Swimming with Animals

Using simple swimming lessons to foster connections to other life forms and appreciation of what they have to teach us

by Zabe MacEachren

The idea for developing swimming lessons based on the swimming techniques of other animals came when I was directing a camp for Native youth on a lakefront in northwestern Ontario. I was seeking water activities that would foster swimming skills but were different from the standard swimming activities that I had been immersed in as a youth. As a product of formal aquatic instruction, I have spent countless hours practicing water rescue techniques and swimming lengths to develop form and speed. Yet, even as a certified swimming instructor and lifeguard, when I’m in the water I prefer just to float around. Instead of swimming laps, I spend hours quietly bobbing around with a mask on, watching sunfish and observing the sunlight bounce off the rocky lake bottom. Fascinated by the movement of other aquatic creatures, I find myself wanting to know what it would be like to be in their bodies as they swim. I have never put on a pair of fins and not marveled at how they improved my swimming ability. I have even made myself a pair of neoprene web mitts so that I can feel more like a fish with dorsal fins. I am grateful for my swim training, but the environmentalist in me wanted to learn in a different manner, one that emphasized the skills of the water creatures I saw in the world around me. So it was as an outdoor educator that I started to develop swimming lessons that emphasize the movements of aquatic creatures.

Initially, I listed the skills involved in learning to swim and tried to find an animal that could be associated with each movement. For instance, the forward float became my duck-bobbing float (I didn’t call it a jellyfish float because my students did not know what a jellyfish was). Likewise, learning to move deeper became linked to a turtle’s ability to swim at the bottom, middle and surface levels of a lake. Young students loved pretending they were animals, and it was easy to weave a few swimming skills together by creating storylines of animals’ daily patterns. As a reminder of which animals could be associated with specific swimming skills and as a focal point from which to begin lessons, I created illustrations that blended human and animal forms. To avoid having wind and water dripping on paper illustrations, I burned the images onto a stretched piece of leather that served as a poster I could hang in a nearby tree.

I typically begin my lessons with open-ended questions...
that allow students to offer their ideas about what various animals could teach us. Conversations go something like this: “Who taught you to swim? Who taught your instructor to swim? Who taught the very first human how to swim? Do other animals need swimming lessons? Could you learn how to swim from the animals? Can you name an animal and tell me what it can teach you about swimming? Show me how it moves? Let’s have everyone try to move like Mallard ducks feeding.”

Simple questions such as these allow me to determine what students know and gauge what skills and concepts I can aim to introduce. I then develop specific lessons and individual goals that improve their aquatic skill, physical conditioning and knowledge of aquatic life and adaptations.

With primary level students I might talk about moose swimming across a lake and see if they can swim a short distance while imagining themselves to be moose. With older students I might ask how such a large animal as a moose, with its long thin legs and heavy antlers, can swim long distances across a lake. I draw out the realization that a moose probably uses its hind and front legs equally well. Then we might set up a long-distance swimming goal or attempt to move an object simulating a heavy antler across a distance.

Today I predominately instruct teacher candidates in pre-service programs in outdoor or environmental education. My aim is to have them “think outside of the pool”: to think critically about the way they learned to swim and others readily sink? What allows turtles to swim easily on the surface of the water then sink and walk along the bottom? If turtles can do this, why can’t humans? Why can some ducks simply jump into the air to fly while others must begin by running across the water? Recognizing the ways that various animal bodies perform in water helps students recognize their own ability to float and what aids and hinders buoyancy. Through the answers that students provide to questions, an instructor can build various forms of knowledge. A biology teacher could emphasize aquatic invertebrate development in a session that has students imitating the challenges a dragonfly nymph might have crawling out of the water. A physical education instructor could emphasize physical conditioning by doing similar “pull-out” exercises and simply calling it the dragonfly nymph drill.

The coordinator, Zabe MacEachren, announced the beginning of the test and asked us to swim towards her, tread water and await instructions. But rather than ask us to demonstrate a standard swimming stroke, she introduced the first skill test with questions bordering on the bizarre: “What adaptations do ducks have for life in aquatic habitats? If you were to do an imitation of a duck swimming in the water, what would it look like?” In a scene comparable to a Monty Python skit, the class performed a series of clumsy forward movements involving brave attempts to mimic webbed feet and bottom-up surface dives.

To start the next skill test, Zabe handed each of us a peanut and said, “Otters are one of the few animals that use tools to break open their food. This peanut represents an abalone or mussel. Dive down to the bottom of the lake, find a small rock and bring it to the surface. While swimming on your back like an otter, try to break open the peanut with the rock you found.”

Next, we formed ourselves into groups of five and were given four very buoyant pool noodles. Our goal was to become a water strider (an aquatic invertebrate that “dances” on the surface of the water) and then present our dance to the rest of the class. Next, we were asked to pair up and assume the identity of mother beavers. Each pair was given a hula-hoop to represent the opening to the beaver lodge and a pool noodle to represent a beaver kit. Because beaver kits are very buoyant and cannot swim to any significant depth, parent beavers initially hold their young in order to help them enter and exit the beaver lodge underwater. Soon, the whole class was invited to come up with examples of animals that have aquatic skills, and our “test” became a platform for sharing lessons from the animals. I suggested a dragonfly nymph, which moves through water by jet propulsion, in effect sucking water in and ejecting it from its rear end. (To my knowledge, mimicking this invertebrate realistically is a feat yet to be accomplished by a human.)

The heart palpitations I had experienced in anticipation of the “SWIM TEST” slowly subsided as I realized that this swimming test was like no other. And yet it was strangely familiar and “earthy,” based on knowledge that, in its simplicity, is often forgotten. By following the movements of animals, I had rediscovered patterns in nature and become connected to water in a new way. Finally I understood the premise for this wonderful afternoon exercise in the water. What lessons can we learn from the animals?

**The Swim Test**

It was a warm afternoon on the last day of August, and the new students of the Queen’s University Outdoor Experiential Education program were gathered at Otter Lake in Ontario, anticipating the “SWIM TEST.” I am not the most confident swimmer in the world, and so it was with trepidation that I joined my fellow students in the water.

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**Tamara Anderson** is an interpretive naturalist at the Guelph Lake Nature Centre near Guelph, Ontario, and a graduate of the Outdoor and Experiential Education program at Queen’s University in Kingston, Ontario.
how they may in future incorporate water activities into other lessons. As many of these teacher candidates are already certified lifeguards, my “learning to swim from animals” idea has served me well. It provides new aquatic challenges for very proficient swimmers as well as opportunities for modeling how to imbue a lesson with environmental thought.

With teacher candidates I present my activities the very first day we meet. I tell them that our afternoon session will be a presentation on aquatic rescue certification, which is a requirement of the program, followed by a swimming test. I purposely set a serious tone about water rescue by sharing some real scenarios of drowning. As the teacher candidates are enrolled in both an outdoor and experiential education program, I use this opportunity to emphasize the historical roots of experiential education in first aid and aquatic rescue. I tell them that Kurt Hahn, the founder of many educational programs, including Outward Bound, emphasized skill and physical fitness so that youth could perform well in sea rescue brigades and situations requiring first aid.

After this discussion, students enter the water and I watch in order to identify any non-swimmers or weak swimmers in the group. Then, as everyone is treading water and nervous about what I might have them do next, I begin the animal swimming “test” with my questions. Who was the very first human swimming instructor and who taught that person to swim? Why do so many animals know how to swim naturally without having to be taught as humans often do? And what can be learned about swimming just by watching animals in the water? We all mimic each suggested animal and then move on to concepts related to the natural history of the animal or to movement in water. There are always a few naturalists in the class who can give elaborate descriptions of aquatic insect life that result in the whole class frolicking and splashing about, legs and arms imitating all manner of webbed feet, wing, fin and appendage.

After the test, I always enjoy listening to the comments. The competitive swimmers in the group sometimes mention having felt physically challenged by treading water for so long between activities, while others feel as if they have had a good workout. Some comment that initially they felt intimidated by the idea of a “swimming test.” Many

### Lessons from Swimming Animals

#### Water Movement Skills

**Loon**
A loon preens itself while swimming, giving the appearance of doing the sidestroke.
- Practice the sidestroke.
- Understand why birds spend so much time preening their feathers.

**Frog**
- Practice headfirst dives in order to streamline water entry as a frog does.
- Emphasize using legs instead of hands.

**Moose**
Despite having long lean legs, moose are fast, long-distance swimmers.
- Swim for a distance with head up, as if crossing a lake.
- Practice speed trials: dog paddle for beginners; head-up front crawl for advanced swimmers.

**Diving ducks**
- Move along the bottom, keeping eyes open as if looking for food.
- Teachers can set up a course of semi-sinking lures representing insects and students can try to catch them.

**Water ouzel (American dipper bird)**
A dipper is a bird often seen in streams bobbing up and down on rocks and then jumping into the water and walking and swimming against the current.
- Create a whirlpool pattern in the water and then quickly turn about and try to swim into the current.
- Dive and use arms to “fly” underwater.
- Use a “knee-bend” movement underwater as if catching larval insects on the bottom.

**Whirligig beetle**
A whirligig beetle uses an air bubble to bring itself to the surface.
- Hold a water noodle while swimming.
- Spin in different directions using arms only (forward, backward, right, left spins and flips).

**Leech**
- Learn the dolphin kick.
- Mimic the movement of a ribbon underwater.

**Backswimmer**
- Learn the elementary backstroke.

**Damselfly and dragonfly larvae**
- Swim using legs only.
- Climb out of the water and remove wet, heavy clothing (simulates dragonfly and damselfly larvae shedding their exoskeleton).
later write in their journals that the activity was unusual for them, but very interesting and enjoyable.

For over a decade now, I have taught others how to view animals as “swimming instructors,” and I have realized that the highlight of this form of education really comes later when we paddle a creek or walk along a shoreline. Having imitated the movements of animals in water, students begin to notice many more details and intricacies of the natural world. After trying to stay afloat like a water strider, for instance, they are drawn to watching this insect for long periods of time, marveling at its ability to walk on water, a skill they don’t have. Watching whirligig beetles spin around becomes an exercise in imagination that allows them to accompany this tiny insect in the thrill and joy it must have at being able to spin and glide on its own body. When students learn to recognize the abilities and intelligence of other animals, an educational pattern is established that is based upon attending to the natural world for guidance and instruction. Simple swimming lessons give rise to a biocentric way of thinking — a deep connection to the natural world and a valuing of other life forms for what they have to teach us humans.

Postscript: Students are busy pretending they are aquatic animals. It is time to end this lesson and prepare for dinner. But before leaving the lakeside, we have one last thing to do. I explain to the students how to do what I call aqua Zen breathing, a form of water yoga inspired by turtles. Those whose bodies tend to sink support themselves on water noodles. Arched chests bob up and down in the water as lungs fill and empty. Time passes, and I join in. Floating on my back, I focus on nothing but my breath. Breathe in and float, breathe out and sink. Over and over, inhale, exhale, inhale, exhale, float, sink, float, sink. As I sense the rhythm, I no longer have to concentrate on making sure that I inhale in time to keep my face from immersing. I still my mind with each breath and attend to my lungs as extensions of the lake’s surface. My lungs and my body, the surface of the lake and the body of the lake, all coalesce into one as I experience being in balance with the marvelous gifts of air and water. Isn’t this what swimming should be all about?

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Water Life Skills

Muskrat
- Muskrats take advantage of floating logs to rest on and create their own floating rest stops called “push-ups.” Create a buoyancy aid similar to a muskrat’s resting log or push-up by tying pant legs together: flip pants overhead to fill them with air (or use flat splashes to catch water and air) and then hold them at the waistband so the air does not escape.
- Practice holding your breath under water (muskrats can hold their breath up to 17 minutes).
- Practice carrying objects (tools and food) in your mouth while swimming underwater.

Otter
- Learn to breathe rhythmically through your nose (preparation for front crawl), mimicking an otter’s “snort.”
- Dive to the bottom, find an object, resurface and use the object to break open a nutshell while floating on your back.

Water Flotation Skills

Beaver
- Complete a “rock and water noodle” course that requires carrying heavy objects up from the bottom (as if carrying river stones for a dam) and pushing floating objects down (as if carrying logs underwater or pushing beaver kits into a lodge).

Turtle
- Swim horizontally at different depths, such as along the bottom, at three-meter depths, at the surface and then back down. Teachers can arrange a course with hula-hoops placed at different depths.
- Float on your back and breathe slowly and deeply. Become aware that inhaling air results in flotation.

Dabbler duck
- Learn the duck-bobbing float (equivalent to the “jellyfish” float): lift your feet off the bottom, clutch body in the fetal position and return to a standing position. (Note that children can become disoriented doing this and may need to be taught the skill.)
- Kneel on a lifejacket and bob upright in the water.

Caddisfly larvae
- Crawl in and out of floating foam pads wrapped around your body (similar to protective caddisfly casing).

Aquatic plants
- Simulate water lilies by walking out in the water and trying to remain standing with your head up in the waves.
- Simulate algae by floating and breathing calmly at surface.