

Nature Bingo

FROST
SCIENCE
@HOME

MAIN IDEA

Celebrate the diversity on our planet while exploring the outdoors and contributing to science! Use our friendly guides to help identify some of Florida's native plants and animal species while engaging your sense of sight, touch, smell, and hearing.

SCIENCE BACKGROUND

Scientists use their observation skills to locate, identify and classify living and nonliving things into specific categories. Botanists (scientists that study plants), entomologists (scientists that study insects) and zoologists (scientists that study animals) continuously work on identifying similarities and differences between species in their field of study. Species are a group of organisms that share similar traits and are able to reproduce, such as humans (*Homo sapiens*) or domestic cats (*Felis catus*).

In addition, these same scientists often look at the entire environment in which a species lives to learn even more about what makes it survive and thrive. To do this, scientists may examine the level of biodiversity, short for biological diversity, in ecosystems as a marker to understand the overall health of that environment. Biodiversity is the natural variations of living organisms, including plants and animals, at all levels, from genes to ecosystems. About 1.7 million different species have been identified around the planet; however, researchers estimate that this count may actually be much higher, potentially even up to 30 million different species, on Earth! We just haven't explored the entire planet yet to find and identify all of it's amazing biodiversity. In Florida, there is an abundance of native species that have particular properties and adaptations that allow them to flourish in their specific, and sometimes unique, environments.

Human interactions with the environment are changing the natural balance of biodiversity across the planet. In some cases, these interactions have lead to a loss of biodiversity, which can have serious impacts not just for the species impacts, but also to the survival of humans. Biodiversity is the reason we have food, drinking water, oxygen to breathe, medicines, and shelter. Thus, there is an important role for all people to play in preservation and conservation of the environment. In Florida, the special and different species found across the state provide great opportunities for scientists, scientists-in-training and science enthusiasts to learn more about the natural world.

Citizen science is the collection and analysis of data by the general public, providing the opportunity for people of various ages, expertise and backgrounds to contribute to science. This process is done in collaboration with professional scientists to help collect and analyze large amounts of data with the goal of accelerating scientific findings and promoting innovation. The City Nature Challenge is an international initiative that engages residents and visitors of cities all over the world to document and better understand urban biodiversity. This citizen science program takes place at the end of April every year. *Please see under Additional Resources for more information on the City Nature Challenge.*

MATERIALS

Frost Science Plant Identification Guide and Nature Bingo (pages 4-5)

Pencil, Pen or Marker

Optional: Binoculars

Optional: Journal

Optional: iNaturalist, Seek by iNaturalist, PlantNet or Leafsnap apps on a handheld device

ACTIVITY PROCEDURE

Step 1: Gather your materials, including the Nature Bingo card, Plant Identification Guide and pencil.

Step 2: With adult supervision head outside and locate a safe space to begin your Nature Bingo.

Step 3: Observe the environment around you, take a look at the different animals, insects and plants.

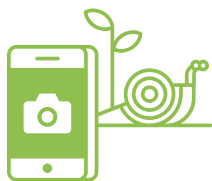
- ✓ What do they look like?
- ✓ What do they sound like?
- ✓ Are there any distinct smells?

Step 4: Compare your findings with items on your Nature Bingo card. If they match, circle the item on your Nature Bingo card. Keep going until you complete the board!

Optional: draw or record these observations in a journal.

- ✓ How are the items different from one another?
- ✓ How are the items the same?
- ✓ *Pro-tip: use the Plant Identification Guide to see if you can find any of the same plants from Frost Science's rooftop!*

Step 5: *Optional: Use Seek by iNaturalist or the iNaturalist app on a handheld device to record photos of your findings and aid your investigation. Make observations between April 24-27 and contribute to the City Nature Challenge. Instructions can be found below in Additional Resources.*



EDUCATIONAL STANDARDS

Kindergarten

Big Idea 1: The Practice of Science

SC.K.N.1.2 - Make observations about the natural world and know that they are descriptors collected using the five senses.

Grade 1

Big Idea 14: Organization and Development of Living Organisms

SC.1.L.14.1 - Make observations of living things and their environment using the five senses.

Grade 4

Big Idea 1: The Practice of Science

SC.4.N.1.1 - Raise Questions about the natural world, use appropriate reference materials that support understanding to obtain information (identifying the source), conduct both individual and team investigations through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.

ADDITIONAL RESOURCES

Exploring Nature In and Around Your Home for the City Nature Challenge

https://drive.google.com/file/d/1OF-aLsgbolg9prlH8OLdO69DkN_Sv0Zw/view

Why is biodiversity so important? - Kim Preshoff

https://www.youtube.com/watch?v=GK_vRtHJZu4

Citizen Science

<https://www.citizenscience.gov/#>

Fact Sheets & Plant Guides, USDA

<https://plants.usda.gov/java/factSheet>

Florida Native Plant Society

<https://www.fnps.org/>

Exploring the Butterflies and Moths of South Florida

<https://www.youtube.com/watch?v=u309v1-dxYM>

Florida Native Plant Tour: Bonner Park

<https://www.youtube.com/watch?v=Pkj20iHG7cc>

Common Weeds of South Florida

<https://www.inaturalist.org/guides/9022>

Audubon for Kids!

<https://www.audubon.org/get-outside/activities/audubon-for-kids#week1>



Nature Bingo:

Plant Identification

Guide



This is **Butterfly Milkweed** (*Asclepias tuberosa*) which is native to North America and can be found in abundance in South Florida. Monarch butterflies love butterfly milkweed and planting some in your yard can attract them for years to come!



The **Arizona Sun Blanket Flower** (*Gaillardia grandiflora*), is native to North and South America and can be found in abundance in Florida as well. It too is a great flower for butterflies and grows really well in very sunny locations.



Sea grapes (*Coccoloba uvifera*) are found all over Florida, especially along the coasts. They produce grape-like fruits that are actually edible!



The **Silver Buttonwood tree** (*Conocarpus erectus*), is a tree commonly found in South Florida. You can identify it by its very distinct silvery leaves!



Beach Sunflower (*Helianthus debilis*), is another very common (and very pretty!) flower found in South Florida. You may find them near the beach because they are very salt tolerant!





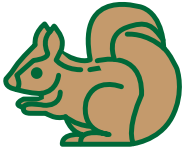
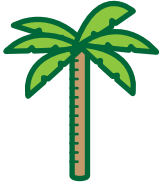
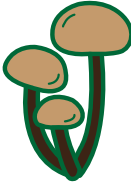
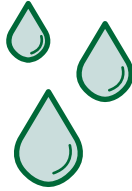

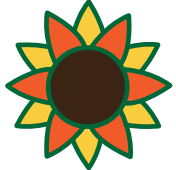
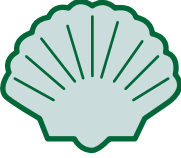




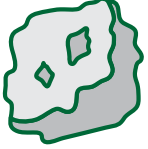
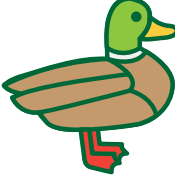









The **Red Mangrove** (*Rhizophora mangle*), is found all along the coasts of Florida. Mangroves are incredibly important for us in Miami because they help protect our city from storm surge.

Nature Bingo:

Observe the environment around you for plants, animals and insects. If you find any of the items below, circle them on your card. Keep going until you complete the board!



LARGE LEAF 	BUTTERFLY 	BEE 	COLORFUL BIRD 	SQUIRREL 
PALM TREE 	MUSHROOM 	RAINDROPS 	TALL TREE 	COLORFUL FLOWER 
SEASHELL 	SPIDER WEB 	FREE 	SMALL LEAF 	PLANT THAT ATTRACTS BUTTERFLIES 
INTERESTING ROCK 	WATER BIRD 	SEED 	BODY OF WATER OR PUDDLE 	LIZARD OR FROG 
BROWN OR RED LEAF 	FRUIT GROWING ON A PLANT 	SNAIL 	DRAGONFLY 	CATERPILLAR 