W.E.E. Conservation

CAITLYN STOCK

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Contents

INTRODUCTION

This program has been designed by the educators of Suzy's Nature Studies, based out of Lansing, MI.

This program was designed as a capstone project for MSU Extension's Conservation Stewards program.

These lessons have been designed for children 3-6 years old. This program can be utilized at home by a parent or other caregiver, or in a group setting such as a preschool classroom or play group.

You don't have to have to be trained or have knowledge in the subject matter in order to use this resource. The program is designed in such a way that the adult will

learn alongside the children. We learn best by teaching, and children benefit greatly from the partnership inherent to side-by-side learning.

If utilized in a family environment, both younger and older siblings can participate as well. Older siblings will likely pick up on the more complex concepts easier. Younger siblings may need some assistance to complete some of the tasks.

Don't be afraid to alter the lesson or the material to better suit the children you are working with. Individualized instruction and accommodations are ok, even encouraged. Every child learns differently, and it's better to embrace and utilize a child's learning style than risk that the child will disengage from the lessons.

In each lesson, you will find supply lists for the lesson and/or activity, along with suggestions for alternative materials where possible. This program is meant to be affordable, so don't be afraid to substitute with what you have on hand already or to take some creative liberties with the activities.

Alternative Materials

Key:

 Household items

 Craft supplies

 Natural materials

Each lesson includes suggestions for extension activities and external resources. Whenever possible, the resources listed will be free or low-cost. External resources that have a cost are not necessary to complete the program; a child will still get a lot out of these lessons without any of the external elements.

After each lesson is a list of 'Common Mistakes.' These are things that people tend to believe or do in attempts to be helpful to conservation efforts which might be misinformed or more harmful than good. Some of these may not be relevant to your

child(ren) depending on age, but they are still important to review and keep in mind. There may be something in this section which is important in your own daily encounters with nature.

If you do not already have a library card for your local library, please consider getting one. Libraries can be a wealth of knowledge and resources- not just books, but preschool and family programs and events as well.

There will be an included list of recommended key words with which your librarian can help you find related books for each topic.

The program is divided up into ten (10) lessons. These should be completed in order, but feel free to set the pace as you please. You could have lessons twice a week, every week for 5 weeks, one lesson every week over 10 weeks, or stretch it out longer if need be. The point is that you should work at the pace that is comfortable and productive for you and the child(ren) you are completing the program with.

Please keep in mind that children learn through repetition and would benefit from doing some of the activities a few times before moving on to the next lesson.

Before beginning an activity, set your children up for success. Start with the basics;

making sure they have full bellies and empty bladders. A child's mind absorbs more when it's not focused on the needs of her or his body.

Next, consider doing some light stretching or breathing exercises. This helps to relax and steady an otherwise energetic child, ensuring the activity receives the attention it needs.

Be mindful of a child's attention span and ability to intake information. Verbal lessons in this program are, by design, always fewer than 500 words. These can be read aloud as they are--like a story--or reviewed then discussed in your own words.

Whichever you choose, be sure to speak dynamically (using varied inflections, varied tones) to keep things interesting for your young listeners. Hand gestures and/or visual props help as well. Regardless, be sure to keep verbal lessons to 5 minutes or less. Any more than that and, no matter how it appears, there's a good chance you've at least partially lost the child's focus.

How to Use The Lesson Plans

- Review the supplies list for the chosen lesson and ensure you have what you need close at hand.
- Read through the lesson as a whole yourself. Make note of anything you may need to say or do differently to benefit your child(ren).
- Prepare the child(ren) for lesson time.

  Full bellies, empty bladders. Remember: set them up for success!
- Either read aloud or thoroughly paraphrase the verbal lesson section. Speak clearly and at a pace your child(ren) can follow. Feel free to answer questions as they come up. Curiosity is good! It shows engagement! Remember that some children aren't made to sit still, feel free to read them the verbal lesson while they are moving. A swing, a mini trampoline, or wobble chair are great gross motor tools during verbal lessons. Playdough or crayons and paper are great fine motor tools during verbal lessons. If they are inclined to sit still, that's great too. Follow the child's cues.

- Perform the activity with the child(ren). Make sure the child(ren) know what is going to happen, what they can expect of you, and what is expected of them before you begin. This is another part of setting them up for success.
- Discuss the activity during and after to ensure the child(ren) understood what they were doing and why they were doing it.
- Talk through the discussion questions. Remember, this is not a test, but a conversation. Child(ren) should feel involved and respected, not quizzed.
- Discuss the 'Common Mistakes' if appropriate. Even if they are not relevant to the child(ren) based on age or opportunity, it can still help a child to know that other people, even adults, can make mistakes in conservation, too.
- Consider revisiting the lesson a time or two, children learn from repetition.
- Have fun with it! If you do, the child(ren) will as well; people both young and old learn better when learning is fun.

1: BIODIVERSITY

Goal:

Children will learn what biodiversity is, the importance of biodiversity, and how energy is passed from organism to organism through the food web.

Supplies:

- **plastic toy plants and animals**
  alternative materials:
  - Plush toys, bath toys
  - Stickers, wooden or foam cut-outs
  - Draw on fallen leaves or wood slices
- **yarn**
  alternative materials:
  - Clothes line, shoe string, garden wire
  - Thread, embroidery floss, pipe cleaner
  - Long grass, leaf or flower stem, twig

Verbal Lesson:

Biodiversity is a big, long word that basically just means "lots of different types of plants and animals living together." In your home, you probably have some biodiversity. You and your family are one species: human. But if you have a pet like a cat or a dog, they're a different species. The squirrels that live in your yard, the spiders that live in your garage, the flowers your family plants in the garden- all of these are different species living together, they all contribute to the biodiversity in your home. In the wild, biodiversity varies from habitat to habitat. A forest has squirrels and trees and deer and

berry bushes. A pond has fish and aquatic (water) plants and turtles and frogs.

We need biodiversity because life is easier when we all play our part. In a home, this means that everyone has a job or a chore to do which helps the family. One person does the dishes, another might vacuum the floor. One person might tell the best bedtime stories while another might give the best hugs. In the wild, the jobs are different. Plants are the producers, they are the start of every food chain. Plants are responsible for taking energy from the sun and making it into glucose (food). There are animals that only eat plants; those are called herbivores and they're the first level of consumers. There are animals that only eat other animals; those are called carnivores and they're the secondary and tertiary level of consumers.

A food chain is how energy gets passed from one thing to another. Energy starts with the sun. Then plants make the sunlight into food. Then herbivore animals eat the plants. Then carnivore animals eat the herbivore animals. Food chains are simple. They go in a straight line and each animal only eats or is eaten by one thing. But. Food chains are not the whole story.

A food web is a more accurate way of showing how energy gets passed around.

Food webs are messy and sometimes a little confusing. Food webs show that some animals eat both plants and other animals, these animals are called omnivores. Food webs also show that what animals eat can get pretty complicated. For example: a big snake might eat a small frog OR a big frog might eat a small snake.

At the end of every food chain, and in every food web, you'll eventually find an animal that doesn't get hunted and eaten by another animal. This is the apex predator, the top of the food chain. This is where scavengers and decomposers come in. Scavengers are animals that eat the already dead meat of other animals. Decomposers are usually things like fungi (mushrooms) and insects which help turn the body of the dead animal into compost. Compost is nutrient rich soil that will be able to grow good, healthy plants.

Hands-On Activity:

Make a food chain. Start with a toy plant. Use yarn to make a line to the next link in the food chain: an herbivore animal which eats the plant. Use another length of yarn to make a line to the next link in the food chain: a carnivore animal which eats the herbivore animal. Use another length of yarn to make a line to the next link in the food chain: a second carnivore animal which eats the first carnivore animal. And so on and so forth until you've reached the apex predator, the top of the food chain. Use a length of yarn to make a line to the last link in your food chain: a decomposer.

If you want to illustrate the circle of life, use a length of yarn to connect your decomposer to the first link in your food chain, your plant.

Make a food web. Place your toy plant (or alternative material) down on your work surface. Surround it with herbivore animals. Use yarn (or alternative material) to make connections from each herbivore to the plant. Surround your herbivore animals with carnivore animals. Use yarn to connect your carnivore animals to the herbivore animals they eat. Now use yarn to connect your carnivore animals to the other carnivore animals they eat. Now use yarn to connect

your omnivore animals to any plants or animals they might not already be connected to. If you aren't 100% sure about an animal's diet, look it up via Google. You might be surprised by some of the things these animals eat!

Continue the Learning with these Discussion Questions:

1- Can you make a food chain that ends with you?
example: corn -> cricket -> chicken -> you

2- What is the biggest carnivore/predator animal you can think of? Is it a Michigan-native animal or does it live somewhere else in the world?

3- If every animal has a job in our ecosystem, what do you think is the job of a bee?

4- Do you know any animals that are rare now but there used to be more of them?

5- What is biodiversity? Why is important?

Common Conservation Mistakes:

(and better alternatives)

✗ Keeping plain grass lawns.

✓ Planting a variety of things, preferably non-invasive and pollinator friendly.

✗ Beginning a conservation project without a plan.

✓ Thinking ahead, researching, and budgeting for a project.

✗ Taking on a large project alone.

✓ Working with conservation organizations and getting support to achieve goals.

Extension Activity: Craft

Woodland Animals Paper Bag Puppets
https://www.hellowonderful.co/post/PAPER-BAG-WOODLAND-ANIMAL-CRAFT/

Extension Activity: Science

Do a Backyard BioBlitz
(record all the species of plants and animals living in your yard, or a nearby park if you don't have a yard)
https://www.kcedventures.com/blog/outdoor-science-biodiversity-for-kids

Extension Activity for Older Sibling(s)

Interactive Notebook
https://www.teacherspayteachers.com/Product/Ecosystems-Interactive-Notebook-Pages-1325186

External Resources

App: iNaturalist

Book: Michigan Wildlife: A Coloring Field Guide by Amalia Celeste Fernand

Key Words to Search for Library Books:
- biodiversity
- ecosystem
- ecology
- habitats
- biomes

YouTube Video: Why is biodiversity so important? – Kim Preshoff on TED-Ed channel

Montessori Resources for Vertebrate Unit Study:

https://livingmontessorinow.com/montessori-vertebrate-resources-for-preschool-through-elementary/

2: INVASIVE SPECIES

Goal:

Children will learn the difference between native, non-native, and invasive species.

Supplies:

- **Jenga blocks with native animal stickers/drawings on them**
  alternative materials:
  - LEGO bricks with animal stickers
  - Wooden or foam cut-outs
  - Thin wood slices with animal stickers
- **River rocks with exotic animal stickers on them**
  - Alternative materials:
  - Paperweight, heavy knick-knack
  - Large marble, decorative stone
- **Balance scale**
  alternative materials:
  - Clothes hanger/wire/plastic cups
    Use wire to hang a plastic cup from either
    end of a clothes hanger, then hang the clothes hanger from a door knob or a broom stick balanced across two chairs.
  - -none-
  - Stick/string/paper
    Roll paper into a cone shape then tape or staple the paper to hold its cone shape. Use string to hang a paper cone from either end of a stick. Tie a longer piece of string to the end of the stick. Tie the other end of the long piece of string to

the other end of the stick. Pick up the middle of the long piece of string and use it to hang the stick from a tree branch, fence post, or similar.

Verbal Lesson:

In nature, everything has a home, a place where it is supposed to be. The plants and animals that call Michigan home are said to be native to Michigan. Our plants and animals have grown and developed together, side by side. Michigan native wildlife lives in a delicate balance. Everything has a purpose. Remove one plant or animal and you could upset the whole ecosystem. Add one plant or animal and you could upset the whole ecosystem.

Plants and animals that aren't from Michigan, but have been brought here to Michigan, are either non-native or invasive.

Non-native plants and animals are the ones that aren't from Michigan, but they fit in well with our native plants and animals. Non-native wildlife might not belong here, but we don't mind because it doesn't hurt the native plants and animals. Non-native wildlife finds a way to work within the delicate balance of our Michigan native wildlife.

Invasive plants and animals are the ones

that aren't from Michigan, and they hurt our native plants and animals. Invasive wildlife doesn't belong here, and a lot of people work hard to try and get rid of it. Invasive wildlife upsets the delicate balance of our Michigan native wildlife.

There are many ways an invasive plant can hurt native plants and animals. Invasive plants might grow faster and taller and block out the sun native plants need to live and grow. Invasive plants might not have any animals that will eat them, so they take up space where food for native creatures could grow instead.

There are many ways an invasive animal can hurt native plants and animals. Invasive animals might be more aggressive (mean) or prolific (make lots of babies) than our native animals, which means they could quickly outnumber our native animals. When outnumbered, native animals become more scarce and die out. Invasive animals might not have any animals that will eat them, so they eat native plants and animals, but don't give back food or spread seeds. This would make them a new apex predator in the area, and that can break the food web.

Sometimes invasive plants and animals can even carry diseases that our native plants and animals aren't used to, and this makes our native plants and animals very

sick.

Hands-On Activity:

Show the delicate balance of our native plants and animals using a balance scale. On one side of the scale place all the plants (producers) and animals that eat plants (herbivores, first level consumers). On the other side of the scale place all the animals that eat other animals (carnivores, omnivores, secondary and tertiary level consumers). Add and take away native plants and animals until the scale is mostly level, fairly balanced out.

Show the destruction that an invasive plant or animal can cause by dropping one invasive plant or animal into one side of the scale. The scale should dramatically drop to that one side, showing a clear and obvious lack of balance in the ecosystem.

Continue the Learning with these Discussion Questions:

1- Can you think of an animal that lives somewhere else but not in Michigan? Where does it live?

2- What would be the scariest animal to see in your backyard? A lion? A polar bear? A blue whale?

3- What do you think is the easiest way to handle an invasive animal: prevention before it comes here or intervention after it has arrived?

4- What is your favorite Michigan native animal? Your favorite Michigan native plant?

5- What does it mean for an animal to be invasive? Why is it bad?

Common Conservation Mistakes:

(and better alternatives)

✗ Planting non-native, often invasive plants just because they are pretty or popular.

✓ Checking a plant is safe for Michigan before putting it in yard or garden.

✗ Releasing an unwanted pet outside.

✓ Contacting a rescue organization to reliquish your pet.

✗ Not cleaning the bottoms of shoes before and after spending time out in nature.

✓ Scraping or washing shoes to prevent the spread of non-native seeds.

Extension Activity: Craft

Invasive Species “Wanted” Poster Art

https://iexplorescience.com/2018/05/15/teaching-with-invasive-species/

Extension Activity: Science

Install a boot scraper outside of your home. Use the boot scraper after spending time outside (at a park, nature center, or just in your backyard) to remove any possible invasive plant species seeds from your shoes, preventing the spread of those invasive species to other outdoor areas

http://www.onehundreddollarsamonth.com/mrs-hillbilly-designs-a-diy-boot-scraper/

Extension Activity for Older Sibling(s)

Computer Game

https://www.brainpop.com/games/invasion/

External Resources

App: MISIN
(Midwest Invasive Species Information Network)

Book: Invaders of the Great Lakes: Invasive Species and Their Impact on You by Wildlife Forever

Key Words to Search for Library Books:
- invasive species
- emerald ash borer
- red swamp crayfish
- mute swan
- pest

YouTube Video: The threat of invasive species – Jennifer Klos on TED-Ed channel

3: ENDANGERED AND PROTECTED WILDLIFE

Goal:

Children will learn what the words endangered, extinct, and protected mean within the context of conservation.

Supplies:

- **3-8 people**
  adults and children can participate
- **small potatoes (1 for each person participating)**
  alternative materials:
   LEGO brick, apple, small ball
   Bean bag, silk flower, large pom-pom
   Small stick, medium pinecone, large acorn
- **optional: music with a steady rhythm**

 Verbal Lesson:

All plants and animals need specific things to survive.

Plants need room to grow, water, and sunlight.

Animals need shelter (like a home, protection from harsh weather and predators), water, and food.

The things needed to survive are called resources.

If an ecosystem is well-balanced, then animals will generally have about as much as they need, not too much more nor too much less. Animals in a well-balanced

ecosystem are what we call “least concern.” They’re doing ok and they don’t need our help to survive.

But if an ecosystem is out of balance, then there might not be enough food or shelter for everyone. If resources are scarce then sometimes population numbers will go down, and animals start to die out. Animals that are dying out might become “protected species,” meaning that people make laws (rules) to keep them safe.

Laws for protected species usually include:

- humans aren’t allowed to move the animal
- humans are not allowed hunt the animal
- humans are not allowed to destroy the animal’s home
- humans are not allowed to mess with the animal’s food

Special people, called conservationists, work hard to give the animal more habitat (more forests, more wetlands, more grasslands), shelters (like wooden houses made for birds, bats, and butterflies), or food (by planting more of a food the animal eats, or removing an invasive species that is effecting the animal’s food chain).

If conservation efforts go well, then the animal’s population number will go up and

we won't have to worry about them. Eventually, they might become "least concern" again.

If conservation efforts don't go well, then the animal's population number will continue to go down and the animal will continue to die out. At this point the animal is what we call "endangered."

Conservation efforts will be stronger for endangered species. Scientists and conservationists spend a lot of time studying endangered species and trying to determine the best way to help them.

If an endangered species isn't helped in time, then they become what we call "extinct." When an animal goes extinct, it means that the animal doesn't exist anymore. Just like the dinosaurs; they lived once, but then they all died out and now they are extinct. Lots of animals go extinct for lots of different reasons.

Some reasons for an animal to go extinct include: severe climate change, habitat loss, pollution, and excessive hunting. We'll talk about some of those subjects later.

Hands-On Activity:

Have everyone sit in a circle. Each person should be able to comfortably reach the people on either side of them, without feeling crowded.

If you have multiple adults participating, have them spread out within the circle, preferably sitting next to any child who is younger or may need extra help following directions.

Show the children the potatoes and tell them, "this potato represents a resource, like food or shelter, something all animals need in order to live. You can only have one potato at a time, so as soon as you are handed a new potato, be sure to pass your old potato to the person on your right."

Everyone starts with one potato. Everyone passes their potato to the right. *[optional: start music]* Continue passing your potatoes to the right for 20-45 seconds. Then stop. *[stop music]*

"If you have a potato, hold it up." Everyone should have a potato to hold up. "We all have what we need to survive, there is plenty to go around, we all can live happily and healthily." *[start music]* Continue passing your potatoes to the right for 20-45 seconds. At some point, quietly remove one

or two of the potatoes being passed around and hide them behind you. *[stop music]*

"If you have a potato, hold it up." Everyone except one or two person(s) should have a potato to hold up. "Resources are becoming more scarce. There isn't enough food and shelter for all of our species to survive, some will die out." *[start music]* Continue passing your potatoes to the right for 20-45 seconds. At some point quietly remove all except one or two of the potatoes being passed around and hide them behind you. *[stop music]*

"If you have a potato, hold it up." Only one or two people should have a potato to hold up. "Resources are dwindling. The less food and shelter we have, the less of our species can survive. Without someone helping us, we might go extinct." *[start music]* Continue passing your potatoes to the right for 20-45 seconds. At some point quietly add in two or three of the potatoes you have hidden behind you. *[stop music]*

"If you have a potato, hold it up." More people should hold up potatoes than last time. "Laws (rules) have been put in place to protect us. Humans are helping to make sure we have access to healthy food and safe habitats to call our homes. Our numbers are increasing, we might be able to avoid extinction." *[start music]* Continue passing

your potatoes to the right for 20-45 seconds. At some point quietly add in all the remaining potatoes you have hidden behind you. *[stop music]*

"If you have a potato, hold it up." Everyone should have a potato to hold up. "We all have what we need to survive, there is plenty to go around, we all can live happily and healthily. The protection laws and conservation efforts have saved our species from extinction."

Continue the Learning with these Discussion Questions:

1- Can you think of an animal that used to exist but doesn't exist anymore? What happened to it?

2- What would happen if a link in your food chain didn't exist anymore?

3- Do you think its easier to protect an animal that is well established, or an animal that is already endangered?

4- What sort of things cause an animal to become endangered?

5- What does it mean for an animal to be protected?

Common Conservation Mistakes:

(and better alternatives)

✗ Allowing domestic cats to roam outside.

✓ Keeping cats inside, where they can't hunt or hurt native songbirds and other wildlife.

✗ Killing snakes.

✓ Letting snakes have their space and not killing them.

✗ Keeping wild turtles and other wild animals as pets.

✓ Leaving wild animals in the wild, where they can participate in seasonal mating and the food web.

Extension Activity: Craft

print out and color in a mask to dress up like a Michigan species in decline

A list of Michigan's threatened wildlife can be found on Wikipedia: https://en.wikipedia.org/wiki/List_of_threatened_fauna_of_Michigan

And there are many free to download printable face masks available on SuperColoring.com

For your convenience, here are some direct links to some options using the above resources:

Grey Wolf special concern
Moose special concern
Indiana Bat endangered
Piping Plover (Bird) endangered
Bald Eagle special concern
Short-Eared Owl endangered
Spotted Turtle threatened
Blanchard's Cricket Frog threatened
Kirtland's Snake endangered
Bluepike (Fish) **extinct**
Mitchell's Satyr (Butterfly) endangered
Hine's Emerald (Dragonfly) endangered
Tamarack Tree Cricket special concern
Yellow Banded Bumble Bee special concern

(These are just a few of the many species in decline, or gone, here in Michigan.)

Extension Activity: Science

Species in Pieces - interactive exhibition on 30 of the world's most interesting endangered species

http://www.species-in-pieces.com/#

Extension Activity for Older Sibling(s)

Design an app

https://www.teacherspayteachers.com/Product/Project-Based-Learning-Activity-Endangered-Animal-Awareness-Build-An-App-PBL-2494836

External Resources

App: WWF Together
(World Wildlife Fund)

Book: Endangered and Disappearing Birds of the Midwest by Matt Williams

Key Words to Search for Library Books:
- endangered species
- threatened species
- vulnerable species
- at-risk species
- wildlife conservation
- extinction

YouTube Video: Why Do Animals Go Extinct? COLOSSAL QUESTIONS on DreamWorksTV channel

Montessori Resources for Invertebrate Unit Study:

https://livingmontessorinow.com/montessori-invertebrate-resources-for-preschool-through-elementary/

4: HABITAT LOSS

Goal:

Children will learn what defines a habitat, and some causes of habitat loss.

Supplies:

- **Wooden blocks**
  alternative materials:
  - LEGO bricks or foam blocks
  - Pieces of wood or fabric
  - Rocks or leaves
- **1 plastic toy animal**
  alternative materials:
  - Animal magnet or small plush toy
  - Wooden or foam animal cut-out
  - River rock or pinecone

Verbal Lesson:

A habitat is a home. Different animals live in different homes. Birds and squirrels live up in trees. Fish and turtles live in water. Raccoons and foxes live in forests. Voles and rabbits live in grasslands. Animals have to have a home to survive.

Before people lived in Michigan, animals had the whole place to themselves. Nowadays, most of the state is used by people, either for human homes or for farms to grow people food, and the animals have fewer places to live.

Most of the time, people don't even realize they're taking homes away from animals.

For example, think about how short grass

is in your neighborhood. Most people mow their grass when it gets to be a few inches long. They don't want tall grass in their yard. But tall grass is where many small animals live! Without tall grass to hide from predators, many insects, frogs, voles, snakes, small song birds, ground squirrels, etc.. get eaten up! People could share the habitat with animals by simply not mowing a corner of their yard. Or by leaving a small pile of sticks in a corner of their yard.

Woodland animals can lose their habitats when we cut down too many trees, when diseases kill the trees, or when invasive plant species take over the forest.

Grassland animals can lose their habitats when we mow grass short, when invasive plants take over the grasslands, or when we put dangerous chemicals on our grass to control the "weeds" like dandelions.

Wetland animals can lose their habitats when we fill in wetlands so water can't pool, when we introduce invasive species to the water, or when we allow the water to become polluted with our garbage.

Different animals need different habitats, and we need to make sure there is enough of each habitat all over Michigan so that the animals can live here, too.

Hands-On Activity:

One trendy form of habitat destruction is rock stacking. Simulate rock stacking and get the children looking at it from the perspective of the animals who need those rocks for shelter and/or breeding grounds.

Dump out your wooden blocks into a messy pile on the floor. Take your plastic toy animal and show how the animal might hide in the various nooks and crannies created by the blocks when they are piled messily. Ask the children to point out any holes they see.

Talk about how the smaller holes are suited to the smaller animals while the bigger holes might make a good hiding place for a bigger animal. Be sure to mention that many of the animals that need these rocks the most are tiny invertebrates, almost impossible to see. Be sure to stress that these invertebrates are very important because they're a basic building block in the food chain. Small fish eat those invertebrates. And bigger fish eat those small fish. And turtles eat those bigger fish. If the invertebrates don't have a home then its not just the invertebrates that die out. Every animal that relies on the invertebrate for food will start to suffer too! The small fish, the big fish, the turtles, and more animals too- they're all hurt by rock

stacking.

Now start to stack some of the blocks. Every time a child points out a place that the toy animal could hide, take the block and add it to the stack. Eventually the toy animal will run out of places to hide. Explain that with no shelter, no home, the animal can't hide from predators and can't make babies. With no shelter, no home, the animal can't survive.

Continue the Learning with these Discussion Questions:

1- What kind of animal homes are there in Michigan?

2- Can you think of three ways an animal could lose its home?

3- If an animal loses its home, where does it go?

4- How can humans and animals do better at sharing the environment?

5- What is habitat loss?

Common Conservation Mistakes:

(and better alternatives)

✗ Keeping short grass lawns, clear of clutter.

✓ Letting parts of your lawn be unmowed, leaving piles of sticks or fallen logs out for shelter.

✗ Building bird houses that are not appropriately sized nor appropriately placed in the yard.

✓ Researching the species of birds you want to attract to make sure you're using the right type of bird house and putting it in the right place.

✗ Fixing/Flattening lawns to prevent seasonal puddles.

✓ Letting vernal pools form for frogs and salamanders to lay their eggs in.

Extension Activity: Craft

Leaf animals

https://emmaowl.com/leaf-animal-craft-for-kids/

Extension Activity: Science

Shelter building

https://theresjustonemommy.com/survival-skills-challenge-building-a-shelter/

Extension Activity for Older Sibling(s)

Lorax Writing Prompts

https://inspirationlaboratories.com/lorax-writing-prompts/

External Resources

App: NASA Images of Change (National Aeronautics and Space Administration)

Book: The Lorax by Dr Seuss

Key Words to Search for Library Books:
- habitat loss
- deforestation
- wetlands
- boreal forests
- grasslands

YouTube Video: Endangered Animals! on SciShow Kids channel

5: GEOGRAPHICAL FEATURES

Goal:
Children will learn some basic geographical features common in Michigan.

Supplies:

- **Blue tray**
  alternative materials:
  - Baking dish or food storage container
  - Wooden or metal tray
  - Small clay bird bath or potted plant saucer
- **Sand**
  alternative materials:
  - Flour or rice
  - Colored sand or aquarium gravel
  - Pea gravel or dirt
- **Optional: spoon, paintbrush, or stick**
- **Optional: printed landform cards found at http://shorturl.at/aiN07 and on page #57**

Verbal Lesson:

We know that a habitat is a home for animals. And we know that different animals need different habitats, different homes to live in. In Michigan we have a lot of water. There are many types of bodies of water: lakes, rivers, ponds. Some bodies of water only exist at certain times of the year; those are called vernal pools. Most bodies of water exist all year round.

All the water in Michigan is important. All of the water is home to something, and different types of animals live in different types of bodies of water.

Use activity materials to demonstrate concepts. Start with just enough sand (or alternative material) in your tray (or alternative material) to cover the bottom. "The sand is land, where you can see the tray beneath the sand is water."

Using a spoon, paintbrush, stick, or your fingers, move all the sand away from the edge of the tray and towards the middle. "The land is surrounded by water. This land is an island."

Move some of the sand so it touches the tray on one side, but not on the other three sides. "The land is connected to more land on one side, but is surrounded by water on the other three sides. This land is a peninsula."

Move the sand so it is against the edge of the tray on three edges but not in the middle and not on the fourth edge of the tray. "The water is connected to more water on one side, but is surrounded by land on the other three sides. This water is a bay."

Move the sand so that it covers the entire bottom of the tray again. Make a straight line through the sand, pulling it to either side of the tray and leaving an empty space down the

middle of the tray. "The water runs through the land. This water is a river."

Move the sand so that it covers the entire bottom of the tray again. Make a small hole in the sand so the tray shows through in a little circle. "There is a small body of water surrounded by land. This water is a pond."

Make the small hole in the sand bigger, so the tray shows through in a larger circle. "There is a large body of water surrounded by land. This water is a lake."

Hands-On Activity:

Offer the sand tray and (optional) printed landform pictures to the students to practice making their own land formations. Discuss the landforms and geographical features they see in the area they live.

Continue the Learning with these Discussion Questions:

1- What is the difference between an island and a lake?

2- Which is biggest: a puddle, a lake, or an ocean?
Which is smallest?

3- Do we have any oceans in Michigan?

4- Can you name some landforms in your town?
What about landforms you've seen on vacation?

5- What does geographical features mean?

Common Conservation Mistakes:

(and better alternatives)

✗ Thinking Michigan is all forests, lakes, and dunes.

✓ Knowing that Michigan needs to conserve our wetland and grassland habitats as well.

✗ Buying fruits and veggies that come from large farms.

✓ Supporting smaller local farms.

✗ Not participating in local elections.

✓ Staying alert to local politics which could effect land use in your area, and voting in local elections.

Extension Activity: Craft

Edible landforms

https://www.pinterest.com/pin/546202261037830289/

Extension Activity: Science

Erosion experiment

https://www.lifeisagarden.co.za/soil-erosion-experiment/

Extension Activity for Older Sibling(s)

Paper Mache Landforms

https://www.ehow.com/how_7763041_make-paper-mache-mountain.html

External Resources

App: AccuWeather: Weather Radar

Book: The Magic School Bus Inside the Earth by Joanna Cole

Key Words to Search for Library Books:
- geographical features
- landforms
- bodies of water
- mason esker
- glaciers
- topography

YouTube Video: Great Lakes Geography/Great Lakes North America on Kids Learning Tube channel

Montessori Resources for Rock and Mineral Unit Study:

https://livingmontessorinow.com/free-rocks-and-minerals-printables-and-montessori-inspired-rocks-and-minerals-activities/

Land Formations

Made for use with
Suzy's Nature Studies'
W.E.E. Conservation Class

Activity 5: Geographical Features

Print and Cut Along Lines

6: WATER POLLUTION

Goal:

Children will learn what water pollution is and how water pollution spreads.

Supplies:

- **Tarp**
  alternative materials:
  Shower curtain liner or shallow tub
  -none-
  -none-
- **Watering can**
  alternative materials:
  Garden hose with spray nozzle or jug of water with holes poked in the bottle cap
  -none-
  -none-
- **Plastic grocery store bags**
  alternative materials:
  LEGO bricks or foam blocks
  -none-
  -none-
- **Food dye**
  alternative materials:
  Kool-Aid mix or bath water color tablets
  -none-
  -none-
- **Optional: printed water cycle cards found at http://shorturl.at/wHL23 and on page #67**

Verbal Lesson:

All water is connected in a process known as the water cycle. *[optional: as you explain the different steps of the water cycle, lay down the accompanying cards which illustrate the water cycle]* Water comes from clouds as rain, snow, sleet, and hail. *[lay down card]* Some water is absorbed into the ground and from there it travels underground to rivers and lakes. Some water flows over ground; it also collects in rivers and lakes. *[lay down card]* The sun shines down on the rivers and lakes, causing the water to warm up. When water is warm, some of it goes into the air. This is called evaporation. We can't see the water in the air, but it's there. Tiny, tiny water droplets, so small that they float in the air. *[lay down card]* Those water droplets gather together in the sky to make clouds. *[lay down card]* When the clouds become heavy enough, the water rains back down on us and goes through the whole cycle all over again. *[point to first card you laid down]*

If the children are having a hard time with this concept, consider doing a demonstration. Remind them that they've seen water fall from the sky in the form of rain. Remind them of the large, dark clouds they see before it rains. Put a pot of water on the stove and

boil it. Point to the steam. Tell them this is how water leaves earth and goes back into the sky to be made into clouds. Warm water travels up through the air, just like the steam.

Most of the time, before the water evaporates back up into the sky, it will move around here on earth. Rivers flow into lakes, and lakes will often feed into other rivers. The water doesn't stay put. It moves around, it mixes up.

In the sky, it's the same thing. A cloud isn't made up of water from only one lake. Its made up of all the water in an area.

When water gets mixed with something its not supposed to be mixed with, that's called water pollution. And because water moves around, the water pollution moves around too.

Hands-On Activity:

This activity is best done outside or in an area that you don't mind getting messy and wet (such as a garage, basement, bathroom, or kitchen).

First, lay out your tarp. Tell the children that this is land. But its not finished yet. This land is flat, with no geographical features.

Invite the children to add geographical features to the land. Use plastic grocery store bags to make hills, valleys, islands, peninsulas, rivers, lakes, etc. on top of the tarp.

Use your watering can to rain down water on the land you've designed. The water should gather into rivers and lakes.

Now add some water pollution. Put a drop of red food dye in one spot. Tell the children the home owner near this body of water uses herbicides to kill wees on their lawn. When rain water flows over the lawn, it takes some of the herbicides with it.

Put a drop of yellow food dye in another spot. Tell the children the farmer near this body of water uses fertilizers and pesticides in their field. When rain water flows over the field, it takes some of the fertilizers and

pesticides with it.

Put a drop of blue food dye in another spot. Tell the children that the city has a storm drain (a hole like the drain in the bottom of your bathtub, which allows to water to travel down, and prevent flooding) near a parking lot. Many people throw their cigarette butts and other trash on the ground of the parking lot. When rain water flows over the parking lot, it takes some of that trash with it down the drain.

Now have the children look at the pollution. Talk to them about it. It doesn't seem like much. Its just three small spots, separate from each other. There is still a lot of clean, unpolluted water left. But what happens when it rains again?

Use your watering can to rain down water on the newly polluted land. Watch how the pollution moves. Watch how it mixes with other pollution. How much clean water is left now?

You can stop here or continue on, adding more pollution and rain again. Be sure to talk through the process, each step of the way. Eventually it should be clear that without some filtration, all of the water will become polluted.

Continue the Learning with these Discussion Questions:

1- What are some things that don't belong in water? How do they get there?

2- Can you think of three different bodies of water?

3- What animals might be effected by water pollution?

4- How can you tell if water is safe to drink?

5- What is water pollution?

Common Conservation Mistakes:

(and better alternatives)

✗ Using pesticide and herbicide on lawn or garden.

✓ Using natural methods to minimize pests and letting beneficial "weeds" grow, like dandelions.

✗ Not washing swim suit, water toys, and bottom of boat after visiting in a lake or river.

✓ Rinsing everything off immediately to prevent the spread of invasive water plants and invertebrates.

✗ Dumping car oil and other fluids outside.

✓ Taking car oil and other fluids to appropriate disposal centers.

Extension Activity: Craft

frog pond playdough set
https://lifeovercs.com/free-frog-pond-play-dough-printable/

Extension Activity: Science

Water Cycle Bag Experiment
https://www.livinglifeandlearning.com/water-cycle-bag-experiment.html

Extension Activity for Older Sibling(s)

water filtration experiment
https://teachbesideme.com/water-filtration-experiment/

External Resources

App: Water Quality from Stroud Water Research Center

Book: The Magic School Bus At The Waterworks by Joanna Cole

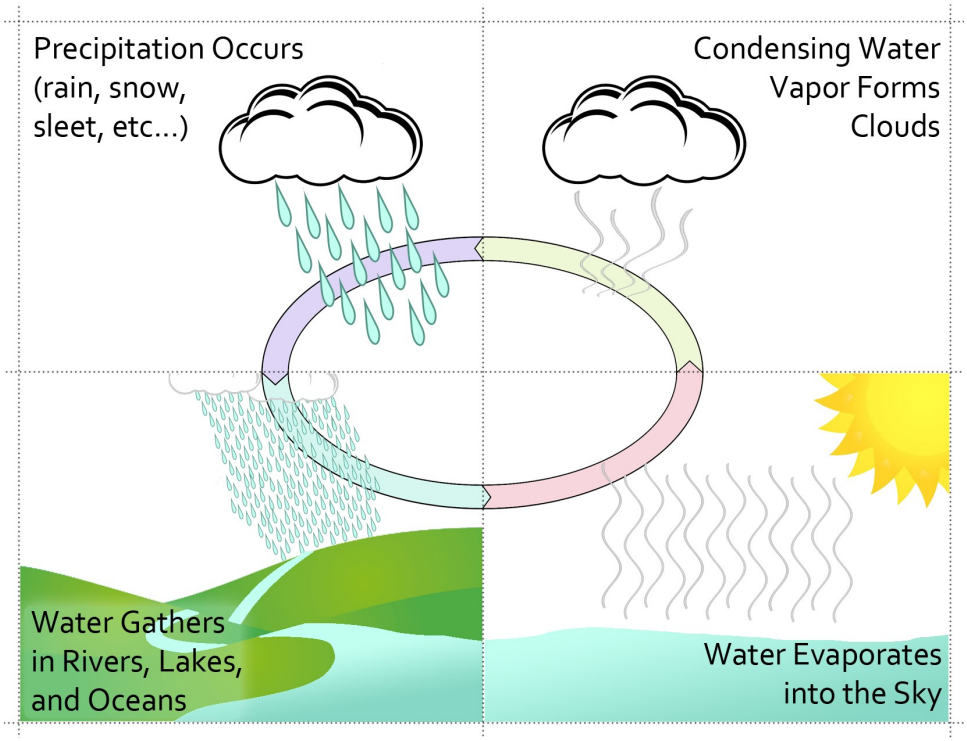
Key Words to Search for Library Books:
- water pollution
- watershed
- water cycle
- oil spill
- great lakes
- Michigan wetlands
- River Rouge

YouTube Video: What really happens to the plastic you throw away – Emma Bryce on TED-Ed channel

Water Cycle

Made for use with
Suzy's Nature Studies'
W.E.E. Conservation Class

Activity 6: Water Pollution



Print and Cut Along Lines

7: OTHER POLLUTION

Goal:

Children will learn about various other types of pollution and why they are bad.

Supplies:

- **3 containers of some sort (boxes or bins)**
- **Man-made items**
  for example: food wrapper, pen, comb, sunglasses, straw, mitten
- **Natural items**
  for example: leaves, twigs, pinecones, rocks, feathers, flowers

Verbal Lesson:

Not all pollution is in the water. Some pollution is in the air. Air pollution has many causes. These include smoke let out by factories and power plants, dust and mist from farm chemicals, and even the stuff which comes out of the back of our cars.

Some pollution is on land. Most if it is made up of things that should be recycled, composted, or put into the trash.

Think about your favorite park. What's there? Is the ground grassy? Are there sticks on the ground that you can play with? Acorns, pinecones, fallen leaves, really cool rocks? Or is the ground covered in trash? Cups and straws and old, dirty diapers? Think about which would be more pleasant for you to play near.

Would you rather play somewhere that's clean and full of natural items to explore, or

would you rather play somewhere that is dirty and has trash all over the ground?

A clean park with lots of natural items probably sounds a lot more fun to you. And its more pleasant for the animals who live at the park too!

Squirrels spend a lot of time searching for food and tucking away some of the nuts they find to eat in winter. Imagine if a squirrel was hungry and went out looking for healthy squirrel food like nuts and berries, but all they found was an old pizza that someone just left on the ground. They might decide to eat the pizza and then get really sick, because pizza is not healthy squirrel food.

Frogs and toads tend to have big appetites and will eat just about any sort of meat they can fit in their mouths, like bugs and (depending on how big the frog is) small rodents. But if a frog got confused by a plastic toy animal and ate one of those thinking it was a bug, that could cause a lot of problems for the frog. Their body wouldn't be able to digest the plastic, and they could get very sick or even die. Which is why it's important that we not leave man-made things on the ground outside, its important to not litter or pollute the land.

Hands-On Activity:

Mix all the man-made and natural items into one container. Place the two empty containers on either side. Pick out one man-made item. Tell the children, “this is man-made, this is something humans have created, it is not found in nature.” Put that item into one of the empty bins. Pick out one natural item. Tell the children, “this is natural, this is something nature created, it is found in nature.” Put that item into the second empty bin. Challenge the children to sort the rest of the items into man-made and natural on their own.

When they’ve finished sorting, go through it with them to see what they got correct and what they may have made mistakes about. Be sure to use this opportunity to discuss with them the various materials they are working with: plastic, rubber, fabric, wood, metal, glass, etc.. and talk to them about how these things can be reused or recycled.

Continue the Learning with these Discussion Questions:

1- How can you tell if something is man-made or found in nature?

2- What does biodegradable mean?

3- What does it mean to reuse something? What does it mean to recycle? How are they different?

4- Can you list three types of pollution?

5- What is pollution?

Common Conservation Mistakes:

(and better alternatives)

✗ Using single-use plastics.

✓ Switching to reusable water bottles, cups, straws, cutlery, snack bags, grocery shopping bags, etc..

✗ Not recycling, or putting things in recycling that can't be recycled in your area.

✓ Finding out what your local recycling center accepts and recycling as much of it as you can.

✗ Buying everything new.

✓ Reusing old items and purchasing second hand whenever possible.

Extension Activity: Craft

Recyclables robot

https://www.pinterest.com/pin/93449761002621377/

Extension Activity: Science

Compost experiment

https://thehappyhousewife.com/homeschool/compost-cups-science-project/

Extension Activity for Older Sibling(s)

Recycling STEM Challenges

https://littlebinsforlittlehands.com/recycled-stem-activities-challenges-for-kids/

External Resources

App: iRecycle from Earth911

Book: One Plastic Bag: Isatou Ceesay and the Recycling Women of the Gambia by Miranda Paul

Key Words to Search for Library Books:
- pollution
- reduce, reuse, recycle
- compost
- landfill
- plastic

YouTube Video: How Plastic Hurts the World on SciShow Kids channel

Montessori Resources for Living vs Non-Living Unit Study:

https://livingmontessorinow.com/montessori-living-and-non-living-resources-and-activities/

8: LEAVE NO TRACE

Goal:

Children will learn what "leave no trace" means and will help to make leave no trace rules for their own family/community.

Supplies:

- **Dry erase board and marker**

  alternative materials:

  Paper and pencil

  Chalkboard and chalk

  -none-

Verbal Lesson:

When you go out in nature, there are certain rules you have to follow. These are called Leave No Trace rules.

Leave No Trace basically means that we should leave natural places exactly how we found them, with no signs that we were there at all. Different places have different Leave No Trace rules, and some are more strict than others. At a city park, where many people visit and where city workers help keep the area clean, it may be as simple as not leaving garbage or human-made items behind when we leave. A state forest, however, might want us to be careful about where we walk, to avoid dragging things across the ground, to cover any holes we dig (or to not dig holes at all). In other words, when we are done exploring and enjoying nature, we should leave it exactly as we found it. It should be as if we were never there at all.

This can be a difficult concept for some people. Many people want to go into natural places and "improve" upon them. People make art by stacking rocks, they clear brush to build trails, they dig holes for fire pits, etc.. It can be very difficult for some people to accept that we're not supposed to improve on nature. Many people unknowingly damage nature, harm plants and animals, in their attempts to improve or change the natural world.

We humans have made changes to the environment to make it more comfortable for us. Our towns and cities take up space where trees used to grow and animals used to live. It would not be nice of us to go into the woods and fields and rivers and lakes which are still around us and change it or leave our things behind. We want to protect the natural places around us, and we can do that and still enjoy them if we follow Leave No Trace rules.

Hands-On Activity:

Look up the rules for the city or state park nearest you. Read over the rules together and see if there are any you didn't know about, or any that you have accidently broken in the past. Discuss the reasons for each rule.

Now invite the children to join you in coming up with your own Leave No Trace rules. Write them down as you go.

These rules can be the same as the rules that already exist such as don't throw trash on the ground, don't feed squirrels, etc..

These rules can be productive. Maybe you could make a rule to always take a trash bag with you to the park, and help clean up the messes that other people leave behind.

These rules can be silly. Children are just starting to exercise and experiment with the concept of control. They may want to make rules like, "don't put hats on toads," and that's ok! Don't put hats on toads is a perfectly acceptable Leave No Trace rule.

Continue the Learning with these Discussion Questions:

1- Should you catch a wild animal and take it home as a pet?

2- If you're leaving the beach to go home, is it ok to leave your sand castle bucket behind for other people to play with?

3- Would it be cool to carve your name into a tree?

4- When you finish eating something at the park, where should you put the wrapper?

5- What does "Leave No Trace" mean?

Common Conservation Mistakes:

(and better alternatives)

✗ Not picking up dog/pet waste on walks.

✓ Always bagging and removing pet waste from trails.

✗ Going off trail when hiking.

✓ Staying on trails, not walking around puddles on the trail.

✗ Leaving compostable waste (like paper and veggie scraps) in the woods.

✓ Taking everything you brought with you, with you when you leave.

Extension Activity: Craft

Leave No Trace rules booklet

http://www.turnthis-intothat.com/2017/06/02/leave-no-trace-booklet/

Extension Activity: Science

Nature Scavenger Hunt

https://www.thermoutdoor.co.nz/blogs/news/nature-scavenger-hunt-printable

Extension Activity for Older Sibling(s)

Wildflower Scavenger Hunt

https://grandpashorters.com/take-a-michigan-wildflower-scavenger-hunt-this-spring/

External Resources

App: JouleBug – Sustainability App

Book: Not for me, please!: I choose to act green by Maria Godsey

Key Words to Search for Library Books:
- leave no trace
- hiking
- backwoods camping
- wildlife
- outdoor ethics

YouTube Video: Leave No Trace Basics on Leave No Trace Center for Outdoor Ethics channel

9: NATIVE POLLINATORS

Goal:

Children will learn what pollination is and why native pollinators are important.

Supplies:

- **3-8 people**
  adults and children can participate
- **Three cups**
  alternative materials:
  - Bowls
  - Storage bins
  - Flower pot
- **Clothes pegs in three different colors**
  alternative materials:
  - Post-It notes in three different colors
  - Paper clips in three different colors
  - Three different types of soft burs

Verbal Lesson:

Pollination happens when an animal, usually an insect or a small bird, drinks flower nectar. They get a bit of pollen on them and they unknowingly carry that pollen with them to the next flower where they drink more nectar. Its sort of like getting mud on your shoe and then leaving muddy prints behind everywhere you walk. They get pollen on them and leave it behind everywhere they go.

The pollen lands on the middle part of the flower, called the stigma, and then the pollen travels down into a part of the flower called the ovary. When the pollen enters the ovary of the flower, then the flower has been fertilized and fruit/seeds can grow.

Flowers are an important part in growing food. Think about an apple. A stem on top attaches the apple to a tree. But what is that brown dimple on the other side of the apple, opposite the stem? That's called the blossom end. Blossom being another word for flower, the blossom end is where the flower used to be. After the flower was pollinated, the fruit can grow, and eventually the flower withers and falls off.

Most pollinators have a favorite food, a favorite flower nectar. Native Michigan pollinators (like the mason bee) tend to like native Michigan flowers, for example. So when you plant a pollinator-friendly garden, its important to make sure you plant the types of plants that will attract the types of pollinators you want.

Its also important to make sure that the plants are safe for the pollinators. Many plants at hardware stores and grocery stores have been sprayed with pesticides meant to kill bad bugs. But the thing about pesticides is that they kill good bugs, too!

Hands-On Activity:

The three cups represent flowers. The three colors of clothes pegs should be sorted by color into the cups. The clothes pegs are the pollen.

If you have a large group with 2-3 adults, have them each take a cup and stand a few feet away from each other. If you only have a small group and/or 1 adult, then that one adult will have to keep all three cups.

The children are native Michigan mason bees. Explain to the bees that it is their job to visit all the flowers. Upon visiting a flower, they may receive some pollen and/or leave some pollen behind. Sing a short song, like the alphabet song, while the bees are traveling around pollinating the flowers. When the song is over, stop, and look at how mixed up the colors of clothes pegs are. The flowers may not be touching but, with help from the bees, they were able to all get pollinated, and now their fruit can grow.

If you'd like to add another layer for fun, play the game again, but this time have the children pretend to be non-native/invasive honey bees. Explain that the mason bees are solitary animals. They don't work together in a hive, and they don't make honey. Honey bees, however, are social animals and need to

communicate with one another. They need to be able to tell each other where to find flowers with tasty nectar, which they use to make honey. But honey bees don't use words to speak. Honey bees communicate through dance. Have the children dance to show each other where flowers can be found.

Continue the Learning with these Discussion Questions:

1- What is your favorite food? Does it require pollination to grow?

2- What is your favorite pollinator? Is it Michigan native?

3- What are some foods that don't require pollination? Can you list five?

4- How can we help pollinators?

5- What is pollination?

Common Conservation Mistakes:

(and better alternatives)

✗ Buying plants from hardware stores and grocery stores that have been sprayed with pesticides.

✓ Buying plants from sources that don't spray with pesticides, like some nurseries and farmers market vendors.

✗ Planting too much of one thing.

✓ Planting a variety of non-invasive things, which bloom at different times of the year.

✗ Not taking into account your growing conditions.

✓ Checking to make sure that soil, sunlight, and moisture are correct for the things you plant.

Extension Activity: Craft

Egg carton bee

https://buggyandbuddy.com/egg-carton-bee/

Extension Activity: Science

Mason bee hotel

https://www.instructables.com/id/mason-bee-hotel/

Extension Activity for Older Sibling(s)

Pollinator Citizen Science Project

http://www.teachingwithoutchairs.com/2019/05/citizen-science-for-kids-pollinator.html

External Resources

App: BeeSmart Pollinator Gardener from Pollinator Partnership

Book: The Magic School Bus Inside a Beehive by Joanna Cole

Key Words to Search for Library Books:
- pollination
- bees
- butterflies
- pollinator mammals
- native flowers
- native gardening

YouTube Video: Like Fruit? Thank a Bee! on SciShow Kids channel

Montessori Resources for Botany/Gardening Unit Study:

https://livingmontessorinow.com/free-montessori-botany-materials-for-a-gardening-unit/

10: EVERYDAY THINGS YOU CAN DO

Goal:

Children will feel empowered to help contribute to conservation efforts. Children will help come up with a plan for something they can do, then act out that plan.

Supplies Vary,
See Flowchart on pg #94

Verbal Lesson:

It's a big world out there, with a lot of things that need our help. But we are only a few, just a handful of people who are trying to help make the world a better place.

The good news is that one person can make a difference. And if each of us does just a little bit to help, then the world will be a much better place for it.

There are networks of people who work together towards a common goal, many people who each do just a little bit to help a big project get done. This is called Cooperation or Teamwork.

If you need to clean your room, and its really dirty, it can feel very overwhelming. Sometimes you might feel like it is never going to get done. But if you have someone there helping you, it can be a lot easier. It's the same with nature. It can feel overwhelming with just one person, but when you join a group of people and everyone does their part, the work feels so much easier.

So now, all you have to do is decide what sort of projects you want to help with. There

are many ways to help the Earth. Some things are not quite what you'd expect them to be, though. For example, if you really love the endangered prairie vole and you wanted to help it survive in the wild, you wouldn't go out trying to catch it or cuddle it, no matter how cute it might look! Instead you could help it by spreading native grassland seeds, or by pulling up invasive plants which damage the grasslands where the prairie voles live.

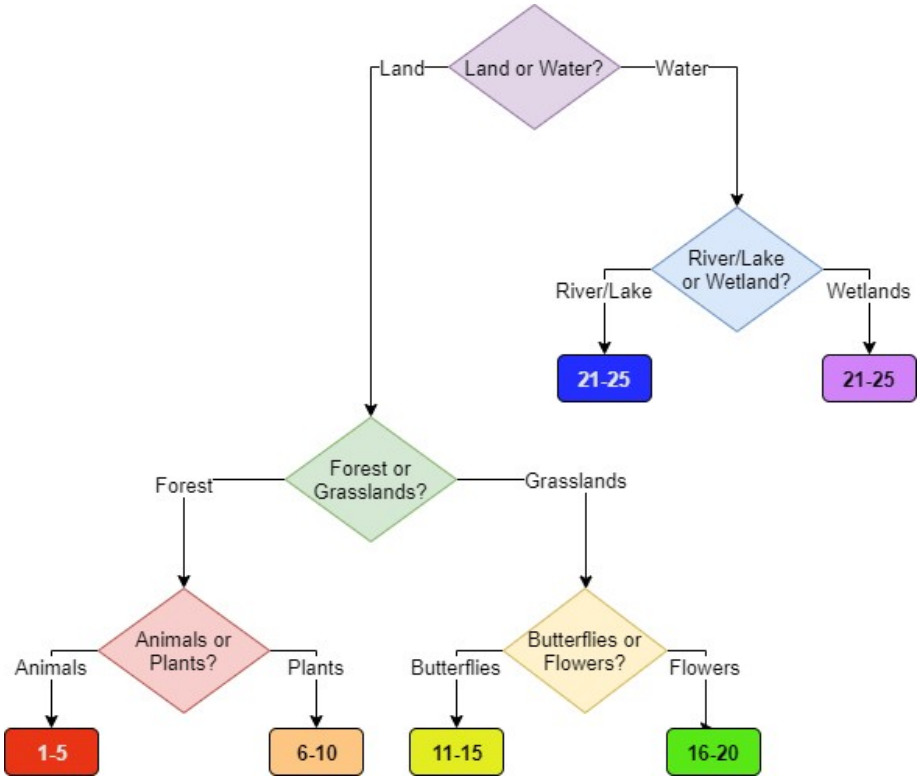
Helping animals often means making sure that they have access to food and shelter. Because everything in nature is connected, you can help many animals by planting the right kind of plants.

But even if you don't want to garden, there are so many other things you can do to help! You can pick up trash. You can start a compost bin for your green waste. You can do fundraisers to make money for conservation charities. You can tell everyone you know how important it is to reduce, reuse, and recycle. You have the power to help! The possibilities are endless!

Hands-On Activity:

Ask children questions and using their answers follow the flowchart on the next page to find a conservation project which will be meaningful to them and helpful to the environment. Details about each conservation project can be found on the pages following the flowchart.

What Kind of Conservation Project Should I Do?



1. Pick-Up Trash
Wear gloves, take a trash bag, and go pick up litter along your favorite hiking trails or at your city park.

2. Trail Maintenance
Contact your local nature center and ask if there are any trails that need minor work done. Some tasks are small and can be completed without training or special equipment, such as moving fallen branches, pruning back brush, spreading mulch, pulling invasive plants, checking on the condition of the trail signs, etc..

3. Record and Report Species
Download apps like iNaturalist and MISIN before you go out. Once on the trail, take a picture of a plant or animal and upload that picture to the app for identification purposes. Make sure to set your GPS to record the location of the species you found. Get as many species as you can, to give a full picture of the ecological health of the area.

4. Donate
Donations to local conservancy programs can be a big help. You could consider doing a fundraiser to gather donations, such as a bake sale, lemonade stand, craft fair, fun run, etc..

5. Volunteer
Every nature center is different. They all have their own individual projects going on and their own unique work that needs to be done. Your

local nature center might need someone to help feed/clean up after their educational animals, or someone to tend their pollinator garden, or someone to vacuum, or someone to build a storage shed- you never know until you ask.

6. Pull Invasive Plants
Familiarize yourself with invasive plant species in your area (MISIN can help with that), then take a garbage bag, and go pull weeds along your favorite hiking trails or at your city park.

7. Plant Native Wildflowers and other Native Plants
Consult a local native plant nursery for advice when choosing what to plant. If you don't have anywhere to plant a garden, you can still have some plants in flower pots or get a plot in a community garden.

8. Record and Report Species
Download apps like iNaturalist and MISIN before you go out. Once on the trail, take a picture of a plant or animal and upload that picture to the app for identification purposes. Make sure to set your GPS to record the location of the species you found. Get as many species as you can, to give a full picture of the ecological health of the area.

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a big help. You could consider doing a fundraiser to gather donations, such as a bake sale, lemonade stand, craft fair, fun run, etc..

10. Volunteer
Every nature center is different. They all have their own individual projects going on and their own unique work that needs to be done. Your local nature center might need someone to help feed/clean up after their educational animals, or someone to tend their pollinator garden, or someone to vacuum, or someone to build a storage shed- you never know until you ask.

11. Collect Milkweed Seeds
Gather native milkweed seedpods and donate them to local monarch conservation programs.

12. Plant Milkweed
If you have a place in your yard that is suitable for milkweed plants, plant some seeds and prepare your garden to be pollinator friendly. (ie, no pesticides and lots of different types of flowering plants)

13. Raise and Release Monarchs
You can order monarch caterpillars online, as well as view care instructions online. Be sure to research thoroughly before taking on a living creature.

14. Donate

Donations to local conservancy programs can be a big help. You could consider doing a fundraiser to gather donations, such as a bake sale, lemonade stand, craft fair, fun run, etc..

15. Volunteer
Every nature center is different. They all have their own individual projects going on and their own unique work that needs to be done. Your local nature center might need someone to help feed/clean up after their educational animals, or someone to tend their pollinator garden, or someone to vacuum, or someone to build a storage shed- you never know until you ask.

16. Pull Invasive Plants
Familiarize yourself with invasive plant species in your area (MISIN can help with that), then take a garbage bag, and go pull weeds along your favorite hiking trails or at your city park.

17. Plant Native Wildflowers and other Native Plants
Consult a local native plant nursery for advice when choosing what to plant. If you don't have anywhere to plant a garden, you can still have some in flower pots or get a plot in a community garden.

18. Distribute Native Wildflower Seeds
You can harvest native wildflower seeds from wildflowers you've already grown, or purchase

them from a local native plant nursery. Gift the seeds to as many people as you can. Give them away for holidays and special occasions. Consider making them into seed bombs for guerilla gardening.

19. Donate
Donations to local conservancy programs can be a big help. You could consider doing a fundraiser to gather donations, such as a bake sale, lemonade stand, craft fair, fun run, etc..

20. Volunteer
Every nature center is different. They all have their own individual projects going on and their own unique work that needs to be done. Your local nature center might need someone to help feed/clean up after their educational animals, or someone to tend their pollinator garden, or someone to vacuum, or someone to build a storage shed- you never know until you ask.

21. Make, Fund, or Maintain a Wood Duck Box
If you have the skills to build a wood duck box, do so. If not then you can pay for someone else to build it. Wood duck nesting boxes need to be cleaned out yearly. Consider contacting your local birding organization to ask if you can apprentice under someone who does this yearly maintenance.

22. Pick-Up Trash

Wear gloves and boots, take a trash bag, and go pick up litter along your favorite lake or local riverbank.

23. Hunt for Invasive Crayfish
Familiarize yourself with what your local native crayfish look like. Wear water shoes and clothes you don't mind getting wet. Take a small bucket or catch cup with you into shallow edges of rivers and streams. Look under rocks (placing them gently back where you found them) and capture any invasive crayfish you find. You can dispatch of these crayfish or donate them to your local wildlife rehabilitation center, which may have animals who could eat the crayfish (large turtles, birds of prey, etc..).

24. Donate
Donations to local conservancy programs can be a big help. You could consider doing a fundraiser to gather donations, such as a bake sale, lemonade stand, craft fair, fun run, etc..

25. Volunteer
Every nature center is different. They all have their own individual projects going on and their own unique work that needs to be done. Your local nature center might need someone to help feed/clean up after their educational animals, or someone to tend their pollinator garden, or someone to vacuum, or someone to build a

storage shed- you never know until you ask.

26. Record and Report Species
Download apps like iNaturalist and MISIN before you go out. Once at your local body of water, take a picture of a plant or animal and upload that picture to the app for identification purposes. Make sure to set your GPS to record the location of the species you found. Get as many species as you can, to give a full picture of the ecological health of the area.

27. Pick-Up Trash
Wear gloves and boots, take a trash bag, and go pick up litter in your local wetland area.

28. Pull Invasive Plants
Familiarize yourself with invasive plant species in your area (MISIN can help with that), then take a garbage bag, and go pull weeds along your favorite hiking trails or at your city park.

29. Donate
Donations to local conservancy programs can be a big help. You could consider doing a fundraiser to gather donations, such as a bake sale, lemonade stand, craft fair, fun run, etc..

30. Volunteer
Every nature center is different. They all have their own individual projects going on and their own unique work that needs to be done. Your

local nature center might need someone to help feed/clean up after their educational animals, or someone to tend their pollinator garden, or someone to vacuum, or someone to build a storage shed- you never know until you ask.

Continue the Learning with these Discussion Questions:

1- Why should we care about conserving nature? Can you think of three reasons?

2- If everyone made one small change in their day-to-day lives, everyone each doing one little thing to help conserve nature, what would be the result of that?

3- What is one small change you can make in your day-to-day life to help conserve nature?

4- How can you spread the word about conservation to your friends, family, neighbors, etc..?

5- What might happen if no one cared about conservation?

Common Conservation Mistakes:

(and better alternatives)

✗ Keeping quiet when you see a neighbor plant an invasive plant, or a friend catching an endangered turtle to keep as a pet.

✓ Speaking up when those around you have good intentions but don't realize the harm they are causing.

✗ Wanting to make positive changes, but then not following through on those changes.

✓ Making a plan that breaks up positive changes into managable chunks, then taking baby steps towards those changes.

✗ Wanting to do more but not knowing what to do.

✓ Networking with like-minded people who can work with you to achieve conservation goals.

Extension Activity: Craft

Natural paintbrushes

https://masandpas.com/mother-natures-paintbrushes/

Extension Activity: Science

Conservation songs

https://bitsofpositivity.com/free-conservation-songs-home-school-character-education-resources/

Extension Activity for Older Sibling(s)

See Flowchart on pg #94

External Resources

App: If you haven't already, please check out the iNaturalist app recommended in Lesson 1.

Book: What a Waste: Trash, Recycling, and Protecting our Planet by Jess French

Key Words to Search for Library Books:
Search for the topic you've chosen to work on from the flowchart. Your librarian can help you look.

YouTube Video: How long will human impacts last? – David Biello on TED-Ed channel

FINAL THOUGHTS

If you've enjoyed this program and are interested in knowing more about conservation, be sure to check out MSU Extension's Conservation Stewards program:

https://www.canr.msu.edu/conservation_stewards_program/

All coursework, activities, and original materials were designed by the educators of Suzy's Nature Studies, based out of Lansing, MI. For more information on Suzy's Nature Studies, what we do and what we offer, visit us on the web:
www.lansingnaturestudy.com.