



Fly Fishing Merit Badge

Troop 52
Lakeway, TX



Expectations



- Use the workbook!!!!
<http://www.usscouts.org/mb/worksheets/fly-fishing.pdf>
- Use this slide deck as your knowledge base for the different requirements
- Attend at least one of the sessions at Sportsman's Finest on 10/7 or 10/14 – knots, gear assembly and fly tying
- After the campout, schedule a review session with me to review workbook assignments and ensure mastery of the skills and knowledge
- You may need to catch a fish at a separate activity outside of the campout
- It is not a matter of IF but WHEN you will impale yourself or someone else with a fly hook





Requirement 1



1. Do the following:
 - a. Explain to your counselor the most likely hazards you may encounter while participating in fly-fishing activities and what you should do to anticipate, help prevent, mitigate, and respond to these hazards. Name and explain five safety practices you should always follow while fly-fishing.
 - b. Discuss the prevention of and treatment for health concerns that could occur while fly-fishing, including cuts and scratches, puncture wounds, insect bites, hypothermia, dehydration, heat exhaustion, heatstroke, and sunburn.
 - c. Explain how to remove a hook that has lodged in your arm.

HOMework

Fill in your workbook!!!!

Be prepared to review with me

Hazards of Fishing

- Drowning
- Lightning and storms.
- Sunburn!
- Dehydration and heat related injuries.
- Insect bites and stings
- Slipping or cutting yourself on sharp, rocky edges.
- Cuts and puncture wounds from fishing equipment.
- **The farther out you go, the risks increase so be prepared!**





Keeping Safe while Fishing

- **Never go fishing alone** – always fish with someone else and, ideally, with two other people.
- **Let somebody know the location of your fishing trip**, who you are going with and an approximate time you will be back.
- **Wear a life jacket** when fishing off rocks, ledges, a riverbank, wading, or a boat.
- **Be aware of weather conditions** and seek shelter during storms.
- **Wear non-slip shoes** and take care to avoid slipping or cutting yourself on sharp, rocky edges.
- **Be SunSmart.** Wear sun protective clothing, use SPF30+ sunscreen and lip balm, wear a hat, wear sunglasses.
- Take adequate **drinking water!!!!**
- Use an **insect repellant** that contains DEET.
- Carry a **first aid kit** with you.



First Aid and Fishing *Cuts*

- Clean the wound with an antibacterial and apply a bandage.
- Apply "Direct Pressure" to the wound to stop bleeding.
- If a sterile dressing is available, it may be placed on the cut before pressing down, but
- If the bleeding is serious, DO NOT WAIT for the sterile material. It is better to have a live victim with a few germs than a sterile wound on a dead patient.



First Aid and Fishing *Scratches*



- Clean the area thoroughly and remove any dirt and debris.
- Cover wound with gauze.
- Do not scrub vigorously, as this can cause more tissue damage.

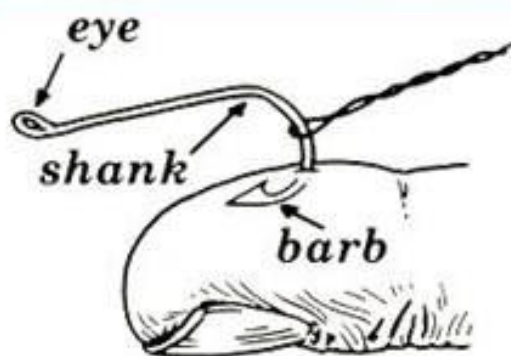
Puncture Wound



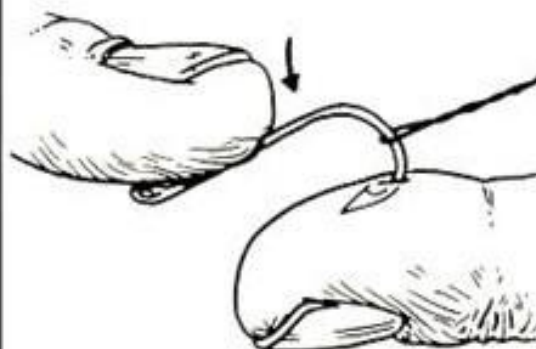
- Clean and cover the wound.
- Change the dressing regularly.
- Watch for infection.

How to Remove a Fish Hook from Your Finger

1. String Yank Technique

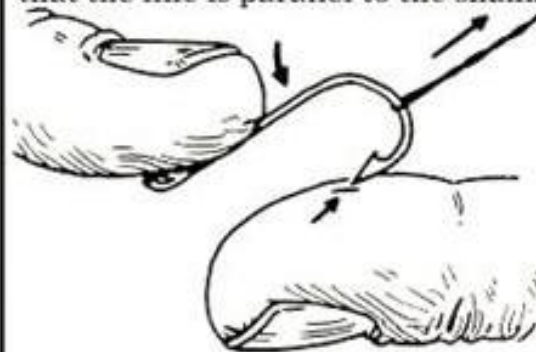


1. Tie off a loop with some fishing line. Place the loop over the hook's shank and lightly pull it against the bend of the hook.



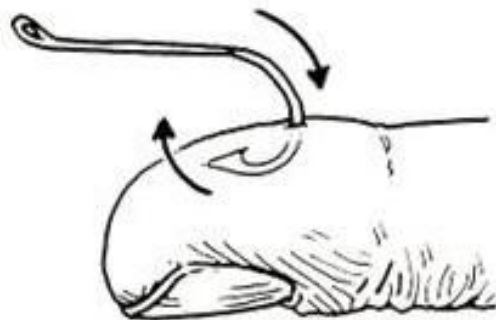
2. With your other hand, press down and back on the hook's eye.

3. Continue pressing down on the hook's eye. Quickly and firmly jerk the fishing line backward, ensuring that the line is parallel to the shank.

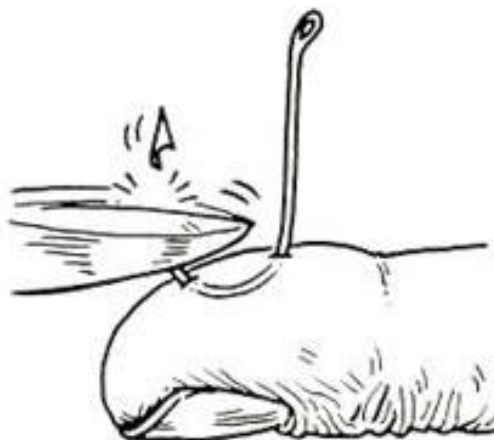


Don't worry: only a tiny bit of flesh is behind the barb. It won't hurt too much. Clean and bandage.

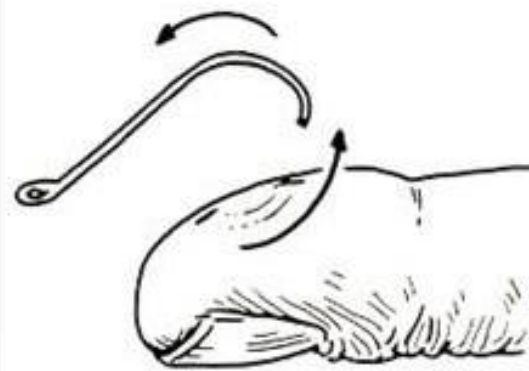
2. Advance & Cut Technique



1. Using pliers, advance the point of the hook (including the barb) out of the skin. Follow the natural curve of the hook.



2. Use your pliers to cut the hook below the barb.



3. Remove the hook by backing it out through the wound. Clean and bandage.



First Aid and Fishing *Stings*

- If there is only redness and pain at the site of the bite, application of **ice is adequate treatment**.
- **Clean the area with soap and water** to remove contaminated particles left behind by some insects (such as mosquitoes).
- **Refrain from scratching** because this may cause the skin to break down and an infection to form.
- Prevention: Wear long-sleeved shirts, long pants cinched at the ankle or tucked into the boots or socks.



First Aid and Fishing

Hypothermia

- Symptoms:
 - Initial mental status changes in response to cold may be subtle and include **hunger and nausea**.
 - This will progress to **apathy, confusion, slurred speech, and loss of coordination**.
 - Many times a person will just lie down, fall asleep, and die.
- Treatment:
 - Removing them from the elements that caused the condition.
 - Seek a dry, warm place away from the wind.





First Aid and Fishing *Dehydration*

- Symptoms:
 - Weakness and/or dizziness
 - Confusion and/or sluggishness, even fainting
 - Inability to sweat
 - Decreased urine output. If urine is concentrated and deeply yellow or amber, you may be dehydrated.
- Treatment:
 - Sip small amounts of water or carbohydrate / electrolyte-containing drinks.
 - Treat for dry mouth and swollen tongue
 - Keep them cool!



First Aid and Fishing

Heat Exhaustion

- Symptoms:
 - Often pale with cool, moist skin
 - Sweating profusely
 - Muscle cramps or pains
 - Feels faint or dizzy
 - May complain of headache, weakness, thirst, and nausea
 - Core temperature elevated—usually more than 100°F—and the pulse rate increased
- Treatment: oral fluids and cool, shading





First Aid and Fishing

Heatstroke

- Symptoms:
 - Unconscious or has a markedly abnormal mental status (dizziness, confusion, hallucinations, or coma)
 - Flushed, hot, and dry skin (although it may be moist initially from previous sweating or from attempts to cool the person with water)
 - May have slightly elevated blood pressure at first that falls later
 - May be hyperventilating
 - Core temperature of 105°F or more
- Treatment:
 - Ice packs/sheets, IV fluids, and medical evacuation

First Aid and Fishing *Sunburn*

- **Symptoms:**
 - Sunburned skin is red and dry in exposed areas in a first-degree burn.
 - Often, one may not realize that the skin is burned until ours later.
 - If exposure to the sun continues, second-degree burns may occur and blisters with clear fluid may form.
- **Treatment:** Sun protection or appropriate coverings should be worn at all times.





Requirement 2



2. Demonstrate how to match a fly rod, line and leader to achieve a balanced system. Discuss several types of fly lines, and explain how and when each would be used. Review with your counselor how to care for this equipment.

HOMEWORK

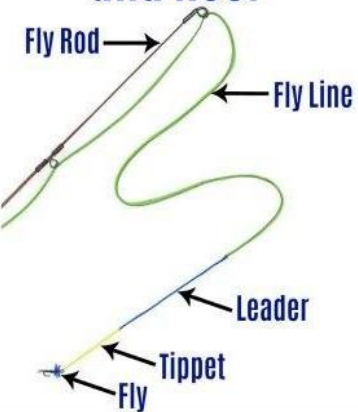
Fill in your workbook!!!!

Be prepared to review with me

A Balanced System

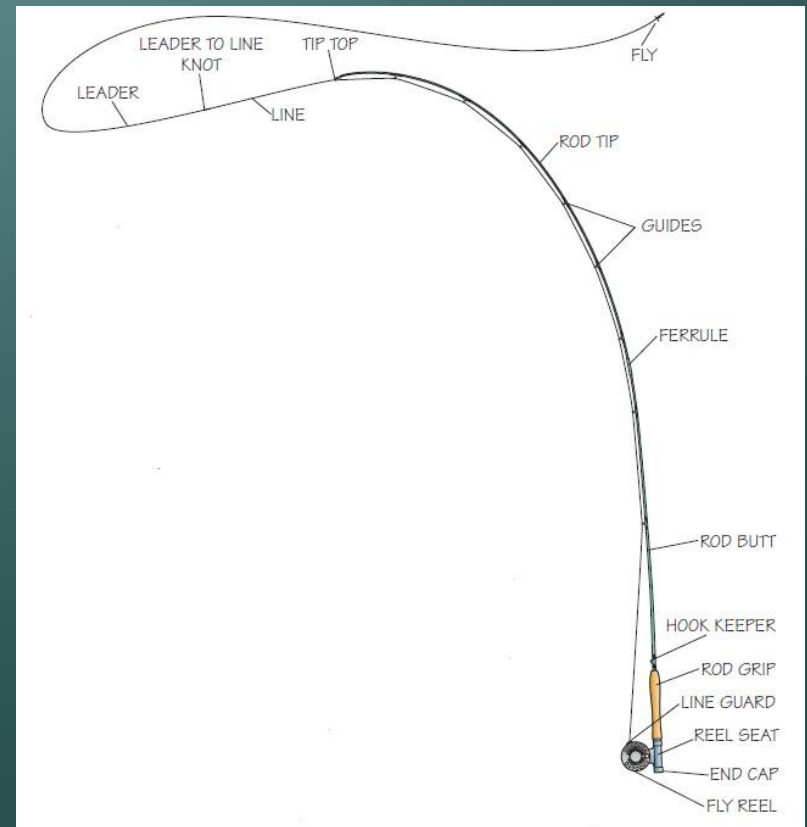
- When the rod, reel, and line are correctly matched to handle a given-weight fly line, they are considered to be in balance.
- When in proper balance, they allow the angler to **deliver a fly with accuracy within desired distance.**
- The **reel mainly functions as line storage**, although its weight can determine how easily casts can be made.
- Fly rods usually are marked with numbers indicating which line works best on a particular model.

How to Setup a Fly Fishing Rod and Reel



The Rod

- Usually 8 to 10 feet long
- Usually made of graphite
- Tapered with a cork grip and a reel seat
- Usually have a hook-keeper
- Guides run the line to the rod tip
- The last guide is called the tip top
- Most rods come in at least two and sometimes as many as 10 sections for travel
- The joints where the rod comes together are called ferrules
- Shorter rods are desirable on close brushy streams
- Longer rods enable the angler to make higher back casts and to keep the line and the fly above obstructions such as grass and brush





Rod Length

DETERMINING YOUR FLY ROD SIZE

LENGTH	LINE WEIGHT	MATERIAL	TIPPETS	DRY FLY SIZE	MATERIAL
7ft-8ft	2oz-4oz	FIBERGLASS, GRAPHITE	4X-8X	14-18	DELICATE FLY PRESENTATION
7ft-8ft	5oz	FIBERGLASS, GRAPHITE	3X-7X	12-22	DELICATE CAST & DISTANCE
8ft-9.5ft	6oz-7oz	FIBERGLASS, GRAPHITE	0X-7X	8-20	VARIOUS FISH UNDER VARYING CONDITIONS
8.5ft-9.5ft	6oz-7oz	GRAPHITE	4X & LARGER	4-3/0	LARGER GAME FISH
9ft-12ft	10oz-15oz	GRAPHITE	0X & LARGER	2-4/0	LARGER GAME FISH



Selecting a Rod and Line

- Every fly rod is **designed to be matched to a line of specific weight.**
- Lines of lighter weight are matched to more delicate rods.
- Smaller rods and lines are used to deliver tiny artificial flies with minimal noise and water disturbance
- The rod and the line must match because the weight of the line is what causes the rod to flex and turn the line over in a smooth, efficient cast

Rod/Line Uses and Sizes

ROD/LINE WEIGHT	REEL SIZE	USES; FLY SIZES
1-2	Small	Catching trout and panfish; #26-#18
3-6	Small, medium	Catching trout, bass, and panfish; #26-#1/0
7-8	Medium, large	Catching trout, steelhead, bonefish, redfish, Atlantic salmon, and bass; #20-#1/0
9-11	Large	Catching steelhead, Atlantic salmon, Pacific salmon, bluefish, small tarpon, dorado, and stripers; #6-#2/0
12-15	Large	Catching tarpon, billfish, and tuna; #2/0-#8/0

Lines

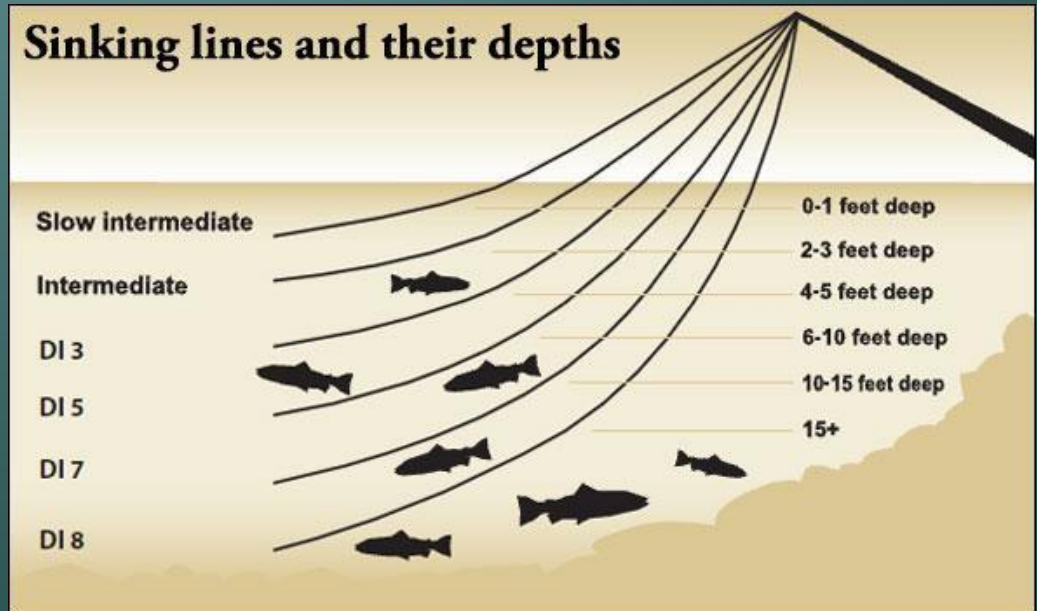
- Fly lines come in different colors
- **Floating lines** are the most common and easiest to cast
- **Sinking lines** usually come in drab, darker colors so that the fish cannot spot them
- In low light conditions, a darker line can be hard to see on the water
- A visible fly line can be the best means of keeping track of the location of small flies on the water



Lines

Sinking Lines

- A sinking line is then useful to get the fly down to the fish
- Intermediate lines, for example, sink very slowly and can be fished just below the surface.
- Heavily weighted lines sink quite rapidly and are designed to get down deep very quickly



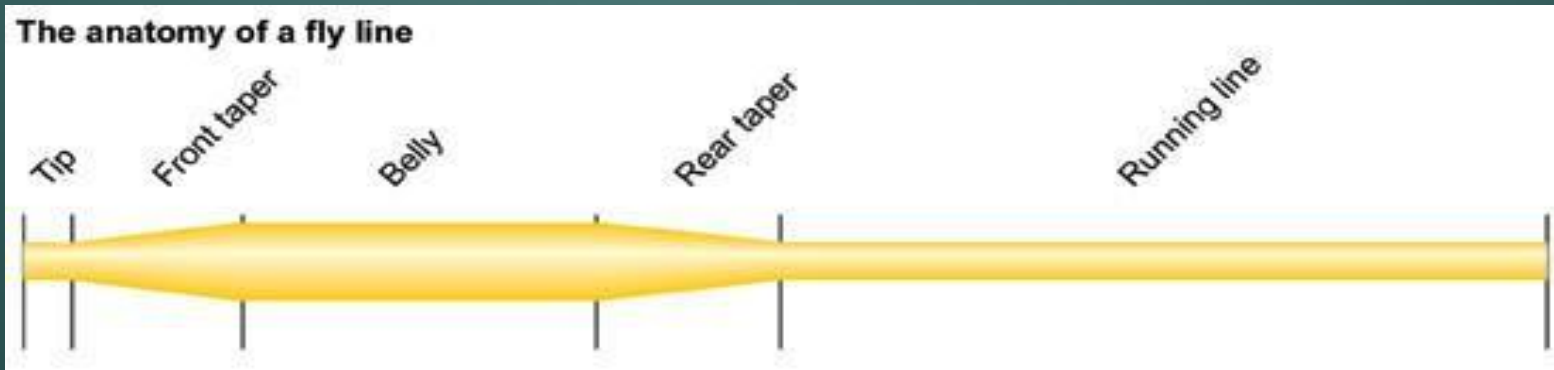
Lines

- A properly maintained fly line should last several years.
- Avoid situations that might cause nicks or small cuts in the fly line
- Do not to step on the line
- Heat and sunlight are the greatest threats to a fly line
- Use fly line cleaner



Fly Line Tapers

A **weight-forward taper** line bulges to its widest diameter about 20 feet from the end of the line. This puts the weight up front and makes the rod flex efficiently without casting an especially long line. The line behind the bulge is narrow in diameter. The heavy forward line is designed to pull or “shoot” the lighter line following it.



A **double taper** line has its widest diameter at the midpoint. Because the fly line is 90 feet long and the angler seldom uses more than half of that to cast, when one end of the line becomes nicked or frayed, it can be reversed to make use of the other end.

Decoding a Fly Line

- You might see the following on the outside of the box: **WF5F**
- The first two letters of the code tell you the taper of the line:
WF = Weight-forward
DT = Double Taper
- The number that follows the taper designation is the weight of the line
- The letters that follow the number indicating the weight of the line tell you whether the line floats or sinks:
F = Floating
S = Sinking
F/S = Sink tip
I = Intermediate
HD = High density (fast sinking)



Fly Reels



A fly reel stores line and puts tension on the line when a fish makes a long run and is pulling line off the reel.

A fly reel is an essential piece of equipment in fly-fishing, but it is not as specialized as the rod or the line.



Fly Reels

- Select a reel for the kind of fishing you plan to do
- It should have the capacity to hold the selected line and some backing (the line that goes on the reel before the fly line)
- If you plan to fish in salt water, make sure that the reel you choose is designed for this kind of use

Fly Reel				
Model	Diameter (in.)	Weight (oz.)	Capacity	Fly Line Weight
1	2.90"	5.6	50 yds./20 lb./WF4	3-4
2	3.25"	6.3	80 yds./20 lb./WF6	5-6
3	3.7"	6.9	150 yds./20 lb./WF8	7-8

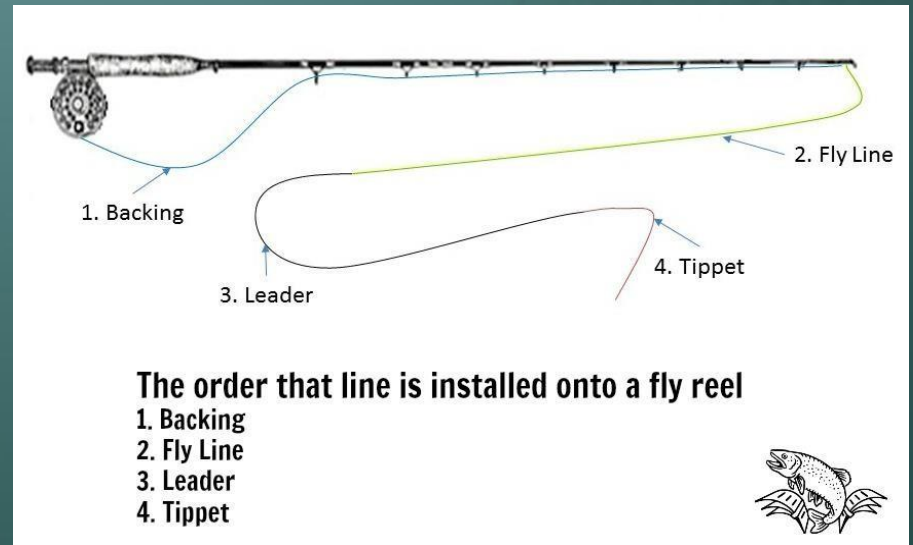
Yards of 20 pound backing

Suitable for either weight



Backing

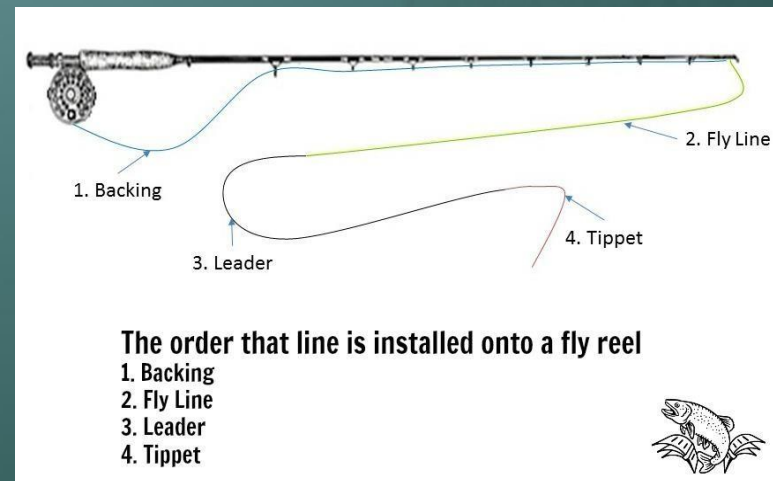
- Backing is the line that goes on the reel before the fly line
- It is generally made of polyester fiber of a fine diameter
- In the case of larger reels for bigger fish, there may be as much as 300 yards of backing!



- There are two reasons for using backing:
 1. Some big fish will run much farther than the length of the fly line
 2. With backing on a reel, the fly line comes off in wider coils that are easier to manage

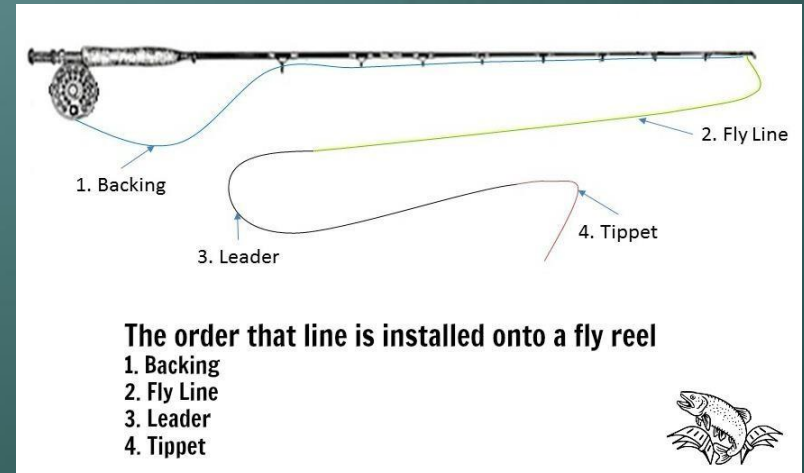
Leaders

- A transparent plastic line tied between the end of the fly line and the tippet
- Leaders are supple, so they do not hinder natural action of a fly
- It is often tapered to a very fine point
- Smaller flies call for finer leaders
- Usually 6 to 12 feet in length...clearer water demands longer leaders
- A leader that is too short will cause the fly line to land too close to fish and possibly alarm them
- A leader that is too long may be difficult to control, especially under windy conditions on brushy streams
- With a proper cast a leader would efficiently transmit the flow of energy all the way down to the tippet, which would straighten out and allow the fly to fall gently on the water



Tippets

- A fine monofilament line that is attached to the end of the leader, to which you tie the fly
- The tippet is usually the smallest gauge line on your rig and is virtually invisible to the fish
- The tippet is also very flexible and allows your fly to float or swim more naturally.
- Usually 2 to 4 feet in length and matches, or is smaller than, the diameter of the leader's tip
- Extends the life of the leader which can be expensive and if you change flies often, little by little the taper of the leader is cut away

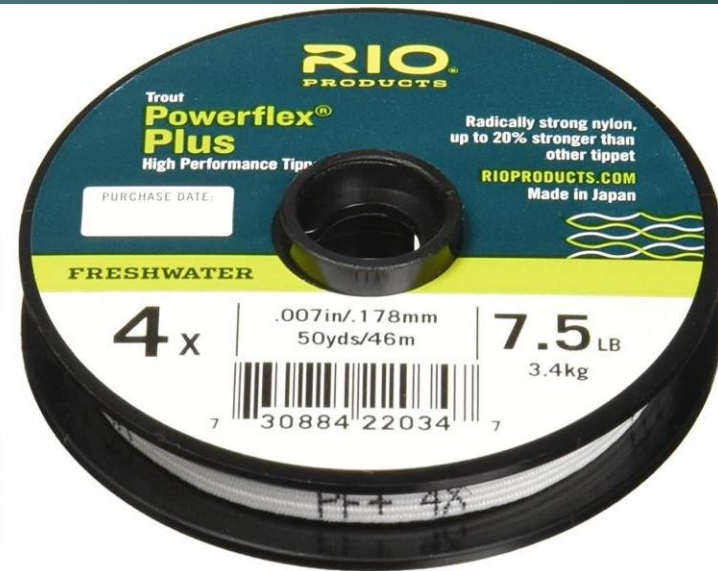


Tippets

Tippets are measured by diameter and a heavy tippet is a 0X while a very fine tippet is 8X.

LEADER & TIPPET SIZE CHART

SIZE IN X	0X	1X	2X	3X	4X	5X	6X	7X	8X
DIAMETER	.011"	.010"	.009"	.008"	.007"	.006"	.005"	.004"	.003"
APPROXIMATE BREAKING STRENGTH	15.5 LBS	13.5 LBS	11.5 LBS	8.25 LBS	6 LBS	4.75 LBS	3.5 LBS	2.5 LBS	1.75 LBS
FISH TYPE	SALMON, STEELHEAD	BONEFISH, REDFISH, PERMIT	LARGE & SMALL- MOUTH BASS	BASS & LARGE TROUT	TROUT	TROUT & PANFISH	TROUT & PANFISH	TROUT & PANFISH	TROUT & PANFISH





Tippets

- Flies come in all different shapes and sizes that range from very small #28 to large #2
- Match the size of fly to the tippet size
- A tippet that is too fine for the fly that is being fished will collapse at the end of the cast instead of unfurl
- A tippet that is not fine enough will cause the fly to behave unnaturally

Tippet Size	Diameter	Fly Size	Pound Test
0X	.011"	#2-#4	14
1X	.010"	#4-#8	12
2X	.009"	#6-#10	10
3X	.008"	#8-#12	8
4X	.007"	#10-#14	6
5X	.006"	#12-#16	4
6X	.005"	#14-#22	3
7X	.004"	#18-#24	2
8X	.003"	#22-#28	1



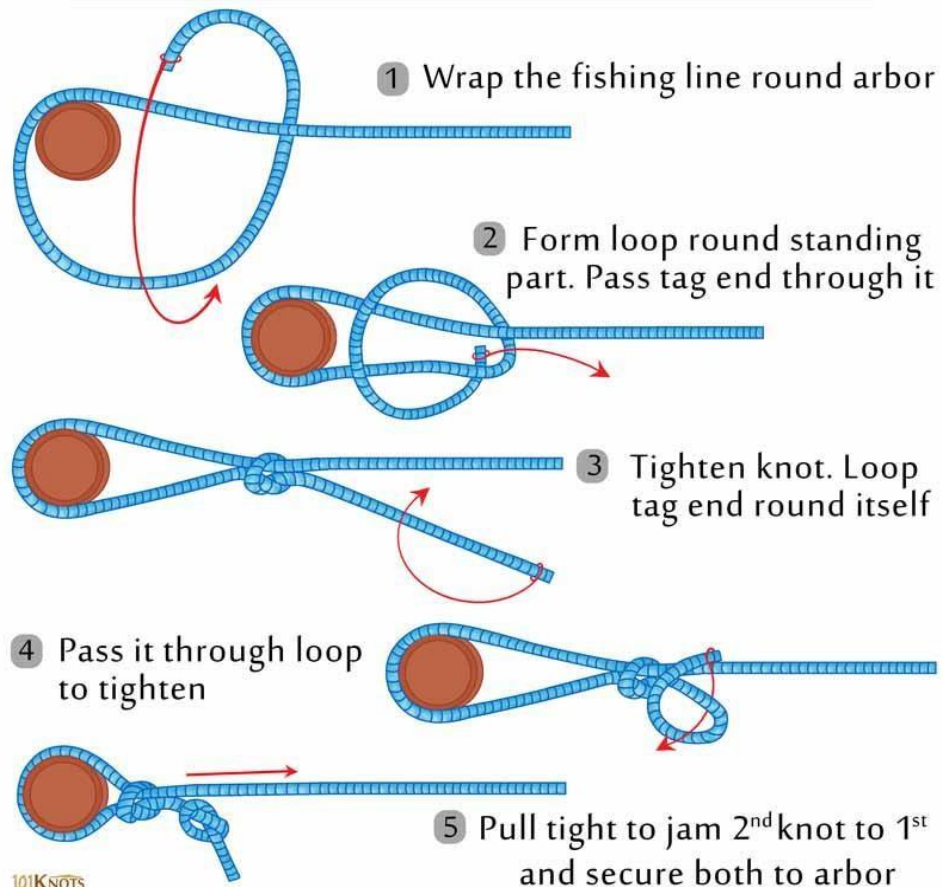
Requirement 3



3. Demonstrate how to tie proper knots to prepare a fly rod for fishing:
 - a. Tie backing to the arbor of a fly reel spool using an arbor knot.
 - b. Tie backing to the fly line using a nail (tube) knot.
 - c. Attach a leader to the fly line using a nail (tube) knot or a loop-to-loop connection.
 - d. Add a tippet to a leader using a surgeon's knot or a loop-to-loop connection,
 - e. Tie a fly onto the terminal end of the leader using an improved clinch knot.

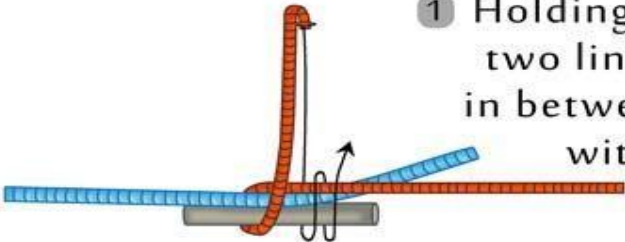
Will be covered at Sportsman's
Finest workshop 10/7 or 10/14

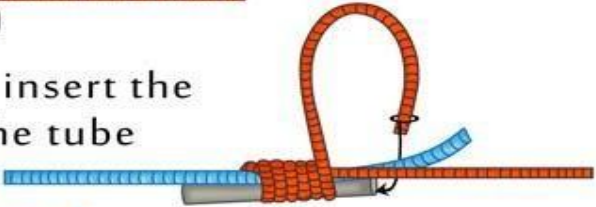
Arbor Knot Instructions

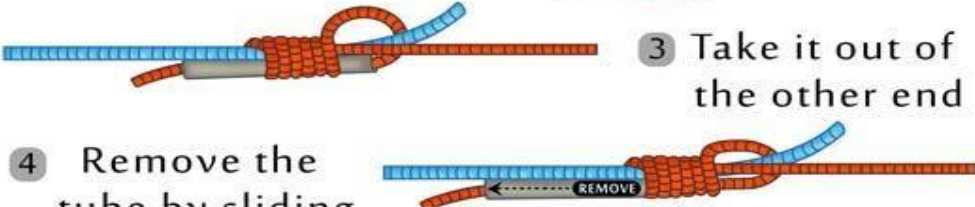


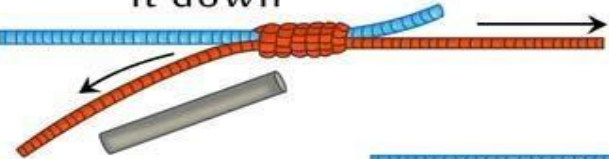
The **Arbor Knot** is used to attach the fishing line to the “Arbor” or “Spool Center”.

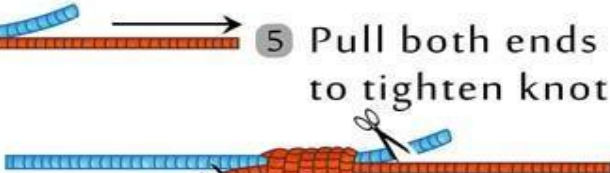
Nail Knot Instructions

- 

1 Holding the ends of the two lines with the tube in between, make 5 turns with the leader
- 

2 At the 6th turn, insert the leader into the tube
- 

3 Take it out of the other end
- 

4 Remove the tube by sliding it down
- 

5 Pull both ends to tighten knot
- 

6 Cut off excess if any

101KNOTS

The **nail knot** is used to connect the fly line to the leader.



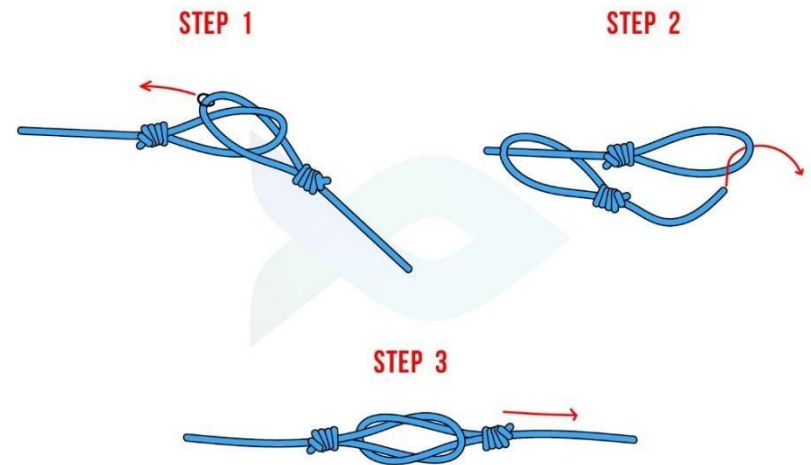
The Loop-to-Loop Knot is not really a knot. It is a method of joining or interconnecting two loops and is often referred to as interlocking loops

It is used to attach the leader to the fly line or the tippet to the leader

Benefit: faster, easier than using a nail knot

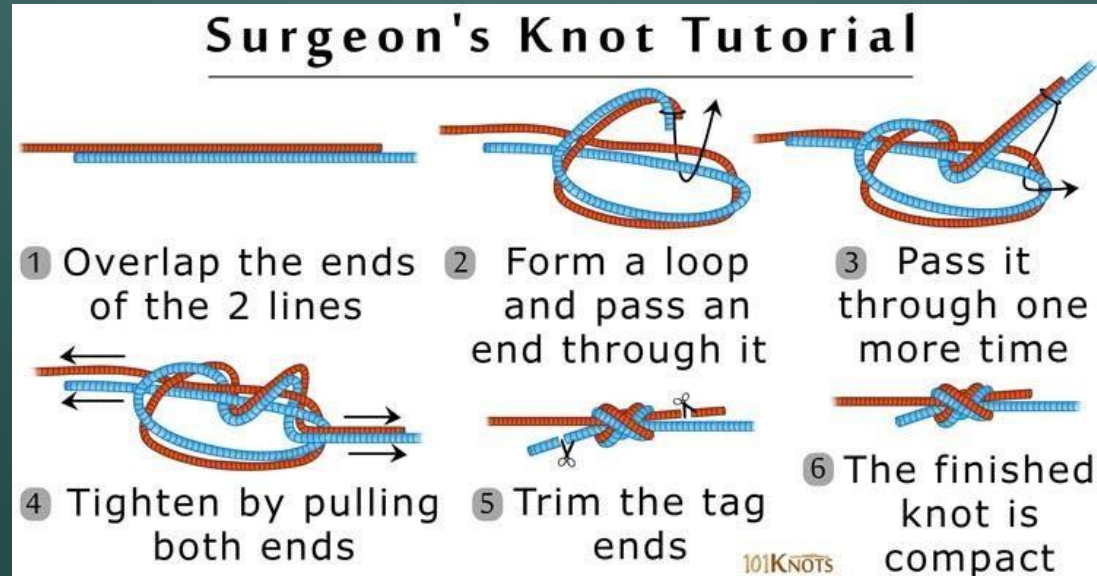
NOTE: the “bulkiess” of this knot can cause issues with beginner casters

LOOP-TO-LOOP KNOT

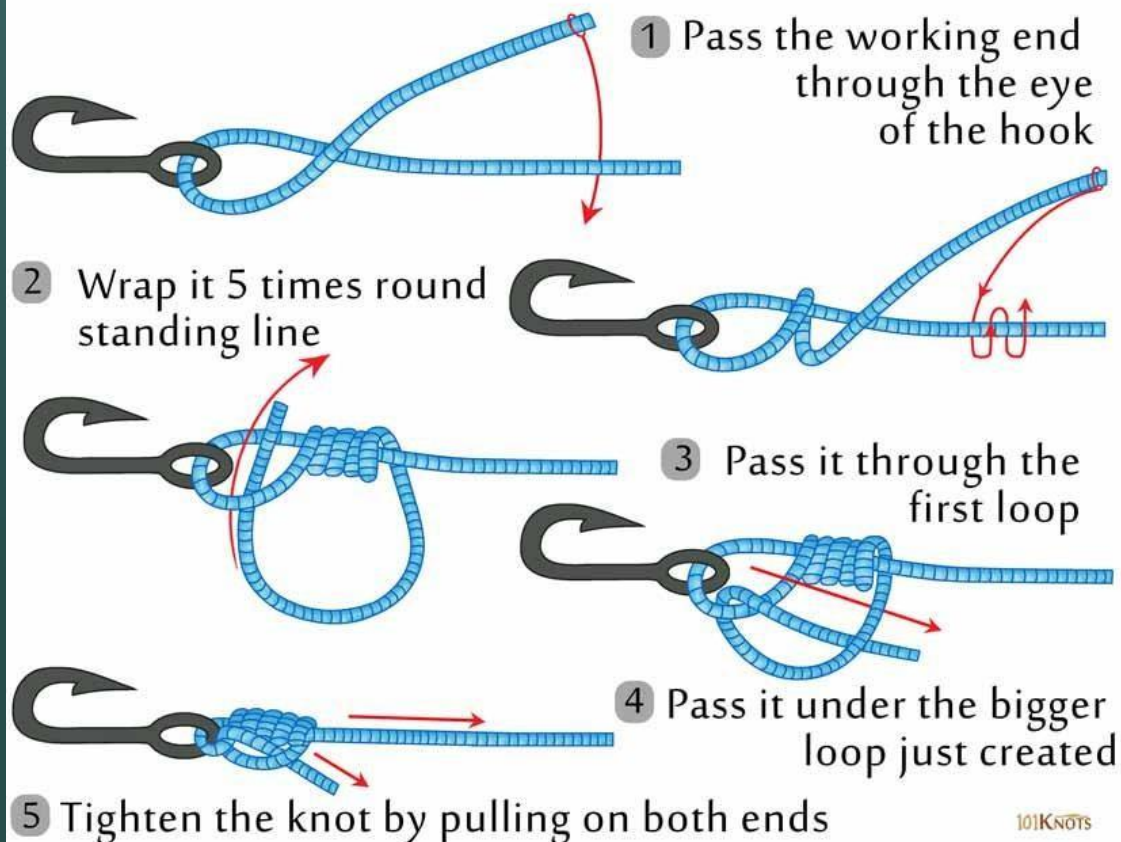


The Surgeons knot is use to join 2 lines of equal or unequal diameters as well as lines of different materials

Most commonly used to tie the tippet to the end of the leader



Improved Clinch Knot Instructions

- 
- 1 Pass the working end through the eye of the hook
 - 2 Wrap it 5 times round standing line
 - 3 Pass it through the first loop
 - 4 Pass it under the bigger loop just created
 - 5 Tighten the knot by pulling on both ends

101KNOTS

The improved clinch knot is used for securing a fly to the tippet or leader



Requirement 4



4. Explain how and when each of the following types of flies is used: dry flies, wet flies, nymphs, streamers, bass bugs, poppers , and saltwater flies. Tell what each one imitates. Tie at least two types of the flies mentioned in this requirement.

HOMework

Fill in your workbook!!!!

Be prepared to review with me

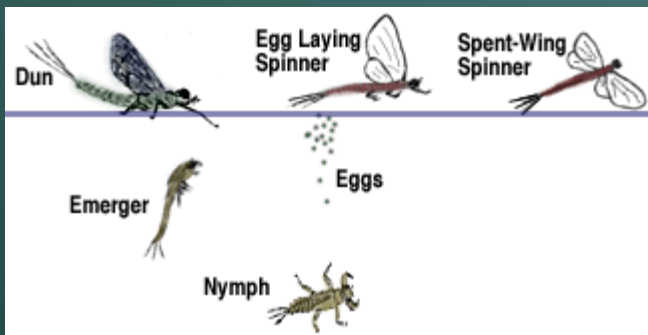
Fly Tying will be covered at
Sportsman's Finest workshop 10/7 or
10/14

Fly Types

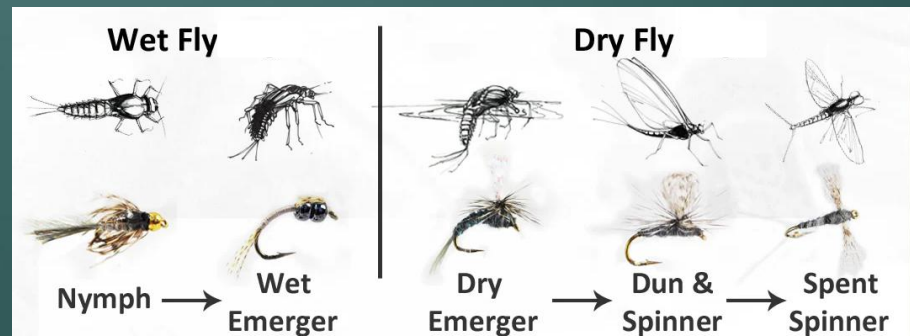
Did You Know??

An adult freshwater trout may eat more than 100 mayflies per day!!

Mayfly Stages



Mayfly Pattern Matches



Dry Flies

- Imitate the adult stage of an insect
- A dry fly is designed to land softly on the surface of the water without breaking it and becoming wet
- They are often oiled or treated with a water repellent



Wet Flies

A **wet fly** is designed to be fished below the water's surface mimicking a variety of insects and emerging insects



Nymphs

A nymph fly is a type of fly that imitates the naturally occurring insect larva and nymphal stages of aquatic insects commonly found in streams, rivers, ponds, and lakes



Streamers

- Streamers are bigger flies that you fish on an active retrieve, and these flies imitate baitfish, crayfish, leeches, and large aquatic insects like hellgrammites
- Streamers are the fly-fishing equivalent of conventional lures



Bass Bugs

- Floating bass flies whether constructed of wood, plastic, foam, or deer hair are all lumped into the same category of “bass bugs”
- A few are tied to imitate specific bass foods like mice, leeches or frogs, but others are ‘attractors’ that try to give the impression of something living and edible



Poppers

- The popper is an effective and proven lure designed to move water using a concave or hollowed nose.
- Poppers aim to simulate any sort of distressed creature that might be moving or struggling on the surface of the water (baitfish, frogs, and insects are the most typical imitations).



Saltwater Flies

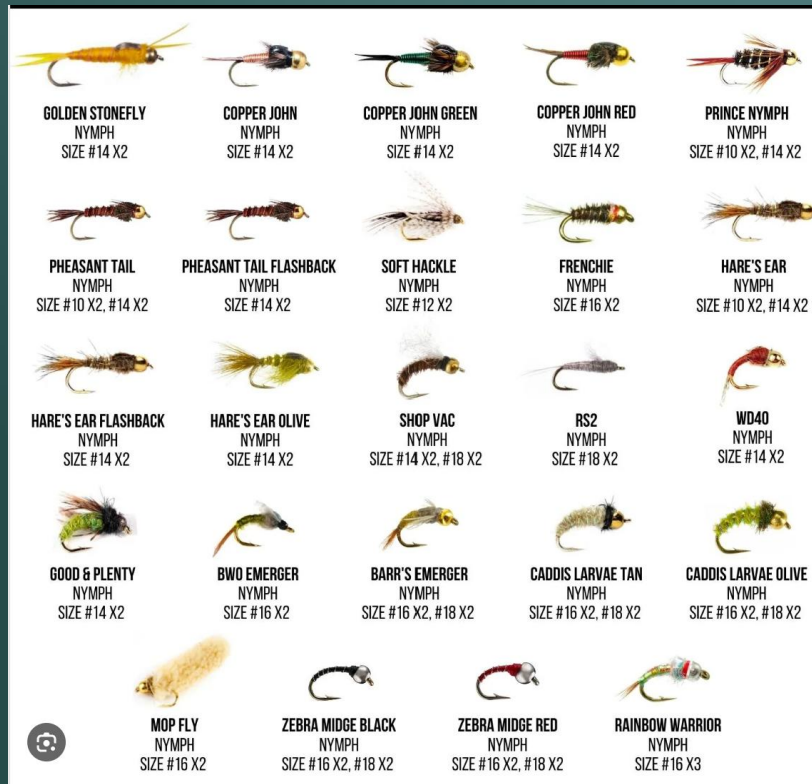
Salt water fly fishing typically employs the use of wet flies resembling baitfish, crabs, shrimp and other forage



Fly Size

- Numbered System: For sizes 1 to 32, the number indicates the size, with larger numbers representing smaller hooks.
- "Aught" System: After size 1, sizes transition to the "aught" system (e.g., 1/0, 2/0). In this system, the numbers increase, and so does the hook size.

Wet Flies



Dry Flies



Requirement 5



5. Demonstrate the ability to cast a fly 30 feet consistently and accurately using both overhead and roll cast techniques.



Will be covered at 10/13 troop meeting hosted by Elevate Fly Casting

False Casting

- Most advanced fly anglers agree that it should take a maximum of three false casts to reach your intended target or change direction in normal fishing situations
- Less is always better. Remember, you can't catch a fish if your fly is whirling about in the air above you, so put it in the water where it belongs!





Setting Expectations....

- Becoming proficient at fly casting takes a LOT of experience
- A reasonable cast is one where the fly line unfurls in a relatively straight line out in front of the angler
- THE TEST: be able to overhead and roll cast a “yarn” fly and land it in a hula hoop at 30 feet within several tries

Will be covered at 10/13 troop
meeting hosted by Elevate Fly Casting



Requirement 6

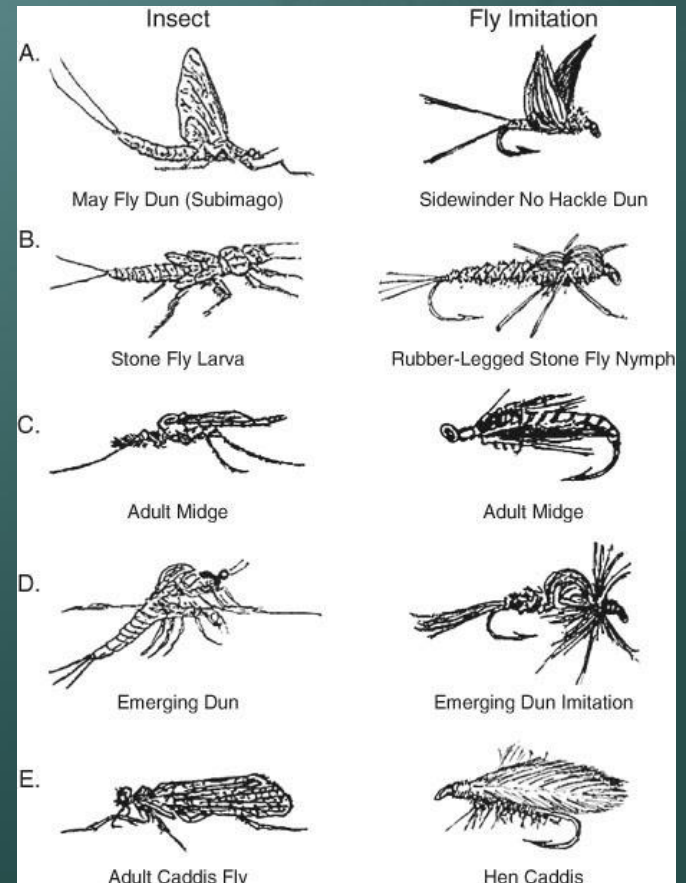


6. Go to a suitable fishing location and what fish may be eating both above and beneath the water's surface. Look for flying insects and some that may be on or beneath the water's surface. Explain the importance of matching the hatch.

Will be covered at campout supported
by Sportsman's Finest

Matching the Hatch

- Look under cobblestone-sized rocks for insects, larvae, nymphs
- A Seine net can also be used to see what is moving in the water
- Try to match your fly based on:
Size
Color
Profile





Requirement 7



7. Do the following:
 - a. Explain the importance of practicing Leave No Trace techniques. Discuss the positive effects of Leave No Trace on fishing resources.
 - b. Discuss the meaning and importance of catch and release. Describe how to properly release a fish safely to the water.

HOMework

Fill in your workbook!!!!

Be prepared to review with me



Leave No Trace

1. Plan Ahead and Prepare.

- Avoid fines or arrest by complying with area game and fish laws, such as size and catch limits, tackle and bait regulations, and seasonal restrictions.
- Be sure to obtain a fishing license if necessary and any other needed permits or permission before heading out on your fishing adventure.





Leave No Trace

2. Travel and Camp on Durable Surfaces.

- Avoid trample vegetation or communities of organisms beyond recovery to avoid soil erosions
- If fishing from shore in high-use areas, concentrate activity where vegetation is already absent.
- Minimize resource damage by using existing trails and selecting designated or existing fishing areas.
- If camping overnight, always camp at least 200 feet from shorelines. It is especially important to avoid impacting stream banks and lakesides.



Leave No Trace

3. Dispose of Waste Properly.

- Pack it in; pack it out.
- Inspect your fishing spot, boat, or campsite for trash or spilled foods.
- Accept the challenge of packing out all trash, leftover food or bait, and used or broken fishing line.
- Use designated fish cleaning areas or check with the local game and fish officials if you will be fishing in a more remote area.
- You must properly dispose of any fish entrails or bodily waste in solid waste facilities or by burying them in a cathole at least 6 inches deep and 200 feet from water.
- If cooking in the backcountry, strain food particles from the dishwater and disperse the wastewater at least 200 feet from springs, streams, and lakes. Pack out the strained food particles. Use biodegradable soap 200 feet or more from any water source.



Leave No Trace

4. Leave What You Find.

- Leave rocks, plants, animals, archaeological artifacts, and other objects as you find them.
- Examine but do not touch cultural or historical structures and artifacts that you may stumble across. It may be illegal to remove artifacts.
- Good fishing spots are found, not made. Avoid altering a site, digging trenches, or building structures.
- Never hammer nails into trees, hack at trees with hatchets or saws, or damage bark and roots by tying horses to trees for extended periods.
- Replace surface rocks or twigs that have been cleared from the fishing spot or campsite.
- On high-impact sites, clean the area and dismantle inappropriate user-built facilities such as log seats or tables and multiple fire rings.





Leave No Trace

5. Minimize Campfire Impacts.

- If you plan to cook what you catch while on a fishing trip, consider the potential for resource damage. Some people would not think of cooking or camping in the outdoors without a campfire. Yet the naturalness of many areas has been degraded by overuse of fires and increasing demand for firewood.
- A low-impact alternative is to use a lightweight camp stove. Stoves are fast, eliminate the need for firewood, and make cleanup after meals easier.



Leave No Trace

6. Respect Wildlife.

- Help keep wildlife wild.
- While fishing, chances are you will encounter other wildlife as well, on the shore or in the water.
- Avoid disturbing animals by observing them from afar and giving them a wide berth.
- Never feed wildlife (except the fish you're trying to catch, of course!).
- Store food and garbage securely to avoid attracting wildlife.
- Be respectful of any catch-and-release areas, and return unharmed to the water any fish that you do not plan to eat or that exceed the designated limit.



Leave No Trace

7. **Be Considerate of Other Visitors.** Thoughtful anglers respect other visitors and protect the quality of their experience. The following are a few tenets of outdoor ethics:
- Travel in small groups. If camping, do so in groups no larger than that prescribed by the land managers.
 - Let nature's sounds prevail. Keep the noise down and leave radios, music players, and pets at home. Fish can be spooked by such interruptions. In bear country, however, being a bit talkative on the trail might help prevent a surprise encounter with a bear.
 - Select fishing spots and campsites away from other groups to help preserve their solitude and their chances of catching fish.
 - Always travel quietly to avoid disturbing other visitors. If fishing from a watercraft, take care not to disturb other anglers' efforts on the water.
 - Respect private property and leave gates (open or closed) as found.



Catch and Release

- Catch and release helps prevent overfishing.
 - Use artificial lures with barbless single hooks. Fish tend to swallow live bait more deeply, and barbless hooks are easier to remove and do less damage than barbed hooks.
 - Play the fish, then release it as gently and quickly as possible. Do not play the fish to exhaustion, or it may not recover.
 - If the fish has swallowed the hook, cut off the line as close to the hook as possible. Never try to remove a deeply embedded hook because you may damage the fish beyond recovery or make it a more vulnerable prey.
 - Avoid stainless steel hooks. If swallowed, they will not dissolve over time.
 - Whenever possible, avoid removing the fish from the water. Prepare your camera for pictures first; hold up the fish for a quick photo, and release it immediately.
 - If you must use a landing net, make sure it is made of soft nylon and not hard mesh, which can damage the slime that covers the fish and helps protect it from disease.
 - If you must handle the fish, wet your hands first. Support the fish horizontally—never vertically—in the water across the back and head, avoiding the eyes and gills. Before releasing, revive the fish gently by moving it back and forth in the water until it swims away.





Requirement 8



8. Obtain and review a copy of the regulations affecting game fishing where you live or where you plan to fish. Explain why they were adopted and what is accomplished by following them.

HOMework

Fill in your workbook!!!!

Be prepared to review with me



Why Do We Have Fishing Regulations?

- There are several types of fishing regulations. Limits on the number of fish that can be caught are meant to keep anglers from taking too many fish at one time. Size limits are meant to protect fish of spawning size before they are caught. Fishing seasons protect fish during spawning and limit the catch on heavily fished waters. Fishing laws are meant to protect fish and make sure there is fishing to be shared by everyone.
- If you fish, it's important that you know the rules and regulations. Ignorance of the law is no excuse. Fishing is a wonderful privilege; obeying fishing regulations is the responsibility that goes with it.



Requirement 7

[Texas Parks and Wildlife: General Fishing Regulations](#)

There are good reasons for fishing laws. All are intended to conserve and improve fish populations. Fisheries biologists study bodies of water to check on fish numbers and the health of fish populations. If there is a problem with a fish stock, regulations are created to help keep the fish population healthy. Marine Patrol officers check to make sure that fishing regulations are being obeyed.



TEXAS
PARKS &
WILDLIFE



Requirement 9



9. Discuss what good sportsmanlike behavior is and how it relates to anglers. Tell how the Outdoor Code of the Boy Scouts of America relates to a fishing enthusiast, including the aspects of littering, trespassing, courteous behavior, and obeying fishing regulations.

HOMework

Fill in your workbook!!!!
Be prepared to review with me



Outdoor Code

BSA's Outdoor Code helps stimulate awareness by Scouts of the need for every user of the outdoors to be a responsible patron of outdoor resources.

- **As an American, I will do my best to—Be Clean in my Outdoor Manners.**
 - I will treat the outdoors as a heritage. I will take care of it for myself and others. I will keep my trash and garbage out of lakes, streams, fields, woods, and roadways.
- **Be Careful With Fire.**
 - I will prevent wildfire. I will build my fires only when and where they are permitted and appropriate. When I have finished using a fire, I will make sure it is cold out. I will leave a clean fire ring, or remove all evidence of my fire.
- **Be Considerate in the Outdoors.**
 - I will treat public and private property with respect. I will follow the principles of Leave No Trace for all outdoor activities.
- **Be Conservation-Minded.**
 - I will learn how to practice good conservation of soil, waters, forests, minerals, grasslands, wildlife, and energy. I will urge others to do the same.



Requirement 10



10. Catch at least one fish on a fly and identify it.

Will be covered at campout supported
by Sportsman's Finest



Requirement 11



11. If regulations and health concerns permit, clean and cook a fish you have caught. Otherwise, acquire a fish and cook it. (You do not need to eat your fish.)

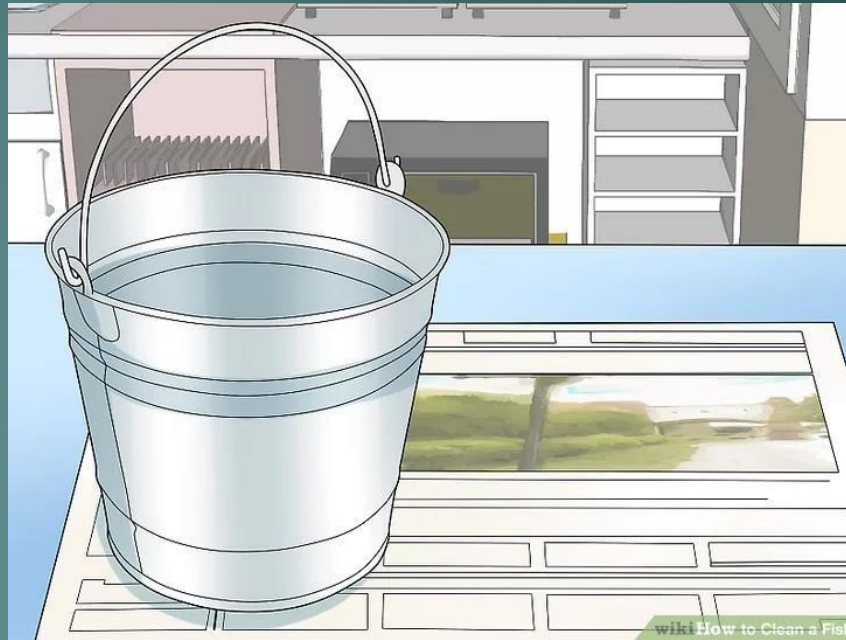
HOMework

Be prepared to review with me

IMPORTANT: take pictures or video
and upload to Scoutbook

Cleaning a Fish

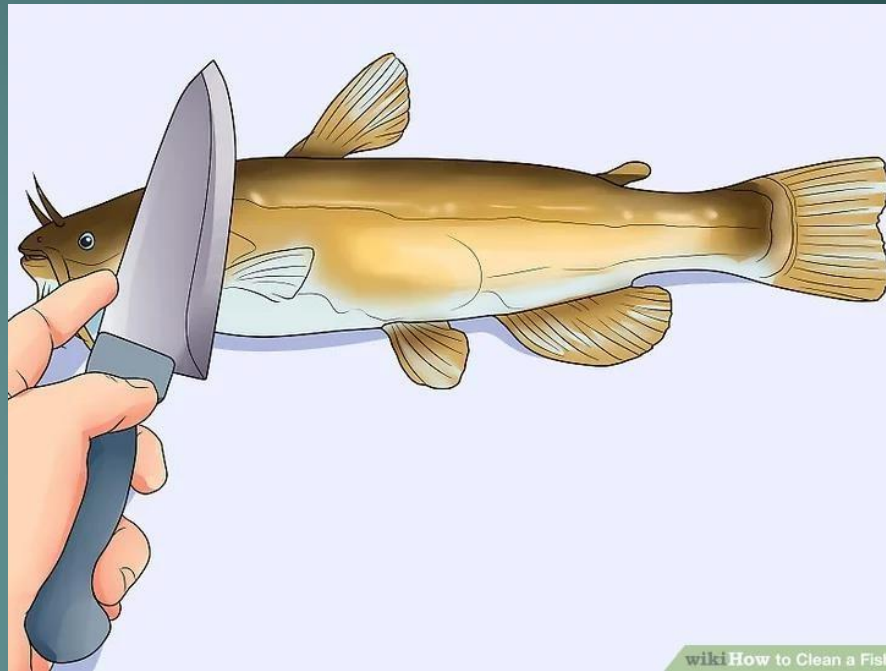




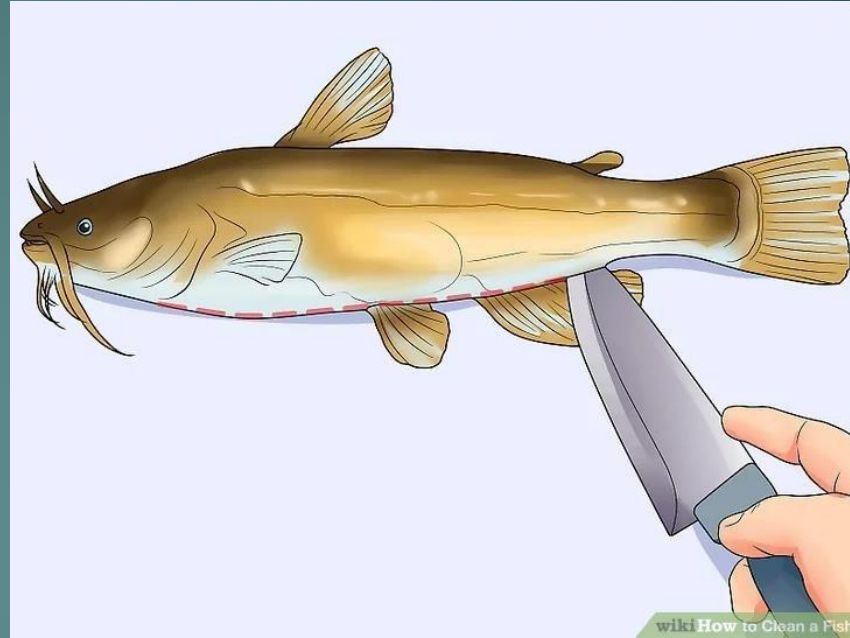
Get a plastic bag or bucket and lay out newspaper to keep clean. You'll use the bag or bucket for guts and bones. Get your disposal system ready before you start cutting so you can toss the guts and excess fish without getting up. Newsprint laid out on the cutting surface is helpful for soaking up the inevitable liquids that will spill out of the fish.



- Use a dull knife or spoon to remove the scales. While a knife or spoon will work, a more effective option is to screw a bottle cap onto a wooden handle and use the cap to remove the scales. Work against the normal direction of the scales, raking up from tail to head. Think of a short, shallow, scoop motion, getting under the scales and pushing up and into them quickly to rake them out of the fish. Get both sides, the top, and bottom of the fish.
 - It can help to scale under running water, or simply underwater in the sink, to prevent a mess.
 - Don't worry if you miss a few scales—they aren't tasty, but they won't hurt anyone.



- Skin thick-skinned fish instead of removing the scales. If you're cleaning a bullhead (also known as a Sculpin), catfish, or another thick-skinned bottom feeder, consider skinning it. To do so, cut a 1 inch (2.5 cm) notch right where the top of the fish's head meets its body. Then, gripping the fish from the head, peel the skin back to the tail. Rinse the flesh thoroughly when you're done.
- These fish, in particular, have a thick, unappealing skin that most people remove before cooking.



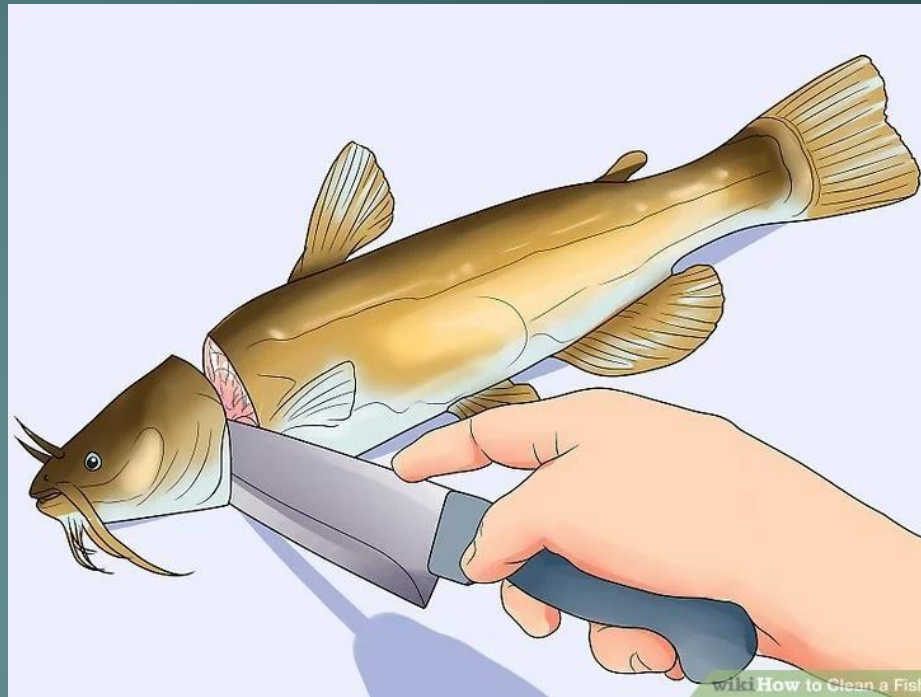
- Cut a shallow incision from the anus up towards the head. The small hole on the belly of the fish, back near the tail, is the anus. Using a sharp knife, make a shallow cut from here along the belly of the fish, stopping at the base of the gills.
- Don't jam the knife in their, or you'll cut the intestines open. You want a shallow cut so that you can pull them out intact, preventing messy (and unappetizing) spillage.



- Use your fingers or a dull spoon to scoop out the fish's innards. Get in there and get everything out. These gummy, long guts should come out without much of a fight. Make sure to check inside to get out anything you missed, like the large, dark kidney in the back or some strands of innards along the walls.



- Scrape out any dark, inner membrane if found. Not all fish have this thin layer in their inner cavity, but you want to remove it if they do. This is strongly flavored and has an oily, extra-fishy aroma that you don't want in your final dish.



- Cut off the head off directly behind the gills, if desired. You do not have to cut the head off, and depending on your cooking method you might not want to, as the head adds flavor and depth. The "cheek meat" of the fish, as well, is considered the best part in some cultures.



- Remove a dorsal fin by pulling firmly from tail to head. This, like the head, does not have to come off if you don't want to remove it, but it will help remove many nasty little bones. Simply grip the fin tightly near the tail, and pull quickly in the direction of the head to rip it out cleanly or use scissors to cut it off.



- Rinse the fish off, inside and out, in cool water. Make sure you wash the outside, getting rid of any sticky scales, as well as the inside, getting rid of bits and blood. Your fish is now ready to cook! Use as little water as possible to preserve the flavor of the fish. Some people prefer to gently wipe off the fish with a paper towel instead of rinsing it.

Filleting a Fish





- Cut just behind the top of the head until you hit the backbone. To do this, lay the fish on one side. Take care not to cut through the spine, just to it.



- Continue this cut in an arc around the fish's head. Again, you don't want to cut deeper than the backbone. You will not be cutting the head off, just cutting about halfway into the fish.



- Turn the knife and cut horizontally towards the tail, through the center of the fish. You'll basically be cutting off the entire side of the fish, removing the whole flank, skin and all. The knife will travel perpendicularly to the backbone, which you can use as a guide to ensure a nice, flat cut.



- Flip the fish and repeat on the opposite side. Simply repeat the same process on the other half of the fish, removing the other fillet.



- Lift and remove the rib cage from the inside of the fillet. Using a smaller knife to remove the rib cage. This will be the small, almost translucent set of bones on the lower third of fish fillet. It should come off in one piece.



wikiHow to Clean a Fish

- Cut directly through the fish perpendicularly to form steaks as an alternative. If you don't want fillets, you can cut steaks. Use a sharp knife and cut perpendicular to the backbone, going all the way through the spine to get 1 inch (2.5 cm) steaks. This is common with bigger fish, like trout and salmon, and retains the spine running through the middle of the fish.



Scale the fish or remove the skin entirely, if desired. If you want to cook the fish with the skin still on, use the dull side of a knife to rake the scales off. Use a short, lifting motion from the tail to the head to quickly scrape all of the scales off. If you don't want the skin, simply slide the knife between the fish and the skin and simply cut the skin away.

Cooking a Fish





Cooking a Fish

Grilling.

- With your coals or gas grill, you'll want to try to make a hot pile and a cold pile, so that you can cook the fish over low heat for the majority of the time, and then give it some color by finishing the cooking over high heat at the very end. Be sure to use the thermometer to get the temperature correct, and remember that fish cooks extremely quickly! When grilling fish, be sure to oil the grill *and* the fish generously before cooking. A well-oiled fish and grill will keep the fish from sticking to the grate when you choose to flip it. If you want to, you can also use an aluminum foil pouch to keep the fish in as it cooks; this saves cleanup time and cooks the fish very nicely.
- Remember to choose the right kind of fish for grilling. Meaty, hearty fish like salmon, halibut, and swordfish work best on the grill, especially if you can get them cut into steaks. Delicate white fish like cod, flounder, or sole tend to fall apart easier on the grill, making for a less than ideal marriage between grill and fish.



Cooking a Fish

Baking

- Probably the healthiest cooking option available, baking relies on dry heat and less oil to thoroughly bring the fish to perfection. Line a baking tray with wax paper or aluminum foil, thoroughly oil the fish (or paint with a dab of melted butter), and cook at a lower heat for a longer time. Here's some more specific pointers for you to remember as you bake fish: If you're baking with a fish fillet that has a thicker center and thin sides, curl the thin sides underneath the fish as it cooks. That way, the sides won't be overcooked by the time the rest of the center is done.
- Because fish are delicate and dry out easily, bake fish at low temperatures (250° F) for longer periods (20 minutes for fillets). For thicker (center cut) fish, many chefs recommend cooking at higher temperatures (400°F) for less time (15 minutes), although cooking times depend on the thickness of the cut.



Cooking a Fish

Baking (continued)

- The 10-minute rule for baking fish. Measure the cut of fish at its thickest point. For every inch of thickness, cook for 10 minutes at 400° - 450°F. Pro-rate the ratio for uneven thicknesses. For example, a 1.5 inch center cut piece of salmon should be cooked for 15 minutes at around 425° F.
- For added flavor and moisture, think about adding herbs and aromatics to your baked fish. Lemon and capers or dill works great with salmon as well as with other types of fish. Bread crumbs work well with white fish, particularly tilapia.



Cooking a Fish

Pan-frying.

- Start off with enough oil and a hot pan. Oil your steel pan generously but not excessively and get it *hot*. Starting off hot helps cook the skin on the fish quickly, allowing it to adhere to the meat of the fish for nice presentation and an even nicer feel in the mouth.
- Always pan-fry with skin side down to begin with. That way, your skin browns evenly and adheres to the meat of the fish.
- After a minute or two on medium or high heat, turn the heat down to medium-low or low. Cook the fish slowly from here on out. Cook too hot and the moisture will evaporate from the fish before it's fully cooked, leading to a drier fish.
- Flip once! Start off cooking the fish skin side down at high temperature. Turn the temp down significantly, and continue cooking for a little bit. Flip the fish once, and only once. Continue cooking the fish until you can easily cut and flake the meat with a fork.



Cooking a Fish

Deep-fried fish.

- Fish are usually battered and then dunked into a hot pan filled with oil. Here are some basics for you to remember as you fry fish: Decide on dredge vs. batter. You can dredge your fish in flour and egg, making for a lighter fish, or whip up a batter out of beer or buttermilk for a thicker, crunchier shell. Cooking times do not vary significantly for either method.
- You'll most likely want your oil to be at around 375°F when you start frying, and cook the fillets for about 3 to 4 minutes, or until golden brown.

Backup



Requirements



1. Do the following:
 - a. Explain to your counselor the most likely hazards you may encounter while participating in fly-fishing activities and what you should do to anticipate, help prevent, mitigate, and respond to these hazards. Name and explain five safety practices you should always follow while fly-fishing.
 - b. Discuss the prevention of and treatment for health concerns that could occur while fly-fishing, including cuts and scratches, puncture wounds, insect bites, hypothermia, dehydration, heat exhaustion, heatstroke, and sunburn.
 - c. Explain how to remove a hook that has lodged in your arm.
2. Demonstrate how to match a fly rod, line and leader to achieve a balanced system. Discuss several types of fly lines, and explain how and when each would be used. Review with your counselor how to care for this equipment.

Requirements



3. Demonstrate how to tie proper knots to prepare a fly rod for fishing:
 - a. Tie backing to the arbor of a fly reel spool using an arbor knot.
 - b. Tie backing to the fly line using a nail (tube) knot.
 - c. Attach a leader to the fly line using nail (tube) knot or a loop-to-loop connection.
 - d. Add a tippet to a leader using a surgeon's knot or a loop-to-loop connection,
 - e. Tie a fly onto the terminal end of the leader using an improved clinch knot.
4. Explain how and when each of the following types of flies is used: dry flies, wet flies, nymphs, streamers, bass bugs, poppers , and saltwater flies. Tell what each one imitates. Tie at least two types of the flies mentioned in this requirement.
5. Demonstrate the ability to cast a fly 30 feet consistently and accurately using both overhead and roll cast techniques.

Requirements



6. Go to a suitable fishing location and what fish may be eating both above and beneath the water's surface. Look for flying insects and some that may be on or beneath the water's surface. Explain the importance of matching the hatch.
7. Do the following:
 - a. Explain the importance of practicing Leave No Trace techniques. Discuss the positive effects of Leave No Trace on fishing resources.
 - b. Discuss the meaning and importance of catch and release. Describe how to properly release a fish safely to the water.
8. Obtain and review a copy of the regulations affecting game fishing where you live or where you plan to fish. Explain why they were adopted and what is accomplished by following them.

Requirements



9. Discuss what good sportsmanlike behavior is and how it relates to anglers. Tell how the Outdoor Code of the Boy Scouts of America relates to a fishing enthusiast, including the aspects of littering, trespassing, courteous behavior, and obeying fishing regulations.
10. Catch at least one fish on a fly and identify it.
11. If regulations and health concerns permit, clean and cook a fish you have caught. Otherwise, acquire a fish and cook it. (You do not need to eat your fish.)

Original Slides





Leave No Trace

To ensure a healthy future for ourselves and our environment, we must do more than simply pick up litter. We must learn how to maintain the integrity and character of the outdoors.



- 1. Plan Ahead and Prepare.** Proper planning and preparation for a fishing trip helps ensure a safe and enjoyable experience while minimizing damage to natural and cultural resources. Anglers who plan ahead can avoid unexpected situations and minimize their impact by complying with area game and fish laws, such as size and catch limits, tackle and bait regulations, and seasonal restrictions. Failure to know and obey these laws can lead to an arrest and a fine. Be sure to obtain a fishing license if necessary and any other needed permits or permission before heading out on your fishing adventure.

A composite image at the top of the slide. On the left, a close-up of several orange fishing lures. In the center, a black metal fishing reel with multiple holes. On the right, a piece of rough, textured wood.

Leave No Trace

- 2. Travel and Camp on Durable Surfaces.** Whether you fish for a few hours or an entire day, or you plan to camp and fish, it is important to minimize your impact on the land. Damage to land occurs when visitors trample vegetation or communities of organisms beyond recovery. The resulting barren areas develop into undesirable trails, campsites, and fishing spots and cause soil to erode. If fishing from shore in high-use areas, concentrate activity where vegetation is already absent. Minimize resource damage by using existing trails and selecting designated or existing fishing areas. If camping overnight, always camp at least 200 feet from shorelines. It is especially important to avoid impacting stream banks and lakesides.





Leave No Trace

- 3. Dispose of Waste Properly.** Pack it in; pack it out. This simple yet effective saying motivates outdoor visitors to take their trash home with them. Inspect your fishing spot, boat, or campsite for trash or spilled foods. Accept the challenge of packing out all trash, leftover food or bait, and used or broken fishing line. Use designated fish cleaning areas or check with the local game and fish officials if you will be fishing in a more remote area. You must properly dispose of any fish entrails or bodily waste in solid waste facilities or by burying them in a cathole. A cathole should be dug 6 to 8 inches deep in humus soil and should be at least 200 feet from water, trails, and campsites. If cooking in the backcountry, strain food particles from the dishwater and disperse the wastewater at least 200 feet from springs, streams, and lakes. Pack out the strained food particles. Use biodegradable soap 200 feet or more from any water source.



Leave No Trace

4. **Leave What You Find.** Allow others a sense of discovery, and preserve the past. Leave rocks, plants, animals, archaeological artifacts, and other objects as you find them. Examine but do not touch cultural or historical structures and artifacts that you may stumble across. It may be illegal to remove artifacts. Good fishing spots are found, not made. Avoid altering a site, digging trenches, or building structures. Never hammer nails into trees, hack at trees with hatchets or saws, or damage bark and roots by tying horses to trees for extended periods. Replace surface rocks or twigs that have been cleared from the fishing spot or campsite. On high-impact sites, clean the area and dismantle inappropriate user-built facilities such as log seats or tables and multiple fire rings.





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Leave No Trace

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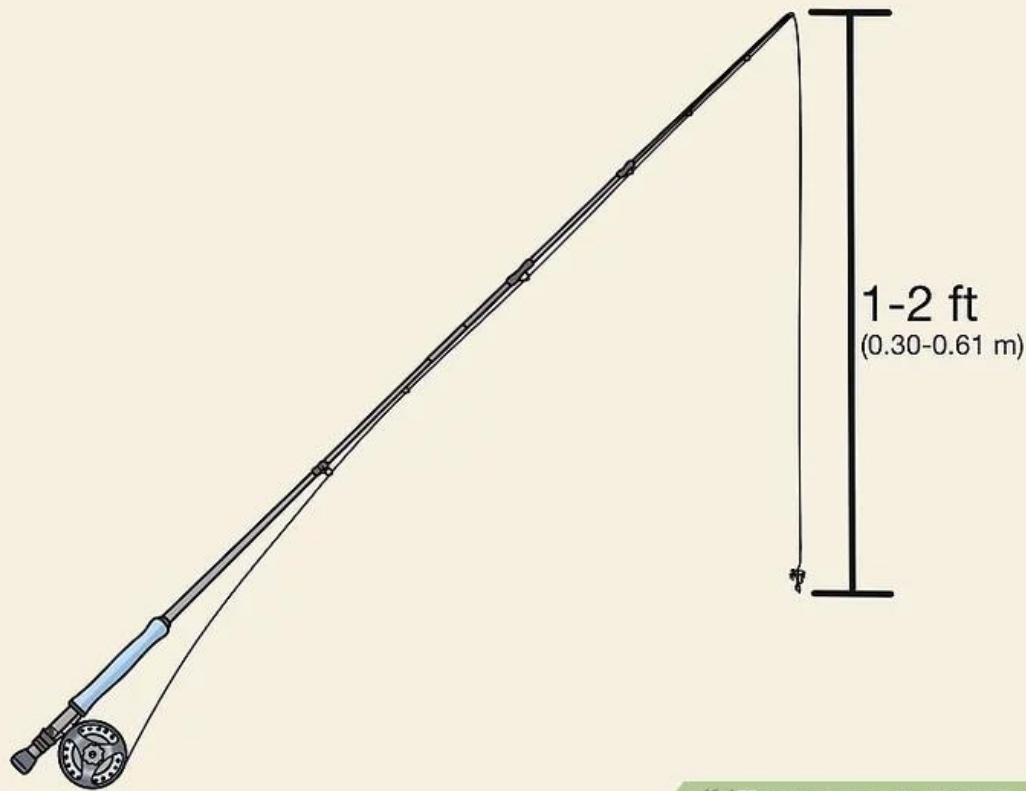


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 - Always travel quietly to avoid disturbing other visitors. If fishing from a watercraft, take care not to disturb other anglers' efforts on the water.
 - Respect private property and leave gates (open or closed) as found.



Overhead Cast



wikiHow to Cast a Fly Fishing Rod

- Set the fly line about 1–2 feet (0.30–0.61 m) longer than the fishing rod.
- The weight of the fly line is what allows you to cast, so you need to have enough of the heavier line pulled out before you try to cast.
- An easy way to ensure you have enough fly line is to let out enough to reach the reel at the bottom of the rod with about 1–2 feet (0.30–0.61 m) of extra length.

Overhead Cast



- Use an overhead cast to get used to casting a fly fishing rod.
- The overhead cast is the standard fly fishing cast. Mastering the overhead cast requires knowing how to properly “load” the rod, which refers to finding the tension in the line and pole to cast the fly lure.
- Before you move on to more advanced casts, learn to use the overhead cast.
- The overhead cast is harder to perform when there are lots of low hanging branches because the line can get tangled easily.

Overhead Cast



- Stand with your feet shoulder-width apart.
- For short to medium ranged casts, adopt a parallel stance so you're stable and in a better position to “feel” the weight of the fly line on the rod.
- Keep your feet evenly spaced apart and your weight centered rather than on the balls of your feet or your heels.
- For longer casts, you may feel more comfortable standing with 1 foot forward so you can reach further behind you for a stronger cast without losing your balance.

Overhead Cast



- Hold the rod with your thumb on top of the grip.
- Don't squeeze too tightly or you won't be able to perform the quick stop at the end of the stroke.
- Keep a loose, comfortable grip and hold the rod in line with your intended target area.
- Allow the rod to rest in your fingers and only squeeze the grip when you force it to stop at the end of each stroke.
- Keep the butt of the fly rod in line with your forearm.
- Make sure the reel of the rod is pointed down toward the ground.

Overhead Cast



- Lay the line straight on the ground in front of you.
- In order to generate enough momentum in your backswing, start by stretching out about 10 feet (3.0 m) of the line from the end of the rod.
- Aim the line completely straight and stand square to your target.
- Make sure that the leader and tippet don't get tangled up.

Overhead Cast



- Bring the rod up and backward in 1 motion.
- Keep the tip of the rod low until you're ready to cast and use a smooth and fluid motion to bring the rod up and behind you.
- This will cause the rod to bend and load up with tension. Think about snapping a long whip.
- The line should move up and overhead as it travels behind you in a large arc.
- The biggest mistake that people make when they're casting a fly fishing rod is trying to cast too fast.
- You have to pause slightly on the back cast or forward cast to allow the line to build momentum.

Overhead Cast



- Stop the rod abruptly once it passes a vertical position.
- When you straighten the rod out above your head and it passes behind you, stop its acceleration abruptly and deliberately so the line is launched behind you.
- Hold the rod still as the line travels backward.
- Think about stopping the rod at about the 1 or 2 o'clock position behind you.
- If the line falls short before it completely unrolls behind you, you may not have put enough energy or power in your cast.
- Straighten the line back out in front of you and try again!

Overhead Cast



- Allow the line to unroll in the air behind you.
- With the rod still extended above and slightly behind you, wait for the line to travel behind you and rise as it unrolls.
- The energy from the backward motion will cause it to move until it extends completely.
- Make sure you pause long enough to allow the line to fully unfurl.

Overhead Cast



- Move the rod forward to bring the line in front of you.
- As soon as the line is fully extended in the air behind you, use a smooth, accelerating stroke to bring the rod forward.
- The line will snap forward and form a loop in the air as it travels.
- Keep your wrist straight and your elbow close to your body to generate a fluid movement.

Overhead Cast



- Lower the tip of the rod as the line unrolls in front of you.
- Stop the rod once it's about parallel with the ground to allow the energy in the line to propel it forward.
- As the line unrolls in front of you, slowly lower the tip of the rod to roll the line out all the way to the fly at the end.
- The line should end right where you were aiming.
- Don't snap the rod down sharply or the tension in the line could cause the cast to go straight down before it has reached its target.

Performing a Roll Cast



- Use the roll cast when you're fishing in narrow waterways.
- The roll cast will cause the line to smoothly unroll over the surface of the water and is less likely to disturb fish, but it's also a little more difficult to perform.
- It's also important that the line is in water because the water anchors it and allows you to create a loop.
- A roll cast is great to use when you're fishing in narrow creeks or streams.
- The roll cast is also effective if you have a strong wind at your back that is interfering with your overhead cast.

Performing a Roll Cast



- Draw the rod up and back to drag the end of the line across the water. Start with about 25 feet (7.6 m) of line laid out in front of you on the water and the tip of your rod pointed at the surface. Use a slow and smooth motion to bring the rod back and drag the line over the surface of the water.
- **Tip:** Make sure you don't pull the line out of the water. The friction of the line and the water is what loads the rod and allows you to cast it forward.

Performing a Roll Cast



- Stop the stroke with the rod tip high when a loop has formed behind you.
- As soon as your rod reaches just past a vertical position, stop and hold it in position.
- The line should be slack and droop behind the tip of the rod, creating a loop.
- The larger the loop, the more power you can generate to cast the line forward.

Performing a Roll Cast



- Accelerate the rod forward quickly.
- Once you've formed the loop with the backward motion, quickly move the rod forward to start the forward cast.
- Keep your hand high and the rod pointed up.
- The line will start to roll over the surface of the water and move the direction of your cast.
- Move forward with a smooth and consistent movement rather than a short and jerky motion.

Performing a Roll Cast



- End the cast by stopping abruptly to allow the line to unroll.
- As you move your rod forward, the loop will rise up.
- Stop your cast abruptly once it's nearly parallel with the water.
- The loop will roll out on top of the water and move to where you're aiming your cast.
- Allow the end of the line to land gently on the surface of the water.