nature Texture Rubbings:** Paper, crayons with paper removed, nature rubbing plates and items in nature such as tree bark and leaves.

- **Camouflage Toothpicks:** Scatter a bunch of colored toothpicks (blue, green, yellow, red) inside a plastic hoop lying on the grass. Then have the children/families try to pick up as many toothpick as they can in 20 seconds. Did they get them all? Which colors were easier to find? Why?

- **Walking Sticks:** Use brown pipe cleaners, twigs and googly eyes to make your own “walking stick” bug. Then hide it and see if another family member or friend can find it.

** If the weather prohibits going outside activities can be done inside with tarps on the floor.

Pattern brochure (directions below), texture rubbings, nature art table, nature sketching, paint chip search.

**Patterns Brochure and Texture Hunt:** Give each child a pattern brochure for them to follow along and do the hunt with their family – including an adult caregiver. Each child may also bring with them a piece of blank white paper and a few different crayons to make rubbings of textured items in the library, bark from a tree, shells and any other items that may make good rubbings. When they are finished making their rubbings they can then paste their white paper on to a piece of colored construction paper.
Go Outside! Life Cycles

Read one of the following books to the group:

- The Case of the Missing Caterpillar by Sam Goldwin – use for a quick read.
- The Lifecycle of a Flower by Bobbie Kalmen – use to show pictures for lifecycle of a flower.
- A Frog’s Life by Ellen Lawrence – use for a group that will sit and listen.

*If you have a younger group you can act out the stages of a frog’s life. (Ex. pretend to be a tadpole munching through the egg. Start to move legs then arms to show how a tadpole develops back legs first. Then hop like a frog.)

Explain activities to the group:

- **Life cycle of a butterfly plate:** Plate, sticks, pasta (bowtie, shell, spiral), lentils, leaves, permanent marker, glue.
  - Example plate:

![Example Plate](image)

- **Plant apple seeds:** Cups, soil, apples cut in half and the seeds.
- **Lifecycle puzzles:** From Lakeshore.
- **Scavenger Hunt:** Magnifying glasses, binoculars, lifecycle journal.
- **Lifecycles game:** Instant Learning Center from Lakeshore.

- **Life Cycle Sequencing Kit:** Each manipulative shows a different stage in the animal’s life cycle—from egg to adult—so children can put them in sequential order or compare one animal’s life cycle to another; from Lakeshore.

- **From Seed to Plant Matching Activity:** From Lakeshore.
- **Lifecycle flip books:** Available at www.exploringature.org, directions, worksheets, crayons, scissors, stapler.

- **Observation station:** Tadpoles and frogs, different stages of a plant, butterfly, lifecycle journals, crayons and colored pencils.

**If the weather prohibits going outdoors the following activities can be conducted indoors:** Read book, lifecycle of a butterfly plate, plant apple seeds, lifecycle puzzles, lifecycle game, flip books, observation station.
This is a _________________.

It is part of the life cycle of a _________________.

This is a _________________________________.

It is part of the life cycle of a _____________________.
Go Outside! Life Underground

Read What Do Roots Do? by Kathleen V. Kudlinski

Explain activities to the group.

**Sand Play:** Storage bins with sand, trucks, shovels, sand molds, funnels, sand strainers.

**Digging a Worm Hole:** Paper or plastic cups, 4 trays of dirt.

**Look at Those Roots Go:** Three root view containers with plants growing, sign for each container. Directions: Have patrons try to match the correct name of plant to the plant growing in the container.

**Seeking Creatures:** Magnifying glasses, shovels, insect guide books. Directions: Give each child clear plastic cup to hunt for underground creatures.

**Plant seeds:** Soil or Jiffy pods, spay bottles, eyedroppers or pitchers of water for pods/cups, seeds, plastic spoons.

** If the weather prohibits going outside the following activities can be conducted indoors: Read Book, explain activities, sand play with a large tarp underneath, Look at Those Roots Go, plant seeds.
Go Outside: Rocks and Dirt

Read one of the following books to the group:

If You Find a Rock by Peggy Christian – if you have a group that will sit and listen.
A Rumbly Tumbly Glittery Gritty Place by Alana Lyn Ray – if you have a group that needs a quick read.
Dirt Boy by Erik Jon Stangerop - if you are in the mood for something funny and have a group that will sit and listen.

Explain activities to the group:

Sand Play: Storage bins with sand, trucks, shovels, sand molds, funnels, sand strainers.

Mud Relay Race: Plastic cups, mud (dirt and water), plastic spoons, robin’s nest illustration.

Directions:

Divide the children into two or more teams. Show the children the drawing of a robin’s nest, and talk about how robins build their nests from mud, grass, and sticks. Robins may make hundreds of trips back and forth, from mud puddle to nest, until their nests are finally complete.

The children are going to pretend to be robins building their nests. Instead of carrying mud in their beaks as robins do, they’ll carry it in spoons. Give each child a spoon. Practice chanting the following together:

“Fly, robin, fly,
Build your nest,
Carry the mud,
Like you do best.”

The children will dip their spoons into the mud bucket, scoop up some mud, and run (or fly) a distance to add mud to their robin family’s nest (the yogurt cup). Continue until both yogurt cup nests are full.

End with the following:

“Stop, robin, stop,
Rest your wings,
Now’s the time,
To do other things.”

Rock Sorting: Rocks, water sprayer, vinegar sprayer, penny, balance scales.

Directions:

Carefully observe the rocks. What colors do you see? How do the rocks feel? What shapes do you notice? Spray water on a rock. How does the rock’s appearance change? Can you dry the rock without touching it? Scratch a rock or two with a penny. What types of rocks have a mark on them from the penny, the hard or soft ones? Choose some rocks to spray with vinegar. What happens? Some of the rocks with limestone or sandstone will bubble. This is because the acid from the vinegar is interacting with the calcium in the rocks. Use a balance scale to weigh and compare rocks.

After you have spent some time exploring the rocks, sort them into different categories: colors; textures; weight; size; bubbles or doesn’t bubble; scratches or doesn’t scratch; etc.

Digging: Magnifying glasses, shovels, rock field guide.

Find Your Rock: Small rocks, permanent marker.

Directions: Mark one of the rocks with a permanent marker with your initials or name. Carefully observe, feel and touch your rock. What colors do you see? How does the rock feel? What shapes do you notice?

Sit in a circle with the group and close your eyes. Slowly pass the rocks around the circle and use only your sense of touch to explore the rocks.

When you think you have found your special rock, yell out “I’ve got my rock!”

Check to see if it is the right rock and then continue until everyone in the group has found their rock.
Go Outside! Rocks and Dirt (continued)

Let’s Make Some Sand: Zip close plastic bags, tiny sea shells, mallets, chalk, rock salt, sugar cubes.
Directions: Crush small amounts of each of the “ingredients” in plastic bags with the mallet until they form tiny grains. Mix the “ingredients” together in a bag to create sand.

One of the ways shells are turned into sand is from the force of the waves crashing on the beach. Have you ever watched as waves pour over and turn up shells at the beach? Do shells turn to sand quickly or over a long period of time?

Chalk is made from limestone, a type of rock formed from the skeletons of tiny sea animals that have been deposited on the floor of the ocean.

Sun, rain, wind, snow, ice expanding and contracting, and the grinding caused by glaciers, rivers, or wind also break down rocks.

Rock Wash: Bins with warm soapy water, scrubbers and cloths.

** If the weather prohibits going outside the following activities can be conducted indoors:

Read Book, Sand Play with a large tarp underneath, Rock Sorting, Find Your Rock, Let’s Make Some Sand, and Rock Wash
Go Outside! Water Exploration

Read any one of the following suggested books: *Come on, Rain* by Karen Hesse, *Water Boy* by David McPhail, *Watervoice* by Toby Speed, *This is the Rain* by Lola M. Schaefer.

Explain activities to the group.

**Water Play:** Storage bins with water, sprayers, basters, watering cans, funnels etc.

**Painting with Water:** Trays/buckets, paint brushes.

**Sink or Float? and Water Can Float Things:** Storage bins with water, objects to test, aluminum foil

Directions: Place different objects into the water basins to see what floats and what sinks.

- Make predictions and share your results with your family and friends.
- Create small aluminum foil boats and float them in the water.
- Try using the boats in the water to float some small objects that sunk in the water.

*How many small objects does it take to sink your boat?*

Again, make predictions and share the results.

The objects and boats float because they weigh less than the water that is pushing upward beneath them.

**A Sponge Cloud:** Sponges, bowls of water, trays, eye droppers.

Directions: Hold the sponge by the edges above the tray.

- Add water to the sponge using the eye dropper.
- Count the number of drops of water it takes until the cloud “rains.”
- The sponge is like a cloud, it collects more and more water until it becomes saturated and drips.

*If the cloud is heavy cloud what comes out of it?*

**Traveling Drops:** Eye droppers, straws, wax paper, tape.

Directions: Use the eyedropper to place drops of water on the wax paper.

- Blow on the drops using a straw.

*What happens to small drop when they touch each other?*

*What happens to large drops when you blow hard on them?*

*If the weather prohibits going outside, activities can done inside with tarps on the floor. The following activities can be conducted indoors: Read Book, Water Play, Sink or Float?, Water Can Float Things, A Sponge Cloud, Traveling Drops.*
Ice Mobiles

What You Need

- Seasonal materials collected during a winter's walk. Include evergreen leaves and needles, last autumn's fallen leaves, berries and seeds.
- Several saucers, plastic bowls, or jam-jar lids.
- Metal pastry cutters of various shapes.
- A tray.
- String.
- A freezer- in case it's not cold enough outside.

Making the Mobiles

- This Winter activity needs a stretch of very cold weather. Make the mobiles on a night when a cold frost is forecast.
- Choose a few favorite things from your collection of natural materials.
- Put the chosen items inside pastry cutters placed in saucers or plastic bowls, or arrange them in upturned jam-jar lids.
- Carefully place the containers in a row on a tray.
- Lay a piece of string along the row of containers, linking them together. The string must go right into each pastry cutter or jam-jar lid to ensure it will be frozen into the mobile.
- Pour water into each container, making sure all the materials and pieces of string are submerged.
- If the temperature outside is below freezing , place the tray outdoors where it will not be disturbed
- If the temperature outside is above freezing, remember you can always cheat by placing the mobile in the freezer.
- When the mobiles have frozen, carefully remove the icy discs from their containers. You may need to use a little warm water to loosen the ice and release the pastry-cutter shapes.
- Hang your mobiles just outside a window or on a tree in the garden, and enjoy them for as long as the cold weather lasts.

This idea is from Nature's Playground: Activities, crafts, and games to encourage children to get outdoors by Fiona Danks and Jo Schofield (PC 796.5 Danks)
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