**Disclaimer:** Nature Cat and his pals are cartoon animals. Check with an adult before bringing along a pet on your next outdoor adventure.



# DEAR EDUCATOR

Tally Ho and welcome to *Nature Cat's Guide to the Great Outdoors!* Organized into three parts (**Observe | Create | Discover**) this guide can be customized to fit you and your student's needs. Its intent is to foster an appreciation for the natural world and encourage students to follow their curiosity about the great outdoors. So get your class outside to tune up their senses, meet new friends, and have fun—just like Nature Cat!







## PART 1: OBSERVE

## **Students in the wild**

Materials needed: Nature Cat Backyard Explorer's Guide, pencil, bag, magnifier

The adventures of Nature Cat and his friends often start with a question about nature in their backyard and beyond. As they explore, they discover so much about the natural world. Go on a nature walk with your students using the Backyard Explorer's Guide as your toolkit. Use a K, W, L chart to record your findings (what you **know**, what you **want** to know, what you **learned**)

Plan ahead and preview the walk with the following questions:

- In what environment is your school located (urban, rural, suburban) and how does the season and the weather affect what you will see?
- What are the animals native to this area? What are their living and sleeping patterns?
- What types of trees do you expect to see? Will they have leaves/needles on them, or will they be bare?
- Are you near a source of water?
- What do you wonder about in the nature around you that you hope to learn more about?

On the walk, look for: tracks, nests, dens, small holes in the ground, food piles, and other signs of wild animals. Feel for the wind; can you tell what direction it is coming from? Are there clouds in the sky? What do they tell us about the weather? Check the soil. What is it like? Scoop some into your hand. Does it hold together?



Try these activities: Collect seeds and rocks using the Nature Cat Backyard Explorer's Guide.

What Seeds do you See? Seeds come from flowers, fruits, and cones. They often travel away from the plant after they have formed. Using Nature Cat's Seed Checklist (page 17 of the Nature Cat guidebook), ask your students to check off any of the seeds they see. If they don't see any listed, collect some seeds and bring them back to the classroom to ask: What plant do you think it is from? Encourage your students to draw pictures of the seed and its origin plant.

## SEEDS, GLORIOUS SEEDS!

Seeds come from flowers, fruits, and cones. Some seeds are as tiny as the period at the end of this sentence. Some seeds are bigger than your head! After seeds form, they travel away from the plant. What grows out of a seed? A plant!



### SEASONAL TIP

This activity works best in the late summer and early Fall. For walks in other seasons, see below.

**Winter walk:** Winter is a good time to talk to your students about migration, hibernation and adaptation. While some species of animals remain dormant for much of the (colder) winter months, others travel to warmer climates to survive. Other kinds of animals adapt to the colder temperatures and limited access to food by growing thicker fur and changing their eating habits. On your walk, look for animal tracks in the snow (if snow is on the ground) or food piles (acorns, as an example). Try to guess what animals are still active in the area, and which ones may be hibernating or dormant, or have migrated.

**Spring walk:** Spring is a time for growth and new life! Look for signs of Spring such as ice thawing on ponds, buds on trees and birds building nests. Try to identify animal tracks in the mud: are there any that come from animals who have hibernated? Rock, Rock: Who's There? Rocks may be made up of one mineral or many, and they form in different ways. They are always changing, and are the oldest objects on Earth. Ask students to point out rocks they see along your walking path. Using Nature Cat's Rock Stars activity (page 65 of Nature Cat guidebook) and a magnifier, allow children to take turns looking at a rock up close. Ask your students: What do you notice? Is the rock bumpy or smooth? Can you identify different layers? How many colors can you see through the magnifier? If possible, try to identify one or two different types of rocks along the path. With a few rocks collected along your walk, observe their differences in shape, size, color, and texture. Ask your students: What makes each rock unique? Encourage them to expand upon the characteristics of each rock and what they can tell us about the rock's history.



### NATURE TIP!

Whatever you pack in, please pack out! Choose "waste-free" snacks, such as fruit, and carry out all leftover food items (including things like peels, pits and cores) and any trash you create. Dispose of trash in the appropriate receptacles: compost, recycling and landfill.

**Back in the Classroom:** Reflect on your walk. What did you see/hear/observe? Encourage your students to journal their experience in nature. Ask them to draw pictures alongside their journal entries using objects collected and/or inspired by their nature walk. To extend the activity, plan nature walks quarterly or seasonally in your school year and refer back to these journals.

As a class, fill out the "L" of the K/W/L chart. What did you learn along your walk?



Nature Cat and his friends observe the wind direction to save Squeeks in *Breezy Rider*. Create your own kite and sailboat with recycled materials, just like Squeeks and the gang ... and see where the wind takes you!

#### **Nature Kite**

**Materials needed:** newspaper, 2 found sticks (thin and approx 2-3 feet long), glue, string, small knife, scissors, toilet paper roll



- **I.** Make the frame of the kite
- A. Using the knife, have an adult carve a small notch into both ends of each wooden stick (all 4 notches must be cut in the same direction).



- **B.** Using your string, tie the sticks at the center so they are shaped like a cross. Tip: Try to make the horizontal stick a little shorter than the vertical stick.
- **c.** String your string into the notches around the ends of the sticks forming a diamond shape.
- **2.** Help children cut out old newspaper into the shape of a diamond. Make it an inch or two larger than your frame. Fold the edges over the frame and then glue them to the sticks.
- **3.** Tie a long string to the kite where the sticks cross. You can use an empty toilet paper roll, or something similar, as a spool by wrapping the string around it. This will give students more control of their kite.
- **4.** Take it outside and give your nature kite a go! Try to determine the direction of the wind.

**Ask your students questions.** What happens when you launch your kite facing the wind? What direction is it easiest to launch from? Are some flying higher than others? Why do you think that is?

#### **Nature Boat**

**Materials Needed:** 11 sticks, all about nine inches long and the same thickness; 1 thin stick, about seven inches long; 1 thin, short stick, about four inches long; Rubber bands; Twist ties; Safety scissors; Waterproof glue or three thumbtacks; Large leaf or lightweight piece of fabric, such as a rag; Twine

- **5.** First build the mast. Make a lowercase "t" shape with your two shorter sticks. Cross the fourinch stick over the seven-inch stick about three inches from the top.
- **6.** Lay the twist ties in an "X" underneath the crossed sticks. There should be an even amount of the twist tie on each side of the sticks. Twist the ties together.







- 7. You should now see an "X" made of the twist ties, crossed over your two sticks. (See photo above.) Repeat this step over the same sticks to keep them in place.
- **8.** To make the sail, find a large leaf outside or cut some fabric into a square shape. It should be about the same width as the horizontal stick and a little more than half of the length of the vertical stick.
- **9.** Attach your sail with the waterproof glue across the "t" or place a thumbtack near the top and on either side of the horizontal stick. Set aside.
- **10.** To make the base of your boat, gather your rubber bands and sticks. The rubber bands will be used to attach the sticks to each other.



II. Place one of your long sticks through a rubber band. Twist the remaining piece of rubber band twice so the stick feels secure. Insert another long stick into the empty loop of the same rubber band and twist twice. Repeat with long sticks until you have at least five joined together and the rubber band feels situated around all of the sticks.





- **12.** Repeat step 7 on the opposite end of the sticks. Make sure they are joined together and can lay flat.
- **13.** Make another bundle with four sticks, joining the sticks on both ends. Loop an extra rubber band around the last stick.



14. Lay the bundles next to each other using the extra rubber band you just looped and connect the two bundles together.





**15.** To finish the base of your boat, take your two remaining long sticks and lay them vertically. Place the connected sticks horizontally over them. Using twist ties, tie the corners of your boat base to the tops and bottoms of the two sticks beneath them.







16. Use the twist ties and attach the mast to your first stick at the front of your raft. Allow about an inch of this "mast stick" to extend below the base of the boat. Tie a long length of twine to the rearmost stick of the raft (the stick at the other end of the mast stick). This will help make sure you don't lose your boat!



17. Once you have crafted the boat, it's ready to set sail! Try sailing the boat/s outdoors in a tub of water, in a puddle, or a pond. Ask the students to observe the wind based on where the sailboat is moving. Can you tell which direction the wind is coming from? What happens if you try to turn your boat so that it is facing the wind? What happens when the wind is coming from behind the boat?

## KEEP IN MIND

Remember to retrieve any of the human-made parts that may come loose while playing with your boat. Even something as small as a rubber band or twist tie can harm wildlife.



Nature Cat's adventures lead him and his friends to discover ways to take care of and protect the Earth. From upcycling to organizing cleanups to building a bird feeder, empower your students to make a difference. No action is too small, and an action can quickly grow when you bring along a friend, family member or neighbor.

Below are sites and resources you can use to nurture your students' love and appreciation for the great outdoors—just like Nature Cat!

#### The Smithsonian Ocean

https://ocean.si.edu

Using your SmartBoard<sup>®</sup> or other projector device, visit the Smithsonian Ocean Page, and find your way to the Ocean Trash Plaguing Our Sea article. You can show your students a short video that showcases the amount of trash that fills our oceans every year. Much like Nature Cat's rescue of Mr. Chewinsky in Ocean Commotion, the students can see firsthand what parts of the ocean look like when polluted—and they can understand that pollution can come both from storm drains and see how connected the world's waterways are.





#### The Nature Conservancy https://www.nature.org/en-us

There are many opportunities for school groups to learn about their parks and green spaces through volunteer opportunities. Find a kid-friendly event sponsored by The Nature Conservancy. Dedicate a field trip each season for a visit to your local park and come away with a deeper appreciation for nature! https://www.nature.org/en-us/get-in-volved/how-to-help/volunteer-and-attend-events

#### The National Wildlife Refuge System

https://www.fws.gov/refuges

This federal organization focuses on the conservation, management and restoration of fish, wildlife, and plant resources and their habitats within the United States. Check the wildlife map to see if there's an opportunity to visit or volunteer at a National Wildlife Refuge in your area. https://www.fws.gov/refuges/find-a-wildlife-refuge/?method=zip-code and https://www.fws.gov/volunteers



Try one of the NWR's Conservation Connect episodes (https://nctc.fws.gov/conservationconnect) with your class. Choose the "Migratory Birds" episode (7min) and watch it in your class. Then, watch "Nature Cat: No Bird Left Behind" on the PBSKids.org website. Compare what you learn in each episode. Explain that one source is nonfiction, and one is fictionalized.

**Ask your students:** Are there any facts about birds that were in both episodes? What made each episode different?

#### **Imperfect Foods**

https://www.imperfectfoods.com

What started as a movement to eliminate food waste is now a popular site for grocery shopping. With your class, explore the Imperfect Foods website, and then watch the Nature Cat episode, "Imperfect Produce" on PBSKids.org. What are the similarities? Can your class plan a celebration serving "imperfect produce" of your own? Do the grocery stores and farmers markets in your area offer reduced price produce? Discuss the importance of eliminating food waste with your students.

**Ask your students:** What are some of the ways we all waste food at home e.g. not finishing food on plate, throwing away edible "scraps" while cooking/preparing meals, buying more food than you can eat before it expires?. Also ask them if they have composted at home. Have your students log all of the food wasted in their home for a week. Have them discuss ways they can make changes to reduce waste based on their observations. Additionally, if your school or classroom hasn't yet organized a composting system, set up a compost bin and encourage students to discard food scraps and lunch leftovers in there instead of in the garbage. Find out if your town or city has a program that will take your compost piles and turn them into useful soil as well!



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