

Packets for parks and recreation. 10th and 11th grade for the weeks of 4/13-17 and 4/20-24

Goal: To exercise your observation skills with writing, visual art and nature.

Day 1 and day 2 are lesson 1 & 2, give yourself time to read carefully through the directions.

-Lesson 1 you will need a family member to work with you. (do note card)

-Lesson 2 has pages to continue with for the days of 3-8.

As always email me with questions. katie.mantel@leonagroup.com

Special activities for April 22nd. The 50th anniversary of Earth Day is this year. With such an important milestone please make sure to share with me in an email.

There is a small reading of *Living With the Wind*, that I would like you to read with a family member and then find something to plant in the wind...

Miss you all!!

Mantel

Lesson 1

Day 1

WORDS FOR BIRDS

In this introduction to descriptive writing in a nature journal, each student tries to use vivid yet concise language to portray one of the birds on the opposite page: 1) the roseate spoonbill, 2) the peregrine falcon, 3) the pinyon jay, or 4) the mallard. At the end of the lesson, the class comes together to consider a question: How can we describe what all of these creatures have in common? In other words: What is a bird?

Color copies of the page are not necessary. Black-and-white images, in fact, might work better. Students will not rely on the most obvious descriptions, such as blue for the pinyon jay.

STEP ONE

Give each student a blank index card and a copy of the page. Explain the assignment:

Each will choose one bird to describe. Each will use the blank side of the card for a brainstorming list of whatever descriptions come to mind, and then edit those thoughts by writing a complete sentence or two on the lined side of the card.

The goal is to give such telling details that a classmate will be able to identify the bird by the description. Students should ask themselves: *How can I say the most about this bird in this small space?* The only stipulations are that they cannot give the name of the bird, if they know it, or describe any characteristic not found in the photograph (e.g., the quack of the mallard).

Encourage them to use simile and other figurative language in their descriptions. Let them know that the common names for many birds derive from similarities to the human world. While the St. Louis Cardinals take their name from the bird, for example, the bird takes its name from the vestments of ecclesiastical cardinals. And it is no coincidence that the bill of the roseate spoonbill looks a lot like a spoon.

STEP TWO

Allow a set time for the exercise—five or ten minutes. Ask students to write their names or initials in a corner of the card when they are done.

Collect the cards and redistribute them at random, so that each student has another's card. Everyone will now try to deduce which bird the assigned card describes.

Ask students to circle the words or phrases on the card that seem especially descriptive.

STEP THREE

Go around the room and ask each student to read the description on the lined side of the assigned card and to announce his or her guess of the bird in question. In a discussion, have students confirm or correct the guesses of their classmates. Ask those who guessed correctly: *What were the words that best described the bird?* If a guess was incorrect: *What other words might have been helpful?*

STEP FOUR

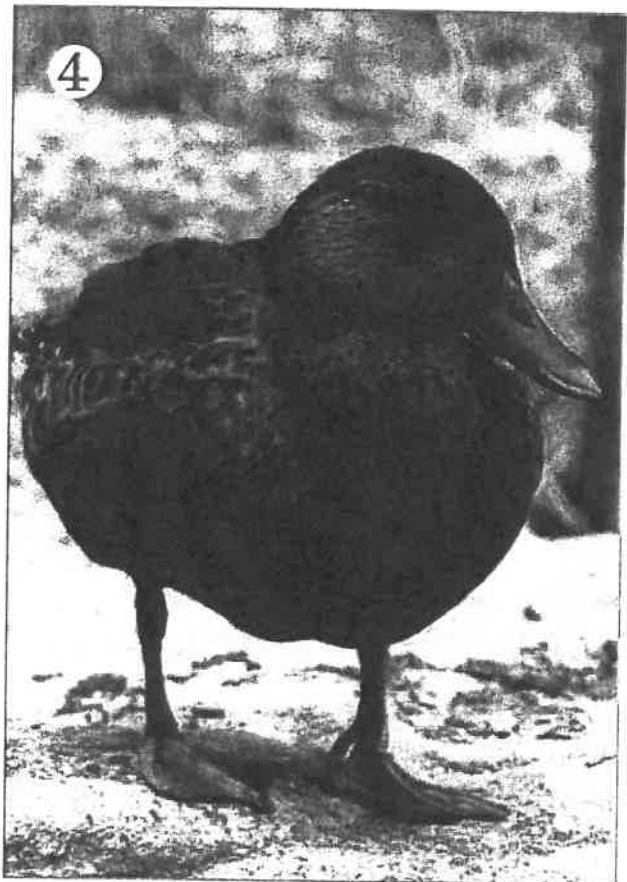
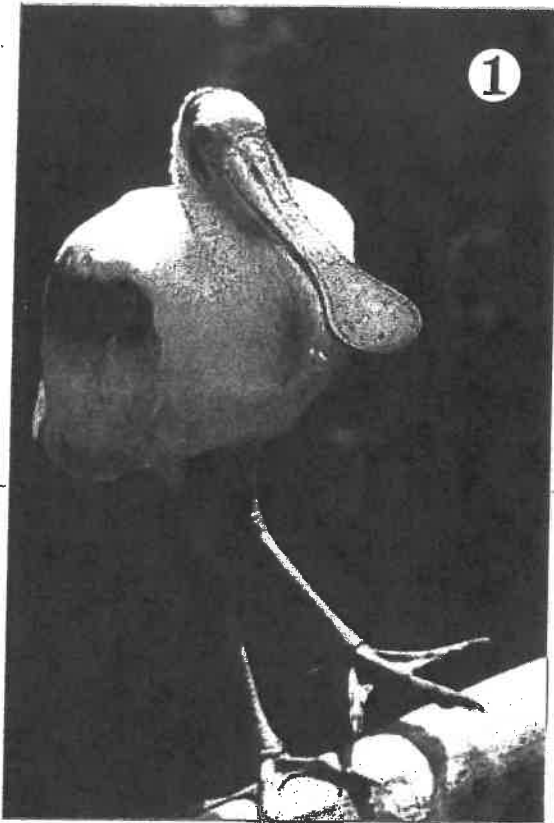
Conduct a class brainstorming session in which students suggest words and phrases that describe all of the birds. Record the responses on the board. Use the brainstorming list to compose, as a class, a paragraph that answers the question *What is a bird?*

EXTENSION

Because birds are likely things for students to describe in a nature journal, we've included, on page 8, a brief introduction to the body parts and adaptations of birds. Share the page with students when the lesson is completed.

The lesson can be applied to any set of different things within one category: pictures of trees or living trees in a park; pictures of flowers or living flowers in a garden; rocks or insects in a natural history museum; landscape paintings in an art gallery. If you go looking for pictures online, try the site of the Smithsonian's United States National Herbarium, which contains a bank of 17,000 plant images, searchable by scientific and common name. You'll find it at www.nmnh.si.edu/botany.

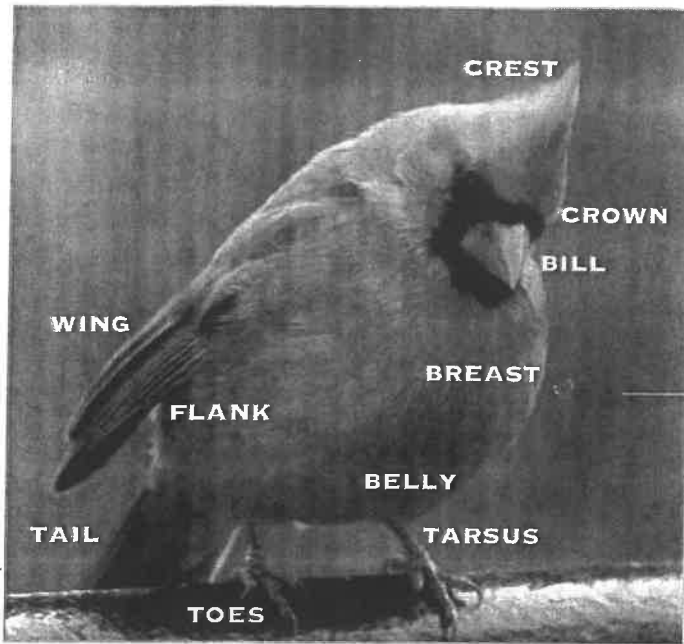
ask a family member to work with you
must turn in note card!



Student Handout

BIRD PARTS

You probably saw big differences in the feet and bills of the four birds. Such differences, or "adaptations," tell us a lot about the lives of birds.



THIS NORTHERN CARDINAL IS A SEED EATER. IT CRACKS THE SEEDS IN ITS SHORT, STURDY, CONE-SHAPED BILL.



THIS ROSEATE SPOONBILL IS A WADING BIRD. IT USES ITS LONG, FLAT BILL TO SCOOP UP FISH, SNAILS, AND OTHER SMALL CREATURES FROM THE WATER. IT STRAINS WATER AND MUCK FROM THIS FOOD IN THE ROUND END OF THE BILL.

THE SPOONBILL'S WIDELY SPREAD TOES ALLOW IT TO WALK LIGHTLY ACROSS THE SOFT BEDS OF RIVERS AND LAKES.



THIS PEREGRINE FALCON IS A BIRD OF PREY. IT SHREDS THE MEAT IT EATS WITH ITS RAZOR-SHARP, HOOKED BILL.

BIRDS OF PREY USE THE HOOKED CLAWS OF THEIR POWERFUL FEET TO SNATCH SMALL ANIMALS FROM THE GROUND AND FISH FROM THE WATER. CAN YOU GUESS WHY THEY HAVE SUCH BIG EYES?

THIS PINYON JAY, LIKE THE CARDINAL, EATS SEEDS. IT ALSO EATS INSECTS AND POKES INTO THE EGGS OF OTHER BIRDS. THE ALL-PURPOSE BILLS OF JAYS AND CROWS HAVE BEEN CALLED "SWISS ARMY KNIVES."

THE JAY IS A PERCHING BIRD. ITS LONG BACK TOES HELP IT GRASP BRANCHES TIGHTLY. CAN YOU FIND ANOTHER PERCHING BIRD ON THIS PAGE?



LIKE THE SPOONBILL, THIS MALLARD STRAINS ITS FOOD THROUGH A FLAT BILL, THOUGH THE BILL IS MUCH SHORTER. MALLARDS DON'T HAVE AS FAR TO REACH FOR FOOD.

WHY DON'T THEY HAVE FAR TO REACH? MALLARDS SWIM AND DIVE FOR THEIR FOOD. THESE WEBBED FEET WORK LIKE A SCUBA DIVER'S FLIPPERS.



Each bird on this page has all but one of the features pointed out on the northern cardinal. Try to find the part missing from the other birds.

Lesson 2

NATURE IN MOTION

- packet. reading day 2

- day 3 - 8 journal entry for each Day
6 journal entries total

STEP ONE

Introduce the class to the webcams. Explain the lesson and allow students to choose the animals they would like to observe. They might conduct the observations on their own, or you might ask the class to get into small groups to form the Panda Team, the Tiger Team, etc.

Encourage students to go through the entire menu of webcams before deciding on a species. Most of the cams are stationary and the frequency of the animals' appearance on them varies greatly. An inside tip: the Panda Cam, the Flamingo Cam, and the Naked Mole Rat Cam (as unappealing as that might sound) rarely disappoint.

other ideas: Eagle Cams or
Back yard or park

STEP TWO

Give each student a copy of the observation form on page 10. Explain that they will be doing something very similar to the procedure of the previous lesson. During an observation session—in class or at home—they will use the space under Notes to write whatever comes to mind: descriptions of the animals' behavior, interpretations of what they see, and general thoughts about the scene.

After the observation session, they will use the space under My paragraph on what I saw for a more polished summary of the experience.

Encourage them to make sketches, too, during the observation, using the blank space at the bottom of the page.

STEP THREE

After the first observation session, hand out copies of page 11, which contains excerpts from "Tiger Cub Diary" by National Zoo animal keeper Marie Magnuson, an online account of the birth and growth of a litter of Sumatran tigers.

As a class, look for instances in "Tiger Cub Diary" of 1) pure description of fact; 2) inferences, or the writer's interpretations of those facts; and 3) the writer's feelings and personal thoughts on the subject.

For young students, you might call attention to passages that contain both observation and inference. For example: "Rokan is always very happy to see his children [inference] . . . they rub heads through the mesh that separates them and make the tiger greeting noise called 'chuffing' [observation on which the inference is based]."

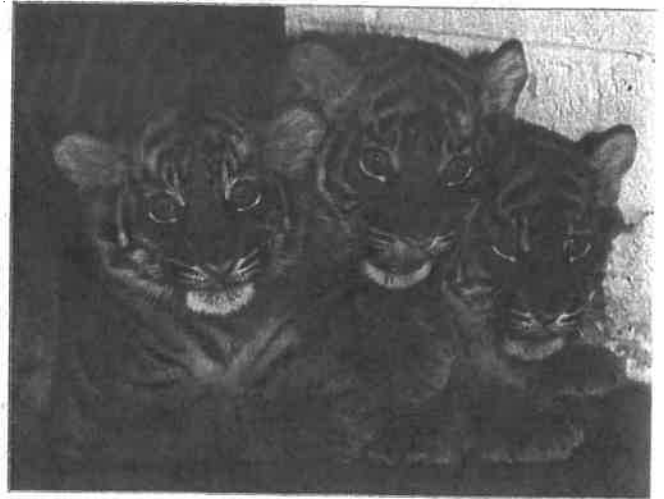
STEP FOUR at the end of each Day!

In a class discussion, have students look at their own writing for pure observation and for such inferences as *The cheetahs were tired* or *The pandas were hungry*.

Consider these questions: *Are my thoughts on the reasons for behavior based on good evidence? Did I state what the evidence is? Would my writing be stronger if I learned more about this species? Where could I go to learn more?*

no writing, Just
reflection.
writing should get
better every day.

TIGER CUB DIARY



The first birth was at about 2:45 in the afternoon, when all the keepers were in the office at Great Cats. We just happened to be looking at the monitor at that moment and couldn't believe it! Tigers usually prefer to give birth in the "wee small hours of the morning" when everything is quiet, and they are sure to be alone.

Each cub was big and healthy, and we found out that we had two girls and a boy. Soyono and Rokan had had two litters before, and all four cubs from those litters had been boys, so we were very happy to finally have some girls.

*

Often, now, when their handsome father, Rokan, comes inside in the evening, Soyono has the cubs in the enclosure next to his, so they can all say "Hi!" In the wild, tiger mothers raise their young alone, without any help from the father. We are often asked why we keep the tigers separate, and it is because it would be unnatural for them to live together. Rokan is always very happy to see his children (and their mother!), and they rub heads through the mesh that separates them and make the tiger greeting noise called "chuffing" to each other. But Rokan might not be willing to put up with the cubs climbing on him and biting his tail and just generally being cubs. Sometimes we feel sorry for Soyono when we see her on the cub cam trying to sleep with a cub chomping on her ear but she's a patient mom and doesn't seem to mind.

*

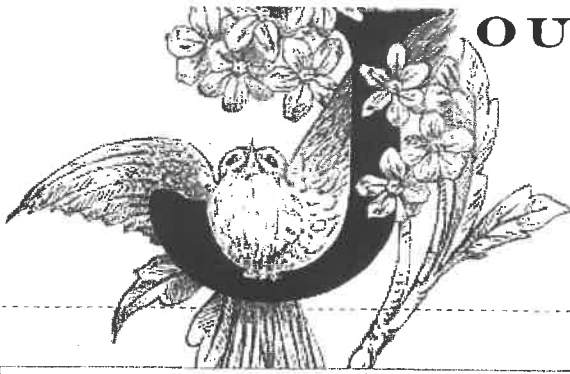
The two girls weigh 13 and 14 pounds each, and the boy weighs 16.1 pounds. Obviously, Soyono is keeping her family very well fed!

The cubs are getting more confident. At first when mom went outside, they would all find a quiet corner together and sleep until she came back, but now they wander around when she is outside and we see them on the cub cam wrestling and playing. This is how they develop the strength and coordination they will need to be predators. Most tiger games are hunting games and you might see a cub stalking and pouncing on Soyono's tail!

*

At last Thursday's exam, everything looks good and everybody is gaining weight. The girls are 14.8 pounds and 16.8 pounds each, and the boy is 19.6 pounds. We think the boy is going to have his father's build. Rokan has a beefier build than most Sumatran tigers, which are the smallest of the tiger subspecies. To use human athletes for comparison, most Sumatran males are built like swimmers, while Rokan is built more like a wrestler. Since tigers are "stalk-and-pounce" hunters (just like your house cat), they have most of their power up front and Rokan just has a little more than most. Soyono thinks he is very handsome, and we agree.

JOURNAL



ANIMAL OBSERVED

DATE

Starting & Ending TIMES

Notes

A large rectangular area with horizontal dashed lines, intended for writing notes.

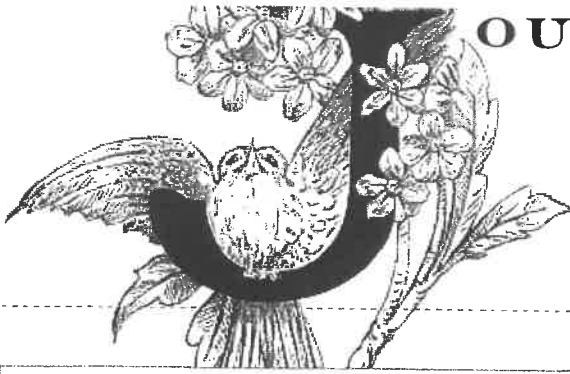
My paragraph on what I saw

A rectangular area with horizontal dashed lines, intended for writing a paragraph about the observation.

Sketches



JOURNAL



ANIMAL OBSERVED

DATE

Starting & Ending TIMES

Notes

A large rectangular area with horizontal dashed lines for writing notes.

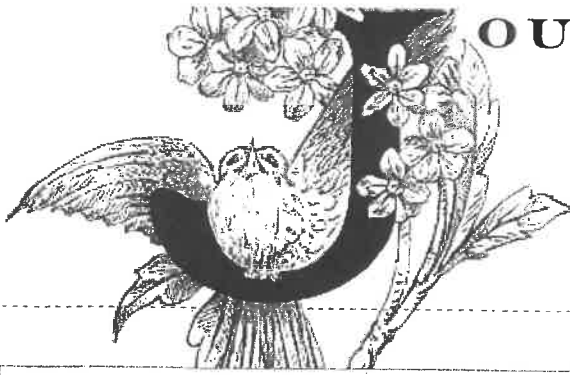
My paragraph on what I saw

A rectangular area with horizontal dashed lines for writing a paragraph.

Sketches



JOURNAL



ANIMAL OBSERVED	
DATE	
Starting & Ending TIMES	

Notes

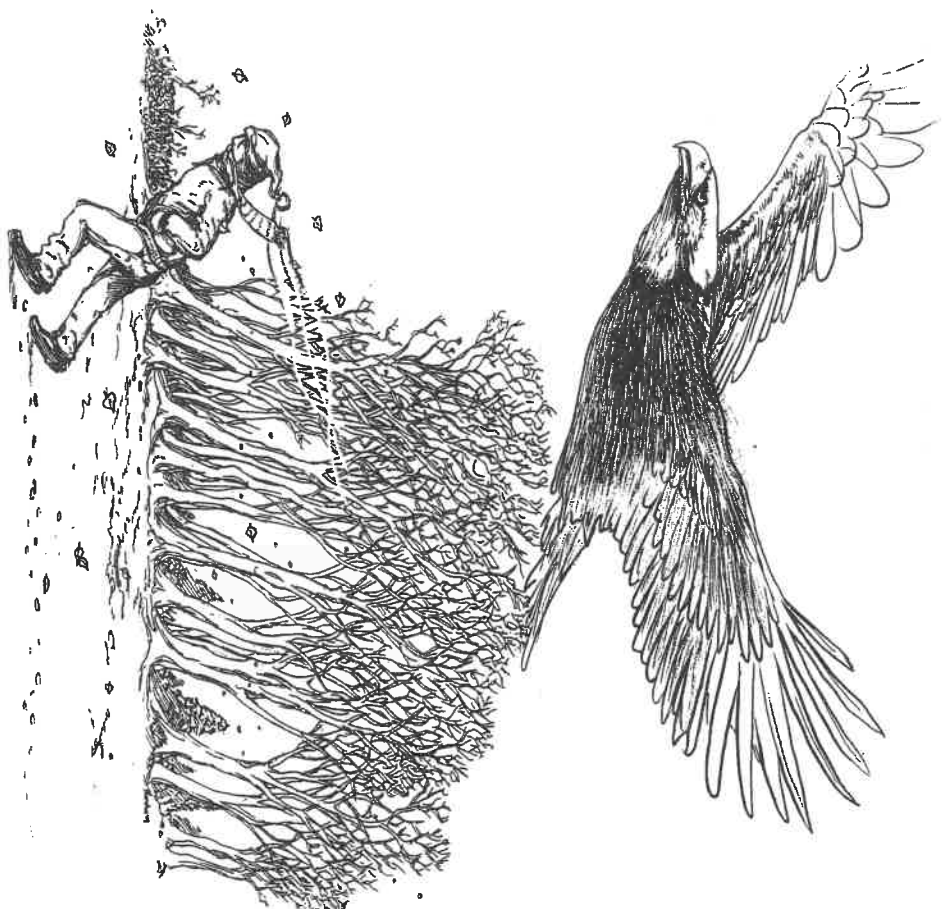
Handwritten notes area with horizontal lines.

My paragraph on what I saw

Handwritten paragraph area with horizontal lines.

Sketches





Living With the Wind

Too much wind? Very bad. No wind at all...?
By Becky Rupp



Good timber does not grow with ease; the stronger the wind, the stronger the trees.
—J. Willard Marriott

ILLUSTRATIONS BY RUSSELL THORNTON

Here where we live, on the Vermont side of northern Lake Champlain, we get a lot of wind. In the Summer, it whips the lake into whitecaps, trips the laundry off the line, and knocks the lawn furniture over. Wind is the reason for that dismal French Canadian sea shanty that ends, "You'll never get drowned on Lake Champlain / As long as you stay on the shore." Wind is the reason we put the vegetable garden on the sheltered side of the barn.

In the Winter, the wind comes straight down from the North Pole across the plains of Canada, makes a snow drift the size of a blue whale just off the back porch, freezes everything freezable solid, and buries the bird feeders.

Our wind is serious wind.

It could, of course, be a lot meaner wind. I just read that the strongest winds in the solar system are found on Neptune. There the wind whips frozen methane across the planet's surface at speeds up to 1200 miles per hour, and temperatures hover around -392 degrees. Compared to Neptune, Vermont, even in February, is a beach on Tahiti.

And, for all my carping about frostbite, we can't do without the wind.

There's an Abenaki legend in which the hero Gluscabi, bent on duck-hunting, is fed up with the wind that keeps blowing his canoe backwards. Annoyed, he tracks down the great Wind Eagle—whose flapping wings generate the world's winds—ties his wings to his sides, and stuffs him into a crack in the mountainside. With the Wind Eagle out of commission, there's no more wind—but soon the air is hot and stuffy, the water is dirty and stagnant, and a chastened Gluscabi learns the error of his ways.

We need the wind, even though I'd like to keep it away from our tomato cages, some of which are funny-shaped due to large doses of it. And the wind may be even more important for trees. Which brings me to Biosphere 2. Biosphere 2—a three-acre, glass-and-metal greenhouse that looks like something out of *Star Trek*—is located in the desert outside Tucson, Arizona. It was initiated as a science experiment in the 1990s, the brainchild

We need the wind, even though I'd like to keep it away from my tomato cages.

of philanthropist Ed Bass and ecologist John Allen, and was intended to be an enclosed self-sustaining environmental system, a replica in miniature of the Earth (Biosphere 1). It was the kind of structure, Bass and Allen hoped, that would eventually allow people to live on Mars.

In its heyday, Biosphere 2 was home to eight Biospherians (four men, four women), 3,000 plant and animal species, and seven different mini-biomes, among them a tiny tropical rainforest with its own 25-foot waterfall, a grassy savannah, a marshland, a desert, and a 150-foot-long ocean, complete with coral reef. (The rainforest supplied the Biospherians with coffee beans; the ocean provided their table salt.)

The Biosphere 2 experiment lasted less than two years before the whole thing melted down. A number of factors contributed to its demise, prominent among these

soil bacteria multiplying at breakneck rates and pumping way too much carbon dioxide into the atmosphere. (The released Biospherians, gasping, said they'd never take oxygen for granted again.) Essential pollinating insect populations went extinct. Crops failed. And the trees started falling down.

Trees, it turns out, need wind.

When trees grow in the wild—that is, in the great outdoors of Biosphere 1—wind, the ultimate personal trainer, relentlessly keeps them moving. The continual mechanical push and shove—and occasional downright battering—by wind creates stress in the load-bearing structure of trees. That stress in turn causes a tree to dig in its heels and produce reaction wood, a stubbornly rigid, live-free-or-die-type wood that is particularly heavy in lignin. Lignin is an organic polymer—chemically a nightmarish snarl of ring-shaped molecules—that acts as a tree's equivalent of cement. Reaction wood is how trees respond to aerodynamic bullying. Reaction wood is a tree's way of drawing a line in the sand. It's obstinate and it's tough. It's what wind gets if it messes with trees.

The Biosphere 2 trees, deprived of wind, never developed reaction wood. They had no challenges, suffered no stress. Nothing shook them up. Biosphere 2, like an over-protective helicopter parent, never gave them the opportunity to test their mettle. The trees grew too tall, too fast, and had too little woody backbone. Gravity caught up with them and they toppled over.

I feel bad for those trees. Somebody should have intervened. On the other hand, like Gluscabi's disastrous goof with the Wind Eagle, there's a lesson for us here, too.

Stress in the United States these days is at an all-time high. According to the latest Gallup poll, about 55% of American adults claim to experience stress for much of their day, as opposed to just 35% on average worldwide. We're now as stressed as Greece, which has been topping the global stress charts since they lost the Olympics back in 2012.

Collectively we worry about money, health, family obligations, work performance, and (well, me) the speed at which our children drive. We agonize over all the things we've left undone. We worry—justifiably—about the future.

But that doesn't mean we should give up.

Stress—dealt with in the right way—isn't always bad.

Sometimes it gives us the impetus to do better. It motivates us to succeed. It inspires us to fight for what we think is right. It teaches us to deal with difficult situations. It gives us resilience and backbone.

Too much wind blows a tree over. But no wind does it no favors, either.

Same with us.

Stress isn't all bad.

Sometimes it makes us tougher. ❖

