

Paddling – Canoeing



Winneshiek County Conservation Equipment and Recommendations:

- **Who:** 5th grade and up
 - **What:** 7 canoes, life jackets, & paddles
 - **Where:** Lake Meyer Park
- Trained instructors are available to assist with groups at no charge.
Call 563.534.7145 for more information.

Introduction

Modern canoes share the same basic design as traditional birch bark canoes. Although today's canoes are made with different materials and designs, their popularity remains. Over 20 million Americans have become paddlers, with numbers still increasing. There are many reasons for the popularity of canoeing. Many people live hectic lives and want to get away and reconnect with nature in a relaxing way. Paddling allows participants to see wildlife and nature from a different perspective than hiking, biking, or motor boating. Canoeing and kayaking are family sports that can be done on a nearby lake for an hour or on a river for days, camping at various sites along the way. The relatively low cost and ease of care for equipment make the enjoyment of paddling attractive to people of all ages.

A Brief History

Paddling has played a role in human history for at least 6,000–8,000 years. Early canoes and kayaks were used for transportation, survival (hunting and fishing), and trade. The earliest canoes were likely dugouts. They were made through an extensive process of carving and burning trees into a hollow craft. Dugouts were used by people throughout the world, from the West Indies, Africa, and the Middle East to North and South America.

Native Americans in the northern region of the continent created birch bark canoes. Roots from white pines were used to sew the birch together. The seams were sealed with pine resin. Wood from white cedar trees was often used for the internal frame. The design and materials were lighter and more maneuverable than dugout canoes. Birch bark canoes quickly became the preferred means of transportation for Native Americans. As French explorers and fur traders arrived in North America during the 17th century, they adopted these vessels to navigate rivers and lakes. Marquette, Joliet, and Lewis and Clark used this style of canoe while traveling.

Canoeing reached its height of popularity at the turn of the 20th century. Since style frequently mattered more than performance, recreational canoes often were elaborately decorated, with wide beams and long ornate decks. Canoeing and kayaking were first included in the Olympics in the 1936 Berlin Games. In the late 1940s and after World War II, Grumman

Aircraft Corporation began making aluminum canoes. Fiberglass canoes followed in the 1950s. The low cost and superior functionality of these new crafts swept the market and they became the most popular types sold.

Equipment & Supplies

Choosing a Canoe

Some canoe designs are best suited for lake paddling, where efficiency and straight line tracking are ideal. Other canoes are better for swift moving rivers and streams, and justify some loss of efficiency for the sake of agility.

Shorter canoes are good for day trips and are more maneuverable, which makes them appropriate for river and whitewater use. Longer canoes are good for extended trips and traveling on lakes and areas of slower moving water. Wider canoes will be more stable but less maneuverable than narrower canoes.

Canoes are made of many different materials. Older canoes are made of wood, metal, or canvas with a wood frame. Aluminum canoes became popular for middle-of-the-line canoes and are still used today. They are tough and durable but also heavy. Unfortunately they are also prone to denting and possibly puncturing when hit hard by rocks. Plastic canoes can take a fair beating, are relatively inexpensive and easy to maintain. However, plastic canoes also tend to be heavy. Fiberglass is a good balance between weight, strength, and cost. Kevlar is the lightest and strongest material available but may scratch easily and is also the most expensive.

Choosing and Caring for a Paddle (See *Terms and Definitions* for paddle parts)

The first consideration for your paddle is proper fit. The American Canoeing Association (ACA) recommends the following methods for sizing an appropriate canoe paddle.

- *On the water:* Sit comfortably in a canoe; place the paddle perpendicular to the water surface with the blade submerged to the throat. The top of the paddle grip should reach between eye and nose level.
- *Without water:* While standing, place the tip of the paddle blade on your toe. The paddle grip should reach between your nose and chin.

Next consider the blade shape. Rounded blades are good for deep water and are more efficient. Flat paddles are better for shallow water and are less likely to be damaged by contact with the ground.

Finally, you must pick an appropriate paddle material. Two types are generally available: wood or plastic. Wood tends to be heavier, but is more durable. With proper care, wood paddles will last far longer than plastic paddles. Plastic paddles are lighter than wood and are available in an array of materials and styles.

When using or carrying a paddle, try to keep the blade from coming into contact with the ground, as this can chip or break the blade. If you're in the canoe and you must push against the riverbed or shore, grip the blade with your hand, and contact the ground with the grip. This will help prevent unnecessary damage to the blade.

Life Jacket or Personal Flotation Device (PFD)

Iowa law requires one approved PFD per canoe occupant (see *Regulations* below for more details)

Other Equipment:

bailer – a scoop (can be made from an empty jug by cutting off the bottom) for dipping accumulated water from the bottom of the canoe.

dry bags – for keeping clothing and food dry

rope – to tie canoe

river map – or become familiar with the lake or river before you paddle

extra paddle

hat or cap (with bill) – to protect your face from the sun. If the underside of the bill is a dark color it will help to cut glare from the water

additional items – sun screen, sunburn ointment, insect repellent, food & beverage, first aid kit, change of clothing, rain gear, sun glasses

Terms and Definitions

Parts of a Canoe:

beam – widest part of the canoe

belly – bottom of the canoe

bow – front of the canoe

bow seat – where the bow person sits

deck – panels attached at the bow and stern ends of the canoe

gunwale – (pronounced “gunnel”) top, finished edges of a canoe, both outside and inside

hull – frame or body of the canoe

keel – ridge projecting from the bottom of the canoe running from the bow to the stern

leeward – the side of the canoe facing away from the wind

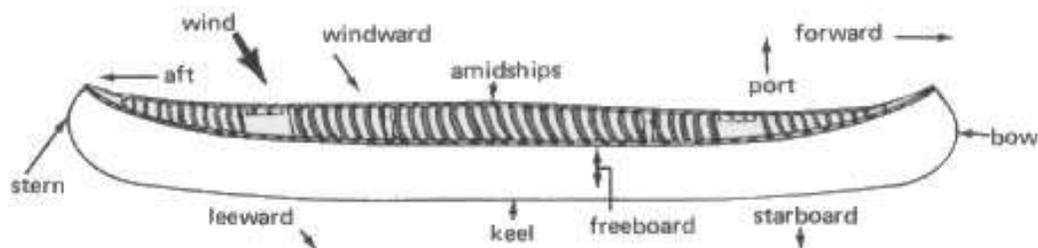
port – the left side of the canoe (when facing forward)

starboard – the right side of the canoe (when facing forward)

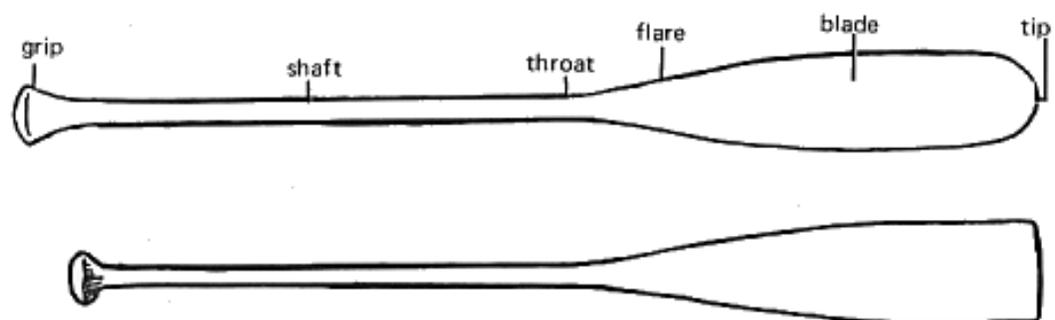
stern – the rear end of the canoe

thwarts – structural supports across the width of the canoe

windward – the side of the canoe facing into the wind



Parts of a Paddle:



Additional Canoeing Terms:

broadside – a canoe which is moving perpendicular to the current of a river, thus exposing its “broad side” to obstacles in the water

eddy – current that is deflected by an obstruction or bend in the river and is moving in a circular motion or opposite direction to the main current

feather – moving the paddle parallel to and close to the water while paddling

flat water – water without rapids, such as a lake or slow-moving river

portage – the physical act of carrying the canoe over land

riffle – a shallow spot extending across the river bed just below the surface of the water, producing choppy water

river rating scale – a nationally recognized scale used by whitewater canoeists to rate the difficulty of rapids; rankings from Class I to Class VI

splash skirt/cover – a fitted cover designed to keep water out of a canoe; useful in rough rapids and big waves

tracking – the ease with which a canoe can be paddled in a straight line

whitewater – foamy (air-filled) turbulent water

yoke – a strong crossbar in the middle of the canoe designed for carrying the canoe on the shoulders, often includes two yoke pads for more comfort

Regulations and Required Equipment

Water regulations in Iowa are set by the Iowa Department of Natural Resources. For a complete list of rules, go to the Iowa DNR website or refer to the current edition of “The Handbook of Iowa Boating Laws and Responsibilities.”

A few of the basic rules include:

- A U.S. Coast Guard–approved wearable PFD (life jacket) in good condition must be **available** to every person in a canoe or kayak.
- A child under 13 years must **wear** a USCG–approved PFD.
- Canoes and kayaks over 13 feet in length must have an Iowa Registration Certificate and decals to be operated legally on public waters. Register your vessel in the County Recorder’s office.
- If two crafts are meeting head-on or nearly so, both operators should alter their course to the right and pass at a safe distance.

Skills & Strategies

Entering the Canoe

Although this seems like it should be simple, it is not. If you are not careful you will flip the canoe and end up in the water! Put the canoe in the water parallel to the shore. Place one hand on the near gunwale and the opposite foot in the center of the canoe. Crouch low and grab the far gunwale with the other hand as you transfer your weight to the foot in the canoe. Staying low to the canoe, swing your other foot into the canoe and drop to your knees. Remain there while your partner boards, then assume your paddling position. If you must enter perpendicular to the shore, keep one hand on each gunwale, body low, and feet in the centerline of the canoe as you make your way to your seat. Your partner should help stabilize the canoe. Reverse the procedure when exiting a canoe. Only one person should move in a canoe at a time!

Basic Strokes

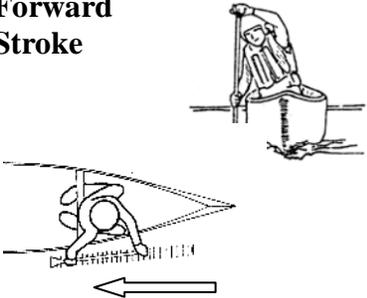
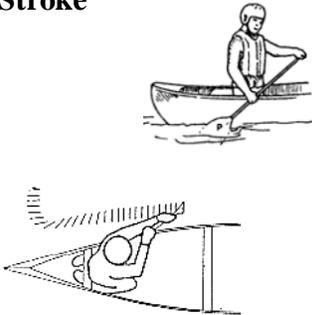
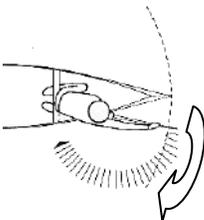
Basic canoe strokes include: Forward stroke, J-Stroke, Forward Sweep or C Stroke, Draw, and Pry Strokes.

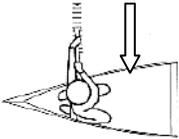
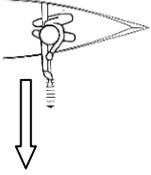
The Bow Paddler (front person)

The paddler in the bow provides the power to move forward and should be on the lookout for obstacles in the water ahead.

The Stern Paddler (back person)

The paddler in the stern works with the bow paddler to move the canoe forward and also is the main steering force.

<u>Basic Strokes:</u>		
<p>Forward Stroke</p> 	<p>Moves the canoe forward in a straight line. <i>Catch:</i> Reach forward and place paddle in water. <i>Propulsion:</i> Draw paddle straight towards stern, in a line parallel to keel. Push forward and down over blade with top arm and pull with lower arm. Body and shoulder rotation provides much of the power. Stroke ends at hip. <i>Recovery:</i> Lift paddle from water and feather it forward in a circular motion. Back Stroke: If done in reverse, will propel canoe backwards.</p>	
<p>J-Stroke</p> 	<p>Provides forward momentum and also turns the canoe toward the side that the stern person is paddling on. Best stroke when soloing in a canoe. <i>Catch:</i> Reach forward and place paddle in water. <i>Propulsion:</i> Begin with parallel motion of Forward Stroke. When paddle reaches hips, twist upper hand so thumb points forward; shaft hand pushes blade away from boat; making the shape of the letter "J" <i>Recovery:</i> Paddle is lifted from water and feathered forward in a circular motion.</p>	
<p>Forward Sweep or C-Stroke</p> 	<p>Turns the canoe in a circle away from the paddling side of the canoe. <i>Catch:</i> Place paddle in water as far in front of you as you can. <i>Propulsion:</i> Pull blade in a wide semicircle until paddle is behind you. <i>Recovery:</i> Pull paddle out of water and feather forward for next stroke. Reverse Sweep: If done in reverse, will rotate canoe towards paddling side.</p>	

<p>Draw</p> 	<p>Moves the canoe toward the paddling side. If done on opposite sides of the canoe by both paddlers, canoe will rotate. If done on same side by both paddlers, canoe will move sideways.</p> <p><i>Catch:</i> Place blade vertically in water, parallel to center line, and as far from canoe safely possible.</p> <p><i>Propulsion:</i> Pull paddle towards canoe.</p> <p><i>Recovery:</i> Remove paddle before you hit canoe and do not let the paddle get swept under. Reposition for next draw.</p>
<p>Pry/Push</p> 	<p>This has the same effect as the draw, but the result will be in the opposite direction.</p> <p><i>Catch:</i> Place blade vertically in water, parallel to center line, and close to side of canoe.</p> <p><i>Propulsion:</i> Push paddle straight out, keeping stroke short and perpendicular to water.</p> <p><i>Recovery:</i> Lift paddle out of water.</p>
<p><u>Putting it Together:</u></p> 	<p>Going Straight</p> <p>To go in a straight line bow paddler should use Forward Stroke. Stern paddler should use forward stroke, with enough J or Sweep Strokes maintain straight line of movement</p>

Safety

- Boating alone is discouraged. The minimum party is three people or two canoes.
- Communicate with your paddling partner at all times.
- Watch for dangerous dams and circulating currents below dams.

Rescue Techniques

Do not panic if your craft capsizes. A canoe probably will eject both paddlers on the same side. If your craft overturns, fall out. Your PFD will keep you afloat. Canoes have some built-in floatation. If turned upside down, even if they fill with water, they will usually stay afloat. After being ejected from the canoe, swim back to the craft. If it has overturned, position one paddler on each side. Work together to turn it upright, or hang on to the boat and pull it along as you swim or wade back to shore.

In moving water, stay on the upstream side of the canoe to prevent being trapped between a rock and the canoe. If possible, stay with the canoe because of its floatation and resulting visibility to other boaters and rescuers. If others are not available to throw a line, ride the river until you can swim or wade to shore.

Environmental Considerations

- Minimize impacts to the shore when launching, portaging, or taking out.
- Don't splash near wildlife.
- Stay at least 100 feet from nesting sites.

Extensions

Science: Stream velocity, volume (gal/min), hydrology cycle, certification classes, water ecology
History: voyagers, Marquette & Joliet, Native American history, American history

Resources

- Iowa DNR. "The Handbook of Iowa Boating Laws and Responsibilities".
<http://www.boat-ed.com/ia/handbook/index.htm>
- Iowa DNR. Canoe/Kayak Curriculum.
<http://www.iowadnr.gov/Recreation/CanoeingKayaking>
- American Canoe Association: Basic Instruction and Resources.
<http://www.americancanoe.org>
- Strokes, Graphics. <http://www.naturecompass.org/wvpc/basics/strokes.html>
- Safety and Paddling Basics; Types of Canoes.
<http://www.canoeing.com/beginner/howto/index.htm>
- Canoe packing list, strokes, parts of.
<http://www.geocities.com/Yosemite/Gorge/1066/528canoeskills.html#ENTERING%20A%20CANOE>
- Guides for Transporting Canoes.
http://www.merrimackcanoes.com/transporting_canoes.htm
- Bass Pro: Resources on a variety of outdoor skills. <http://www.basspro.com>
- GORP.com: Paddling, Capsized canoes, children.
http://gorp.away.com/gorp/activity/paddling/skills/canoe_rescue.htm