

# BEC EDUCATION PROGRAMS

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## ANIMAL ARCHITECTS

Students will explore why animals build homes, see the different building materials animals use, and build “homes” using nature materials.

## EAT LIKE A BIRD!

Students will discuss beak design and what foods each beak is best suited for. Students will get to try different simulated beaks to eat simulated foods.

## FIELD JOURNALS

When taking notes and making drawings of a plant or tree that you will later identify, there are some important details to consider. After discussing these details, students will go into the nature park and do journaling.

## GEOCACHING

Learn about the GPS system and how it works as well as Geocaching. Participants will use a smart phone/ ipad and google maps to find geocaches.

## INCREDIBLE JOURNEY

Students will discuss the phases of water, “journey through the water cycle” while collecting beads at each stop, and review the path they took as a water molecule.

## MAMMAL DIET SKULL CLUES

This presentation covers mammal basics, dental formula basics, and general teeth types. The presentation will then focus on the differences between the teeth of carnivores, omnivores, and herbivores. Students will then work in groups to identify the diet of their “mystery” skull.

## OWL ADAPTATIONS

This presentation will demonstrate owl vision, hearing, and beak design. Students will then learn about owl pellet formation and then dissect owl pellets.

## NATURE POEMS

Students are asked to bring their writing journals while they spend time surrounded by nature in our outdoor classroom listening to poems written by famous nature poets. After listening to these inspirational poems, students will be asked to write their own nature poems to share with their classmates.

## PLANT FAMILIES

Biologists love to group living organisms by their common characteristics. Biologists working to do this are called taxonomists and generally they work in one area. Taxonomy follows the basic groupings of Kingdom, Phylum, Class, Order, Family, Genus, and Species. This activity focuses on five families of plants by discussing their traits and looking at examples of them on the nature trail.

## PLANTS (GRADES: K-1)

Students will learn to identify plant vs non-plant, plant parts, leaf shapes, and compound vs simple leaves. Students will go on the nature trail and find trees and plants with leaves they looked at and try to match real leaves with the shapes of leaf sponges or rubbing plates, students will also look at galls and lichens on the trees.

## PLANTS (GRADE: 2)

Students will learn about basic plant needs, plant structures that help plants meet their needs (stem: water/food transport, leaves: light absorption and food production, roots: anchoring/storage, flowers: reproduction and seed formation/dispersal), temperature and precipitation effect on plant growth, how animals depend on plants in their environment (food and shelter), basic food chain members, plants place in a food chain as producers, and examples of wooded area food chains.

## PLANTS (GRADE: 3)

Students will be introduced to the basic food chain members, plants' place in a food chain as producers, and an example wooded area food chain. They will also look at the flow of energy in a wooded area food chain and discuss how changes in a wooded area effect its food chains. Finally, students will learn about plant structures such as: thorns; "fur"; spines; chemicals; and cuticles as well as plant tropic responses to their environments (response is part of plant's DNA) and how these all help plants survive in varying environments. Students will observe plant structures under stereomicroscopes (possibilities include: stems, "fur", thorns, plant cells, waxy cuticle, and bark)

## SPIDERS

This presentation will discuss the basics of a spider's body. It will also cover the different types of webs that spiders weave. Students will get to try their hand at weaving an orb weaver's web on our spider boards as well as they will create a web of their own to take home. If time permits, the concept of ballooning (spider dispersion) and baby spider facts will be included.

## STREAM TESTING

Students will hike to Cottonwood Creek that runs through Coppell Nature Park. At creek side they will work in small groups to conduct basic water tests of the creek's water. The students will then review their results and learn what each test result means for the health of the creek. If time allows, there will be in-creek wading allowed to look for aquatic macroinvertebrates.

## THE ARTS AND NATURE

This lesson follows the four steps of Nature Explore’s “Look, Move, Build, Sketch” art technique. There will be natural artifacts for the students to “look” at, they will then use their bodies to create nature such as flowers and trees. Students will build nature with tree blocks and other natural materials. The remaining time, students will be given an opportunity to “sketch” an artifact of their choice using pencils, markers, and crayons.

## TREE-TECTIVES

Can trees get sick? Yes they can! Learn about some common tree illnesses, then hike the Coppell Nature Trail and look for trees that may have some common tree problems. Keep track of what problems you find with your tree-tective bingo card.

## GEOLOGIC HISTORY OF COPPELL NATURE PARK

Have you heard about the inland sea that once covered Coppell? This program will cover the basic geologic events that have occurred in this area and students will hike to the creek to see some remaining artifacts from our geologic past.

## GEOLOGY LESSONS FOR GRADES 1ST-6TH

These lessons cover a wide range of geologic concepts and use sampling techniques for activities. Please inquire for more detailed information.

## BEEES

This suite of activities introduces students to the life of bees. Students will role play the life of a bee in a game as they gather pollen, collect nectar, and waggle dance for the next bee in line. Students hike through Coppell Nature Park looking for possible bee hive sites. Flower dissection and the parts of a bee’s body round out the suite of activities. When available, a bee keeper will present how he manages hives.

## HISTORY OF COPPELL NATURE PARK AND BEC

This brief history of Coppell Nature Park and the creation of the Biodiversity Education Center is shared as students walk the trails of Coppell Nature Park.

## SOLAR POWER

Learn about the basics of solar power generation and the specifics of the Biodiversity Education Center’s Solar Power system. The students will wrap up this program by assembling a solar powered car to race classmates on the deck of the BEC.

## ENVIROSCAPE

Water is flowing from many different sources before it reaches its destination. As it flows from source to source, it picks up many different items from the environments it flows through. Role play water run-off and pollution using our enviroscape and see how the contaminants in one water source can end up in another water location.

## INSECTS

North Texas Master Naturalist share the life cycle of insects and common characteristics with students in this fascinating program. Students are able to view preserved insects and if time allows, go on a short insect hunt to learn some basic insect catching techniques. Availability dependent on NTMN's schedule.

## BIRDS

North Texas Master Naturalist share the basics of birds, from beaks to bones, feathers to flight, and beyond. 4-5 small stations are set up with bird artifacts and students rotate through these stations changing stations about every 10 to 15 minutes. Availability dependent on NTMN's schedule.

## HOW IS THE BEC GREEN?

Students will tour the Biodiversity Center and learn about the different green construction features of the building. Samples of some of the building materials will be shown as well.