Nature Preserve Discovery Pack

Manual

Dike 14 Environmental Education Collaborative
Cleveland, Ohio
www.dike14.org

Nature Preserve Discovery Pack

Dike 14 Nature Preserve

Discovery Pack

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Special thanks to the Dike 14 Environmental Education Collaborative members and the Ohio Lepidopterists for their extensive work in research, document preparation, instructions and graphics, editing and other support.

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When one tugs at a single thing in nature, he finds it attached to the rest of the world. ~ John Muir

Nature Preserve Discovery Pack

Introduction

Cleveland's premier environmental education institutions joined together to bring you the Dike 14 Nature Preserve **Discovery Pack.** This unique backpack is filled with activity kits providing a menu of favorite time-tested environmental education activities to help you connect with nature**.**

The Discovery Pack will link your classroom or family to an emerging, revitalized 88-acre urban green space, the Dike 14 Nature Preserve, on the shores of Lake Erie in Cleveland, Ohio.

Dike 14 is a former dredge disposal site. From 1979 to 1999 sediments dredged from the Cuyahoga River and Cleveland Harbor filled the dike. It is now closed as a disposal site. Over the years, Dike 14 has become naturalized and provides a unique opportunity for access to Lake Erie as well as access to a remarkable diversity of birds that either make their home in or migrate over the area, native Ohio plants and trees, and other wildlife. While urban school systems, public or parochial or private schools have few shoreline green spaces available for biological and ecological study, the Dike 14 Nature Preserve presents a significantly unique land laboratory.

Discovery Packs expand the capacity of students, teachers and families to access a distinctive place-based community resource for environmental education. Using the Discovery Pack will promote off-site investigation until the Dike 14 Nature Preserve is fully opened to the public and expand on-site exploration at special events.

Understanding the treasures at Dike 14 will promote an appreciation and stewardship for Cleveland's ecological systems and natural resources. Enjoy!

There is nothing in a caterpillar that tells you it's going to be a butterfly. ~ Richard Buckminster Fuller

Nature Preserve Discovery Pack

A. Discovery Pack Topics

1. Plants

“Flower Visitor Bingo”

Different color flowers attract different pollinators because not all animals and/or insects can see all the same colors people can see.Using Flower Visitor Bingo, students will observe flowers and the animals/insects that visit them and try to determine a pattern of pollination.

2. Trees

“Terrific Trees”
Learn how to use a dichotomous key to identify some of the trees around your school. Once you have identified the tree you can learn how to measure it using math skills.

3. Insects

“The Insects Around Us”

Sure, call them bugs if you want! There are so many different kinds of insects living in so many different places that they are easy to find. Discover the diversity of insects at Dike 14 Nature Preserve or right in your neighborhood. Keep track of data as to where insects are found, how many you see, and even if weather plays a role in insect’s lives. You will be amazed.

4. Surface Runoff

“How Water Flows: Surface Runoff”

How water flows: surface runoff will help students gain an understanding of the water cycle by showing them water runoff, flow and absorption. The exercise and accompanying book compliment each other to hear and see where water goes when it rains.

5. History and Geography

“ Place Matters - History and Geography of the Dike 14 Nature Preserve”

Learn the exact location of the Dike 14 Nature Preserve and how to get there from your home or school. Have fun learning how the dike was created and how nature slowly reclaimed the site; plus,

you can learn a little history of this natural treasure on Cleveland's lakefront.

6. Weather

"Lake Erie Weather"

Explore the ever-changing weather along the Lake Erie shoreline. As Junior Meteorologists, observe and record current weather conditions using real weather instruments. Go on a weather scavenger hunt to investigate how Lake Erie weather affects our natural world.

7. Mammals

"Who Was Here"

Who are the mammals who live at the Dike 14 Nature Preserve and how do they adapt to the various habitats. Discover the clues and signs that let us know which animals are attracted to this lakefront home.

8. Birds

" Who Lives Here - Birds & Habitats at Dike 14"

Do you wonder: What makes a bird different from other animals? Why do some birds live in woods, near water, or in your backyard? Here's the kit for you.

9. Butterflies

"The Butterflies of Dike 14 Nature Preserve"

Butterflies: When we see these colorful, jewel-like acrobats of the air, we always stop and watch. Do you ever wonder where they are going in such a hurry? Why they are all different? What are their wings made of? The Butterfly Kit holds all the answers.

A bird does not sing because it has an answer. It sings because it has a song. ~ Chinese Proverb

Nature Preserve Discovery Pack

B. What is in a Discovery Pack?

The Discovery Pack is readily accessible, no-cost, classroom or family-friendly backpack filled with nine activity kits that add to environmental education and encourage exploration by taking kids of all ages on short learning adventures at home, school or on-site at the Dike 14 Nature Preserve. All kit activities were developed with Ohio's academic content standards guidelines, focusing on 4th to 8th grade standards. The activity kits promote on-site and off-site experiences related to Dike 14 that are engaging, interesting, and connected to our region and the Dike 14 site.

The hands-on experience with basic science concepts and inquiry-based project tools linked to Dike 14 will create a spiral of knowledge for students, after-school and community-based programs, family and friends of the Dike 14 Nature Preserve. The Discovery Packs provide materials and resources for experiential learning activities that foster problem-solving and critical thinking skills through environmental education. The Packs provide Cleveland residents with an exceptional introduction to Dike 14 to help develop an understanding of the environment and environmental sustainability.

C. Who can use a Discovery Pack?

Everyone can! Your classroom, day care, church group, family or group of friends can learn and explore the Dike 14 Nature Preserve using the Discovery Pack.

D. How can you obtain a Discovery Pack?

It's easy! Discovery Packs are available from any Environmental Education Collaborative institution. The Collaborative is composed of members from Cleveland Botanical Garden, Cleveland Metroparks, Cleveland Museum of Natural History, Cuyahoga Soil and Water Conservation District, Cuyahoga Valley National Park Association, Earth Day Coalition, Lake Erie Nature and Science Center, Nature Center at Shaker Lakes and the Western Cuyahoga Audubon Society. Contact information is available on page .

E. How long can you keep a Discovery Pack?

You can keep and use the Discovery Pack for two weeks. When you pick up your Discovery Pack the Environmental Education Collaborative institution will tell you when and how to return the Pack.

The world is mud-luscious and puddle-wonderful. ~ e.e. cummings

Nature Preserve Discovery Pack

F. Discovery Pack evaluation form

Each Discovery Pack contains a general evaluation form. There is also a copy for you to reproduce in this manual. Some individual activity kits also have an evaluation form. We need to hear from you.

Borrowers are asked to return the completed evaluation form (s) to the Environmental Education Collaborative member when you return the Discovery Pack.

These important evaluations will help the Environmental Education Collaborative make improvements to the Discovery Packs, track Discovery Pack use and effectiveness, and replenish needed supplies and copies. Thanks for your help!

G. Supply list for each Discovery Pack kit

Each Dike 14 Nature Preserve Discovery Pack contains a certain amount of materials, copies and supplies that are to be used by the borrower. Each individual kit has a list of supplies and printouts for that activity. In some cases you will need to temporarily 'borrow' supplies from one kit to be used in another.

Please return supplies to the proper kit when you have completed the activity.

If you are running low on materials or supplies, check the enclosed CD to see if you can make copies, contact the Environmental Education Collaborative member who gave you the Discovery Pack, or call or email the contact person, listed below:

Chris Trepal
216-281-6468 x 227
ctrepal@earthdaycoalition.org

Look deep into nature, and then you will understand everything better. ~ Albert Einstein

Nature Preserve Discovery Pack

1. Flower Visitor Bingo

❏ One (1) page (Educator's Guide)
❏ Master Copies (use laminated master sheets to make more copies) of:
    Flower Visitor Bingo - one (1) page
❏ Hand lens from the Backpack
❏ Grease pencil from the Backpack

2. Insects Around Us

❏ "The Insects Around Us" (Educator's Guide)
❏ Master Copies (use laminated master sheets to make more copies) of:
    The Insects Around Us Activity Sheet (laminated)
    Insect Body Parts/Invertebrate I.D. sheet (laminated)
    Key to Winged and Wingless Insect Orders (laminated)
    Large sheet "Who's Who Among the Insects" (laminated)
❏ "Insects" (Golden Guide Book)
❏ Four (4) Plastic Hand Lenses
❏ Plastic Magnifier Box
❏ Thermometer with red, plastic sheath
❏ Six (6) White, plastic rulers
❏ Two (2) Zip-top, plastic bags for holding insects
❏ Grease pencil from the Backpack

3. Terrific Trees

❏ Five (5) pages (Educator's Guide)
❏ Master Copies (use master sheets to make more copies) of:
    Tree Key - two (2) pages
❏ "Common Trees of the Metroparks" (Cleveland Metroparks)
❏ Fabric tape measurer

4. How Water Flows: Surface Runoff

❏ Two (2) pages (Educator's Guide)
❏ "Rain Rain Rivers" (Uri Shulevitz)
❏ Tin pan
❏ Sand
❏ Button
❏ Measuring cup
❏ Food coloring
❏ Water is needed for this kit

When Nature has work to be done, she creates a genius to do it. ~ Ralph Waldo Emerson

5. Place Matters - the History and Geography of the Dike 14 Nature Preserve
❏ Two (2) pages (Educator's Guide) (laminated printout)
❏ "Field Guide: Getting Ready to Visit the Dike 14 Nature Preserve"
❏ Master Copies (use master sheets to make more copies if needed) of:
- Map of Dike 14 (laminated satellite map)
- Map of Ohio (laminated)
- Map of Great Lakes (laminated)
- Historical Photos (laminated)
- "Confined Disposal Facility (CDF) Dike 14 Cleveland, Ohio" (laminated)

❏ Map of Cleveland area (Rand McNally road map)
❏ Ruler

6. Lake Erie Weather
❏ Three (3) pages (Educator's Guide)
❏ Master Copies (use master sheets to make more copies if needed) of:
- Weather observation record sheet
- Cloud types (2 pages)
- Weather Scavenger Hunt
- First With the Forecast (2 pages)
- Say it with Symbols
- Weather Station

❏ Cloud Formation Chart
❏ Weather instrument: Anemometer
❏ Weather instrument: ribbon
❏ Cloud Formation Chart
❏ Grease pencil from the Backpack
BORROW THIS ITEM FROM OTHER KIT:
❏ Thermometer with red plastic sheath from 2. Insects Around Us

7. Who Was Here? Mammals of the Dike 14 Nature Preserve
❏ "Mammal Field Guide" Ohio Department of Natural Resources
❏ Dike 14 Mammal Scat Guide (laminated)
❏ Dike 14 Mammal checklist (laminated)
❏ Grease pencils from the Backpack
❏ Data Sheet

A weed is no more than a flower in disguise. ~ James Russell Lowell

8. Who Lives Here? Birds & Habitats at Dike 14

❏ Master Copies (use master sheets to make more copies if needed) of:
- Naturalist's Journal
- Checklist of the Common Birds of Dike 14
- Parts of a Bird
- Pigeon Plumage Data Sheet
- Bird Walk Checklist

❏ Binoculars
❏ _"Eastern Backyard Birds"
❏ Feather
❏ Hand lenses from the Backpack

BORROW THESE ITEMS FROM OTHER KITS:

❏ Map of Cleveland area (Rand McNally road map) from 5. Place Matters
❏ Map of Dike 14 (laminated satellite map) from 5. Place Matters

9. The Butterflies of the Dike 14 Nature Preserve

❏ The Cabbage White Butterfly: (Educator's Guide) (laminated)
❏ Dike 14 Nature Preserve and the Wild Indigo Duskywing: Educator's Guide (laminated)
❏ Master Copies (use master sheets to make more copies if needed) of:
- The Butterflies of Dike 14 Nature Preserve: Introduction - 12 Photos of Dike 14 Butterflies (laminated)
- Metamorphosis (laminated)
- Butterfly Wing Features (laminated)
- Checklist of Ohio's Butterflies and Skippers (laminated)
- List of Plants found on Dike 14

❏ _"Field Guide: Common Butterflies and Skippers of Ohio"
❏ "Butterflies and Moths" (Lake Metroparks)
❏ "Butterfly Gardening Tips" (Lake Metroparks)
❏ "Backyard for Butterflies" (ODNR)
❏ Net
❏ Plastic Ziploc Bag
❏ Hand len from the Backpack
❏ Grease pencil from the Backpack

An animal's eyes have the power to speak a great language. ~ Martin Buber

10. Backpack supplies

❏ Hand lenses
❏ Grease pencils
❏ Compass
❏ "Field Guide: Getting Ready to Visit the Dike 14 Nature Preserve"
❏ Discovery Pack Manual
❏ Discovery Pack CD
❏ Discovery Pack evaluation

H. Contact Persons

1. Cleveland Botanical Garden
Kristen Ciofani
(216) 721-1600
www.cbgarden.org

2. Cleveland Metroparks
Wendy Weirich
(440) 247-7075
www.clemetparks.com

3. Cleveland Museum of Natural History
Nancy Howell
(216) 231-4600
www.cmnh.org

4. Cuyahoga Soil & Water Conservation District
Jan Rybka, Amy Roskilly
(216) 524-6580
www.cuyahogaswcd.org

Cuyahoga Valley National Park Association
Deb Yandala, David Irvine
(330) 657-2796
www.cvnpa.org

5. Earth Day Coalition
Chris Trepal, Dawn Wrench
(216) 281-6468
www.earthdaycoalition.org

6. Lake Erie Nature and Science Center
Larry Richardson, Bev Walborn, Suzie Dills
(440) 871-2900
www.lensc.org

7. The Nature Center at Shaker Lakes
Steve Cadwell, David Wright
(216) 321-5935
www.shakerlakes.org

8. Western Cuyahoga Audubon Society
Mary Anne Romito
(216) 741-2352
www.wcasohio.org

9. Ohio Lepidopterists
Susan Gallagher
(216) 932-7815
www.ohiolepidopterists.org

A rainy day is the perfect time for a walk in the woods. ~ Rachel Carson

Nature Preserve Discovery Pack

I. Additional Information

1. Where is the Dike 14 Nature Preserve?
Although the Dike 14 Nature Preserve is not currently open to the public, special events and on site visits on site can be arranged through the Dike 14 Environmental Education Collaborative.

The Dike 14 Nature Preserve is just a few miles east of downtown Cleveland; take I-90 East to the University Circle/Martin Luther King Jr. Drive exit (#177) and turn left (north) on to Martin Luther King Jr. Drive. Go under the 1-90 overpass and immediately turn left (west) onto the North Marginal.

From the south, take I-71 or I-77 north to downtown Cleveland and follow route sign to I-90 East.

From the east, take I-90 west to the University Circle/ Martin Luther King Jr. Drive exit (#177) and turn right (west) onto North Marginal.

From the Ohio Turnpike, go to Exit #187 (previously Exit #13), go west on I-480. I-480 merges with I-271. Take I-271 North to I-90 West. Take I-90 west to the University Circle/ Martin Luther King Jr. Drive exit (#177) and turn left (north) on to Martin Luther King Jr. Drive. Go under the 1-90 overpass and immediately turn left (west) onto the North Marginal.

Parking is available at Gordon State Park. Entrances are from North Marginal at E. 72nd Street, from North Marginal between E. 72nd and Martin Luther King Jr. Drive, and Cleveland Lakefront State Park office entrance from Lakeshore Boulevard east of Martin Luther King Jr. Drive. Additional space is available at E. 55th State Park (Exit SR 2).

2. Visiting on Site
For the safety and enjoyment of all visitors and the protection of the Dike 14 Nature Preserve, please use care when visiting on site:

- Stay on the established trails
- Do not remove or disturb plants
- Do not feed, remove or disturb wildlife
- Take your trash; no food or drinks on site
- No smoking or pets

Nature does nothing uselessly. ~ Aristotle

3. On site emergency
Dial 911

4. Public Transportation
39B Bus Route. Call RTAnswerline at (216) 621-9500 or check www.gcrta.org

5. For current information
Click www.dike14.org
Or contact any Collaborative member

We can judge the heart of a man by his treatment of animals. ~ Immanual Kant

Nature Preserve Discovery Pack

Evaluation Sheet

Thank you for using the Dike 14 Environmental Education Collaborative's Nature Preserve **Discovery Pack**! To make each Pack better, we want to hear from you. Please take a moment to reflect on each topic below. When you have finished your kit activities please copy this sheet, fill it in and return it when you return your **Discovery Pack**.

For each kit you used please answer the following:

1. Name of the kit used: _____
2. Date (s) used: _____
3. How many people used this kit: _____
3. Were all needed materials present in the pack? Yes No
4. Were the directions easy to follow? Yes No
5. Did the children enjoy this activity? Yes No

Your Additional Comments:

1. Name of the kit used: _____
2. Date (s) used: _____
3. How many people used this kit: _____
3. Were all needed materials present in the pack? Yes No
4. Were the directions easy to follow? Yes No
5. Did the children enjoy this activity? Yes No

Your Additional Comments:

1. Name of the kit used: _____
2. Date (s) used: _____
3. How many people used this kit: _____
3. Were all needed materials present in the pack? Yes No
4. Were the directions easy to follow? Yes No
5. Did the children enjoy this activity? Yes No

Your Additional Comments:

Please copy this evaluation sheet and fill it out after using the kit (s) in the **Discovery Pack.**
Use the second page to add any other additional thoughts or suggestions.
Please return the evaluation to the Institution that loaned you the **Discovery Pack. Thank You!**

Nature always tends to act in the simplest way. ~ Bernoulli

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Evaluation Sheet

Please use this page to add any other additional thoughts or suggestions.

We have nowhere else to go...this is all we have. ~ Margaret Mead

Manual

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