

NATURE DETECTIVES

WINTER 1995-96

PATTERNS IN NATURE

Sunlight is playing tricks on me — it's dancing on my arms while I lay under the tree. The wind blowing the tree's branches is blowing clouds into rows. Nature is at work creating patterns all around me.

Some patterns tell a story. Often when I pick up a rock I uncover trails left by tiny creatures. Long, long ago, people saw patterns in the stars that formed pictures in their minds. They used those "star patterns," called constellations, to pass myths and stories down through the ages.

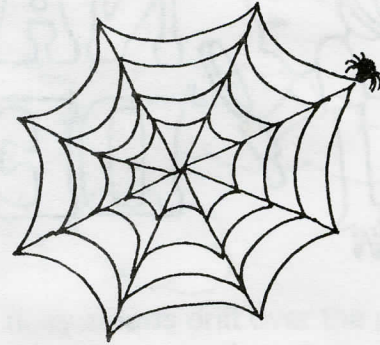
Some patterns help plants and animals. Is that why the zebra's stripes go up and down instead of stretching from its head to its tail? Is that why a fawn has spots? Sit very still for a while. See how many different nature designs you can find. They are out there just waiting to be enjoyed!



Patterns that Help

Spider Webs

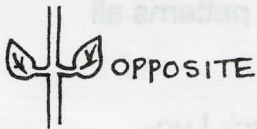
Watch for tiny diamonds sparkling in the dewy grass. Look closely! Do you see a circular pattern of silk shaped like a wheel? Spiders weave long spokes to support their orb-webs. Sticky snare threads wind around and around in perfect symmetry with evenly spaced lines. The spider sitting in the center of the web is waiting for breakfast. Soon some unsuspecting bug will get stuck in this helpful pattern.



Some web patterns are hammock-shaped or look like a funnel. What other shapes can you find? How do they help spiders catch food?

Leaf Patterns

Leaves are arranged on branches to help the tree gather as much sun as it needs to make food. Leaves can grow opposite each other on a branch. Others alternate along the branch. Some are even whorled all around the branch.



OPPOSITE



ALTERNATE

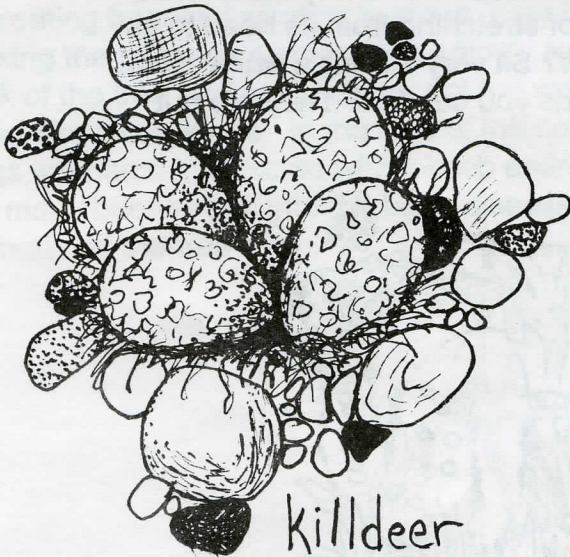


WHORLED

Camouflage

You have probably walked right by a baby deer and not seen it. Here's why. Sunlight shining through tree branches makes a pattern of sun and shade on the ground below.

The pale spots on a fawn's brown coat look just like this pattern and make the young deer hard to see. When an animal is camouflaged this way, it is safe from predators.



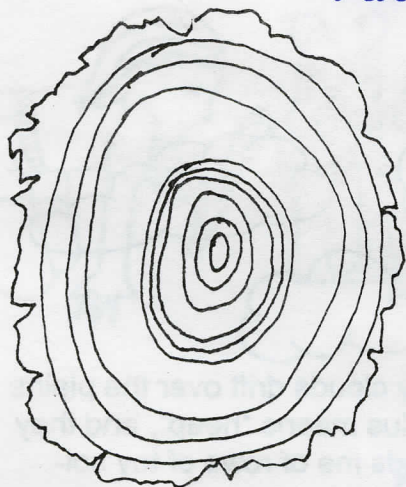
Killdeer
Nest

The killdeer lays its eggs in a simple nest right on the pebbly shore of a pond or stream. You might think this is a foolish place for eggs. Why wouldn't a fox or raccoon just walk up and eat them? Because they're camouflaged! The gray and brown speckled pattern of the eggs blends with the pattern of small stones on the water's edge.

Keeping animals safe is the key to many of nature's patterns.



Patterns that Tell a Story



The Tale of a Tree

Do you like to measure your growth each year to see how big you are getting? How much did you grow last year? Trees can be measured for growth and age, too. But not the same way we measure ourselves. Inside a tree trunk are a series of rings. Each ring marks one year of growth for the tree. If there are eight dark rings, the tree is eight years old. The width of the spaces between the rings tells a story about the tree. If the rings are far apart then the tree had a great year with lots of water and sunshine, and really grew. If the rings are very close together then the

tree had a bad year and didn't grow very much at all. How old is this tree? Did it ever have a bad growth year? A good one? Answers: This tree is 9 years old, the fourth and fifth years were bad and the sixth year was good.

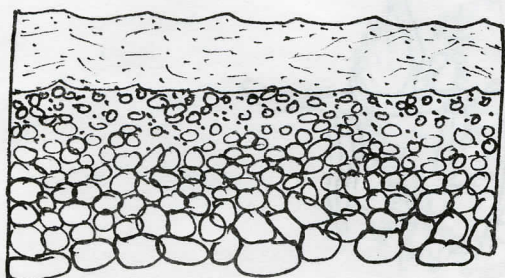
Track and Trails

If you follow a human's tracks in the snow or mud you might be able to learn something about that person. Was she running? Did he have boots on? Did she stop to turn around? You can learn things about other animals from their tracks, too. You can tell what kind of animal it is, and you might be able to tell what it was doing or how fast it was going!



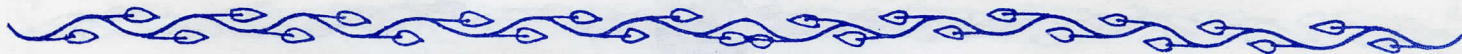
Layers in the Earth

Have you ever seen a canyon wall that has stripes? The stripes are layers of rock. When sandy sedimentary rock is deposited by wind, water, or ice, strata are formed. Each layer has a unique texture because each is made up of different materials. Some textures are smooth, like sandstone. While others are very rocky, like conglomerate. The pattern of layers tells a story about how the rock was formed.

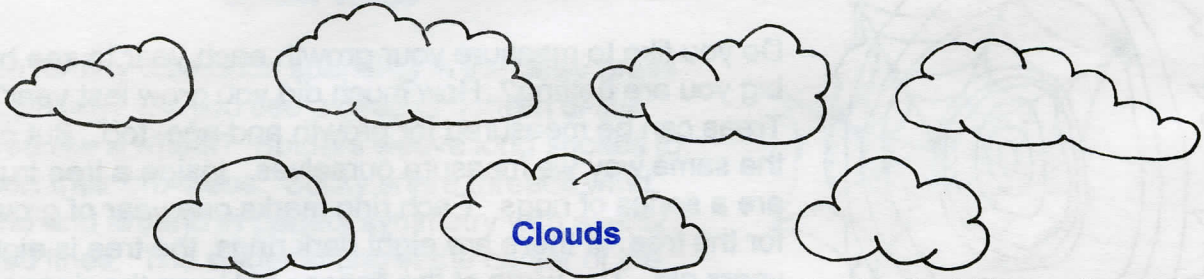


Sandstone is made of grains of sand cemented together by the weight of water. Sometimes you can see a ripple pattern left by the waves of an ancient sea.

Conglomerate is a mass of all sorts of rock stuck together. The edges of the rocks are rounded by water. Either they had a long, rough river journey or were battered by ocean waves. Large heavy rocks settle on the bottom.



Patterns to Enjoy



Are you a cloud gazer like me? Have you noticed how big, fluffy clouds drift over the plains on hot summer afternoons? These are cumulus clouds. Cumulus means "heap", and they are like heaps of white cotton. But the pattern they make reminds me of rows of toy soldiers marching across the sky.

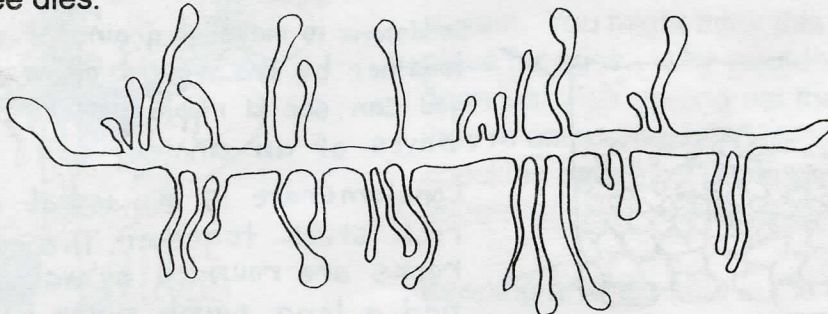
In the winter look for cirrus clouds - thin, feathery, curling wisps way up high. They make a pattern like the tails of horses racing across a field. In fact, "mares' tails" is the nickname for cirrus clouds. My father used to tell me "When you see mares' tails be ready for a change in the weather."

Frost

*Silvery patterns in shady lanes
glisten when Sun first rises.
See feathery patterns on window panes
and pumpkins with icy disguises.*

Patterns Inside

Something amazing is happening under the bark of this pine tree. A Mountain Pine Beetle is creating beautiful winding burrows, called galleries, between the bark and wood. Is it making the galleries just for us to enjoy? No, the little digger eats a tiny hole through the bark of the tree and continues to eat the wood underneath until it has made a pattern that looks like a centipede. In the legs of the centipede design, the beetle lays its eggs. The eggs will hatch into pupae which keep eating and the tunnels wind farther and farther. If too many beetles drill into the bark, diseases could enter the holes and attack the tree. Sometimes the tree dies.



Next time you see a fallen pine tree, pull off a piece of bark and you might find the amazing pattern that the beetle left behind.

