Amazing Animals Program Information Sheet

Theme: Amazing Animals of West Michigan
Recommended Grade Levels: 1st, 2nd & 3rd
Seasons Offered: Fall & Spring
Program Length: 1.5 hours (can be adapted upon request)
Maximum # of Students: 60

Program Synopsis: Students will become nature detectives as they look for signs of animal life and things animals need to survive while walking through the preserve. They will also examine the relationship between animals and their unique adaptations through observation and activities that illustrate predator-prey interaction and camouflage strategies. (Upon request, this program can be adapted to teacher’s specifications with enough lead time.)

Key Concepts: survival needs of animals (food, water, air, shelter, space), animal signs, observational skills, predator-prey interactions, camouflage, warning coloration, classification of animals (vertebrate vs invertebrate, mammals, birds, fish, reptiles, and amphibians), nocturnal, echolocation, awareness and appreciation of nature

Teaching Objectives: Students will …
- Discover different types of signs which indicate the presence of animals in the preserve.
- Observe Michigan animals in their natural habitats and in captive habitats.
- Learn the difference between predator and prey and their interactions.
- Discover the roles camouflage and warning colorations play in protecting both prey and predators.
- Learn the difference between vertebrates and invertebrates and the five classifications of vertebrates (fish, amphibians, reptiles, birds, and mammals)

MI GLCE Standards:
1st Grade:
- S.IP.01.11: Make purposeful observations of the natural world using appropriate senses.
- S.IP.01.12: Generate questions based on observations.
- S.IP.01.14: Manipulate simple tools (hand lens, pencils, rulers)

Tips for a successful field trip

Preparing for an Outdoor Program: Students, teachers and chaperones need to dress for the weather. In inclement weather, outdoor activities may be shortened and conducted inside the nature center; but, unless the weather is severe we will still go outside. Please have students wear lots of layers, hats, gloves, boots and coats in cold weather and rain gear when needed. Clothes and apparel may get dirty or wet during outdoor programs—please advise your students’ parents of this. During certain times of the year, insect repellent may be needed.

Before arriving, please remind your students and chaperones of the following:
- Walk quietly. Quiet hikers see more wildlife.
- Staying on the trails protects both plants and animals that live in the preserve and yourself.
- Stay behind the leader and listen carefully to instructions.
- To care for our plants and animals, we need to be kind and not hurt them.
- S.IA.01.12: Share ideas about science through purposeful conversation.
- S.IA.01.13: Communicate and present findings and observations.
- S.IA.01.14: Develop strategies for gathering information (ask an expert, book, observation, investigation)
- L.OL.01.13: Identify the needs of animals.

2nd Grade:
- S.IP.02.11: Make purposeful observations of the natural world using the appropriate senses.
- S.IP.02.12: Generate questions based on observations.
- S.IP.02.14: Manipulate simple tools (ruler, hand lens, thermometer).
- S.IP.02.12: Share ideas about science through purposeful conversation.
- S.IA.02.13: Communicate and present findings and observations.
- S.IA.02.14: Develop strategies and skills for information gathering and problem solving (books, internet, ask an expert, observation, investigation).
- S.RS.02.15: Use evidence when communicating scientific ideas.

3rd Grade:
- S.IP.03.11: Make purposeful observation of the natural world using the appropriate senses.
- S.IP.03.12: Generate questions based on observations.
- S.IP.03.14: Manipulate simple tools that aid observation and data collection (hand lens, ruler, thermometer and timer).
- S.IA.03.12: Share ideas about science through purposeful conversation and collaborative groups.
- S.IA.03.13: Communicate and present findings of observations and investigations.
- S.IA.03.14: Develop research strategies and skills for gathering information and problem solving.
- S.RS.03.15: Use evidence when communicating scientific ideas.
- L.OL.03.32: Identify and compare structures in animals used for controlling body temperature, support, movement, food-getting and protection (fur, wings, teeth, scales).
- L.OL.03.42: Classify animals on the basis of observable physical characteristics (backbone, body coverings, and limbs).
- L.EV.03.12: Relate characteristics and functions of observable body parts to the ability of animals to live in their environment (sharp teeth, claws, color, body coverings).

Program Activities:

**Animal Signs:** (S.IP.01.11, S.IP.01.12, S.IP.01.14, S.IA.01.12, S.IA.01.13, S.IA.01.14, S.IP.02.11, S.IP.02.12, S.IP.02.14, S.IA.02.12, S.IA.02.13, S.IA.02.14, S.RS.02.15, S.IP.03.11, S.IP.03.12, S.IP.03.14, S.IA.03.13, S.IA.03.14, S.RS.03.15)

Students will use their senses and observation skills to look for animal signs such as tracks, nests, sounds, holes etc. of all kinds as they walk through the preserve. They will also discuss the five things animals need to live and see if they can find evidence of those things throughout the hike. If animals are spotted, students will observe their behavior and adaptations and have a discussion about their observations so they can get to know the animal's life history and classification. Depending on the season and time of day, birds, squirrels and chipmunks, frogs, worms, and slugs are usually observed.
Birds and Worms (Camouflage): (S.IP.01.11, S.IP.02.11, S.IP.03.11, L.OL.03.32, L.EV.03.12)
In this activity, students will learn why animals use camouflage as they pretend to be birds looking for worms and caterpillars hidden along the trail. As they continue on their walk throughout the preserve, they will be encouraged to look for real animals using camouflage techniques. The purpose of warning coloration will also be discussed.

Bat and Moth (Predator/Prey Interactions): (L.OL.03.32)
Students will discover how predators and prey interact by playing a game in which a bat uses its senses to capture a moth to eat. Students will also learn more about Michigan bats and how they use echolocation to capture their prey.

Mystery Critters (Animal Classification) (S.IP.01.12, S.IP.02.12, S.IP.03.12, L.OL.03.32, L.OL.03.42) (Note: This activity is dependent on your students’ background knowledge and grade level. It will be adapted as the program leader deems best for your students. Many times the program leaders chose to address these standards/topics throughout the program as they observe an animal and not as a single activity.)

Students will learn the difference between invertebrates and vertebrates and how vertebrate animals (fish, amphibians, reptiles, birds and mammals) are classified based on their unique characteristics and how their young are born. In this game, students will identify Michigan animals by asking questions about what it eats, where it lives, what it looks like, and in which family of animals it belongs.

Meet our Michigan Frogs, Turtles, & Fish: (S.IP.01.11, S.IP.01.12, S.IP.02.11, S.IP.02.12, S.IP.03.11, S.IP.03.12, L.EV.03.12)
At the end of the program, students will have the opportunity to observe up close the frogs, turtles, and fish that live in our terrariums and aquariums in the Bunker Interpretive Center and ask our program leaders questions about these creatures.

Depending on your schedule and the availability of staff, we may also have time to do a more in-depth meet and greet with the animals. At least fifteen minutes is needed for this additional educational program, but it can be scheduled for up to an hour. A staff member will bring out our teaching animals so that the students can observe them up close and ask questions about the animals. Classification, adaptations, and life histories of the animals will be discussed. During inclement weather, this is one of the activities that is substituted for one of our outdoor activities.

Ideas for Pre & Post Classroom Activities:

Activities:

Animal Story Books: Read animal based storybooks to your class. See the Resources list below for some of our favorites.

Animal Catchers: This is a fun running game that involves students using their knowledge of animal classification. Set a playing area large enough for a game like Sharks and Minnows. Have all the students line up at one end. Pick one student to be the animal catcher who will stand in the middle of the field. Now have each student lined up at the end pick an animal silently in their head (you could give them a type of animal they must think of, like birds,
mammals, reptiles, etc.) When you say go, the animal catcher must call out an animal characteristic (feathers, fur, drinks milk, lives in the water, can fly, lays eggs, warm blooded, etc.) and every student whose animal has that characteristic must run across the playing field to the other side. The animal catcher tries to catch them as they are running. If a student is caught, they become a tree, able to catch animals, but without moving their feet. Students must run across the field if a characteristic of their animal is called, regardless of the side they are on when the characteristic is called.

Art:

Animal Track Maps: In conjunction with a forest animal storybook, have the students think back to the forest stories you read together as a class. Now that they have learned about animal signs, they can create maps of the animal signs that the characters in the books would leave behind (i.e. tracks, scat, shelters, browse, fur, feathers, etc.). Have the students create a visual representation of the stories and make an animal signs map.

Create Your Own Forest Animal:
Using recycled materials (egg cartons and various other containers) and craft supplies, have students create their own forest critter. As they create it, have them think about its name, adaptations, habitat, diet, etc. They can write a report about it and/or share their critters and their unique critter characteristics with the class. This is a favorite art activity of both our campers and camp leaders at the Ecosystem Preserve and works well in a learning cycle lesson plan as the application section.

Forest Animal Sculptures: Invite the students to create clay sculptures of forest animals that they observed in the Ecosystem Preserve or studied in class.

Exploration, Observation & Experiments:

Animal Observation: Spend some time as a class observing animals around your school or on the web. You could do this by going outside on the school grounds, placing a bird feeder outside of the classroom, create a wildlife garden for animals to visit or visiting an animal webcam such as the ones found at:

- Animal Cameras from Around the World
  http://www.animalcameras.com/
- Cornell Lab of Ornithology Nest Cameras
  http://watch.birds.cornell.edu/nestcams/camera/index
- UStream
  http://www.ustream.tv/discovery/live/animals

Sharing/Discussion:

Nature Station: Set aside an area in your classroom for students to bring in nature items to display. Have the students share where they found the item, why they think it is special, how it feels, smells, looks, etc. A nature station also creates a unique resource for other sensory activities where students can blindfold each other and try to identify the object by using their other senses such as touch, smell, and hearing.
Writing:

Animal Reports: Have students write their own forest animal reports by conducting simple research and learning about their animal’s diet, habitat, and unique adaptations. Students could also draw a picture of their forest animal or create a clay sculpture and share their animal report with the class.

Animal Stories: For younger children that cannot do simple research yet, have them write a story about a forest animal. It could be a real or a make-believe story, but encourage the students to write about their animal in a natural (not fantasy) setting. Students can then share their stories with the class.

Great Resources for the Classroom

Our favorite storybooks about Michigan animals:
- A Log's Life by Wendy Pfeffer
- Adopted by an Owl by Robbyn Smith van Frankenhuyzen
- Around the Forest: Who's Been Here? by Lindsay Barrett George
- Around the Pond: Who's Been Here? by Lindsay Barrett George
- Box Turtle at Long Pond by William T. George
- Bugs! by David T. Greenberg
- Come Out, Muskrats by Jim Arnosky
- Diary of a Fly by Doreen Cronin
- Diary of a Spider by Doreen Cronin
- Diary of a Worm by Doreen Cronin
- Flute’s Journey by Lynne Cherry
- Groundhog Gets a Say by Pamela Curtis Swallow
- Lost in the Woods by Carl Sams and Jean Stoick
- One Two Three Jump! by Penelope Lively
- Saving Samantha by Robbyn Smith van Frankenhuyzen
- Stellaluna by Janell Cannon
- The Far Flung Adventures of Homer the Hummer by Cynthia Furlong Reynolds
- The Very Best Bed by Rebekah Raye
- The Very Busy Spider by Eric Carle
- The Very Hungry Caterpillar by Eric Carle

Devotional Books and Christian Resources for Christian Schools:
- My Big Book of 5-Minute Devotions: Celebrating God's World by Pamela Kennedy
- Taking Godly Care of the Earth: Stewardship Lessons in Creation Care by Anna Layton Sharp
- God's Mighty Acts in Creation by Starr Meade
- The One Year: Devos for Animal Lovers by Dandi Daley Mackall
Grants & Funding Resources for Creating Outdoor Classrooms:

Lowe’s Tool Box for Education  www.toolboxforeducation.com

Seeds for Education  www.for-wild.org/seedmony.html
The Lorrie Otto Seeds for Education Grant Program gives small monetary grants to schools, nature centers, and other non-profit and not-for-profit places of learning in the United States, including houses of worship, with a site available for a stewardship project.

WAM/Glassen Educational Grant Program  www.wildflowersmich.org
The Wildflower Association of Michigan, in a partnership with the Harold & Jean Glassen Foundation, awards grants annually to fund projects involving the creation of an outdoor classroom, the enhancing of an existing site, or other educationally directed projects that support the WAM Mission.

Internet Resources:

Journey North: A Global Study of Wildlife Migration and Seasonal Changes: This is an amazing resource for teachers. The site contains a variety of citizen science projects that classes can take part in throughout the year, the most popular being monarch migration. Extension lesson plans and resources are also available for teachers.
www.learner.org/jnorth/

Michigan Animal Factsheets: The Michigan Department of Natural Resources’ website contains a variety of factsheets about Michigan animals.
www.michigan.gov/dnr/0,4570,7-153-10370_12145---,00.html

Michigan Natural Features Inventory Special Animal Factsheets: Michigan Natural Features Inventory contains a variety of factsheets about Michigan’s animals that are listed as special concerns, threatened, or endangered.
http://mnfi.anr.msu.edu/data/specialanimals.cfm

Lesson Plans:
- Creepy Crawlies and the Scientific Method: More Than 100 Hands-on Science Experiments for Children by Sally Kneidel. Published by Fulcrum Publishing
- Flying Wild: An Educator’s Guide to Celebrating Birds Published by Council for Environmental Education
- Growing Up Wild: Exploring Nature with Young Children Published by Council for Environmental Education
- Project Wild Published by Council for Environmental Education

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