

# Outdoor Explorers

Nature offers year-round opportunities for fun and learning. Your whole family can go outside together to explore science and math, read and write, and be creative.

Use this month-by-month guide to build your child's skills and help her learn to appreciate the great outdoors.



## January • Ice Art

Show your youngster how water turns to ice. Start by having family members gather evergreen needles, twigs, seeds, and other small objects outside. Then, let each person fill a large, plastic zipper bag about half full of water and drop in their finds. Seal the bags and leave them outside overnight (or in your freezer if it's too warm outside). In the morning, your child will see what happened to the water when you cut the bags open to reveal ice sculptures!



## February • Shadow Search

Your youngster can use shadows to practice measurement. On a sunny day, go outside with a tape measure. Explain that a shadow appears when a solid object, such as a person or building, blocks light from the sun. Help him measure to find the longest and the shortest shadows. For example, houses and trees will cast long ones, while bushes and stop signs will make shorter ones. He can also measure the shadows of the same objects at different times during the day. How do the shadows change?

## March • Outdoor Poetry

Combine writing and science by taking your family outside to write poetry. At a park, encourage each person to look and listen and then select something to write a "sense poem" about. It could be a blossom or a caterpillar, for instance. Have everyone use their sense of sight, hearing, smell, and touch to write a poem describing their choice (*example*: The blossom smells sweet like candy, And feels soft, not at all sandy).

## April • Waterproof Ducks

How do ducks stay dry? To find out, visit a pond and watch them. Point out to your child how they seem to "clean" themselves a lot. This is called *preening*, and the ducks are actually spreading a kind of oil on their feathers that comes from a gland near their tails. The oil repels the water, making the ducks waterproof. At home, have your youngster try this experiment to see how the oil helps. Let him cut two duck shapes out of yellow construction paper and dip one in vegetable oil. Have him put each duck in a separate bowl of water, pull them out, and see what happens. Because oil repels water, the water will form beads and run off the oil-coated duck while the other one will get soaked.

## May • Pollen Race

Show your youngster how bees spread pollen. Explain that when bees land on flowers to eat nectar, pollen sticks to them. When they land on the next flower, some of the pollen falls off. Flowers need the pollen to make seeds for new flowers. Have your child draw a bee on construction paper, cut it out, and glue it onto a craft stick. She can draw large flowers on several paper plates and fill the centers with glue and glitter—that will be the "pollen." Then, let her "fly" her bee from plate to plate so it lands on the flowers. The bee will pick up the glitter, just like bees gather pollen as they fly from flower to flower.



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## June • Animal Graph

Visit a spot with a lot of animals, such as a path in the woods or a nature center picnic table. Let each family member choose one type of animal to count (dogs, birds) and record the number. Then, have your youngster put the information into a graph. Help her divide a sheet of paper into columns and write the types of animals at the bottom. She can create a symbol for each one (paw print, bird beak). In each column, she could draw the symbol for each time someone spotted that animal.



## July • Nighttime Stargazing

Go outside on a clear night, and discover the night sky together. Take a blanket to lie on, a flashlight, and a book like *Find the Constellations* by H. A. Rey (or star charts printed out from a website such as <http://media.skyandtelescope.com/documents/GettingStartedNorth.pdf>). Shine the flashlight on the book or chart, and try to locate a few of the constellations in the night sky. Then, suggest that your child find and name his own group of stars. For instance, he

might see stars that look like initials and name the group after himself.

## August • Boat Race

Have each family member build a boat from a milk or juice carton. Encourage your youngster to cut her carton into the shape and size she thinks will float best. She might also make a sail by taping a paper triangle to a straw and attaching it to her boat. Next, put your boats in a wading pool or large plastic container filled with water. See which one will hold the most weight by placing one penny at a time in each boat. *Safety Note:* Stay close to your child anytime she plays near water.

## September • Nature Walk

Help your youngster observe autumn leaves during a family hike. Find a path with plenty of trees, and give each person a small bag to collect leaves. Encourage your child to choose a variety of shapes, colors, and sizes. Stop at a scenic overlook or clearing to spread out your collections and compare your leaves. What colors did each person find? Who has the largest or the smallest leaf? Ask your youngster to sort his leaves in different ways. He might classify them according to color or shape, for example.

## October • Pumpkin Math

Visit a pumpkin patch to give your child practice in estimating and counting. Ask her to guess how many pumpkins

are in a row, and have her count to check her guess. Then, help her estimate the number of pumpkins in a section of the patch (10 rows of pumpkins x 20 pumpkins in a row = 200 pumpkins). Take a pumpkin home, cut the top off, and let your child scoop out the insides with a big spoon. Have everyone guess how many seeds there are. Your youngster can arrange them in groups of 10 to check the estimates.



## November • Squirrel Tails

How many ways can a squirrel use its tail? Read a book such as *Nuts to You!* by Lois Ehlert or *Flying Squirrel at Acorn Place* by Barbara Gaines Winkelman. Then, sit with your child and watch a busy squirrel gathering nuts for winter. Look for the squirrel to use his tail in different ways. For example, when he jumps, his tail flares out like a parachute to help him land softly. If it's sunny or rainy, he puts it over his head like an umbrella. And as he scurries along a branch, he uses his tail for balance by sticking it straight up. Explain that all animals have body parts that help them survive and adapt.

## December • Matching

Build your youngster's memory and teach her the names of outdoor objects with this twist on the Concentration game. Have her collect 12 pairs of items from nature, such as pinecones, acorns, and pebbles. Hide the objects under paper cups arranged in four rows of six. To play, take turns picking up two cups to see what's underneath. Players have to name each object as they remove its cup. If they get a match, they keep the objects and have another turn. When all the items are taken, the person with the most pairs wins.

# Recipes for Success