PLANT & ANIMAL ADAPTATIONS - Younger groups
Grades: K-2
50 minutes

Learning Objectives: explore some of the ways that plants and animals have adapted. Touch on natural selection

Materials: Hickory nuts and a bone chewed by squirrels
Some plant items that demonstrate adaptations (seed, fruit, pine needles, etc.
Clear plastic jar in case you find something to show that might get away.
Yarn for Birds and Worms activity
Dandelion seed head in container

Discuss different adaptations of several plants. Animals show up unexpectedly. If something shows itself, discuss an adaptation that it has. Green Anoles are good to show color change from green to brown/grey. Put a grey anole in a plastic jar and it will usually turn green. The throat fan is called a dewlap.

Adaptations are structural or behavioral changes that help organisms survive. Adaptations enable some organisms to survive while others without the adaptations don't survive. The survivors produce offspring with the favorable adaptations. This process is known as **natural selection** (Survival of the fittest) and allows species to survive as their environment changes.

Name an animal or creature and ask a student to think of an adaptation that it has. Choose your own, or ones from the list.

Snail – slime	Birds – flight	Fish – gills
Owl – eyesight	Cat – whiskers	Skunk - smell
Spider – silk	Turtle – shell	Faun – speckled fur

Everything you encounter has some sort of adaptations that helps them survive in their habitat.

Birds and Worms

Objectives: Concepts of **Camouflage** and **Natural Selection**

Materials: about 60-80 2 inch long pieces of yarn. 1/3 brightly colored, 1/3 nature tones, 1/3 muted earthy colors.

Before students arrive, select a grassy area and randomly distribute the yarn pieces. Take the group to the area and have them stand at one end. Explain to the students that they are small hungry birds looking to eat a single worm to make them full. There are a lot of different colored "worms" attempting to hide from them so they won't be eaten. Define the boundaries and line the "birds" up at one end. For each round have students find one worm and return to the starting spot. Collect worms. Run several rounds until the

majority of the worms have been picked up. Gather in a circle and present each round collected. Discuss which colors were easiest to find; which were hardest; which (if any were not found at all. Students will discover that brown and tan worms were hardest to find. Why? **Camouflage** (the way an organism conceals itself by blending in with its environment). The color of worms is the color of soil. If worms used to come in a variety of colors, only the brown ones would have survived and reproduced. So eventually most worms became brown (this is known as **Natural Selection**).

An additional activity or discussion can be added about different caterpillars or bugs that are brightly colored and why they might be that way. Their color says something about where they live whether they are poisonous or mimicking another insect that is poisonous.

Findings

Find a place where the students can sit while discussing seeds, nuts, and any findings they ask about. You can discuss any adaptations you find appropriate. Hickory nuts are always available and a good choice.

The hard shell of a hickory nut protects the seed. When conditions are right the nut will sprout and grow into a tree. Animals use them for food, some animals like squirrels will carry them away and burry them as a way to store food. Lots are forgotten and grow into new trees. Because they have very hard and thick shells, hickory nuts take a long time to sprout, so there is a good chance that the squirrels will find some of the hidden nuts to eat later. **Squirrels have the useful adaptation of front teeth that keep growing** (like our fingernails). This allows them to be able to eat foods that other animals can't because squirrels constantly need to wear down their teeth to stay healthy. If they didn't, their teeth would curl under and the squirrel would starve. Squirrels also gnaw on other hard things like bones and antlers.

Name some other trees that have seeds with hard shells; oaks walnuts and pecans. These hard shelled **seeds that are hidden by animals is an adaptation of the plant** to help the seeds move away from under the tree where they fall so that some of them will grow up somewhere else. What are other ways that plants have adapted to disperse their seeds? Float on the air like dandelions. Winged seeds that twirl in the wind like maple and pine tree seeds. Berries that are eaten and the seeds excreted. Seeds that stick to fur or our clothing will fall off later.

Dandelion in the wind activity if Nuts About Seeds is not part of the field trip.

You are all going to pretend that you are dandelion seeds. Ask a parent to stand in the middle and all the kids bunch up around her holding each other's hands, or touching the parent around the waist. This is a dandelion flower and the students are the developing seeds. Dandelion seeds have fluffy parachutes attached. When I blow across you, let go and pretend to float away with your hands held high up over your heads.

Aquatic adaptations if Pond Study is not part of the field trip.

Information for Birds and Worms was adapted from a lesson developed by the Brandywine Valley Association, West Chester, PA

Rotation locations

Birds and Worms – at log by BPS2
Aquatic adaptations – Pond deck
Nuts and findings – Muscogee fire circle or BPS fire circle
Dandelion in the wind – field behind the pool
Vines – Old building over bridge on hiking trail