

Director's Corner: Lessons from Nature

"The lasting pleasures of contact with the natural world are not reserved for scientists but are available to anyone who will place himself under the influence of earth, sea and sky and their amazing life."

Rachel Carson



Ten years ago, our educators discussed Richard Louv's 2005 book, "Last Child in the Woods: Saving Our Children from Nature Deficit Disorder." Louv's aim was to encourage discussion of "the increasing divide between the young and the natural world, and the environmental, social, psychological, and spiritual implications of that change" (p. 2). Since that time, we have worked more purposefully to include nature in the classroom, focus more on "nearby nature", make our school more "green", and improve our "outdoor classroom". For example, our classrooms now include more plants and a wider variety of pets, we take more walks on campus and in Schenley Park, we have broadened our recycling and composting programs, and we have added more natural elements and gardens to our outdoor space. Both CMU and the city of Pittsburgh have supplemented our efforts with their own steps toward "green urbanism".

This year, we decided to capitalize on children's fascination with animals and increase our contact with the natural world by choosing the Whole School Theme of **ANIMALS in the WILD**. We aim to engage children, educators and families in discovering the "amazing life" Rachel Carson described. In this series of articles, I will explore the lessons we can learn about educating and raising children by observing the animal kingdom. Principles such as niches, adaptation, interdependence, and biodiversity – each of which is crucial for the balance of nature and stability of ecosystems, can also be applied to the health and sustainability of our learning communities and families.



For example, a simple internet search for life lessons from elephants revealed lots of ideas, such as living in community, respecting elders, having thick skin, using touch as a form of communication, eating mostly plants, and drinking more water. The Flourish Anyway web site uses observations about common neighborhood squirrels to offer life lessons, including taking time to chew things over, always having a backup plan, accentuating your best features (for squirrels, the bushy tail), and saving for the future (<https://owlcation.com/misc/How-To-Live-Your-Best-Life-Lessons-Learned-From-Squirrels>).



Basically, taking the perspective of animals to explore their lives and learning may help us think outside our proverbial boxes to notice more creative approaches, unique solutions, or broader vision than we have previously considered. Research shows that simply being present in nature has significant benefits for mental and physical health, as well as cognitive functioning. My hope is that reflecting together about our experiences with animals in the wild will also inspire our work with children as educators and parents. I'd love to hear your ideas about life lessons from your favorite animal!

Exploring Animals in the Wild

This year, we plan to intentionally focus on building our relationships with the environment by studying **ANIMALS IN THE WILD** for our Whole School Unit, including both a local and a global emphasis. The timing of this unit in February and early March coincides with the [United Nations World Wildlife Day](#) (March 3, 2018) and ends just before the [US National Wildlife Week](#) (March 14-18, 2018). Studying Animals in the Wild will enable us to discover 1) the safe ways we can observe animals in their natural habitats, 2) the life science features of animals and their life cycles, adaptations to the food, water, shelter, etc. available in their habitats, and ways that communication and interdependence help them meet their needs, 3) the physical science properties of animals' physical features, homes, etc., 4) the earth science aspects of animal behavior based on the weather and seasons, 5) the historical, social, and cultural changes related to humans' environmental responsibility, and 6) the representation of animals in literature and the visual, dramatic, movement, and musical arts.



In preparation for the unit, our educators visited the Humane Animal Rescue Wildlife Center (<https://www.humaneanimalrescue.org/wildlife-rehabilitation-center/i-found-an-injured-wild-animal/>) during our professional development time prior to the beginning of school. "The Wildlife Center is a fully licensed wildlife rehabilitation clinic that specializes in the care and treatment of injured, orphaned, and ill native Pennsylvanian wildlife. All animals are admitted to the clinic with the goal of releasing them back into the wild as healthy individuals." We

anticipate having some of the wildlife center's "educational ambassadors" visit our classrooms during the unit in February. Meanwhile, we encourage your family to notice the animals you encounter near your home and in your neighborhood parks. In my backyard in Crafton Heights, I've seen birds, insects, and a variety of mammals, including squirrels, raccoons, opossums, and deer. I even saw a coyote walking on a city street near my home at dusk one night recently. If you are interested in helping to design the unit or have ideas to share, please contact me (sc0e@andrew.cmu.edu) or your child's teacher.



Perhaps you wondered ...

why we organize our curriculum into thematic units.

Studying topics in depth builds children's knowledge base, starting with what they already know and creating a network of concepts that are richly connected in ways that help children apply their knowledge to new contexts. We combine verbal and visual representations and provide a variety of activities to help them acquire, strengthen, and refine concepts via experimentation, stories, dramatic play, art, games, technology activities, etc. Children converse and reason in more sophisticated ways about content they understand, so themes provide a foundation for other cognitive challenges.

Across the school year, we include a variety of topics that span literature, social studies, science (life, physical, and earth & space), and the arts. In every unit, we include activities that strengthen children's skills in all of our developmental domains: self-esteem & independence, interaction & cooperation, communication, discovery & exploration, physical capabilities / health & safety, and artistic expression & appreciation.

Director's Corner: Biodiversity Benefits



“The beauty in the genome is of course that it's so small. The human genome is only on the order of a gigabyte of data...which is a tiny little database. If you take the entire living biosphere, that's the assemblage of 20 million species or so that constitute all the living creatures on the planet, and you have a genome for every species the total is still about one petabyte, that's a million gigabytes - that's still very small compared with Google or the Wikipedia and it's a database that you can easily put in a small room, easily transmit from one place to another. And somehow mother nature manages to create this incredible biosphere, to create this incredibly rich environment of animals and plants with this amazingly small amount of data.”

Freeman Dyson, Physicist

As we consider the lessons we can learn about educating and raising children by observing the animal kingdom, the **principle of biodiversity** is a helpful place to start. The most stable ecosystems have significant diversity within and between species, in part because they are better able to cope with the stresses of change. Furthermore, the diversity of life demonstrates that there are literally millions of ways for living organisms to meet their biological needs of survival, which for humans include oxygen, water, food, shelter and sleep. In order for species to survive, organisms also need safe places to raise young to maturity. Abraham Maslow expanded the notion of safety for humans to include both physical and psychological safety, and then he suggests that in order to thrive we all need to form relationships that provide love and belonging and to participate in society that offers a sense of esteem. According to Maslow, these foundations are necessary in order for humans to have the motivation necessary to strive for their full potential. In other words, the health and sustainability of human ecosystems depends on our ability to build such foundations for everyone, beginning in early childhood.



Certainly, families have the primary role in providing for our youngest children's needs, but our school community aims to support families. For example, at the physical level, we offer healthy snacks to everyone, with accommodations for children with special dietary needs. Similarly, with respect to safety, we endeavor to create a secure context for children and families with varying temperaments, cultural and linguistic backgrounds, etc. Doing so means that we cannot use a one-size-fits-all approach but rather must tailor our strategies to each individual, as needed. The same is true for the varied ways we encourage children to form relationships with each other and with the diverse adults in our laboratory school context. Some children naturally connect with a wide range of peers within the first weeks of school, while others prefer a slower pace with a few key adults and close peers. Similarly, there are children who love opportunities to share their knowledge and skills with the whole group at circle time, while others choose to communicate individually with an educator or wait to tell their families about their accomplishments at the end of the day. We increasingly observe that children can thrive in many different ways. By creatively crafting unique approaches for each of the children we are parenting and educating, and at the same time for all the adults in our spheres of influence, we can together build an incredibly rich learning community. We look forward to hearing any ideas you have for how we can best support the diverse learners at the Children's School.

Director's Corner: Careful Communication



This year, I am exploring life lessons from the animal kingdom to broaden my view of novel solutions to some of the common challenges in early childhood learning communities and in families raising young children. At the same time, I am now “Mormor” (Swedish for mother’s mother) to a new granddaughter, Violet, and my other granddaughter, Lucia, has entered “The 4 Club”, as she calls it. Both my Director and Mormor roles are giving me plenty of opportunities to recognize the need for improved communication to better understand the individual children with whom I have the privilege of interacting. Given what I said last month about the benefits of biodiversity, it should come as no surprise that each child will communicate in unique ways, which challenges adults to adjust the communication dance to fit each individual personality and to continually readjust as development changes the child’s capabilities, which then advances their ideas, initiative, and explorations at the edges of both their own and our comfort zones.

Interestingly, the study of animal communication offers several helpful tips for educators and other adult caregivers as we seek to support and guide children in developmentally appropriate ways.

- **Listen more and talk less.** In many animal societies, individuals must observe signals in order to keep track of other group members, and they only send signals for specific purposes related to coordinating behaviors, establishing authority, defending territory, finding mates, and caring for young. For example, understanding a new baby, a new child in a classroom, or even a child entering a new stage, all necessitate focused observation of varied signals: visual (gesture, facial expressions, posture, etc.), auditory (e.g., coos, sighs, cries, and words), physical touch, and body rhythms, etc.
- **Listen carefully.** As with animals, we do well to “listen” to these nuanced signals attentively to fully comprehend the message behind the behavior, such as the wriggling that indicates a toileting need or the “fatigue sillies” that may seem fun but often precede a meltdown. On the positive side, we can “learn to suspend [our] adult agenda to really see children's perspectives and the amazing ways they experience the world ... to engage with children in a more meaningful teaching and learning process.” (Ad for early childhood educator Deb Curtis’s new book, *Really Seeing Children*)
- **Talk purposefully.** During busy days, we often narrow our focus to communicating only about the procedural routines and immediate tasks. While these are important and at times urgent messages, parent & writer Monica Bielanko reminds adults to stop daily to “talk to your children to better understand what’s going on in their world because it makes a world of difference.”

My favorite photo from our Thanksgiving holiday shows my husband (aka “Grampy”) intentionally listening to Lucia’s ideas about what should be included in the story that she asked him to tell her,



and that she would then ask to be retold and embellished repeatedly. In just the last few months, he noticed and acknowledged her interest in stories and her need for them to involve a brave character grappling with the challenges of monsters, little sisters, fears, and disappointment. Together, they are building quite a repertoire of tales and, through this careful communication, deepening their relationship and laying a foundation for meaningful conversations in the future. I hope that the winter break will afford you opportunities for such calm and comfortable communication that will yield new insights and joys!

Director's Corner: Adaptation Advantages



Reflecting on our school's 50-year history at the dawn of a new year highlights the importance of secure foundations for adaptation to changing times. Here again, animals' incredible adaptations to environmental conditions, particularly during such frigid weather as we are currently experiencing, offer lessons that we can apply to strengthening the ways we seek to raise and educate our children.

In western Pennsylvania, some birds avoid the cold by migrating to warmer southern regions, but others adapt to the cold by nesting in dense foliage, huddling together, or growing an extra layer of downy feathers. Deer have hollow fur to provide insulation, and they escape the elements by resting together in areas protected from wind. A few mammals, like woodchucks, hibernate for the winter, while others, like chipmunks, enter a state of torpor, spending periods of inactivity in underground chambers with access to stored food. Reptiles, like snakes, slow their metabolism to conserve energy so they don't need food (called brumation), and they avoid freezing by sheltering in crevices below the frost line. The fact that these adaptations required generations of evolution to achieve is evident in one of our region's relative newcomers, the opossum, which can be seen with frostbitten ears and "ice-abbreviated tails" during our coldest winters. Similarly, human populations adapted over generations to the environments where they live. Stocky body types with short appendages are more efficient at maintaining body heat, which is adaptive in arctic regions, while tall, slender body types with long limbs lose body heat better, which is adaptive in hot tropical climates. Even more so, technology and culture give humans the adaptive advantage because we innovate malleable ways to cope with climate conditions via clothing and shelter, etc., and then we share our ideas across populations and over time to distribute the benefit.

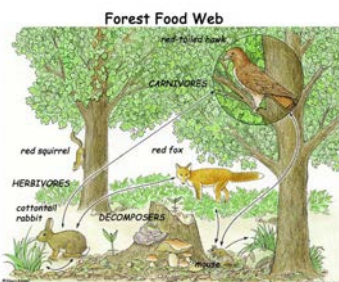
In fact, humans are unique in the animal kingdom for their adaptations to teaching and learning. Before birth, babies' brains are wired to prefer sounds in the human voice range and they begin imitating behaviors within their repertoire (e.g., sticking out a tongue) within the first hour after birth. Within months, infants follow others' gaze so that they attend to what interests others, while they quickly habituate (i.e., stop attending) to repeated stimuli that provide no new information. The fact that they can remember multiple patterns of interaction is evident from the smiling, cooing, and laughing games that they play with the diverse adults. These processes of attention, memory, and imitation are central to social learning in families, schools, etc. Before turning 1, children are reciprocally using pointing to both learn and teach, such as following an adult's point to a new object that is being named or requesting an object or its name by pointing. By the time children are 2, they are already becoming teachers by changing their tone and choice of words, demonstrating actions, and supporting behaviors of younger children in the same ways that they have been taught. Herein lies the lesson of adaptation advantages: The better we understand how children are adapted for learning, the better we can synchronize our efforts with their natural tendencies, sometimes in counterintuitive ways. For example, if you need children to be quiet, try whispering. Focus your eyes where you want the children to attend. Children pay most attention to models with whom they identify and most imitate behaviors whose benefit is evident. So, as parents and teachers, we do well to take an apprenticeship approach to both child-rearing and education, such that we involve children in meaningful activity within varied conditions so that they are naturally motivated to participate as fully as they are able at each stage of development. In this way, we will build foundations for their future adaptability.

Children are great imitators, so give them something great to imitate
~ Unknown

Director's Corner: Importance of Interdependence



As we consider life lessons from nature during our exploration of animals in the wild, a central concept is the **interdependence among organisms** within a habitat. The benefits of biodiversity and advantages of adaptation have their best effects within a community context of interdependence, particularly with careful communication. For the animal kingdom, in addition to depending on the non-living environment for some basic needs, such as water, air, etc., many organisms need other organisms to survive. For example, organisms that cannot make their own food must eat other



organisms to get the energy they need to live. Within nature, food webs are one way of viewing the interdependence necessary for survival of the species, but scarcity of resources forces competition such that only some individuals benefit. In human society, we can aim to imitate the closely connected symbiotic relationships in which both species benefit and survival is strengthened for diverse individuals. For example, oxpecker birds eat the ticks that bother zebra and even eat some of the blood from the tick wounds; but, in addition to ridding the zebra of ticks, they are easily startled and so provide an early warning system for impending danger.

As parents and educators, we often prioritize support for children's independence, particularly in American culture that emphasizes individuality. For example, at the Children's School, "self-esteem and independence" is the goal we list first in our set of developmental objectives. Notice, however, that it is closely followed by our goal of fostering "interaction and cooperation". As Mahatma Gandhi said, "*Interdependence is and ought to be as much the ideal of man as self-sufficiency. Man is a social being.*" Developmental psychologist Erik Erikson seconds the notion; "*Life doesn't make any sense without interdependence. We need each other, and the sooner we learn that, the better for us all.*" Civil rights leader Martin Luther King, Jr. highlights the impact of interdependence on each individual. "*Whatever affects one directly, affects all indirectly. I can never be what I ought to be until you are what you ought to be. This is the interrelated structure of reality.*"

One of the keys to our success at the Children's School is that we consistently seek "win-win" approaches wherein the children, families, students, researchers and other learners in our community can all do their best learning in ways that are mutually beneficial so that each individual can not only survive but actually thrive. In policy and practice, we aim to support our educators in being their best selves both professionally and personally. The same idea applies to family life, particularly as each new child joins the family. Naturally, our initial focus is on providing the best possible nurture for the new child, whose very survival depends on that consistent and loving care. At the same time, family members do well to consider a cooperative approach to building an interdependent nuclear family and extended circle of friends and family so that the needs of each member can simultaneously be met by the efforts of the group. Taking the apprenticeship approach that I discussed last month is very helpful in this regard because children build skills that are valuable to the group and they are motivated to contribute meaningfully when they experience the creative and constructive ways that the group can adjust to changing conditions and welcome new members. The importance of this healthy interdependence has been particularly evident in the past month as we have welcomed new children, undergraduates, and even a new teacher to the school and witnessed the seamless transitions. Thanks to the whole community for continually striving for such symbiotic connections.

Director's Corner: Navigating Niches



In recent months, we have reflected on our parenting and teaching roles by considering key principles of life “in the wild”. Contemplating the ways that biodiversity, adaptation, communication, and interdependence promote survival in animal species gives us a new perspective on our own lives with young children. This month, I suggest that one way to connect all of the above concepts is that of the **ecological niche**, which is basically the role each species plays within the natural world. An organism’s survival depends in part on its ability to establish a unique niche where its basic needs can be met in ways that support the good of the community and avoid unfavorable competition with other organisms. For example, squirrels play the part of “spreaders” that enhance the health of the forest when the seeds and berries they store and eat either get left behind or excreted in new places where they can grow. The opossum has many helpful adaptations, including being resistant to many diseases, which means that they can eat insects like mosquitos and ticks that carry disease. They can survive with different types of food in rural, urban, and suburban environments, so they are generalists who can fill available niches in varied habitats.

Schools and families are in many ways like ecosystems. Their sustainability depends on having diverse individuals well adapted to different roles in an interdependent web of activity with careful communication. As humans, we are born ready for social interactions, but establishing a reciprocally beneficial balance is a delicate operation. At school, we help each educator contribute his or her diverse talents to enrich our program and communicate clearly to ensure that everything that needs to be done is handled well. In the classroom community, both adults and children have jobs to do so that the days and weeks flow smoothly. Basically, we want everyone to have a niche that fits well and have every niche well filled. But, of course, with life comes change, which disrupts the balance. Changes in staffing, special visitors, school delays, etc. may all mean that some niches are vacant. Here’s where human ingenuity has the potential to save the day without waiting for generations of evolution to restore the balance. For example, in the kindergarten, one student each week has the job “substitute” (i.e., the one who fills any niche that is vacant because of an absence) and another is the “assistant” who handles any unexpected job that arises. The educators have a similar system with substitutes and a floater, but we also work as teams so that roles assigned to individuals get covered by the team when necessary and responsibilities assigned to teams can be flexibly delegated among the members to make the best use of the available talents at the time.



Families can navigate niches in their home ecosystems in similar ways by taking a team approach. Before children, adults in the family establish a pattern of life wherein they have their personal needs met, divide work inside and outside the home, etc. Then a baby is born or adopted and the balance of nature shifts dramatically, because there is more work to do and often less skill or energy to go around. Gradually, the adults find a new rhythm, gain new skills, and perhaps renew their energy, particularly as the infant becomes more interactive and affectionate, which rewards the adults for their efforts. As children grow into apprentices within the family culture, the synchrony among the members may progress to yield genuinely symbiotic relationships wherein everyone benefits. That is, until the next major change, such as a new job, a move, a new baby, etc. At such times, taking a team approach can ensure that each member has a meaningful niche and that every role is filled, even if by someone outside the family. In fact, families supporting each other and collaborating with educators when inevitable gaps arise is a new level of teamwork that strengthens the whole community. Thank you for choosing to partner with us to raise and educate your young children!

Director's Corner: Renewing Wonder

As this year's Whole School exploration of Animals in the Wild draws to a close and spring commences (whether the weather aligns with the calendar or not), I find myself burrowing beneath the intellectual *principles* of life "in the wild" to focus on observing the amazing **patterns of animal life with their young**. Like many children and adults in Pittsburgh, I watched in awe as the Hays Bald Eagle Webcam showed the first eaglet hatching. What amazing persistence from a new life that is, at the same time, so fragile. Watching the adult eagles so gently care for their young and so fiercely struggle to protect them is a similar paradox, akin to human parenting that requires a balance of warmth and structure, attachment and letting go, devoted attention and distance, etc. With animals, much of the challenge of balancing these seemingly opposing qualities is



instinctual, with each different species following a pattern of parent-child interdependence and communication that is uniquely adaptive. Human families have an even richer array of effective parenting styles that uniquely suit their heritage, current context, and individual profiles. At the same time, 25 years of collaborating with parents at the Children's School has taught me that many joys and woes of parenting are widely shared across the surface level differences between families, such as pride in children's accomplishments and worries about their futures.

At the beginning of our unit, I asked the group of parents who attended our theme introduction to view a series of photographs entitled "Parenting in the Wilderness". You can watch the brief slideshow at <https://www.youtube.com/watch?v=xtE0FBHFYag>. Here are a few that resonated with numerous parents.



Perhaps you can identify with the challenge of balancing an often overwhelming load, the simultaneous pride and pressure of constantly being a model, or the anxious gaze as your precious child takes first steps farther from home. All of these experiences are a natural part of the process for parents, educators, mentors, etc. One way to embrace them is to renew our sense of wonder, to admire the beauty of the child, savor the surprise of the unexpected interaction, marvel at the mistakes we make, admire the ingenuity - even of the challenging behaviors, and capitalize on our own and our children's capacity for starting fresh each day with curiosity about what may transpire, what we can learn, and how we can support each other. As Socrates said, "Wonder is the beginning of wisdom." May this season of our partnership in nurturing young children be wonder-full, so that together we become increasingly wise.



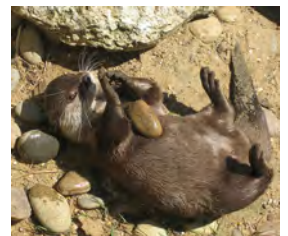
Director's Corner: Reviving Nature Play

Throughout this school year, the lives of "Animals in the Wild" have been my inspiration for this column. With so much to celebrate this spring – our 50th anniversary, our NAEYC accreditation and PA private school license renewals, our lab school collaborations around the world, our kindergarten graduation, and a fabulous school year overall – I began to wonder whether animals celebrate in the wild. Of course, culture ascribes meaning to the milestones humans celebrate, and diverse cultures creatively plan unique ways for people to have fun together. Considering opportunities for having fun is where animals can inspire us to launch our summer celebrations by reviving nature play.



Animals love to play. Crows will slide on their backs on a steep snowy slope, then fly to the top to slide down again; bison will repeatedly sprint onto a frozen lake, then bellow gleefully as they skid across the ice. Brown bear cubs who play the most, Alaskan scientists have found, live the longest. Why is play behavior so prevalent in the animal kingdom? Through play, animals explore their world and discover all its possibilities. In higher animals, play stimulates the brain, enhances cognitive function and adaptability, and strengthens social bonds. Beyond these biological and social explanations, scientists are starting to believe that play is a means by which animals can express their joy of life. (From Deep Nature Play, by Joseph Bharat Cornell, 2018)

Early childhood educators advocate strongly for increasing children's nature play opportunities, for all of the reasons mentioned in Cornell's description of animal play's prevalence. Furthermore, we see benefit of encouraging more open-ended play with simpler materials for children's creative and critical thinking, as well as their attention, persistence, and resilience, all of which are evident in the ways that dogs fully engage in water play or pigs in mud, or that polar bears relish the unusual springtime sensations, chimps care for their "stick babies", and river otters play with river stones.



In a way, engaging children in nature play is both easy and inexpensive because intriguing materials like water, dirt, plants, sticks, rocks, etc. are abundantly available across the seasons. At the same time, educators and parents may need to adjust their tolerance for risk-taking, mess-making, and lollygagging. Summer is a perfect time for taking a slower pace and reflecting on our priorities for children's development into adults who are healthy in both mind and body.



A quote often attributed to Einstein is that, "Play is the highest form of research." Closely observing children's play often reveals that they are indeed creatively and systematically seeking to understand the world through their "hands on" and "minds on" interactions, particularly when supported by adults willing to listen, acknowledge, and encourage their endeavors. May the animal kingdom inspire your summer to be wildly joyful with nature play that invigorates children and adults alike.