

TEACHER'S GUIDE

Habitats Program — Create and Learn Classroom Kit

This creative activity is designed to augment Nurture Nature Center's HABITATS Science on a Sphere show, a show that takes a worldwide look at habitats. Through this guided arts-based exercise, students will take a closer look at local habitats — some of the animals and plants that make a home here in the Lehigh Valley.

This activity should take 40-45 minutes and all materials are provided in the kit except scissors. We ask that the teacher/ educator guide students through the steps in order that students can give thoughtful consideration to the components of the picture they create.

Your kit should contain:

- Colored pencils
- Large crayons for rubbing
- A set of leaf rubbing plates and tissue paper squares
- Glue sticks
- 4 stacks of different color paper (2 light and 2 dark)
- 2 types of student packets containing an animal fact sheet and coloring pages (one for daytime and one for nighttime)
- 4 clear envelopes with habitat collage pieces in them.
- *Exploring Local Habitats* handouts

Instructions:

Explain to the student that in this activity, they are to create a design representing a habitat - a picture containing multiple plants and animals that have a home in one of our local forests, wetlands, meadows, farms of their choosing.

STEP 1: DIURNAL OR NOCTURNAL? Students choose from one of the four large, colored papers. This will determine the first lesson. Light blue and turquoise papers determine that the student will make a daytime or diurnal scene, darker blue and purple paper determines a nighttime or nocturnal scene. Students are given the coloring packets that match their choice. Students review the handouts and discuss what the differences are between nocturnal and diurnal animals.

STEP 2: CHOOSE YOUR HABITAT. Hand out the "Exploring Local Habitats" sheet. Students choose a habitat (Forests, Wetlands, Meadows, or Farmland) for their design and then pick a couple habitat collage pieces to get them started with their design background. The habitat name should be the title of the picture.

STEP 3: WHAT'S UP WITH THE WEATHER? Students should consider adding an element of the weather to their background. Is it sunny or overcast? Is it a clear night with a sliver of a moon or a hazy full moon night? What is the weather like outside today? One coloring page features sun and moon images they can color and clip or they may make their own. These get glued into their scene.

STEP 4: ADDING FLORA. With the tracing paper, large crayons and leaf rubbing plates provided, the students should create images of leaves to represent flora. The names of leaves should be labelled. These images get pasted into the design.

STEP 5: ADDING FAUNA. Students then color and finish their work by adding mammals, birds, reptiles and insects into their design. Students can use the photographs to aid in coloring the animals with the colored pencils provided. What animals rely on others as a food source?



Example of finished design:
Forest at Night

Example of finished design:
Daytime Meadow

When the students have completed the design, they will have explored one local habitat and some of the flora and fauna they may find there. Students should label these components to the best of their ability. If time allows, students should share their work and what they've learned with other students.

Please send photographs of completed projects to: Keri Maxfield, NNC Art Director: kmaxfield@nurturenature.org for inclusion in our web gallery for the project.

This project is supported through a Crayola Cares grant.

EXPLORING LOCAL HABITATS

Now that you've seen the Science on a Sphere® "Habitats" show, we are going to explore our local habitats and create a work of art with what we learn. Review following habitats. Which one will you choose to make a design with?

WHERE DO WE LIVE?

Those of us that live in Pennsylvania or New Jersey live in a temperate zone. This means that we have seasons that are different, but not too cold like the poles, or too hot, like the tropics. We also live inland, many miles from the ocean, but we have many rivers, streams and creeks that provide us with water. Temperate zones have different types of habitats and many animal species that are adapted to them. In this exercise, we will explore some of these animal species and their habitats while creating a design that reflects what we've learned.

Here are some local habitats you may be familiar with:

FORESTS

Forests, or woodlands, are habitat areas that are best identified by their abundant trees. Forests provide food, shelter and protection to many species of birds, mammals, insects, reptiles (turtles, snakes) and amphibians (salamanders, frogs and toads). Some species prefer to live in the high leaves of the trees. This area is known as the "canopy." Some species live on or inside trees, while other species prefer the forest floor. Forest trees act like sponges in the landscape. Their root systems help to store and control water runoff from rainstorms.

WETLANDS

Swamps, small pools and water drainage areas are known as wetlands. Wetlands are identified by standing surface water and certain types of plants, like cattails and types of grasses. Like forests, wetlands provide food, shelter and protection for numerous animals that live there. Many birds, insects, reptiles, amphibians and fish live in wetlands. Other animals who don't live in wetlands, like bats and some birds, fly into these areas for food. Wetlands offer perfect protective habitats for raising the young of many animals.

MEADOWS

Fields and grasslands often exist on the edges of forests and wetlands. They are generally drier than those other habitats and are populated by sedges (grasses) and low growing brush. Animals that may be found in meadows are mammals, like mice and weasels, some reptiles and many species of birds and insects. Meadows are sunny, warm areas that support many species of wildflowers that provide food for pollinators, such as bees, wasps, butterflies and moths.

FARMLAND

Agricultural lands, or farmland, are man-made areas that provide habitat for a range of animals. Besides cows, pigs, chickens and others, farmland is also utilized by wild animals that may be searching for food or shelter. Reptiles, like snakes, or mammals, like foxes and weasels, will come onto farmland and either take up residence or live close by. Also, larger mammals, like deer, feed on field crops and fruit trees. Birds and bats are some of the best animal species to take advantage of what farms can offer. From food (grains, crops), to prey (insects), to shelter (barns), birds and bats make use of farm conditions.

OTHER TYPES OF LOCAL HABITATS

Water - lakes, rivers, streams and creeks

Underground - moles, voles, other rodents, insects

Mountainside - snakes, small mammals, insects, deer and bears



Active in the Day (Diurnal)

Snapping Turtles-

1. The common snapping turtle can live up to 30 years.
2. Their diet comprises of worms, frogs, insects, snakes, birds and small mammals.
3. The weight of the normal adult ranges from 10 – 35 pounds.
4. The head of these species are large and connected by an elastic neck with powerful jaws and a strong beak.
5. Each snapper's clutter of eggs consists of 25 to 80 eggs on an average.



Monarch Butterflies -

1. Monarchs need milkweed plants to live and lay eggs.
2. Its orange, black, and white wings send a warning to predators that it is foul-tasting and poisonous.
3. The monarch migrates 3000 miles to wintering grounds in Mexico or Southern California.
4. Monarchs can produce four generations during one summer.
5. Monarch butterflies cannot fly if their body temperature is below 86 degrees. They "shiver" to warm up.



Barn Swallow -

1. Barn swallows build nests from mud which they attach to barns and other buildings.
2. The song of the barn swallow is a cheerful chirp.
3. The habitat of the barn swallow is open land, such as pasture, meadows and farmland.
4. Swallows prefer to nest close to water bodies.
5. Migratory swallows spend their winters in Argentina, South Africa, and Australia.

Rabbits –

1. In the wild, some female rabbits can produce about eight litters of bunnies per year.
2. The largest litter of bunnies ever reported consisted of 24 kits (baby rabbits).
3. Rabbits are natural runners and can reach speeds of up to 30 to 40 mph.
4. Believe it or not, a rabbit's teeth never stop growing throughout its life.
5. Rabbits can jump up to 36 inches or higher.

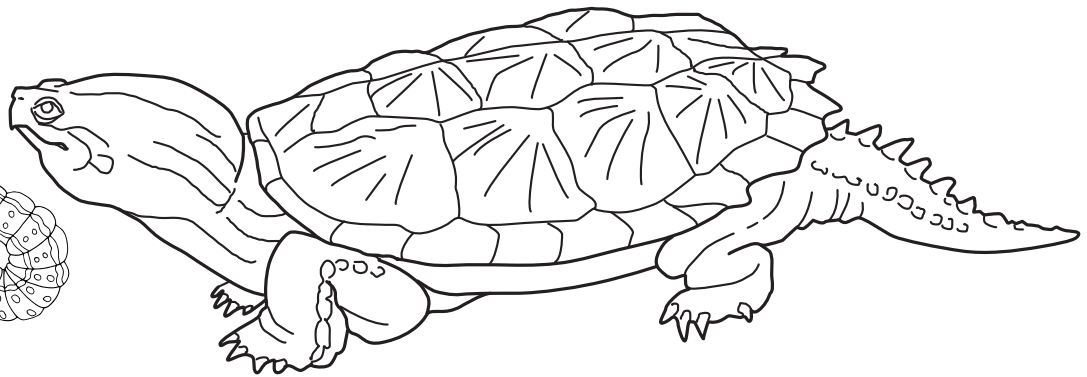
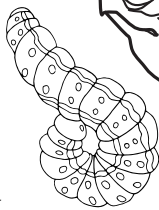
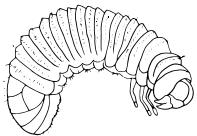
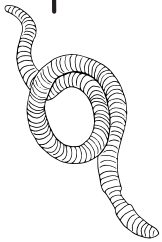
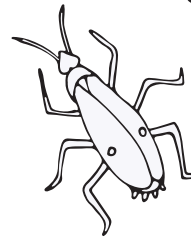


Daytime (Diurnal)

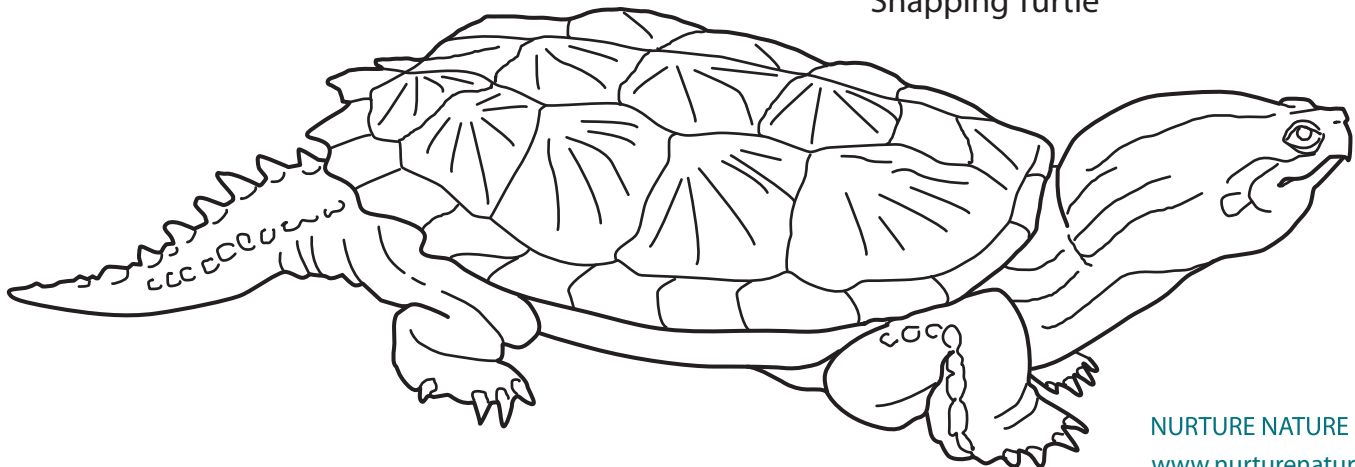
Barn Swallow



Barn Swallow



Snapping Turtle

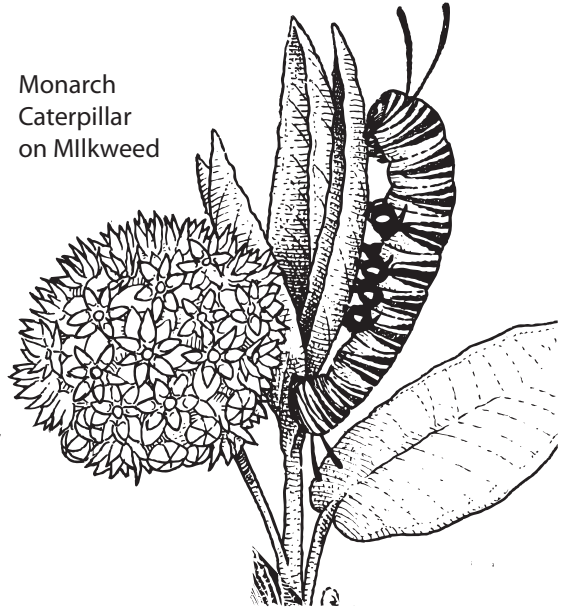


Daytime (Diurnal)

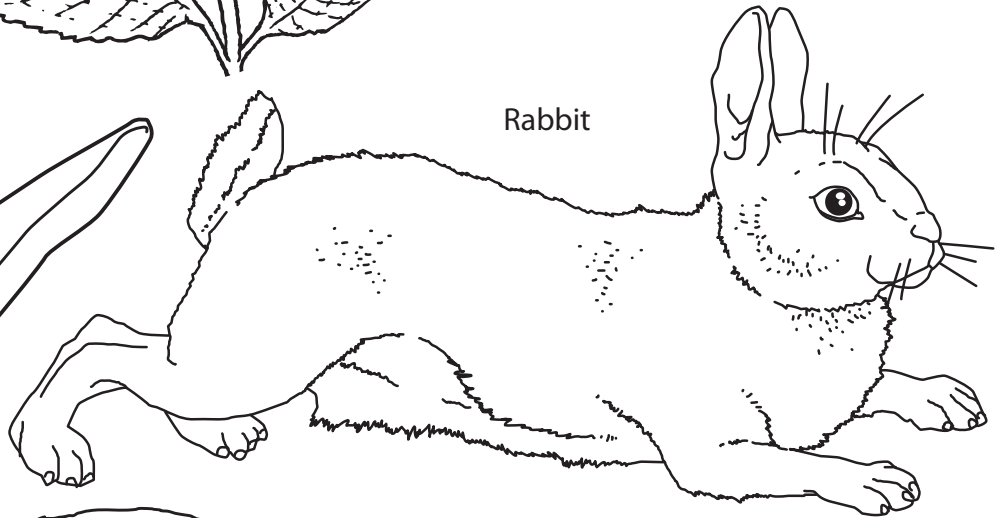
Monarch Butterfly



Monarch Caterpillar on Milkweed



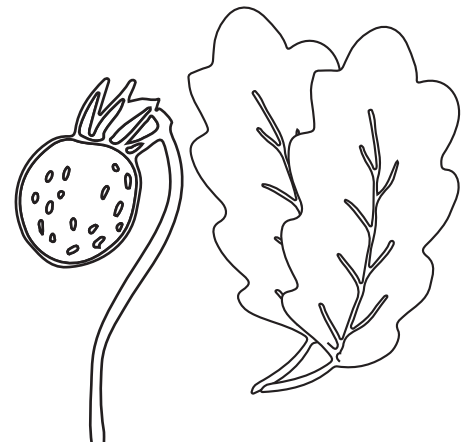
Rabbit



Rabbit



Monarch Butterfly



Active at Night (Nocturnal)



Bats -

1. Bats have good vision, but also use sonar to navigate.
2. Bats are nocturnal (active at night).
3. Bats like high temperature (100-120° F) during the day.
4. They hibernate in the winter in lower temperatures (mid 50's°F).
5. Bats eat thousands of mosquitos and other insects each night.



Opossums -

1. Opossums are North America's only marsupials (pouched animals).
2. Opossums will eat up to 5,000 ticks in a week and help to control Lyme and other diseases.
3. When opossums are small and young their tails are prehensile like monkeys.
4. When opossums are born they are very tiny. They crawl into the mother's pouch where they nurse.
5. Opossums sometimes pretend to be dead (also known as "playing possum") so that predators will lose interest.

Red Foxes-

1. A fox's den is normally a burrow underground, but they can also live above ground.
2. The mating call, which is a sharp, high-pitched shrieking/ screaming noise, can sound quite terrifying.
3. They catch small rodents with a high pounce, a technique that is one of the first things cubs learn.
4. Foxes belong to the dog family, which includes wolves, coyotes, grey foxes, and raccoon dogs.
5. Foxes are nocturnal and are great night-time predators because their eyes are adapted to night vision.

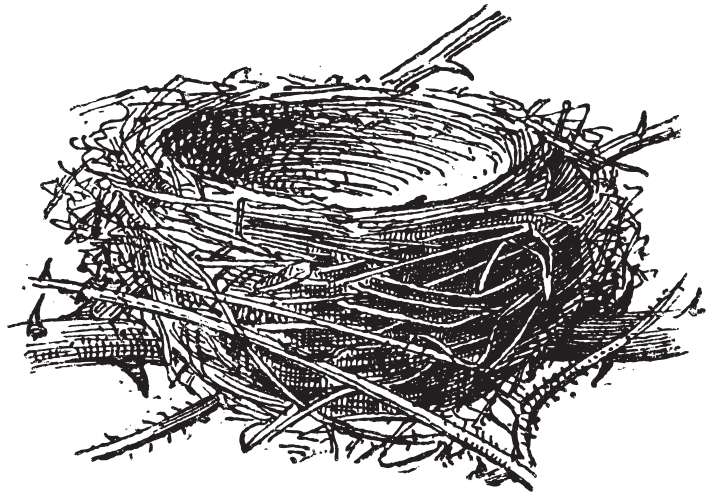
Great Horned Owl-

1. The ears of owls are at two different levels to help them to locate prey.
2. Owls cannot move their eyes. Instead they move their head to see side to side or up and down.
3. Owls are nocturnal.
4. Owls have adaptations in their feathers so that they can fly and hunt silently.
5. Most of an owl's brain is devoted to vision (not wisdom!).



Nighttime (Nocturnal)

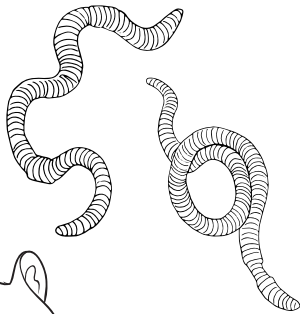
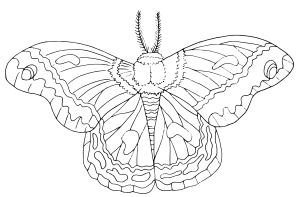
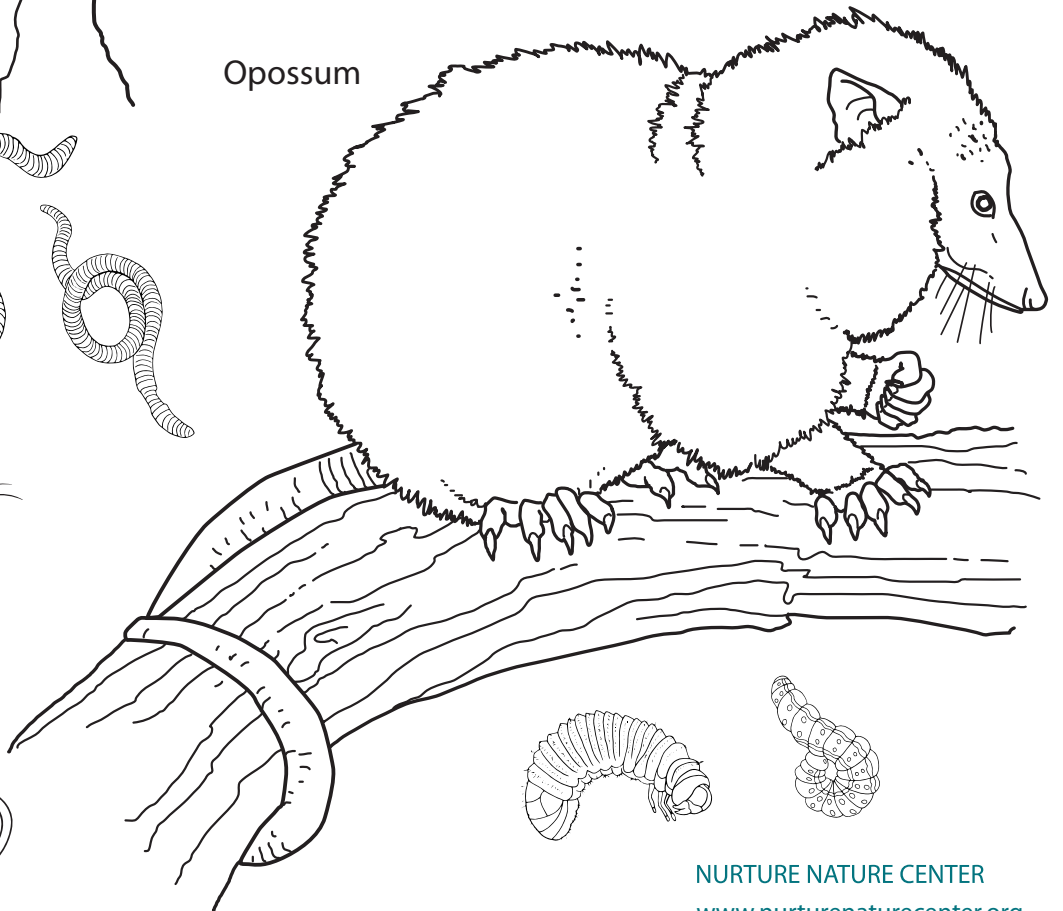
Great Horned Owl



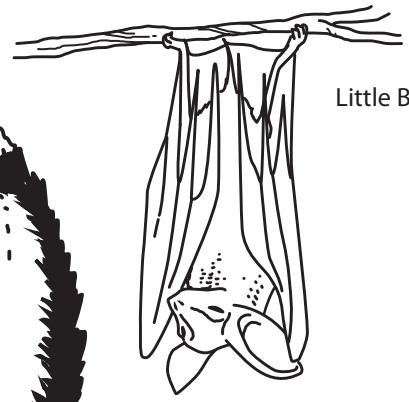
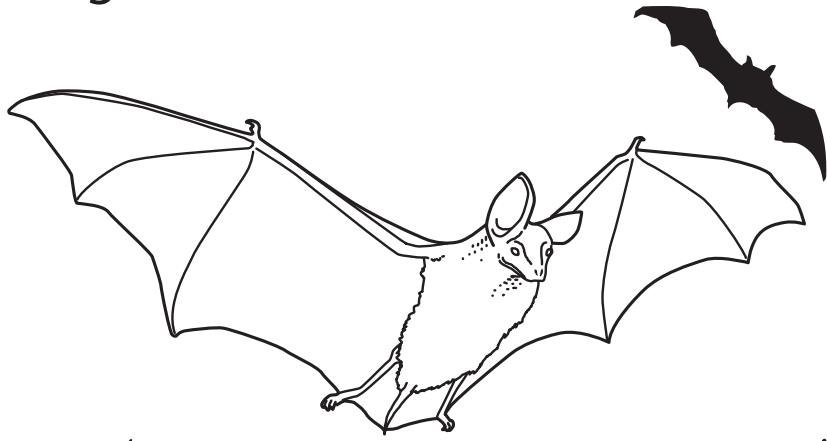
Opossum



Opossum



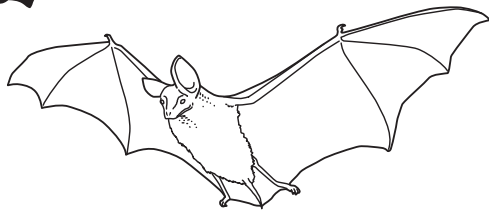
Nighttime (Nocturnal)



Little Brown Bat



Brown Bat



Red Fox

