

David Sobel's Children and Nature Design Principles:

Source: "Children & Nature-Design Principles for Educators" -a book by David Sobel published in 2008 by Stenhouse Publishers, ISBN 978-1-57110-741-1

Page 1: "Kids say the darnedest things, and in those darnedest things are some of the gnarly questions of life. In Richard Louv's (2005) recent book, 'Last Child in the Woods', he quote one of his children as saying, 'What's the relationship between God and Mother Nature-are they married or are they just friends?' I'd like to bring that question down to earth to help clarify the point of this book: What's the relationship between School and Mother Nature? Are they getting divorced or are they committed to a long-term relationship?"

Page 9: 'Researchers have studied the lives of environmentalists to determine whether there are any similarities in their childhood experiences that might have led to their having strong ecological values and their choice of an environmental career. When Louise Chawla (1998) of Kentucky State University reviewed these studies, she found a striking pattern. Most environmentalists attributed their commitment to a combination of 'many hours spent outdoors in a keenly remembered wild or semi-wild place in childhood or adolescence, and an adult who taught respect for nature.' "

Page 10:" Lepidopterist Robert Pyle describes the urban semi-wild place that inspired him...a nearby ditch.....These are the places of initiation, where the borders between ourselves and other creatures break down, where the earth gets under our nails and a sense of place gets under our skin...It is through close and intimate contact with a particular patch of ground that we learn to respond of the earth, and see that it really matters.....To Translate this back into academic speak, it was Pyle's childhood 'wild nature experiences' in his ditch that led to his adult environmental attitudes and behaviours. The implication is that if we want children to become environmental stewards, then one of the best things we can do is let them play in natural settings."

Page 11: "The underlying assumption is that knowledge leads to the creation of attitudes that eventually lead to thoughtful environmental behaviours.....Because curriculum guidelines are connected to a state assessment the focus often collapses into making sure students can recite the information. They follow the old Dragnet maxim: 'Just the facts, ma'am.'. As a result, providing direct experience falls to the wayside. The opportunity to explore the ditch gets replaced by memorizing lists of the plants you might find if you actually went to a ditch."

Page 12: Pyle's description shows us where the problem lies. From exploring the ditch, he became interested in natural history and then became an advocate for preservation. Sounds like knowledge to attitudes to behaviour. My contention, however, is that the crucial element in his description is, 'These are the places of initiation, where the borders and a sense of place gets under our skin. What gets lost when we focus on facts are the initiation experiences. the moments of transcendence when the borders between the natural world and ourselves break down....John Burroughs (1919) puts it simply when he says, 'Knowledge without love will not stick. But if love comes first, knowledge is sure to follow.' Too often in schools, we're trying to inject knowledge without providing the experiences that allow love to slowly take root and then flourish. Which leads me to my controversial hypothesis: One transcendent experience in nature is worth a thousand nature facts. Stated in a slightly more positive form, one transcendent experience in the landscape may have the potential for leading to a thousand nature facts. So the question becomes, How do we design family outings, school curriculums, and environmental learning opportunities with an eye toward optimizing the possibility of creating transcendent experiences? Of course, first, we have to get a sense of what these transcendent experiences are and if they really make a difference before we can decide whether they're important enough to pursue."

CHILDREN AND NATURE DESIGN PRINCIPLES:

Page 19-50:

"Just as Howard Gardner had identified a set of intelligences in children, I have identified serve play motifs. Regardless of socioeconomic status, ethnicity, or ecosystem, children play in similar ways when they have safe free time in nature....Spend time at a safe, woody playground and you'll find children:

- 1.) making forts and special places;
- 2.) playing hunting and gathering games;
- 3.) shaping small worlds;
- 4.) developing friendships with animals;
- 5.) constructing adventures;
- 6.) descending into fantasies;
- 7.) and following paths and figuring out shortcuts.

I think there are evolutionary reasons why children do all these things, but regardless of these explanations, it's important to recognize that these activities occur over and over. To encourage transcendent experiences or, more simply just to follow the child's lead in building nature relationships, we can translate these motifs into design principles. In other words, we can use the design principles of special places, hunting and gathering, creating small worlds, and the others as design components for family outings, curriculum projects, and environmental field trips.

PRINCIPLE 1: ADVENTURE:

Environmental education needs to be kinaesthetic, in the body. Children should stalk, balance, jump, and scamper through the natural world. Activities with a physical challenge component speak directly to children via the mind/body link.

PRINCIPLE 2: FANTASY AND IMAGINATION:

Young children live in their imaginations. Stories, plays, puppet shows, and dreams are preferred media for early childhood. We need to structure programs like dramatic plays, we need to create simulations in which students can live the challenges rather than study them.

PRINCIPLE 3: ANIMAL ALLIES:

Brenda Petersen said, 'In our environmental wars, the emphasis has been on saving species, not becoming them.' 1993. If we aspire to developmentally appropriate science education, then the first task is to become the animals, to understand them from the inside out, before asking children to study or save them.

"Hands on experience at the critical time, not systematic knowledge, is what counts in the making of a naturalist. Better to be the untutored savage for a while, not to know the name or anatomical detail. Better to spend long stretches of time just searching and dreaming. (E.O. Wilson 1994)

Instead, in schools and at nature centers, we see the opposite: science units on animal taxonomy in the third grade where students never go outside; young students being charged with the responsibility of saving endangered species; and a prevailing, Don't touch! attitude when children actually go outside. 'Nature is fragile and we have to make sure not to harm her,', you'll hear the naturalist caution, advocating a kind of environmental puritanism. We wind up discouraging exactly the behaviour that Wilson says is crucial to his becoming a natural scientist. Our goal, especially through ages nine and ten, should be to foster close allegiances between children and animals. This means playing at being animals, interacting with animals, and taking care of animals. As Brenda Petersen implies, we have to become animals before we can save them."

PRINCIPLE 4: MAPS AND PATHS:

Finding shortcuts, figuring out what's around the next bend, following a map to a secrete event. Children have an inborn desire to explore local geographies. Developing a local sense of place leads to organically to a bioregional sense of place and hopefully to biosphere consciousness.

PRINCIPLE 5: SPECIAL PLACES:

Almost everyone remembers a fort, den, tree house, or hidden corner in the back of a closet. Especially between ages eight and eleven, children like to find and create places where they can hide away and retreat into their own found or constructed spaces.

These special places impulse in a school setting invites children to relive the history of the species. They create primitive shelter, form tribes, battle over resources, learn to barter, create legal systems, invent currency, learn to monitor their own behaviour, recognize the impact of the built environment on the natural environment, learn to restore changed ecosystems. This could be the basis of a whole social studies curriculum for the upper elementary school. If your students start to build stick forts on the end of the playground, don't discourage them.

PRINCIPLE 6: SMALL WORLDS:

From sand boxes to doll houses to model trains sets, children love to create miniature worlds that

they can play inside of. Through creating miniature representations of ecosystems, or neighbourhoods, we help children conceptually grasp the big picture. The creation of small worlds provides a concrete vehicle for understanding abstract ideas.

PRINCIPLE 7: HUNTING AND GATHERING:

From a genetic perspective, we are still hunting and gathering organisms. Gathering and collecting anything compels us; searching for hidden treasure or the Holy Grail is a recurring mythic form. Loos the success of Where's Waldo. How do we design learning opportunities like treasure hunts?

TREASURE HUNTS AND QUESTS:

Page 102: "Valley Quest was created by VCUV director Delia Clark, VQ Coordinators Maggie Stier and Linny Levin, and a host of local school principals and teachers. (Questing in now a national endeavour promoted by place based educator extraordinaire Steve Grazer.).....The grandmother of regional treasure hunts is something called Dartmoor Letterboxing. ...Letterboxes (mailboxes) were established at two or three of the most inaccessible spots on the moor, such as Cransmere Pool. By leaving your letter there you get it postmarked from this exotic location. This tradition existed for a century or more, until some Devonshire folks decided that it would be fun to expand the idea. People hid old ammunition boxes, identified their locations with ordinance survey coordinates and gave some additional directions. Inside was a handmade stamp, an ink pad, and a guest book to show who'd been there. The locations of all these boxes were collected, put into a clandestine catalogue, and low and behold, a recreational pastime flourished.

Page 144-147 KNOWLEDGE, ATTITUDES & BEHAVIOR:

"Does place-based education actually change environmental behaviour?"

Good question. And the answer to that has been changing over the past couple of decades. The conventional assumption in environmental education starting in the 1960s and 1970s was that knowledge leads to attitudes, which lead to behaviour. In academic terms, Hungerford and Volk summarize, 'If we make human beings more knowledgeable, they will in turn, become more aware of the environment and its problems and thus, be more motivated to act toward the environment in more responsible ways.' (1990).....Hungerford and Volk indicate, 'Research into environmental behaviour, unfortunately, does not bear out the validity of these linear models for changing behaviour.' Or, more simply, it isn't necessarily so. Just because children know that burning fuel creates carbon dioxide and that this is bad for the planet, they don't necessarily develop ecologically responsible buying patterns. Increased knowledge and a change in attitude don't necessarily translate not different behaviour. It is more complicated than that. One of the problems with the model is the assumption that knowledge precedes behaviour. Schools have construed this to mean that it's the school's responsibility to provide the knowledge and maybe the attitudes now-the behaviour will take care of itself in the future. So we assume that all this good learning will lead to good behaviour. This, in turn, means we are less likely to use schools to practice, in little ways, the behaviour we want children to develop in bigger ways later on.

In also turns out that the pathway to responsible behaviour is a bit trickier than knowledge leads to attitude lead to behaviour. It's more like a sense of agency and control leads to the knowledge of issues and action strategies, which lead to an attention to act, which under the right precipitating conditions, lead to environmental behaviour.

One of the first things we need to help children learn is that their behaviour makes a difference. Your feeding the kitty keeps the kitty healthy. Turning off the lights hen you leave the room saves us money. This sense of personal responsibility leads to wanting to understand why turning off the lights saves money and why turning off the lights reduces carbon dioxide production. The sense of agency leads to the desire for knowledge and a desire to know other skills for reducing carbon dioxide production. This leads to the intention to make other changes, if and when the choices present themselves, which leads to responsible environmental behaviour. At the risk of gross oversimplification, what this suggests is that small behaviours lead to knowledge and attitudes, which lead to medium-sized behaviours, which lead eventually to bigger behaviours. But keep in mind that behaviours are possible only when choices present themselves. If the nearest Prius dealer is a hundred miles away, you're probably going to buy he Firebird. If you really believe in recycling but there's no convenient paper recycling system to your classroom, you're probably going to throw the paper away.

This is a long-winded way of saying that we've been spending way too much time focusing on

conventional environmental knowledge and way to little time on developing environmental behaviours. In addition, in most schools, we've got a situation of 'Do as we say, not as we do.' We disseminate knowledge about how environmental systems work but don't design schools to be models of sustainable systems. And as we know, actions speak louder than words.....Swiss National Science Foundation (Finger 1993) looked at the relationship between different kinds of environmental knowledge and environmental behaviour in Swiss adults. The study compared adults whose knowledge about the environment was based mostly on media presentations of ecological catastrophes versus adults whose knowledge about the environment came extensive nature experiences and activism, mostly at the local level. Finger found that 'Environmental behaviour is less the result of learning and knowledge and more the result of particular environmental experiences,' and that 'Some environmental learning does not necessarily translate into more responsible behaviour towards the environment and can even be counterproductive. In other words, too much knowledge about environmental tragedies actually discourages environmental behaviour. Knowledge decreases behaviour! If global warming is a done deal, why should I bother to do anything about it? If this is true for adults, who have well-developed capacities to shield themselves from information overload, thinks thus this must be affecting children.

Recommendations for Environmental Education Programs:

The author concludes his study with recommendations for environmental education programs. First, 'Nature experiences seem to be a necessary condition for any type of environmentally responsible behaviour...In particular, nature experiences should be provided for the youngest generation.

Second, 'Experiences of environmental activism emerge as another crucial condition for any environmental behaviour. It is necessary that social and collective action be an integral part of any continuing education activity.'

Third, 'Fear and anxiety of environmental problems has the potential to turn environmental education into a counter-productive activity.' Therefore, education about the problem should be substantially counterbalanced by opportunities to address the problem constructively.

Fourth, 'When low fear is involved, environmental knowledge and information do make a difference in terms of environmental behaviour.

Resonating with Finger's first suggestion is a 2006 Cornell study by Wells and Leckies that looked at the relationship between childhood experience and adult environmental behaviour. They found that 'Childhood participation in 'wild' nature, such as hiking or playing in the woods, camping, and hunting and fishing, is positively associated with environmental behaviours in adulthood. Rather than taking eight-year-olds to the global warming slide show, it might be more useful, in the long run, to take them fishing or blueberry picking."

The first thing we need to do is create a comprehensive place-based education program that connect children and curriculum to the nearby natural world....Next we have to design schools as communities of care. Schools are used to this mind-set in regard to caring for people....One core concept of this approach would be to create a developmentally appropriate, school wide model, a Ladder of Environmental Responsibility which honours learning dispositions and capabilities of students and teachers at the elementary, middle and high school levels. This ladder would provide a set of incrementally more challenging tools for children throughout their school career. "