



MinnAqua Moments with Fishing: Get in the Habitat!

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Minnesota DNR
MinnAqua Program

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Inside this issue:

- Featured Lesson - 2
- Species Profile - 3
- Fishing Equipment & Tips - 4
- Piers & Places - 5
- Book Reviews - 5
- Mentoring & MinnAqua - 6
- Community Connections - 7
- Pay it Forward Update - 7
- School Spotlight - 8
- Thinking Inside-Out! - 9
- Angling for a Laugh - 10

It's Your Legacy

by Jenifer Matthees

During those quiet times in life or when you're just about to fall asleep, do you ever think about your legacy? It's a hefty thought.

*Legacy...*What will I hand down or leave behind? *Legacy...*What memories of me will endure in their hearts? *Legacy...*What stories will they continue to tell when I'm gone.

Legacies. Memories. Stories.

The market of scrapbooking our memories is a growing industry. And looking at the aisle of stickers, paper, hardware, scissors, and books in any craft box store, you come to think the memories are less important than the embellished paper we archive the memories to. Yes, it's pretty. Yes, it's exciting to show your friends and family. And yes, you spend a lot to get to that colorful, carefully laid out, scrapbook of memories. Now don't get me wrong, I enjoy a good embellishment and matching paper. I have scrap weekends with friends. But, in the end, are the memories more memorable because of the embellishments?

I think about digging through my grandmother's attic. The smell of moth balls, the stained cardboard boxes, and the photos stacked in a journal with handwritten notes. Memories not captured in scrapbooks, but simple notes, photos with dates and names. Vignettes of history play in my mind from looking through these simple journals and photos. These memories never lose their value and were their legacy to me.

Legacies, memories, and stories do not need to be captured and embellished on matching paper with stickers. They just need to be created and captured. So grab a wire bound notebook, a camera, your friends and family, and plan your fishing trip, fall color hike, outdoor afternoon, or any other outdoor activity, and start your legacies, memories, and stories today! Handwritten notes of your day including a photo or two of that happy moment are all it takes. No embellishments needed...(well maybe a good tall tale around that fish you caught.)

For more ideas on outdoor activities happening across MN go to the DNR events calendar at www.mndnr.gov/events



Remember Us?

MinnAqua is sending you this newsletter because you have received the new leader's guide, *Fishing: Get in the Habitat!* either through a training workshop or you have requested information about the leader's guide. If you would like to be removed from our mailing list please let Jenifer Matthees know by contacting her at 651-259-5217 or jenifer.matthees@state.mn.us.

Featured Lesson - LESSON 1:6 - FROM FROZEN TO FASCINATING

by Michelle Kelly



Chapter 1 of the MinnAqua Leader's Guide - **Fishing: Get in the Habitat!** focuses on Minnesota aquatic habitats and houses six of our 39 lessons. **Lesson 1:6 - From Frozen to Fascinating** is the last lesson in Chapter

1. November winds are blowing and winter will soon envelop our lakes, rivers, and streams. The seasonal changes are dramatic in Minnesota and stark winter landscapes can appear nearly empty of all the living things that inhabited these places just a few months before.

What happens to all of the aquatic organisms in the winter? Do they sleep for the winter under the sheets of ice and blankets of snow? How do aquatic organisms weather the cold winter conditions and reawake in spring?

Lesson Summary

In this activity, students investigate how spring-like conditions trigger plankton and algae from bottom sediments to emerge and resume activity after winter dormancy. Students add scoops of bottom sediment (liquid or frozen, collected after frost) from an icy-cold lake, pond, or wetland to large containers of water to make "mini-ponds."

Working in groups, students design their own experiments and place their mini-ponds in various environments within the classroom to encourage dormant organisms to emerge. Groups make predictions, decide where-and in which conditions-in the room to place their mini-ponds, record observations over a four-week period, and draw conclusions. They also use identification keys and pond field guides to identify and sketch organisms in the developing mini-pond. Each group prepares a final presentation that communicates their results to the class.

Tips & Tricks

- ☞ This lesson is season-specific. You will want to plan to do this lesson mid-winter, when lakes and wetlands are frozen, and covered with ice.
- ☞ To add to the "drama", take the kids outside and let them experience first-hand the frozen conditions where the aquatic organisms are overwintering in the "muck" and bottom sediments.
- ☞ Bring students along with you to the collection site and have the students collect the bottom samples through the ice and snow capping the water. Note: Be certain ice conditions are safe, before bringing students out on the ice.
- ☞ Avoid collecting sediments and samples from waters that have been posted "Infested Waters" by the Minnesota DNR. It is illegal to transport water from waters infested with invasive species. A list of infested waters is posted on the MN DNR

Visit our website at www.mndnr.gov/minnaqua

- website. Wetlands are not usually posted for invasive species. But if you know that an area contains purple loosestrife, or another invasive species, don't collect sediment there – it's illegal to transport purple loosestrife seeds or plant parts.
- ☞ Sediment and frozen muck samples can be stored in the freezer. To thaw- remove samples from the freezer the day before the experiment.



MinnAqua Lesson Connections

Teaching about adaptations exhibited by aquatic organisms for surviving Minnesota winters with **Lesson 1:6 - From Frozen to Fascinating** connects well with **Lesson 2:8 - Fish In Winter** in which students learn about the limitations imposed on fish survival by Minnesota winters. Lesson 2:8 provides an opportunity for students to role-play being fish in winter.

Completion of these two lessons provides a good foundation for a winter unit that includes an ice-fishing trip that will surely create lasting memories for your students. Prepare kids for going ice-fishing with **Lesson 5:7 - Making Ice Fishing Jiggle Sticks**. Get comprehensive information on what you will need to bundle up in layers and safely take kids outside with their new jiggle-sticks to go ice fishing with **Lesson 6:2- Ice Fishing and Winter Safety**.

For a heads-up on new gear, gadgets, and strategies that are revolutionizing this once sleepy, sedentary sport, access these MN DNR Conservation Volunteer articles:

"Ice Fishing in High Gear"

http://www.mndnr.gov/volunteer/janfeb08/ice_fishing.html

Let's Go Ice Fishing"

http://www.mndnr.gov/young_naturalists/icefishing/index.html

Ice fishing is both easy and exciting. It's fun to hike across the ice to your fishing holes imagining hungry sunnies or walleyes lurking below!



Check our website periodically for updates on the Leader's Guide and other MinnAqua activities.
www.mndnr.gov/minnaqua

Species Profile** - CLOSE-UP ON THE BURBOT

by Mike Kurre

Burbot:

Lota lota (low'-tah low'-tah): from the French word for codfish; "burbot" is also a French word, meaning "mud" or "mire"

Ur, Ur, Ur! spoke the burbot. . .

What's in a name any way? Burbot is only one of numerous names this cold-water species from the cod family goes by. Many of the fresh water cod's nick-names can't be mentioned, but here is a list of the most common: Eel Pout, Lawyer, Ling, Cusk, Lush, Loche, Mudblow and Poor Man's Lobster.

Burbot can be found in most Minnesota northern lakes and rivers, including Lake Superior, but can also be found in small numbers in the prairie regions and parts of the lower Mississippi. They are good indicators of a healthy watershed. Typically they require water temps lower than 70 degrees during the summer and are a rare catch, but come winter-time, these predators come alive and are most active.

Identification

The burbot coloration varies from yellow-brown to brown or even dark olive with black mottling and blotching, giving it almost a camouflage appearance. Burbot resembles an eel more than other freshwater fish. Its scales are small, the skin has a slimy feel and this bottom hugger has large chin barbel with tubular nostrils similar to catfish, for detecting food.

This secretive fish can live up to the ripe old age of 15 and the Minnesota state record is 19 lbs. 3 ozs. and was caught in Lake of the Woods. These fish can weigh over 60 lbs in other areas of the world. Typically in Minnesota, they are under 8 lbs. and are less than 28 inches in length.



*Dawson's Eel Pout Picture
courtesy of "Gus' Place Resort"*

Handling

Burbot can be handled by placing a firm grip just behind the head. Their teeth are much like largemouth bass, like rough sandpaper. Don't be shocked when our eel-like looking friend, uniquely and harmlessly, wraps its body around your forearm and gives you a little.... ur...ur...ur, vocalization when handling

them. It's just their way of greeting you.

Food

They eat mostly other fish such as small yellow perch and walleyes, but also consume fish eggs, clams, crayfish, mayfly larvae and other aquatic insects.

Reproduction

The spawning season for this unique fish is very unusual. It spawns during mid-winter into early spring, before the ice is off



the lake or river. Reproduction occurs in pairs or sometimes in groups of dozens or even in the hundreds, in shallow water over sand or gravel bottoms. There is no nest built and no care for the eggs or newly hatched young. After the release of eggs and sperm the fish thrash about scattering the eggs, which later fall to the bottom. A single female can lay as many as 1 million eggs depending on her size. The embryos develop for 4 to 5 weeks in the cold water and hatch at the tiny size of .15 inches (one of the smallest freshwater fish larvae).

Predators

Young burbot are common prey for many fish, such as smallmouth bass, yellow perch, smelt, lake trout and muskie. Humans also can be considered a predator even though many people consider burbot the "ish" in fish and most folks don't even like to touch them. Folks who cut the line not knowing that baked with a little butter, salt and pepper, miss out on a delicacy served in many households.

Tackle & Fishing Tips

Most burbot are accidentally caught by anglers targeting other fish like walleyes (that would be me). They are especially active during low light conditions during the winter months. Tip-ups or walleye style jigging equipment, spooled with 4 to 8 lb line will provide the necessary gear needed to land these unique creatures.

Your bait of choice can be just about any minnows, locating the bait within inches of a deep muddy river- or lake-bottom (like the mud flats in Lake Mille Lacs). Keep a watchful eye on your line; Burbot have very sensitive bite. Wait too long to set the hook and you'll be fishing-out your hook from the gullet or cutting your line to make an ethical release.

Burbot do not have special conservation status in Minnesota and are not actively managed, so fish away and enjoy another special offering from the lakes of Minnesota.

Fun Facts

- ☞ Burbot have long been used for fish meal, oil and food for animals raised for furs (the oil is absorbed through digestion making for a great fur conditioner).
- ☞ The tough skin was once used in the windows of Siberia as a substitute for glass.
- ☞ Burbot are part of an annual celebration in February in Walker, MN. The Eelpout Festival has been a great event, distracting Minnesotan's during winters for over 30 years.

***Species highlighted in this section will be aquatic (fish, plants or bugs) or semi-aquatic in the case of shoreline plants. We'll try to rotate through the various fauna and flora of our aquatic ecosystems in order to help you to become familiar with some amazing organisms from our state!!*

Fishing Equipment & Tips - ICE FISHING TECHNIQUES

by Roland Sigurdson

Ice fishing is just like summer fishing, right? Well, yes....and no. In terms of planning your fishing trip, the steps are the same. Good location? Check. Safety issues accounted for? Check. Volunteers lined up for event? Check. Moon boots dry? Huh????

O.K. so maybe not quite the same, but you get the idea. Following **Lesson 6:3 Planning a Fishing Trip** and **Lesson 6:2 Ice Fishing and Winter Safety** will get you the list of steps needed to make it a fun, safe outing. But what about catching fish? Do we fish near the dock like we did during our fall trip? What species will we find in the winter to take our bait? Great questions! Here are a few tips to make your winter fishing outings as successful as your summer trips.

Certainly during your ice fishing field trip you'll be most successful targeting panfish (sunfish, perch, and perhaps crappies) just like the open water season. However, as you learn more about fish biology, you soon realize that these fish do not stay in the same habitat all year long. In fact, most fish species take up residence in different parts of the lake depending on the season. In the winter, fish tend to move into deeper water. Once the plants die off in the shallows areas, the food sources tend to be found in the benthic layer on the bottom so fish move there. Oxygen levels will also affect where fish gather during the winter months. To explore this phenomenon more check out **Lesson 2:8 Fish in Winter**.

So what techniques give us the best chance to catch fish? First step is location, location, location. If I'm not familiar with a lake, my first stop is at the nearest bait store. These folks are more than willing to help anglers locate the hot spots that they have heard about through the grapevine. Let them know that you've got a group of kids and that you're most interested in fast action panfish. Walleye's are nice, but you're looking to keep the kids' attention.

Once you've established a location, work with your local sheriff or water safety patrol to determine ice conditions and address any safety concerns. You won't be driving a bus onto

the lake, so plan your point of entry to reduce the length of the walk to the fishing area. However, realize up front that you won't be fishing near shore. You may need to walk 100 yards to ½ mile from the shoreline to find good winter habitat. Prepare students with this information early so that they can mentally process it.

Another time saver is to have volunteers to go out and drill the holes before the students arrive. It can really increase fishing time. I usually have a couple hand ice augers available for students that 'need' to drill a hole. It helps them warm up too!!

Once you're on the ice, the best place to start fishing is near the



Use a weighted depth-finder to locate the bottom of the lake

bottom. Use the depth finder weight to locate the bottom and then set your bobber to maintain the bait about 6 inches above that. Illustrated instructions on how to set your bobber-depth for ice fishing can be found in **Lesson 5:7 - Making Ice Fishing Jiggle Sticks** and **Lesson 6:2 Ice Fishing and Winter Safety**. If nothing is

biting, try moving it up a couple inches at a time to find the fish.

Since we're targeting panfish, it is best to rig your jiggle sticks with small hooks or ice flies (size 10 – 12) and bait them with insect larvae (waxworms, moussies, eurolarvae). Small minnows also work well when you know that you're on a perch lake.

Have the students 'jig' their jiggle sticks and then allow the bait to 'rest' for a few minutes. Often the jiggle draws the fishes attention and the resting period allows them to bite. Pay close attention to any movement of the bobber. Fish don't bite as aggressively in the winter as they do in the summer.

Finally, it is always fun to see a large fish. Setting a couple tip-ups rigged with suckers can produce a northern pike or walleye to add to the thrill of the day. Check with your volunteers to see if they can provide this special equipment for the day.

Good luck!

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The following items on ice safety can be found at <http://www.mndnr.gov/safety/ice/index.html>

"Ice safety. When is ice safe? There really is no sure answer." Video PSA

"Danger Thin Ice" Safety Brochure

"Cold Facts about Ice Safety" podcast

Also - the MN DNR Take a Kid Ice Fishing website has links to information and activities about ice fishing and winter safety

<http://www.mndnr.gov/minnaqua/takeakidicefishing>

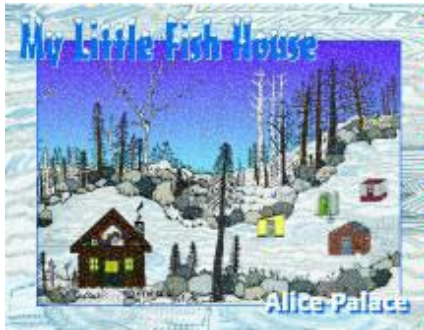
Book Reviews* - WINTER FISHING & AQUATIC HABITATS

by Nadine Meyer

My Little Fish House, 2004

by Alice Palace, Ill. by Carrie Sineby

Grades: PreK-3 ISBN: 097094442



This short story takes you to a family ice-fishing house where a young child anticipates catching a lot of fish. The story illustrates why fishing is not called catching, includes a “fish story” and ends on a happy note.

Available in hardcover, new at MN DNR State Park bookstores & used online

Tobias Goes Ice Fishing, 1984

By Ole Hertz

Grades: 2-6 ISBN: 0876142609

“The Tobias books are about a Greenlandic boy who lives with his family in a small settlement.” This book tells the story about how the family catches fish in the winter for commercial fishing, traditional to Greenlandic cultures. Either a read-aloud book or supplemental reading for older students.

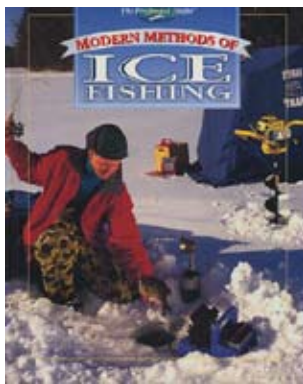


Available in hardcover, used & new

Modern Methods of Ice fishing, 1999

by Tom Gruenwald

Grades: Reference ISBN: 0865730717



From habitats to tackle to tips on catching specific species of fish, this guide to ice fishing is a one-stop shop for the novice and experienced ice-angler. The in-depth species and habitat information are excellent reference material. High-quality photographs accompany each section to help illustrate fishing techniques and identify the equipment and fish that is discussed.

Available in hardcover, used

**Book reviews are provided as an educational service and are not an endorsement by the MN Department of Natural Resources.*

Piers & Places - TAKE A KID ICE FISHING

by Nadine Meyer

If I were asked “*What is your favorite program to teach for the MinnAqua Program?*” I can honestly answer: **Ice Fishing Clinics** for youth and families.

- ☞ Ice fishing makes the entire lake accessible to everyone. With the appropriate tools, clothing, and a good sled, any angler can head out to the deeper reaches of a lake to angle for the elusive-to-shore-fishing fish like lake trout, eel pout, or walleye, without investing a large amount of money in equipment.
- ☞ You can easily make your own fishing rod using a basic dowel, a couple screws, needle-nose pliers, fishing line, and tackle. Total cost around \$7.00 depending on the type of line and tackle you use. Plus, nothing is more gratifying than making your own tool to catch your supper. **Lesson 5:7 Making Ice Fishing Jiggle Sticks** gives simple instructions on how to make a jig-stick and how to rig it for ice fishing.
- ☞ Ice fishing is unique and limited to select areas of the world. We are lucky enough to live in one of those places! I recently took a vacation where I was close to the equator. When I talked about Minnesota winters with the people who lived there, they were in various stages of disbelief about the fact that I could walk on top of the water, drill a hole through the ice, and find fish alive down there. (And possibly about the fact that I was actually willing to do such a thing in the first place!)
- ☞ Heading out to wind-swept, frozen tundra to spend some time communing with nature gives me the pride in knowing I can face the elements and thrive. I have noticed a festive, elated mood over the families and youth who have gone ice-fishing with me. Like “*I was on that lake in the freezing temperatures, wind, and snow; and lived to tell about it!*” I have even had to nearly drag the youth off of the ice in -20 degree F weather at the end of a program, and not because they are frozen to the ice.
- ☞ Playing on the ice is just plain fun. I recall enjoying many afternoons on the frozen lake with my sister playing around the ice house (which in some years consisted of a canvass tent with the floor cut out) skidding on the ice, having snow fights, and scooping out our ice-holes just to watch the water go up and down while the ice we stood on felt absolutely still.
- ☞ Good preparation makes all the difference. The MN DNR TKIF website has all the information you need to successfully take youth out ice fishing this winter.

<http://www.mndnr.gov/minnaqua/takeakidicefishing>

Take a Kid Ice Fishing Weekend, Feb. 13-15, 2009; is an excellent opportunity to take your students or your family out on the ice for an “ed-venture” they will not forget. You and your adult chaperones will not need a fishing license when fishing with youth 15 & under that weekend. If you need a little assistance with the ice-fishing basics – check out the DNR Events Calendar for listings of mentored ice-fishing programs near you.

My how time flies during our busy days!

Do families sit around the table for breakfast or dinner anymore or has that family tradition vanished like the black and white TV? Meals on the run are the norm, I suspect, for you and your kid. Squeezing time in for talking about the day's activities is tough, because the youth these days are as structured as the adults. How can we sit down for an hour when we're dropping the kids off at sporting practices or after school activities, visiting the dentist, grocery shopping or getting the car fixed? And oh yeah, most of us have jobs too!



Work, work and more work. The daily pressures of producing more in less time is always in the back of our minds. We're constantly answering business phone calls, texting, trading emails

or twittering your daily activities to friends. We even feel guilty when we take some well deserved time off.

Times have changed!

Talking with the Commissioner of the MN DNR, Mark Holsten, we hit on the topic of how he manages his busy schedule running the DNR and balancing his family life with his kids. Meetings, travel, phone calls, email, presentations, media requests, events and the likes are all a part of the head of the DNR's normal day.

Let's add another layer to the issue. The Commissioner also has a passion for the outdoors. He loves to hunt and fish and spend time afield with his wife, kids, family and friends. He knows how precious little time he has with his kids before they have families of their own and wants to pass on family values and life lessons.

And on the flip side, kids establish their own priorities of activities and friends (hopefully with our guidance) as we did as youths. Plus, they are exposed to distractions and pitfalls, which are prevalent today as they were in our youth such as after school activities, peer pressure, sports, cars, the opposite sex, drugs and alcohol. Now add: the web, texting, iPods, Facebook, Twitter, the

faster pace of life, single parent families or parents who always seem to be working late into the night and on weekends.

Where does it stop?

How does the Commissioner find the time necessary to balance home-life obligations with family and friends and still find time to enjoy the fruits of his labor in the outdoors? No small task to bring the two sides together. However, he makes it happen by setting family priorities with his wife, talks to the kids multiple times about activities and what's happening in their lives, schedules personal time with them, follows through on making quality time together and sometimes he just says NO to outside pressures.

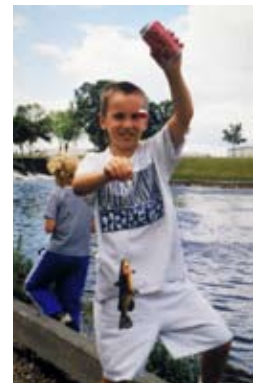
Ask yourself a question, am I a part of my kids lives or am I passing them on to somebody else to shape and mold their values? Get involved! If it is truly a priority in your family life, you'll make the necessary quality time adjustments happen and you (and your kids) will be better off because of it.

I've seen first hand as to what can happen by spending some quality family & friend time afield. At mentored hunting and fishing events, the parents or adult partners learn as much if not more than the kids do. They re-live some of the outdoors memories (good and bad) by teaching and sharing life experiences with a youth. The kids may not appreciate the moment when it occurs, but they will remember when it counts, later in life.

Slow down! The gleam in children's eyes after spending maybe just a few hours fishing on the bank of a river or in the blind waiting for whistling wings or just plain skipping rocks, are some of the best rewards in life.

Take some time, share some outdoor experiences and find out what's important in your kids lives. It's probably you!

Hook'm on the Outdoors



Resources to Support Environmental Education

NEA Foundation Green Grants for School Teachers

<http://www.neafoundation.org/>

Application Deadline: Feb. 1 & June 1, 2010

Minnesota Waters Conservation Grants Partnership

<http://www.minnesotawaters.org>

Application Deadline: Dec. 11, 2009

Wildlife Forever Fish-Art Contest

<http://www.StateFishArt.com>

Submission Deadline: March 31, 2010

ATTENTION MinnAqua Moments Readers

Thanks to everyone who submitted the answer to our quick question last quarter. Everyone who submitted received a handsome MinnAqua logo lapel pin. A random drawing for a MinnAqua Fishing Education Package was held for the people who submitted their answer of "Brook Trout" by Oct. 2, 2009.

Congratulations to Dave Jackson, 5th grade teacher at Birchview Elementary, in Wayzata, who is the recipient of the MinnAqua Fishing Education Package!

Community Connections - GROWING LOCAL SUPPORT

by Scott Mackenthun ~ Fisheries Specialist



Making ice-fishing jiggle sticks

Winter for Minnesota DNR's Section of Fisheries finds many employees tight to microfiche readers counting fish scale annuli, pressed to computers typing reports, plans, and narratives, and sitting at tables in committee meetings. A break in the monotony is always a welcome addition. When Region IV director Mark Matuska and Region Fisheries Manager Jack

Lauer recently emphasized youth participation in fishing and hunting at local levels, it seemed to be an opportunity to do something different through the winter blahs.

This past February, Waterville area fisheries office had its first Youth Ice Fishing Workshop. Our first class brought together a dozen 3rd through 6th graders to our office from the Waterville-Elysian-Morristown school district. The four-week class held on Thursdays finished with a Saturday afternoon of fishing on Tetonka Lake.

Each week highlighted new concepts to prepare the youth for their culminating fishing activity and for the future decisions they will need to make as they become voting citizens and environmental stewards. Some of the *Fishing: Get in the Habitat!* lessons we used were:

- **Lesson 2:8 Fish In Winter & Lesson 1:6 From Frozen to Fascinating** to learn about aquatic organisms' adaptations to cold weather and what fish do in the winter,
- **Lesson 3:5 The Lake Game** to illustrate individual stewardship decisions
- **Lesson 4:2 Fish Surveys** to introduce how the DNR conducts fish surveys,

- **Lesson 5:7 Making Ice Fishing Jiggle Sticks**, and **Lesson 6:2 Ice Fishing and Winter Safety**

The Waterville office also assisted with 3 other kid's ice fishing events on weekends.

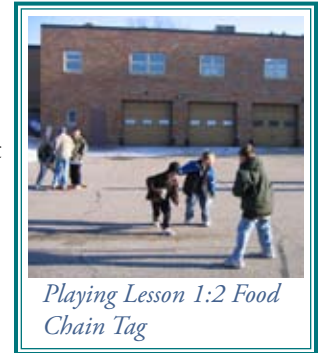
Overall I think the kids had a lot of fun. Fishing was slow during our Saturday event, but the hot chocolate made it a bit more bearable. We had a very strong response from local donors; all the kids went home with a bag holding a dozen different jigs and some bobbers. For the 2009-2010 ice fishing season, our office has been in contact with nearby Waseca community education about offering a class for similarly aged kids in that district. We are hoping to make it an annual event.

Kids can develop a fascination with physical and biological sciences during the winter months.

They learn about the role temperature plays in the water cycle, in matter states, and in biological seasons and rhythms. I fondly recall my time spent with my grandfather looking down a spear hole as bluegills, perch, and bass cruised through our hole while we waited for the dark shadow of a decoying pike. A collection of water

boatmen would shoot around the edges of the water and ice boundary. An occasional crayfish would scuttle across the bottom amongst the dormant aquatic vegetation. For me today, watching a flasher screen or a slim bobber dance is just as exciting as watching the old red and white spear decoy, but it all started with getting this kid out on the ice. Winter gets long for many fisheries employees, so why not contact your local fisheries staff to help with an ice fishing class?

-Scott



Playing Lesson 1:2 Food Chain Tag

Pay it Forward Update - SOMETHING IS FISHY AT KELLEY ELEMENTARY!

by Mary Jo Taintor, 1st grade teacher, Kelley Elementary



worked better? - using bobbers or not using bobbers; standing up or sitting down; using worms, minnows or leeches; and what kinds of fish were most caught.

When a survey was given to ascertain whether fishing was fun or not, "fun" definitely won! Needless to say, the first graders at Kelley can't wait to go fishing again!

On a beautiful Friday afternoon in Silver Bay, MN, Mrs. Taintor's first grade class took a trip to Lax Lake. The students put into practice the fishing techniques that they learned with Kelley Elementary's new fishing equipment! The fishing rods and tackle were awarded to the school by the MinnAqua - Pay it Forward Program last spring.

Before heading to the lake, the class studied how to be safe on a dock, how to identify different species of fish, and how to properly use a fishing rod and reel. To incorporate math and science, the first graders recorded specific information on graphs and charts. They included information such as, what



School Spotlight - MARTIN COUNTY WEST SCHOOLS: SHERBURN, TRIMONT, WELCOME

by Scott Moeller

Tom Crosby is helping to get Martin County West students hooked on fishing, one afternoon at a time.

Crosby is a sixth grade teacher and coach at the southern Minnesota school serving Sherburn, Trimont and Welcome in western Martin County. Recently, he has taken his passion for fishing to the next level, and begun to share it with Martin County West students.

Crosby credits his inspiration to his many fond memories of going fishing with his dad.

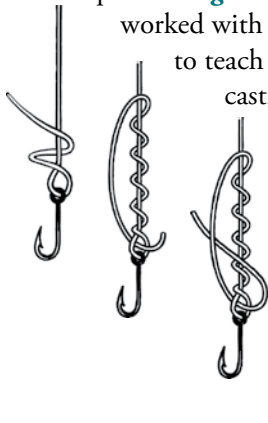
“Those are some of the greatest memories you can make,” he says. “I have always loved to fish and I have a passion for outdoor opportunities. But, I was frustrated by how many of my students seemed to not be getting those opportunities for one reason or another.”

Crosby soon made it his goal to help give his students the knowledge, confidence and equipment they needed to get outdoors and go fishing. And, it didn't take him long to put his plan into action.

“I pretty much got the idea one day, and started working on it the very next week,” says Crosby.

His plan consisted of starting a sort of after-school fishing club, made up of any interested 3rd, 4th, 5th and 6th grade students. Over the course of a five week period, the club (consisting of about 25 students) met in the school gymnasium for an hour or two after school.

At each session, they worked on a different topic featured in the MinnAqua **Fishing: Get in the Habitat!** Leader's Guide. Crosby



worked with fellow 6th grade teacher Rodger Taylor to teach topics like knot-tying, line replacement, casting, and fishing safety. He invited DNR conservation officer Eric Schettler in to talk about boat and water safety, and invited MinnAqua staff to talk about fish identification and fish senses.

At each session, students were encouraged to bring their own fishing equipment to help others learn. At the same time, Crosby



*Martin County West students wait patiently for a bite on their Fox Lake fishing trip.
Photo courtesy of: Lori Peters, Martin County Star*

was partnering with area vendors and conservation organizations to help secure new equipment for those in need.

He worked with Jim Miller and Rodger Taylor of the Fox Lake and Trimont Conservation Clubs to purchase reduced-price rods and reels from Berkeley's. And he worked with Roger Morris' Freshwater Bait and Tackle of Welcome for tackle and bait.

Crosby knew the education sessions were having the desired effect

when students started “jumping the gun” and asking their parents to take them fishing even before the series of fishing education sessions was completed.

“Students would come back after the weekend and tell me about where they went fishing and what they were catching. They were pretty excited.”

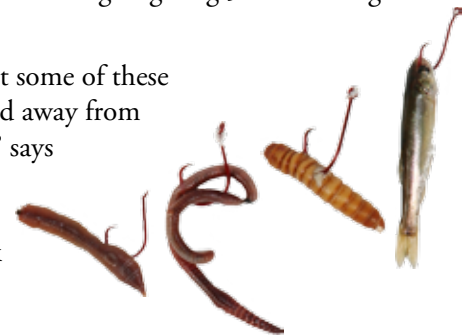
The culmination of the education series was a weekend fishing field trip to Fox Lake. Plenty of adult helpers were on hand, as parents and siblings were invited to come along. Although the fishing success was minimal (only a single largemouth bass was caught), the day was not without its memorable moments.

“We caught one fish and one blackbird,” recalls Crosby. “Somebody's bait floated on the water just a bit too long, and a blackbird swooped down, grabbed it and got hooked. We actually had to reel the blackbird in and take the hook out of its beak. We let it go and it was fine.”

To cap off the memorable day, Crosby and his volunteers brought some fresh crappies they had in their freezers and treated the students to a fish fry.

As for continuing this effort in future years, Crosby definitely plans to, although he is considering targeting 5th and 6th grade students every other year.

“I just really wanted to get some of these kids out of their house and away from the TV and video games,” says Crosby. “You know, for some of these kids, Xbox is their world. I just think the world should be your Xbox.”





Thinking Inside-Out!

by Michelle Kelly

How can we help today's young people learn the skills that will set them on a journey to long-term success: to actualizing their own greatest potential,

creating healthy relationships with others, and achieving a sustainable interdependent relationship with the environment?

What if we were able to provide kids with instructions for learning how to direct their own learning and armed them with confidence in their own unique strengths and talents and the know how to use their strength and talents effectively? What if they had the skills to leverage each other's strengths and abilities?

We all come into the world equipped with a brain that's ready to learn. Even as infants, our brains are wired for rapid and complex knowledge assimilation. As children grow and experience the world their minds develop all sorts of ways to absorb, make sense of, relate to and interact with others and with a wondrous and mysterious world.

Think, for just a moment, about the complex array of observations, emotions, symbols, ideas, and words we are able to integrate into our understanding of the world! How do our brains do that? Despite the fact that most of the people from the many generations that have inhabited this planet have had little or no knowledge of how - their brains have served them well.

But, our world is changing dramatically. We are living in a world that is more connected with higher pressures on it's resources. The societal and environmental challenges we are facing today are growing more complex and daunting. Our future, it seems, may be imperiled... The time to address these issues is running short, and the course ahead is uncharted.

Can we empower our next generation with the skills they will need to successfully navigate these challenges to a bright and promising future? Certainly, we are going to need a new way of thinking to get us out of the current social and environmental problems we've created. Perhaps if we knew how our brains think, we could learn how to think better!

Our first "Thinking Inside Out" article featured in the August 2009 MinnAqua Moments newsletter, described how our brains are "plastic", and that learning can change the brain. The brain can literally be shaped by a person's environment and by the actions of that person, too. This is one exciting facet of a fast-growing array of brain research that is revealing new information about how our brains work.

With science-based insights into how we think, we can provide sound "instructions" to kids for learning how to use their brains more effectively. Imagine if we gave our kids an education that provided them with the tools to mindfully take control of their own learning, and shape their most optimal brains?

There's more to our brains than conceptual thinking. Our brains

also house the centers where our emotions reside. So what's the connection between the "thinking" and the "feeling" that our brains do? Research shows that it's not just our cognitive knowledge that moves us to act. The interdependence of emotional and cognitive processes is perhaps most powerfully presented in recent neurobiological studies which establish that emotion is indispensable in rational decision making. That's right, rational decision-making is emotional! Key to our self-awareness and self-efficacy is the knowledge of how our emotions motivate our decisions, choices and actions.

And there's more. We don't travel through the world in isolation. It's true that we're each unique, with our own unique strengths and talents and our own best contribution to make, but we're also in this journey together. That's fortuitous, as it will take the joint effort and combined talents and skills of us all to invent viable, harmonious and sustainable solutions for the problems that lie ahead.

"You don't get harmony when everybody sings the same note." – Doug Floyd, News Editor and Author

To learn to bring unique individuals together to cooperate and work well for the benefit

of the group, students need to be taught how to develop strong social skills. They will need to learn how to strengthen the resilience of social relationships with a deeper empathy for and deeper sense of connectedness with each other. Self awareness (cognitive and emotional learning) is the foundation for social learning because "connecting" begins first with awareness of the self before you can move to an understanding of and empathy for other people and other things. That's thinking (and learning) inside-out!



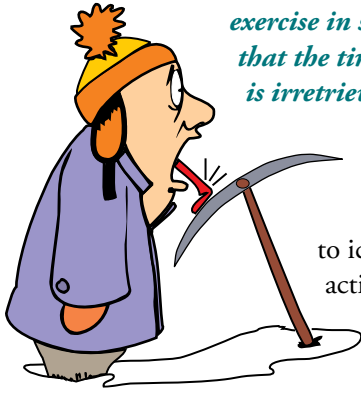
In order to successfully address the social and environmental challenges ahead, clearly, today's children will need to be well prepared. In order to "light up", engage in their own learning, and thrive, children must understand the many ways in which they are strong and smart (inside), and discover the path to realizing their unique potential and their best contribution (outside).

To learn to be the pilots in this journey, kids must actively participate in the process of discovering their strengths, and how they learn best so they can direct their own learning – life-long. We can start closing the gap between our best and most current brain research and education practice now by teaching kids how to shape their own best brains, and their best selves (inside thinking), and by also including emotional and social learning as critical components of their education. Doing so will help to empower today's youth to express their strengths and collectively create their own brightest future (thinking outside).

Angling for a Laugh - WINTER SAFETY 101: DON'T LICK YOUR PICK-AX

by Scott Moeller

Warning: *The following article has virtually no educational value whatsoever. It is, instead, largely an exercise in silliness. The author reminds you that the time you spend reading this article is irretrievable and could undoubtedly be better spent.*



As winter closes in and the holidays approach, we look ahead to ice fishing and other outdoor winter activities. And so, this is always a good time of year to remind ourselves about outdoor winter safety.

Lucky for us, there's an easy way to enjoy the holiday season and learn some important winter safety tips, all at the same time. I'm referring, of course, to the annual airing of the holiday cartoon specials.

These annual holiday specials will be kicking off very soon, and you may be surprised to learn that they contain all you need to know about outdoor winter safety. It starts in late October with a cautionary tale in which Linus survives a brush with hypothermia after falling asleep in a pumpkin patch. Several weeks later, Frosty the Snowman teaches us about sledding safety and how snowmen are not to be trusted.

But, the most profound winter safety message of all will come from none other than Rudolph the Red-nosed Reindeer. As the parent of three young children, I have learned through ample and repeated viewings that there's no better way to foster family togetherness and drive home some important winter safety tips like watching Rudolph with your children.

You may not have realized it as a child, but that jerky, spastic, stop-motion animated holiday classic is an absolute clinic in what NOT to do outdoors in the winter. So, in case you just can't wait 'til December, I have compiled some prominent winter and ice safety tips that I have gleaned from watching Rudolph the Red-Nosed Reindeer:

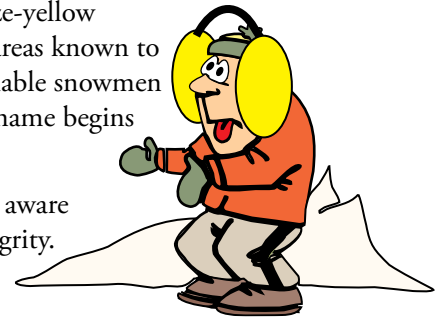
- ☞ First, always check the weather forecast before venturing out. Rudolph's decision to run away from home into the barren arctic tundra was, at best, ill-advised. But his failure to check the weather and make himself aware of the impending storm was inexcusable. (Granted, he had just been told by his father that he was a failure, but that's still no excuse for poor planning.)
- ☞ Along those lines, it's important to be aware of your mental status, and the mental status of others, before venturing out into the cold. Between Seasonal Affective Disorder and the constant workplace harassment, Hermey the elf was probably already on the brink of depression. His boss might have avoided driving Hermey away into the midst of a blinding snowstorm, had he made more of an effort to use positive,

affirming language instead of phrases like "you'll never fit in" and "you're a misfit." Of course, hindsight is 20/20.

- ☞ Be sure to dress appropriately for winter weather. While Rudolph gets a pass on this, being naturally well-suited for the cold climate, Hermey should probably have thrown something on besides a pair of green tights and Go-Go boots.
- ☞ Be sure you have some basic supplies. Anyone venturing out into the winter weather should have a basic winter survival kit with them. Aside from some catchy songs to sing, Rudolph and Hermey took... absolutely nothing. I do have to give them points, however, for using the buddy system. (I don't know if frostbite is more enjoyable with a companion, but these two sure made it look like it might be.)

Now, as disturbingly unprepared as Rudolph and Hermey were, Yukon Cornelius represents the height of irresponsibility. This is the silver and gold prospector whose endearing yet woefully irresponsible actions have led to the following litany of "don'ts:"

- ☞ Do not throw a pick-ax wildly into the air just to watch and see where it lands. This is a poor way to find silver or gold, but a remarkably reliable way to bleed to death in the snow.
- ☞ As a corollary to the preceding point, do not lick the business-end of a pick-ax (or any metal object) in wintertime, particularly north of the arctic circle. Again, neither silver nor gold have a taste, so this unspeakably foolish act serves absolutely no purpose.
- ☞ Do not wear bright blaze-yellow earmuffs in wilderness areas known to be inhabited by abominable snowmen (or any creature whose name begins with "abominable")
- ☞ When on ice, always be aware of its thickness and integrity.



- ☞ Here's a useful rule of thumb: if the ice is so thin that you can chip off a chunk of it and you and your friends can float away on it, the ice is too thin. If given the choice between being eaten by a monster and floating away into the foggy darkness of the arctic ocean on a three-inch sheet of ice, do yourself a favor and choose the former.
- ☞ Finally, I'm not sure it's relevant to most people's day-to-day lives but, do not, under any circumstances, perform or attempt to perform dental work on an abominable snowman.

So there you have it: a thorough treatise on what not to do when out and about enjoying our glorious Minnesota winter. There are only a few questions that remain:

How does Hermey get his hair to stay that way? Why are there no Chia Pets on the Island of Misfit Toys (that island should be crawling with those things)? And, why is Santa such a grouch?

Maybe he's tired of paying the health insurance premiums for such unsafe employees. Happy ice fishing and happy holidays!