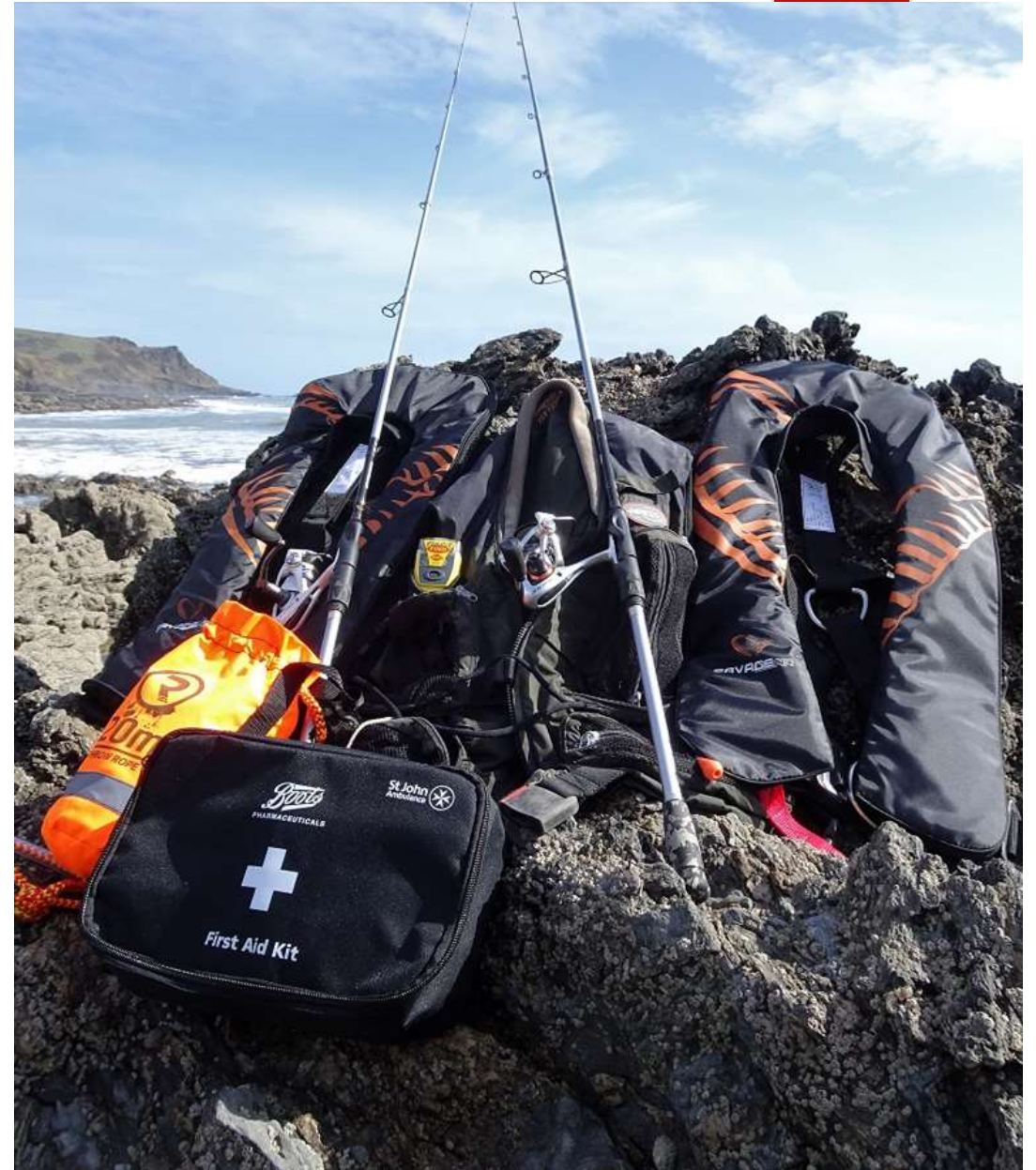




Fly Fishing Merit Badge

SCOUTS BSA

Requirement #1 Health and Safety



Health & Safety Requirements

- 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.

1a/b – Hazards, Prevention & Treatment

Hazards

1. Getting hooked
2. Dehydration
3. Sun issues
4. Heat issues
5. Wild animal bites
6. Insect bites

Prevention or Treatment

1. Wear eye protection and a brimmed hat; learn hook removal techniques
2. Drink plenty of water
3. Wear SPF-rated clothing; use sunscreen
4. Wear light, breathable clothing; stay out of direct sun; drink plenty of water
5. Avoid wild animals
6. Wear insect repellent

1a/b – Hazards, Prevention & Treatment

Hazards

7. Falls
8. Cuts
9. Falling in;
drowning
10. Weather
11. Lightning/storms
12. Getting lost

Prevention or Treatment

7. Use a hiking/wading staff
8. Bring a First Aid kit
9. Wear a PFD, especially in running water or on a boat
10. Check weather before you go; bring raingear
11. Seek shelter; keep your rod down low
12. Create a trip plan; leave it with an adult. Fish with a buddy. Bring a compass & map.

1c - Removing an Embedded Hook

The method you use depends on the hook type and how deep it went.

IMPORTANT NOTES:

- ▶ If the hook is embedded in or near the eye or on the face or neck **DO NOT** attempt to remove the hook!
- ▶ Cut the line and stabilize the hook if you can, then seek medical attention immediately!
- ▶ All head injuries should be shown to a doctor. Keep your tetanus shots up-to-date.

1c - Removing an Embedded Hook

Cut the line and (if possible) the lure off the hook.

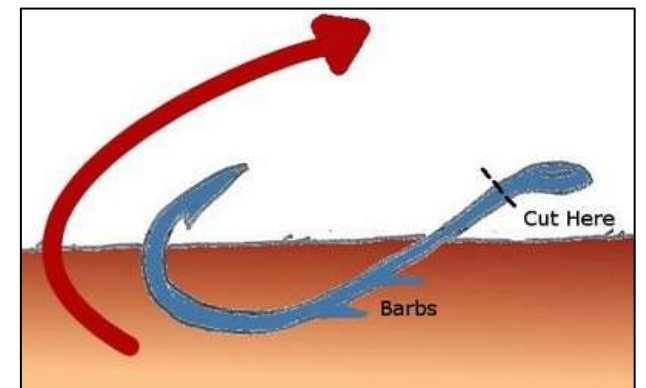
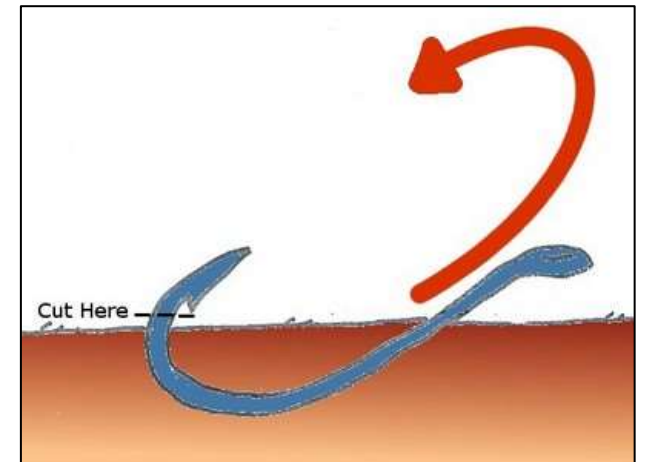
- ▶ If the embedded hook is a treble hook, cut off all the uninvolved points.
- ▶ A wire cutter or Leatherman tool works great for this - always have one with you when fishing.
- ▶ Wash your hands and clean the wound area before you begin. Rinsing it with some antiseptic like Bactine™ is a good idea.

1c - Removing an Embedded Hook

The Hard Way

- ▶ Push the hook the rest of the way out, until the barb is clear of the skin.
- ▶ Cut off the barb, and back it out the way it came in. Yes, this is as much fun as it sounds.
- ▶ If the hook shank barbs are embedded, cut the eye off and pull it out by the barb.

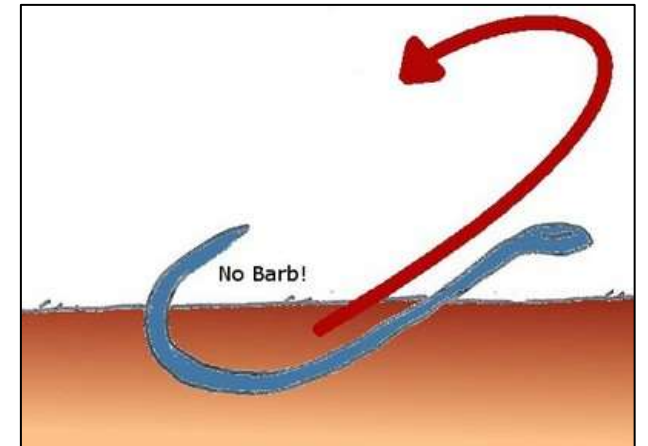
OUCH!



1c - Removing an Embedded Hook

A (Super) Easy Way

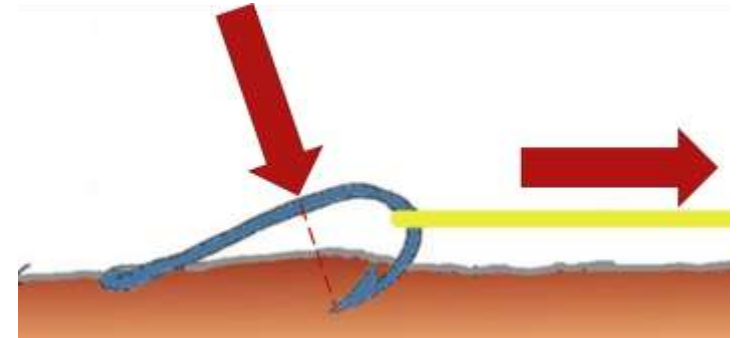
- ▶ Always use barbless hooks or pinch down the barb.
- ▶ If your hook is barbless, just back it out the way it came in.



1c - Removing an Embedded Hook

The Best Way with Barbed Hook

- ▶ This is the best method to use if the hook is not barbles and the hook is not deeply embedded.
- ▶ Stabilize the hooked part on a flat surface. If the hook is in your arm, place your arm on a rock or in your lap.
- ▶ Use a non-stretchy string or piece of heavy fishing line and loop it twice around the hook.
- ▶ Press down on the eye so it's flat against the skin.
- ▶ Yank the line sharply in the direction opposite the eye. Make sure you pull PARALLEL to the skin. The hook should pop right out.
- ▶ Disinfect, add a little antibiotic ointment, slap on a Band-Aid and it's all done. Keep fishing!



Health & Safety Game

- ▶ You will have 20 seconds to view each of the following slides and write down the number of each health or safety item that you should bring on a fishing trip.
- ▶ If using Zoom, we'll run a poll after each slide to have you lock in your answers, then discuss everything after the 2nd set.

Ready?

You have 20 seconds
to decide which health and safety items to bring...

1



2



3



4



5



6



7



8



9



10



One More - Ready?

You have 20 seconds
to decide which health and safety items to bring...

11



12



13



14



15



16



17



18



19



20



Requirement #2 Balanced System

16



Balanced System Requirements

- ▶ **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.**

Balanced System

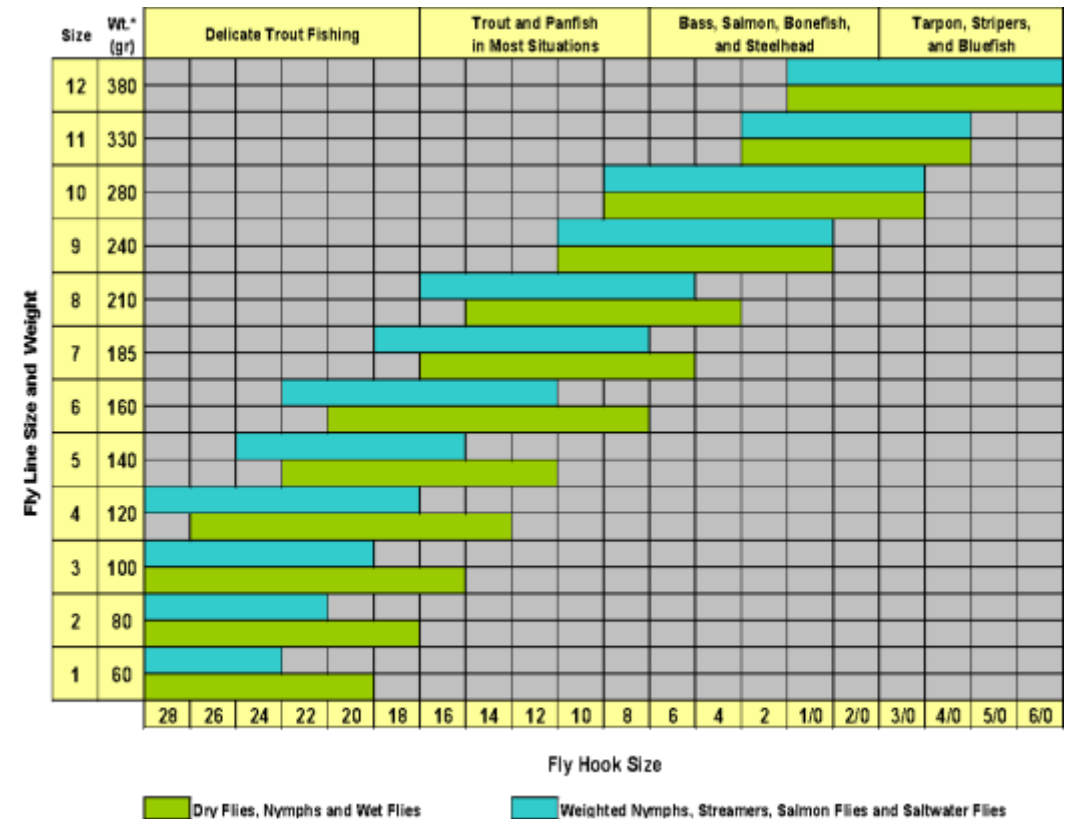
- ▶ When a rod, reel, fly line, leader, tippet and fly are correctly matched, the outfit is **balanced**.
- ▶ **Rods** are usually marked by **line weight** (5wt, 7wt, etc.), **length** and number of **pieces**.
- ▶ **Reels** must be adequate to store backing, fly line, leader and tippet.
- ▶ The weight of the first 30 feet of **fly line** determines what rod it matches to yield a balanced system. Mark your line so you can tell what it is.



Fly Line “Size” vs. Weight vs. Fly Size

Reading the chart - a 5wt example:

- ▶ The first 30 feet of a 5wt line weighs about 140 grains (9 grams or 0.32 ounces)
- ▶ Unweighted flies from #22 to #12 are most appropriate.
- ▶ Weighted flies from #24 to #16 are most appropriate.



* Fly line weight in grains based on first 30 feet of line, not including any taper tip

Common Fly Line Tapers

Double Taper



Weight Forward



Bass Bug



Common Fly Line Types



Types of Fly Rods

- ▶ Fixed Line (Tenkara, etc.)
- ▶ Modern Fiberglass, Graphite, Boron & “Blends”
- ▶ Traditional Bamboo
- ▶ Spey or Switch: Single-Handed vs. Two-Handed

Age & Skill Level Appropriate

Fixed-Line Fly Tackle (Tenkara)

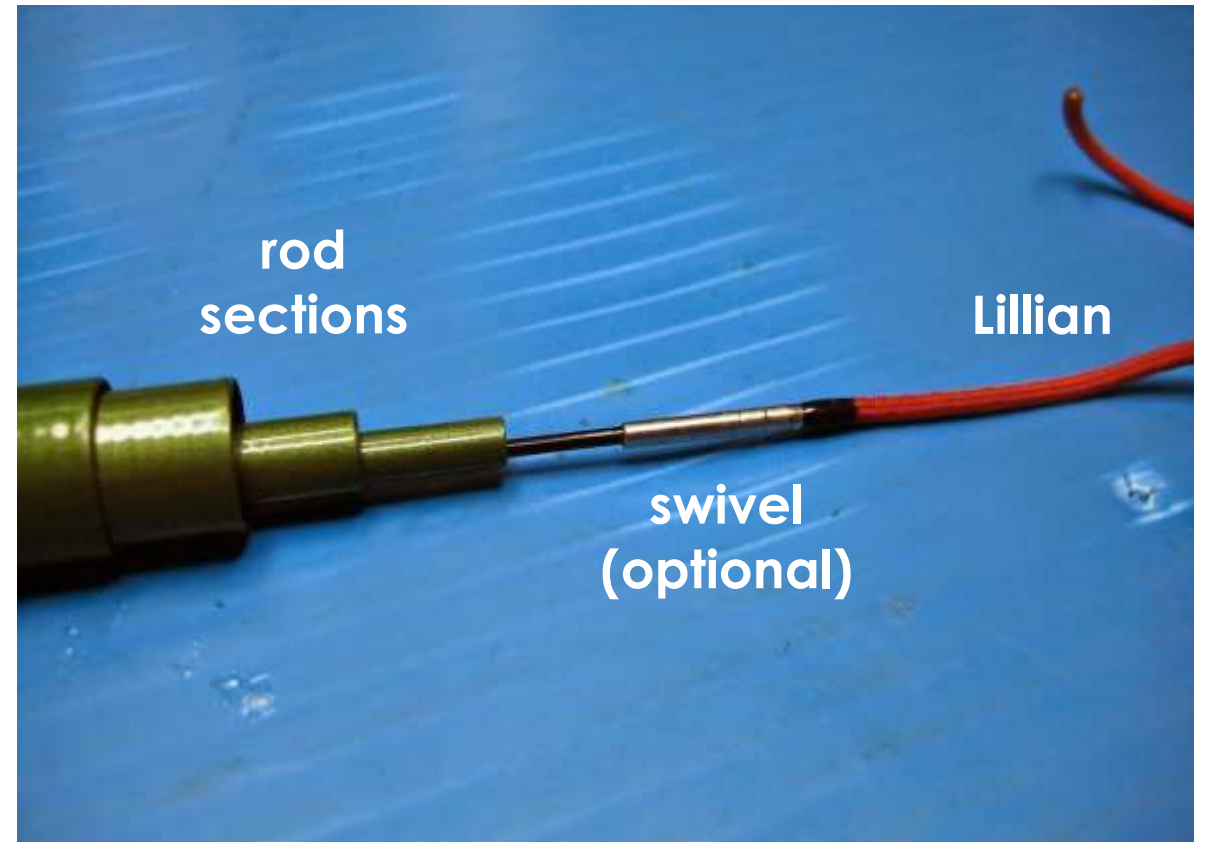


- ▶ Fixed-line fly-fishing is over 1,800 years old!
- ▶ Easy to set up and cast.
- ▶ Excellent as entry-level fly rod.
- ▶ Can be very low-cost.
- ▶ Very compact and lightweight - great for backpacking!



Fixed-Line Fly Tackle (Tenkara)

- ▶ No reel! The line is attached to a “Lillian” cord on the tip with simple, easy-to-tie and easy-to-remove knots.
- ▶ Most rods are long (11' to 15'), include a number of telescoping pieces, and collapse into the short butt section.
- ▶ Lines can be as simple as a length of fluorocarbon or nylon monofilament. Tapered, braided lines are also used.
- ▶ A thin monofilament tippet is attached directly to the line with a tippet ring, line-line knot or loop-to-loop connection.



Standard Fly Tackle

- ▶ A complete outfit includes rod, reel, backing, line, leader and tippet.
- ▶ Rods are typically made of fiberglass, graphite, boron or traditional bamboo. Graphite is the most popular.
- ▶ Outfits range from short, delicate rods for small mountain streams to hefty “fighting” rods suitable for large saltwater fish weighing hundreds of pounds.
- ▶ A medium-action, 8½-foot, 5-wt outfit is a good all-purpose rod. Temple Fork Outfitters (TFO) makes a SCOUT rod just for Scouts and Scouters.



Some Fly Reels



Fly Rod, Reel & Line Care

Rule #1:

1. Don't put your reel in the dirt or sand!

To clean the rod and reel:

1. Gently rinse, sponge with warm, slightly soapy water, and then thoroughly rinse again.
2. Wipe dry with a clean cloth and then air dry.
3. When completely dry, loosen the reel drag and store in a cool, dry place.

To clean the fly line:

1. Pull 40-60 feet of line from the reel.
2. Wash in slightly soapy water, rinse and dry.
3. Add line conditioner if desired.

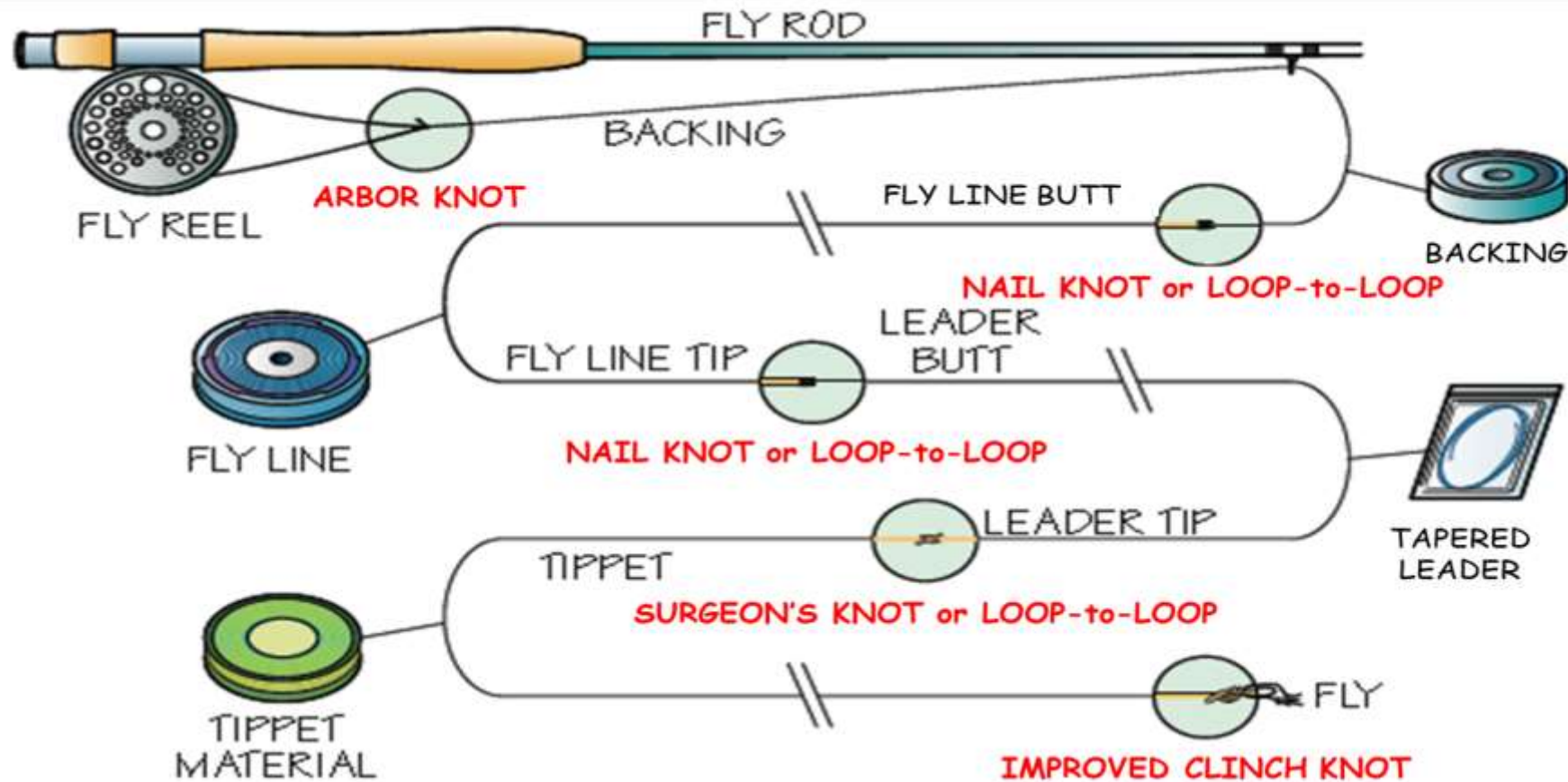


Requirement #3

Fly Fishing Knots



Tying it all Together



Fly Fishing Knot Requirements

Demonstrate how to tie proper knots to prepare a fly rod for fishing:

1. Tie backing to the arbor of a fly reel spool using an **arbor knot**.
2. Tie backing to the fly line using a **nail knot**.
3. Attach a leader to the fly line using a **nail knot** or a **loop-to-loop connection**.
4. Add a tippet to a leader using a **surgeon's knot** or a **loop-to-loop connection**.
5. Tie a fly onto the terminal end of the leader using an **improved clinch knot**.

Getting Started with Knots

- ▶ When just starting out, begin with:
 - ▶ Heavier fishing line or light cord
 - ▶ Large hooks, or even a coat hanger bent like a hook.
- ▶ Get comfortable with each knot before trying to tie it with smaller, more realistic materials.
- ▶ Practice, practice – before you get on the water...

Rules for Strong Knots

- ▶ Knots must be neat! Make sure wraps are side-by-side and don't overlap
- ▶ Lubricate knots before final tightening!
- ▶ Test your knots! It's better for them to break in your hands than when a big fish is on the line.

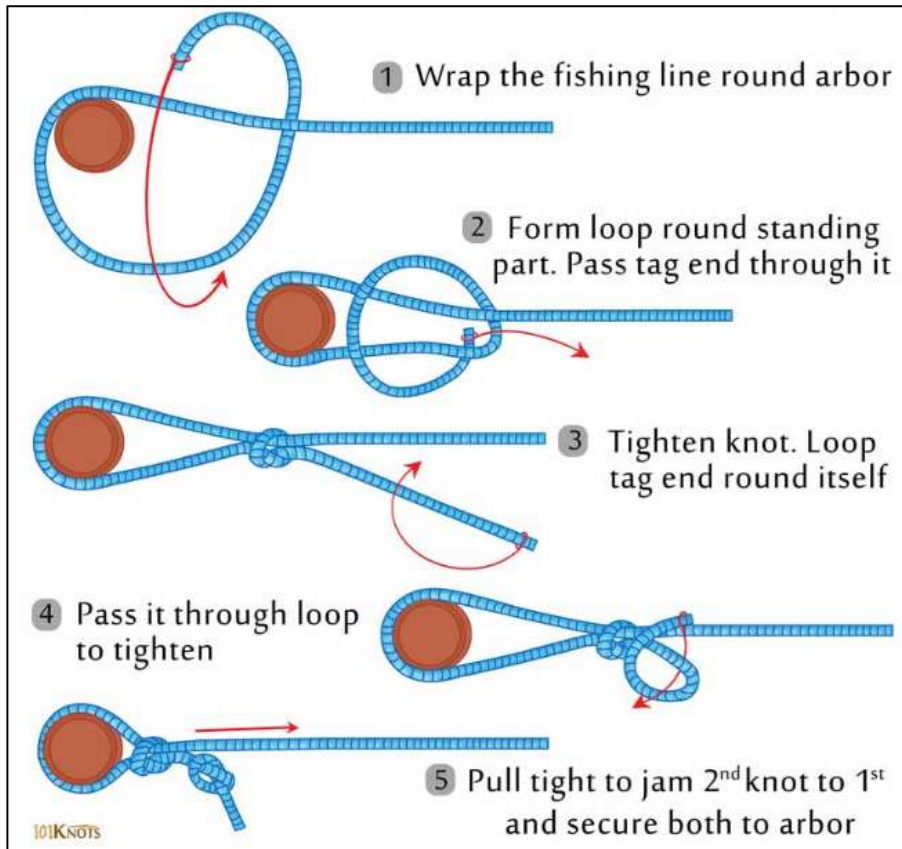
Hyperlinks:

<https://www.animatedknots.com/fishing-knots>

<https://www.101knots.com/category/fishing-knots>

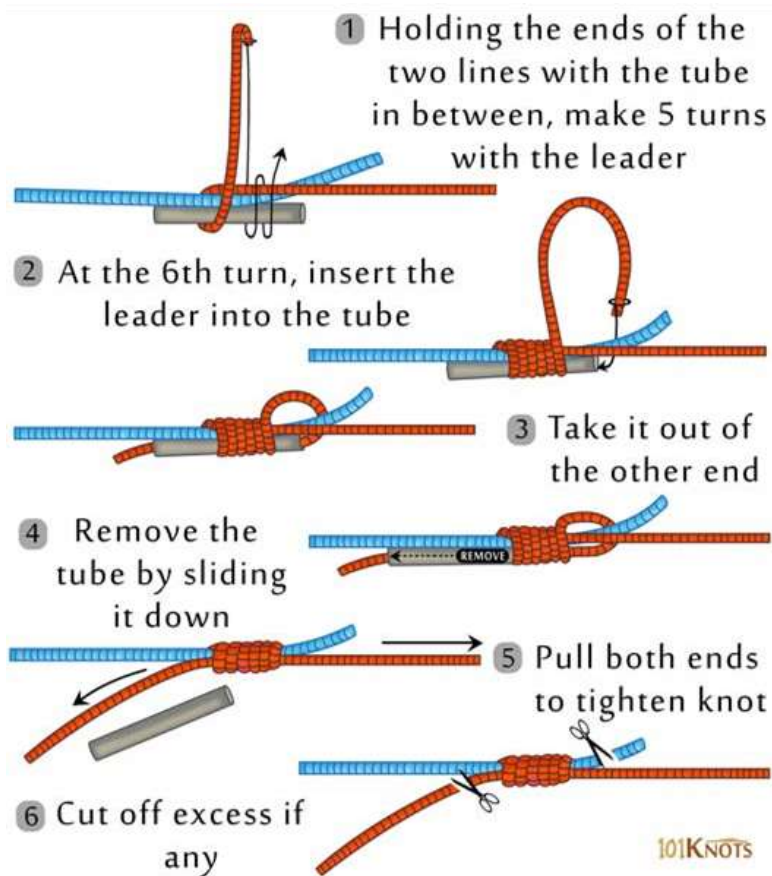
https://www.netknots.com/fishing_knots

Arbor Knot



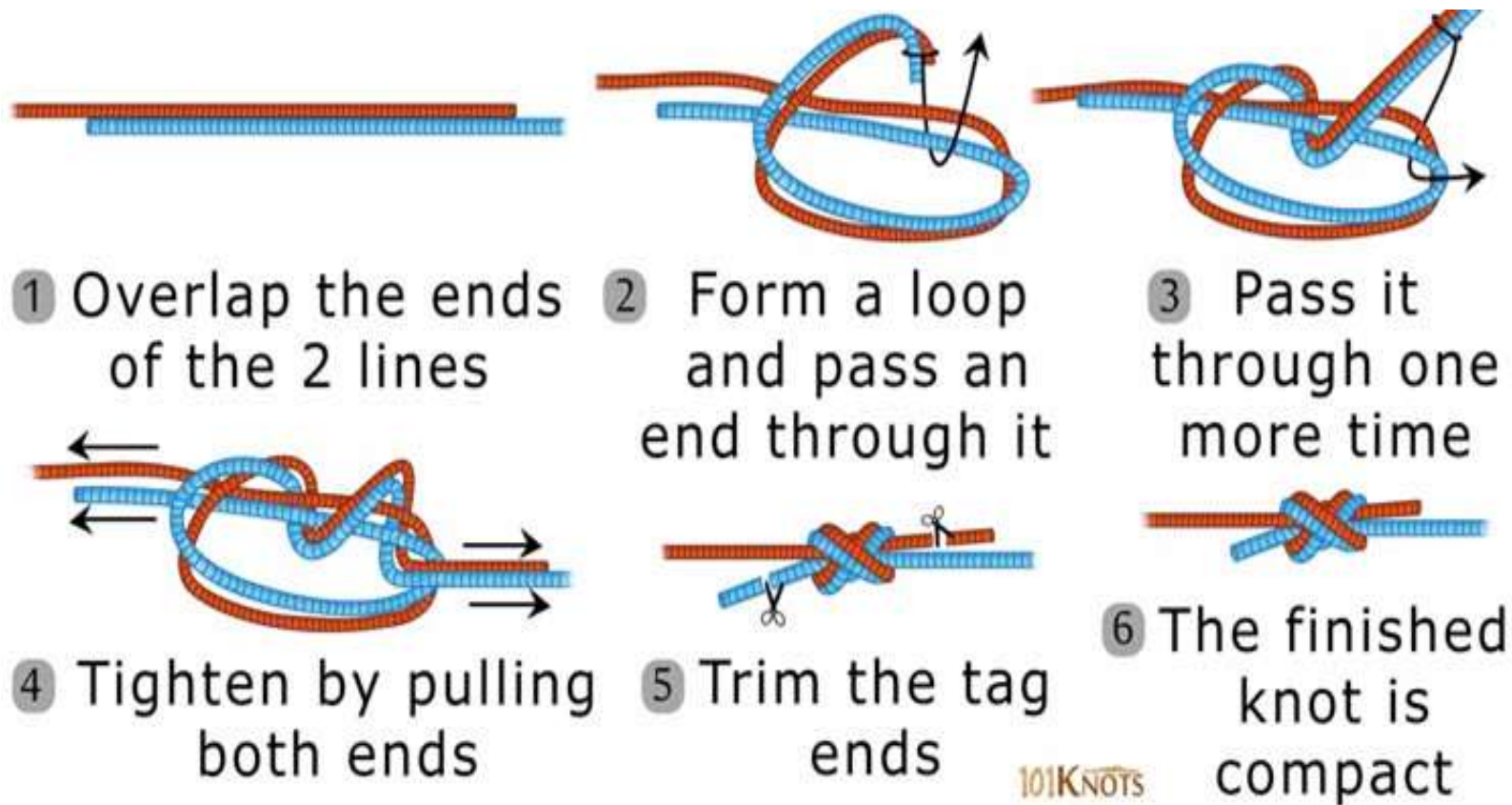
- ▶ The arbor knot is used to secure the fly line backing to the fly reel arbor. It is good for anchoring the backing to the reel for big fish that may take out more than just the leader and fly line.
- ▶ Note how the tag end of the line passes through the loop - important!
- ▶ After tying the stopper knot on the end of the tag end, trim the waste.
- ▶ Lubricate and then snug the knot down to the arbor.

Nail Knot (Tube Knot)



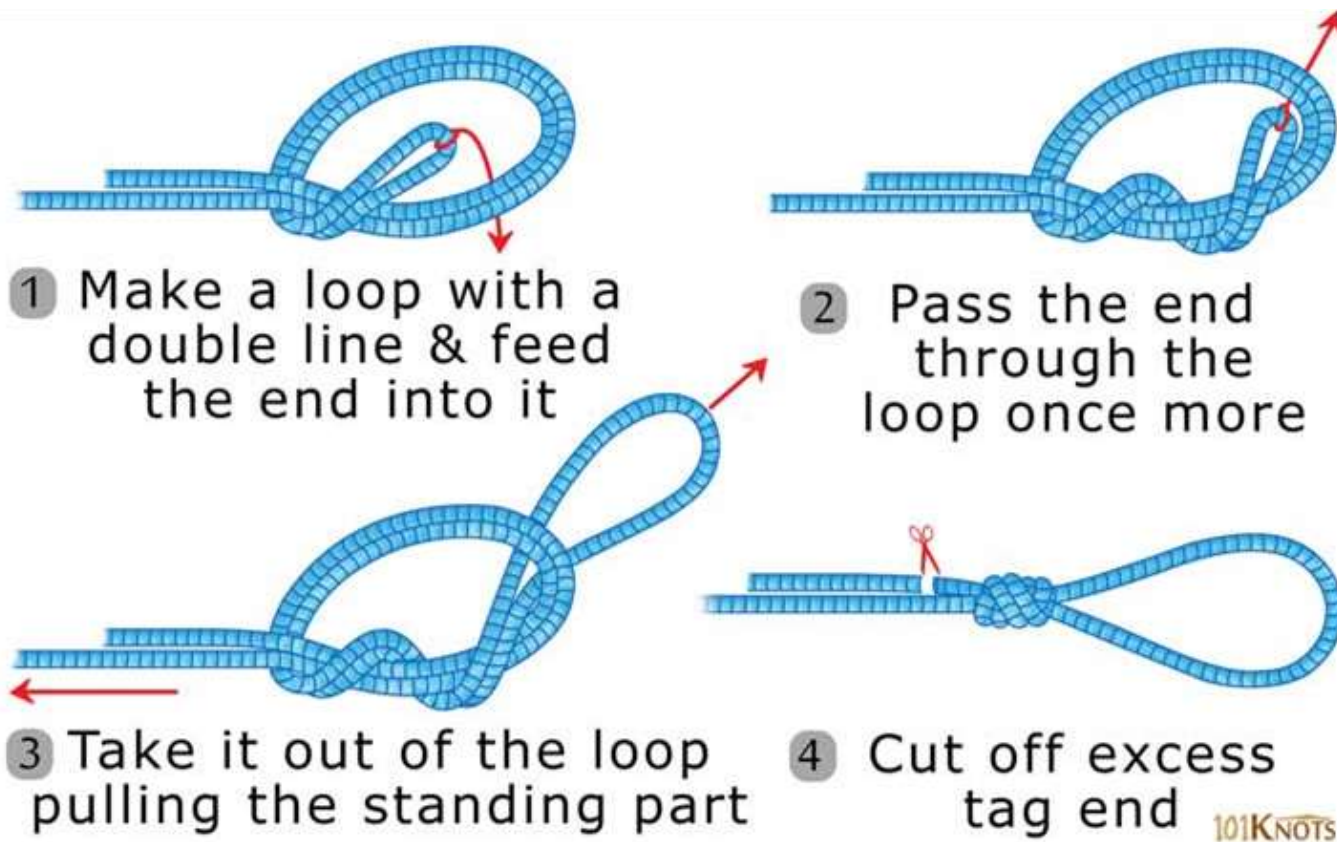
- ▶ The primary use of the nail knot is to secure the backing to the back end of the fly line and to secure the leader to the front end of the fly line.
- ▶ It's a bit tricky to tie, but you won't have to do it very often.
- ▶ Make sure your wraps are even and neat. After snugging it up gently, lubricate it thoroughly before tightening.
- ▶ Trim excess line so the knot will flow smoothly through the rod guides.

Surgeon's Knot



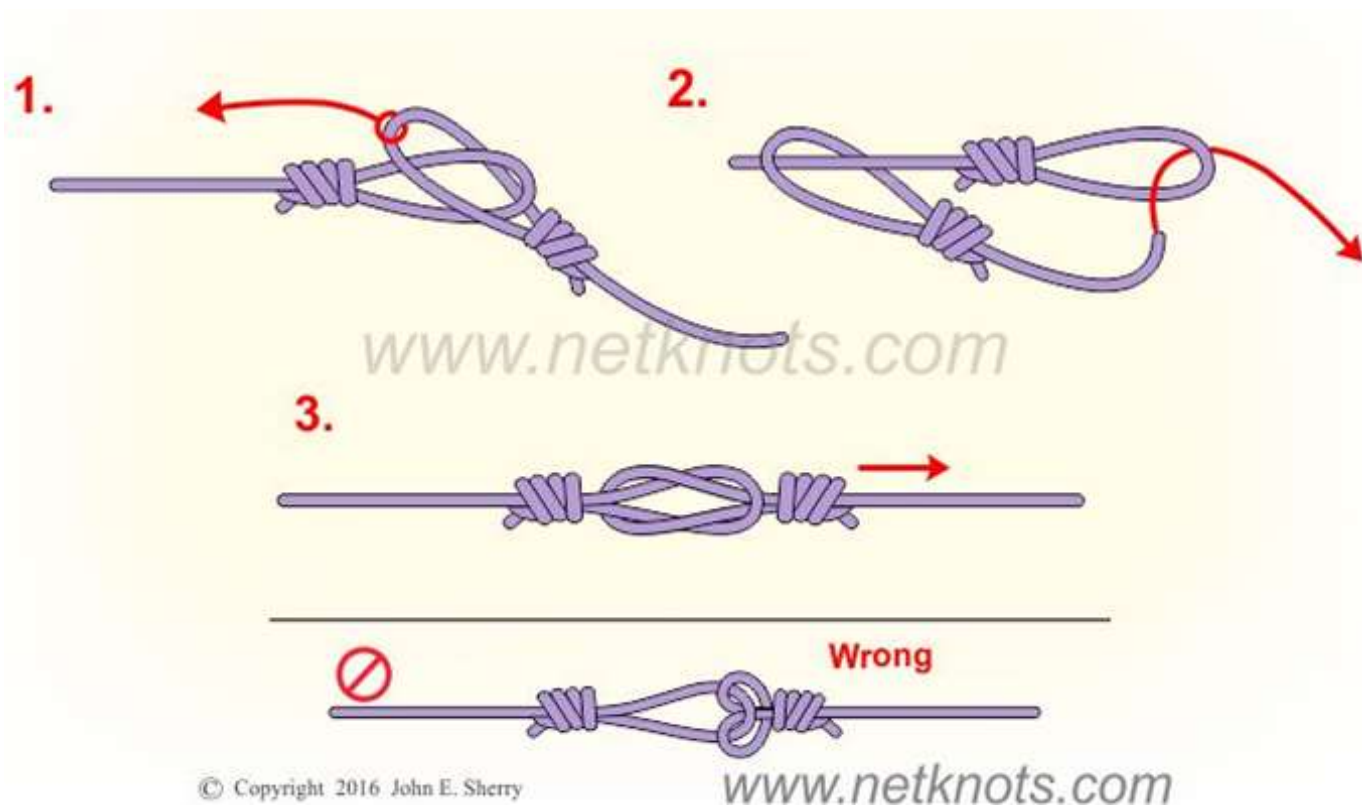
- ▶ The surgeon's knot is used to connect two lines.
- ▶ Use it to build a tapered leader or to connect tippet to a tapered leader.
- ▶ Make sure your knot is neat. Lubricate thoroughly before tightening.

Surgeon's Loop (for Loop-to-Loop Connection)



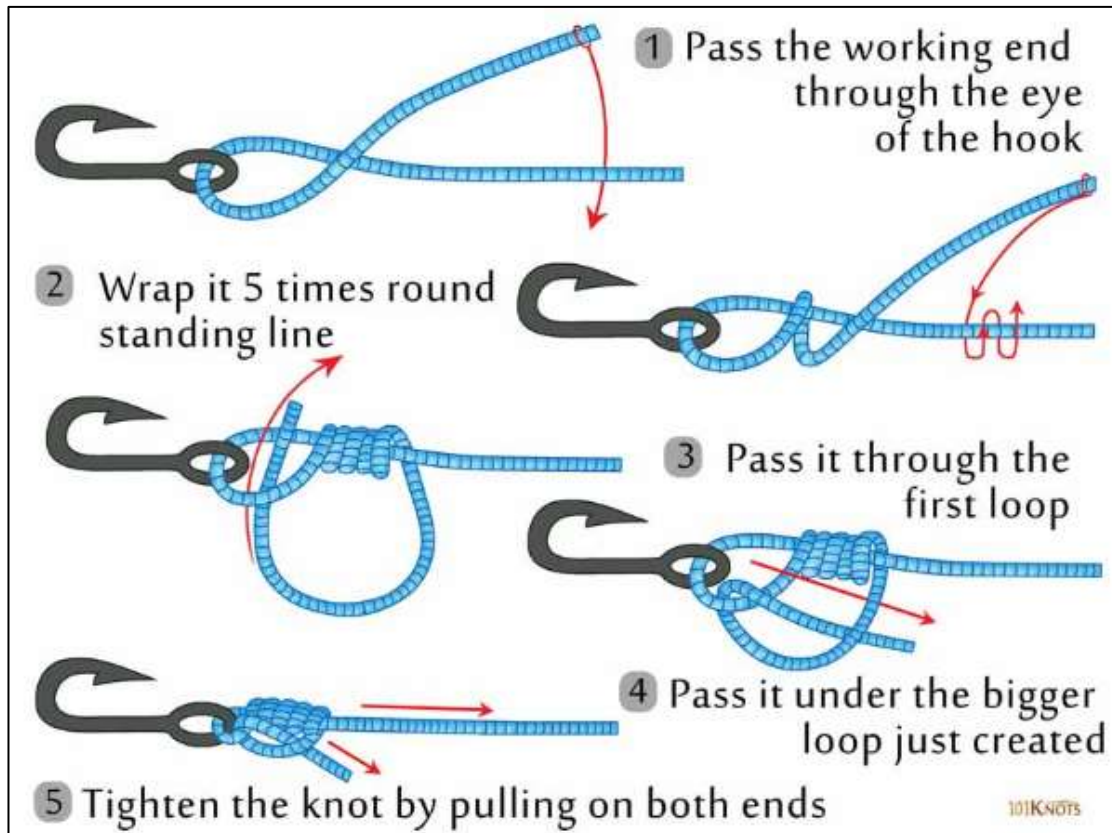
- ▶ The surgeon's loop is tied the same way as the surgeon's knot, except a loop is formed as shown.
- ▶ Add a loop to the end of your tapered leader and to your tippet, then connect them with a loop-to-loop connection.
- ▶ Make sure your knot is neat. Lubricate thoroughly before tightening.

Loop-to-Loop Connection



- ▶ The loop-to-loop connection is formed as shown.
- ▶ Each line has a loop, which clasp together and look like a square knot when done right.
- ▶ If done wrong, a girth hitch is formed, which is weaker than a properly formed loop-to-loop connection.
- ▶ This connection can be used to connect a tapered leader to a fly line or the leader to a tippet.

Improved Clinch Knot



- ▶ If you want to tie your fishing line securely to a hook, swivel or lure, the improved clinch knot is a good choice.
- ▶ This widely-used fishing knot is more secure than the regular clinch knot owing to an extra tuck under the final turn, making it suitable for holding on to strong fish.
- ▶ As usual, lubricate the knot before tightening and cut the excess tag end.

Requirement #4 Flies



Fly Tying Requirements

- ▶ 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.

A Few Different Types of Flies



Dry Fly



Emerger



Nymph



Saltwater
Critter



Bass Bug



Wet Fly



Streamer



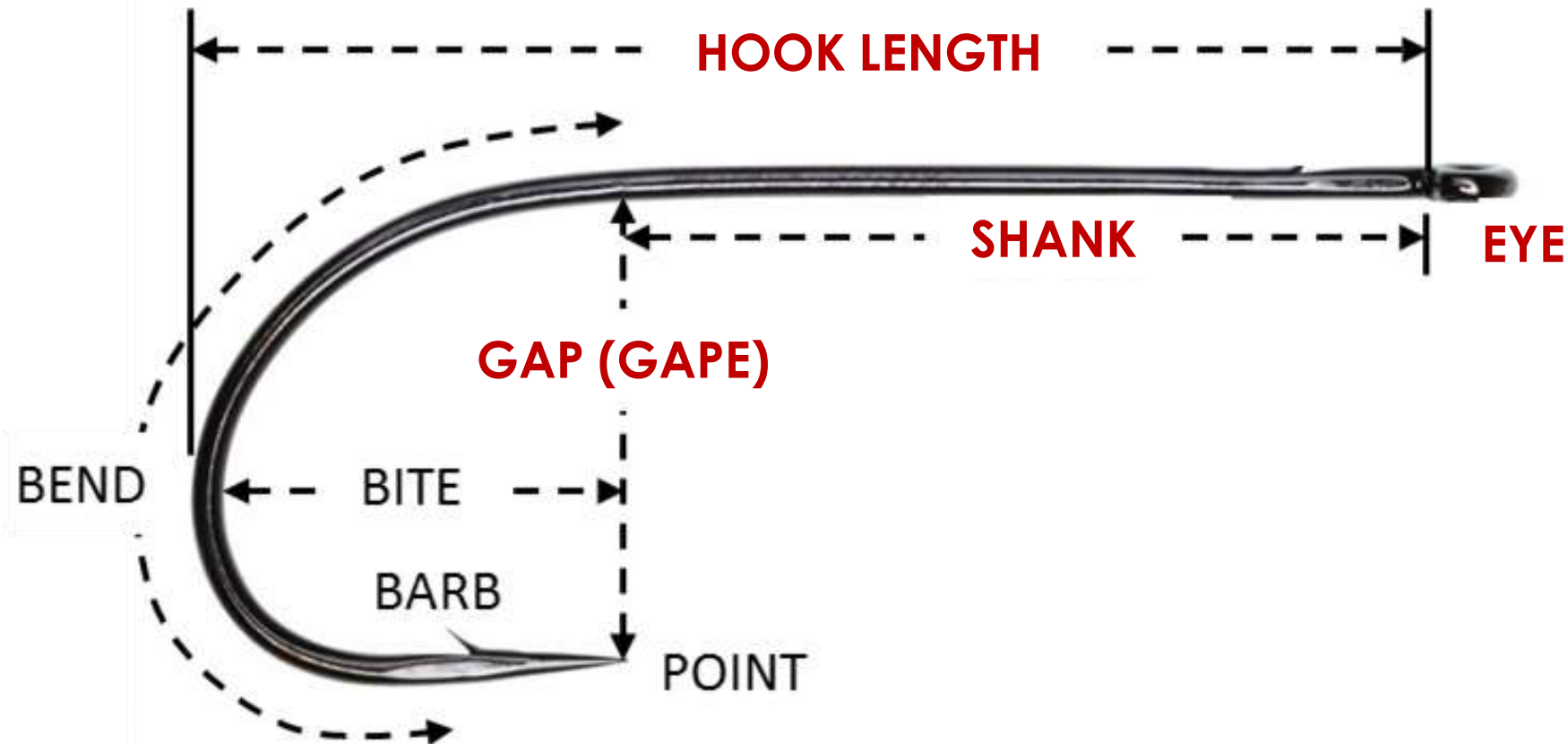
Crayfish



Popper

Check out <https://www.youtube.com/watch?v=95LsX9a8WQQ>

Hook Anatomy



Why are hook parts important to know?

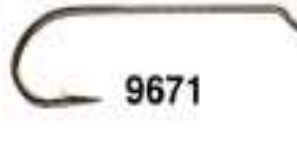
- ▶ Fly parts are proportional to hook parts.
- ▶ Parts of the hook are used to measure materials before they are tied on.
- ▶ Parts in **red** are used most often.

Some Hook Types

Mustad
BE SHARP. USE MUSTAD.



94840



9671



3665A



3407



94845



9672



9674



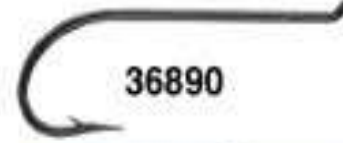
34007



94833



79580



36890



3906



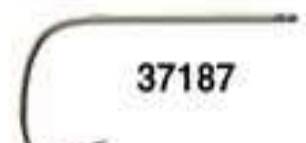
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33903



37187

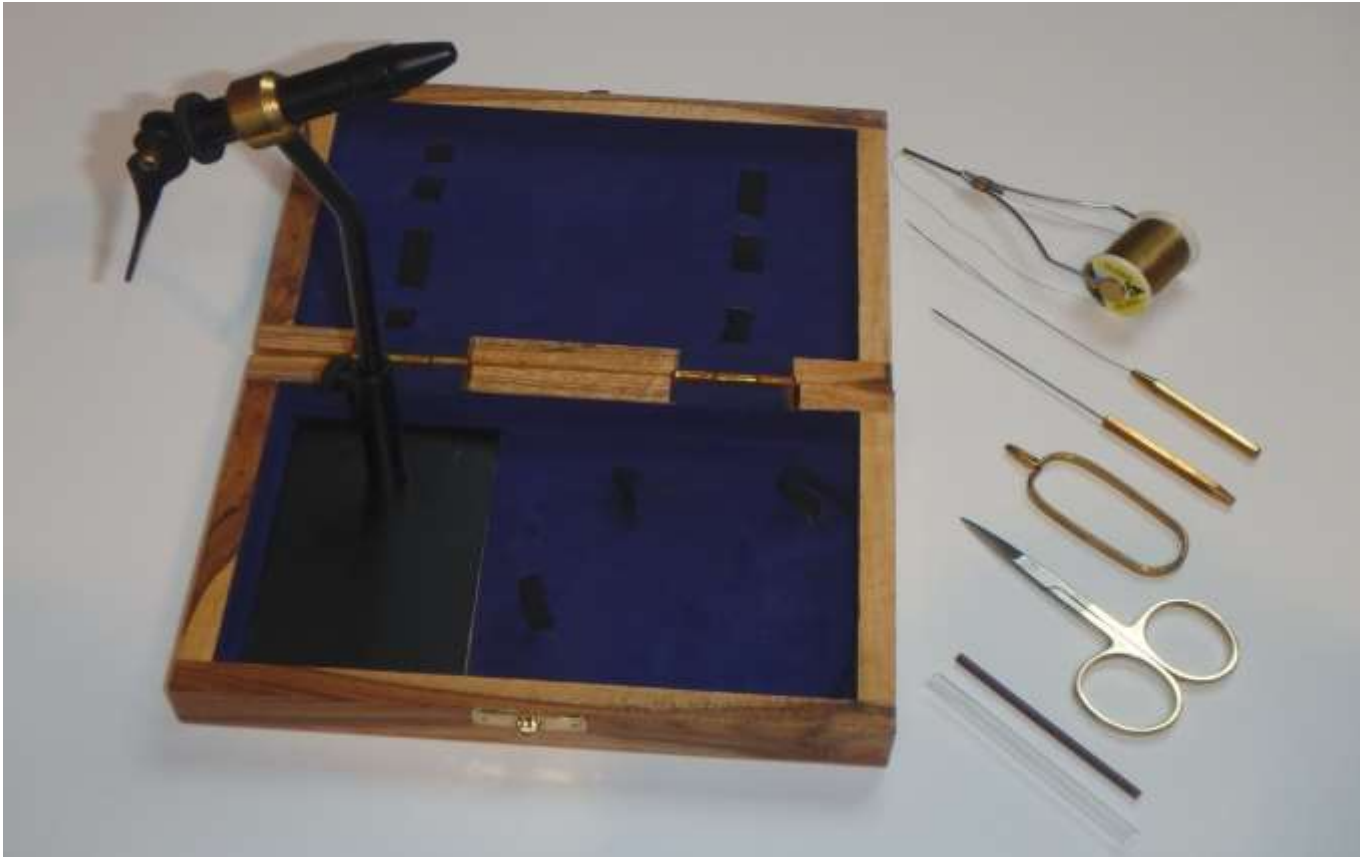


3906B



9575

Basic Fly Tying Tool Kit



- ▶ **Vise** – to firmly hold the hook
- ▶ **Thread bobbin with thread** – for tying materials on the hook
- ▶ **Bobbin threader** – to pull thread through the bobbin tube
- ▶ **Bodkin** – for picking out materials & applying head cement
- ▶ **Hackle pliers** – for wrapping hackle
- ▶ **Scissors** – for cutting materials & thread
- ▶ **Half hitch tools** – for applying half hitches to secure the finished fly

Basic Fly Tying Skills

- ▶ Securing the thread (jam knot)
- ▶ Forming a thread base
- ▶ Using the hook to measure materials
- ▶ Tying on materials (critical pinch, thread torque)
- ▶ Wrapping materials (palmering, etc.)
- ▶ Cutting off excess materials
- ▶ Building a neat thread head
- ▶ Tying off and sealing the head

Fly Tying Best Practices

- ▶ Know what you're trying to simulate – size, shape, color, and especially behavior.
- ▶ Invest in quality tools.
- ▶ Be prepared:
 - ▶ Select the right hook, thread and materials for your fly.
 - ▶ Lay out only what you need. Keep tools and materials in order.
- ▶ Keep flies in proportion – use the hook to measure parts.
- ▶ NO SLACK!!! Maintain thread control at all times.
- ▶ Tie several of each fly – practice makes perfect!
- ▶ Keep natural materials in sealed containers – no bugs!

Requirement #5 Fly Casting



Fly Casting Requirements

- ▶ Demonstrate the ability to cast a fly 30 feet consistently and accurately using both:
 - ▶ Overhead casting techniques and
 - ▶ Roll casting techniques

Principles of Fly Casting

1. You must get the end of the fly line moving before you can make a back or forward cast.
2. Once the line is moving, the only way to load the rod is to move the casting hand at an ever-increasing speed and then bring it to a quick stop.
3. The line will go in the direction the rod tip speeds up and stops - it goes in the direction that the rod straightens when the rod hand stops.
4. The longer the distance the rod travels on the back and forward casting strokes, the less effort is required to make the cast.

Casting for Accuracy

- ▶ There are two imaginary lines between you and the target:
 - ▶ The eye-to-target line.
 - ▶ The hand-to-target line.
- ▶ Normally these are slightly apart:
 - ▶ The distance from your hand to your eyes.
- ▶ Lining up the rod between your eyes can give you greatly improved accuracy.
- ▶ Using two hands can help too – especially for beginning casters.



Casting for Distance

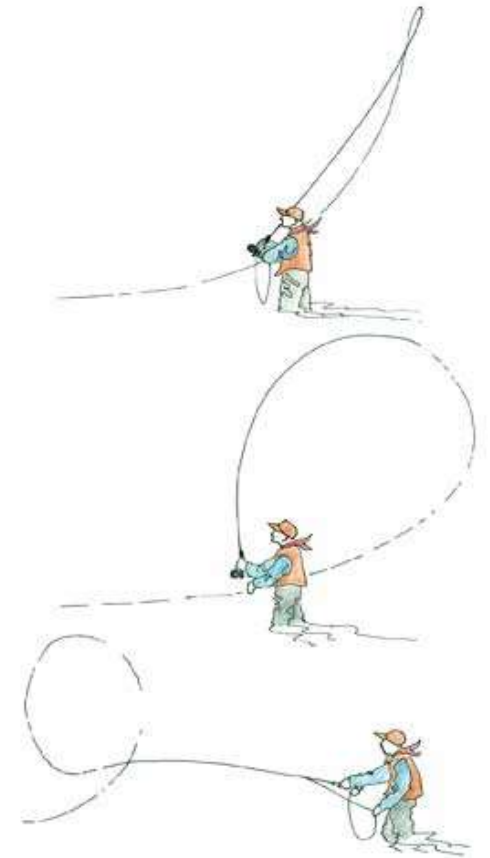
Keep your loops tight and line speed high.

- Keep the rod **elevated** at the back and forward stops for tight loops.
- Open your stance and move your **body** to lengthen the stroke.
- Learn how to **double-haul** to increase line speed.
- Keep your line path completely **straight** - 180° between back and forward casts.
- Aim **above** the target on the final forward stroke.



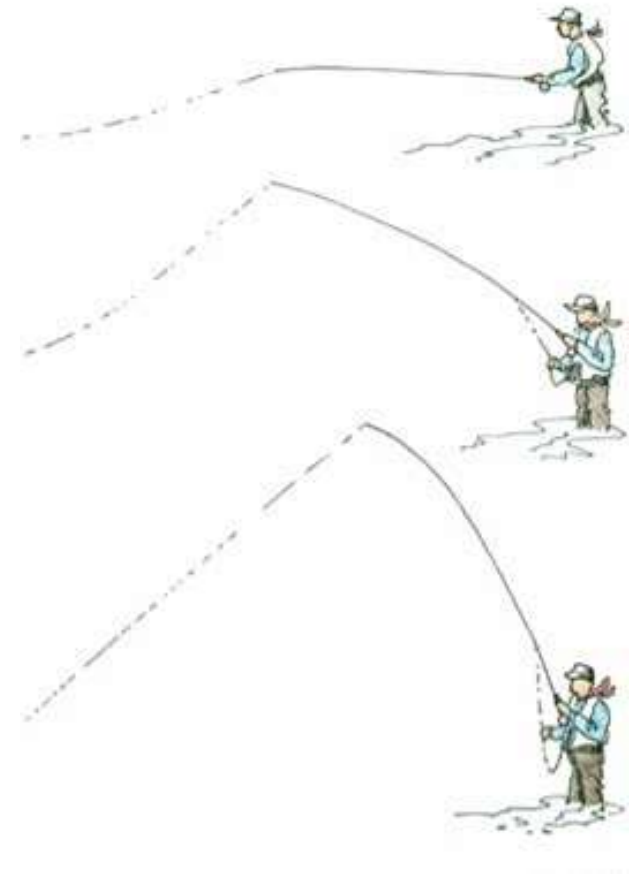
Roll Cast

1. Lift the rod tip up ***slowly*** and gently ***stop*** when the rod tip is slightly behind you (about 1 o'clock). ***Wait*** a moment to let the line settle to form a D-shaped loop behind you and an “anchor” on the water’s surface in front of you.
2. Accelerate straight forward, then ***speed up*** and ***quickly stop*** the rod tip.
3. Aim the cast above the target so the line unrolls before you. Let the rod drift down as the line settles to the water.



Overhead Cast 1/2

1. **Lower** the rod, **point** it at the target, and take any slack out of the line.
2. **Lift** the rod tip, slowly at first, then smoothly **accelerate** the backstroke to get the line off the water.
3. Quickly **speed up** the backstroke to load the rod and propel the line into a high back cast.



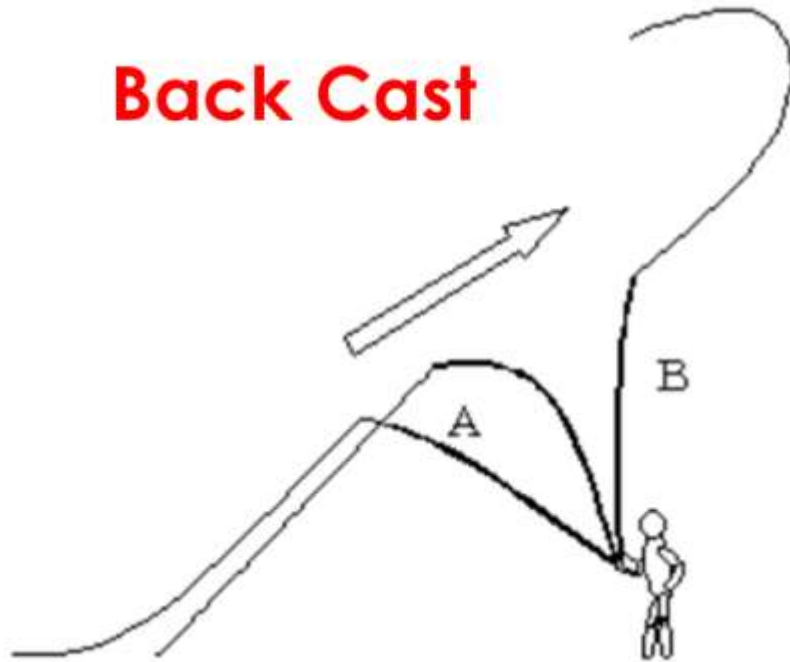
Overhead Cast 2/2

4. **Stop** the rod **quickly** at about the 1 o'clock position to form a tight loop as the line passes overhead.
5. **Pause** for a moment as the back cast unrolls behind you.
6. **Accelerate** smoothly forward, slowly at first, then **speed up** to load the rod and propel the line forward. Aiming the cast above the target, **stop quickly** at about the 10 o'clock position. Let the rod drift down as the line settles to the water.



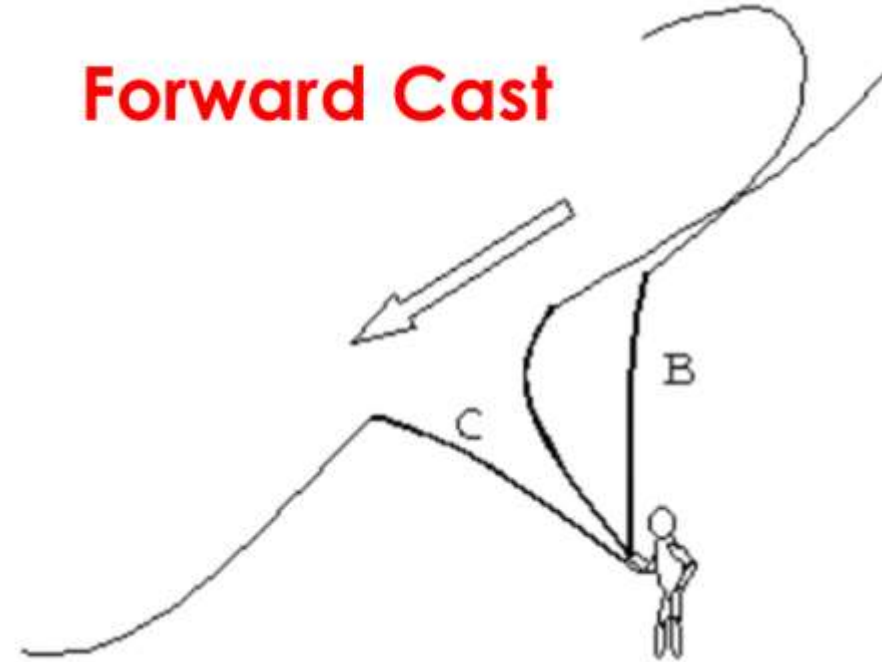
Tenkara Fly Casting

Back Cast



From the 10 o'clock fishing position (A), raise the rod to 12 o'clock (B) and **stop** for a brief moment to let the line unroll behind you.

Forward Cast



From 12 o'clock (B), stroke the rod to the 10 o'clock position (C) and **stop** to let the line unroll in front of you. Do NOT lower the rod.

Requirement #6

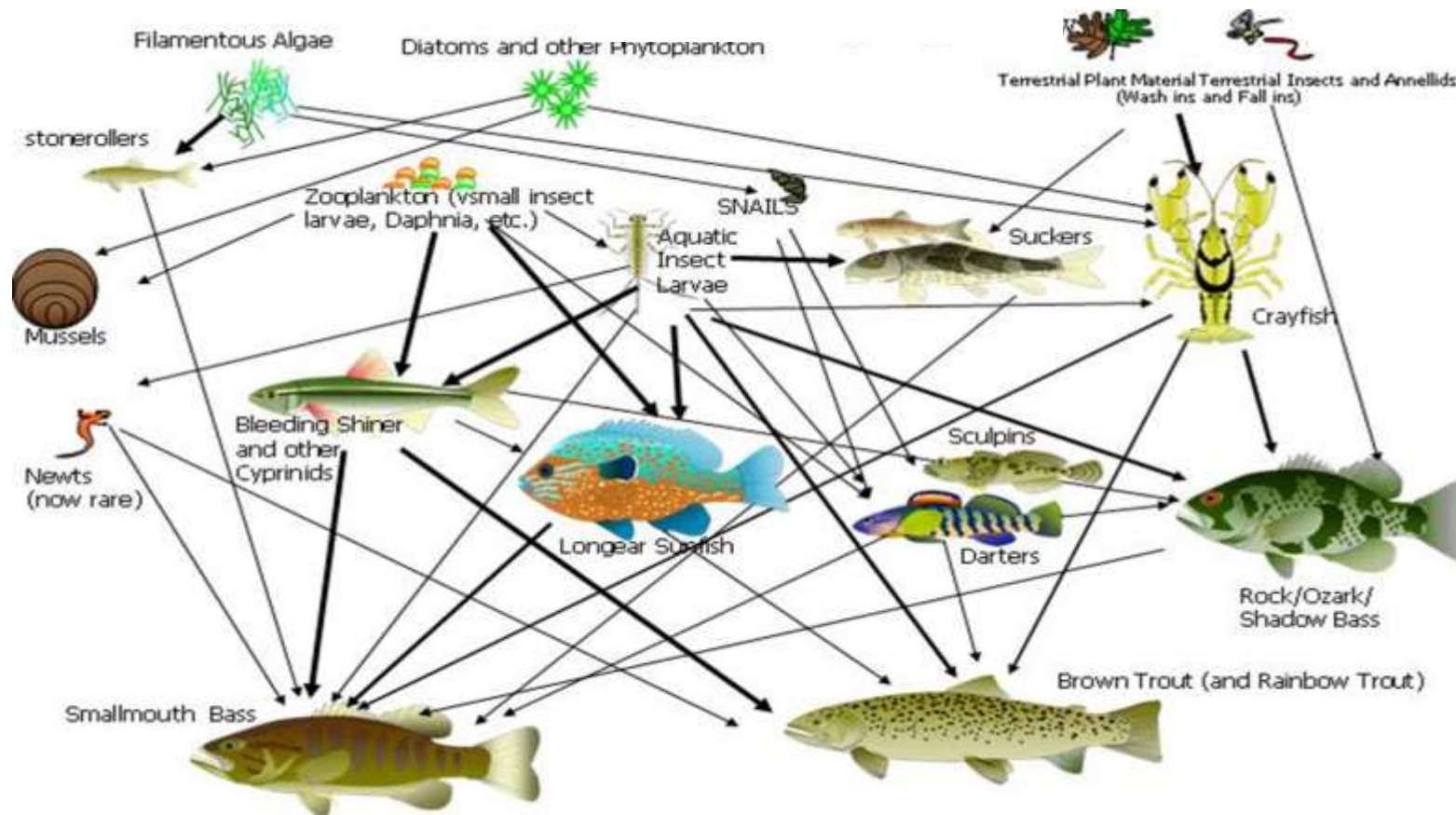
What Fish Eat



What Fish Eat Requirements

- ▶ Go to a suitable fishing location and observe what fish may be eating both above and beneath the water's surface.
- ▶ Explain the importance of matching the hatch.

What Fish Eat



- ▶ The “Food Web” is complex.
- ▶ Water quality and watershed features determine what can thrive there.
- ▶ All critters need to eat without being eaten. Everything has unique ways of doing that (camouflage, numbers, speed, agility, size, etc.).
- ▶ Its good to be at the top of the food chain...

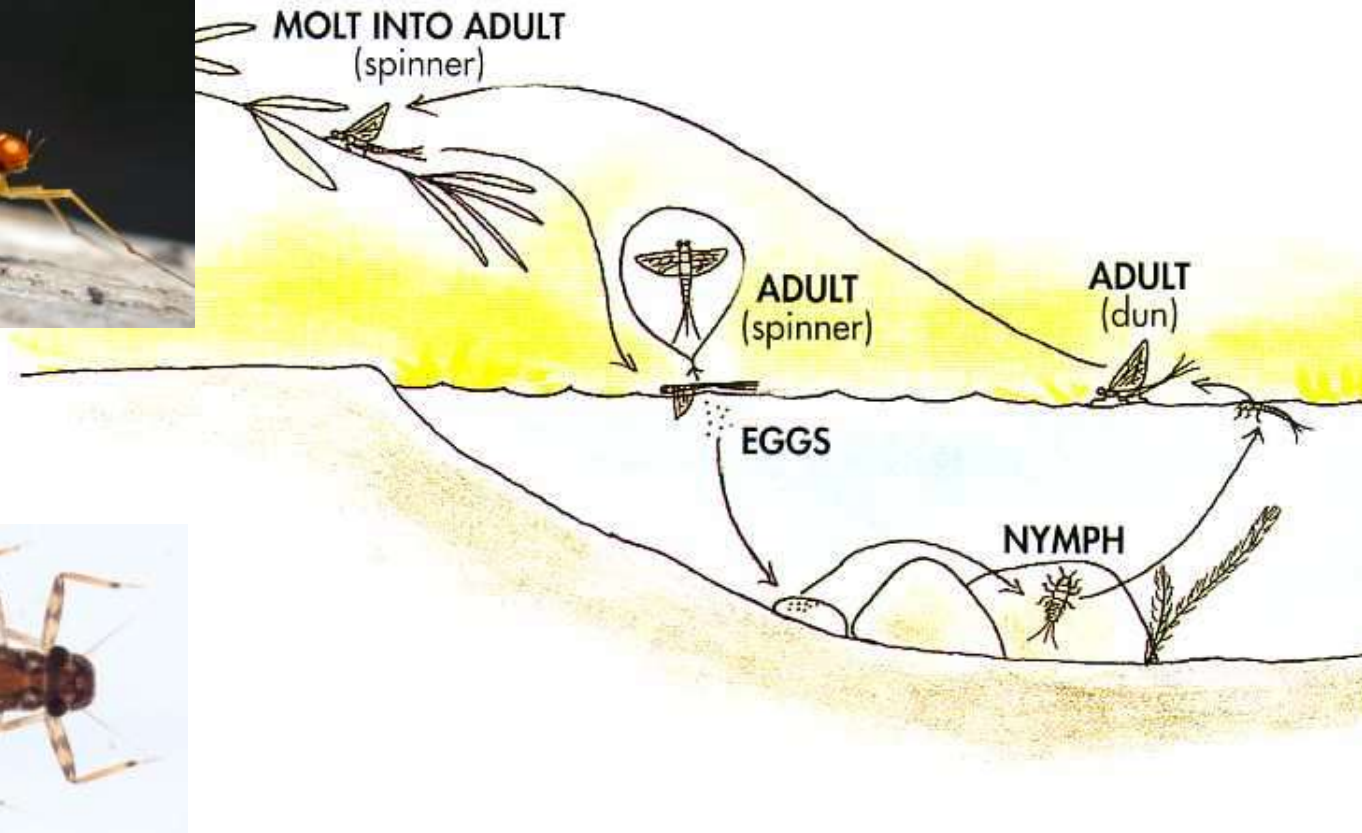
What are the Fish Eating Here?

Where should you look?

- ▶ Terrestrials and adult aquatic insects hide in shoreline grass, bushes and trees. Shake them to see what falls or flies out.
- ▶ Aquatic insect nymphs hide under rocks, logs and water weeds. Lift some rocks or hold an aquarium net below some gravel. Stir it up to see what comes out.
- ▶ Crayfish, sculpin minnows and other critters hide in the same places. You may see some when you lift a rock or stir the gravel.
- ▶ Look carefully in the shallows for minnows. Larger fish would certainly like to snack on them.



Mayfly Lifecycle



Match the Hatch

(Blue Ridge Mountains Hatch Chart)

Reading the chart - May example:

- ▶ Flies to use include Blue Winged Olive, Adams, Elk Hair Caddis, Hendrickson, Light Cahill, Sulphur, and Eastern Green Drake.
- ▶ Hook sizes are given for each month. Fly size is based on hook size. Note how small they are!
- ▶ Hatches depend on weather and water conditions - always check before you go!
- ▶ Why is all this good to know?

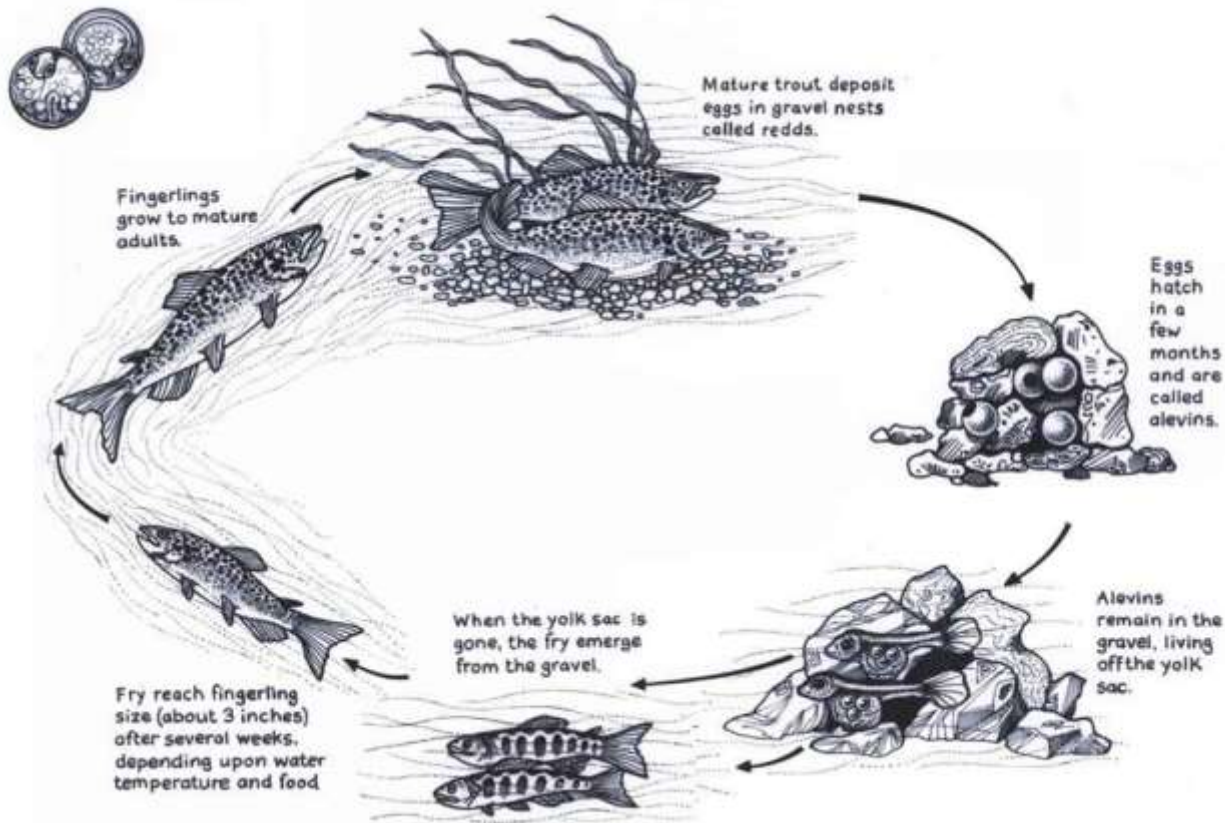
Hatch/Pattern	Jan	Feb	Mar	Apr	May	Jun	Jul	August	Aug	Sep	Oct	Nov	Dec
Midge: Gray/Olive	18-24										18-24	18-24	18-24
Blue Winged Olive	18-24	18-20	16-18	16-18	18	20-22					16-24	18-24	18-24
Adams	18-24	18-20	16-18	16-18	16-18	16-18		12-16	12-16	12-16	16-18	18-24	18-24
Early Black Stone Fly	18	18	18	18									
Quill Gordon		12-14	12-14	12-14									
Blue Quill		18	18	18									
Tan Elk Hair Caddis			14-16	14-16	16	16	16						
Brown Elk Hair Caddis			14-16	14-16									
Female Adams				14-16									
Hendricksons				14	14								
Light Cahill					16-18	16-18	16-8	16-18	16-18	16-18			
Sulphurs					16-18	16-18							
Eastern Green Drake					8-12	8-12							
Stonefly Nymph						8	8	8					
Little Yellow Stonefly						14-16	14-16						



Fly Hook Size



Fish Lifecycle



- ▶ As fish become larger, they depend on larger food sources like baitfish.
- ▶ Baitfish are simulated by streamers, which can be tied to "match the hatch" or serve as an attractor.

Requirement #7 Leave No Trace & Catch and Release



LNT & C&R Requirements

Do the following:

- a. Explain the importance of practicing **Leave No Trace** techniques. Discuss the positive effects of Leave No Trace on fly-fishing resources.
- b. Discuss the meaning and importance of **Catch and Release**. Describe how to properly release a fish safely to the water.

Leave No Trace Core Principles

1. Plan ahead and prepare
2. Travel and Camp on Durable Surfaces
3. Dispose of waste properly
4. Leave what you find
5. Minimize campfire impacts
6. Respect wildlife
7. Be considerate of other visitors

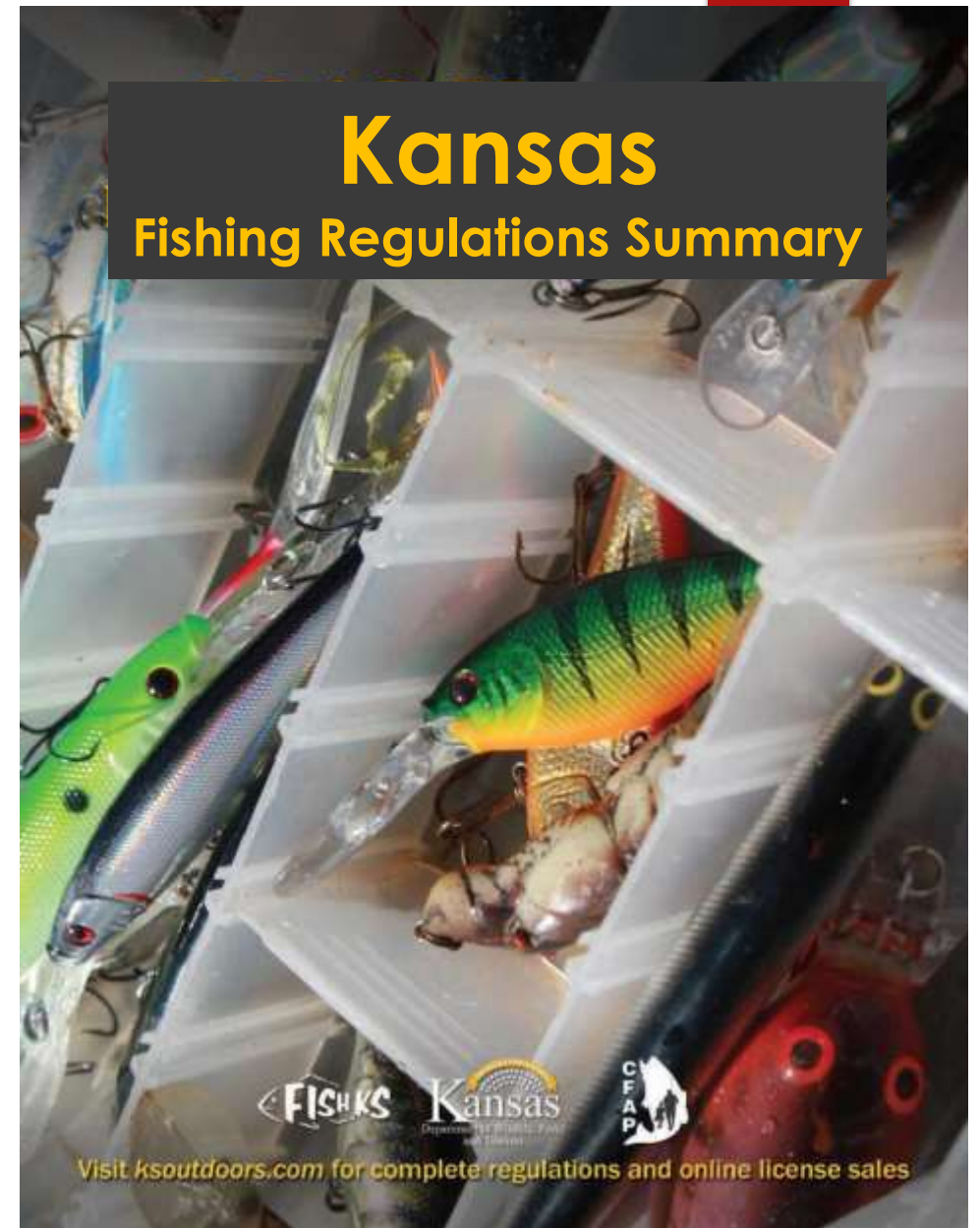
How do these core principles apply to fly-fishing?
Check out <https://Int.org/leave-no-trace-fishing/>.

Releasing Your Fish

- ▶ Handling the fish with wet hands, remove the hook and then cradle the fish in the water until it recovers and swims off strongly on its own.
 - ▶ Facing up-current in moving water.
 - ▶ Facing toward deeper water or shelter in still water. Do NOT move the fish forward and backward to flow water through the gills. This can collapse the gills when you move the fish backward. Let it breathe naturally.
- ▶ Take the time to make sure the fish is ready to go - usually a minute or less.



Requirement #8 Regulations



Regulations Requirements

- ▶ Obtain and review 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.

Regulations

- ▶ Each State has its own rules & regulations.
- ▶ See the **Take Me Fishing** website for links to each State's regulations and to get a license.
 - ▶ Go to <https://www.takemefishing.org>.
- ▶ License Information: Most states will send a downloadable PDF, which you can print and sign. You can also have the State send your license in the mail.

Take time to review your State's fishing regulations. Be aware that they vary from State to State and from one watershed to another.

Requirement #8 Good Outdoor Sportsmanlike Behavior



Good Sportsmanlike Behavior Requirements

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- ▶ 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, “catch and release”, and obeying fishing regulations.

Good Sportsmanlike Behavior

What does this mean?

- ▶ Leave No Trace.
- ▶ Follow the Outdoor Code.
- ▶ Respect the rights of fishermen and others who use the resource.
- ▶ Keep only the fish you want to eat.
- ▶ Release unwanted fish carefully and unharmed.
- ▶ Never litter or pollute the waters.
- ▶ Know and follow angling and boating regulations.
- ▶ Share your knowledge with others.

For more details go to <https://stillwateranglers.com/fly-fishing-etiquette-rules-need-know/>.

The Outdoor Code 1/2

As an American, I will do my best to:

- **Be clean in my outdoor manners**
I will keep my trash and garbage out of lakes, streams, fields, woods, and roadways.
I will treat the outdoors as a heritage.
I will take care of it for myself and others.
- **Be careful with fire**
I will prevent wildfire.
I will build my fires only where they are 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.



The Outdoor Code 2/2

As an American, I will do my best to:

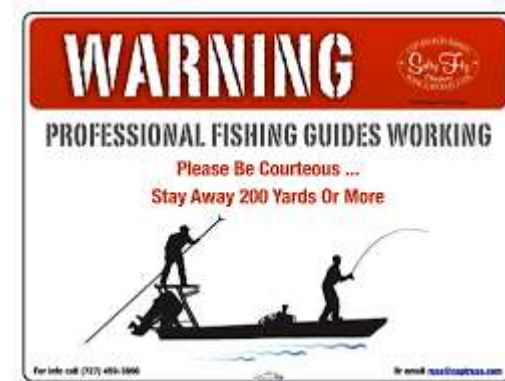
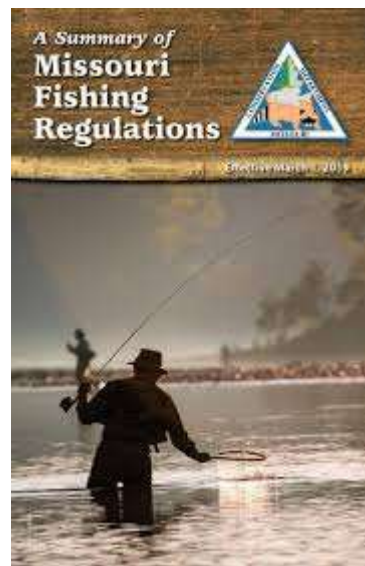
- **Be considerate in the outdoors**
I will treat public and private property with respect.
I will use low-impact methods of hiking and camping
I will LEAVE NO TRACE.
- **Be conservation-minded**
I will learn how to practice good conservation of soil, waters, forests, minerals, grasslands, wildlife, and energy.
I will urge others to do the same



What Does the Outdoor Code Mean to a Fisherman?

What about:

- Littering
- Trespassing
- Courteous behavior
- Obeying fishing regulations



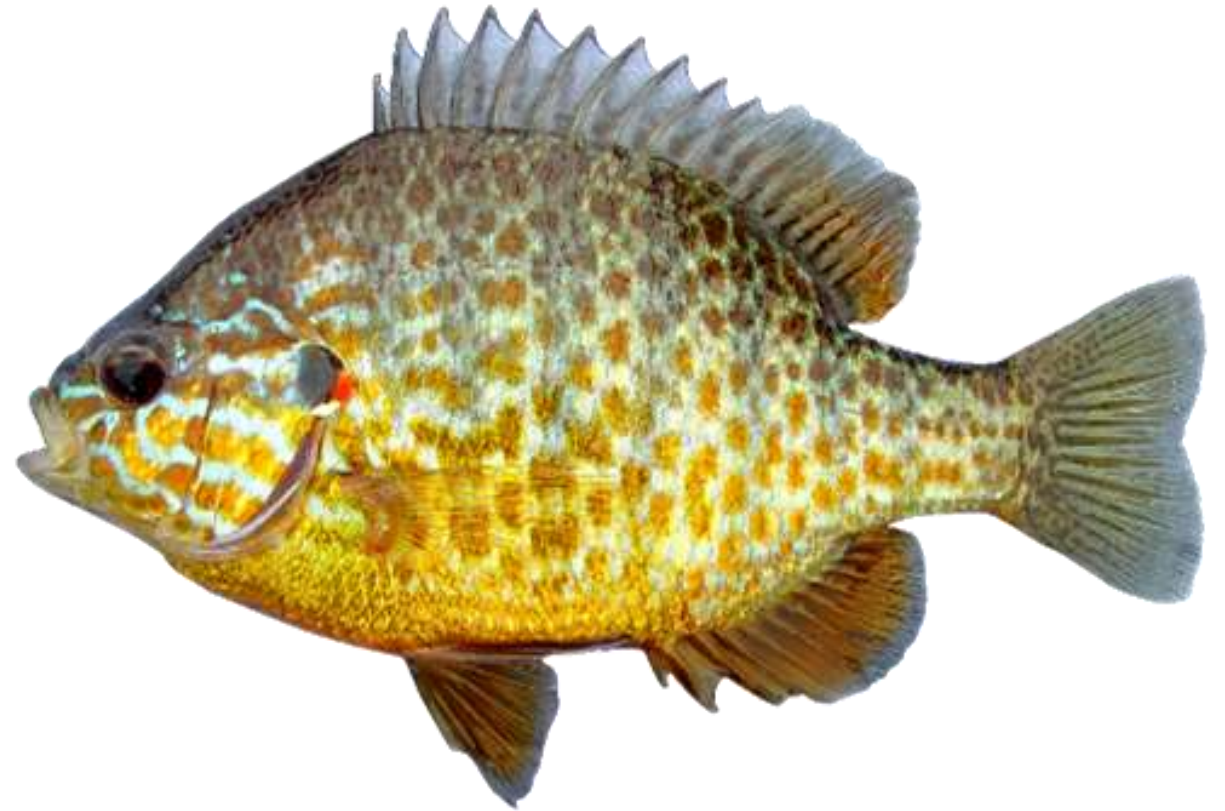
Requirement #10

Catch and Identify a Fish



Fishing Requirements

- ▶ Catch at least one fish using a fly rod and fly.
- ▶ Identify it and quickly release it live back into the water.
- ▶ Discuss this experience with your counselor.



What do you Need to Know to Catch and Identify a Fish?

▶ **Catching Fish**

- ▶ What do fish need to thrive?
- ▶ What are some of the best practices for fishing?
- ▶ Where can you find fish?
- ▶ What is the nature of fish?

▶ **Identifying Fish**

- ▶ See your state fishing website for fish identification information.
- ▶ Go to <https://www.takemefishing.org/fish-species/> to identify both freshwater and saltwater fish.
- ▶ For additional freshwater fish information go to <https://fws.gov/fisheries/freshwater-fish-of-america.html>.

WHAT FISH NEED TO THRIVE

- ▶ Clean, oxygenated water at the right temperature
- ▶ A place to safely feed*
- ▶ A place to safely rest*
- ▶ A place to hide from predators*
- ▶ A place to reproduce

“Prime Lie”

BEST PRACTICES for FISHING

- ▶ Use barbless hooks or crush the barbs on your hooks.
- ▶ Practice **STEALTH**. Approach from behind (usually from downstream) to sneak up on fish. Act non-threatening - move slowly and keep your arms and rod down. Dress in subdued colors to match the background - woods, rocks, sky, etc.
- ▶ Use fine line to avoid spooking fish. Position yourself and your line to avoid cross currents.
- ▶ Loud noises can scare fish, especially sloshing water. Wade gently. Use a rubber-tipped wading staff for stability.

The Importance of STEALTH

- ▶ Fish can be very skittish and spooky, especially if they've been disturbed. They quickly react to predators (like you) and competitors (other fish). Only the quick and cautious survive to maturity and spawn.
- ▶ Water and other conditions can make your approach difficult: lack of cover, clear water, still water, bright sky, etc.
- ▶ Wind and current can be your friends when they ripple the water and distort the fish's view.
- ▶ Wear unobtrusive clothing and use gear that blends with the background. No red shirts! No white hats! No shiny watches! No pink rods!

Getting into Position

- ▶ Plan your attack. Study potential paths. What's the best approach?
- ▶ Stay out of sight! Use cover – trees, bushes, rocks, tall grass, rough water, etc. – to mask your approach and casting position.
- ▶ Fish from the bank if possible. If you enter their domain, the fish will know.
- ▶ If you must wade, move slowly (2 steps per minute or less). Keep a low profile. Become the Heron...
- ▶ After you are in position, rest the water to allow fish to resume active feeding – take the time to observe what they're eating, above or below the surface.
- ▶ Think about your cast and where the fly must go.



FINDING STREAM FISH NEAR SEAMS

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FINDING STREAM FISH NEAR OBSTRUCTIONS

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FINDING STREAM FISH BELOW LEDGES

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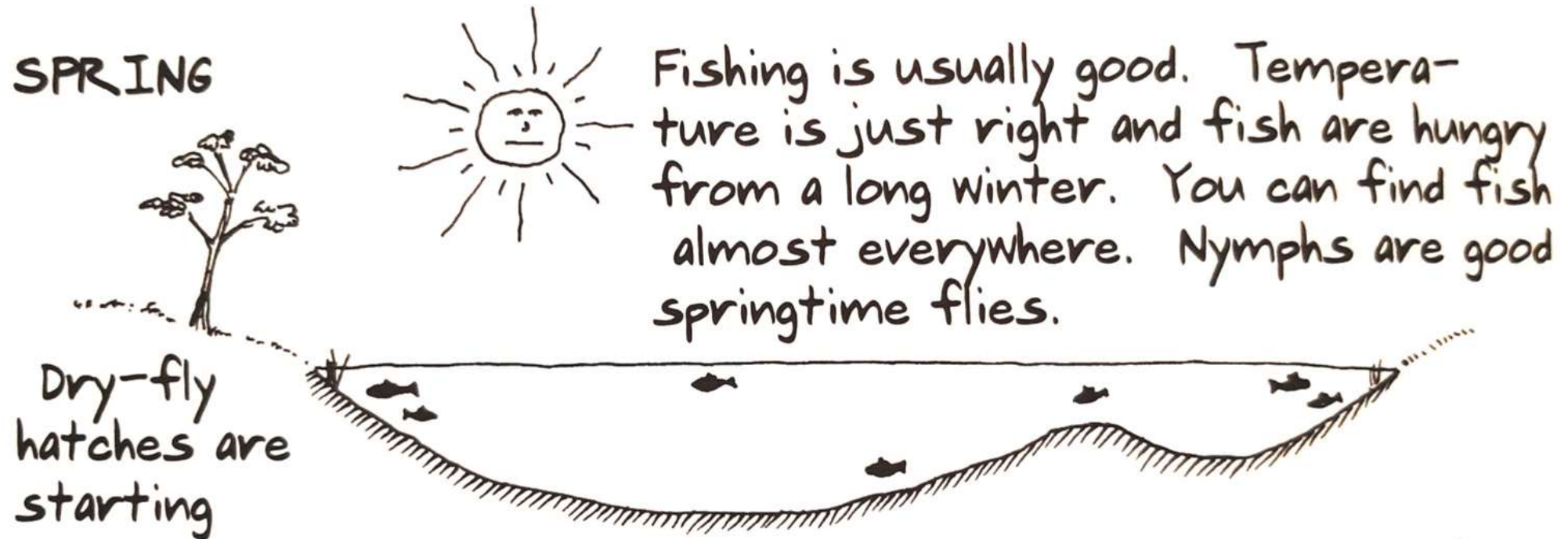
FINDING STREAM FISH IN WEEDS

86



FINDING FISH IN PONDS & LAKES IN THE SPRING

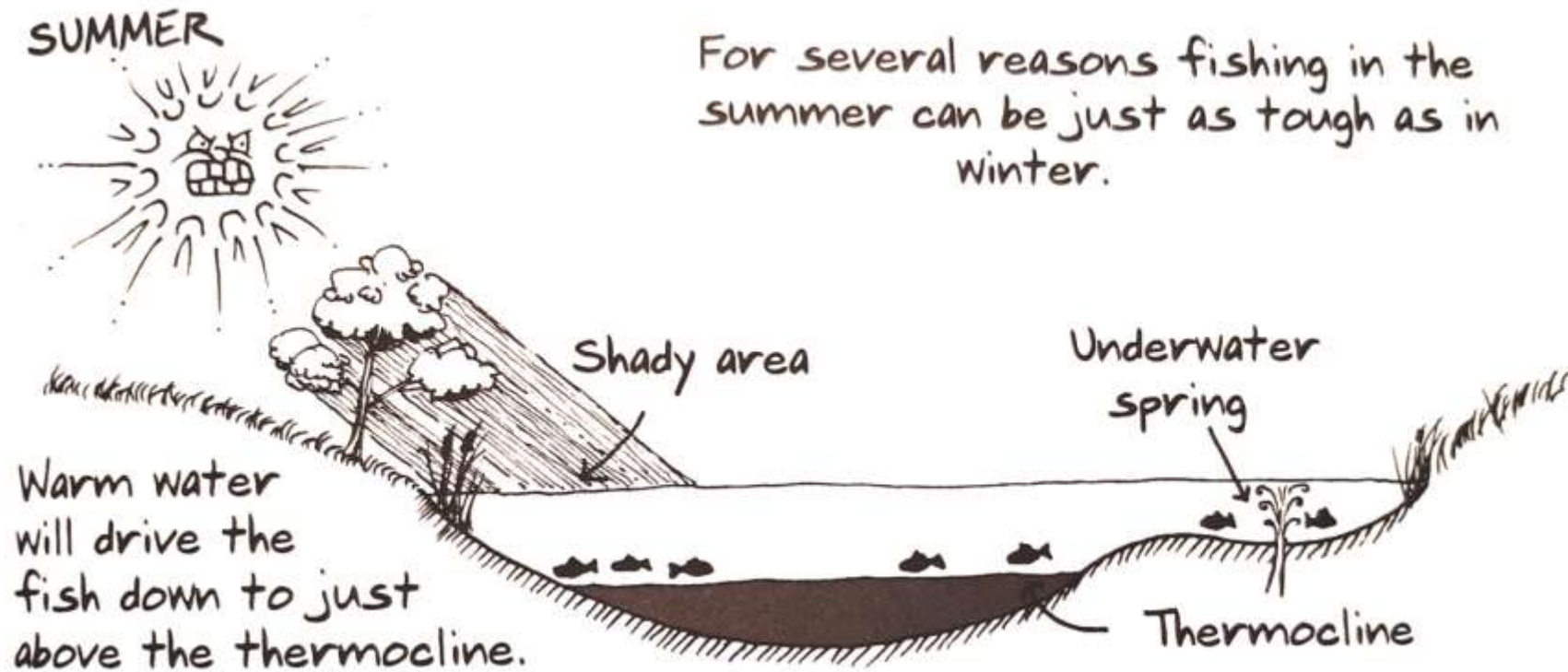
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From *Lake Fly-Fishing Manifesto* by Mike Croft

FINDING FISH IN PONDS & LAKES IN THE SUMMER

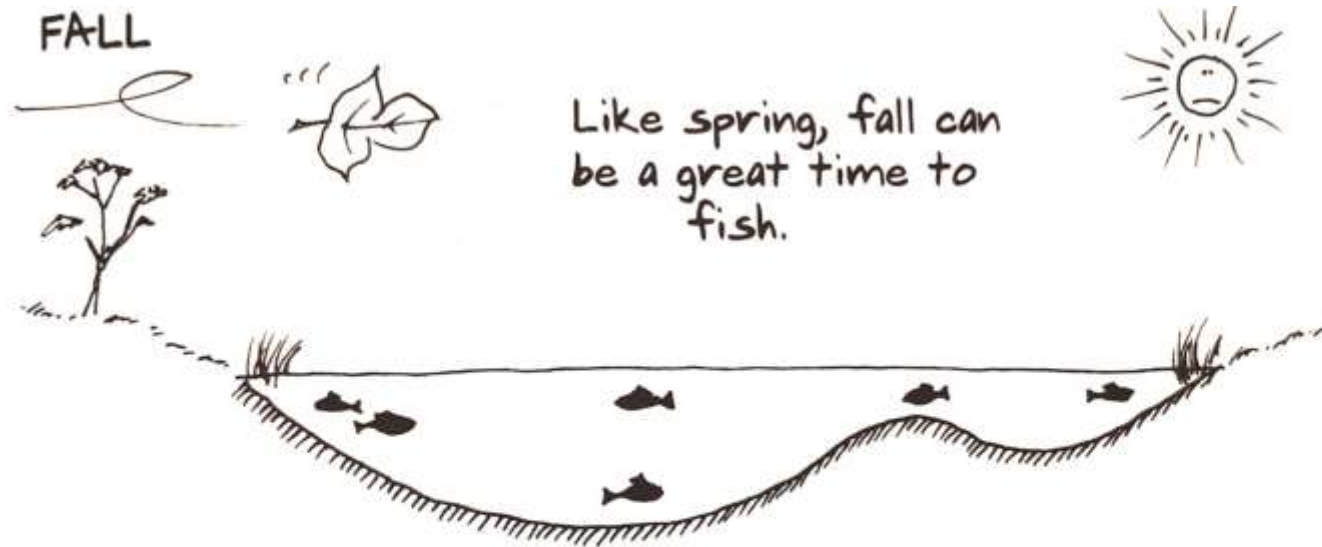
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From *Lake Fly-Fishing Manifesto* by Mike Croft

FINDING FISH IN PONDS & LAKES IN THE FALL

89

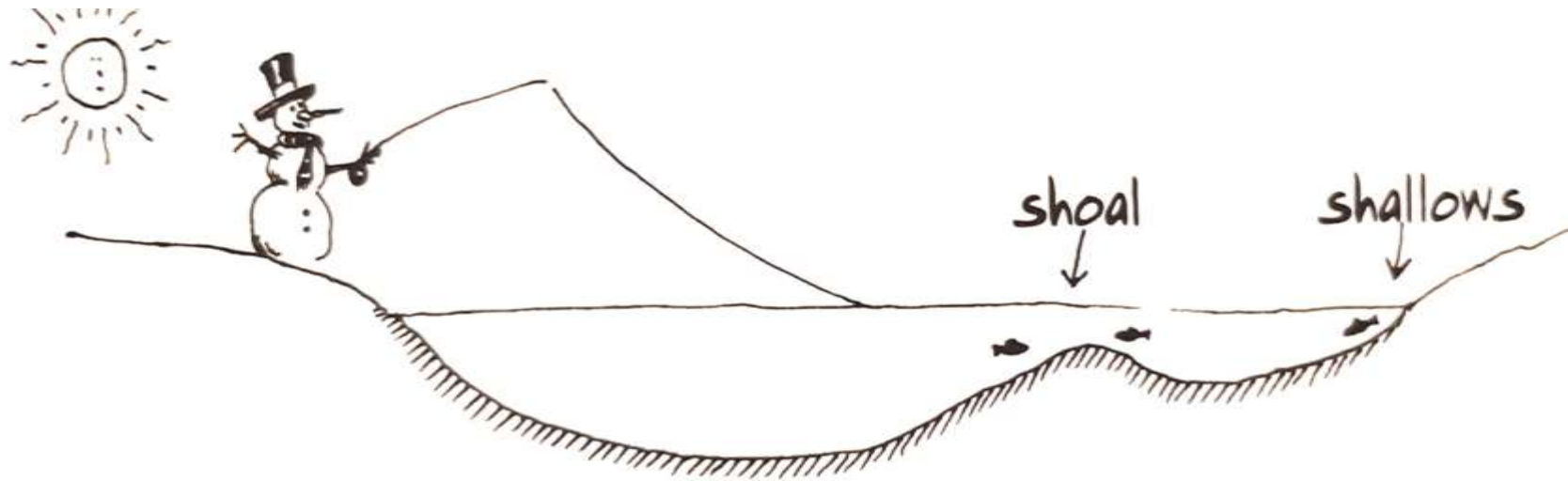


Think of fall as starting when your nighttime temperatures drop into the low forties. This will start the cooling effect for your lakes. The last of the big dry-fly hatches will happen but the insects will usually be smaller than in spring and summer.

From Lake Fly-Fishing Manifesto by Mike Croft

FINDING FISH IN PONDS & LAKES IN THE WINTER

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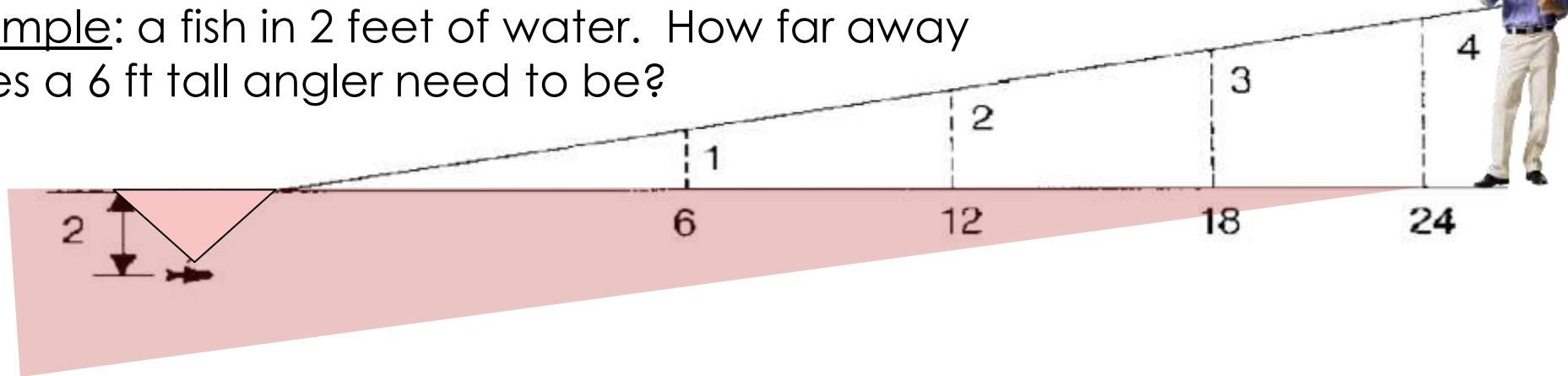
Fishing is usually slow. The fish just don't eat that much in cold water. Fish the shallow areas that are warmed by the sun.

From *Lake Fly-Fishing Manifesto* by Mike Croft

FISH CAN SEE YOU !

Fish Cone of Vision (Rule of 6)

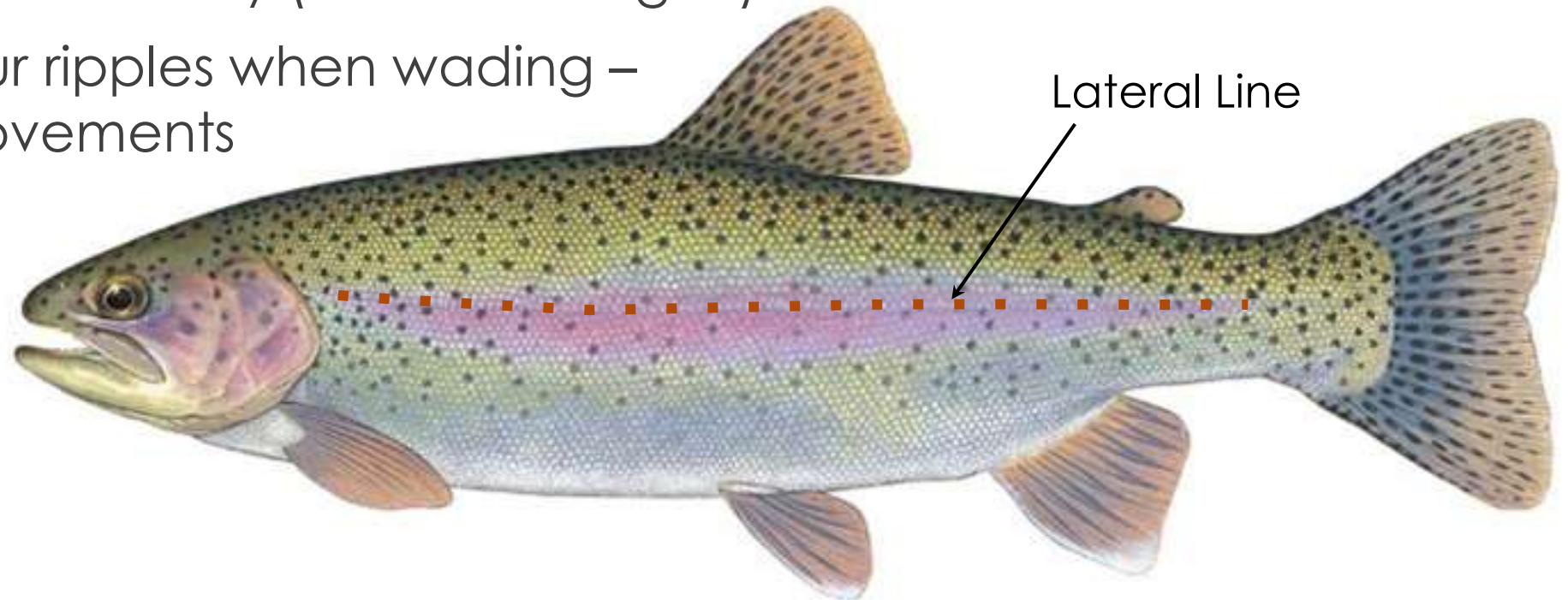
- Example: a fish in 2 feet of water. How far away does a 6 ft tall angler need to be?



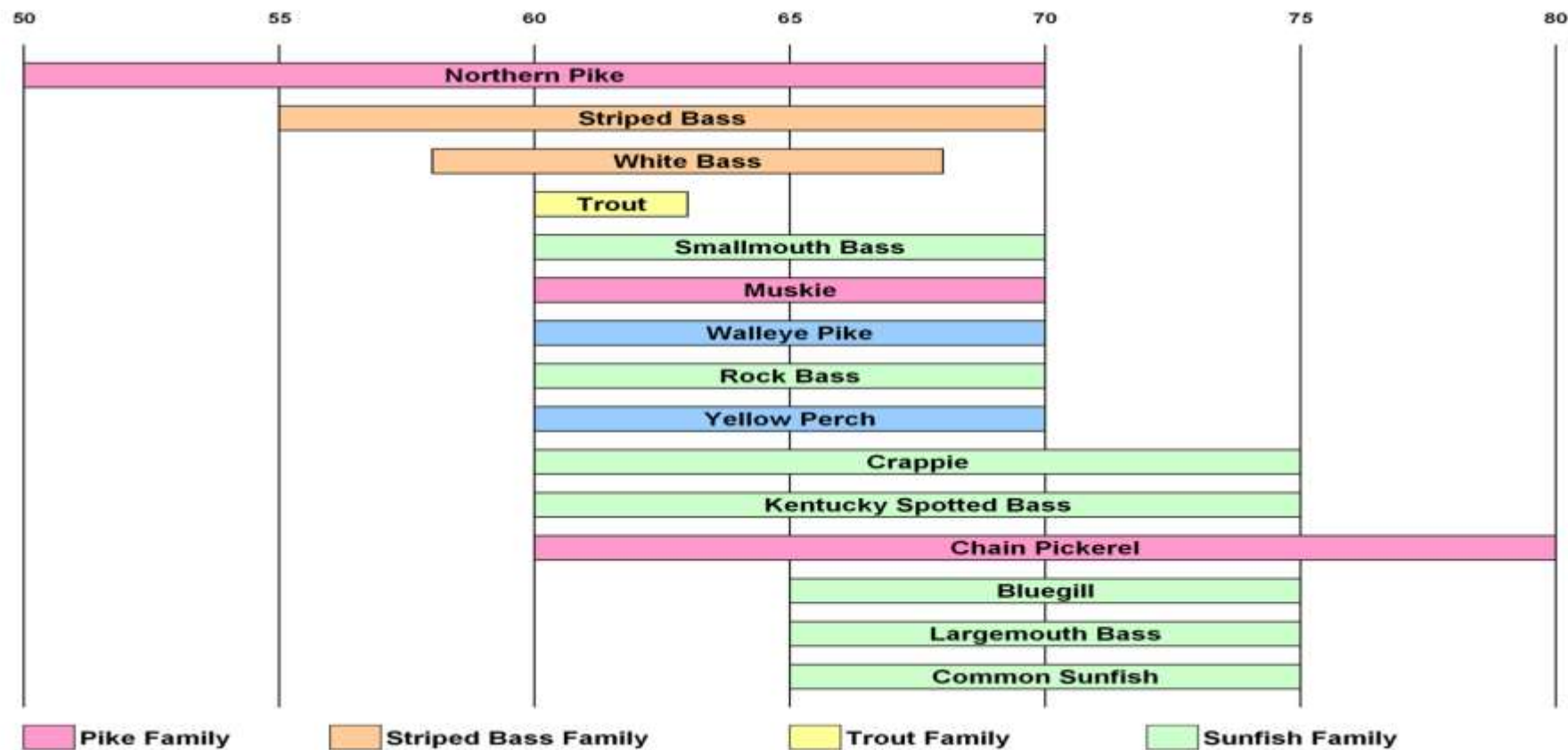
- Answer: 6 X height above water = 36 feet (unless the 6 ft angler is wading, kneeling, sitting, crawling or lying on his stomach). To get closer, get on your hands and knees and cast sidearm or hide behind a rock, bush, tree, etc. Wear drab clothing. Move slowly. Don't cast a shadow on the water. STEALTH!

FISH CAN HEAR & FEEL YOU !

- ▶ With their ***Lateral Line***
 - ▶ Walk the banks softly (and out of sight!)
 - ▶ Watch your ripples when wading – slooow movements



FISH TEMPERATURE PREFERENCES



USGS RIVER TEMPERATURE vs. TIME

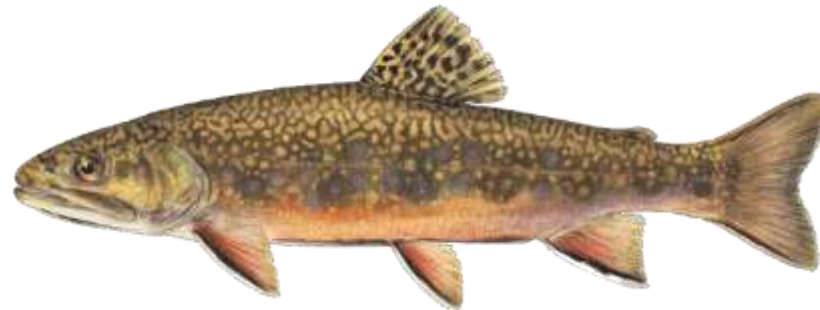
(Rappahannock River, Fredericksburg VA)

- ▶ Use USGS water data to help you plan!
 - ▶ See <https://waterdata.usgs.gov/nwis/rt> for water data for the country.
 - ▶ Select **Data Category** and **Geographic Area** to narrow your search.
 - ▶ From the many sites shown, select the water body you want.
 - ▶ You can then select how data is displayed and the time period.
- ▶ This sample chart shows ideal temperature ranges for Smallmouth Bass.
 - ▶ Pick a time of year when the fish are happy and hungry!



Fish Identification: Can you Identify These Fish?

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Requirement #10

Cleaning and Cooking Fish



Cleaning & Cooking Requirements

- ▶ If regulations and health concerns permit, clean and cook a fish you have caught.
- ▶ If you are unable to catch a fish for eating, acquire a fish, clean the fish you acquired, and cook the fish you acquired.
- ▶ (It is not required that you eat the fish.)

BEST PRACTICES for CLEANING FISH

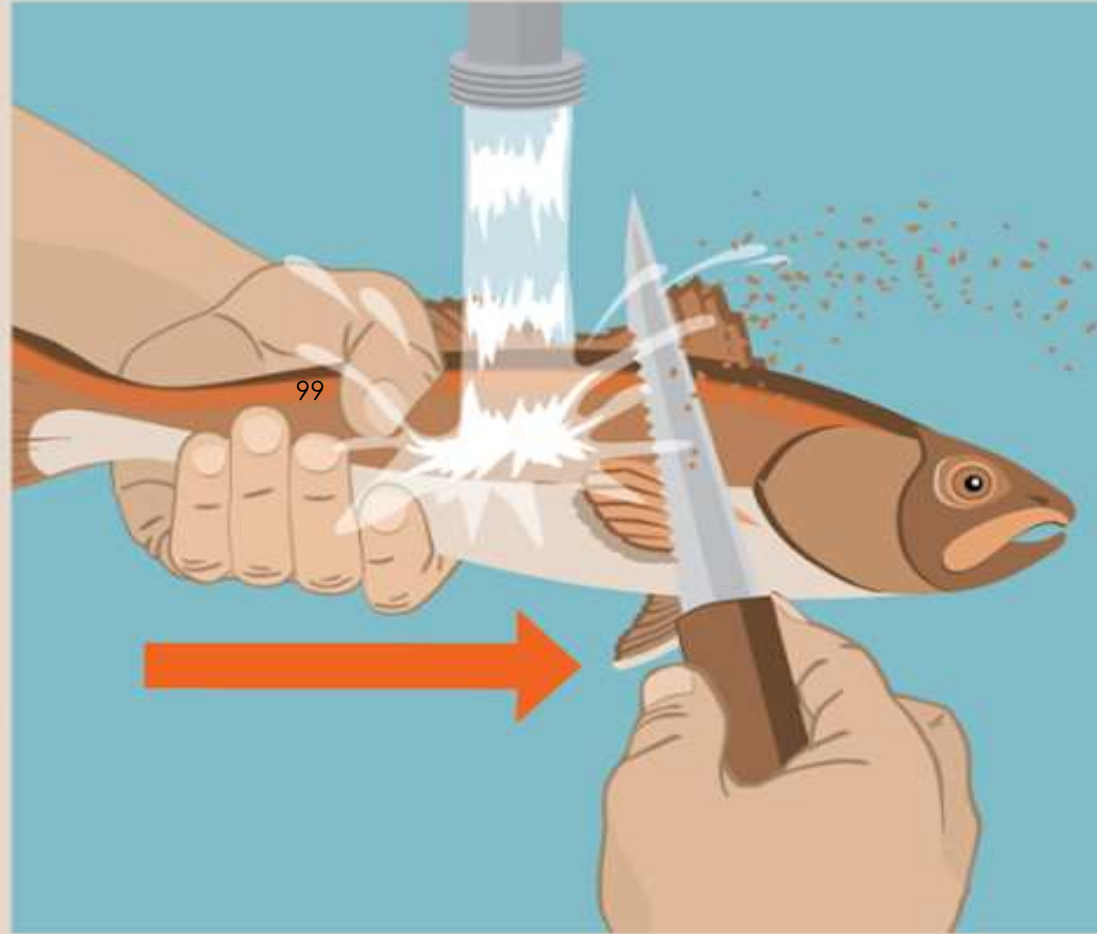
- ▶ Clean your fish as soon as possible, while it's fresh.
- ▶ Keep fish on ice or refrigerated until they're cleaned.
- ▶ Make sure everything is clean and ready before starting.
- ▶ You can use any sharp knife to clean a fish, but a thin, flexible fillet knife is best.
- ▶ Knives should be very sharp and fish can be slippery – be careful!
- ▶ You can wear plastic or rubber gloves to keep your hands clean while you work.
- ▶ A Kevlar or metal mesh cleaning glove is highly recommended. See <https://www.amazon.com/s?k=fish+cleaning+glove>.
- ▶ Keep rinsing the fish in cool water as you clean it and give it a final rinse when you're done.
- ▶ Discard the carcass and guts, and clean up when you're done.

CLEANING – STEP 1

99

1

Use the back of a knife, or scaling tool, to remove scales under water.



CLEANING – STEP 2

100



CLEANING – STEP 3

101



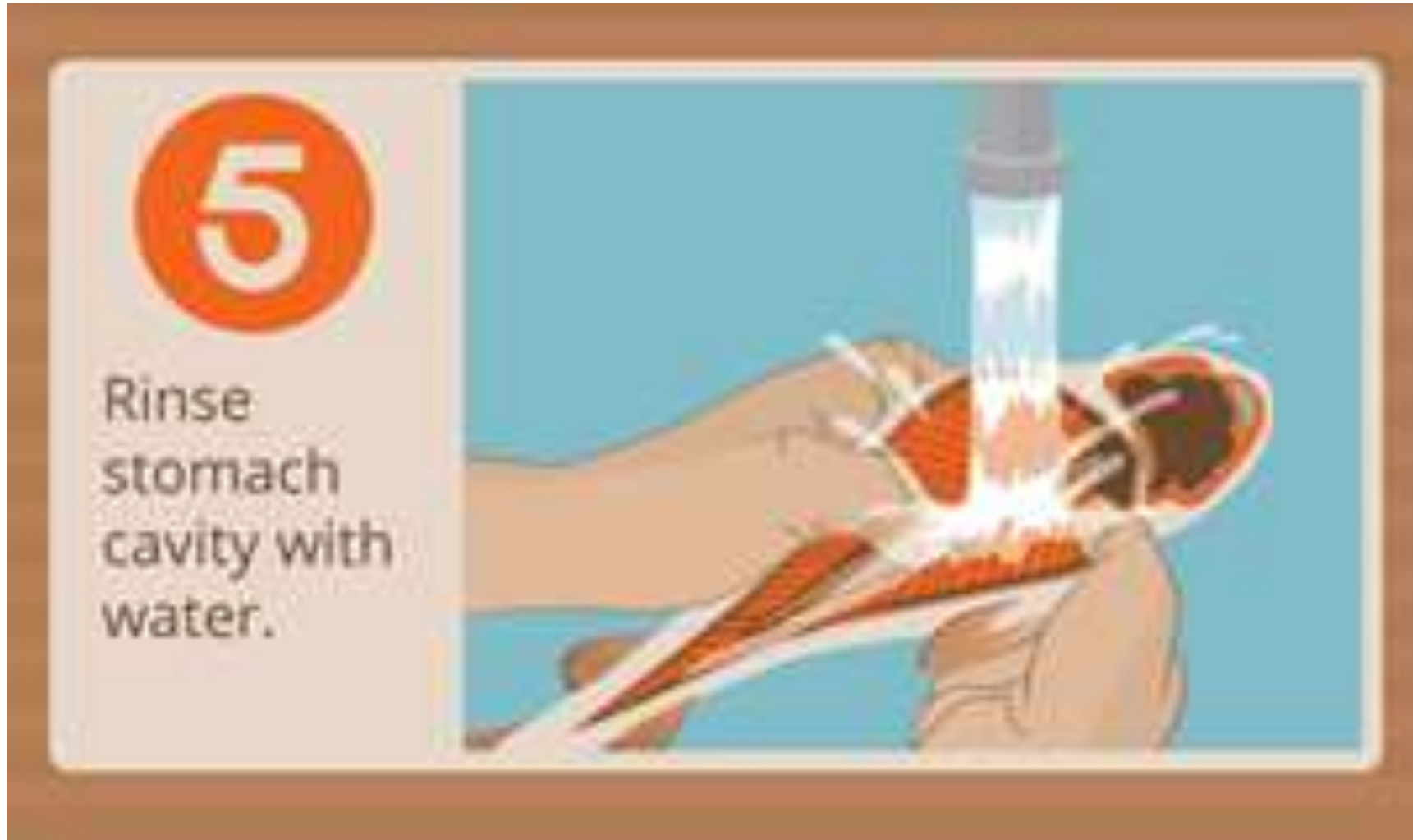
CLEANING – STEP 4

102



CLEANING – STEP 5

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FILLETING – STEP 1

104



#1

Cut down to the backbone just behind the fish's head, then turn the knife and cut down towards the tail. Repeat on the other side.

FILLETING – STEP 2

105



FILLETING – STEP 3

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MAKING STEAKS

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If cutting into steaks, use a heavy-duty standard or serrated knife to cut at a 90° angle.

BEST PRACTICES for COOKING FISH

- ▶ There are many delicious ways to cook fish, including:
 - ▶ Grilling
 - ▶ Poaching
 - ▶ Steaming
 - ▶ Broiling
 - ▶ Baking
 - ▶ Frying
- ▶ Remember KISMIF – Keep It Simple, Make It Fun
 - ▶ When cooking with Scouts, give them choices of spices, sauces, condiments, etc.
 - ▶ Let them do as much as possible.
 - ▶ Foil dinners are great for this.
- ▶ Make sure fish are well cooked, but not overdone.
 - ▶ This is a delicate balance, especially with “dry” cooking methods like grilling, broiling and baking, and with delicate fish like trout.
 - ▶ Most fish cook quickly.
 - ▶ Test frequently for doneness by slicing to see the inside or pushing with a fork to test for firmness.
- ▶ Recipes are available:
 - ▶ Online
 - ▶ Recipe books
 - ▶ Mom, Grandma or a neighbor – ask!

For some great advice on how to cook with youth, see
<https://growing-minds.org/documents/cooking-in-the-classroom-best-practices-guide.pdf/>

GRILLING

- ▶ When you're grilling fish, keep a close watch. Fish only takes a few minutes per side to cook.
- ▶ Brush the fish lightly with oil or spray with nonstick cooking spray.
- ▶ Place fish near the edge of the grill, away from the hottest part of the fire.
- ▶ Don't try to lift up the fish right away; it will be stuck to the grill.
- ▶ Start checking for color and doneness after a few minutes, once the fish starts to release some of its juices.
- ▶ Flip the fish over when you see light grill marks forming.



POACHING

- ▶ To poach fish, use vegetable or chicken stock, or make a court-bouillon, a homemade broth of aromatic herbs and spices.
- ▶ Use a pan big enough to lay each piece of fish down flat. Pour in enough liquid to just barely cover the fish. Bring the liquid to a simmer, and keep it there.
- ▶ If you see bubbles coming up from the bottom of the pan, it's too hot - the liquid should "shimmer" rather than bubble. The ideal temperature is between 165 and 180 degrees F. Gently simmer until the fish flakes easily.



STEAMING

- ▶ Steaming produces a mild-tasting fish that is often paired with a flavorful sauce.
- ▶ Rub the fish with spices, chopped herbs, ginger, garlic, and chile peppers to infuse flavor while it cooks.
- ▶ Use a bamboo steamer or a folding steamer basket with enough room for each piece of fish to lie flat.
- ▶ Pour about 1½ inches of water into the pan, place the steamer over the water, cover the pot, and bring the water to a boil.
- ▶ Begin checking the fish for doneness after 10 minutes.

