



A COMPANION GUIDE FOR SAUNTERING

AN ICE AGE TRAIL JOURNAL

THIS BOOK BELONGS TO:

A Companion Guide for Sauntering would not have been possible without the support of generous donors that believe in getting youth outside; Leave No Trace Center for Outdoor Ethics; Sauk Prairie Memorial Hospital; Celtic, Inc.; Ice Age Trail Alliance volunteers and staff; Saunters leaders and the hundreds of Saunterers that keep hiking.

Unless otherwise noted, all diagrams and photographs are part of the Ice Age Trail Alliance's educational library.

Dr. Mickelson's Definitions provided by:

Dr. Mickelson: A professor emeritus and senior scientist in the Department of Geoscience at the University of Wisconsin – Madison.

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INTRODUCTION



WHAT IS THE ICE AGE TRAIL?

The Ice Age Trail is a 1,000 mile long hiking trail that weaves throughout Wisconsin. It takes hikers through deep woods, along steep bluffs, around crystal-blue kettle lakes, next to mighty rivers and where you live. It is home to black bears, herons, badgers, songbirds, snakes, turtles, wolves and you! The Ice Age Trail connects all of these places and critters through a winding tunnel of green space, protecting the land for generations to come.

18,000 – 20,000 years ago Wisconsin was almost completely covered by glaciers. These were not still pieces of snow, but six moving lobes of ice that carved our landscape and left behind evidence of their work in the form of drumlins, kettles, kames, eskers, erratics, and tunnel channels. The Ice Age Trail travels among these forms and helps share the power of the glacier with people from all over the world. Take a hike and travel back in time to experience the wonders of the last ice age and our great state of Wisconsin!





Thousands of volunteers from all across the Upper Midwest help build new segments of Ice Age Trail, maintain existing trail and lead hikes. These hard working people volunteer with the Ice Age Trail Alliance (IATA). The IATA was created in 1958 by Ray Zillmer with the help of great conservationists like Gaylord Nelson and Henry Reuss. People like you help make their dream of citizens enjoying Wisconsin's glacial treasures a reality!

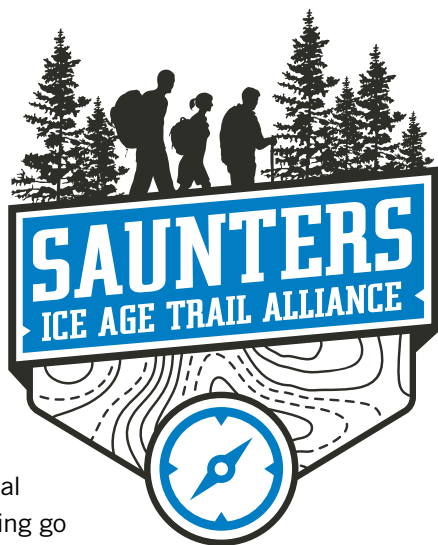
You can learn more about the Ice Age Trail Alliance, how to join a hike and find a place to volunteer by visiting iceagetrail.org.



**“IT IS A GREAT ART
TO SAUNTER.”**

Henry David Thoreau

The Ice Age Trail Alliance believes in getting kids hiking and learning on the Trail. The Ice Age Trail is an educational trail by nature, so learning and exercising go hand in hand! Schools and youth groups across the state participate in Saunters activities that include educational hikes, backpacking trips and service-learning adventures. Over 500 youth participate in Saunters events each year.



To get involved with a Saunters adventure contact info@iceagetrail.org or **608-798-4453**.

Like the Hike? The Ice Age Trail is created, supported and protected by thousands of volunteers. The Ice Age Trail Alliance is always looking for people to help lend a hand and build new trail or maintain existing segments. Your help can make a difference! Visit iceagetrail.org to explore ways you can make the Ice Age Trail even better.

RECORD YOUR OBSERVATIONS!

Date: _____

Segment Name: _____

Segment Location (County and Nearest Community): _____

Total Distance Hiked: _____

Time it Took to Hike: _____

Rate of Travel: _____

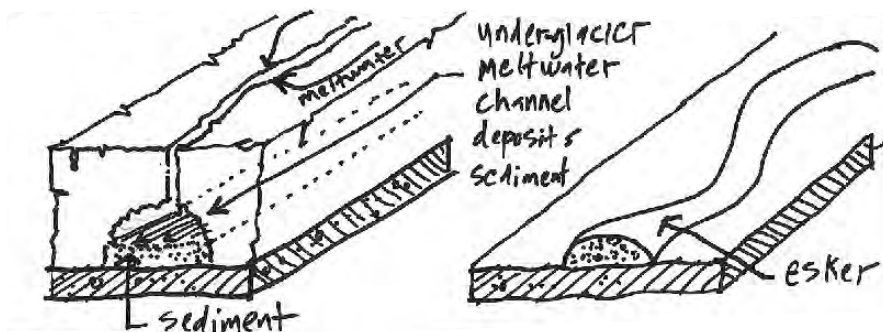
Weather Conditions: _____

Interesting Flora or Fauna: _____

Landscape Observations: _____

DR. MICKELSON'S DEFINITIONS

Esker: A sinuous hill created by sand, gravel and silt left behind by a river flowing under the ice.



ColdCache Challenge:

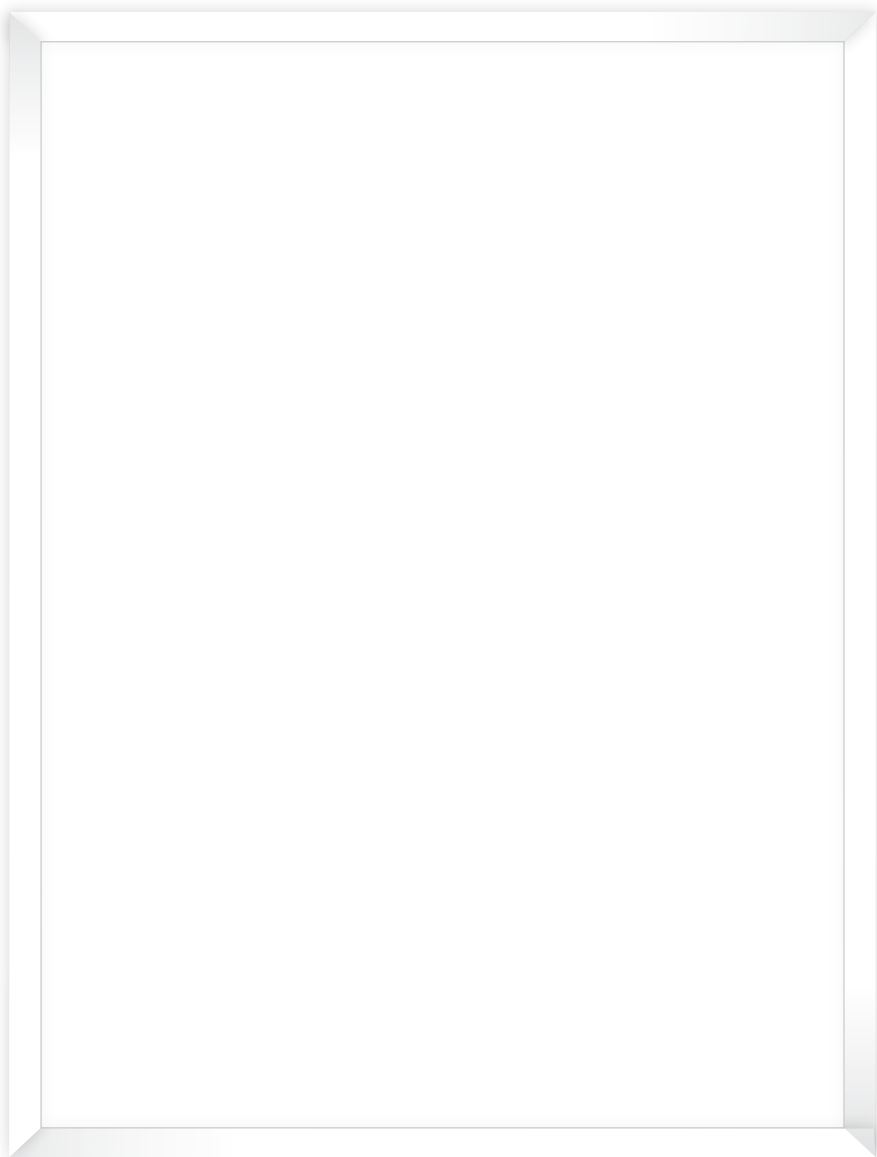
- What does sinuous mean?

- Think scientifically — how could you recreate the events that created eskers on a small scale?

- Create a series of cause and effect events that describe how eskers were created.

ART FOR ALL THE SENSES

Take the time to rest, look around, listen, eat, hydrate and create a masterpiece. Sketch a memory from the day.



HIKING 101

Hiking the Ice Age Trail is good for the body and mind. Taking a saunter allows you to connect with the natural world and leave worries behind. Hiking is one of those activities that you can do your entire life, and it is free! There are a few things you should keep in mind when you are planning a hike.

SAFETY FIRST

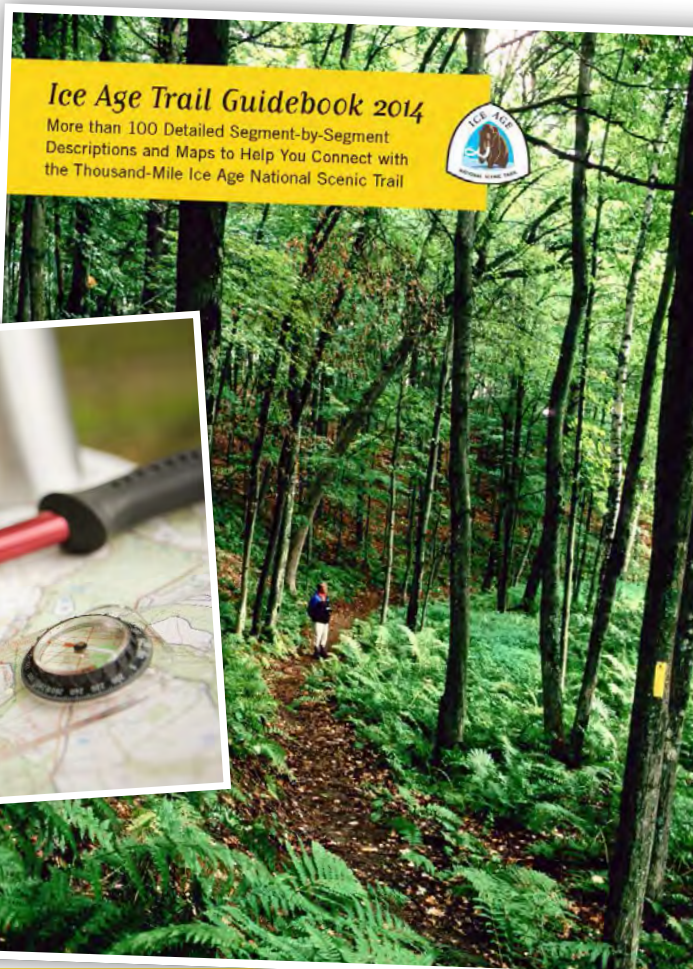
- Make sure you have a plan including location, time you will be gone, and maps.
- Let someone you trust know where you will be.
- Find out if a cell phone works where you will be hiking in case you have an emergency. If it doesn't work along the Trail, find out where it will.
- Know where the nearest roads and parking lots are located.
- Eat an energy-building meal before setting out and take some healthy snacks with you (look over the nutrition guidelines).
- Wear the appropriate clothing for the weather and pack extra layers.
- Understand the weather forecast.
- Read about the segment you will be hiking.
- Stop at the trailhead kiosk to read about important notices and familiarize yourself with the hike.
- Follow the Leave No Trace principles.

WHAT TO PACK

Before you pack your gear remember the old saying

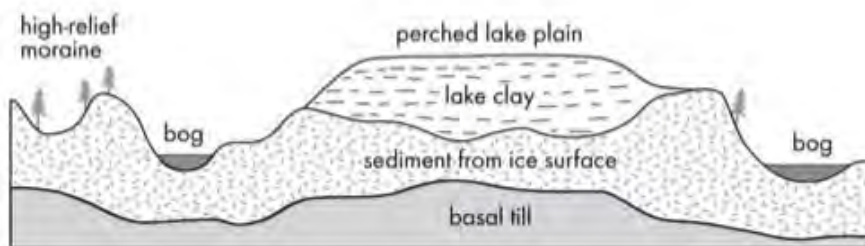
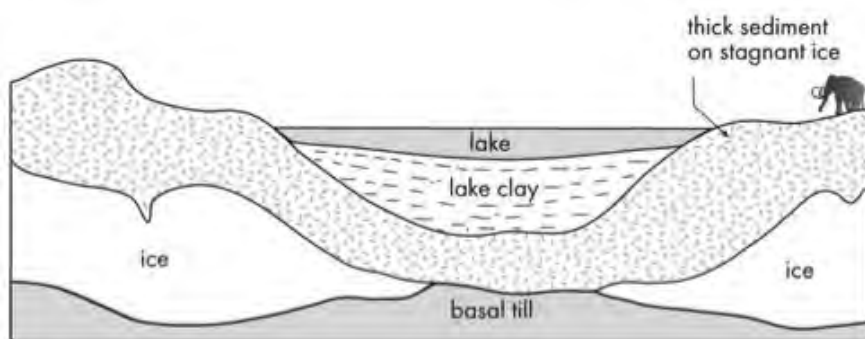
“Ounces lead to pounds and pounds lead to pain!”

- Ice Age Trail Guidebook
- Water
- First Aid Kit
- Snacks
- Rain Jacket
- Compass
- Extra layer of clothing
- Journal, camera, pencils, binoculars, or other tools of observation.



DR. MICKELSON'S DEFINITIONS

Ice Walled Lake Plain: A plateau type feature that was created by lake clay perched on top of the glacial ice. When the ice melted, the lake clay remained on top of the sediment left behind



ColdCache Challenge:

- Use the diagram to describe how an ice walled lake plain is formed.

- Would an ice walled lake plain be a good spot for early pioneers to settle, raise crops and create homes? Why or why not?

- In the diagram there are two bogs. What is a bog and how do you think it was formed?

RECORD YOUR OBSERVATIONS!

Date: _____

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Total Distance Hiked: _____

Time it Took to Hike: _____

Rate of Travel: _____

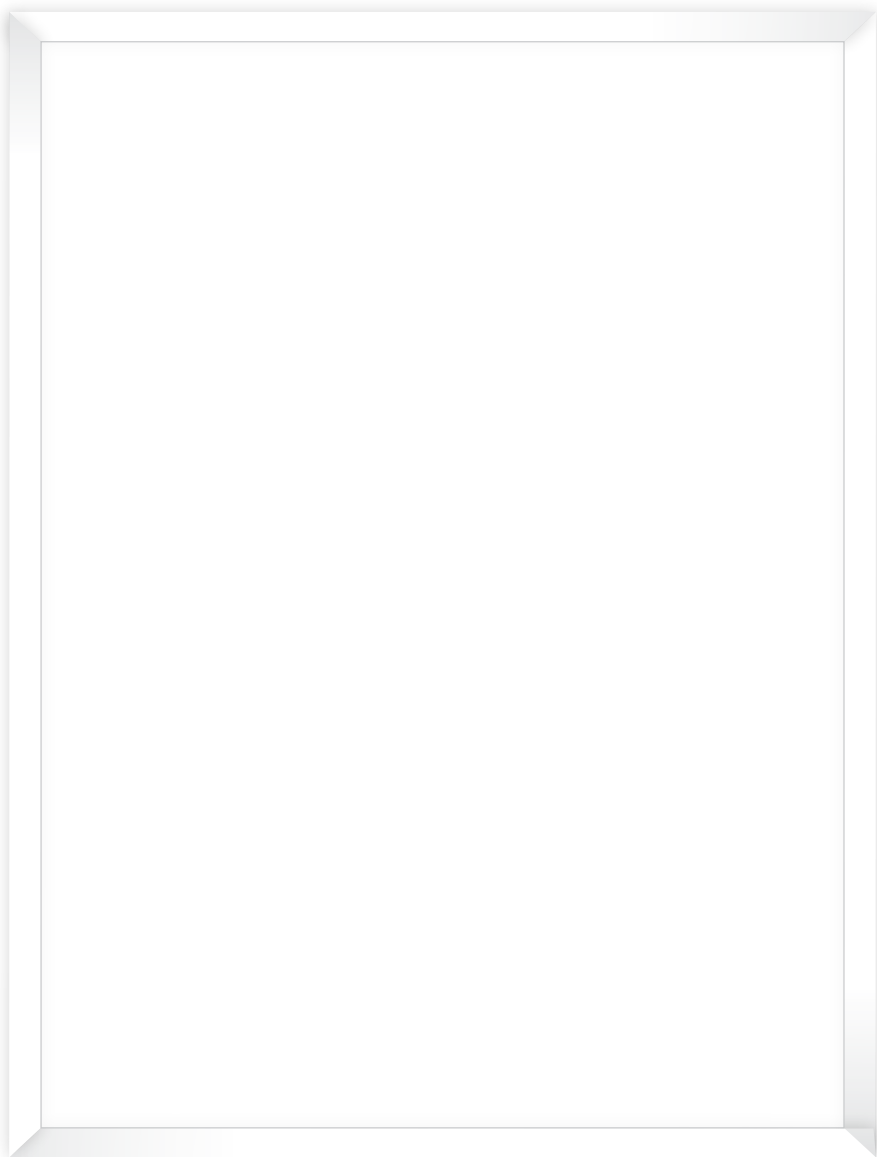
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ART FOR ALL THE SENSES

Take the time to rest, look around, listen, eat, hydrate and create a masterpiece. Sketch a memory from the day.



GET YOUR GRUB ON

BEFORE THE HIKE

Having enough energy for a hike starts long before the first boot hits the Trail. A good hiker plans ahead and prepares for the trip, including what to eat and drink. Follow these easy steps for an energized trip.

- Stay hydrated! See your pee — clear to light yellow means you are hydrated.
- Start with a full tank! Fuel up with carbohydrate-rich foods that will keep your energy up later in the hike. Examples are pasta, rice, bread and yogurt.
- Make some protein packed snacks. Protein helps build and repair the muscle tissue you use while hiking. Examples are meat, cheese, eggs and nuts or nut butters.

EXAMPLE MEALS (3–4 HOURS BEFORE HIKING)

- Peanut butter & jelly sandwich with low-fat or skim milk
- Fruit and yogurt smoothie with low-fat granola
- Oatmeal with brown sugar & almonds, low-fat or skim milk, and a banana
- Low-fat cottage cheese, whole grain crackers and fresh grapes
- Lean hamburger on a whole grain bun, side salad and a yogurt-fruit parfait
- Turkey and Swiss sandwich on whole wheat bread, fruit and low-fat or skim milk

EXAMPLE SNACKS (30–60 MINUTES BEFORE HIKING)

Drink 8-20oz. of fluid an hour before you start your hike.

- Whole-grain bread with peanut butter
- Granola or sports bar
- Piece of fruit & string cheese

BUILD-YOUR-OWN ICE AGE TRAIL MIX

Homemade trail mix is a great food to take along on your hike. It travels well and provides great nutrition to fuel you along the way. A mixture of your favorite dried fruit, nuts, seeds, and whole grain cereal. Mix equal amounts of your favorite foods from each category below:

- **Dried fruit**

(raisins, craisins, apples, apricots, pears, dates, banana chips etc.)

- **Cereal**

(Cheerios-plain, honey nut or apple cinnamon, granola, etc.)

- **Nuts**

(almonds, walnuts, peanuts, cashews, pistachios, pecans, etc.)

- **Seeds**

(pumpkin, sunflower, etc.)

- **Other favorites**

(goldfish, mini M&M's, pretzels, chocolate covered raisins)





DURING THE HIKE

In order to have enough energy to get through your hike, it is important to eat and drink throughout the day. A good rule of thumb is to drink before you are thirsty and eat before you are hungry.

Drinking 12-20 oz. bottles every hour (3-5 oz. every 15 min.) will help you stay hydrated. One gulp equals about 1 oz. of fluid.

Consider a sports drink to replace fluid and electrolytes and provide energy throughout your hike, especially if it is hot outside and you are sweating a lot.

Use a hydration pack so you can drink water while on the go!

Keep food safety in mind: Lunches that include meat, fish, poultry, or dairy need to be kept at the proper temperature. If you pack these foods, don't forget an ice pack.

AFTER THE HIKE

It is important to refuel your muscles after your hike.

This will make you feel better and help you gear up for the next day's adventure! Try the post-hike snacks and meals below to refuel.

EXAMPLE SNACKS (15-30 MINUTES AFTER HIKING)

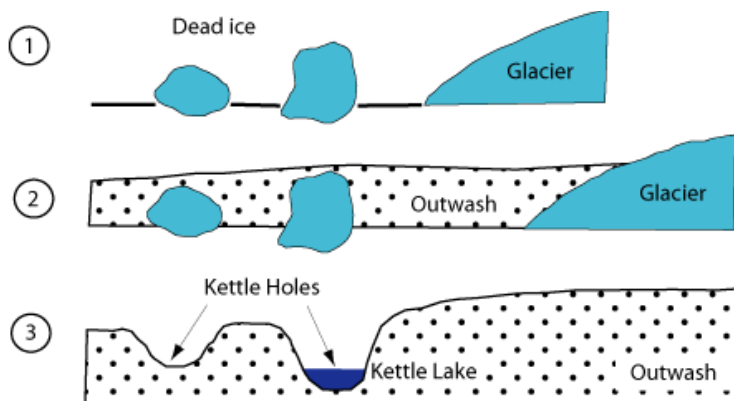
- Drink water or a sport drink to replenish fluids lost in sweat
- Smoothies (blend yogurt, frozen berries and milk)
- Granola bar
- Graham crackers with peanut butter
- Low-fat chocolate milk
- Fruit

RECOVERY MEAL IDEAS:

- Whole wheat sandwich with turkey and veggies, pretzels and low-fat or skim milk
- Rice bowl with beans, cheese, salsa, avocado and whole grain tortilla chips
- Stir fry with lean steak, vegetables, and brown rice

DR. MICKELSON'S DEFINITIONS

Kettle: A depression created by a large block of ice that melted after the glacier retreated



ColdCache Challenge:

- Kettles are formed by stagnant ice trapped in glacial till.
How do you think this piece of ice gets trapped?

- An acre is 43,560 square feet. Kettle Lake in Langlade County is 7 acres.
How many square feet is Kettle Lake?

- Rumor has it Babe the Blue Ox created the lakes of Northern Wisconsin with his hoof prints. Wisconsin has 15,074 lakes. Since Babe was four-legged, how many steps did he have to take to make these lakes?

RECORD YOUR OBSERVATIONS!

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Time it Took to Hike: _____

Rate of Travel: _____

Weather Conditions: _____

Interesting Flora or Fauna: _____

Landscape Observations: _____

HEALTHY BODY! HEALTHY MIND!

BEFORE THE HIKE

Hiking is more than just fun. It's good for you too! Why is it good for you?

- Improved cardiorespiratory and muscular fitness
- Better bone health
- Less chance of becoming overweight
- Less chance of developing risk factors for heart disease, high blood pressure and type 2 diabetes
- Possibly reduced risk of depression and feeling less stress, more ready to learn in school
- Sleeping better at night

What's more, hiking exercises almost every part of your body: legs, knees, ankles, arms, hips and butt, abdominals, shoulders and neck.

KEEP THE ENGINE REVVING

How many calories will a hike burn? The exact number depends on a set of bodily variables, including your weight, muscle content, and current fitness level.

Environmental factors will also affect how many calories are burned, such as the incline of your hike, your weight (and how much your pack weighs), the speed you maintain during your trek, weather conditions, and more. A 155 pound person will burn an estimated 440 calories in one hour of hiking. This same person will burn an estimated 230 doing one hour of walking.

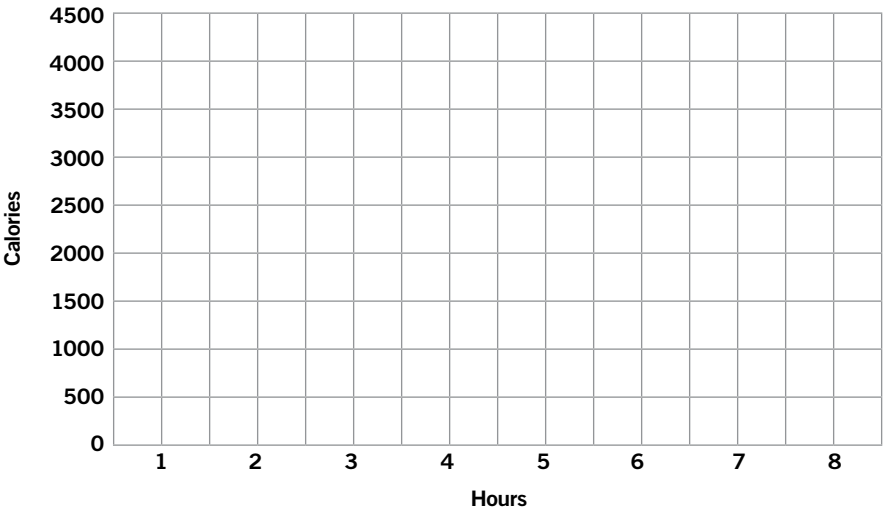
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GRAPH IT!

Use the data above for a 155-pound person to see how many calories are burned for an average day of sauntering vs. walking.

Hours	Sauntering	Walking
1		
2		
3		
4		
5		
6		
7		
8		

CALORIES BURNED SAUNTERING VS. WALKING



ARE YOU SAUNTERING ENOUGH?

How much activity do you need to reap these incredible health benefits? Experts say getting active for just 150 minutes a week – doing “moderate-intensity” aerobic exercise such as moderate hiking or brisk walking – leads to most of these benefits. That’s only 2½ hours a week, and you don’t have to do it all at once. If you take part in more vigorous aerobic activities, such as running, dancing, or hiking uphill or with a heavy pack, you need only half that amount of time, or 75 minutes a week, to get health benefits.

What’s moderate exercise? You can talk, but you can’t sing during the activity. Vigorous? You can’t say more than a few words with pausing for breath. When you are doing moderate exercise, you can continue for a long time, and you are breathing rhythmically. With vigorous exercise, you can’t do it for more than a few minutes at a time.

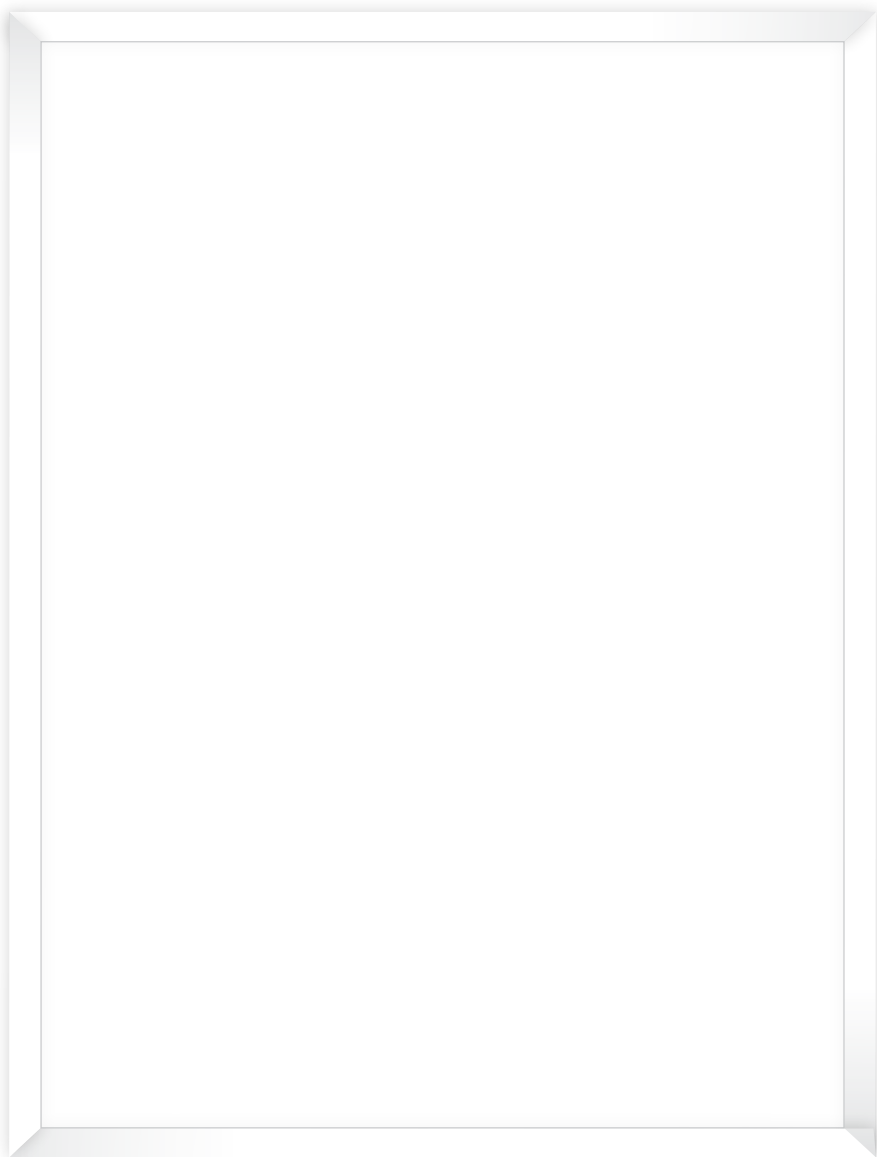
As you rack up even more time, the benefits keep growing. For even more substantial health benefits, such as an even lower risk of heart disease, aim for 300 minutes of moderate-intensity aerobic exercise, or 150 minutes of vigorous-intensity aerobic exercise each week.

Another plus: you don’t have to be in perfect shape to start. Even if you are overweight, getting physical can lead to health benefits. But don’t run out and climb a 14er if you’ve long been inactive. Hiking is a great way to start exercising. Start with easy hikes and work up to steeper hikes that work your legs more.



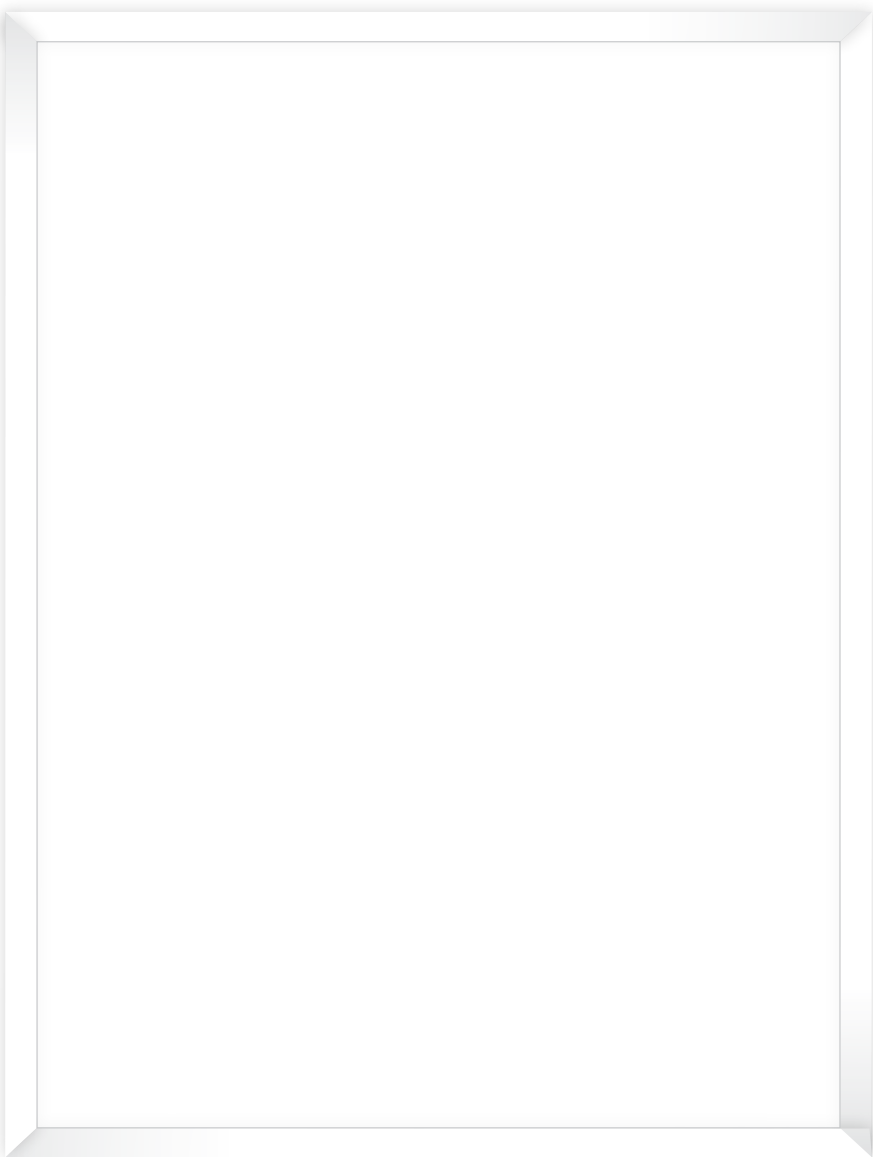
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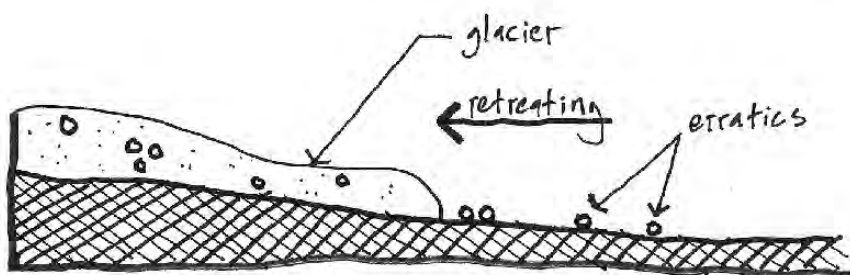
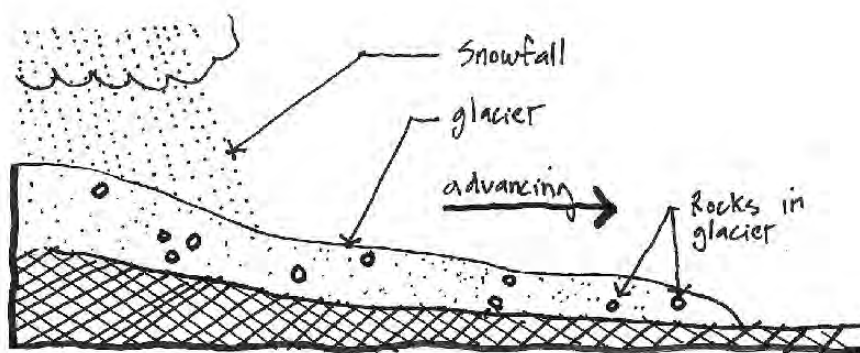
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Landscape Observations: _____

DR. MICKELSON'S DEFINITIONS

Erratics: Large boulders carried by the glacier that were left behind once the glacier retreated.



ColdCache Challenge:

- Erratics are everywhere! How do scientists know which big rocks are erratics and which are not?

- In the diagram the glacier is carrying erratics. If each weighed 680 pounds, how many pounds of erratic is the glacier moving?

- The density of the mineral dolomite equals 180 pounds per cubic foot. Let's say one of the erratics is 6 cubic feet (volume) and made of dolomite. Use the formula $\text{volume} \times \text{density} = \text{weight}$ to determine the weight of the erratic.

LEAVE NO TRACE

The Leave No Trace Center for Outdoor Ethics teaches people of all ages how to enjoy the outdoors responsibly, and is the most widely accepted outdoor ethics program used on public lands. Through education, research and outreach, the Center ensures the long-term health of our natural world. In its simplest form, Leave No Trace is about making good decisions to protect the world around you - the world we all enjoy. Do your part to pass our nation's heritage of outdoor recreation to future generations by practicing the Seven Principles.

PLAN AHEAD AND PREPARE

- Know the regulations and special concerns for the area you'll visit.
- Prepare for extreme weather, hazards and emergencies.
- Schedule your trip to avoid times of high use.
- Visit in small groups when possible. Consider splitting larger groups into smaller groups.
- Repackage food to minimize waste.
- Use a map and compass to eliminate the use of marking paint, rock cairns or flagging.



LEAVE WHAT YOU FIND

- Preserve the past: examine, but do not touch cultural or historic structures and artifacts.
- Leave rocks, plants and other natural objects as you find them.
- Avoid introducing or transporting non-native species.
- Do not build structures, furniture, or dig trenches.

TRAVEL AND CAMP ON DURABLE SURFACES

- Durable surfaces include established trails and campsites, rock, gravel, dry grasses or snow.
- Protect riparian areas by camping at least 200 feet from lakes and streams.
- Good campsites are found, not made. Altering a site is not necessary.

In popular areas:

- Concentrate use on existing trails and campsites.
- Walk single file in the middle of the trail, even when wet or muddy.
- Keep campsites small. Focus activity in areas where vegetation is absent.

In areas without established trails:

- Disperse use to prevent the creation of campsites and trails.
- Avoid places where impacts are just beginning.

DISPOSE OF WASTE PROPERLY

- Pack it in, pack it out. Inspect your campsite and rest areas for trash or spilled foods. Pack out all trash, leftover food and litter.
- Deposit solid human waste in catholes dug 6 to 8 inches deep, at least 200 feet from water, camp and trails. Cover and disguise the cathole when finished.
- Pack out toilet paper and hygiene products.
- To wash yourself or your dishes, carry water 200 feet away from streams or lakes and use small amounts of biodegradable soap. Scatter strained dishwater.

MINIMIZE CAMPFIRE IMPACTS

- Campfires can cause lasting impacts to the backcountry. Use a lightweight stove for cooking and enjoy a candle lantern for light.
- Where fires are permitted, use established fire rings, fire pans or mound fires.
- Keep fires small. Only use sticks from the ground that can be broken by hand.
- Burn all wood and coals to ash, put out campfires completely, then scatter cool ashes.

RESPECT WILDLIFE

- Observe wildlife from a distance. Do not follow or approach them.
- Never feed animals. Feeding wildlife damages their health, alters natural behaviors, and exposes them to predators and other dangers.
- Protect wildlife and your food by storing rations and trash securely.
- Control pets at all times, or leave them at home.
- Avoid wildlife during sensitive times: mating, nesting, raising young, or winter.

BE CONSIDERATE OF OTHER VISITORS

- Respect other visitors and protect the quality of their experience.
- Be courteous. Yield to other users on the trail.
- Take breaks and camp away from trails and other visitors.
- Let nature's sounds prevail. Avoid loud voices and noises.

RECORD YOUR OBSERVATIONS!

Date: _____

Segment Name: _____

Segment Location (County and Nearest Community): _____

Total Distance Hiked: _____

Time it Took to Hike: _____

Rate of Travel: _____

Weather Conditions: _____

Interesting Flora or Fauna: _____

Landscape Observations: _____

COLDCACHING

ColdCaching is an exciting way to explore and learn about the many natural features along the Ice Age Trail. If you are looking for a family-friendly activity that allows you to experience the thrill of a treasure hunt, learn important navigational skills and develop an appreciation for Wisconsin's fascinating Ice Age history, ColdCaching is for you.

WHAT IS COLDCACHING?

- The concept of Ice Age Trail ColdCaching is based on the popular activity of GeoCaching. ColdCaching is a type of EarthCaching in which participants seek out natural features along the Ice Age Trail.

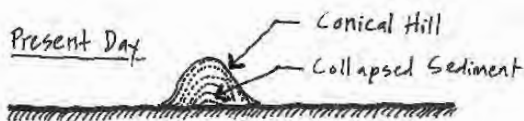
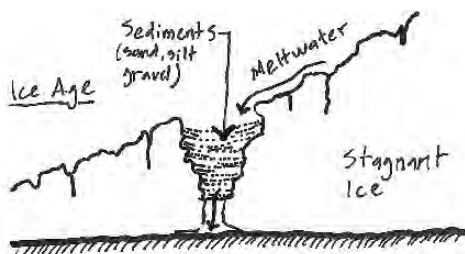
As a ColdCaching participant, you can choose from a list of Ice Age Trail landmarks (ColdCaches) to seek out. Once you find the ColdCache, you are asked to perform a simple task and/or answer a question related to the site to verify your discovery. As you investigate more sites, you can earn more ColdCache awards. You can also participate by developing new ColdCaches for others to seek out.

The activities found in this notebook help you meet ColdCache requirements. So, you are already a ColdCacher! If you like the thrill of hunting down ColdCaches you can sign up online to continue the adventure with your family or friends. You can find additional ColdCache locations at geocaching.com. Please register with the ColdCache coordinator at coldcache@iceagetrail.org to continue the hunt!

ColdCaching is consistent with Leave No Trace outdoor ethics in that participants leave only footprints on the landscape as part of their activities.

DR. MICKELSON'S DEFINITIONS

Kame: A conical hill created by sand, silt and gravel piling up beneath a piece of the glacier that was not moving.



ColdCache Challenge:

- o List three ways people use kames today:

- o If the average glacier moves at a rate of 1 ft. per day, how long do you think it takes to form a kame? Use math to show your answer.

- o Write a freestyle poem describing how a kame is formed.

EARNING AN AWARD

As you find more ColdCaches, you can register for the ColdCache awards program to receive patches recognizing your prowess as a ColdCache hunter. Filling out the activities in this book will earn you at least the first patch. If you sign up to continue ColdCaching you can work toward collecting the other patches to make this ice age scene.



LEVEL I: SNOWFLAKE

- A water crystal that forms in the atmosphere and falls to the earth. Visit and log 3 ColdCache sites representing at least 2 different feature types.



LEVEL II: BLIZZARD

- A long, severe snowstorm with intensely cold wind and fine snow. Visit and log 7 ColdCache sites representing at least 5 different feature types.



LEVEL III: FIRN

- Partially consolidated snow that has passed through one summer melt season, but is not yet glacial ice. Visit and log 12 ColdCache sites representing at least 9 different feature types.



LEVEL IV: ICE SHEET

- A broad, thick sheet of ice covering an extensive area for a long period of time. Visit and log 18 ColdCache sites representing at least 14 different feature types.



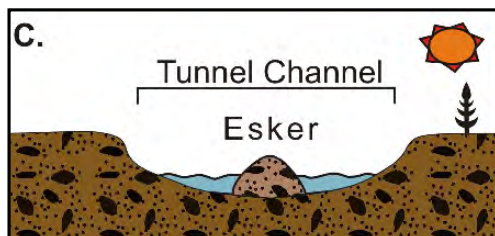
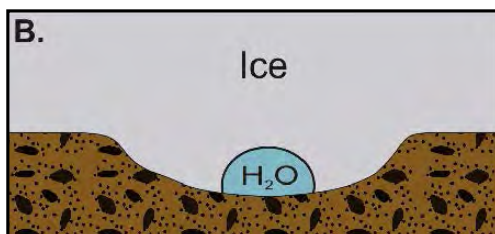
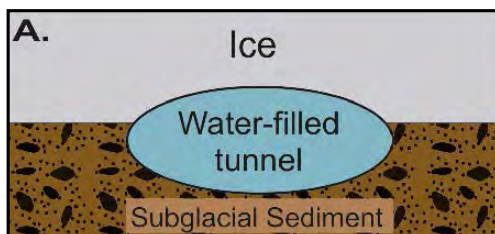
LEVEL V: GLACIER

- An extended mass of ice, formed from snow falling and accumulating over years, that flows over a land mass. Visit and log 25 ColdCache sites representing at least 20 different feature types.



DR. MICKELSON'S DEFINITIONS

Tunnel Channel: A wide valley created when a river moving under the glacier carved out the glacial drift.



ColdCache Challenge:

- o Tunnel channels were responsible for carving out large valleys throughout Wisconsin. Can you list some communities that exist in some of the valleys carved by these giant rivers?

- o Examples of Ice Age Trail segments that travel through a tunnel channel are Straight Lake in Polk County and Bohn Lake in Waushara County. Use your Guidebook to find these segments and read the descriptions. Please summarize how each tunnel channel formed the lakes.

- o The Wisconsin River carved out a route to the Mississippi River through the Driftless Region on southwest Wisconsin. When the Wisconsin River met the Mississippi River the route of the Mississippi was changed. Imagine how much water and force it took to move the United States' largest river. How could this have happened?

GLOSSARY

The Swahili word for these important hiking terms is listed below the English word.

14ER

kumi na nne-er

In mountaineering terminology in the United States, a fourteener is a mountain that meets or exceeds an elevation of 14,000 feet (4,270 m) above mean sea level.

ACRE

ekari

A common measure of area: in the U.S. and U.K., 1 acre equals 4,840 square yards (4,047 square meters) or 0.405 hectare; 640 acres equals one square mile.

ADVANCE

kuendeleza

When a glacier grows through accumulating snowfall. When a glacier advances it moves across the landscape.

AEROBIC

zoezi

A type of exercise that is intended to improve the body's cardiovascular ability to absorb and transport oxygen.

CALORIE

kalori

A unit of heat energy to measure the energy content food will release in the body.

CARBOHYDRATE

wanga

A molecule in food that is used by the body to create energy. The types we eat are simple carbohydrates (sugar) and complex carbohydrates (starch.)

CARDIORESPIRATORY

moyo na napafu

The combination of the body's cardiovascular system (heart, veins, blood vessels) and respiratory system (lungs.)

DENSITY

msonganama

How close together the molecules of a substance are, or how much mass an object has in a certain space.

ERRATIC

mwamba kawaida

Large boulders carried by a glacier that were left behind once the glacier retreated.

ESKER

krokiga kilimia

A sinuous hill created by sand, gravel, and silt left behind by a river flowing under the ice.

FAUNA

wanyama

The animals that live in a particular habitat, region, or geological period.

FLORA

mimea

The plants that live in a particular habitat, region, or geological period.

GLACIER

mtu wa barafu

An extended mass of ice, formed from snow falling and accumulating over thousands of years, that flows over a land mass.

HYDRATION

taratibu

Replacing the water the body loses through sweat and evaporation.

ICE WALLED LAKE PLAIN

ziwa la barafu ukitu

A plateau-like feature that was created by lake clay perched on top glacial ice. When the ice melted, the lake clay remained on top of sediment left behind.

KAME

koni kilima

A conical hill created by sand, salt, and gravel piling up beneath a piece of glacier that was not moving.

KETTLE

birika

A depression created by a large block of ice that melted after the glacier retreated.

LANDSCAPE

mandhari

All the visible features of an area.

LEAVE NO TRACE

kuondoka ishara yoyote

A set of outdoor ethics promoting conservation and appreciation of the outdoors.

NATIONAL SCENIC TRAIL

kijaa wa kitaita na kuvitia

Trails that are 100 miles or longer, continuous, primarily non-motorized routes of outstanding recreation opportunity and designated by U.S. Congress.

PIONEER

mwanzilishi

A person who is among the first to explore or discover a new area.

RETREAT

rejea nyuma

When a glacier shrinks because the rate of melting is faster than the rate of snow accumulation. When a glacier retreats it moves across the landscape.

SAUNTER

kutembea

To walk without hurry or effort.

SEGMENT

sehemu

A specific section of the 1,000 mile of the Ice Age National Scenic Trail.

TUNNEL CHANNEL

handiki

A long U-shaped valley or tunnel created by the flow of meltwater beneath ice.

VIGOROUS

makali

An intense level of exercise in which your breathing rate and heart rate is elevated.

VOLUME

juzu

The amount of 3-dimensional space taken up by an object.



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