Welcome to Amazing Adaptations! In this class packet you'll learn all about how animals have evolved adaptations to better survive in their environment and discover some unique examples from Nantucket! Activities will include nature exploration, art, and games. If you pick up this packet in-person at the LLNF at 110 Eel Point Rd, then all materials will be provided in the packet. **Everything in the bag is yours to keep, please do not return anything to the pick-up box.**

You can also download this packet from our website and follow along with the instructions, even if you are not on Nantucket, but you'll need to provide your own materials.

Activities included:

- Amazing Adaptations Scavenger Hunt
- Create Your Own Adapted Animal
- Bat Moth Game

Amazing Adaptations Scavenger Hunt

Materials:

- Scavenger Hunt Card
- Colored Pencil

Instructions:

On the next page is a scavenger hunt full of animals that have evolved unique adaptations over time. All of the animals can be found on Nantucket but many can also be found elsewhere if you downloaded the packet and are following along from home. Walk on the LLNF trail or somewhere else in nature to try to find these animals and observe their adaptations. Then once you've found them, read the follow up sheet to learn more about the adaptations and how they help each animal survive!

Find the piece of nature below...or find a clue! Each of these species has evolved special adaptations (in parentheses)!

Amazing Adaptations Edition!

LINDA LORING Nature Foundation

Spider (webs) _____

Osprey (talons) _____

Squirrel (hind feet) _____

Snake (forked tongue) _____

Bee (stinger) _____

How do animals on the Linda Loring Nature Foundation property use their adaptations?

Osprey (talons): The osprey has four long toes. As it dives for fish, the outer front toe swivels to the back of its foot, so that two toes are in the front of the foot and two are behind. This provides excellent grip for catching fish. Their talons also have a 'spicule' a pointy spike that acts like the barb on a fishing hook. Osprey are unique from other birds of prey such as hawks and eagles in this way.

Snake (forked tongue): The snake uses its forked tongue to "smell" the air. Snakes do not smell in the same way humans do. Instead, they have a Jacobsen's organ which allows them to smell in 3D by detecting chemical gradients in the air.

Spider (webs): The webs of spiders have many different functions. Most spiders have adapted to use their webs to hunt and trap prey. Some use it for mating and courtship.

Squirrel (hind feet): Squirrels have rotating ankles on their hind feet that perform a swiveling motion. This allows squirrels to quickly shift their weight and maintain agility while climbing trees. Sharp, strong claws also allow them to anchor themselves securely.

Bee (stinger): The stinger of a bee is an adapted egg laying organ, therefore only females have stingers. The stinger has evolved as a defense mechanism to protect the hive against predators. A bee will sacrifice herself by stinging the predator (they die after stinging) in the hope that the stung predator will retreat and abandon the hive.

Create Your Own Adapted Animal

Materials:

- Paper
- Colored pencils

Instructions:

Create an animal with unique adaptations: Choose one choice from Group 1, one from Group 2, and one from Group 3.

Group 1): Select an animal type: bird, reptile, or insect.

Group 2): Select a Nantucket ecosystem: forest, grassland, or ocean.

Group 3): Select a limiting factor: limited food, pollution, or heavy predator presence.

Then with the factors you've chosen, create your own unique made-up animal. How will your animal adapt to its ecosystem? How will it get food? What does it look like? Create your animal with unique adaptations by drawing it with the provided materials. Once you are done, be sure to name it!

Bat Moth Game

Materials:

- At least three people, feel free to ask your family or friends!
- Some cloth material to use as a blindfold (for instance a shirt, face covering, or mask)

Instructions:

You'll need at least 3 people to play. Select an open area outside to play. Choose one person to be the "bat" and the rest are "moths". Whoever is the "bat" needs to wear a blindfold (or just keep their eyes closed). They will call out "bat" to the moths. The moths will reply "moth" and the bat will move towards the moths and try to tag them. Set a timer for three minutes. Once the time is up or all the "moths" have been tagged, the round is over. Choose a new "bat" and play again! This game emulates the way a bat uses echolocation to hunt prey at night, which is one of their unique adaptations!